CITY COUNCIL MEETING AGENDA

Monday, December 3, 2012, at 7 p.m.
Camas City Hall, 616 NE 4th Avenue

I. CALL TO ORDER

II. PLEDGE OF ALLEGIANCE

III. ROLL CALL

IV. PUBLIC COMMENT

V. CONSENT AGENDA

A. Approve the minutes of the November 19, 2012, Camas City Council Meeting and the work session minutes of November 19, 2012.
B. Approve claim checks as approved by the Finance Committee.
C. Award contract for Project WS-713 WWTF Improvements, Phase 2B, to Contractors Northwest, Inc., with a base bid of $3,023,858.11. Staff recommends that Council accept the bids for Alternative Additive Items No. 1 and No. 5, in the amounts of $25,582.40 and $49,538.80 respectively. The construction budget for this project has a 3.5 million dollar balance leaving ample budget authority to complete the project.
D. Authorize Pay Estimate No. 2 FINAL to Gregg Roofing, Inc. in the amount of $3,878.68 for Project P-871 Community Center Roof Replacement and accept the project as complete. Installation of the new roof at the Camas Community Center has been completed. Change Order No. 1 in the amount of $4,066.24 was approved at the November 5, 2012, Council Meeting.
E. Authorize the Mayor to sign a professional services contract with Otak Engineering in an amount not to exceed $26,880 for Project SS-568 Vactor Waste Facility. The project encompasses designing an upgrade to the existing vactor facility located at the Operation Center. This project is funded through a grant from the Department of Ecology.
F. Authorize the Mayor to sign Change Order No. 7 (final) to McClure & Sons, Inc. in the amount of $131,267 plus sales tax for Project WS-656 Wastewater Treatment Facilities Improvements, Phase 2A. The majority of the items included in the change order were discussed at the November 5th Council Workshop. The total cost of the change order is 4% of the total construction cost. After all current costs, the construction account balance is approximately 3.5 million. Project WS-656 remains within the City's budget and current spending authority.

G. Authorize bid award to CivilWorks, NW, Inc., in the amount of $59,165.80 for Project SS-571 Cedar Street Storm Realignment. The 2012 Budget includes $75,000 for the repair of the City's stormwater facilities. These budgeted funds will be used to construct this project.

NOTE: Any item on the Consent Agenda may be removed from the Consent Agenda for general discussion or action.

VI. NON-AGENDA ITEMS

A. Staff
B. Council

VII. MAYOR

A. Announcements

VIII. COMMUNITY DEVELOPMENT

A. 2013 Capital Facilities Plan (CFP) Update List – Discussion
   1. Details: The proposed updates to the CFP include project additions, deletions, and minor alterations. This update is being conducted in conjunction with the 2013 Budget adoption process as allowed by state statute. These revisions are intended to create harmony between the proposed 2013 Budget and the CFP list of projects for 2013. Changes were made to the list at the November 19th Workshop to more accurately depict the predicted timing and cost of ambulance purchases. It was staff's recommendation at the November 19th Council Workshop to schedule a public hearing on December 3, 2012. The notice for this hearing did not get published in time for the December 3rd Meeting.

   Department/Presenter: James Carothers, Engineering Manager and Phil Bourquin, Community Development Director
   Recommended Action: Discuss the proposed changes and reschedule the public hearing date for December 17, 2012. As the hearing date was originally slated for December 3rd, Council may want to allow public comment at this time.

IX. PUBLIC WORKS

A. Resolution No. 1254 adopting the Boulder Creek and Jones Creek Watershed Forest Management Plan
   1. Details: The Boulder Creek and Jones Creek Watershed Forest Management Plan provides an outline to manage the City of Camas watershed. The goals of the plan include protecting and maintaining water quality, generating periodic income from the sale of wood products, providing an access road network for operational, maintenance and asset protection and improving forest health. The plan was discussed at the July 16, 2012, Workshop and was issued a determination of non-significance through the State Environmental Protection Agency (SEPA) process.

   Department/Presenter: Eric Levison, Public Works Director

Recommended Action: Adopt Resolution No. 1254.

X. ADJOURNMENT

NOTE: The City of Camas welcomes and encourages the participation of all of its citizens in the public meeting process. A special effort will be made to ensure that person with special needs have opportunities to participate. For more information, please call 360.834.6864.

CITY COUNCIL REGULAR MEETING MINUTES - Draft
Monday, November 19, 2012 at 7:00 p.m.
Camas City Hall, 616 NE 4th Avenue

Note: Due to technical issues, this meeting is not available by video.

I. CALL TO ORDER

Mayor Higgins called the meeting to order at 7:00 p.m.

II. PLEDGE OF ALLEGIANCE

III. ROLL CALL

Present: Greg Anderson, Don Chaney, Linda Dietzman, Tim Hazen, Steve Hogan, Melissa Smith, Shannon Turk

Staff: Kristin Berquist, Phil Bourquin, Jennifer Gorsuch, Eric Levison, Nick Swinhart, and Shawn MacPherson, City Attorney.

Press: Members of the press were not present.

Mayor welcomed Scout Troop 554 and Scout Master Julie Bradley. The Troop is working toward their Citizen in the Community Merit Badge.

IV. PUBLIC COMMENT

There were no comments from the public.

V. CONSENT AGENDA

A. Approve the minutes of the November 5, 2012, Camas City Council Meeting and the work session minutes of November 5, 2012.

City Council Meeting Minutes from November 5, 2012

City Council Workshop Minutes from November 5, 2012

B. Approve claim checks numbered 115306-115442 in the amount of $442,368.81.

C. Accept Project No. S-569 as "COMPLETE". S-569 - 2012 Pavement Project was completed in early August of 2012. Excluding retainage in the amount of $2,691.61, all monies owed for the project were approved at the August 20, 2012, Council Meeting. Formal "Acceptance" of the project had been delayed pending receipt of certain project information. This information has now been received.

D. Award Project No. P-874A Louis Bloch Park Restrooms Improvements to the lowest responsive bidder, Michael Green Construction, Inc., in the amount of $149,179.72. Construction of this project is fully funded with a Community Development Block Grant (CDBG) in the amount of $150,000.

P-874A Bid Tab

E. Authorize the Mayor to sign the Road and Right-of-Way Conveyance Agreement with Clark County for the transfer of ownership of NE Goodwin Road. This Agreement provides terms by which the City of Camas will accept the roadway right-of-way from Clark County. Clark County will repave Goodwin Road in 2013 and will inspect the Lacamas Creek Bridge until 2018. Camas will pay Clark County to maintain the traffic signal at NE 13th Street and Friberg/Strunk Street under the current interlocal agreement between the two agencies.

Goodwin Road Conveyance Agreement

F. Authorize the Mayor to sign the Quit Claim Deed with Clark County for the transfer of ownership to the City of Camas of NE Goodwin Road right-of-way. The terminus points of this conveyance are 350 feet west of Friberg/Strunk Street and the existing west city limits near the Lacamas Lake Bridge.

Goodwin Road Quit Claim Deed

G. Authorize the Mayor to sign the interlocal agreement between the City of Camas and the Cowlitz-Wahkiakum Council of Governments (CWCOG), allowing the City to join the Kaiser medical insurance rate stabilization pool created by the CWCOG. This interlocal was discussed at the November 5, 2012, Council Workshop.

Cowlitz-Wahkiakum Council of Governments Interlocal Agreement

H. Authorize the Mayor to sign the First Amendment to the Timberland Purchase and Sale Agreement with Longview Fiber for Project No. WS-709 Surface Water Headworks Study. This amendment extends the closing date to allow time to complete the County land use process and to set the final sale price at $30,000 based on the appraised value. This item was discussed at the November 5, 2012, Workshop.

First Amendment to Timberland Purchase and Sale Agreement

I. Authorize the Mayor to sign the annual contract with Northwest Regional Training Center (NWRTC) in the amount of $9,744. This contract provides training required by Washington Industrial Safety and Health Act (WISHA) to City Operations, Engineering, Building, and Parks staff.

Northwest Regional Training Contract

J. Authorize the surplus of vehicles from the Drug Task Force. The vehicles include a 2002 Buick Century, license plate no. 284ZQL and a 2000 Toyota 4-Runner, license

plate no. 906VJK. Proceeds from the sale of the vehicles will go to the City of Camas Police Department Drug Task Force fund.

It was moved by Linda Dietzman, seconded by Steve Hogan to approve the Consent Agenda. The motion carried unanimously.

NOTE: Any item on the Consent Agenda may be removed from the Consent Agenda for general discussion or action.

VI. NON-AGENDA ITEMS

A. Staff

There were no comments from staff.

B. Council

Dietzman reminded everyone about First Friday on December 7th. It is Camas' Hometown Holidays. She also extended an invitation to attend the open house for CID BioScience, a new business in Camas, on Tuesday, November 20th, from 10 a.m. to 4 p.m. The public is welcome to attend.

VII. MAYOR

A. Announcements

2012 Council Committees

Mayor said he is proud of the Camas High Football Team who will be playing in the Washington State Semi-Finals on Saturday, November 24th at the Tacoma Dome and also wished everyone a pleasant Thanksgiving, commenting that we have a tremendous amount to be thankful for.

VIII. FINANCE

A. Public Hearing - Levying Ad Valorem Taxes for 2013.

Details: The proposed levy for the General Fund is the same amount as the 2012 levy, the EMS levy is $.46 per $1,000 of assessed valuation that the voters approved in August and the levy for the Unlimited Tax General Obligation Bond Fund is for the debt service requirements in 2013. Based on the outcome of the public hearing, adoption of Ordinance No. 2663 levying taxes for the General Fund and adoption of Ordinance No. 2664 levying taxes for Emergency Medical Services and adoption of Ordinance No. 2665 levying taxes for the Unlimited Tax General Obligation Bonds may occur.

Department/Presenter: Scott Higgins, Mayor

Mayor opened and closed the public hearing at 7:05 p.m. There were no comments from the public.

Ordinance 2663

It was moved by Shannon Turk, seconded by Greg Anderson that Ordinance No. 2663 levying taxes for the General Fund be read by title only. The motion carried unanimously.

It was moved by Shannon Turk, seconded by Melissa Smith that Ordinance No. 2663 levying taxes for the General Fund be adopted and published according to law. The motion carried unanimously.

Ordinance 2664

It was moved by Don Chaney, seconded by Linda Dietzman that Ordinance No. 2664 levying taxes for Emergency Medical Services be read by title only. The motion carried unanimously.

It was moved by Don Chaney, seconded by Greg Anderson that Ordinance No. 2664 levying taxes for Emergency Medical Services be adopted and published according to law. The motion carried unanimously.

Ordinance 2665

It was moved by Shannon Turk, seconded by Linda Dietzman that Ordinance No. 2665 levying taxes for the Unlimited Tax General Obligation Bonds be read by title only. The motion carried unanimously.

It was moved by Shannon Turk, seconded by Linda Dietzman that Ordinance No. 2665 levying taxes for the Unlimited Tax General Obligation Bonds be adopted and published according to law. The motion carried unanimously.

IX. HUMAN RESOURCES

A. Resolution No. 1253 requesting Affiliate Membership in the Cowlitz-Wahkiakum Council of Governments (CWCOG)

Details: This request was discussed at the November 5, 2012, Council Workshop.

Department/Presenter: Jennifer Gorsuch, Human Resources Director

Resolution 1253

It was moved by Linda Dietzman, seconded by Steve Hogan that Resolution No. 1253 requesting Affiliate Membership in the Cowlitz-Wahkiakum Council of Governments (CWCOG) be read by title only. The motion carried unanimously.

It was moved by Linda Dietzman, seconded by Steve Hogan that Resolution No. 1253 requesting Affiliate Membership in the Cowlitz-Wahkiakum Council of Governments (CWCOG) be adopted. The motion carried unanimously.

X. COMMUNITY DEVELOPMENT

A. Knights Court Final Plat

Details: Knights Court received preliminary plat approval from the City of Camas Hearings Officer as a 12 lot residential subdivision in an MF-24 zone in July of 2012 (File SUB#11-03). The applicant has submitted an application and final plat to the City of Camas for approval in accordance with the Camas Municipal Code (CMC). Please see the attached staff report.

Department/Presenter: Phil Bourquin, Community Development Director

Staff Report

Plat Drawing

It was moved by Linda Dietzman, seconded by Steve Hogan that the Knights Court Final Plat (File #FP 12-02) be approved as submitted. The motion carried unanimously.

XI. FIRE

A. Three Party Agreement

Details: The "Three Party Agreement" that provides for the continued ambulance service of Camas, Washougal, and East County Fire and Rescue (ECFR), expires on December 31, 2012. The renewal of the interlocal agreement was presented at the November 5, 2012, Workshop without opposition.

Department/Presenter: Nick Swinhart, Fire Chief

Agreement

It was moved by Greg Anderson, seconded by Don Chaney that the new Three Party Service Agreement be approved as written. The motion carried unanimously.

XII. ADJOURNMENT

The meeting adjourned at 7:14 p.m.

NOTE: The City of Camas welcomes and encourages the participation of all of its citizens in the public meeting process. A special effort will be made to ensure that person(s) with special needs have opportunities to participate. For more information, please call 360.834.6864.

Quick Preview of Agenda and Supporting Documents - Posted November 15, 2012

Council Agenda with Supporting Documents

Mayor

City Clerk

CITY COUNCIL WORKSHOP MEETING MINUTES - Draft
Monday, November 19, 2012 at 4:30 p.m.
Camas City Hall, 616 NE 4th

Note: Due to technical issues, the first two minutes of this meeting are AUDIO only.
The video begins at 00:02:27.

I. CALL TO ORDER

Mayor Scott Higgins called the meeting to order at 4:30 p.m.

II. ROLL CALL

Present: Greg Anderson, Don Chaney, Linda Dietzman, Tim Hazen, Steve Hogan, Melissa Smith, and Shannon Turk

Staff: Kristin Berquist, Phil Bourquin, James Carothers, Jennifer Gorsuch, Mitch Lackey, Eric Levison, David Schultz and Nick Swinhart

Press: Heather Acheson, Camas-Washougal Post Record

III. PUBLIC COMMENT

There were no comments from the public.

IV. DEPARTMENT PRESENTATIONS

A. COMMUNITY DEVELOPMENT
Note: The video begins recording at 2:27 minutes into the meeting.

1. Amendments to the City of Camas Capital Facility Plan to include the "2013 Capital Facilities Plan Update List" consistent with RCW 36.70A.070 and RCW 36.70A.130

   Details: Proposed updates to the "2012 Capital Facilities Plan (CFP) Update List" to include project additions, deletions, and minor alterations. This update is being conducted in conjunction with the 2013 Budget adoption process as allowed by statute. These revisions are intended to create harmony between the proposed 2013 budget and the CFP list of projects for 2013.

   Department/Presenter: Phil Bourquin, Community Development Director

   Draft - 2013 Capital Facilities Plan Update List

   A public hearing will be scheduled for December 3, 2012, to consider the proposed "2013 Capital Facilities Plan Update List" and implementing ordinance.

2. Amendments to the Camas Municipal Code (CMC) related to adding Chapter 18.37 Business Park and 18.05 District Designations and 18.07 Use Authorization and 18.09 Density and Dimensions

   Details: Amendments to the CMC related to the establishment of a Business Park zoning district consistent with a development agreement (Northshore Development Agreement).

   Department/Presenter: Phil Bourquin, Community Development Director

   Attachment "A" Proposed Zoning Code Amendments

   Attachment "B" Development Agreement Northshore Properties

   Staff Report BP Zoning

   A public hearing will be scheduled for December 3, 2012, to consider the proposed amendments.

3. Fallen Leaf Boundary Line Adjustment

   Details: Staff has been in discussions with an adjacent property owner to Fallen Leaf Lake in regard to a potential boundary line adjustment that would involve City-owned property and provide for the future potential for trail connectivity. Ordinance No. 2507 requires a public hearing prior to the sale, conveyance, exchange, transfer, or other disposition of open space, park, or other recreational land owned by the City.

   Department/Presenter: Phil Bourquin, Community Development Director

   DRAFT Fallen Leaf BLA Maps (2nd page is large file so it will take a few moments to load)

   A public hearing will be scheduled for December 3, 2012, to consider the proposed property exchange.

4. Update on Bonneville Power Administration (BPA) (Added during the meeting)

   Department/Presenter: Phil Bourquin, Community Development Director

   Bourquin gave Council an update about BPA's I-5 Corridor Reinforcement Project.

   Camas staff has requested that BPA staff attend the January 22, 2012, Council Meeting to discuss their preferred alternatives.

B. PUBLIC WORKS

1. Professional Services Contract with CH2MHILL for the WS-709 544 Foot Pressure Zone Surface Water Supply Project

   Details: Staff is working with CH2MHILL to develop a scope and contract for the WS-709 544 Foot Pressure Zone Surface Water Supply Project. This project is funded through the Department of Health State Revolving Fund in the amount of $8,000,000. It is anticipated that this item will be included on the December 17th Consent Agenda.

   Department/Presenter: Eric Levison, Public Works Director

2. Jones Boulder Forest Management Plan (Added during the meeting)

   Department/Presenter: Eric Levison, Public Works Director

   Levison informed Council that the Jones Boulder Forest Management Plan will adopt the plan's infrastructure.

   This item will be included on the December 3, 2012, Consent Agenda for Council's consideration.

C. LEGAL

1. Marijuana Law Update

   Details: The City Attorney's office presented an update related to the recent passage of Initiative 502 (marijuana legalization).

   Department/Presenter: David Schultz, Attorney

2. Police Incident Update (Added during the meeting)

   Department/Presenter: Mitch Lackey, Police Chief

   Lackey gave Council an update regarding a police incident.

D. FINANCE DEPARTMENT

1. Public Hearing scheduled for December 3rd for the 2013 proposed budget

   Details: The changes that Lloyd Halverson, City Administrator, listed during the last workshop are now included in the proposed budget document.

   Department/Presenter: Jennifer Gorsuch, Human Resources Director

   A public hearing will be scheduled on December 3, 2012, for the 2013 proposed budget. An ordinance to adopt the budget will also be on the agenda for December 3rd.

2. Budget amendment for the Fire Department and Emergency Management Services (EMS) Fund

Details: The City hired three new firefighters using the Safer Grant funds. However, the related personnel costs were not budgeted. Also, overtime costs in both funds have significantly exceeded the budgeted amount for overtime. Amendments to the Fire Department budget for an increase of $100,000 and for the EMS Fund budget increase of $150,000 are necessary. Both of these have grant monies of approximately $40,000 to offset a portion of the amendments.

Department/Presenter: Jennifer Gorsuch, Human Resources Director

An ordinance will be included on the December 3, 2012, Council Meeting for Council's consideration.

3. Interfund loan for the Emergency Services Fund

Details: When preparing the 2012 Budget, to balance projected revenues of the EMS Fund with anticipated expenses, the use of $150,000 of fund balance was authorized, plus an interfund loan by yearend of $84,939. The current financial status of this fund was reviewed and project revenues will be $158,000 higher than budgeted, including the SAFER grant monies, however expenses will be about $160,000 higher, including personnel hired with the SAFER grant. So this fund will need a loan of $84,939 before the end of the year to assure positive cash balance in this fund.

Department/Presenter: Jennifer Gorsuch, Human Resources Director

A resolution will be included on the December 3, 2012, Council Meeting for Council's consideration.

E. FIRE DEPARTMENT

1. Regional Fire Authority Financial Analysis Scope of Work

Details: As part of the continued Regional Fire Authority (RFA) Planning Committee efforts between Washougal and Camas, the Committee has decided to hire Paul Lewis to conduct a financial review and forecast relating to the merger efforts. The total cost is to be split 50/50 between both cities. The Camas cost will be $2,817. This contract was approved by the Committee and is also supported by Lloyd Halverson.

Department/Presenter: Nick Swinhart, Fire Chief

Regional Fire Authority Planning Commitee Financial Analysis

V. CITY ADMINISTRATION

A. Miscellaneous and Scheduling

Details: Updates on miscellaneous or scheduling items

Department/Presenter: Jennifer Gorsuch, Human Resources Director

Gorsuch commented about City Administrator Lloyd Halverson's return date and the addendum for the Camas-Washougal Court building lease extension with the Port of Camas-Washougal. She gave an update on the process for the City Administrator recruitment. Mayor also commented about the recruitment process.

Mayor relayed that the dates for the Annual Planning Conference are Friday, January 25th and Saturday, January 26th. The conference will be held in the Council Chambers on January 25th, beginning at 1 p.m. and January 26th, beginning at 9 a.m.

VI. COUNCIL COMMENT AND REPORTS

Dietzman mentioned that Hazen, Chaney, and Turk attended the Liberty Anchor Dedication at Liberty Middle School and the Downtown Camas Association Award Dinner.

Mayor referred to the 2012 Council Appointments document list attached to the City Council Regular Meeting Agenda under Mayor's announcements. He asked that Council members review the list and get back to him with any changes they would like. The new and renewed appointments will be made at the December 17th Council Meeting.

VII. PUBLIC COMMENTS

Ken Hadley, 4011 F Circle, Washougal, commented about the Regional Fire Authority Financial Analysis. Anderson and Mayor responded to Hadley's questions.

John Wagner, P.O. Box 852, Camas, commented about how fortunate he was to live in Camas and thanked Mayor and Council for the excellent work they are doing for the community.

Dietzman invited the public to the open house at CID Bio-Science on November 20th from 10 a.m. to 4 p.m.

VIII. ADJOURNMENT

The meeting was adjourned at 6:42 p.m.

NOTE: The City of Camas welcomes and encourages the participation of all of its citizens in the public meeting process. A special effort will be made to ensure that persons with special needs have opportunities to participate. For more information, please call 360.834.6864.

Quick Preview of Agenda and Supporting Documents - November 15, 2012

November 19th Workshop Agenda with Supporting Documents

Mayor

City Clerk

AGENDA ITEM SUBMITTAL FORM

MEETING DATE/TIME: 12/03/2012 – 7:00 P.M.

COUNCIL MEETING

Consent Agenda	(Yes_X_ No__)
Regular meeting Agenda	(Yes__ No__)

WORKSHOP MEETING (Yes__ No__)

DEPARTMENT:

COMMUNITY DEVELOPMENT

AGENDA ITEM TITLE:

Award contract for WS-713 – WWTF Improvements, Phase 2B

AGENDA ITEM DETAILS/DESCRIPTION:

Bids were received and opened for this project on Thursday, November 8, 2012. The lowest responsive bidder is Contractors Northwest, Inc. with a Base Bid of $3,023,858.11. Staff recommends that Council accept the bids for Alternative Additive Items #1 and #5, in the amounts of $25,582.40 and $49,538.80, respectively.

The Construction Budget for this project currently has a balance of about $3.5 million, and there is ample budget authority to complete this project.

RECOMMENDED ACTION:

Award Project: WS-713 WWTF Improvements, Phase 2B – including the Base Bid and Additive Items #1 & #5 - to Contractor's Northwest, Inc. in the amount of $3,098,979.31.

DEPARTMENT STAFF/PRESENTERS:

James Carothers, Engineering Manager

SUPPORTING DOCUMENTS:

WS-713 Bid Tab
G&O Bid Award Letter

SUBMITTED BY: Jim Hodges, Project Manager

NOTES: 1) EMAIL "Agenda Item Submittal Form" to agendaprep email in WORD .doc format by 5:00pm on the Tuesday prior to scheduled meeting; 2) Place all supporting documents listed above in the G:\AgendaPrep\(your department folder) by same deadline.

City of Camas WASHINGTON

I, Joan Durgin, City Clerk hereby certify that these bid tabulations are correct.

Joan Durgin 11/8/12
Joan Durgin Date

PROJECT NO. WS-713	Engineer's Estimate:	Contractors Northwest, Inc.
DESCRIPTION: Wastewater Treatment Facilities Improvements, Ph. 2B	$3 million	PO Box 6300
Ent. By		Coeur d'Alene, ID 83816
DATE OF BID OPENING: 11/08/12 10:00 a.m. RLS		208.667.2456

ITEM NO	DESCRIPTION	UNIT	QTY	UNIT PRICE	ENGRG TOTAL	UNIT PRICE	CONTRACT TOTAL
	BASE BID						
1	Wastewater Treatment Facilities Improvements, Ph. 2B	LS	1.00	$2,658,528.00	$2,658,528.00	$2,759,000.00	$2,759,000.00
2	Trench Excavation Safety Systems	LS	1.00	$10,000.00	$10,000.00	$5,703.00	$5,703.00
3	Dewatering	LS	1.00	$50,000.00	$50,000.00	$6,064.00	$6,064.00
4	Unsuitable Excavation	CY	100.00	$50.00	$5,000.00	$37.00	$3,700.00
5	Rock Excavation	CY	220.00	$200.00	$44,000.00	$68.50	$15,070.00
	Subtotal (Base Bid)				$2,767,528.00		$2,789,537.00
	Washington State Sales Tax (8.4%)				$232,472.35		$234,321.11
	TOTAL CONSTRUCTION COST (BASE BID)				$3,000,000.35		$3,023,858.11
	ADDITIVE ITEM NO. 1						
1	Biosolids Dryer Building Metal Wall Panels	LS	1.00	$21,675.00	$21,675.00	$23,600.00	$23,600.00
	Subtotal (Additive Item No. 1)				$ 21,675.00		$ 23,600.00
	Washington State Sales Tax (8.4%)				$1,820.70		$1,982.40
	TOTAL CONSTRUCTION COST (Additive Item No. 1)				$23,495.70		$25,582.40
	ADDITIVE ITEM NO. 2						
1	Partial Secondary Clarifier No. 2 Rebuild	LS	1.00	$163,825.00	$163,825.00	$214,100.00	$214,100.00
	Subtotal (Additive Item No. 2)				$ 163,825.00		$ 214,100.00
	Washington State Sales Tax (8.4%)				$13,761.30		$17,984.40
	TOTAL CONSTRUCTION COST (Additive Item No. 2)				$177,586.30		$232,084.40
	ADDITIVE ITEM NO. 3						
1	Full Secondary Clarifier No. 2 Rebuild	LS	1.00	$272,456.00	$272,456.00	$250,600.00	$250,600.00
	Subtotal (Additive Item No. 3)				$ 272,456.00		$ 250,600.00
	Washington State Sales Tax (8.4%)				$22,886.30		$21,050.40
	TOTAL CONSTRUCTION COST (Additive Item No. 3)				$295,342.30		$271,650.40
	ADDITIVE ITEM NO. 4						
1	Secondary Clarifier No. 2 Launder Covers	LS	1.00	$52,685.00	$52,685.00	$45,700.00	$45,700.00
	Subtotal (Additive Item No. 4)				$ 52,685.00		$ 45,700.00
	Washington State Sales Tax (8.4%)				$4,425.54		$3,838.80
	TOTAL CONSTRUCTION COST (Additive Item No. 4)				$57,110.54		$49,538.80
	ADDITIVE ITEM NO. 5						
1	Secondary Clarifier No. 3 Launder Covers	LS	1.00	$52,685.00	$52,685.00	$45,700.00	$45,700.00
	Subtotal (Additive Item No. 5)				$ 52,685.00		$ 45,700.00
	Washington State Sales Tax (8.4%)				$4,425.54		$3,838.80
	TOTAL CONSTRUCTION COST (Additive Item No. 5)				$57,110.54		$49,538.80

PROJECT NO. WS-713 DESCRIPTION: Wastewater Treatment Facilities Improvements, Ph. 2B DATE OF BID OPENING: 11/08/12 10:00 a.m.			Ent. By RLS	Rotschy, Inc. 9210 NE 62nd Ave. Vancouver, WA 98665 360.334.3100		James W. Fowler Co. PO Box 489 Dallas, OR 97338 503.623.9117	
ITEM NO	DESCRIPTION	UNIT	QTY	UNIT PRICE	CONTRACT TOTAL	UNIT PRICE	CONTRACT TOTAL
	BASE BID						
1	Wastewater Treatment Facilities Improvements, Ph. 2B	LS	1.00	$2,796,598.00	$2,796,598.00	$2,862,499.00	$2,862,499.00
2	Trench Excavation Safety Systems	LS	1.00	$3,000.00	$3,000.00	$13,269.00	$13,269.00
3	Dewatering	LS	1.00	$35,000.00	$35,000.00	$25,298.00	$25,298.00
4	Unsuitable Excavation	CY	100.00	$65.50	$6,550.00	$52.00	$5,200.00
5	Rock Excavation	CY	220.00	$41.00	$9,020.00	$103.00	$22,660.00
	Subtotal (Base Bid)				$2,850,168.00		$2,928,926.00
	Washington State Sales Tax (8.4%)				$239,414.11		$246,029.78
	TOTAL CONSTRUCTION COST (BASE BID)				$3,089,582.11		$3,174,955.78
	ADDITIVE ITEM NO. 1						
1	Biosolids Dryer Building Metal Wall Panels	LS	1.00	$25,860.00	$25,860.00	$38,977.00	$38,977.00
	Subtotal (Additive Item No. 1)				$ 25,860.00		$ 38,977.00
	Washington State Sales Tax (8.4%)				$2,172.24		$3,274.07
	TOTAL CONSTRUCTION COST (Additive Item No. 1)				$28,032.24		$42,251.07
	ADDITIVE ITEM NO. 2						
1	Partial Secondary Clarifier No. 2 Rebuild	LS	1.00	$169,600.00	$169,600.00	$119,770.00	$119,770.00
	Subtotal (Additive Item No. 2)				$ 169,600.00		$ 119,770.00
	Washington State Sales Tax (8.4%)				$14,246.40		$10,060.68
	TOTAL CONSTRUCTION COST (Additive Item No. 2)				$183,846.40		$129,830.68
	ADDITIVE ITEM NO. 3						
1	Full Secondary Clarifier No. 2 Rebuild	LS	1.00	$221,017.00	$221,017.00	$174,041.00	$174,041.00
	Subtotal (Additive Item No. 3)				$ 221,017.00		$ 174,041.00
	Washington State Sales Tax (8.4%)				$18,565.43		$14,619.44
	TOTAL CONSTRUCTION COST (Additive Item No. 3)				$239,582.43		$188,660.44
	ADDITIVE ITEM NO. 4						
1	Secondary Clarifier No. 2 Launder Covers	LS	1.00	$44,046.00	$44,046.00	$42,497.00	$42,497.00
	Subtotal (Additive Item No. 4)				$ 44,046.00		$ 42,497.00
	Washington State Sales Tax (8.4%)				$3,699.86		$3,569.75
	TOTAL CONSTRUCTION COST (Additive Item No. 4)				$47,745.86		$46,066.75
	ADDITIVE ITEM NO. 5						
1	Secondary Clarifier No. 3 Launder Covers	LS	1.00	$44,826.00	$44,826.00	$42,497.00	$42,497.00
	Subtotal (Additive Item No. 5)				$ 44,826.00		$ 42,497.00
	Washington State Sales Tax (8.4%)				$3,765.38		$3,569.75
	TOTAL CONSTRUCTION COST (Additive Item No. 5)				$48,591.38		$46,066.75

PROJECT NO. WS-713 DESCRIPTION: Wastewater Treatment Facilities Improvements, Ph. 2B DATE OF BID OPENING: 11/08/12 10:00 a.m.				2KG Contractors, Inc. 4917 NE 185th Drive Portland, OR 97230 Ent. By RLS 503.489.2020		William Charles West 5920 W Clearwater Ave., Ste. 201 Kennewick, WA 99336 509.582.1900	
ITEM NO	DESCRIPTION	UNIT	QTY	UNIT PRICE	CONTRACT TOTAL	UNIT PRICE	CONTRACT TOTAL
	BASE BID						
1	Wastewater Treatment Facilities Improvements, Ph. 2B	LS	1.00	$2,858,000.00	$2,858,000.00	$2,850,000.00	$2,850,000.00
2	Trench Excavation Safety Systems	LS	1.00	$15,000.00	$15,000.00	$2,400.00	$2,400.00
3	Dewatering	LS	1.00	$40,000.00	$40,000.00	$136,000.00	$136,000.00
4	Unsuitable Excavation	CY	100.00	$40.00	$4,000.00	$60.00	$6,000.00
5	Rock Excavation	CY	220.00	$150.00	$33,000.00	$85.00	$18,700.00
	Subtotal (Base Bid)				$2,950,000.00		$3,013,100.00
	Washington State Sales Tax (8.4%)				$247,800.00		$253,100.40
	TOTAL CONSTRUCTION COST (BASE BID)				$3,197,800.00		$3,266,200.40
	ADDITIVE ITEM NO. 1						
1	Biosolids Dryer Building Metal Wall Panels	LS	1.00	$40,000.00	$40,000.00	$38,500.00	$38,500.00
	Subtotal (Additive Item No. 1)				$ 40,000.00		$ 38,500.00
	Washington State Sales Tax (8.4%)				$3,360.00		$3,234.00
	TOTAL CONSTRUCTION COST (Additive Item No. 1)				$43,360.00		$41,734.00
	ADDITIVE ITEM NO. 2						
1	Partial Secondary Clarifier No. 2 Rebuild	LS	1.00	$175,000.00	$175,000.00	$162,000.00	$162,000.00
	Subtotal (Additive Item No. 2)				$ 175,000.00		$ 162,000.00
	Washington State Sales Tax (8.4%)				$14,700.00		$13,608.00
	TOTAL CONSTRUCTION COST (Additive Item No. 2)				$189,700.00		$175,608.00
	ADDITIVE ITEM NO. 3						
1	Full Secondary Clarifier No. 2 Rebuild	LS	1.00	$224,000.00	$224,000.00	$206,000.00	$206,000.00
	Subtotal (Additive Item No. 3)				$ 224,000.00		$ 206,000.00
	Washington State Sales Tax (8.4%)				$18,816.00		$17,304.00
	TOTAL CONSTRUCTION COST (Additive Item No. 3)				$242,816.00		$223,304.00
	ADDITIVE ITEM NO. 4						
1	Secondary Clarifier No. 2 Launder Covers	LS	1.00	$62,000.00	$62,000.00	$59,000.00	$59,000.00
	Subtotal (Additive Item No. 4)				$ 62,000.00		$ 59,000.00
	Washington State Sales Tax (8.4%)				$5,208.00		$4,956.00
	TOTAL CONSTRUCTION COST (Additive Item No. 4)				$67,208.00		$63,956.00
	ADDITIVE ITEM NO. 5						
1	Secondary Clarifier No. 3 Launder Covers	LS	1.00	$50,000.00	$50,000.00	$59,000.00	$59,000.00
	Subtotal (Additive Item No. 5)				$ 50,000.00		$ 59,000.00
	Washington State Sales Tax (8.4%)				$4,200.00		$4,956.00
	TOTAL CONSTRUCTION COST (Additive Item No. 5)				$54,200.00		$63,956.00

PROJECT NO. WS-713 DESCRIPTION: Wastewater Treatment Facilities Improvements, Ph. 2B DATE OF BID OPENING: 11/08/12 10:00 a.m.				McClure and Sons, Inc. 15714 Country Club Drive Mill Creek, WA 98012 Ent. By RLS 425.316.6999		Apollo, Inc. 1133 W Columbia Drive Kennewick, WA 99336 509.586.1104	
ITEM NO	DESCRIPTION	UNIT	QTY	UNIT PRICE	CONTRACT TOTAL	UNIT PRICE	CONTRACT TOTAL
	BASE BID						
1	Wastewater Treatment Facilities Improvements, Ph. 2B	LS	1.00	$2,995,047.00	$2,995,047.00	$2,998,400.00	$2,998,400.00
2	Trench Excavation Safety Systems	LS	1.00	$10,000.00	$10,000.00	$2,600.00	$2,600.00
3	Dewatering	LS	1.00	$15,000.00	$15,000.00	$105,000.00	$105,000.00
4	Unsuitable Excavation	CY	100.00	$50.00	$5,000.00	$36.50	$3,650.00
5	Rock Excavation	CY	220.00	$85.00	$18,700.00	$56.00	$12,320.00
	Subtotal (Base Bid)				$3,043,747.00		$3,121,970.00
	Washington State Sales Tax (8.4%)				$255,674.75		$262,245.48
	TOTAL CONSTRUCTION COST (BASE BID)				$3,299,421.75		$3,384,215.48
	ADDITIVE ITEM NO. 1						
1	Biosolids Dryer Building Metal Wall Panels	LS	1.00	$52,000.00	$52,000.00	$39,255.00	$39,255.00
	Subtotal (Additive Item No. 1)				$ 52,000.00		$ 39,255.00
	Washington State Sales Tax (8.4%)				$4,368.00		$3,297.42
	TOTAL CONSTRUCTION COST (Additive Item No. 1)				$56,368.00		$42,552.42
	ADDITIVE ITEM NO. 2						
1	Partial Secondary Clarifier No. 2 Rebuild	LS	1.00	$131,000.00	$131,000.00	$154,680.00	$154,680.00
	Subtotal (Additive Item No. 2)				$ 131,000.00		$ 154,680.00
	Washington State Sales Tax (8.4%)				$11,004.00		$12,993.12
	TOTAL CONSTRUCTION COST (Additive Item No. 2)				$142,004.00		$167,673.12
	ADDITIVE ITEM NO. 3						
1	Full Secondary Clarifier No. 2 Rebuild	LS	1.00	$188,400.00	$188,400.00	$187,875.00	$187,875.00
	Subtotal (Additive Item No. 3)				$ 188,400.00		$ 187,875.00
	Washington State Sales Tax (8.4%)				$15,825.60		$15,781.50
	TOTAL CONSTRUCTION COST (Additive Item No. 3)				$204,225.60		$203,656.50
	ADDITIVE ITEM NO. 4						
1	Secondary Clarifier No. 2 Launder Covers	LS	1.00	$50,400.00	$50,400.00	$44,000.00	$44,000.00
	Subtotal (Additive Item No. 4)				$ 50,400.00		$ 44,000.00
	Washington State Sales Tax (8.4%)				$4,233.60		$3,696.00
	TOTAL CONSTRUCTION COST (Additive Item No. 4)				$54,633.60		$47,696.00
	ADDITIVE ITEM NO. 5						
1	Secondary Clarifier No. 3 Launder Covers	LS	1.00	$50,400.00	$50,400.00	$44,000.00	$44,000.00
	Subtotal (Additive Item No. 5)				$ 50,400.00		$ 44,000.00
	Washington State Sales Tax (8.4%)				$4,233.60		$3,696.00
	TOTAL CONSTRUCTION COST (Additive Item No. 5)				$54,633.60		$47,696.00

PROJECT NO. WS-713 DESCRIPTION: Wastewater Treatment Facilities Improvements, Ph. 2B DATE OF BID OPENING: 11/08/12 10:00 a.m.				Ent. By RLS	Stettler Supply Company 1810 Lana Ave. NE Salem, OR 97301 503.585.5550		Pacific Crest Construction, Inc. 13619 Mukilteo Speedway, Ste. D5-1150 Lynnwood, WA 98087 425.513.8979	
ITEM NO	DESCRIPTION		UNIT	QTY	UNIT PRICE	CONTRACT TOTAL	UNIT PRICE	CONTRACT TOTAL
	BASE BID							
1	Wastewater Treatment Facilities Improvements, Ph. 2B		LS	1.00	$3,118,825.00	$3,118,825.00	$3,300,000.00	$3,300,000.00
2	Trench Excavation Safety Systems		LS	1.00	$8,450.00	$8,450.00	$10,000.00	$10,000.00
3	Dewatering		LS	1.00	$39,150.00	$39,150.00	$25,000.00	$25,000.00
4	Unsuitable Excavation		CY	100.00	$58.00	$5,800.00	$50.00	$5,000.00
5	Rock Excavation		CY	220.00	$112.00	$24,640.00	$100.00	$22,000.00
	Subtotal (Base Bid)					$3,196,865.00		$3,362,000.00
	Washington State Sales Tax (8.4%)					$268,536.66		$282,408.00
	TOTAL CONSTRUCTION COST (BASE BID)					$3,465,401.66		$3,644,408.00
	ADDITIVE ITEM NO. 1							
1	Biosolids Dryer Building Metal Wall Panels		LS	1.00	$37,650.00	$37,650.00	$43,500.00	$43,500.00
	Subtotal (Additive Item No. 1)					$ 37,650.00		$ 43,500.00
	Washington State Sales Tax (8.4%)					$3,162.60		$3,654.00
	TOTAL CONSTRUCTION COST (Additive Item No. 1)					$40,812.60		$47,154.00
	ADDITIVE ITEM NO. 2							
1	Partial Secondary Clarifier No. 2 Rebuild		LS	1.00	$168,050.00	$168,050.00	$175,000.00	$175,000.00
	Subtotal (Additive Item No. 2)					$ 168,050.00		$ 175,000.00
	Washington State Sales Tax (8.4%)					$14,116.20		$14,700.00
	TOTAL CONSTRUCTION COST (Additive Item No. 2)					$182,166.20		$189,700.00
	ADDITIVE ITEM NO. 3							
1	Full Secondary Clarifier No. 2 Rebuild		LS	1.00	$201,075.00	$201,075.00	$228,000.00	$228,000.00
	Subtotal (Additive Item No. 3)					$ 201,075.00		$ 228,000.00
	Washington State Sales Tax (8.4%)					$16,890.30		$19,152.00
	TOTAL CONSTRUCTION COST (Additive Item No. 3)					$217,965.30		$247,152.00
	ADDITIVE ITEM NO. 4							
1	Secondary Clarifier No. 2 Launder Covers		LS	1.00	$29,800.00	$29,800.00	$33,000.00	$33,000.00
	Subtotal (Additive Item No. 4)					$ 29,800.00		$ 33,000.00
	Washington State Sales Tax (8.4%)					$2,503.20		$2,772.00
	TOTAL CONSTRUCTION COST (Additive Item No. 4)					$32,303.20		$35,772.00
	ADDITIVE ITEM NO. 5							
1	Secondary Clarifier No. 3 Launder Covers		LS	1.00	$48,425.00	$48,425.00	$34,000.00	$34,000.00
	Subtotal (Additive Item No. 5)					$ 48,425.00		$ 34,000.00
	Washington State Sales Tax (8.4%)					$4,067.70		$2,856.00
	TOTAL CONSTRUCTION COST (Additive Item No. 5)					$52,492.70		$36,856.00

PROJECT NO. WS-713 DESCRIPTION: Wastewater Treatment Facilities Improvements, Ph. 2B DATE OF BID OPENING: 11/08/12 10:00 a.m.			Ent. By RLS	Todd Construction, Inc. PO Box 949 Tualatin, OR 97062 503.620.7652		Pease & Sons, Inc. PO Box 44100 Tacoma, WA 98448 253.531.7700	
ITEM NO	DESCRIPTION	UNIT	QTY	UNIT PRICE	CONTRACT TOTAL	UNIT PRICE	CONTRACT TOTAL
	BASE BID						
1	Wastewater Treatment Facilities Improvements, Ph. 2B	LS	1.00	$3,375,800.00	$3,375,800.00	$3,375,703.00	$3,375,703.00
2	Trench Excavation Safety Systems	LS	1.00	$2,000.00	$2,000.00	$2,464.00	$2,464.00
3	Dewatering	LS	1.00	$50,000.00	$50,000.00	$122,656.00	$122,656.00
4	Unsuitable Excavation	CY	100.00	$40.00	$4,000.00	$57.39	$5,739.00
5	Rock Excavation	CY	220.00	$210.00	$46,200.00	$88.80	$19,536.00
	Subtotal (Base Bid)				$3,478,000.00		$3,526,098.00
	Washington State Sales Tax (8.4%)				$292,152.00		$296,192.23
	TOTAL CONSTRUCTION COST (BASE BID)				$3,770,152.00		$3,822,290.23
	ADDITIVE ITEM NO. 1						
1	Biosolids Dryer Building Metal Wall Panels	LS	1.00	$56,000.00	$56,000.00	$20,575.00	$20,575.00
	Subtotal (Additive Item No. 1)				$ 56,000.00		$ 20,575.00
	Washington State Sales Tax (8.4%)				$4,704.00		$1,728.30
	TOTAL CONSTRUCTION COST (Additive Item No. 1)				$60,704.00		$22,303.30
	ADDITIVE ITEM NO. 2						
1	Partial Secondary Clarifier No. 2 Rebuild	LS	1.00	$204,000.00	$204,000.00	$213,771.00	$213,771.00
	Subtotal (Additive Item No. 2)				$ 204,000.00		$ 213,771.00
	Washington State Sales Tax (8.4%)				$17,136.00		$17,956.76
	TOTAL CONSTRUCTION COST (Additive Item No. 2)				$221,136.00		$231,727.76
	ADDITIVE ITEM NO. 3						
1	Full Secondary Clarifier No. 2 Rebuild	LS	1.00	$255,000.00	$255,000.00	$255,813.00	$255,813.00
	Subtotal (Additive Item No. 3)				$ 255,000.00		$ 255,813.00
	Washington State Sales Tax (8.4%)				$21,420.00		$21,488.29
	TOTAL CONSTRUCTION COST (Additive Item No. 3)				$276,420.00		$277,301.29
	ADDITIVE ITEM NO. 4						
1	Secondary Clarifier No. 2 Launder Covers	LS	1.00	$42,000.00	$42,000.00	$39,337.00	$39,337.00
	Subtotal (Additive Item No. 4)				$ 42,000.00		$ 39,337.00
	Washington State Sales Tax (8.4%)				$3,528.00		$3,304.31
	TOTAL CONSTRUCTION COST (Additive Item No. 4)				$45,528.00		$42,641.31
	ADDITIVE ITEM NO. 5						
1	Secondary Clarifier No. 3 Launder Covers	LS	1.00	$42,000.00	$42,000.00	$39,337.00	$39,337.00
	Subtotal (Additive Item No. 5)				$ 42,000.00		$ 39,337.00
	Washington State Sales Tax (8.4%)				$3,528.00		$3,304.31
	TOTAL CONSTRUCTION COST (Additive Item No. 5)				$45,528.00		$42,641.31

PROJECT NO. WS-713				Contractors Incorporated	
DESCRIPTION: Wastewater Treatment Facilities Improvements, Ph. 2B			Ent. By	19165 SW 119th Ave. Tualatin, OR 97062	
DATE OF BID OPENING: 11/08/12 10:00 a.m.			RLS	503.692.0100	
ITEM NO	DESCRIPTION	UNIT	QTY	UNIT PRICE	CONTRACT TOTAL
	BASE BID				
1	Wastewater Treatment Facilities Improvements, Ph. 2B	LS	1.00	$3,518,000.00	$3,518,000.00
2	Trench Excavation Safety Systems	LS	1.00	$9,000.00	$9,000.00
3	Dewatering	LS	1.00	$85,000.00	$85,000.00
4	Unsuitable Excavation	CY	100.00	$50.00	$5,000.00
5	Rock Excavation	CY	220.00	$85.00	$18,700.00

Subtotal (Base Bid)	$3,635,700.00
Washington State Sales Tax (8.4%)	$305,398.80
TOTAL CONSTRUCTION COST (BASE BID)	$3,941,098.80

	ADDITIVE ITEM NO. 1				
1	Biosolids Dryer Building Metal Wall Panels	LS	1.00	$48,000.00	$48,000.00

Subtotal (Additive Item No. 1)	$ 48,000.00
Washington State Sales Tax (8.4%)	$4,032.00
TOTAL CONSTRUCTION COST (Additive Item No. 1)	$52,032.00

	ADDITIVE ITEM NO. 2				
1	Partial Secondary Clarifier No. 2 Rebuild	LS	1.00	$175,000.00	$175,000.00

Subtotal (Additive Item No. 2)	$ 175,000.00
Washington State Sales Tax (8.4%)	$14,700.00
TOTAL CONSTRUCTION COST (Additive Item No. 2)	$189,700.00

	ADDITIVE ITEM NO. 3				
1	Full Secondary Clarifier No. 2 Rebuild	LS	1.00	$214,000.00	$214,000.00

Subtotal (Additive Item No. 3)	$ 214,000.00
Washington State Sales Tax (8.4%)	$17,976.00
TOTAL CONSTRUCTION COST (Additive Item No. 3)	$231,976.00

	ADDITIVE ITEM NO. 4				
1	Secondary Clarifier No. 2 Launder Covers	LS	1.00	$49,500.00	$49,500.00

Subtotal (Additive Item No. 4)	$ 49,500.00
Washington State Sales Tax (8.4%)	$4,158.00
TOTAL CONSTRUCTION COST (Additive Item No. 4)	$53,658.00

	ADDITIVE ITEM NO. 5				
1	Secondary Clarifier No. 3 Launder Covers	LS	1.00	$59,000.00	$59,000.00

Subtotal (Additive Item No. 5)	$ 59,000.00
Washington State Sales Tax (8.4%)	$4,956.00
TOTAL CONSTRUCTION COST (Additive Item No. 5)	$63,956.00

Gray & Osborne, Inc.
CONSULTING ENGINEERS

November 20, 2012

Mr. Jim Hodges
Public Works Project Manager
City of Camas
616 NE Fourth Avenue
Camas, Washington 98607

SUBJECT: REVIEW OF BIDS, WASTEWATER TREATMENT FACILITIES (WWTF) IMPROVEMENTS – PHASE 2B
CITY OF CAMAS, CLARK COUNTY, WASHINGTON
G&O #11505.00 CAMAS #WS-713

Dear Mr. Hodges:

On November 8, 2012, the City received 12 bids for the Wastewater Treatment Facilities (WWTF) Improvements – Phase 2B project. The base bids ranged from $3,023,858.11 to $3,941,098.80. The Engineer's Estimate was $3,000,000.00. Each proposal was checked for correctness of extensions of the prices per unit and the total price. Several corrections were made; however, these corrections did not change the position of the low bidder based on the base bid or on any combination of the additive bid items with the base bid. The bid summary is attached to this letter. The bidders and their respective base bid amounts, including sales tax where applicable, are as follows:

	Engineer's Estimate	**$3,000,000.00**
1.	Contractors Northwest, Inc. (Coeur d'Alene, Idaho)	$3,023,858.11
2.	Rotschy, Inc. (Vancouver, Washington)	$3,089,582.11
3.	James W. Fowler Company (Dallas, Oregon)	$3,174,955.78
4.	2KG Contractors, Inc. (Portland, Oregon)	$3,197,800.00
5.	William Charles West (Kennewick, Washington)	$3,266,200.40
6.	McClure and Sons, Inc. (Mill Creek, Washington)	$3,299,421.75
7.	Apollo, Inc. (Kennewick, Washington)	$3,384,215.48
8.	Stettler Supply Company (Salem, Oregon)	$3,465,401.66
9.	Pacific Crest Construction, Inc. (Lynnwood, Washington)	$3,644,408.00
10.	Todd Construction, Inc. (Tualatin, Oregon)	$3,770,152.00
11.	Pease & Sons, Inc. (Tacoma, Washington)	$3,822,290.23
12.	Contractors, Inc. (Tualatin, Oregon)	$3,941,098.80

The low responsive bidder, Contractors Northwest, Inc. of Coeur d'Alene, Idaho, is currently a Washington State registered and licensed contractor and appears to have the relevant qualifications and experience to successfully perform the work the project will require. To our knowledge, the low bidder has not claimed bid error and no formal bidding protests have been recorded. In accordance with RCW 39.04, we have verified the low bidder, Contractors Northwest, Inc. of Coeur d'Alene, Idaho, has met the mandatory bidder responsibility criteria (see attached checklist).

We understand the City would like to proceed with awarding the Base Bid and Additive Alternate Bid Items 1 (Biosolids Dryer Building Metal Wall Panels) and 5 (Secondary Clarifier No. 3 Launder Covers), which had bid amounts of $25,582.40 and $49,538.80, respectively, from Contractors Northwest, Inc. Based on our evaluation, we recommend that the project be awarded to the lowest responsive, responsible bidder, Contractors Northwest, Inc., for the Base Bid plus Additive Alternate Bid Items 1 and 5, for a total contract amount of $3,098,979.31.

Please contact us if you have any questions and/or require additional information.

Very truly yours,

GRAY & OSBORNE, INC.

Eric Nutting, P.E.

EN/hhj
Encl.

cc: Mr. Eric Levison, Public Works Director, City of Camas
Mr. Dave Knight, P.E., Washington State Department of Ecology

AGENDA ITEM SUBMITTAL FORM

MEETING DATE/TIME: 12/03/2012 – 7:00 P.M.

COUNCIL MEETING

Consent Agenda	(Yes_X_ No__)
Regular meeting Agenda	(Yes__ No__)

WORKSHOP MEETING (Yes__ No__)

DEPARTMENT:

COMMUNITY DEVELOPMENT

AGENDA ITEM TITLE:

Pay Estimate #2-Final for P-871 Community Center Roof Replacement

AGENDA ITEM DETAILS/DESCRIPTION:

Installation of the new roof at the Camas Community Center has been completed. Change Order (C.O.) #1 in the amount of $4,066.24 was approved at the November 5, 2012. Pay Estimate #2-FINAL includes payment to the Contractor, Gregg Roofing, Inc. for work related to C.O. #1. Staff also recommends Formal Acceptance of the project.

RECOMMENDED ACTION:

Authorize Pay Estimate #2-FINAL in the amount of $3,878.68, and Accept Project as Complete.

DEPARTMENT STAFF/PRESENTERS:

James Carothers, Engineering Manager

SUPPORTING DOCUMENTS:

P-871 Pay Est #2-FINAL

SUBMITTED BY: Jim Hodges, Project Manager

NOTES: 1) EMAIL "Agenda Item Submittal Form" to agendaprep email in WORD .doc format by 5:00pm on the Tuesday prior to scheduled meeting; 2) Place all supporting documents listed above in the G:\AgendaPrep\(your department folder) by same deadline.

CITY OF CAMAS PROJECT NO. P-871 Project Name: Camas Community Center Roof Replacement	PAY ESTIMATE: TWO-FINAL PAY PERIOD: Original Contract Amount: $48,552.36	Gregg Roofing 27001 SE 15th Street Camas, WA 98507 360.834.3902

ITEM NO.	DESCRIPTION	UNIT	ORIGINAL QUANTITY	UNIT PRICE	CONTRACT TOTAL	QUANTITY PREVIOUS	TOTAL PREVIOUS	QUANTITY THIS EST.	TOTAL THIS EST.	QUANTITY TO DATE	TOTAL TO DATE
1	30 Year Dimensional Fiberglass Shingles - 130 mph	LS	1	$35,240.00	$35,240.00	1.00	$35,240.00	0.00	$0.00	1.00	$35,240.00
2	60 Mil. TPO Thermo-Plastic 2 membrane Roof	SF	540	$4.00	$2,160.00	540.00	$2,160.00	0.00	$0.00	540.00	$2,160.00
3	Labor Rate for Repairs	HR	40	$50.00	$2,000.00	0.00	$0.00	0.00	$0.00	0.00	$0.00
4	Continuous Gutters and Downspouts	LS	1	$5,390.00	$5,390.00	1.00	$5,390.00	0.00	$0.00	1.00	$5,390.00
CO#1	Items A & B			3,751.14		0.00	$0.00	1.00	$3,751.14	1.00	$3,751.14
	Subtotal:				$44,790.00		$42,790.00		$3,751.14		$46,541.14
	Sales Tax:	Rate:	8.4%		$3,762.36		$3,594.36		$315.10		$3,909.46
	Total:				$48,552.36		$46,384.36		$4,066.24		$50,450.60

	ORIGINAL CONTRACT TOTAL	TOTAL PREVIOUS	TOTAL THIS EST.	TOTAL TO DATE
SUBTOTALS	$44,790.00	$42,790.00	**$3,751.14**	$46,541.14
CHANGE ORDERS TO DATE	------	$0.00	**$0.00**	$0.00
SUBTOTAL	$44,790.00	$42,790.00	**$3,751.14**	$46,541.14
SALES TAX	$3,762.36	$3,594.36	**$315.10**	$3,909.46
TOTAL CONTRACT	$48,552.36	$46,384.36	**$4,066.24**	$50,450.60
LESS 5% RETAINAGE	------	($2,139.50)	**($187.56)**	($2,327.06)
TOTAL LESS RETAIN.	------	**$44,244.86**	**$3,878.68**	**$48,123.54**

CITY USE ONLY
ACCT. NUMBER: 001-18-594-730-62

CITY USE ONLY
THIS PAY EST. LESS RETAINAGE $3,878.68

F.I.

Project Engineer — Date

Contractor — 11/26/12 — Date

James Hodges — 11/19/2012 — Project Manager — Date

ENTERED
NS 11/27/12

AGENDA ITEM SUBMITTAL FORM

MEETING DATE/TIME: December 2, 2012

COUNCIL MEETING

Consent Agenda	(Yes_X No__)
Regular meeting Agenda	(Yes__ No__)

WORKSHOP MEETING (Yes__ No__)

DEPARTMENT: Public Works

AGENDA ITEM TITLE: Professional service contact for the Vactor Facility Upgrade with Otak engineering

AGENDA ITEM DETAILS/DESCRIPTION: This contract with Otak Engineering in the amount not to exceed $26,880 provides for the design of an upgrade to the existing vactor facility located at the Operation Center. This project is funding though a grant with the Department of Ecology

RECOMMENDED ACTION: Authorize the Mayor to sign the professional service contract

DEPARTMENT STAFF/PRESENTERS: Eric Levison

SUPPORTING DOCUMENTS (name): vactor scope of work, vactor contract

SUBMITTED BY: Eric Levison

NOTE:

- **EMAIL "Agenda Item Submittal Form" to agenda email in WORD .doc format by 5:00pm on the Tuesday prior to scheduled meeting.**
- **Place all supporting documents listed above in the G:\AgendaPrep\(your department folder) by same deadline.**

City of Camas
Vactor Facility Upgrade
Scope of Work

Otak Project No. 16352
November 13, 2012

Background and Project Description

This project is to retrofit an existing Vactor waste facility and storage area with source control BMPs, including a permanent roof and storm drainage system. This will reduce leaching of pollutants from vactor waste during processing, transfer, and storage; prevent stormwater from entering the vactor waste decant facility; and ensure that all stormwater impacted from these operations is routed into the sanitary sewer system.

The facility is located within the city's operations and maintenance complex located between 8th Avenue and SR 14, west of Polk Street and east of the Washougal River. This project is funded by a grant from the Washington Department of Ecology.

The following scope of work is to provide construction drawings and an archaeological survey for the project. The archaeological survey of the areas proposed for ground disturbance will be done to meet the Executive Order 05-05 agency and tribal review, and the DAHP standards and guidelines will be followed. The archaeological survey will also be done to meet the City's archaeological ordinance.

Scope of Work

The following describes the scope of work for this project. The project will be prepared in conformance with the Department of Ecology grant specifications.

Task 1: Project Management

This task includes the management of the tasks described herein in accordance with the schedule and budget and includes the following work activities:

- Manage the quality control review of all work activities and project deliverables.
- Monthly progress reports to be submitted with billings. Monthly progress reports will reflect hourly/percent complete progress for each activity and identify budget status and tasks performed to date during the billing period.

Assumptions:

- Assumes project lasts approximately four (4) months.

Deliverables:

- Invoices and progress reports (Scope assumes four (3)).

Task 2: Cultural and Historic Resources Evaluation

The following tasks are proposed to meet the reviewing agencies.

- Conduct the pedestrian archaeological survey of the proposed project area.
- Conduct up to 6 shovel test excavations following the City's and DAHP's standards for size and screening. No artifacts, if found, would be collected.
- Upon completion of the fieldwork, summarize the results of the field survey and shovel testing in an email and coordinate on recommendations.
- Prepare a report documenting the fieldwork and research findings and providing a recommendation regarding the possible impacts the construction excavations may have on possible or documented archaeological resources.
- As a contingency to the scope of work, this scope includes preparation of a monitoring and inadvertent discovery plan to address the possible recommendation that monitoring during construction in the paved area may be needed. This task would not be initiated without prior written approval by the City of Camas.

Assumptions:

- Onsite construction monitoring is not included.

Deliverables:

- Draft and final Cultural and Historic Resources Report meeting Executive Order 05-05.

Task 3: Design Activities

The purpose of this task is to develop a vactor facility retrofit design along with construction plans, specifications, and cost estimates. Each stage of completion will correspond to a submittal and review by the City. The final product will be construction plans, specifications and estimates (PS&E) ready for bid. This work element includes the following tasks:

Task 3.1 60% Design

The purpose of this task is to develop the plans and estimate to the 60% design stage and prepare an outline list of special provisions for the project. This work element includes the following tasks:

- Develop plan sheets to be included with 60% design.
- Coordinate with roof structure suppliers to determine a structure suitable for this project.
- Develop construction quantities for project elements.
- Prepare a list of anticipated project special provisions for unique elements within the project that are not covered by the Standard Specifications or General Special Provisions.
- Perform an internal quality control review prior to submittal.
- Submit 60% plans, engineer's estimate, outline special provisions for review.

- Attend 60% plan review meeting with the City.

Assumptions:

- The cost estimate will be in 2013 dollars and will include a 25 percent contingency.
- No survey is necessary for this project.
- The roof structure will be contractor-designed and provided. Specifications will be provided to a level of detail necessary to obtain a suitable structure.
- The design will be as prepared for the grant application and as shown in Figure 3 from the grant application (attached to this Scope of Work).
- The following sheets are assumed to be included in the 60% plans:
    - Cover sheet (1 sheet)
    - Legend and notes (1 sheet)
    - Vactor waste storage center removal and reconstruction (2 sheets)
    - Storm pipe designs (1 sheet)
    - Roof facility plan (1 sheet)
    - Structural (footing) designs (2 sheets)
    - Erosion control plan (1 sheet)
    - Details (2 sheets)

Deliverables:

- Half-sized (11" x 17") paper sets of the 60% design plans.
- Draft outline of special provisions (one paper copy and electronic Microsoft Word document).
- 60% quantities and unit bid costs (paper copies and electronic Microsoft Excel spreadsheet).
- Meeting notes from the 60% plan review meeting in electronic format.

Task 3.2 90% Design

The purpose of this work element is to advance the development of the plans, contract provisions and estimate from the 60% stage to the 90% stage of design development. This work element includes the following tasks:

- Update design elements to incorporate comments from the 60% plan review.
- Refine the plans to a level of detail required for project construction.
- Perform an internal quality control review prior to submittal.
- Prepare 90% special provisions for elements that are unique to this project.

- Develop a project cost estimate based on the 90% submittal. The 90% estimate will reflect the pay items and quantities as developed at the 90% stage of the project and based on anticipated unit costs.
- Attend 90% plan review meeting with the City.

Assumptions:

- The 90% plans will match the 60% list of plan sheets, but will include more details.
- The cost estimate will be in 2013 dollars and will include a 10 percent contingency.
- The design will not change substantially after the completion of the 60% design.
- Otak will provide special provisions for up to five (5) bid items.

Deliverables:

- Half-sized (11" x 17") paper sets of the 90% design plans.
- 90% special provisions in hard copy (8 ½" x 11") and electronic form (MS Word).
- 90% construction quantities and unit bid costs in hard copy (8 ½" x 11") and electronic form (MS Excel).
- Meeting notes from 90% plan review meeting in electronic format.

Task 3.3 Final PS&E

The purpose of this work element is to prepare final plans, special provisions and estimate for bidding. This work element includes the following tasks:

- Update plans and add detail to address comments on the 90% Plans.
- Perform an internal quality control review prior to submittal.
- Prepare the final special provisions for unique project elements.
- Prepare the final construction quantities and unit costs.

Assumptions:

- The cost estimate will be in 2013 dollars and will not include a contingency.
- The design will not change substantially after the completion of the 90% design.
- The final plans will be routed for a final check by the City to confirm review comments have been addressed. Otak will then submit the stamped and signed set of plans to the City.

Deliverables:

- Half-sized (11" x 17") paper sets of the pre-review final design plans.
- Final construction plans (22" x 34") on bond paper, stamped and signed.
- Final special provisions.
- Final construction quantities and unit bid costs

City of Camas Vactor Facility Retrofit

Fee Estimate
Otak, Inc.
Otak Project # 16352

Task	*Description*	Otak	AINW	*Total Hours*	*Total Budget by Task*
1	Project Management	12		12	$1,418
2	Cultural and Historic Resources Evaluation	2	74	76	$5,006
2	Monitoring and Inadvertent Discovery Contingency		23	23	$1,916
3	Facility Design	177		177	$17,940
	Total Hours	191	97	288	
	Total Labor Cost with contingencies	$19,638	$6,643		$26,281
	Direct Expenses	$200	$64		$264
	Subconsultant Administration	$335	$0		$335
	Project Total with Contingencies	$20,173	$6,707		$26,880

Professional Services Agreement

17355 SW Boones Ferry Rd.
Lake Oswego, OR 97035
Phone (503) 635-3618
Fax (503) 635-5395

Project: Vactor Facility Upgrade — Project #: 16352

Client: Attn: Jim Hodges, City of Camas

616 NE 4th Avenue, Camas, WA 98607

Location and Description: Camas, WA — professional services

Terms and Conditions

1. This Professional Services Agreement ("Agreement") is entered into between Client and the Otak entity specified on the signature line below ("Otak"). Otak agrees to furnish and perform those professional services specified in the attached Exhibit A dated November 13, 2012.

   The bill rates established in estimating the fee for the scope of services are based on the current fiscal year. Due to annual increases and promotions, Otak will adjust the bill rates yearly beginning on October 1 of each calendar year at approximately 5%. If the overall rate adjustment is in excess of 5%, written notification of the bill rate schedule will be provided before billing.

2. Client agrees to compensate Otak for the professional services provided on a monthly basis based on time and materials not-to-exceed $26,880. The estimated fee will not be exceeded without prior written authorization.

3. Upon execution of this Agreement, Client shall pay Otak $0, to be applied against the last invoice(s).

4. Copies of direct expense vouchers are not provided with the invoices. In-house direct expenses will be invoiced on a cost plus 10% basis and out sourced expenses will be invoiced on a cost plus 10% basis.

5. Only those items specifically identified in the attached scope of work are included in the estimated fees. If the project is materially changed, or if Client desires other professional services not already included in this Agreement, then additional compensation shall be paid to Otak, which shall be subject to negotiation by both parties. The terms of the Agreement shall apply to such additional services.

6. If Client requires an invoice format different than the one submitted for payment, then Client shall be assessed a special handling fee of $150.00, which will be added to each invoice processed.

7. All invoices are payable within 30 days of receipt of such invoices. Failure to pay an invoice when due shall constitute default, and interest at 18% per annum shall be payable on all such invoices from the date such invoices become due. In the event of a default, Otak may elect to suspend all professional services under this Agreement until such invoice is paid in full, and may elect to terminate this Agreement as of the 30th day of default. Otak shall not be liable for any damages or costs, including, but not limited to, direct, indirect, incidental, consequential or exemplary damages, suffered by Client, his subcontractors, agents, employees and assigns as a result of any suspension or termination. In the event of a suspension, Otak may, in its discretion, require an additional deposit in an amount equal to any amount Client has failed to pay as a condition to resuming performance. Any such deposit will be applied as set forth in Paragraph 3 of this Agreement.

8. Either party shall have the right to terminate this Agreement at any time giving 10 calendar days written notice. In the event this Agreement is terminated by the Client, payment to Otak will be made based on work performed in accordance with the scope of services up to the date of termination plus termination expenses, such as, but not limited to, reassignment of personnel, subcontract termination costs and related closeout costs. In the event this Agreement is terminated by Otak, payment to Otak will become due upon delivery of all products completed in whole or in part for services performed, through the date of termination.

9. To the fullest extent permitted by law, this Agreement shall be construed according to the laws of the State of Oregon. Any litigation between Otak and Client arising under this Agreement or out of work performed under this Agreement shall occur, if in the state court, in Multnomah County, and if in the federal courts, in the United States District Court for the District of Oregon in Portland, Oregon. Client hereby irrevocably and unconditionally submits to the jurisdiction of the state and federal courts located in Portland, Oregon. Unless the Project is in the state of Oregon, the terms of this paragraph shall not apply to any lien foreclosure proceedings instituted by Otak in the appropriate court where the Project is located.

   As a condition precedent to arbitration or litigation, any claim arising out of or related to this Agreement shall be subject to mediation before a single mediator as agreed by the parties, or in the absence of agreement, in accordance with the current Construction Industry Mediation Rules of the American Arbitration Association. The mediator's fee and filing fees shall be shared equally by the parties. The parties shall use their best efforts in good faith to resolve disputes in mediation.

10. If the project is idle more than 60 days, the estimated fees and scope of work will be reassessed. A revised estimate of fees and scope of work will be submitted for approval if such need arises.

11. All original documents prepared by Otak in performance of this Agreement, including, but not limited to, original maps, plans, drawings, electronic media and specifications, are the property of Otak, and Otak retains all applicable rights in such documents, including, but not limited to copyrights, unless otherwise agreed in writing. All original and quality reproducible record copies of such documents shall be provided to Client, at Client's expense, upon request. Any such documents and copies thereof are for use only in connection with this project, and Client shall not use those documents or copies for other projects or for future additions to this project, unless otherwise agreed in writing.

12. Otak shall perform all of its professional services in a workmanlike and professional manner. However, nothing in this Agreement shall be construed as a guarantee by Otak of a perfect outcome, or as obliging Otak to use greater skill and judgment than that which could reasonably be expected from other design professionals under like circumstances. Otak makes no other warranty, express or implied.

13. To the fullest extent permitted by law, the following shall apply to Otak and Client:

Client shall defend, indemnify and hold harmless Otak and its related companies, and their respective representatives, officers, directors, shareholders, principals, agents, employees and subcontractors from and against all claims including damages, losses, expenses and reasonable attorney fees and costs, arising out of or relating to the following: (a) development of this project where such claims, damages, losses, or expenses are based solely on the negligence or willful misconduct of Client and/or its principals, agents, employees, representatives and subcontractors; (b) Client's use of documents prepared by Otak for projects other than the project which is the subject of this Agreement, without Otak's involvement or written consent; (c) existence of hazardous substances at or adjacent to the project; and (d) any certificate in connection with the project executed by Otak at the request of a governmental entity, lender or other third party, except to the extent claims arising from such certificate are the result of the negligence or intentional misconduct of Otak.

Otak shall defend, indemnify and hold harmless Client and its respective representatives, officers, directors, shareholders, principals, agents and employees from and against all claims made by third parties including damages, losses, expenses, and reasonable attorney fees and costs arising out of or relating to the development of this project where such claims, damages, losses, or expenses are based solely on the negligence or willful misconduct of Otak, and/or its principals, agents, employees, representatives, or subcontractors in performing its and/or their services as provided in the scope of services per paragraph 1.

In no event shall Otak be liable for special, indirect or consequential damages, including, but not limited to, loss of use of equipment or facility, lost profits, etc. The limits of liability throughout this Agreement will apply whether the liability of Otak arises under breach of contract or warranty; tort, including negligence; professional negligence; strict liability; statutory liability; or any other cause of action, except for willful misconduct or gross negligence and shall apply to Otak's related companies and its and their officers, directors, shareholders, employees and subcontractors.

Notwithstanding anything to the contrary herein, no shareholder, principal, member, officer, director, partner, employee or other representative of Otak shall have any personal liability to Client, or any other party arising out of or relating to this Agreement.

14. Client agrees to pay the costs and reasonable attorney's fees and disbursements incurred by Otak in connection with the failure by Client to make any payment in accordance with the provisions of this Agreement, whether or not a legal action is commenced by Otak. The parties agree that in the event action or suit is commenced related to the subject matter of this Agreement, or in the event of any breach of this Agreement, the prevailing party shall have and recover reasonable attorney fees, both at trial and on appeal, together with all other costs and disbursement allowed by law.

15. Otak shall be free from any liability for delay or failure of providing the services contemplated by this Agreement which arise from any acts of God or any actions outside of Otak's control and without it's fault or negligence. Such causes include without limitation: strikes, lockouts, or labor troubles of any kind, accidents, fire, earthquake, civil commotion, war or consequences of war, government acts, restrictions or requisitions, failure of manufacturers or suppliers, suspension of shipping facilities, any act or default of a carrier. In such a situation, if the services contemplated by this Agreement are not provided during the period contracted for, Client shall accept the services and pay for the same when provided so long as a mutually acceptable revision is made to the scope of services and compensation.

16. Due to the potential for modification of information set forth in electronic data transfer, Otak has retained copies of the transmitted data with file name, size, date and time. If the received data is modified, Otak requires the Client and/or Client's authorized recipient to remove all indication of Otak's ownership and/or involvement from such modified data.

Unless otherwise agreed to in writing, Client and/or Client's authorized recipient shall be responsible for determining the compatibility of Otak's data with Client and/or Client's authorized recipient's software and for the interception and elimination of any computer virus. Otak makes no warranty of data compatibility with Client and/or Client's authorized recipient's software.

Distribution of the electronic data to others by Client and/or Client's authorized recipient, whether or not electronic data is modified, is prohibited without the express written consent of Otak.

To the fullest extent permitted by law, Otak shall not be liable for any damages, including without limitation, direct, indirect, incidental, or consequential damages to any party resulting from the following: (a) the use of electronic data which is modified by any party other than Otak; (b) either the incompatibility of Client and/or Client's authorized recipient's software with Otak data or the existence of any computer virus which is transmitted with Otak's data; or (c) the unauthorized use of Otak's electronic data.

To the fullest extent permitted by law, Client and Client's authorized recipient agree to defend, indemnify and hold harmless Otak, its related companies and its and their principals, officers, directors, shareholders, agents, employees and subcontractors from and against any claims arising out of the unauthorized use or modification of Otak's electronic data.

All electronically transferred data from Otak will contain Paragraph 16. It is expressly understood and agreed that any use of the electronic data is conditioned upon the acceptance of the terms stated in Paragraph 16. Client and/or Client's authorized recipient agrees to be bound by these terms.

17. Otak shall have no responsibility for, or control over, the safety precautions employed by others in the development or construction of this project, nor shall Otak have responsibility for, or control over, the manner, methods and techniques employed by others in any development or construction relating to this project unless otherwise agreed in writing.

18. To the extent Otak's duties under this Agreement include project site observation and/or visitation, Otak shall visit the site at intervals appropriate to become generally familiar with the quality and progress of the project. Otak shall not be required to make continuous or exhaustive inspections to check the quality or quantity of the work being done on the project, unless otherwise agreed in writing.

19. Any causes of action between the parties to this Agreement arising out of any damages or losses caused by the negligent performance of, or failure to perform under, this Agreement, shall be deemed to have accrued and the applicable statutes of limitations shall commence to run not later than the date of substantial completion of the project.

20. Otak shall have no fiduciary responsibility to Client. Nothing in this Agreement shall be construed as creating contractual obligations between Otak and any third parties, including, but not limited to, Client's consultants, contractors and clients.

21. The parties hereto each bind themselves, their partners, successors, assigns and legal representatives of such other party in respect to all terms of this Agreement. Neither party shall assign the contract as a whole without written consent of the other.

22. This Agreement constitutes the entire agreement between the parties and supersedes all prior agreements, written and oral, courses of dealing, or other understandings between the parties. No modification of this Agreement shall be binding unless in writing and signed by both parties. The term "Agreement"

as used herein includes this document (entitled "Professional Services Agreement"), and Exhibit A dated November 13, 2012 attached hereto.

23. Except to the extent of its gross negligence or willful misconduct, Otak has no liability or responsibility for any hazardous material handling, dispensation, mitigation or otherwise.

This Agreement entered into this _____ day of _____, 20____

Otak, Inc. (A Washington corporation)

By: _____

Name: _____

Title: _____

City of Camas

By: _____

Name: _____

Title: _____

Federal Tax ID No.. or SS #: _____

City of Camas WASHINGTON

AGENDA ITEM SUBMITTAL FORM

MEETING DATE/TIME: 12/03/2012 – 7:00 P.M.

COUNCIL MEETING

Consent Agenda	(Yes_X_ No__)
Regular meeting Agenda	(Yes__ No__)

WORKSHOP MEETING (Yes__ No__)

DEPARTMENT:

COMMUNITY DEVELOPMENT

AGENDA ITEM TITLE:

Change Order (CO) #7 for WS-656 WWTF Improvements, Phase 2A

AGENDA ITEM DETAILS/DESCRIPTION:

CO #7 is the final CO for this project. It includes 13 Items totaling $131,267.00 plus state sales tax. The majority of the items were discussed at the November 5th Council Workshop.

Budget Information: The total cost of C.O.'s for this project amount to only 4% of the total construction cost. After all current costs, the Construction Account Balance for this project is about $3.5 million. Project WS-656 remains within our budget and current spending authority.

RECOMMENDED ACTION:

Authorize Change Order #7 to McClure & Sons, Inc. for WS-656 WWTF Improvements, Phase 2A, in the amount of $131,267.00 plus sales tax.

DEPARTMENT STAFF/PRESENTERS:

James Carothers, Engineering Manager

SUPPORTING DOCUMENTS:

WS-656 CO#7

SUBMITTED BY: Jim Hodges, Project Manager

NOTES: 1) EMAIL "Agenda Item Submittal Form" to agendaprep email in WORD .doc format by 5:00pm on the Tuesday prior to scheduled meeting; 2) Place all supporting documents listed above in the G:\AgendaPrep\(your department folder) by same deadline.

CHANGE ORDER

Project Title	Wastewater Treatment Facilities Improvements – Phase 2		
Owner	City of Camas	**Contractor Name**	McClure and Sons, Inc.
Change Order No.	7	**Contractor Address**	15714 Country Club Dr. Mill Creek, WA 98012
Change Order Date	November 21, 2012		
G&O Project No.	07511.00	**City of Camas Project No.**	WS-656

The following changes, as itemized below, are hereby made to the Contract Documents:

ITEM NO. 1: Add Strainer on Rotary Screen Thickener NPW Line (G&O #72/MSI #66)

The Contractor shall install a strainer on the rotary screen thickener NPW spray wash connection as directed in the change order proposal request.

The Contractor agrees to perform this work for the lump sum amount of.....$500.00

Justification: The strainer is required to prevent clogging of the spray bars, being fed by the non-potable waterline.

ITEM NO. 2: Install an Additional Isolation Valve on the Polymer Dilution Water Connection (G&O #73/MSI #74)

The Contractor shall install an additional isolation valve on the polymer dilution water connection.

The Contractor agrees to perform this work for the lump sum amount of.....$547.00

Justification: The addition of this valve allows maintenance to occur associated with this unit without having to shut off water supply to other equipment.

ITEM NO. 3: Install Crushed Rock in Lieu of Asphalt and Curbing at the WAS Storage Tank (G&O #74/MSI #84)

The Contractor shall install crushed rock in lieu of asphalt and curbing at the WAS storage tank.

The Contractor agrees to perform this work for the lump sum credit amount of..... ($3,336.00)

Justification: The Contract requires asphalt and curbing in this area; however, the next project, WS-713 Phase 2B, will require this area to be excavated and repaved.

ITEM NO. 4: Remove Biosolids from Existing Aerobic Digester No. 1 (G&O #75/MSI #80)

The Contractor shall remove and haul offsite the biosolids above the bottom 3 feet of the existing Aerobic Digester No. 1.

The Contractor agrees to perform this work for the lump sum amount of.....$118,891.00

Justification: The Contract requires the Contractor to remove the bottom 3 feet of biosolids from the existing aerobic digester tank. Removal and disposal of additional Biosolids exceeding 3 feet in depth were the responsibility of the owner. Because of conflicting schedules and difficulties for Camas Staff to coordinate this work with an outside vendor on an active construction project, it was agreed that it was best to have the contractor schedule and pay for this work directly via force account. The costs for removal and disposal of this material is very similar to what the City would have been billed, if we had asked a third party to perform this work. The volume of material pumped and disposed of was approximately 265,000 gallons.

ITEM NO. 5: Install an Additional Emergency Stop Pushbutton in the Boiler Room (G&O #76/MSI #73)

The Contractor shall install an additional emergency stop pushbutton for the boiler.

The Contractor agrees to perform this work for the lump sum amount of.....$892.00

Justification: The Washington State Department of Labor & Industries Inspector required the installation of an additional emergency stop pushbutton for the boiler.

ITEM NO. 6: Add Drain Line Connection and Valve to Buried Digester Gas Line (G&O #77/MSI #85)

The Contractor shall install an additional drain line connection and valve to the buried digester gas line.

The Contractor agrees to perform this work for the lump sum amount of.....$1,430.00

Justification: The gas line required a low-point drain connection to purge water from the system.

ITEM NO. 7: Revise 6-Inch DS and WAS Lines in Centrifuge Room (G&O #78/MSI #70)

The Contractor shall revise 6-inch DS and WAS lines in the centrifuge room as directed by the Owner.

The Contractor agrees to perform this work for the lump sum amount of.....$1,496.00

Justification: The piping revision was required to allow for interim operation during startup, and provides for future operational flexibility.

ITEM NO. 8: Relocate Existing 4-inch NPW at New 24-inch OCD and Existing 2-inch NPW Line at New Catch Basin (G&O #79/MSI #27)

The Contractor shall relocate existing 4-inch NPW at new 24-inch OCD and existing 2-inch NPW line at new catch basin as directed by the Owner.

The Contractor agrees to perform this work for the lump sum amount of.....$3,451.00

Justification: The existing 4-inch NPW and 24-inch OCD pipes were in direct conflict with the required location of new items.

ITEM NO. 9: Additional Survey Staking (G&O #80/MSI #31B)

The Contractor shall provide additional survey staking as directed.

The Contractor agrees to perform this work for the lump sum amount of.....$711.00

Justification: Additional survey work was required.

ITEM NO. 10: Additional Work to Troubleshoot and Reset Power to MCCs (G&O #81/MSI #83)

The Contractor shall provide additional work to troubleshoot and reset power to the motor control centers (MCCs) as requested by the City.

The Contractor agrees to perform this work for the lump sum amount of.....$753.00

Justification: Operational problems required the electrical subcontractor to trouble-shoot and restore plant operations at the MCCs.

ITEM NO. 11: Add Backflow Preventer and Water Lines to Biofilters (G&O #83/MSI #31F)

The Contractor shall provide and install a backflow preventer and additional water line piping to the Biofilters.

The Contractor agrees to perform this work for the lump sum amount of.....$1,353.00

Justification: Operators requested that city water be connected to biofilter spray system in lieu of non-potable waterlines, due to operational issues associated with clogging sprinkler lines. This change required the addition of a backflow preventer.

ITEM NO. 12: Additional Work to Relocate Existing 2-Inch Waterline for Catch Basin 3A (G&O #84/MSI #28)

The Contractor shall provide additional work to relocate existing 2-inch waterline for Catch Basin 3A installation.

The Contractor agrees to perform this work for the lump sum amount of.....$1,231.00

Justification: The existing waterline was relocated because it was in conflict with the installation of a new catch basin.

ITEM NO. 13: Additional Work to Locate and Install Connection to Existing 4-Inch Septage Pipe (G&O #85/MSI #69)

The Contractor shall provide additional work to locate and install connection to existing 4-inch septage pipe.

The Contractor agrees to perform this work for the lump sum amount of.....$3,348.00

Justification: The information on the as-built drawings was different than the actual location of the existing pipe.

CHANGE TO CONTRACT PRICE

Original Contract Amount (without tax)	$11,045,453.00
Current Contract Amount, as adjusted by previous change orders	$11,425,401.00
The Contract Amount due to this Change Order will be increased by	$ 131,267.00
The New Contract Amount (without tax) due to this Change Order will be:	$11,556,668.00

CHANGE TO CONTRACT TIME

The Contract Time will be increased by 15 working days. These additional days are being granted by the Owner for the various change order item impacts included in this Change Order.

The Substantial Completion Contract Time will change from a total of 558 working days to a total of 573 working days, as indicated in the Contract.

The Physical Completion Contract Time will change from a total of 648 working days to a total of 663 working days, as indicated in the Contract.

This document will become a supplement to the Contract and all provisions in the Contract will apply hereto. The Contractor acknowledges and agrees that by executing this change order he foregoes all rights and privileges of acquiring any additional compensation for any known or unknown claims of any type or nature, to include but not be limited to, any additional work, delays, extended office overhead, design omissions, changed site conditions, or any oral directions as of the date of the execution of this change order.

GRAY & OSBORNE, INC. _____ Date _____

MCCLURE AND SONS, INC. _____ Date 11-26-12

CITY OF CAMAS _____ Date _____

AGENDA ITEM SUBMITTAL FORM

MEETING DATE/TIME: 12/03/2012 – 7:00 P.M.

COUNCIL MEETING

Consent Agenda	(Yes_X_ No__)
Regular meeting Agenda	(Yes__ No__)

WORKSHOP MEETING (Yes__ No__)

DEPARTMENT:

COMMUNITY DEVELOPMENT

AGENDA ITEM TITLE:

Award contract for SS-571 Cedar Street Storm Realignment Project

AGENDA ITEM DETAILS/DESCRIPTION:

Bids were received and opened for this project on Tuesday, November 27, 2012. The lowest responsive bidder is CivilWorks, NW, Inc., with a Bid of $59,165.80.

The adopted 2012 Budget includes $75,000 for repair of stormwater facilities. These budgeted funds will be used to construct this project.

RECOMMENDED ACTION:

Award Project: SS-571 Cedar Street Storm Realignment to CivilWorks NW, Inc. in the amount of $59,165.80.

DEPARTMENT STAFF/PRESENTERS:

James Carothers, Engineering Manager

SUPPORTING DOCUMENTS:

SS-571 Bid Tab

SUBMITTED BY: Jim Hodges, Project Manager

NOTES: 1) EMAIL "Agenda Item Submittal Form" to agendaprep email in WORD .doc format by 5:00pm on the Tuesday prior to scheduled meeting; 2) Place all supporting documents listed above in the G:\AgendaPrep\(your department folder) by same deadline.

City of Camas
WASHINGTON

I, Joan Durgin, City Clerk hereby certify that these bid tabulations are correct.

Pam O'Brien 11/27/12
Joan Durgin Date

PROJECT NO. SS-571 DESCRIPTION: Cedar Street Storm Realignment Project DATE OF BID OPENING: November 27, 2012, at 11 a.m				Engineer's Estimate: $42,276.00		CivilWorks NW, Inc. PO Box 5698 Vancouver, WA 98668 Ent. By RLS 360.694.8849		Nutter Corporation 7211-A NE 43rd Ave. Vancouver, WA 98661 360.573.2000		Haag & Shaw, Inc. 636 Se 3rd Ave. Camas, WA 98607 360.834.2514	
ITEM NO	DESCRIPTION	UNIT	QTY	UNIT PRICE	ENGRG TOTAL	UNIT PRICE	CONTRACT TOTAL	UNIT PRICE	CONTRACT TOTAL	UNIT PRICE	CONTRACT TOTAL
	Schedule 'A' Stormwater										
1	Mobilization	LS	1.00	$3,000.00	$3,000.00	$5,000.00	$5,000.00	$8,600.00	$8,600.00	$3,500.00	$3,500.00
2	Project Temporary Traffic Control	LS	1.00	$1,000.00	$1,000.00	$1,750.00	$1,750.00	$1,500.00	$1,500.00	$3,000.00	$3,000.00
3	Clearing & Grubbing	LS	1.00	$2,000.00	$2,000.00	$3,500.00	$3,500.00	$2,800.00	$2,800.00	$1,500.00	$1,500.00
4	Removal of Structures and Obstructions	LS	1.00	$500.00	$500.00	$1,750.00	$1,750.00	$2,000.00	$2,000.00	$500.00	$500.00
5	Erosion Control & Water Pollution Control	LS	1.00	$1,000.00	$1,000.00	$1,500.00	$1,500.00	$1,000.00	$1,000.00	$750.00	$750.00
6	Roadside Restoration	LS	1.00	$1,000.00	$1,000.00	$750.00	$750.00	$250.00	$250.00	$500.00	$500.00
7	Manhole 48 Inch Dia.	EA	3.00	$2,800.00	$8,400.00	$3,250.00	$9,750.00	$3,700.00	$11,100.00	$5,000.00	$15,000.00
8	RE-Channel Manhole	EA	1.00	$1,000.00	$1,000.00	$500.00	$500.00	$800.00	$800.00	$600.00	$600.00
9	Connection to Drainage Structure	EA	1.00	$500.00	$500.00	$1,000.00	$1,000.00	$1,000.00	$1,000.00	$1,400.00	$1,400.00
10	Plug Existing Pipe	EA	1.00	$550.00	$550.00	$1,000.00	$1,000.00	$1,900.00	$1,900.00	$1,925.00	$1,925.00
11	ASTM D3034 PVC Storm Sewer Pipe 12 Inch Dia.	LF	251.00	$45.00	$11,295.00	$80.00	$20,080.00	$79.00	$19,829.00	$80.61	$20,233.11
12	Solid Rock Excavation	CY	30.00	$170.00	$5,100.00	$150.00	$4,500.00	$95.00	$2,850.00	$200.00	$6,000.00
13	Reconstruction of CMU Retaining Wall	LS	1.00	$854.00	$854.00	$1,250.00	$1,250.00	$700.00	$700.00	$500.00	$500.00
14	Trench Safety System ($1/LF Minimum Bid)	LF	251.00	$1.00	$251.00	$1.00	$251.00	$2.00	$502.00	$2.00	$502.00
15	Project Documentation ($2,000 Minimum Bid)	LS	1.00	$2,000.00	$2,000.00	$2,000.00	$2,000.00	$241.16	$241.16	$2,000.00	$2,000.00
	Subtotal (Schedule 'A')				$38,450.00		$54,581.00		$55,072.16		$57,910.11
	Washington State Sales Tax (8.4%)				$3,229.80		$4,584.80		$4,626.06		$4,864.45
	TOTAL CONSTRUCTION COST (Schedule 'A') Basis of Award				$41,679.80		$59,165.80		$59,698.22		$62,774.56

PROJECT NO. SS-571 DESCRIPTION: Cedar Street Storm Realignment Project DATE OF BID OPENING: November 27, 2012, at 11 a.m				Thompson Bros Excavating, Inc. 18211 NE Fourth Plain Road Vancouver, WA 98682 Ent. By RLS 360.254.7956		Robertson & Olson Constr., Inc. 4600 NW Camas Meadows Drive, Suite 200 Camas, WA 98607 360.699.4724	
ITEM NO	DESCRIPTION	UNIT	QTY	UNIT PRICE	CONTRACT TOTAL	UNIT PRICE	CONTRACT TOTAL
	Schedule 'A' Stormwater						
1	Mobilization	LS	1.00	$7,000.00	$7,000.00	$9,360.00	$9,360.00
2	Project Temporary Traffic Control	LS	1.00	$5,000.00	$5,000.00	$5,015.00	$5,015.00
3	Clearing & Grubbing	LS	1.00	$3,000.00	$3,000.00	$4,220.00	$4,220.00
4	Removal of Structures and Obstructions	LS	1.00	$1,600.00	$1,600.00	$3,305.00	$3,305.00
5	Erosion Control & Water Pollution Control	LS	1.00	$3,000.00	$3,000.00	$1,795.00	$1,795.00
6	Roadside Restoration	LS	1.00	$1,500.00	$1,500.00	$2,960.00	$2,960.00
7	Manhole 48 Inch Dia.	EA	3.00	$3,300.00	$9,900.00	$3,965.00	$11,895.00
8	RE-Channel Manhole	EA	1.00	$600.00	$600.00	$450.00	$450.00
9	Connection to Drainage Structure	EA	1.00	$1,200.00	$1,200.00	$695.00	$695.00
10	Plug Existing Pipe	EA	1.00	$500.00	$500.00	$2,250.00	$2,250.00
11	ASTM D3034 PVC Storm Sewer Pipe 12 Inch Dia.	LF	251.00	$140.00	$35,140.00	$145.00	$36,395.00
12	Solid Rock Excavation	CY	30.00	$85.00	$2,550.00	$100.00	$3,000.00
13	Reconstruction of CMU Retaining Wall	LS	1.00	$1,500.00	$1,500.00	$2,685.00	$2,685.00
14	Trench Safety System ($1/LF Minimum Bid)	LF	251.00	$1.00	$251.00	$4.00	$1,004.00
15	Project Documentation ($2,000 Minimum Bid)	LS	1.00	$2,000.00	$2,000.00	$2,000.00	$2,000.00
	Subtotal (Schedule 'A')				$74,741.00		$87,029.00
	Washington State Sales Tax (8.4%)				$6,278.24		$7,310.44
	TOTAL CONSTRUCTION COST (Schedule 'A')				$81,019.24		$94,339.44
	Basis of Award						

AGENDA ITEM SUBMITTAL FORM

MEETING DATE/TIME: 12-03-12 / 7:00 PM

COUNCIL MEETING

Consent Agenda	(Yes__ No__)
Regular meeting Agenda	(Yes_x No__)

WORKSHOP MEETING (Yes__ No__)

DEPARTMENT: COMMUNITY DEVELOPMENT

AGENDA ITEM TITLE:

2013 Capital Facilities Plan Update List - Discussion

AGENDA ITEM DETAILS/DESCRIPTION:

These proposed updates to the "2012 Capital Facilities Plan (CFP) Update List" include project additions, deletions, and minor alterations. This update is being conducted in conjunction with the 2013 Budget adoption process as allowed by state statute. These revisions are intended to create harmony between the proposed 2013 budget and the CFP list of projects for 2013. Changes have been made from the list on the November 19th workshop to more accurately depict the predicted timing and cost of ambulance purchases.

Staff recommended the scheduling of a public hearing date of December 3, 2012 at the November 19th Council work session. The notice for this hearing did not get published in time for the December 3rd meeting.

RECOMMENDED ACTIONS:

Discuss the proposed changes.

Re-schedule the public hearing date for December 17th, 2012.

As the hearing date was originally slated for December 3rd, Council may want to allow public comment at this time.

DEPARTMENT STAFF/PRESENTERS:

James Carothers, Engineering Manager and Phil Bourquin, Community Development Director.

SUPPORTING DOCUMENTS (name):

2013-30_120312RegMtg

SUBMITTED BY: James E. Carothers, P.E., Engineering Manager

Capital Facilities Plan
2013

						Funding Sources							
Year - 2013	Total Project	General/ Street Fund	Equipment Rental	Emergency Rescue Fund	Storm Drainage	Bonds	Loan	Grants	Partnerships/ Developer	Water/Sewer Capital	REET	Impact Fees	Total Funds
Dept. - STREET/STORM													
Facilities													
38th Ave/SE 20TH ST IMP ARMSTRONG TO 192ND	$ 3,550,000							3,550,000					$ 3,550,000
NW 38TH ARMSTRONG TO PARKER	4,090,000						683,000	1,100,000				2,307,000	4,090,000
PAVEMENT MGMT PROGRAM	300,000										300,000		300,000
NW 6TH AVE-NORWOOD TO ADAMS/TRAFFIC SIGNAL	1,750,000						1,094,000	500,000				156,000	1,750,000
NW FRIBERG/STRUNK IMPROVEMENT	3,950,000	145,000						1,435,000				2,370,000	3,950,000
NW FRIBERG SIGNAL	260,000	165,000						95,000					260,000
NE GOODWIN RD 13TH TO CAMAS MEADOWS DR	1,000,000							400,000				600,000	1,000,000
LAKE ROAD EVERETT TO LACAMAS LANE	3,000,000							2,400,000			600,000		3,000,000
STORM UTILITY SYSTEM REHAB MISC	100,000				100,000								100,000
STORM CAPITAL PLAN	50,000				50,000								50,000
STORM VACTOR FACILITY IMPROVEMENTS	200,000				50,000			150,000					200,000
Equipment													-
SUBTOTAL	$ 18,250,000												$ 18,250,000
Dept. - WATER/SEWER/UTILITIES													
Facilities													
MISC. WATER MAIN REPLACEMENT	$ 75,000									75,000			$ 75,000
WWTP PHASE 2B	3,500,000						3,500,000						3,500,000
2.0 MG GREGG RESERVOIR	$ 2,200,000						2,200,000						$ 2,200,000
BASIN 6 STEP BYPASS LINE TO PLANT	4,480,000						4,480,000						4,480,000
CROWN WATER PS UPSIZE (city)	262,400									262,400			262,400
SR-3 TREATMENT PLANT FAC UPGRADE	60,000									60,000			60,000
SEWER PUMP STATION REHAB	250,000									250,000			250,000
544 ZONE SURFACE SOURCE	6,000,000							6,000,000					6,000,000
SUBTOTAL	$ 18,827,400												$ 18,827,400
Dept. - GENERAL GOVT.													
Equipment													
OP'S CENTER OFFICE ANNEX PURCHASE	$ 35,000		35,000										35,000
COUNCIL CHAMBERS TECHNOLOGY	40,000										40,000		40,000
SUBTOTAL	$ 75,000												$ 75,000
Dept - PARKS													
Facilities													
LACAMAS LAKE LODGE	$ 1,750,000						1,450,000		300,000				$ 1,750,000
3RD AVE TRAILHEAD DESIGN/PERMIT	20,000											20,000	20,000
GOODWIN TRAILHEAD PERKING ADDITION (ACQUISITION/PRE-DESIGN)	80,000											80,000	80,000
PARKS LANDS PURCHASE	200,000										100,000	100,000	200,000
COMMUNITY CENTER PARKING LOT PURCHASE	30,000							30,000					30,000
TRAILS & TRAILHEAD ACQUISITION/CON	100,000										50,000	50,000	100,000
OPEN SPACE ACQUISITION	150,000											150,000	150,000
HERITAGE PARK PHASE 2	110,000										55,000	55,000	110,000
FALLEN LEAF LAKE PARK: ACCESS IMPR	25,000											25,000	25,000
MAJOR CAPITAL MAINTENANCE	50,000											50,000	50,000
SUBTOTAL	$ 2,515,000												$ 2,515,000
Dept. - POLICE													
Facilities													
HVAC IMPROVEMENTS	$ 300,000							100,000	50,000		150,000		$ 300,000
PARKING LOT SECURITY FENCE	60,000										60,000		60,000
SUBTOTAL	$ 360,000												$ 360,000
Dept. FIRE													
Equipment													
AMBULANCE	$ 150,000			150,000									$ 150,000
SUBTOTAL	$ 150,000												$ 150,000
Dept. - LIBRARY													
Equipment													
WINDOWS/DOORS/CARPETS	75,000	75,000											75,000
COMPUTER DESKS & CHAIRS	20,000										20,000		20,000
LIBRARY MATERIALS	100,000										100,000		100,000
SUBTOTAL	$ 195,000												$ 195,000
GRAND TOTAL	$ 40,372,400	385,000	35,000	150,000	200,000	-	13,407,000	17,760,000	350,000	647,400	1,475,000	5,963,000	$ 40,372,400

Capital Facilities Plan
2014

					Funding Sources								
Year - 2014		General/	Equipment	Emergency	Storm				Partnerships/	Water/Sewer			
	Total Project	Street Fund	Rental	Rescue Fund	Drainage	Bonds	Loan	Grants	Developer	Capital	REET	Impact Fees	**Total Funds**
Dept. - STREET/STORM													
Facilities													
PAVEMENT MGMT PROGRAM	$ 300,000										300,000		$ 300,000
WOODBURN DRIVE	5,455,000								3,074,000			2,381,000	5,455,000
BYBEE ROAD REALIGNMENT EAST	1,247,000								624,000			623,000	1,247,000
SHARED PATH/BIKE/PED IMPROVE	100,000	100,000											100,000
NW BRADY 16 TO 25TH DESIGN/ROW	330,000								165,000		165,000		330,000
STORM UTILITY SYSTEM REHAB MISC	410,000				410,000								410,000
STORM CAPITAL PLAN	50,000				50,000								50,000
Equipment													-
SUBTOTAL	**$ 7,892,000**												**$ 7,892,000**
Dept. - WATER/SEWER/UTILITIES													
Facilities													
MISC. WATER MAIN REPLACEMENTS	75,000									75,000			75,000
SEWER PUMP STATION REHAB	250,000									250,000			250,000
SUBTOTAL	**$ 325,000**												**$ 325,000**
Dept. - GENERAL GOVT.													
Equipment													
TECHNOLOGY UPGRADES	$ 75,000										75,000		$ 75,000
SUBTOTAL	**$ 75,000**												**$ 75,000**
Dept - PARKS													
Facilities													
FALLEN LEAF COMPLEX	$ 240,000							120,000			120,000		$ 240,000
LOUIS BLOCH PARK LIGHTING UPGRD	150,000							100,000				50,000	150,000
SWIMMING POOL	350,000							300,000			50,000		350,000
CROWN PARK MASTER PLAN	$ 90,000							45,000			45,000		$ 90,000
ASH CREEK, PH 1	750,000										400,000	350,000	750,000
PARKS LANDS PURCHASE	500,000							300,000			100,000	100,000	500,000
TRAILS & TRAILHEAD ACQUISITION/CO	200,000										100,000	100,000	200,000
OPEN SPACE ACQUISITION	250,000							150,000				100,000	250,000
MAJOR CAPITAL MAINTENANCE	50,000										50,000		50,000
SUBTOTAL	**$ 2,580,000**												**$ 2,580,000**
Dept. - LIBRARY													
Equipment													
GATES COMPUTER EQUIPMENT REPL*	$ 26,000	26,000											$ 26,000
LIBRARY PARKING LOT PAVING	100,000										100000		100,000
PARKING LOT PURCHASE	200,000										200000		200,000
REPLACE INTEGRATED LIBRARY SYS	150,000	150,000											150,000
MATERIALS HANDLING SYSTEM ADD	60,000	60,000											60,000
MEETING ROOM SOUND SYSTEM	20,000	20,000											20,000
LIBRARY MATERIALS	120,000	120,000											120,000
SUBTOTAL	**$ 676,000**												**$ 676,000**
GRAND TOTAL	$ 11,548,000	476,000	-	-	460,000	-	-	1,015,000	3,863,000	325,000	1,705,000	3,704,000	$ 11,548,000

Capital Facilities Plan
2015

Year - 2015	Total Project	General/ Street Fund	Equipment Rental	Emergency Rescue Fund	Storm Drainage	Funding Sources: Bonds	Loan	Grants	Partnerships/ Developer	Water/Sewer Capital	REET	Impact Fees	Total Funds
Dept. - STREET/STORM													
Facilities													
PAVEMENT MGMT PROGRAM	$ 550,000	250,000									300,000		$ 550,000
PAC RIM/PARKER SIGNAL	260,000								54,000		50,000	156,000	260,000
SHARED PATH/BIKE/PED IMPROVE	100,000	100,000											100,000
NW ASTOR/11TH FOREST HOME RD TO MCINTOSH	1,828,100								1,828,100				1,828,100
NW BRADY 16 TO 25TH IMPROVEMENT	1,200,000								800,000		400,000		1,200,000
SHARED PATH/BIKE/PED IMPROVE	250,000							250,000					250,000
STORM UTILITY SYSTEM REHAB MISC	165,000				165,000								165,000
SUBTOTAL	**$ 4,353,100**												**$ 4,353,100**
Dept. - WATER/SEWER/UTILITIES													
Facilities													
WATER FILTER PLANT UPGRADES	$ 3,500,000						3,500,000						$ 3,500,000
JONES/BOULDER CRK TRANSMAIN IMP	2,500,000						2,500,000						2,500,000
SR-2 BOULDER CREEK FISH SCREENS	35,000									35,000			35,000
T-1 FOREST HOME BS SITE ACQUISITION	50,000									50,000			50,000
D-4 UPH PRV ADJ/LOOPING NW ASTOR	323,000					323,000							323,000
D-5 BUTLER PRV, 8"	89,000									89,000			89,000
T-2 FOREST HOME BOOSTER STATION UPGRADE	200,000					200,000							200,000
T-3 FOREST HOME TRANSMAIN UPGRADE	358,000					358,000							358,000
D-6 COUCH ST BOOSTER STATION	120,000					120,000							120,000
D-7 UPH LOOPING NW16TH TO NW 12TH AV	78,000					78,000							78,000
T-6 NUGA 544 ZONE-24" TRANSMAIN	4,600,000					1,560,000			3,040,000				4,600,000
D-1 PIPELINE REPLACEMENT	150,000					150,000							150,000
S-1 LOWER PH RESERVOIR EVALUATION	80,000									80,000			80,000
WATER CONSERVATION PROGRAM	50,000									50,000			50,000
IN-CITY SEWER MAIN REHAB	1,200,000					1,200,000							1,200,000
LACAMAS CREEK PS UPGRADE (LOYAL LANDS)	160,000								160,000				160,000
PUMP STATION UPGRADES	150,000									150,000			150,000
NUGA SANITARY (CONSULTANT)	2,600,000					900,000			1,700,000				2,600,000
SUBTOTAL	**$ 16,243,000**												**$ 16,243,000**
Dept. - CEMETERY													
Facilities													
MEMORIAL GARDEN	$ 50,000										50,000		$ 50,000
SUBTOTAL	**$ 50,000**												**$ 50,000**
Dept. - GENERAL GOVT.													
Equipment													
TECHNOLOGY UPGRADES	$ 75,000	75,000											$ 75,000
SUBTOTAL	**$ 75,000**												**$ 75,000**
Dept. FIRE													
Equipment													
AMBULANCE RE-CHASSIS	150,000			150,000									150,000
AMBULANCE	150,000			150,000									150,000
FIRE ENGINE NORTH - LAKE	500,000						500,000						500,000
SUBTOTAL	**$ 800,000**												**$ 800,000**

Capital Facilities Plan
2015

Dept. - PARKS													
Facilities													
PARKS LANDS PURCHASE	$ 500,000							300,000			100,000	100,000	$ 500,000
OSTENSON CANYON PH 1	650,000										350,000	300,000	650,000
ASH CREEK PARK PH 2	650,000										350,000	300,000	650,000
IONE SPORTS PARK IMPROVEMENTS	2,500,000							1,000,000	1,500,000				2,500,000
DOROTHY FOX PLAYING FIELDS	200,000								100,000		100,000		200,000
TRAILS & TRAILHEAD ACQUISITION/CO	200,000										100,000	100,000	200,000
OPEN SPACE ACQUISITION	250,000							150,000				100,000	250,000
MAJOR CAPITAL IMPROVEMENTS	50,000										50,000		50,000
HERITAGE PARK DOCK	150,000							150,000					150,000
HERITAGE PARK CLUBHOUSE	270,000							135,000	135,000				270,000
SUBTOTAL	**$ 5,420,000**												**$ 5,420,000**
Dept. - LIBRARY													
Equipment													
CARPET *	$ 75,000	75,000											$ 75,000
UPHOLSTERED FURNITURE REPL	50,000	50,000											50,000
LIBRARY EQUIPMENT	100,000	100,000											100,000
LIBRARY MATERIALS	125,000	125,000											125,000
Equipment													
MINOR REMODELING & PAINTING **	400,000	400,000											400,000
SUBTOTAL	**$ 750,000**												**$ 750,000**
GRAND TOTAL	**$ 27,691,100**	1,175,000	-	300,000	165,000	4,889,000	6,500,000	1,985,000	9,317,100	454,000	1,850,000	1,056,000	**$ 27,691,100**
* $50K TOTAL IN EXISTING CFP													
** 250K TOTAL IN EXISTING CFP													

Capital Facilities Plan
2016

Year - 2016	Total Project	General/ Street Fund	Equipment Rental	Emergency Rescue Fund	Storm Drainage	Funding Sources: Bonds	Loan	Grants	Partnerships/ Developer	Water/Sewer Capital	REET	Impact Fees	Total Funds
Dept. - STREET/STORM													
Facilities													
TIF STUDY UPDATE	$ 80,000	80,000											$ 80,000
PAVEMENT MGMT PROGRAM	550,000	250,000									300,000		550,000
NW LEADBETTER DR PH 2 IMPR	700,000				100,000							600,000	700,000
NW 23RD IMPROVEMENTS	240,000	120,000							120,000				240,000
SHARED PATH/BIKE/PED IMPROVE	50,000	50,000											50,000
STORM UTILITY NPDES	250,000				250,000								250,000
SUBTOTAL	**$ 1,870,000**												**$ 1,870,000**
Dept. - WATER/SEWER/UTILITIES													
Facilities													
T-2 FOREST HOME BOOSTER STATION UPGRADE	$ 264,800					264,800							$ 264,800
SR-4 WELL 17 FEAS -CAMAS MEADOWS	50,000									50,000			50,000
D-1 PIPELINE REPLACEMENT	150,000									150,000			150,000
T-6 NUGA 544 ZONE-24" TRANSMAIN	2,441,000					841,000			1,600,000				2,441,000
CONSERVATION PROGRAM	75,000									75,000			75,000
COLLECTION SYSTEM UPGRADES	1,200,000					1,200,000							1,200,000
PUMP STATION UPGRADES	150,000									150,000			150,000
NUGA SANITARY (CONSULTANT)	2,600,000					900,000			1,700,000				2,600,000
SUBTOTAL	**$ 6,930,800**												**$ 6,930,800**
Dept. - FIRE/EMERGENCY													
Facilities													
FIRE STATION NORTH - LAKE	$ 4,750,000					4,750,000							$ 4,750,000
FIRE STATION CONSTRUCTION	3,600,000					3,600,000							3,600,000
CITY HALL ROOF	300,000										300,000		300,000
SUBTOTAL	**$ 8,650,000**												**$ 8,650,000**
Dept. - LIBRARY													
Equipment													
LIBRARY EQUIPMENT	$ 300,000	300,000											$ 300,000
LIBRARY MATERIALS	130,000	130,000											130,000
SUBTOTAL	**$ 430,000**												**$ 430,000**
Dept. - PARKS													
Facilities													
OSTENSON CANYON PH 2	$ 600,000										300,000	300,000	$ 600,000
PARKS LANDS PURCHASE	500,000							300,000			100,000	100,000	500,000
TRAILS & TRAILHEAD ACQ / CONSTR	200,000										100,000	100,000	200,000
OPEN SPACE ACQUISITION	250,000							150000				100,000	250,000
MAJOR CAPITAL MAINTENANCE	50,000										50,000		50,000
SUBTOTAL	**$ 1,600,000**												**$ 1,600,000**
GRAND TOTAL	**$ 19,480,800**	930,000	-	-	350,000	11,555,800	-	450,000	3,420,000	425,000	1,150,000	1,200,000	**$ 19,480,800**

Capital Facilities Plan
2017-2023

Year - 2017-2023	Total Project	General/ Street Fund	Equipement Rental	Emergency Rescue Fund	Storm Drainage	Funding Sources: Bonds	Loan	Grants	Partnerships/ Developer	Sanitary Fund Capital	Water/Sewer Capital	REET	Impact Fees	Total Funds
Dept. - STREET/STORM														
Facilities														-
16TH/HOOD/18TH IMPROVEMENT	$ 2,000,000								2,000,000					$ 2,000,000
NW 18TH/PAYNE WHITMAN TO PAC RIM	3,000,000								3,000,000					3,000,000
TRAFFIC SIGNAL PACIFIC RIM/PAYNE	260,000								54,000			50,000	156,000	260,000
NW 38TH AVE. ASTOR TO SIERRA	2,713,000								2,713,000					2,713,000
GOODWIN RD LACAMAS CREEK TO INGLE	5,091,100								5,091,100					5,091,100
NW GOODWIN RD CM DR TO LAC CREEK	5,091,000								5,091,000					5,091,000
NE 28TH ST INGLE TO 232ND	6,650,000								6,650,000					6,650,000
NE 28TH ST 232ND TO 242ND	3,325,000								3,325,000					3,325,000
NEW E/W COLLECTOR INGLE TO 232ND	7,689,000								7,689,000					7,689,000
NE 232 AVE 28TH TO 9TH	8,115,000								5,185,000				2,930,000	8,115,000
NE 9TH ST 232ND TO 242ND	3,813,000								2,023,000				1,790,000	3,813,000
NE 242 AVE 28TH TO 9TH	9,840,000								7,059,000				2,781,000	9,840,000
NEW E/W ARTERIAL 242ND&9TH TO EVERETT	11,970,000								6,372,000				5,598,000	11,970,000
EVERETT ST NE 35TH AV TO NEW E/W ART	4,946,000								2,664,000				2,282,000	4,946,000
NE 13TH/18TH GOODWIN TO 192ND	6,956,000								6,956,000					6,956,000
TRAFFIC SIGNAL 242ND/GOODWIN	520,000								432,000				88,000	520,000
TRAFFIC SIGNAL INGLE/28TH	260,000								104,000				156,000	260,000
ROUNDABOUT 232ND/28TH	520,000								352,000				168,000	520,000
ROUNDABOUT 232ND/9TH	520,000								208,000				312,000	520,000
TRAFFIC SIGNAL EVERETT/242ND EXT.	260,000								104,000				156,000	260,000
INTERSECTION IMPR SR-500/LEADBETTER	52,000								20,000				32,000	52,000
ROUNDABOUT EVERETT/LAKE RD	2,078,000								831,000				1,247,000	2,078,000
IMPROVEMENTS 14TH/EVERETT	52,000								20,000				32,000	52,000
NW 43RD/ASTOR SIERRA TO 38TH	2,894,500								2,894,500					2,894,500
SHARED PATH/BIKE/PED IMPROVE	700,000	700,000												700,000
PAVEMENT MGMT PROGRAM	3,850,000	1,750,000										2,100,000		3,850,000
NW 38TH PARKER TO GRASS VALLEY PRK	3,000,000								1,622,000				1,378,000	3,000,000
NE 43RD AV-SR500 TO EAST CITY LIMITS	1,950,000								1,950,000					1,950,000
SE 15TH ST/NOURSE RD-CHS TO 283RD	3,000,000								3,000,000					3,000,000
NE INGLE RD - GOODWIN TO CITY LIMITS	5,000,000								5,000,000					5,000,000
AREA WIDE SIGNAL STUDY	100,000	100,000												100,000
6TH/IVY TURN LANE	400,000											400,000		400,000
6TH/7TH TURN LANE	400,000											400,000		400,000
6TH/DIVISION TURN LANE	400,000											400,000		400,000
N DWYER CREEK MP: STREET A	2,750,000								2,750,000					2,750,000
N DWYER CREEK MP: STREET B	4,450,000								4,450,000					4,450,000
NW PAYNE ST LAKE TO CAMAS	1,990,900								1,990,900					1,990,900
TRAFFIC SIGNAL NW LAKE RD/SIERRA	260,000								104,000				156,000	260,000
TRAFFIC SIGNAL GOODWIN/C.M. DR	260,000								104,000				156,000	260,000
ROUNDABOUT NE LAKE/EVERETT	2,000,000								1,000,000			1,000,000		2,000,000
ACCESS CONTROL NE 14TH/EVERETT	52,000								52,000					52,000
TRAFFIC SIGNAL NW PAC RIM/SE PAYNE	260,000								104,000				156,000	260,000
NW MCINTOSH 11TH TO BRADY	4,100,000								4,100,000					4,100,000
NW CAMAS MEADOWS DR PAYNE TO LAKE	3,907,000								3,907,000					3,907,000
SE 23RD ST REALIGNMENT CROWN/283rd	655,000								655,000					655,000
STORM UTILITY NPDES	1,750,000				1,750,000									1,750,000
Equipment														
SWEEPER	165,000				165,000									165,000
TRACTOR W/ROADSIDE MOWER	85,000				85,000									85,000
SUBTOTAL	**$ 130,100,500**													**$ 130,100,500**
Dept. - WATER/SEWER														
Facilities														

Capital Facilities Plan
2017-2023

Year - 2017-2023		General/	Equipement	Emergency	Storm				Partnerships/	Sanitary Fund	Water/Sewer			
	Total Project	Street Fund	Rental	Rescue Fund	Drainage	Bonds	Loan	Grants	Developer	Capital	Capital	REET	Impact Fees	Total Funds
PIPELINE REPLACEMENT	$ 1,050,000										1,050,000			$ 1,050,000
D1 MAIN CAMAS MEADOWS DR TO SE 1ST	985,000					985,000								985,000
TRANSMAIN CEMETERY RESERV TO 290 ZONE	514,000					514,000								514,000
CEMETERY BOOSTER STATION	784,250					784,250								784,250
TRANSMAIN CEMETERY BS TO 455 ZONE	1,275,000					1,275,000								1,275,000
CONVERT 12" CL TO SUPPLY 455 ZONE	50,000										50,000			50,000
2.0 MG CEMETERY RESERVOIR	2,188,000					2,188,000								2,188,000
DECOMMISSION BUTLER RESERVOIR	40,000										40,000			40,000
UPH LOOPING NW 16TH AV	323,000										323,000			323,000
15,600 LF OF 12" NUGA TRANSMAIN	3,434,000					1,164,000			2,270,000					3,434,000
WELL 17 DEV-CAMAS MEADOWS	1,650,000					1,650,000								1,650,000
LOWER PH BS UPGRADE	483,000					483,000								483,000
542 ZONE LOOPING	494,000					494,000								494,000
5,300 LF OF 12" NUGA TRANSMAIN	1,294,000					440,000			854,000					1,294,000
DECOMMISSION 10TH AV/FRANCIS ST BS	471,000					471,000								471,000
1,900 LF OF 12" NUGA TRANSMAIN	590,000					200,000			390,000					590,000
Lower PH RESERVOIR REPLACEMENT	1,539,000					1,539,000								1,539,000
UPH STANDPIPE OUTLET PIPING UPGR 24"	151,000										151,000			151,000
LACAMAS BS UPGRADE	177,000										177,000			177,000
20" SUCTION TRANSMAIN LACAMAS BS	1,731,000					1,731,000								1,731,000
11,200 LF OF 12" NUGA TRANSMAIN	2,519,000					869,000			1,650,000					2,519,000
2,600 LF OF 12" NUGA TRANSMAIN	735,000					250,000			485,000					735,000
WELL 15 DEV PARKERS LANDING	1,650,000					1,650,000								1,650,000
NUGA SOURCE DEVELOPMENT	500,000					500,000								500,000
7,900 LF OF 12" NUGA TRANSMAIN	1,835,000					635,000			1,200,000					1,835,000
WATER FACILITY PLAN UPDATE	150,000										150,000			150,000
SEWER PUMP STATION REHAB	1,050,000										1,050,000			1,050,000
SEWER MAIN LINE REHAB	8,400,000					8,400,000								8,400,000
NUEA SANITARY	18,200,000					6,200,000			12,000,000					18,200,000
SUBTOTAL	**$ 54,262,250**													**$ 54,262,250**
Dept. - GENERAL GOVT.														
Equipment														
TECHNOLOGY UPGRADES	$ 500,000	500,000												$ 500,000
SUBTOTAL	**$ 500,000**													**$ 500,000**
Dept. - SANITATION														
Equipment														
AUTOMATED REFUSE TRUCK	$ 270,000									270,000				$ 270,000
SUBTOTAL	**$ 270,000**													**$ 270,000**
Dept. - POLICE														
Facilities														
PARKING LOT EXPANSION	$ 100,000											100,000		$ 100,000
WORK CREW BUILDING	50,000											50,000		50,000
BOAT HOUSING BUILDING - LAC. LAKE	400,000											400,000		400,000
HVAC REPLACEMENT	450,000											450,000		450,000
SUBTOTAL	**$ 1,000,000**													**$ 1,000,000**
Dept. - LIBRARY														
Equipment														
LIBRARY MATERIALS	$ 200,000	200,000												$ 200,000
EQUIPMENT TBD	300,000	300,000												300,000
REPLACE INTEGRATED LIBRARY SYS.	150,000	150,000												150,000
REPLACE FURNISHINGS	75,000	75,000												75,000
Facilities														-
SECOND LIBRARY OUTLET	4,000,000	4,000,000												4,000,000
DESIGN/BUILD NORTH SIDE LIBRARY	4,500,000					4,500,000								4,500,000

Capital Facilities Plan
2017-2023

Year - 2017-2023	Total Project	General/ Street Fund	Equipement Rental	Emergency Rescue Fund	Storm Drainage	Bonds	Loan	Grants	Partnerships/ Developer	Sanitary Fund Capital	Water/Sewer Capital	REET	Impact Fees	Total Funds
REMODEL/EXPAND MAIN LIBRARY	5,000,000					5,000,000								5,000,000
SUBTOTAL	**$ 14,225,000**													**$ 14,225,000**
Dept. - FIRE/EMERGENCY														
Facilities														
REPLACE FIRE STA. 41	$ 4,000,000					4,000,000								$ 4,000,000
SUBTOTAL	**$ 4,000,000**													**$ 4,000,000**
Equipment														
AMBULANCE RE-CHASSIS (2017)	$ 150,000			150,000										$ 150,000
AMBULANCE RE-CHASSIS (2019)	150,000			150,000										150,000
AMBULANCE RE-CHASSIS (2021)	150,000			150,000										150,000
AMBULANCE PURCHASE (2023)	150,000			150,000										150,000
SUBTOTAL	**$ 600,000**													**$ 600,000**
Dept. - PARKS														
Facilities														
COMMUNITY CENTER	$ 30,000,000					30,000,000								$ 30,000,000
PARKS LANDS PURCHASE	4,550,000					4,550,000								4,550,000
TRAILS & TRAILHEAD ACQ / CONSTR	1,750,000												1,750,000	1,750,000
OPEN SPACE ACQUISITION	1,750,000												1,750,000	1,750,000
PARKS DEVELOPMENT	5,000,000					5,000,000								5,000,000
MAJOR CAPITAL MAINTENANCE	350,000					$ 350,000								350,000
SUBTOTAL	**$ 43,400,000**													**$ 43,400,000**
GRAND TOTAL	**$ 248,357,750**	7,775,000	-	600,000	2,000,000	85,822,250	-	-	120,475,500	270,000	2,991,000	5,350,000	23,074,000	**$ 248,357,750**

		Funding Sources										
Year - 2024-2030	Total Project	General/ Street Fund	Emergency Rescue Fund	Storm Drainage	Bonds	Loan	Grants	Partnerships Developer	Water/Sewer Capital	REET	Impact Fees	Total Funds
Dept. - STREET/STORM												
SHARED PATH/BIKE/PED IMPROVE	$ 350,000	350,000										$ 350,000
PAVEMENT MGMT PROGRAM	3,850,000	1,750,000								2,100,000		3,850,000
DALLAS/3RD TURN LANES	600,000						300,000			200,000		500,000
IMPACT FEE STUDY UPDATE	50,000	50,000										50,000
TRAFFIC SIGNAL NW BRADY/16TH	260,000							104,000			156,000	260,000
TRAFFIC SIGNAL NE 242ND/28TH	520,000							433,000			87,000	520,000
TRAFFIC SIGNAL NE INGLE/GOODWIN	260,000							260,000				260,000
ROUNDABOUT NE 232ND/28TH	520,000							520,000				520,000
ROUNDABOUT NE 232ND/9TH	520,000							520,000				520,000
TRAFFIC SIGNAL NEW E/W ART./EVERETT	260,000							104,000			156,000	260,000
ACCESS CONTROL LEADBETTER/EVERETT	52,000							20,800			31,200	52,000
NW 18TH WHITMAN TO BRADY IMPR	1,634,000									1,634,000		1,634,000
SE CROWN RD SE 23RD ST TO NE 3RD AV	10,040,000							10,040,000				10,040,000
STORM UTILITY NPDES	1,750,000			1,750,000								1,750,000
SR-14 WEST CAMAS SLOUGH BRIDGE	20,000,000						20,000,000					20,000,000
SUBTOTAL	$ 40,566,000											$ 40,566,000
Dept. - WATER/SEWER												
Facilities												
PIPELINE REPLACEMENT	$ 1,050,000								1,050,000			$ 1,050,000
REPL 14" ST TRANSM BUTLER TO 455 ZN	1,563,000				1,563,000							1,563,000
5,700 LF OF 12" NUGA TRANSMAIN	1,379,000				469,000			910,000				1,379,000
WELL 16 DEV NEAR WWTF	1,650,000				1,650,000							1,650,000
UPPER GRN MTN BS	419,200				419,200							419,200
2.0 MG GRN MTN RESERVOIR	1,838,000				1,838,000							1,838,000
CROWN RD BS UPGRADE	80,250								80,250			80,250
12" TRANSMAIN WELL 16 POLK ST	514,000				514,000							514,000
WELL 18 DEV-FIRE STATION	1,000,000				1,000,000							1,000,000
STEIGERWALD SOURCE DEVELOPMENT	500,000				500,000							500,000
SEWER PUMP STATION REHAB	1,050,000								1,050,000			1,050,000
SEWER MAIN LINE REHAB	8,400,000				8,400,000							8,400,000
WASTEWATER FACILITY PLAN UPDATE	500,000								500,000			500,000
TREATMENT PLAN EXPANSION	12,600,000				12,600,000							12,600,000
SUBTOTAL	$ 32,543,450											$ 32,543,450
Dept. - GENERAL GOVT.												
Equipment												
TECHNOLOGY UPGRADES	$ 500,000	500,000										$ 500,000.00
SUBTOTAL	$ 500,000											$ 500,000
Dept. - POLICE												
BUILDING REMODEL/EXPANSION	$ 1,500,000									1,500,000		$ 1,500,000
SUBTOTAL	$ 1,500,000											$ 1,500,000
Dept. - FIRE/EMERGENCY												
AMBULANCE PURCHASE	$ 150,000		150,000									$ 150,000.00
REPLACEMENT LADDER TRUCK	500,000	500,000										500,000
REPLACEMENT PUMPER TRUCK	400,000	400,000										400,000
SUBTOTAL	$ 1,050,000											$ 1,050,000
Dept. - PARKS												
Facilities												
PARKS LANDS PURCHASE	$ 4,550,000				4,550,000							$ 4,550,000
TRAILS & TRAILHEAD ACQ / CONSTR	1,750,000				1,750,000							1,750,000
OPEN SPACE ACQUISITION	1,750,000				1,750,000							1,750,000
PARKS DEVELOPMENT	5,000,000				5,000,000							5,000,000
MAJOR CAPITAL MAINTENANCE	350,000				350,000							350,000
SUBTOTAL	$ 13,400,000											$ 13,400,000
GRAND TOTAL	$89,559,450	3,550,000	150,000	1,750,000	42,353,200	-	20,300,000	12,911,800	2,680,250	5,434,000	430,200	$89,559,450

AGENDA ITEM SUBMITTAL FORM

MEETING DATE/TIME: December 2, 2012

COUNCIL MEETING

Consent Agenda	(Yes__No__)
Regular meeting Agenda	(Yes X No__)

WORKSHOP MEETING (Yes__ No__)

DEPARTMENT: Public Works

AGENDA ITEM TITLE: Resolution adopting the Boulder Creek and Jones Creek Watershed Forest Management Plan

AGENDA ITEM DETAILS/DESCRIPTION: The Boulder Creek and Jones Creek Watershed Forest Management Plan provides an outline to manage the City of Camas watershed. The goals of the plan include: protect and maintain water quality, generate periodic income from the sale of wood products, provide an access road network for operational, maintenance and asset protection, and improve forest health. The plan was discussed at the July 16, 2012 workshop and was issued a determination of non significance through the SEPA process.

RECOMMENDED ACTION: adopt resolution

DEPARTMENT STAFF/PRESENTERS: Eric Levison

SUPPORTING DOCUMENTS (name): Watershed forest management plan

SUBMITTED BY: Eric Levison

NOTE:

- **EMAIL "Agenda Item Submittal Form" to agenda email in WORD .doc format by 5:00pm on the Tuesday prior to scheduled meeting.**
- **Place all supporting documents listed above in the G:\AgendaPrep\(your department folder) by same deadline.**

RESOLUTION NO. 1254

A RESOLUTION adopting the Boulder Creek and Jones Creek Watershed Forest Management Plan.

WHEREAS, the City of Camas Boulder Creek and Jones Creek Watershed consists of approximately 1,700 acres of mature forest land that is used by the City to collect water for municipal purposes; and

WHEREAS, the City retained AKS Engineering & Forestry to prepare a Watershed Forest Management Plan for the Boulder Creek and Jones Creek Watershed; and

WHEREAS, the plan was completed in May of 2012, and was thereafter presented at the July 16, 2012 City Council Workshop; and

WHEREAS, Community Director Phil Bourquin, as the responsible official, issued a SEPA Determination of Non Significance on October 23, 2012; and

WHEREAS, the SEPA comment period expired November 6, 2012, and two comments were received; and

WHEREAS, the Council desires to proceed with adoption of the Plan;

NOW, THEREFORE, BE IT RESOLVED BY THE COUNCIL OF THE CITY OF CAMAS AS FOLLOWS:

I

The Boulder Creek and Jones Creek Watershed Forest Management Plan dated May 14, 2012 and prepared by AKS Engineering & Forestry is hereby adopted as the Management Plan for the Jones Creek and Boulder Creek Watershed.

ADOPTED at a regular meeting of the Council of the City of Camas this _____ day of December, 2012.

SIGNED:_____
Mayor

ATTEST:_____
Clerk

APPROVED as to form:

_____
City Attorney

Boulder Creek & Jones Creek Watershed Forest Management Plan

Prepared for
City of Camas

May 14, 2012

Prepared by

AKS ENGINEERING & FORESTRY
12011 NE 99th Street, Suite 1530
Vancouver, WA 98682
(360) 882-0419

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APPENDICES:

Executive Summary

The City of Camas Boulder Creek and Jones Creek watershed property consists of approximately 1,700 acres of mature forest land that is used by the City to collect water, via water intake facilities, for municipal purposes. Other than minor improvements and maintenance activities necessary to operate the water intake facilities, the property has been unmanaged for the last 60+/- years.

In February 2011, the City contracted with AKS Engineering & Forestry (AKS) to perform a timber inventory and valuation assessment of the watershed. The purpose of this assessment was to inventory the timber resource and estimate its current value. The assessment determined that the property contains a significant amount of high value timber. Given the valuation of the timber resource, the City directed AKS to develop a forest management plan to generate periodic income from the sale of wood products while protecting water quality.

AKS met with City staff to discuss the creation of this plan and performed extensive field reconnaissance of the watershed. An assessment of existing resources, a timber harvesting plan, an access and road plan, as well as implementation methods, guidelines, and management recommendations, comprise the main components of this plan.

City goals guided the development of this forest management plan. These goals are to:

(1) Protect and maintain water quality
(2) Generate periodic income from the sale of wood products
(3) Provide a permanent access/road network within the property for operational, maintenance, and asset protection purposes
(4) Improve forest health

Generating income from the sale of wood products without sacrificing water quality can be achieved by periodically harvesting small areas spatially distributed throughout the watershed and by providing protection measures for streams and other sensitive areas. An adequate and efficient road network can be established within the watershed without sacrificing water quality by avoiding significant stream crossings; locating roads away from streams, steep slopes and other sensitive areas; constructing roads with an all-weather rocked surface; and by performing proper road maintenance. Additionally, overall forest health can be enhanced by rehabilitating poorly stocked and degraded portions of the watershed, and by removing trees infected with laminated root rot (or other diseases) and replanting these areas with immune and resistant species.

1. INTRODUCTION

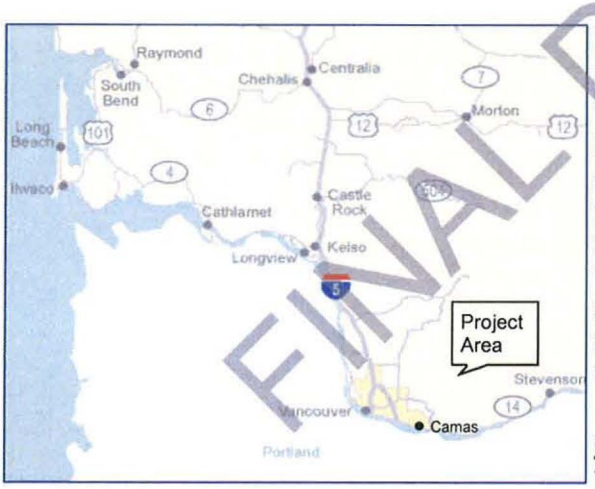
Purpose

The purpose of this document is to provide the City of Camas with a sustainable forest management plan for the Boulder Creek and Jones Creek watershed property that meets the City's management goals and objectives. This plan will be presented to the City Council for final adoption. The approved and adopted plan will be implemented by City Public Works staff members, who will also be responsible for ongoing monitoring and evaluation. The ultimate decision on resource policy and management direction rests with the City of Camas City Council. Once adopted, any policy changes to the Boulder Creek and Jones Creek Watershed Forest Management Plan would require approval by the City Council.

Management Goals and Objectives

The City's goal is to develop and implement sustainable forest management policies for the watershed property that will:

- Protect and maintain water quality
- Generate periodic income from the sale of wood products
- Provide a permanent access/road network within the property for operational, maintenance, and asset protection purposes
- Maintain and improve forest health



Property Description

Location

The Boulder Creek and Jones Creek watersheds are located approximately ten miles northeast of the City of Camas, near the southwest corner of the Gifford Pinchot National Forest. The property is located in Section 33, T3N, R4E; Section 3, T2N, R4E; the NE ¼ of Section 4, T2N, R4E; a portion of the NW ¼ of Section 4, T2N, R4E; and a portion of the NW ¼ of Section 10, T2N, R4E; W.M., Clark County, Washington.

General Description

The site is comprised of five individual and contiguous parcels that the City acquired in individual transactions between 1923 and 1950. The parcels were obtained from Clark County, the Camas Water Company, Columbia River Paper Mills, and individual private parties. These parcels are identified as parcel numbers 243582000, 243583000, 136645000, 136440000, and 137914000 by the Clark County Tax Assessor. Assessor records show a combined total of approximately 1,608 acres in the tracts; however, the GIS acreage of approximately 1,707 acres varies from the assessor records by approximately 99 acres. It appears that most of this acreage is from a discrepancy in the acreage for Parcel No. 136645000, which consists of the north half of a Township line section and should be close to 320 acres but is listed by the assessor as approximately 208 acres. The only way to verify the exact acreage of the parcels would be to conduct a property boundary survey. For the purposes of this plan, the GIS acreage of 1,707 acres was used as it appears to be more accurate.

The site is generally split into two principal drainage basins, with Boulder Creek draining the westerly half of the site and Jones Creek draining the easterly half. Both of these large streams have public water intakes and are fed by numerous tributaries that web throughout the property. The site is comprised of unmanaged mature forest (60-100 years old) with a network of streams and unmaintained old roads. Elevation of the property ranges from approximately 540 to 1,880 feet above sea level, and drainage is generally to the south and southwest. Slopes are moderate and range from approximately 10% to 60%. General maps of the property are included in Appendix A.

Uses

The property is currently used to collect water, via water intake facilities on Boulder Creek and Jones Creek, for municipal purposes. Other than minor improvements and maintenance activities necessary to operate the water intake facilities, the property has been unmanaged for the last 60+/- years. Historical photographs and documents indicate that at least part of the property burned in the first half of the 1900's (there were several forest fires in southwest Washington between 1902 and 1952) and was salvage logged in 1955.

Adjacent Ownership and Uses

Adjacent properties to the north and east are owned by the State of Washington and managed by the Washington Department of Natural Resources (DNR). The DNR manages land for a variety of uses, including forest health, wildlife habitat, water quality, sustainable timber production, and recreation. The DNR managed land primarily consists of well stocked, even-aged, Douglas-fir forests that are approximately 40 years old, with the exception of an approximate 80-acre area abutting the western portion of the north line that was recently harvested (clearcut with scattered pockets of standing timber) and replanted.

Adjacent properties to the south are owned by the State of Washington (managed by the DNR) and Longview Timber, LLC (Longview Timber). Longview Timber manages their land for sustainable timber production. Both the Longview Timber and DNR lands primarily consist of well stocked, even-aged, Douglas-fir forests that vary in age from approximately 0 to 40 years old. Additionally, the DNR managed land near the southeast corner of the site is actively used for recreation, including off-highway vehicle (OHV) use.

Adjacent properties to the west are owned by the State of Washington (managed by the DNR) and individual private landowners. The DNR managed land primarily consists of well stocked, even-aged, Douglas-fir forests that are approximately 40 years old, with the exception of an approximate 80-acre area abutting the north portion of the west line that was recently harvested (clearcut with scattered pockets of standing timber) and replanted. There are four small parcels, owned by individual private parties, that abut the southern portion of the westerly line. These parcels are rural residential properties, some of which appear to be practicing small woodland management as evidenced by some selective harvesting of merchantable timber.

Access

Current access to the western half of the property (Boulder Creek side) is provided via NE Boulder Creek Road. NE Boulder Creek Road connects the western portion of the property to NE Lessard Road, which is dedicated public right-of-way. There were no easement or road establishment documents found on file at the Clark County Surveyors office for NE Boulder Creek Road; however, the right-of-way dedicated for NE Lessard Road extends to the property near the actual location of NE Boulder Creek Road. The City does not currently allow public access to the watershed. The property is not regularly patrolled, but there is a locked gate and no trespassing signage on the north portion of NE Boulder Creek Road at its intersection with NE Lessard Road.

Current access to the eastern half of the property (Jones Creek side) is provided via NE Jones Creek Road. NE Jones Creek Road is dedicated public right-of-way that connects the eastern portion of the watershed property to NE Boulder Creek Road. There is a locked gate and no trespassing signage at the beginning of NE Jones Creek Road at its intersection with NE Boulder Creek Road.

Although public right-of-way was dedicated for both access locations, road establishment documents on file at the Clark County Surveyors office show that the right-of-way dedicated for these roads is not consistent with the actual road locations. In some cases, actual road locations are up to one-quarter of a mile from the dedicated right-of-way (a map showing the actual road locations versus the location of dedicated right-of-way is included in Appendix B). While discrepancies exist, these roads were dedicated a very long time ago (NE Jones Creek Road in 1895 and NE Lessard Road in 1931) and the County as well as adjoining landowners have utilized the actual road locations for many decades.

2. Existing Resource Assessment

Timber & Wood Products

Timber on the watershed is primarily Douglas-fir. Other species include red alder, western hemlock, and bitter cherry. The timber ranges in age from approximately 60 to 100 years old and timber stands vary in density from well-stocked stands of Douglas-fir, to mixed stands of Douglas-fir and red alder, to scattered pockets of bitter cherry and brush. Douglas -fir, red alder, and western hemlock are viable commercial tree species. Bitter cherry can also be a viable commercial species if market prices for pulp are high enough to cover harvesting and delivery costs.

AKS performed a timber inventory volume and value assessment in 2011. The reported net timber volumes are presented in Table 2-1. The complete inventory report and value assessment is included in Appendix C.

Table 2-1: Timber Resource Net Volumes		
Species	Net Volume (MBF[1])	Net Volume % by Species
Douglas-fir	33,306	92.6
Red Alder	1,620	4.5
Western Hemlock	739	2.0
Bitter Cherry	300	0.9
Total	35,965	100.0

[1] MBF is one thousand board feet. A board foot is a one-inch thick board, 12 inches wide by 12 inches long, or the equivalent. Many timber related transactions are based on MBF values.

Water Quality, Streams, Riparian Areas, and Wetlands

Water Quality

Boulder Creek and Jones Creek are the two main streams that extend within and through the property. These streams are fed by a network of smaller tributary streams that are webbed throughout the site. Both Boulder Creek and Jones Creek produce high quality water, which the City draws from during the winter months for municipal purposes. City water intake facilities are located at the southern end of both creeks, and the water is conveyed through existing underground pipes located in the vicinity of NE Boulder Creek Road and NE Jones Creek Road and then to the City of Camas.

Streams

The DNR classifies streams and other water bodies in terms of whether or not they are used by fish, and whether or not streams experience perennial or seasonal flow. These classifications are used to help determine riparian buffer protection requirements during forest practice activities. The DNR maintains and updates stream maps that show both modeled and field-verified stream classifications. The different types of water classifications, as well as general descriptions of which on-site streams fall into each classification (based on maps provided by the DNR), are as follows:

- *"S" – **Shoreline:** Streams and water bodies that are designated "shorelines of the state".*

  There are no streams or water bodies on the site with this classification.

- *"F" – **Fish:** Streams and water bodies that are known to be used by fish, or meet the physical criteria to be potentially used by fish.*

  This stream classification applies to Boulder Creek, Jones Creek, and some of their tributaries.

- *"Np" – **Non-Fish Perennial:** Streams that have flow year round, but do not meet the physical criteria of a Type F stream. This also includes streams that have been proven not to contain fish using approved methods.*

- ***"Ns" – Non-Fish Seasonal:*** *Streams that do not have surface flow during some portion of the year, and do not meet the physical criteria of a Type F stream.*

  The maps provided by DNR list all "non-fish" streams on site as Type "N". This code is used as a place holder when the flow type (perennial - Np or seasonal - Ns) has not been determined. For the purposes of this plan, all streams identified as Type N are assumed to be perennial and fall under the Np classification. The specific classification of Type N streams will need to be determined by field inspection prior to conducting adjacent forest practice activities.

A detailed map showing the classification of all mapped on-site streams is included in Appendix D. This map is provided as a starting point to help identify and classify streams on the property; however, additional field inspection will be necessary to more adequately identify and classify all waters prior to conducting forest practice activities. The physical criteria for classifying streams are shown in Table 2-2.

Table 2-2: Stream Classification by Physical Characteristics

Width	Gradient	Basin size	Classification
Bank full width 2 feet +	Less than or equal to 16%	Any	Fish Stream (F)
Bank full width 2 feet +	17-20%	Greater than 50 acres	Fish Stream (F)
Does not meet fish stream criteria. Water present all year			Np Stream
Does not meet fish stream criteria. Water NOT present all year			Ns Stream

Riparian Areas and Wetlands

All of the on-site streams have adjacent riparian areas. The lower reaches of streams tend to have wider and more significant riparian areas that often include small flood plains and forested wetland areas and are dominated by Red Alder dense understory vegetation. Some ponds and small pools, created by beaver, are present in the southwest corner of the site. Riparian areas associated with the upper reaches of streams tend to be significantly narrower, do not include flood plain or wetland areas, and include a mix of Red Alder, Douglas-fir, and a dense vegetated understory. The riparian areas in the middle to upper reaches of Boulder Creek and Jones Creek also include rock outcroppings, narrow gorges, and falls.

Fish and Wildlife Habitat

The property has a variety of wildlife habitats that are consistent with typical western Washington forest lands and has been relatively undisturbed for approximately 60 years. It appears that natural regeneration has taken place subsequent to past timber removal, so the property is more diverse in terms of both species and structure than a majority of the adjacent DNR and Longview Timber land, which has been clear cut and replanted. This diversity includes different mixes of tree species, size classes, and varying tree, understory, and canopy densities. Standing snags and large downed wood are present throughout the property. There are some significantly larger second-growth trees scattered throughout the northern part of the site and beaver ponds in the southwest corner of the site. There is evidence of use by woodpeckers and other cavity-nesting birds, and both deer and elk were observed on the property during field reconnaissance activities.

Jones Creek is currently part of the Stream Nutrient Enhancement Project, which is a cooperative study between the WDFW and the Lower Columbia Fish Enhancement Group. This study assesses the benefits of stream life and its inhabitants due to the presence of salmon carcasses.

Information regarding the presence of on-site priority habitats and species was provided by the Washington Department of Fish and Wildlife (WDFW). The information received shows that fish bearing streams within the watershed support Coho Salmon, Steelhead (summer and winter), Rainbow Trout, and resident Cutthroat Trout. This information also shows that WDFW classifies some of the streams within the property as a "priority fish presence". No other known presence of priority habitats or species was identified by WDFW as being within the vicinity of the site.

The information provided above regarding streams with priority fish presence is general in nature because the WDFW considers sensitive species and habitat locations to be confidential. They require that this information not be distributed publicly and Washington State Law exempts sensitive fish and wildlife information from public inspection and copying. Therefore, more detailed information regarding which streams are classified as a priority fish presence is not included in this report. Additionally, information provided by WDFW regarding sensitive species and habitats only includes information that the WDFW maintains in a central computer database. It is not an attempt to provide an official agency response as to the impacts on fish and wildlife for any particular project. It is not a complete inventory and it is important to note that fish and wildlife resources may occur in areas not currently known to the WDFW, or in areas for which comprehensive surveys have not been conducted. Site specific surveys may be necessary to rule out the presence of priority resources prior to conducting forest practice activities.

Threatened and Endangered Species

Information provided by the WDFW indicated that there are no known threatened or endangered species, or priority habitats for threatened or endangered species, located within the vicinity of the site.

Roads

NE Boulder Creek Road and NE Jones Creek Road provide access to the west and east portions of the site, respectively. These roads extend approximately one-half of a mile into the southern portion of the site to provide access to their respective water intake facilities, where each road terminates. The roads are in fair condition, are lightly rocked, and have undersized stream crossing culverts. Additionally, both of these roads follow their respective streams and portions are located very close to the streams and riparian areas, which has an adverse impact on water quality. Underground water pipes, associated with the water intake facilities, are located within the vicinity of each road.

There is a network of old "legacy" roads throughout the property. Most of these roads were observed during field reconnaissance and are not mapped. These roads have not been used or maintained since the last harvest over 50 years ago, are overgrown with trees and vegetation, have been washed out in some places, and have geometric configurations that

are not suitable for current conventional forest practice activities (steep grades, narrow widths, tight corners, etc.). Many of these roads are located adjacent to streams and riparian areas and have undersized stream crossing culverts, or none at all (ie. fords), which contributes to poor water quality. Additionally, several of these roads extend off site onto adjacent properties.

Soils, Site Index, and Site Class

Based on the US Soil Conservation Service Soil Survey of Clark County, WA, on-site soils predominantly consist of Olympic clay loam. This soil type has a slight to severe erosion potential depending on slopes (i.e. gentle slopes have a slight erosion potential and steep slopes have a severe erosion potential) and in general is poorly suited for native surface roads (i.e. roads should have a crushed rock surface).

Site index is a measure of soil productivity, and is a number corresponding to the average total height in feet that the largest Douglas-fir trees will attain at age 50. The site index for on-site soils range from 117 to 133.

Site class refers to a range of site indices. The DNR has categorized site index ranges into five classifications (1 through 5, with 1 being the most productive and 5 being the least). The following are the different site classes (recognized by the DRN for western Washington) as they relate to site indices:

Site Class	50-yr Site Index Range
I	137
II	119-136
III	97-118
IV	76-96
V	<75

Based on the site index values, the site class for on-site soils range from high class III to high class II, which is considered good for timber production. Besides being a measure of productivity, site class is used by the DNR to help establish the width of riparian buffer areas for forest practices activities adjacent to fish bearing streams. A map showing the DNR site class for the watershed property is included in Appendix D.

Recreation

The watershed is closed to public access and does not currently provide any recreational opportunities. The property is not regularly patrolled, but there are no trespassing signs and locked gates at both access roads.

3. Management Plan

Harvesting Plan

Guidelines

The following guidelines were used in developing a harvesting plan that meets the City's overall goals:

- *To the extent possible, focus early (near term) harvesting on areas that are not tributary to the water intake facilities (i.e. areas that are located below the water intake facilities).*

This guideline helps to meet the City's goals of *protecting and maintaining water quality* and *generating periodic income from the sale of wood products*. Focusing early harvesting activities on areas that are not tributary to the water intake facilities provides the City with an opportunity to become familiar with implementing forest practices activities in areas that will not affect water quality at the intake locations. The City then has the opportunity to evaluate the effects of forest practice activities, and make any desired adjustments, prior to implementing activities in more sensitive areas of the watershed. Harvesting these areas will also generate positive net income from the sale of wood products.

- *To the extent possible, focus early (near term) harvesting on poorly stocked areas (rehabilitation or "rehab" areas) so that these areas can be properly stocked and reforested.*

  This guideline helps to meet the City's goal of *maintaining and improving forest health*. Focusing early harvesting activities on areas that are poorly stocked provides the quickest opportunity for rehabilitating degraded portions of the forest and improving overall forest health.

- *Keep individual harvest unit size small.*

  This guideline helps to meet the City's goals of *protecting and maintaining water quality* and *maintaining and improving forest health*. Harvest unit size is related to disturbed soils which can affect water quality. Keeping harvest units small reduces the potential for erosion and sedimentation that can affect water quality. Additionally, small harvest units help to provide greater diversity in overall forest characteristics, which promotes forest health.

- *Distribute successive harvesting activities around the watershed to allow "greenup[2] " of harvested areas to occur prior to harvesting adjacent areas.*

  This guideline helps to meet the City's goals of *protecting and maintaining water quality* and *maintaining and improving forest health*. Distributing harvesting activities around the watershed and waiting for harvested areas to regenerate prior to conducting adjacent harvesting activities reduces the amount of disturbed and exposed area in any given portion of the watershed at any given time. This reduces the potential for erosion and sedimentation that can affect water quality. Additionally, distributing harvesting activities around the watershed provides greater diversity in overall forest characteristics, which promotes forest health.

- *To the extent possible, provide consistent harvest volume.*

  This guideline helps to meet the City's goals of *generating periodic income from the sale of wood products*.

[2] Greenup is defined as established trees that are at least five growing seasons old or at least four feet tall.

Schedule

The City draws water from Boulder Creek and Jones Creek during the winter months and protecting and maintaining water quality is of the upmost importance; therefore, harvesting should be limited to the dry season (typically May thru October). The harvesting plan divides the property into 39 separate harvest units that will be harvested in 15 separate entries over a period of 40 years (2013-2053). The harvest schedule is represented in Table 3-1. Detailed maps of harvest units by entry are included in Appendix E.

Table 3-1: Harvest Schedule

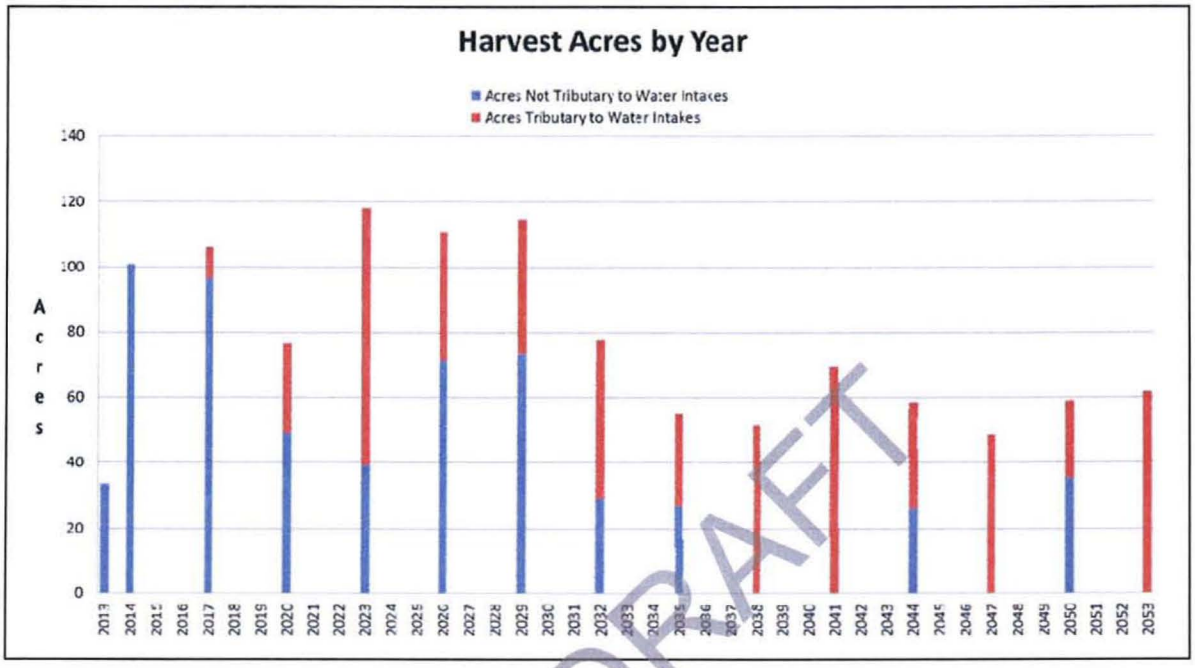
Entry	Year	Harvest Units ("rehab[3]" units in **bold**)	Approximate Water Intake Non Tributary Acres	Approximate Water Intake Tributary Acres	Approximate Total Acres	Approximate Volume (MBF)
1	2013	1	34	0	34	1,100
2	2014	7, **12**, 27	101	0	101	2,500
3	2017	2, 10, **13**	96	10	106	2,600
4	2020	**5**, 8, 26	49	27	76	2,700
5	2023	**11**, 15, 24	39	79	118	4,300
6	2026	3, **4**, **19**, 28	72	39	111	3,600
7	2029	6, 9, **14**	73	41	114	4,000
8	2032	16, 20, 22	29	49	78	4,300
9	2035	29, 30, 35	27	28	55	3,100
10	2038	33, 38	0	52	52	3,400
11	2041	17, **36**	0	69	69	4,000
12	2044	23, 31, 37	26	32	58	3,600
13	2047	25, 34	0	49	49	3,800
14	2050	32, 39	36	23	59	4,200
15	2053	18, 21	0	62	62	4,600
Total			582	560	1142	51,800

The harvest schedule has been designed to conform to the harvest guidelines to the extent practical while still respecting other guidelines and overall goals, as described below.

Guideline: To the extent possible, focus early (near term) harvesting on areas that are not tributary to the water intake facilities (ie. areas that are located below the water intake facilities).

[3] "Rehab" units are areas that are poorly stocked or stocked with trees of low quality and low value.

While respecting other guidelines, the schedule focuses on harvesting acreage that is not tributary to the water intake facilities first, as shown in the graph below.



Guideline: To the extent possible, focus early (near term) harvesting on poorly stocked areas (rehabilitation or "rehab" areas) so that these areas can be properly stocked and reforested.

Units with 50% or more of their area in poorly stocked condition include: 4, 5, 11, 12, 13, 14, 19, and 36. Units 11-14 abut each other in the southeast part of the property and harvesting them all at the same time (or in back to back entries) would not be consistent with other harvesting objectives. The schedule focuses on harvesting poorly stocked units early to an extent that is consistent with other harvesting objectives. These are all scheduled by 2029, with the exception of unit 36.

Guideline: Keep individual harvest unit size small.

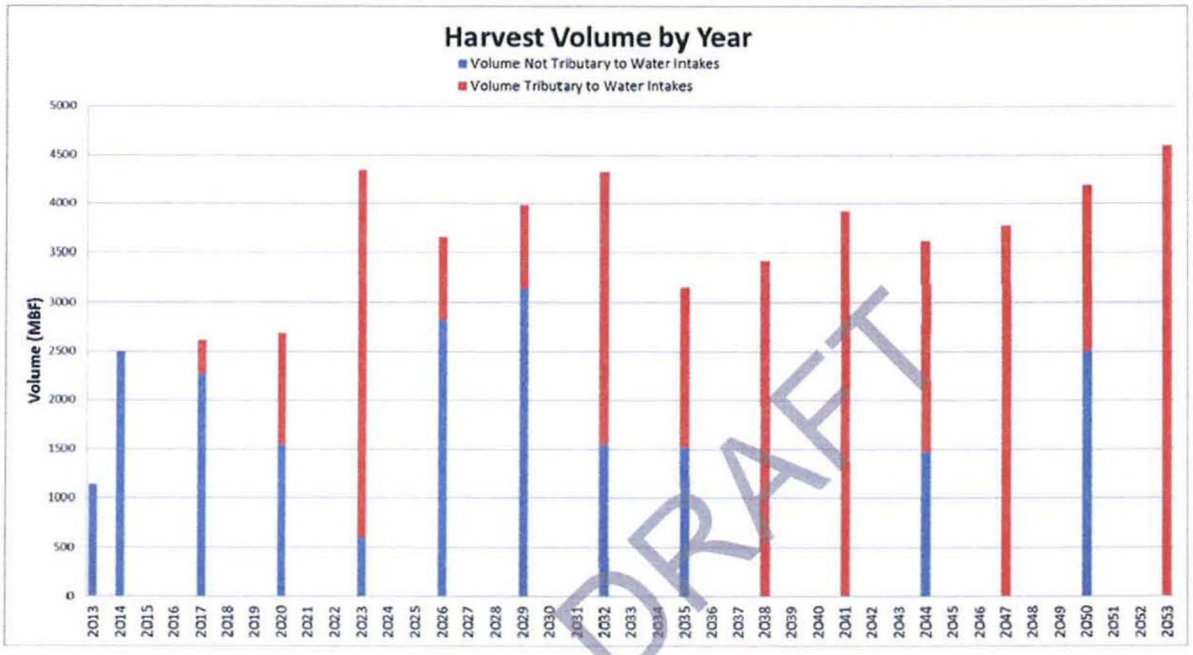
The average unit size is 29.3 acres, which is small in comparison to typical harvest unit sizes utilized by commercial timber companies and the maximum size allowed by Washington law (120-240 acres, depending on prescription). The largest is unit 13, which is 48.5 acres. This is a "rehab" unit that is not tributary to the water intake facilities and is scheduled for harvest in 2017.

Guideline: Distribute successive harvesting activities around the watershed to allow "greenup" of harvested areas to occur prior to harvesting adjacent areas.

The proposed harvest schedule spatially distributes successive harvesting activities around the watershed, over a period of 40 years, so that harvested areas are given a chance to "greenup" and regenerate before adjacent units are harvested. Detailed maps of harvest units by entry are included in Appendix E.

Guideline: To the extent possible, provide a consistent harvest volume.

In an effort to meet other objectives, the early harvest schedule focuses on poorly stocked ("rehab") units and units that are not tributary to the water intake facilities. After the fourth entry in 2020, the harvest volume is reasonably stable as indicated in the graph below.



Prescriptions

Thinning and clearcutting are the two prescriptions that are typically used to harvest timber in southwestern Washington.

Thinning - Thinning is a process in which a certain number of trees are removed from a stand to increase the growing space available to the residual stand of timber (the trees that are left to grow). By increasing the growing space available to the remaining trees, the growth rate (and value) of those trees is increased. Thinning can also be used to remove poorly formed, suppressed, and/or defective trees that would have little future value. Although thinning rarely removes large volumes of timber, financial returns can be expected in most cases when thinning merchantable timber. Additionally, depending on thinning intensity, replanting is usually not necessary.

Thinning generally comes with some additional costs and risks. Thinning operations typically necessitate additional roads; harvesting and road construction costs are higher and financial returns are lower; there is risk of damage to remaining trees during harvest and from windthrow[4] after harvest; and there is more effort involved with sale planning and administration.

[4] Windthrow refers to trees uprooted or broken by wind.

Thinning prescriptions are typically used in the middle of the growing cycle to remove suppressed and defective trees so that the healthy vigorous trees have additional room to grow prior to final harvest. The timber on the watershed property is fully mature and ready for final harvest; therefore, thinning prescriptions are not recommended for the initial harvest. However, thinning prescriptions will be a viable option for the next harvest cycle.

Clearcutting **-** Clearcutting is a harvest method in which most or all of the trees are removed from a stand of timber at one time. Clearcutting encourages the growth and proliferation of tree species that require full sunlight (such as Douglas-fir).

Cleaructting prescriptions typically require fewer roads; harvesting and road construction/ maintenance costs are lower and financial returns are higher; regeneration occurs much quicker; and there is less effort involved with sale planning and administration.

Clearcutting prescriptions are typically used for final harvest of a timber stand. The timber on the watershed property is fully mature and ready for final harvest; therefore, clearcut prescriptions are recommended. While there is much debate and controversy associated with clearcut harvesting, it is usually focused on erosion, unattractive visual effects, and other forest health and wildlife concerns associated with clearcutting vast sections of forestland. The DNR has regulations that limit the size of clearcut harvests and require a minimum number of trees to remain when a clearcut prescription is utilized. Additionally, the proposed harvest plan includes small harvest units that are distributed throughout the property and dispersed over a significant period of time. This facilitates the use of economical final clearcut harvesting prescriptions without significant risk of the typical negative impacts associated with large clearcut harvesting, and results in limited impact patch cuts that mimic natural disturbances. This provides diversity in forest characteristics which contributes to increased forest health and wildlife habitat.

Methods

Three common methods used to harvest timber include ground based harvesting, cable harvesting, and helicopter harvesting.

Ground Based Harvesting **-** Ground based harvesting methods utilize tractor equipment and are feasible in areas where slopes are less than or equal to 30%. The timber is either cut by hand or with a machine (usually with a machine) and then forwarded to centralized landing locations where it is processed by machine and loaded onto haul trucks. An alternative is to process trees where they were cut, leaving limbs and un-merchantable pieces in the field, and forwarding only the merchantable tree bole to landing locations.

There are two typical methods used for ground based harvesting. The first method utilizes rubber tired tractors with grapples or chokers that lift the lead end of logs and "skid" (drag) them to the landing. This method necessitates the use of skid trails within the harvest unit in order to transport logs from the stump to the landing.

The second method utilizes a tracked excavator type machine with grapples called a "shovel". The shovel picks up logs, swings them from one side of the machine to the other,

and sets them down. This swinging process is repeated all the way to the landing. Additional skid trails are usually not required as the tracked machine can traverse the harvest area without designated roads, and logs are swung to the landing.

Ground based methods are the most cost effective way to harvest timber and are recommended in areas where slopes allow. Rubber tired machines have less traction than tracked machines, which can increase soil disturbance and erosion. They also exert more ground pressure than tracked machines, which increases the potential for soil compaction. For these reasons, AKS recommends that only tracked machines be used for ground based harvesting operations. Additionally, the "skid" method necessitates the use of temporary skid roads, which can increase soil disturbance, erosion, and compaction. Therefore, utilizing the "shovel" method to swing logs to the landing is recommended. Any temporary roads used to facilitate ground based harvesting activities should be stabilized (exposed soils covered with straw, water barred, barricaded, etc.) following harvesting.

Cable Harvesting - Cable harvesting methods utilize a cable yarding system and are used in areas where steep slopes preclude the use of ground based methods. The timber is cut by hand and then transported to centralized landing locations via a cable yarding system where it is processed and loaded onto haul trucks. An alternative is to process trees by hand where they were cut, leaving limbs and un-merchantable pieces in the field, and forwarding only the merchantable tree bole to landing locations. Cable yarding systems consist of a tall tower (yarder) with a suspended cable system that lifts the lead edge of the logs and drags (yards) them to the landing.

Cable harvesting methods are more expensive than ground based methods, but they are the most economical way to harvest areas on steep slopes. Cable harvesting methods are recommended for areas that have slopes greater than 30%. Timber is partially suspended during yarding and ground based equipment is kept to centralized landing locations, both of which reduce soil disturbance, compaction, and erosion.

Helicopter Harvesting - Helicopter harvesting methods utilize a helicopter and are typically used in extremely remote areas where access for ground based or cable harvesting methods cannot be provided, or in highly sensitive areas to avoid ground disturbance. The timber is cut and processed in the field by hand, and then flown by helicopter to a centralized landing location.

Helicopter harvesting is by far the most expensive harvesting method, but if planned properly, can have the least impact. Helicopter harvesting requires extremely large landings for landing logs, log sorting, and helicopter fueling and maintenance. In addition, helicopter harvesting can be difficult to schedule, and may be disrupted due to weather. These factors limit the practical application of helicopter logging to timber sales in remote areas with extreme topography, sensitive areas, and valuable timber where an appropriate landing location can be found. All of the watershed property can be accessed by ground and cable harvesting methods and the harvesting plan include measures to protect sensitive areas; therefore, AKS does not recommend helicopter harvesting.

Slash Disposal - As discussed above, timber can be transported to landing locations for processing or it can be processed in the field. It is recommended that timber be processed in the field, regardless of the harvesting method used, so that limbs and other un-merchantable pieces (typically referred to as slash) remain scattered throughout the harvested area. This provides cover for exposed soils, which reduces the potential for erosion, and eliminates the need to clean up and dispose of large slash accumulations at landing locations. The slash also acts as a cushion for ground based equipment, which reduces the potential of soil compaction. Leaving slash in the field increases the effort (and therefore cost) required to plant new trees; however, this is partially offset by eliminating costs associated with slash disposal and is recommended for the watershed property to protect water quality and reduce the potential of soil compaction.

Marketing, Sale Options, and Contract Administration

The watershed property is located in a part of the Northwest where there are active markets for Douglas-fir, hemlock, and red alder (the primary species on the property). Local Douglas-fir markets include both domestic sawmills and log exporters. State law prohibits the export of unprocessed logs from publicly owned land, so logs from the watershed cannot be sold into the export market. However, the fact that the export market exists, and that a portion of the Douglas-fir harvested locally is sold into this market, tends to stimulate price competition from domestic processors in northwest Oregon and southwest Washington. The Douglas-fir in the watershed (approximately 93% of the total volume) includes logs that are of export quality. While the logs cannot be exported, this quality should be reflected in bid prices for watershed timber sales.

Red alder is the second most abundant species in the watershed, at approximately 5% of total volume. Red alder is sought after by hardwood sawmills and will also be a marketable part of any timber sale.

Within the context of competitive sales, there are three typical approaches used to sell timber. Each method is discussed below, in order from the least desirable to the recommended approach.

1. ***Lump Sum***: This method sells the standing timber for a lump sum payment. The risk involved with this method depends in large part on the accuracy of the volume estimate for the timber in the sale. In this regard, there are risks to both the seller and the buyer. Each party conducts its own volume estimate and appraisal. There is one buyer for the entire sale, who is responsible for hiring and paying the harvesting contractor and marketing and selling the logs. This method tends to discourage parties who are unwilling to take the risk associated with lump sum payment for an estimated amount of volume, or are unable to provide a large up-front payment.

2. ***Sorts:*** The term "sort" refers to the way logs are segregated during harvest and marketed to specific buyers. Within each species there may be a number of sorts, based on log length, diameter, taper, knot size, grain and other physical characteristics. With this method, sale contracts are executed between the seller and various mills interested in specific log sorts. Log buyers like this approach because they only purchase the log sorts they want. It can result in greater overall revenue for the seller if conducted properly, but

requires significantly more supervision and administration on the part of the seller to ensure that the right sorts are delivered to the right locations. The harvesting contractor is a key element in the success of this method. The seller contracts with one vendor (harvesting contractor) for harvesting, sorting, loading and hauling to the required destinations.

3. ***Stumpage***: With this method, the timber is sold to one buyer on a "per MBF" or "per Ton" basis. There is little risk to both the seller and buyer, as payment is based on scaled measurements taken at the mill at the time of delivery. There is one buyer for the entire sale, who is also responsible for hiring and paying the harvesting contractor. Contract administration is simplified, allowing the seller to focus more on adherence to forest practice rules and landowner specifications instead of the complicated marketing of log sorts.

It is recommended that the stumpage method be used for selling timber. This is the simplest approach with minimal risk to the seller. It is also recommended that timber sales be conducted by competitive bid, as this usually yields the best value to the owner.

Resource Protection

Water Quality, Streams, Wetlands, and Riparian Areas

Washington State Forest Practice Rules (Title 222 WAC) include requirements for protecting steams, wetlands, and riparian areas (among other things). Stream protection areas are referred to as Riparian Management Zones (RMZ) or "buffers." The RMZ's are broken up into zones, and in some cases, the Forest Practice Rules allow selective harvesting within some zones. However, in order to protect and maintain water quality, it is recommended (and this plan assumes) that no harvesting will occur in any zones. In addition to the RMZ requirements of the Forest Practice Rules, it is recommended that streams above the water intake facilities include a wider no harvest RMZ in order to protect and maintain water quality. The minimum RMZ widths for each stream classification required by the Forest Practice Rules, as well as additional RMZ widths recommended, are shown in Tables 3-2 and 3-3. It should be noted that trees within RMZ's may be cut down for the purposes of road construction or cable yarding corridors, but the Forest Practice Rules require that these trees be left in in the RMZ.

Table 3-2: Riparian Management Zones Type "S and "F" Waters

Site Class	Range of Site Index	DNR required RMZ width (in feet, on each side of stream)	Additional RMZ width for streams above the water intake facilities (in feet, on each side of the stream)	Total RMZ width for streams below water intake facilities (in feet, on each side of the stream)	Total RMZ width for streams above water intake facilities (in feet, on each side of the stream)
I	137 +	200	0	200	200
II	119 - 136	170	30	170	200
III	97 – 118	140	60	140	200
IV	76 - 96	110	90	110	200
V	75 and under	90	110	90	200

Table 3-3: Riparian Management Zones Type "Np" and "Ns" Waters				
Water Type	DNR Required RMZ width (in feet, on each side of stream)**	Additional RMZ width for streams above the water intake facilities (in feet, on each side of the stream)	Total RMZ width for streams below water intake facilities (in feet, on each side of the stream)	Total RMZ width for streams above water intake facilities (in feet, on each side of the stream)
Np	50	50	50	100
Ns	0	25	0	25

*** Type Np Waters require a 50-foot no harvest RMZ from their confluence with a Type S or F Water upstream for a distance that varies depending on the length of the Np Water. In order to protect and maintain water quality, it is recommended (and this plan assumes) that all Type Np Waters be protected with a 50-foot no harvest RMZ for their entire length.*

The Forest Practice Rules do not require protection areas for forested wetlands, but they require that harvest methods used within the forested wetland be limited to low impact systems. The on-site forested wetlands mapped by the DNR are located adjacent to streams and are likely within the required stream RMZ. The Forest Practice Rules require no harvest Wetland Management Zones (WMZ) for non-forested wetlands; however, there were no non-forested wetlands identified on site. Prior to conducting forest practice activities, any adjacent wetland areas should be identified and protection measures determined on a case-by-case basis.

In addition to the water resource protection requirements discussed above, there are also some small areas distributed throughout the watershed that are difficult to access and/or are small slivers between RMZ's. It is recommended that these areas be left as reserve areas to protect and maintain water quality. A detailed map showing the required RMZ's, additional proposed RMZ's, and proposed reserve areas is included in Appendix F. This map is provided as a reference to help identify stream protection requirements based on the stream classifications provided by the DNR. Additional field inspection will be necessary to more adequately identify and classify all waters and associated RMZ requirements prior to conducting forest practice activities.

Fish and Wildlife Habitat

The stream protection RMZ's and additional reserve areas discussed above provide adequate protection of fish habitat and wildlife habitat with riparian areas. In addition to RMZ requirements, the Forest Practice Rules require that the following type and number of trees be left per each acre harvested:

1) Three Wildlife Reserve Trees (WRT's or "Werts").
    a. Minimum height 10 feet.
    b. Minimum 12 inches diameter at 4.5 feet above ground.
    c. Can be alive or dead, defective or deformed trees.
    d. If there are no WRT's on site, you do not have to leave extra GRTs to make up for it.

2) Two Green Recruitment Trees (GRT's or "Gerts").
    a. Minimum height 30 feet.
    b. Length of live crown equal to 30% of total height.
    c. Minimum 10 inches diameter at 4.5 feet above ground.
    d. Over time, these trees are expected to become WRT's.
3) Two down logs, minimum 12 inches in diameter at small end, minimum 20 feet long.

Trees within RMZ areas that meet the minimum requirements for WRT's and/or GRT's may be counted towards the total requirements. However, there is a requirement that no point within the harvest unit be more than 800 feet from a WRT or a GRT; therefore, even if RMZ areas contain adequate numbers of leave trees, some additional trees may need to be left to meet the distance requirement. WRT's and GRT's may be left in clumps to facilitate safe and efficient harvesting operations, or they can be dispersed throughout the harvested area. The number and location of WRT's, GRT's, and down logs will need to be determined and identified for each unit prior to harvesting.

The leave tree requirements of the Forest Practice Rules provide for wildlife habitat protection. As previously discussed, the DNR is not aware of any significant wildlife habitat located on the property at this time; however, some large Douglas-fir trees were found in the very northern part of the property. The City may want to consider performing wildlife survey's for Spotted Owls prior to conducting forest practice activities in the vicinity of harvest units 15, 23, 24, and 38.

Road Plan

Guidelines

An adequate and efficient road system is necessary to access and remove timber, for on-going resource management (planting, vegetation management, etc.), and for asset protection (firefighting, security, etc.). The following guidelines were used in developing a road plan:

- *Locate roads away from streams, riparian areas, and wetlands.*
- *Avoid unnecessary stream crossings.*
- *Avoid steep slopes to the extent possible.*
- *Provide adequate and efficient access to harvest units.*

These guidelines were developed to meet the City's overall goals. Locating roads away from streams, riparian areas, and wetlands, as well as avoiding unnecessary stream crossings and steep slopes, helps to meet the City's overall goal of *protecting and maintaining water quality*. Providing adequate and efficient access to harvest units helps to meet the City's overall goals of *generating periodic income from the sale of wood products; providing a permanent access/road network within the property for operational, maintenance, and asset protection purposes; and maintaining and improving forest health.*

Locations

Field reconnaissance was performed to evaluate and determine suitable access to the property and road locations throughout the property. As previously discussed, the existing Boulder Creek and Jones Creek access roads only extend into the property far enough to provide access to the water intake facilities. These roads would need to be improved in

order to accommodate heavy truck traffic associated with forest practice activities (particularly harvesting and road construction), and extending them throughout the property would require many significant stream crossings and placement adjacent to streams, riparian areas, and across steep slopes. Additionally, portions of these roads are located close to their respective streams, which increases the potential of water quality degradation when used for heavy truck traffic. It is not in the City's interest to try and use these roads for hauling activities because of the significant upgrades required to prevent sedimentation of adjacent streams.

Due to the condition and location of the existing Boulder Creek and Jones Creek access roads, new access roads are recommended to facilitate forest practice activities throughout the watershed. New access locations (to each side of the property) have been identified over adjacent properties owned by Longview Timber and the DNR. Easements will need to be obtained for legal access, which is discussed later under the Access Easements section. The existing access locations will remain to provide access to the water intake facilities and maintenance of their associated underground water pipe systems (the proposed road network on the Jones Creek side could be connected to the existing Jones Creek Road if the City desires).

Two alternative road plans have been developed (Alternatives A and B). These alternatives are very similar (differing only in their proposed access to the northwest portion of the property) and utilize the proposed access points discussed above over adjacent Longview Timber and DNR managed property. Maps of each alternative are included in Appendix G.

Alternative A only requires the access easements discussed above and provides internal access from these locations to the northwest portion of the watershed. Alternative B requires additional easements over adjacent properties managed by the DNR for access to the northwest portion of the watershed. The pro's and con's between the two alternatives are:

- Alternative A requires fewer and shorter easements, has fewer access points to the property (which limits the potential for trespassing and associated issues), and provides internal access throughout the property; however, more road construction will be required to provide access to harvest units in the northwest portion of the property.

- Alternative B eliminates two stream crossings, and has the potential to provide more cost effective access to the northwest harvest units because an internal road network will not have to be completely constructed to access them; however, the additional easements necessary are quite significant. Permanent easements would be necessary to obtain permanent access, the cost of which may preclude this alternative. Temporary easements would be more cost effective, but would only provide access for a limited time period (such as during forest practice activities), making this portion of the site inaccessible to the City after the completion of forest practice activities.

Alternative A is recommended because it limits the number of access locations to the property and provides permanent internal access to more area within the property. This plan assumes that Alternative A is selected.

As shown on the road maps, roads have been located to avoid streams and riparian areas to the extent possible; avoid steep slopes to the extent possible; avoid stream crossings to the extent possible (when necessary, stream crossings have been located in areas requiring the least impact); and to provide adequate and efficient access to harvest units. This map is intended as a conceptual road plan only. Conceptual road locations shown have been field verified for general feasibility; however, actual road locations will need to be identified and designed prior to construction.

Design Standards and Specifications

The City's goal is to develop permanent all-weather access roads and on-site soils are considered fair to poor (due to erosion potential) for native surface roads; therefore, it is recommended that all internal roads be constructed with a crushed gravel all-weather surface. General Road Standards and Specifications for road construction on the watershed property are included in Appendix G.

Implementation Options

Road construction can be implemented two different ways, by either contracting for road construction and harvesting separately or combining the two activities into one contract. Both methods are typical. The main difference is that when the contracts are separated, the City will need to pay for road construction costs before receiving revenue generated from the harvest. If the activities are combined into one contract, then road construction costs are paid for by the timber purchaser and there is no upfront cost for road construction.

It is recommended that the City combine road building and harvesting activities for each harvest entry to avoid the upfront costs associated with road building and to simplify contracting and administration activities. Also, because the City draws water from Boulder Creek and Jones Creek during the winter months, and protecting and maintaining water quality is of the upmost importance, road construction should be limited to the dry season (typically May thru October).

Maintenance

All forest landowners have a legal obligation to maintain their forest roads to the extent necessary to prevent damage to public resources, per WAC 222-24-052. Road maintenance should be evaluated and adequately addressed at least annually, and as necessary prior to conducting forest practice activities, during active hauling, and after major storm events. Maintenance should occur during the dry season, if possible, to reduce the risk of erosion and sedimentation. Road maintenance activities typically include erosion control, grading, cleaning ditches, inspecting and cleaning culverts and stream crossing structures, and clearing roadside vegetation. Best Management Practices (BMP's) for road maintenance can be found in Section 3 of the Washington State Forest Practices Board Manual.

Any temporary roads constructed for the purposes of facilitating harvesting activities should be properly abandoned. At a minimum, this should include covering exposed soils with straw or slash, seeding, and installing water bars as necessary to control water runoff and reduce erosion and sedimentation.

Access Easements

As previously discussed, the existing Boulder Creek and Jones Creek roads will remain to provide access to the water intake facilities. However, these roads should not be used for forest practice activities. That function will be fulfilled by new road systems that enter the property at different locations and provide access throughout the property as proposed in this road plan (Alternative A).

Access to the west of Boulder Creek - The road system planned for this area necessitates permanent access across Longview Timber property near the southwest corner of the watershed, as shown on the Road Plan Map – Alternative A (Appendix G). This access location utilizes approximately 2,300 feet of existing road on Longview Timber property, with an additional 500 feet of new road construction required to reach the watershed property. Payment for this easement will need to be negotiated with Longview Timber.

Access between Boulder Creek and Jones Creek - The road system planned for this area necessitates permanent access across Longview Timber property between Boulder Creek and Jones Creek, as shown on the Road Plan Map – Alternative A (Appendix G). This access location utilizes approximately 3,500 feet of existing road on Longview Timber property, with an additional 1,000 feet of new road construction required to reach the watershed property. Payment for this easement will need to be negotiated with Longview Timber.

Access to the east of Jones Creek - The road system planned for this area necessitates access across land owned by the State of Washington and managed by the DNR, as shown on the Road Plan Map – Alternative A (Appendix G). This access location requires approximately 2,500 feet of new road construction across DNR managed property to reach the watershed. Obtaining temporary access permission (when needed to conduct forest practice activities) is recommended, as this road system only provides access to a small amount of the watershed property and obtaining permanent access permission from the DNR will likely be difficult and expensive. The DNR typically grants temporary access for a period of three years, with the possibility of negotiating an extension. This provides adequate time to conduct forest practice activities for each entry period.

Longview Timber and the DNR have their own processes for granting access. The DNR's is more formal, starting with an application on forms they provide. These forms are included in Appendix G. Following application for either a permanent easement or a temporary right-of-way, the DNR examines the proposed route, appraises any timber or pre-merchantable trees that need to be removed, and assesses the application in terms of environmental impacts. The DNR executes the grant using their own granting documents. Regardless if temporary or permanent access is sought, the access application will need to include a forest practices application for new road construction.

Longview Timber's process is similar but less formal, and a forest practice application will still be required for new road construction. Typically, the party requesting the easement completes the forest practices application and Longview Timber simply signs it as the landowner.

The typical approach used for pricing a permanent easement over an existing road is to start by estimating the "tributary" acres for each owner. In this context, "tributary" means the number of acres that are accessed by the road in question. These acreages are then converted to percentages and viewed as representing a share of ownership in the road. The next step is estimating the cost of building the road, in current dollars, to standards that are appropriate for the expected use. The total estimated cost of the road is then split proportionally based on the "ownership" percentages discussed above. The cost for the permanent easement is then determined as the benefiting parties portion of the total road cost. Additional costs are factored in if new construction is involved. These costs account for the land that is taken out of production and the value of any trees (either pre-merchantable or merchantable) that are within the proposed right-of-way width.

A temporary easement is appraised the same way with respect to any land taken out of production and/or trees that need to be removed. However, the granting party usually does not assess a price based on tributary acres. Instead, the price paid is intended to offset the "wear and tear" expected from the planned use of the road. The applicant usually estimates the amount of material that will be hauled over the road (timber, rock, etc.). The amount of material, expressed in MBF or tons, is then applied to a "per mile" rate that the granting organization uses to calculate the cost to the grantee. In some cases a base fee may be added to cover the administrative costs associated with processing the application. Most organizations use their own standard documents for temporary access permission.

Reforestation

Proper reforestation is a critical component of developing a well-stocked and healthy forest. It is also required by the Forest Practices Rules. The three main components of reforestation include site preparation, planting, and vegetation management, which are discussed separately below.

Site Preparation

Proper site preparation is necessary to prepare the harvested area for planting. This typically includes collecting and disposing of slash (limbs and un-merchantable pieces) left over from harvesting activities and a broadcast application of herbicide to eliminate competing vegetation. However, this is not consistent with the City's goal of protecting and maintaining water quality. As previously recommended, timber should be processed in the field so that slash remains scattered throughout the harvested area to provide cover for exposed soils. This reduces the potential for erosion and also reduces soil compaction by providing a cushion for harvesting equipment. Additionally, a broadcast application of herbicide is not recommended within the watershed for water quality purposes. Because typical site preparation activities are not consistent with the City's goals, additional measures will need to be taken during the planting phase to ensure the successful establishment of seedlings.

Planting

The Forest Practice Rules require that areas be replanted with commercial species following harvest. The most common native commercial species are Douglas-fir, western hemlock, red cedar, and red alder. Douglas-fir is by far the most prevalent species on site and

performs very well throughout the region. It is recommended that the City replant Douglas -fir and, where appropriate (i.e. areas infected with laminated root rot, which is discussed under Forest Health), plant red alder and western red cedar.

The state mandates at least 190 trees per acre, surviving, after the end of the first growing season (i.e. in the fall after having been planted the previous winter); however, it is recommended that the City plant at least 300 trees per acre, and consider planting up to 430, because the marginal increase in the per acre planting cost is more than offset by the increase in future harvest volume, as shown in Table 3-4.

Table 3-4: Approximate Future Yields of Planted Douglas-fir

	190 Trees Per Acre	300 Trees Per Acre	430 Trees Per Acre
Approximate Yield at age 60 (MBF per acre)	25	39	47
Difference in Yield (MBF per acre)		14	8
Approximate Planting Cost (per acre)	$130 – 150	$195 – 215	$260 - 280

Aggressive site preparation and vegetation control is not consistent with City goals; therefore, it is recommend that planting specifications include "scalping," that is, clearing a small area of slash and vegetation around each tree planting location (approximately 2 feet in diameter), where needed, before planting the seedling. It is also recommended that some type of marker (wire flags, flagging, etc.) be used to identify planted seedlings so they can be located in the future during vegetation management activities. Care should be taken when selecting nursery stock for replanting. Large, healthy, vigorous seedlings with good root mass have better survival rates, grow faster, and are better able to compete with fast-growing shrubs. It is also important to select seedlings that are grown in a geographical area and environment that is similar to the planting site. Fertilizers should be avoided due to water quality concerns.

Planting activity should be monitored for quality control. Assigning an inspector to conduct random audits helps to ensure that the seedlings are properly planted and spaced, and that competing vegetation and slash is scalped per the planting specifications.

A survival survey should be conducted following the first summer after planting. This survey should evaluate the extent of mortality, determine the causes of mortality, and evaluate damage by wildlife. Knowledge gained from these surveys will guide future reforestation activities.

Seedlings are available from private commercial nurseries and from the nursery operated by the State of Washington. Seedlings should be ordered 8–12 months prior to the anticipated planting date. Orders should be placed in the late winter or early spring of the preceding year so that they are ready for the January to March planting period.

Vegetation Management

Managing competing vegetation is a critical component to successful reforestation, particularly in the first few years of growth, and is often necessary to ensure continued survival and growth of seedlings. If not properly controlled, competing vegetation can quickly overtop seedlings. This results in stunted and suppressed growth and often leads to high seedling mortality.

Vegetation management typically consists of broadcast application of herbicide one to two years after planting occurs. This is not consistent with City goals and, therefore, not recommended for the watershed property; however, the direct application of herbicide by hand (backpack sprayer) on competing vegetation immediately adjacent to seedlings should not have an effect on water quality and is a viable treatment method. Broadcast applications have the potential to treat or contaminate unintended or sensitive areas via spray drift, whereas hand applications give the operator complete control over the treatment area.

If vegetation control is determined to be necessary, herbicides should be applied during dry weather in the spring one year after planting. The application of herbicides in aquatic or riparian areas is not recommended, but using herbicides approved for use in those areas further reduces any potential effect on water quality. An alternative to herbicide application is to re-scalp competing vegetation around seedlings. Competing vegetation should be monitored and controlled as necessary until seedlings are "free to grow", meaning they have reached a height in which competing vegetation is no longer a concern (typically 4-5 years if competing vegetation is controlled during that time period). Additional hand slashing of some vegetative species (such as vine maple) may be necessary in later years.

Invasive species can also have a detrimental effect on reforestation. If invasive species are identified, they should be controlled by hand application of herbicide, hand cutting, or a combination of the two. Additionally, equipment used for forest practice activities should be cleaned prior to entering the property to reduce the potential for introduction of invasive species within the watershed.

Forest Health

A majority of the forest within the watershed is healthy and in good condition. However, there are some areas that are poorly stocked or stocked with trees of low quality and low value (rehabilitation or "rehab" areas). Evidence of laminated root rot was also observed in some areas.

Rehabilitation

Rehabilitation includes removing trees and competing vegetation from areas that are poorly stocked, or stocked with trees of low quality and low value, so that a well stocked stand of high quality and high value trees can be established. As previously discussed, management of competing vegetation is critical to the successful establishment of seedlings. Poorly stocked areas usually have a significant amount of understory vegetation compared to well stocked areas, and additional measures are often necessary to control competing vegetation

prior to reforestation. Some vegetation is eliminated during the tree harvesting process (by falling timber, harvesting equipment, yarding corridors, etc.), and the rest is typically removed by mechanical piling and burning, broadcast burning, broadcast application of herbicide, or by hand methods (such as hand cutting and/or hand application of herbicide). Mechanical piling, burning, and broad cast application of herbicide is not consistent with the City's goal of protecting and maintaining water quality; therefore, hand cutting and/or hand application of herbicide is recommended to control competing vegetation in these areas.

Harvesting, rehabilitating, and planting poorly stocked areas is more expensive than harvesting and planting a well stocked area, due to the low volume and value of merchantable timber and additional costs associated with managing competing vegetation. However, these areas are currently producing a fraction of the timber volume that they are capable of, and rehabilitating them not only increases future value but also contributes to increased forest health. In accordance with City goals, the harvesting plan focuses early harvesting activities on these areas, which provides the quickest opportunity for rehabilitating degraded portions of the forest and improving overall forest health.

Laminated Root Rot

Laminated root rot is a disease caused by the fungus *Phellinus weirii,* which penetrates the host through injured bark and grows inside the wood causing decay and death of living cells. The disease is widespread throughout the Pacific Northwest and primarily attacks fir and hemlock species, with cedars being more resistant, and hardwoods (such as red alder and bitter cherry) being immune. The fungus can survive for decades in old stumps and roots, with new hosts being infected when their roots contact infected material. Tree to tree spread occurs across root grafts and contact and infected areas are generally small (less than 2 acres) and scattered.

Affected trees show marked reduction in height and diameter growth. The crown thins and yellows, and may produce a distress crop of cones. Trees will not typically show crown symptoms until half to 75% of the roots are infected. Trees are commonly windthrown after the disease rots off roots just below the root collar, forming a "root ball." As decay progresses, the wood softens. The earlywood disintegrates more quickly than the latewood in each annual ring, resulting in a laminated ring rot where the annual rings of the wood separate.

Planting species which are immune and resistant will cause the pathogen to die off. Prior to harvesting, the unit should be evaluated to identify infected areas. Infected areas should be marked and mapped so they can be identified following harvesting and during the planting phase. The planting prescription of infected areas should include red alder (immune) or a mix of red alder and western red cedar (resistant), which will also contribute to species diversity in replanted areas of the watershed.

Asset Protection

Access Restrictions

There is no current public access allowed on the property. Public access should continue to be restricted to reduce associated impacts such as vandalism, dumping, fire ignition, and erosion and sedimentation due to off highway vehicle (OHV) use. The existing gates at the current Boulder Creek Road and Jones Creek Road access locations should remain and new gates should be installed at new permanent access locations. When temporary access locations are utilized, they should include temporary gates or barricades when in use and be permanently blocked following use. It is recommended that any public access be by permit only, so that the City can fully evaluate proposed activities and timelines prior to granting access permission.

Signage and Monitoring

No trespassing signage currently exists at the locked gates on Boulder Creek Road and Jones Creek Road. This signage should remain, and no trespassing signage should be installed at new permanent and temporary access locations. Contact information should be provided for violation reports.

As previously discussed, rural residential properties abut the southwest corner of the site and property managed by the DNR and used for OHV recreation abuts the southeast corner of the site. Some evidence of trespassing was observed on the watershed property near these areas, including found irrigation pipes and actively used OHV trails in the southwest corner of the property and old OHV parts found in the southeast corner of the property. Periodic patrol of the property is recommended to ensure compliance and provide enforcement of access policies.

If the recommended gates, signage, and monitoring are found to be inadequate in controlling trespassing, additional considerations including posting and fencing the outer boundaries of the watershed property should be considered.

Hazardous Materials

The maintenance of an ecosystem that produces a consistent supply of high quality water is critical to the well-being of the community of Camas and is the City's most important goal in the development of this plan. Any use of hazardous materials on the watershed property should be carefully evaluated and monitored. Contracts for forest practice activities should include a thorough, complete, and detailed spill prevention and response plan to protect water quality, forest health, and wildlife. Equipment fueling and maintenance areas should be located away from streams and other sensitive areas. Leaking or derelict equipment should not be allowed, and the undercarriage and exposed areas of equipment should be cleaned of hazardous materials prior to entering the property.

Fire

Despite the "wet" reputation of the Pacific Northwest, fire has figured prominently in the natural and economic history of the region. Several wildfires occurred in southwest

Washington in the first half of the 1900's. The most significant of these was the Yacolt Burn of 1902. This was the most significant fire in state history, which killed 38 people and destroyed approximately 240,000 acres of forestland. The loss of the timber alone was assessed at a 1902 value of $30 million. According to the DNR's evaluation of the 2008 fire season (most recent available information), approximately 400 wildfires occurred in the state, 71 of which were in the Pacific Cascade Region that the watershed property is located in. All of the fires in the region were contained to 100 acres or less, with the majority being contained in 10 acres or less. While most of these fires were contained to small areas, this illustrates the potential for wildfire in the area.

Fire season in Washington (as regulated by the DNR) starts April 15th and runs through October 15th, unless conditions warrant an extension. By law, the DNR uses two closure systems for reducing the risk of wildfires; one for the general public and one for forest practice activities. Public use restrictions include specific fire season rules, burn bans, closed entry areas, and complete forestland closure when necessary.

The DNR, US Forest Service, Bureau of Land Management, and Bureau of Indian Affairs all use the same four-level industrial regulation system. This system, which helps prevent wildfires by regulating forest work activities, is known as the Industrial Fire Precaution Level (IFPL) system (Table 3-5). The DNR adjusts the Precaution Level as necessary based on weather conditions.

Table 3-5: Industrial Fire Precaution Level Restrictions

Precaution Level	Designation	Restrictions
I	Closed Season	Fire fighting equipment and tools required on site. Fire watch required.
II	Partial Hoot Owl	Some activities limited to the hours between 8 pm and 1 pm when humidity is higher.
III	Partial Shutdown	Most cable harvesting and power saw use prohibited, with some exceptions from 8 pm to 1 pm
IV	General Shutdown	All operations prohibited.

Several key steps can be taken to reduce the risk of fire on the watershed property. One of the most important aspects is initial response. Being able to identify fire early and having the necessary tools to provide an initial response greatly increases the opportunity to contain a fire before it gets out of control. It is recommended that increased patrols be provided during high fire danger periods. It is also recommended, and required by law during some precaution levels, that adequate and properly functioning fire equipment and a fire watchman be located on site during forest practice activities. Forest practice activities should not be conducted in periods of extreme fire danger, even if allowed by law. These recommendations, along with the proposed access restrictions, will reduce the potential for fire ignition. Additionally, the proposed road plan provides access throughout the watershed which will significantly aid firefighting activities should a wildfire occur.

Regulatory Compliance

Most of the activities associated with road construction and harvesting are regulated by the state under the Forest Practices Act and require permits issued by the DNR. The DNR is the lead agency that administers the Forest Practice Rules on private and publicly owned forestlands in the state. "Forest practices" are defined as: any activity conducted on or directly pertaining to forest land and relating to growing, harvesting, or processing timber or forest biomass, including but not limited to: road and trail construction; harvesting, pre-commercial thinning; reforestation; fertilization; prevention and suppression of diseases and insects; salvage of trees; and vegetation control.

The types of permits issued by the DNR for various forest practice activities are shown in Table 3-6. Almost all of the harvesting and road construction activities proposed for the watershed property will require a Class III permit. Tree planting and vegetation control will require a Class I permit.

Table 3-6: Types of Permits for Forest Practices

Permit Class	Forest Practice Activity Description	Fee	Forest Practice Activity Examples
I	Minimal or specific forest practices that have no direct potential for damaging a public resource	$ 0 or, $50 if harvest is involved	Tree planting. Hand slashing of competing vegetation.
II	Forest practices which have a less than ordinary potential for damaging a public resource. Written notification required by operator/landowner. Notification must conform to DNR specifications. Activities can begin within 5 days of notification.	$ 0 or, $50 if harvest is involved.	Harvest of less than 40 acres, located more than 200 feet from any water.
III	Forest practices other than those contained in Class I, II, or IV.	$ 50	Harvesting, road building, stream crossings.
IV	Forest practices on land that is going to be converted from timber production so another land use, or, forest practices on timber land inside an urban growth boundary.	$500, but could be reduced to $50 in some cases	Harvest, conversion to a use not compatible with long term timber production.

Completed permit applications must be submitted to the DNR regional office in Castle Rock for review and approval. The department reviews the application for completeness and may request additional information. Once the application is deemed complete, the department has 30 calendar days to issue a decision. Some applications may require review and comment by an interdisciplinary team (ID team). If, during their review, the DNR determines that this is necessary, they will assemble the experts needed (an example might be harvesting or road construction where slope stability is of concern). When an ID team is convened, the approval time is extended to a minimum of 45 days. Permit application instructions and forms are included in Appendix 8.

When submitting a forest practice permit application for the first unit harvested within the watershed, a Road Maintenance and Abandonment Plan (RMAP) checklist will need to accompany the permit application. The completed checklist provides the DNR with

information regarding existing roads on the property and ensures that the landowner is aware of their legal obligations regarding road maintenance. A copy of this checklist is included in Appendix H.

In addition to a forest practice permit, stream crossings require a hydraulics permit issued by the Washington Department of Fish and Wildlife (WDFW). However, no separate application to the WDFW is needed because the forest practice application to the DNR contains all of the information the WDFW needs for review and issuance of the hydraulics permit.

The Washington State Environmental Policy Act (SEPA) is a state policy that requires state and local agencies to consider the likely environmental consequences of a proposal prior to approving or denying the proposal. However, class I, II, and III forest practices activities (those activities the City would be conducting) are specifically exempt from SEPA under RCW 43.21C.037. Road Maintenance and Abandonment Plans are also exempt per RCW 43.21C.260.

4. 2013 Harvest Plan

In addition to an overall forest management plan, this 2013 harvest plan has been included to provide additional direction and detail regarding specific activities necessary to facilitate forest practice activities conducted in 2013 (entry 1). It should be noted that it typically takes approximately three months to perform field work, appraise the timber, prepare contract documents, and obtain permits prior to conducting forest practice activities. Additional time may be necessary to obtain legal access rights.

Harvest Units

There is one harvest unit proposed for 2013. This is Unit 1, which is approximately 34 acres and contains approximately 1,100 MBF (1.1 million board feet). It is located west of Boulder Creek, adjacent to both the south and west property lines, and is below the Boulder Creek water intake facility. A 2013 Harvest Map is included in Appendix E.

Most of the unit has moderate slopes that will facilitate the use of ground based harvesting methods, with the exception of some steeper areas near the east end that may need to be harvested with a cable system.

Road Construction

Road access to this unit is provided via the proposed permanent access location on the west side of Boulder Creek. This access route includes the use of approximately 2,300 feet of existing forest road on Longview Timber property (some of which may need additional maintenance or slight reconstruction), approximately 500 feet of new road construction across Longview Timber property to the unit, and approximately 500 feet of new permanent road construction within the unit. Because this road is proposed for further extension to provide additional access within the watershed, the actual location of the proposed road will need to be identified in the field and designed to facilitate future extension. Additional temporary roads will also need to be identified and located to conduct harvesting operations.

Access Easements

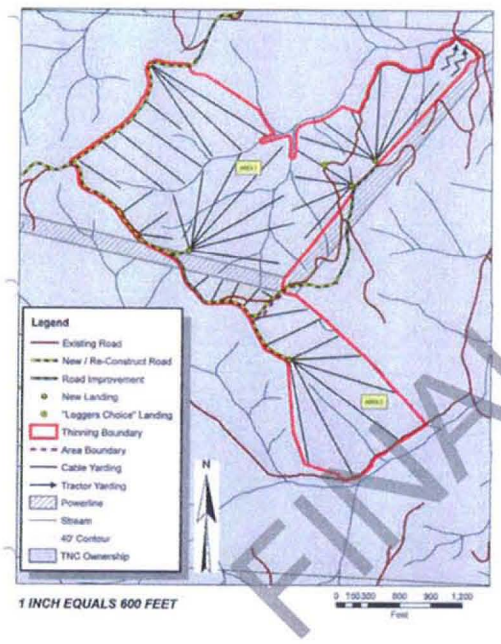
Legal access will need to be obtained from Longview Timber to gain access to Unit 1. A temporary easement could be pursued to conduct Unit 1 forest practice activities only. However, this access is proposed for future extension within the watershed to provide permanent access to watershed property west of Boulder Creek; therefore, obtaining permanent access rights is recommended. Payment for this easement will need to be negotiated with Longview Timber.

Sale Activities, Processes, and Administration

There are many steps necessary to facilitate a successful harvesting plan. These steps are broken down into Pre-Sale, Sale, and Post-Sale activities, as described below:

Pre-Sale

Pre-sale activities, processes, and administration should include:



1. Order seedlings for reforestation.
2. Perform a field investigation to determine road and landing locations.
3. Obtain legal access over Longview Timber property.
4. Survey, design and layout roads and landings.
5. Perform a field investigation of the unit to identify streams, stream types, other water bodies, evidence of root rot, and physical characteristics.
6. Survey property lines, if necessary, to identify property line locations.
7. Mark harvest area boundaries, including property lines and stream RMZ's.
8. Survey harvest area boundary to determine actual harvest area.
9. Determine amount of Wildlife Reserve Trees (WRT's) and Green Retention Trees (GRT's) required to remain based on harvest area.
10. Determine appropriate location(s) to retain WRT's and GRT's and mark WRT's and GRT's in the field.
11. Perform a timber cruise of the harvest area to estimate harvest volume, species, and quality.
12. Appraise the timber value, estimate road building and harvesting costs, and determine stumpage value.
13. Prepare permit applications (including RMAP checklist) and obtain permits for road construction and harvesting activities.
14. Develop a timber sale and road construction contract (one contract for both activities).
15. Assemble bid prospectus.
16. Advertise sale and solicit bids.
17. Evaluate bids and award contract.

Sale

Sale activities, process, and administration should include:

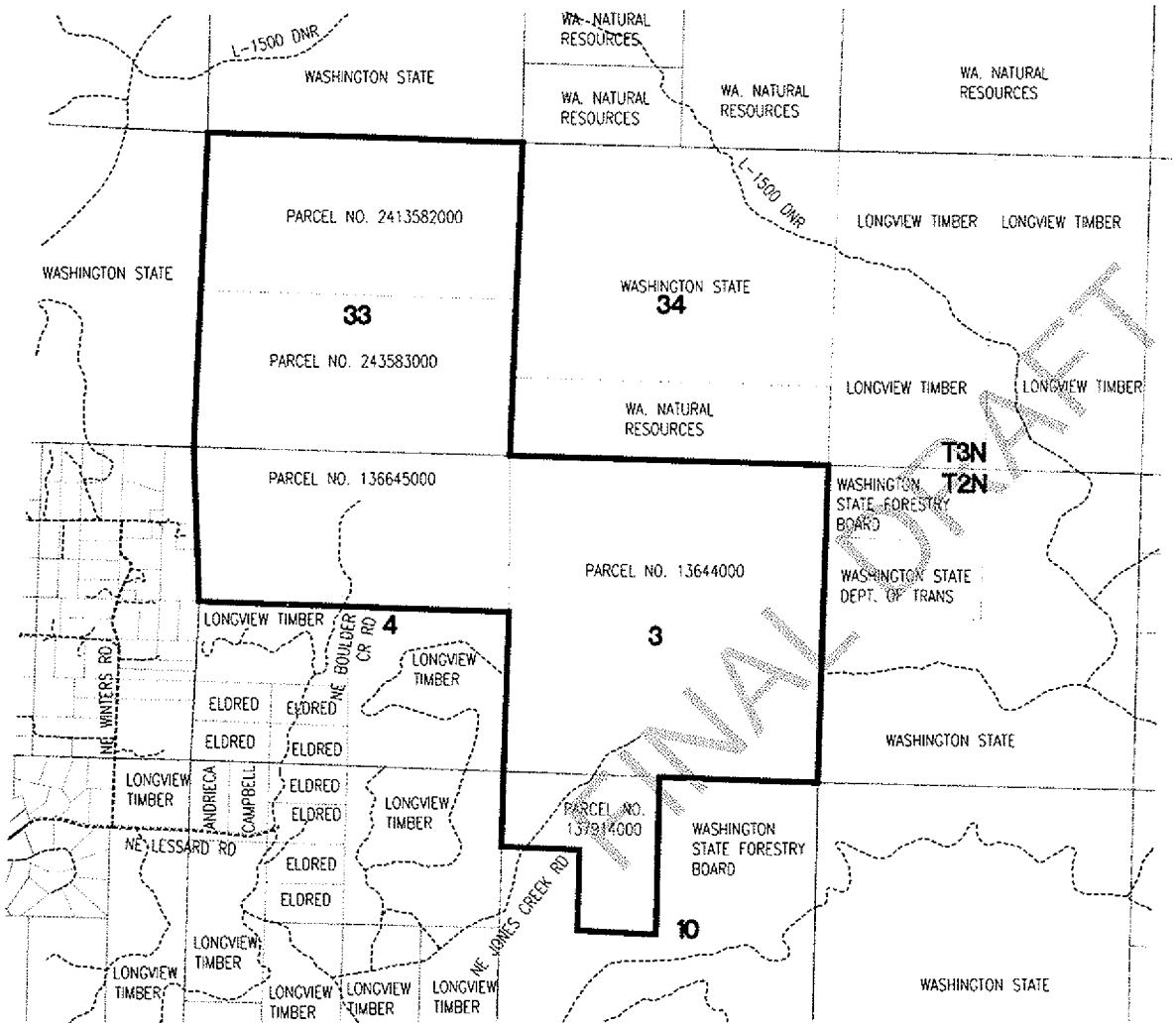
1. Conduct a pre-work meeting to ensure that all parties understand the requirements of the work.
2. Monitor road construction activities to ensure compliance with the contract documents.
3. Monitor harvesting activities to ensure compliance with the contract documents.
4. Monitor haul roads and perform maintenance as necessary.
5. Perform clean-up activities:
    a. Clean up slash and other debris on landings.
    b. Stabilize exposed soils by seeding and covering with straw.
    c. Properly abandon temporary roads used to facilitate harvesting.
    d. Perform haul road maintenance as necessary (clean ditches and culverts, grade and patch road, etc.)
6. Sign off with Purchaser that all obligations have been met.
7. Release any deposits or retainers.

Post-Sale

Post-sale activities, processes, and administration should include:

1. Prepare, solicit, and award planting contract.
2. Plant seedlings during winter or early spring following harvest.
3. Monitor planting activities to ensure compliance with the contract documents.
4. After the first growing season, conduct a seedling survival survey and report replanting information to the DNR.
5. Evaluate seedlings for wildlife damage.
6. Monitor site for competing vegetation and perform vegetation management activities as necessary.

Appendix A
General Property Maps



LEGEND

SITE BOUNDARY

PROPERTY LINES

EXISTING ROAD

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

GENERAL PROPERTY MAP

ENGINEERING · PLANNING · SURVEYING · FORESTRY

13010 SW CALDBEAN DR., SUITE 100
SHERWOOD, OR 97140
PHONE: (503) 925-8799
FAX: (503) 925-8969

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SALEM, OREGON
VANCOUVER, WASHINGTON
www.aks-eng.com

DESIGNED BY: AHH
DRAWN BY: MAL
CHECKED BY: AHH
DRAWING NO.: A-1
SCALE: AS NOTED
DATE:

CITY OF CAMAS
616 NE 4TH AVENUE
CAMAS, WA 98607

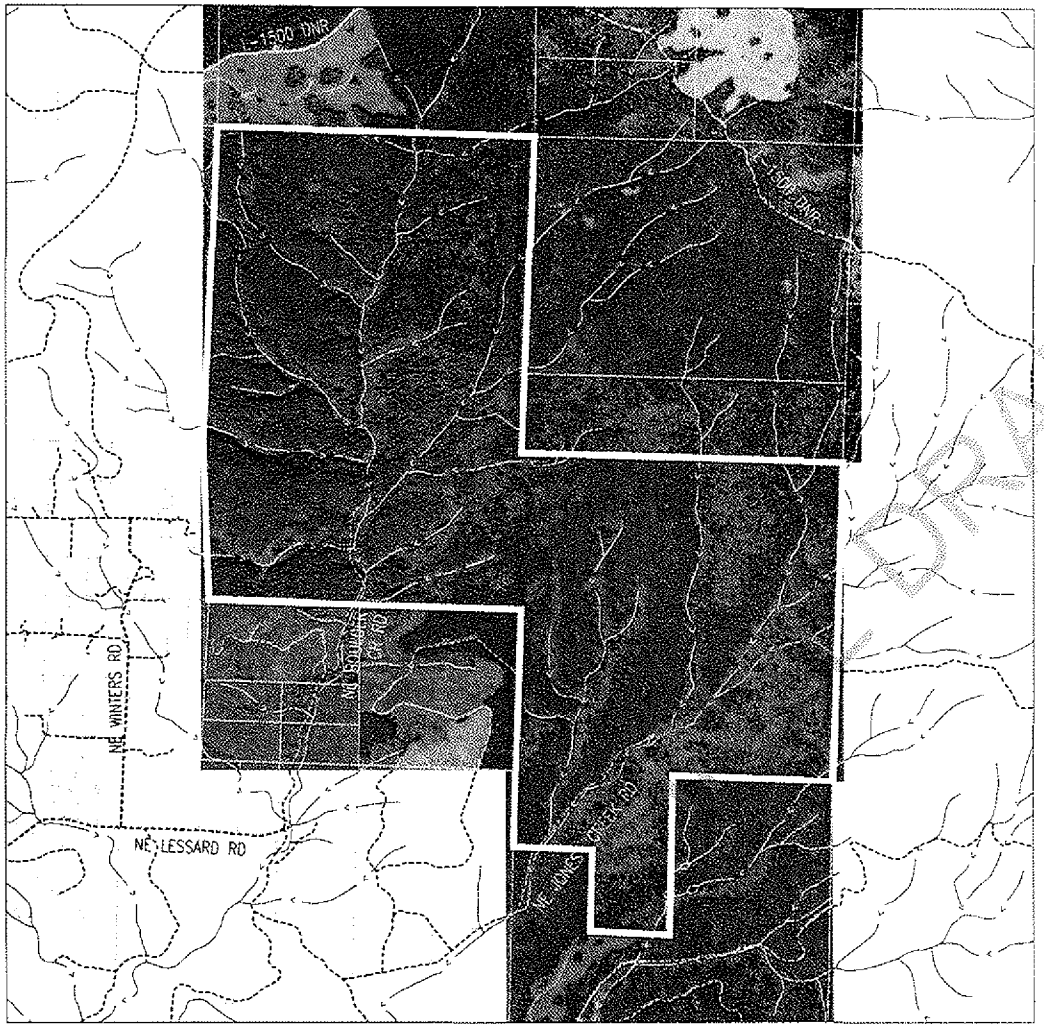
CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

CAMAS WASHINGTON

CLARK COUNTY TAX MAP 5 NE SECTION 33, 2 NE SECTIONS 3 & AND 10

JOB NUMBER 2800

SHEET A-1



LEGEND

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

PROPERTY MAP WITH AERIAL PHOTO

ENGINEERING · PLANNING · SURVEYING · FORESTRY
LICENSED IN OR, WA & AK
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DESIGNED BY	AHH	DRAWING NO	A-2
DRAWN BY	KAL	SCALE	AS NOTED
CHECKED BY	AHH		

CITY OF CAMAS
616 NE 4TH AVENUE
CAMAS, WA 98607

CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

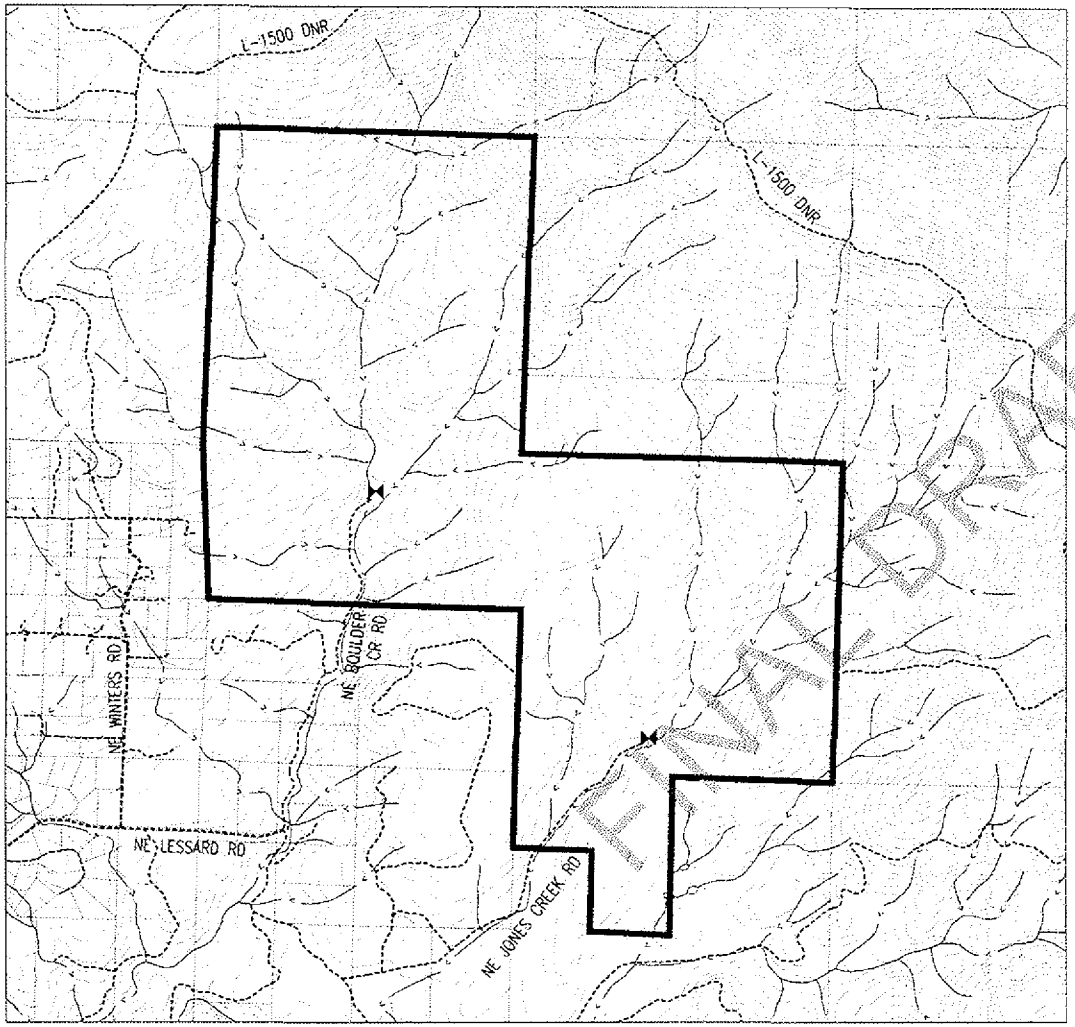
CAMAS WASHINGTON

CLARK COUNTY TAX MAP 3 4E SECTION 33, 2 4E SECTIONS 3 4 AND 10

DATE:

JOB NUMBER 2800

SHEET A-2



LEGEND

- SITE BOUNDARY
- PROPERTY LINES
- EXISTING ROAD
- STREAMS
- 40' CONTOUR
- WATER INTAKE FACILITY

SCALE 1" = 2000 FEET

2000 0 800 1200 1800 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

GENERAL TOPOGRAPHY MAP

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SHERWOOD, OR 97140
PHONE: (503) 925-8799
FAX: (503) 925-8969
AKS ENGINEERING & FORESTRY
Offices Located in
SHERWOOD, OREGON
SALEM, OREGON
VANCOUVER, WASHINGTON
www.aks-eng.com

DESIGNED BY: AAH | DRAWING NO: A-3
DRAWN BY: KAL | SCALE: AS NOTED
CHECKED BY: AAH

CITY OF CAMAS
616 NE 4TH AVENUE
CAMAS, WA 98607

CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

CAMAS WASHINGTON

CLARK COUNTY TAX MAP 5 4E SECTION 33, 5 4E SECTIONS 3 4 AND 10

DATE:

JOB NUMBER 2800

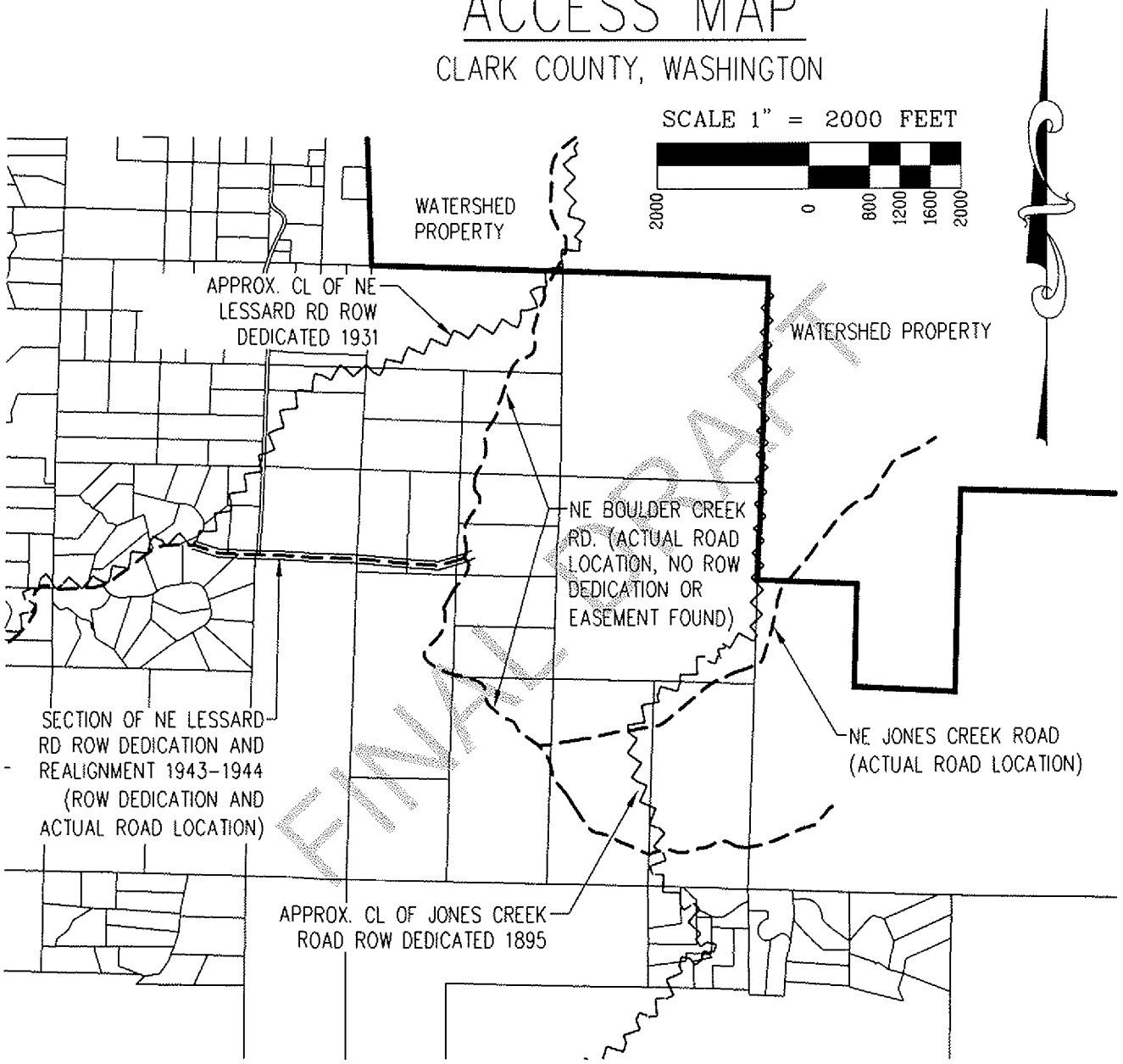
SHEET A-3

Appendix B

NE Boulder Creek Road and NE Jones Creek Road Right-of-way Map

CITY OF CAMAS BOULDER CREEK AND JONES CREEK WATERSHED ACCESS MAP

CLARK COUNTY, WASHINGTON



JOB NAME: CAMAS	
JOB NUMBER: 2800	
DRAWN BY: JOH	
CHECKED BY: BRB	
DWG NO.: 041712ROAD	

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APPENDIX C

TIMBER VOLUME AND VALUATION REPORT

TIMBER VALUATION REPORT
CITY OF CAMAS BOULDER CREEK AND JONES CREEK WATERSHED PROPERTY

An Income Approach Valuation of the City of Camas Boulder Creek and Jones Creek Watershed Property (1,694.4+/- acres), being located in Section 33, T3N, R4E; Section 3, T2N, R4E; the NE ¼ of Section 4, T2N, R4E; a portion of the NW ¼ of Section 4, T2N, R4E; and a portion of the NW ¼ of Section 10, T2N, R4E; W.M., Clark County, Washington, Owned by the City of Camas

Prepared for:
CH2M Hill

Valuation Date: July 15, 2011
(Revised April 24, 2012)

Prepared by:

AKS ENGINEERING & FORESTRY

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AKS ENGINEERING & FORESTRY, LLC
ENGINEERING / SURVEYING / PLANNING / FORESTRY
LANDSCAPE ARCHITECTURE / ARBORICULTURE

Date: July 15, 2011 (Revised April 24, 2012)

To: Lee Odell, PE
CH2M Hill
2020 SW 4th Avenue
Portland, OR 97201-4958
E-Mail: lee.odell@ch2m.com

From: *Keith Jehnke*

Re: Volume and Value Calculations for the City of Camas Boulder Creek and Jones Creek Watershed Tracts

Dear Mr. Odell:
Pursuant to your recent request, I am submitting the attached report of my opinion of the market value of the standing timber for the Boulder Creek and Jones Creek watershed parcels owned by the City of Camas.

After consideration of all of the factors which influence market values, my opinion of the income approach market value of the subject timber, as of July 15, 2011, is as follows:

$8,915,000

Your attention is directed to the attached Appraisal, Timber Cruise and Volume Calculations report, and Appraisal spreadsheet. Please call if you have any question.

Very Truly Yours,
AKS Engineering & Forestry, LLC.

ASCA AMERICAN SOCIETY of CONSULTING ARBORISTS

CERTIFIED ISA ARBORIST
KEITH JEHNKE
CERTIFICATE NUMBER PN-1905
EXPIRATION DATE: 6/30/2013

Keith Jehnke, PE, PLS, Principal;
Certified Arborist #PN-1908, Certified Tree Risk Assessor #192
Member, American Society of Consulting Arborists

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VANCOUVER, WA 98682

REDMOND, OR
P.O. BOX #1459
REDMOND, OR 97756

WWW.AKS-ENG.COM

APPRAISAL

STATEMENT OF ASSUMPTIONS AND LIMITING CONDITIONS

1) No responsibility is assumed for matters legal in character, nor has any opinion as to title been rendered; it is assumed to be marketable. Any existing liens, encumbrances or assessments have been disregarded and the properties are appraised as though free and clear.
2) Exhibits, sketches, maps, plats, or aerial photographs included herein are provided to assist the reader in visualizing the properties. No surveys were made and no responsibility in connection with such matters is assumed. Sizes or dimensions not shown should not be scaled from these visual aids. The tax lot lines shown are from the Clark County GIS maps. The acreages shown are per the Clark County GIS maps and cannot be verified without a full legal survey of the property.
3) Unless otherwise noted herein, it is assumed there are no encroachments, zoning or restrictive violations existing on the subject properties.
4) It is assumed legal road rights-of-way are either in existence or can be obtained to subject lands.
5) The subject properties were appraised as if there were no constraints to harvesting, road access or normal management or harvesting practices as the result of the northern spotted owl or other species being listed as threatened or endangered under the Endangered Species Act.
6) The subject property was appraised as if there is no loss of timber to slope stability high risk site designation by the Washington Department of Natural Resources.
7) Riparian Management Zone (RMZ) buffer widths were assigned per the Washington Department of Natural Resources rules and stream buffer maps on the DNR website.
8) It is assumed that no logs may be exported.
9) It is assumed that a bridge crossing over Boulder Creek and over Jones Creek will be required at an assumed cost of $100,000 per bridge for a total of $200,000.
10) The buyer of the timber will pay the 5% State of Washington Timber Excise Tax per the state's rules: "For timber harvested on public land, the taxable stumpage value is the actual amount paid for the timber in cash or other considerations. "Other considerations" include anything of value given in lieu of cash, such as roads constructed as part of the timber sales contract."
11) The total dollar figure shown is for all of the harvestable timber outside of the RMZ's on the site. The maximum regeneration harvest (clear cut) size allowed is 120-240 acres and a 300 foot buffer is required between clear cuts. Most of this buffer can be provided by the RMZ buffers, however there may be areas where harvestable timber is required to be left (for a future harvest) to maintain a 300 foot distance between cutting areas.

LOCATION OF TIMBER VALUED

The subject property is located off of Boulder Creek Road and Jones Creek Road, about 7 miles northeast of the City of Camas, in Clark County, Washington. The subject property is shown on the attached map.

PURPOSE OF THE APPRAISAL

The purpose of this appraisal is to estimate, in terms of dollars, the market value of standing timber from the subject parcels. The value of this timber is given value as of July 15, 2011. The term "market value" as used herein is "the amount of cash or any terms reasonably equivalent to cash, for which in all probability the timber would be sold by a knowledgeable owner willing but not obligated to sell to a knowledgeable purchaser who desires but is not obligated to buy."

HIGHEST AND BEST USE

The highest and best use assumed for this report is as merchandised logs.

MARKET AREA

The log sales data used for this valuation were gathered from log buyers in northwestern Oregon and southwestern Washington. This market is influenced by various domestic buyers scattered throughout the region and log exports out of Longview Washington.

MARKET CONDITIONS

The log market bottomed out in the middle of 2009 and has seen some increases in values from 2009 peaking in April 2011 and falling slightly since that time. There is still a relatively low demand in the domestic markets however there has been reasonable demand for export logs especially the traditional "China" sorts to the Asian markets. The export market, while intermittent, is better than the domestic market for fir logs, with most logs making an export sort being exported. The market for Western Red Cedar logs has not seen as dramatic of a decline as the rest of the market. The log markets for Red Alder and Big Leaf Maple generally fluctuate more than the rest of the log market and are currently at a fairly historically high level. A general history of the log markets follows:

Prices for most log species, grades, and sorts in this area peaked in 1993-94 when there was a strong housing and export market and the supply of logs from Forest Service lands plummeted due to timber sale appeals. Most log prices then slowly declined until they hit bottom late in 2002. Loss of mills, increasing wood product imports, and increasing competition from engineered wood and non-wood products all contributed to this decline in prices for logs and stumpage. Log prices and stumpage then rose significantly from 2003 to 2006 due largely to strong housing construction and a weakening U.S. dollar (reduced imports). In the middle of 2006, the housing market began its current collapse and prices for logs and stumpage began a steady decline to the all-time lows reached in the first middle of 2009. Current prices have increased from the 2009 lows, but are not at 2006 levels.

The reduction of Pacific Northwest harvest levels, reduced Asian market demand (especially in Japan), and the globalization of wood markets has weakened the export log market, however a demand for export logs in China has been adding some life and value to the market. During the last 10 years, the strength of the export versus the domestic log markets has been intermittent. At present, there is a small export market and log prices are sufficiently high to justify additional haul costs to export booms.

GENERAL DESCRIPTION OF THE SUBJECT PROPERTY

The property has been owned by the City of Camas since the 1920's and had been used as a year round water source for the City. Due to fish Concerns from the Washington Department of

Natural Resources, the City has been limited to taking water from the watershed only in the wettest months of the year. The timber is somewhat variable in density, species mix, and quality. The timber varies ranging from dense stands of Douglas fir to scattered pockets of thick brush. The timber generally ranges from 60-100 year old Douglas-fir, Red Alder, Western Hemlock, and Bitter Cherry. The property is generally medium sloped with slopes ranging from 10-60%. There are numerous streams and draws on the property with the largest creeks being Boulder Creek and Jones Creek. The parcel is poorly roaded with graveled access at the southern end, but no other graveled roads. The few existing skid roads are over grown with vegetation. The tract has been logged previously. Portions of the property have regenerated or been planted and contain high grade, high value second growth Douglas-fir trees, while other areas did not regenerate and contain scattered Douglas fir and Red alder . The site index varies throughout the property, with the US Soil Conservation Service Soil Survey showing Site Indexes of between low site II and high site III.

The 1306 cruised acres on this tract contain an average of 27.5 net mbf per acre consisting of 25.5 net mbf/acre Douglas-fir, 1.2 net mbf/acre Red Alder, 0.6 net mbf/acre of Western Hemlock, and a trace of Bitter Cherry. The average Douglas-fir is about 16.3 inches at d4h (4 feet above the stump) and has about 55 feet of merchantable height. The Douglas-fir is generally 50 to 100+ years old and the older trees are considered to be of good quality for this age of timber, with approximately 43% of the volume being export type logs. The average Red Alder is approximately 15.0 inches at d4h with about 44 feet of merchantable height, of which about 83% is saw log quality . The average Western Hemlock is about 17.1 inches at d4h with about 59 feet of merchantable height.

This parcel has low evidence of defect for a stand of this age and has intermixed areas of high stocking, areas of low stocking, and areas of no stocking.

APPROACH TO FAIR MARKET VALUE

The conversion return (income) approach to timber stumpage values was used to calculate the market value of the timber.

INCOME APPROACH TO STUMPAGE VALUE

The conversion return or income approach to stumpage value is used to calculate value. The conversion return method is more sensitive to sudden fluctuations in the market.

The delivered log values were developed from a cruise of the property and various log buyers were called to determine current market values for the logs.

Additionally, logging, hauling, road/landing construction, timber excise tax, boundary survey and line marking costs, and administration costs would need to be subtracted from the delivered log value. These are outlined on the attached appraisal spreadsheet.

The summary of the conversion return stumpage calculations follow:

Total Net Value to Owner= (Total Net Volume in mbf) *(Stumpage Value)

Species	Net Volume (mbf)	*	Stumpage Value**	=	Total
Douglas-fir	33,306	*	$290.9767	=	$9,691,269
Red Alder – Saw	1339	*	$411.9767	=	$551,637
Red Alder – Pulp*	281	*	$0	=	$0
Western Hemlock	739	*	$235.9767	=	$174,387
Bitter Cherry – Pulp*	300	*	$0	=	$0
TOTAL VALUE					$10,417,293

*At current log prices cable yarded Red alder pulp and Bitter Cherry pulp have a negative value- therefore they would be left in the woods.

**Note: Number of digits shown in Stumpage Value is to insure that these values exactly match the Valuation Spreadsheet Values

There are three steps to arrive at the appraised value:

Step 1: Include a 10% reduction in the Total Value to account for the purchaser's "Profit and Risk" for the outlay of capital;

Profit and Risk Discounted Value=Total Value - 10% of Total Value =$9,375,563

Step 2: Calculate the purchasers "deduction" from the Profit and Risk Discounted Value to pay the State Timber Excise Tax. To calculate the Excise Tax, take 95% of the Profit and Risk Discounted Value calculated above, add in the "other considerations" which were included in the logging costs such as roads, surveying, culverts and bridges, and subtract 5% of this total for the State Timber Excise Tax which on all public timber sales is paid by the purchaser.

Discount for Excise Tax =((95% of Total Value Discounted for Profit and Risk) + (other considerations)) * (Excise Tax of 5%)

Purchaser's State Excise Tax Discount=(($8,906,785) + ($318,000)) * (5%)=$461,239

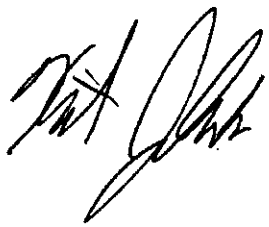
Step 3: To calculate the total Appraised Value, subtract the Purchaser's State Excise Tax Discount (calculated in step 2) from the Profit and Risk Discounted Value (calculated in Step 1).

Total Appraised Value = $9,375,563-$461,239=$8,914,324

APPRAISED VALUE = $8,915,000

CERTIFICATION

The appraiser hereby certifies that he has inspected, gathered together and assessed all pertinent information, and that neither his employment nor his compensation for making this appraisal are in any way contingent upon the opinions rendered herein. The appraiser further certifies that he has no direct or indirect, present or contemplated further interest in the subject property.



Keith R. Jehnke
July 15, 2011

AKS ENGINEERING & FORESTRY, LLC
ENGINEERING / SURVEYING / PLANNING / FORESTRY
LANDSCAPE ARCHITECTURE / ARBORICULTURE

Date: July 15, 2011 (Revised April 24, 2012)

To: Lee Odell, PE
CH2M Hill
2020 SW 4th Avenue
Portland, OR 97201-4958

E-Mail: lee.odell@ch2m.com

From: *Keith Jehnke*

Re: Timber Cruise & Volume Calculations for the City of Camas Boulder Creek and Jones Creek Watershed Tracts (1,694.4+/- acres), being located in Section 33, T3N, R4E; Section 3, T2N, R4E; the NE ¼ of Section 4, T2N, R4E; a portion of the NW ¼ of Section 4, T2N, R4E; and a portion of the NW ¼ of Section 10, T2N, R4E; W.M., Clark County, Washington.

Dear Mr. Odell:

Per your request, we have completed the timber cruise, value, and volume calculations for the Boulder Creek and Jones Creek Watershed tract.

CRUISE OBJECTIVE
The primary objective of this cruise is to determine the sort, grade and volume of harvestable trees on the tract from which a value of the timber as merchandised logs can be determined.

VOLUME SUMMARY TABLES:

Cruise Summary:

Species	Age Class	Ave. Log Length	Ave d4h (in)	Ave. Merch. Ht (ft)	Net Volume (mbf)
Douglas-fir	60-100+	32	16.3	55	33,306
Western Hemlock	50-70	31	17.1	59	739
Red Alder	50-70	27	15.0	44	1,620
Bitter Cherry	50-70	12	6.5	16	300

Percent of Net Volume (mbf) by Log Diameter:

Species:	4-7"	8-11"	12-15"	16-39"
Douglas-fir	15.3	15.3	28.0	39.8
Red Alder	43.8	8.8	39.4	8.0
Western Hemlock	18.7	47.0	34.4	0.0
Bitter Cherry	100.0	0.0	0.0	0.0

TIMBER DESCRIPTION

51 plots were taken on the 1306 timbered acres. The timber density, species mix, quality, and age varies significantly throughout the parcel, ranging from denser stands of Douglas fir, to areas of Douglas fir and Red Alder, to areas of scattered Red Alder, Douglas fir, and brush. The timber generally ranges from 50-100 year old Red Alder, Douglas-fir, and Western Hemlock. The property is generally sloping from 10-40% with occasional flatter areas on the ridge tops and steeper areas near the creeks. A few scattered overgrown skid road grades exist on the property. The entire tract was previously logged as evidenced by the "spring board" old growth stumps widely scattered across the site. Also, per City of Camas Employees, portions of the site burned in the Yacolt Burn of 1902 and portions were replanted in the 1920's and 1930's.

The Washington Department of Natural Resources (DNR) Riparian Management Zone (RMZ) buffers were calculated by stream type, stream length, etc. (as shown on DNR maps). The widths of these buffers on this site are from 50 feet to 170 feet on each side of the stream. DNR rules allow for some levels of harvesting within these buffers under certain conditions based on meeting a threshold for the basal area of the conifers or in a situation where there are many hardwoods and few conifers and a conversions cut is needed. However for this timber cruise and valuation it was assumed that no harvesting will occur on the 388.3 acres located within these RMZ buffers. Also, no cruise plots were placed within the RMZ buffer areas.

The Tax Assessor records show 1608.08 acres in the tracts. I will note that the GIS acreage of 1694.4 acres varies from the assessor record acreage of 1608.08 acres by 86.32 acres. It appears that most of this acreage is from a "bust" in the acreage for Parcel No. 136645000, which consists of the north half of a Township line section and should be an acreage close to 320 acres but is shown as 208.08 acres. The only way to verify the exact acreage of the parcels would be to conduct a proper land survey. For this timber cruise and valuation, we are using the GIS acreage of 1694.4 acres. The 388.3 acres of Riparian Management Zone (RMZ) buffers were then removed leaving 1306.2 net acres. These 1306.2 acres were then delineated into 3 distinct timber types.

Type 1: Contains 300.4 acres, has 10.7 mbf per acre, 64 timber trees per acre with the average Douglas fir being 21.0 inches at d4h (4 feet above the stump)-This type consists of scattered Red Alder, Douglas fir, Western hemlock, and brush. In areas it appeared that portions of this area had the Douglas fir "high grade" logged 40-50 years ago, with smaller Douglas fir trees left and no replanting done-resulting in scattered timber and a large amount of brush. There are many small marginal Bitter Cherry trees throughout this type.

Type 2: Contains 735.4 acres and has 31.6 mbf per acre, 194 timber trees per acre with the average Douglas fir being 15.2 inches at d4h-This type consists of well stocked even aged Douglas fir.

Type 3: Contains 35 mbf per acre, and has 97 timber trees per acre with the average Douglas fir being 21.5 inches at d4h-This type contains pockets of larger Douglas fir trees and scattered Red alder and brush.

The site index varies throughout the property, with the US Soil Conservation Service Soil Survey for Clark County showing Site Indexes of between low site II and high site III.

The 1306 cruised acres on this tract contain an average of 27.5 net mbf per acre consisting of 25.5 net mbf/acre Douglas-fir, 1.2 net mbf/acre Red Alder, 0.6 net mbf/acre of Western Hemlock, and a trace of Bitter Cherry. The average Douglas-fir is 16.3 inches at d4h (4 feet above the stump) and has about 55 feet of merchantable height. The Douglas-fir is generally 60 to 100+ years old and the older trees are considered to be of good quality for this age of timber, with approximately 43% of the volume being export type logs (although all public timber in Washington is banned from export, the timber was cruised given the higher quality export sorts). The average Red Alder is approximately 15.0 inches at d4h with about 44 feet of merchantable height, of which about 83% is saw log quality . The average Western Hemlock is about 17.1 inches at d4h with about 59 feet of merchantable height. .This parcel has low evidence of defect for a stand of this age and has intermixed areas of high stocking, areas of low stocking, and areas of no stocking.

CRUISE METHOD

The timber was cruised using the variable plot method. Acreages for the volume calculations were determined from Clark County GIS records. I will note that when using the variable plot cruise method you calculate a volume per acre and then multiply this volume by the acreage, so an error in the acreage results in an error in the timber volume.

Logs were graded using Columbia River Bureau rules, then sorted in order to estimate the higher quality volumes that would be suitable for the log export market. Export sorts are based upon local sorting methods summarized in the attachments.

Timber volumes are from the Super A.C.E. cruise program. This is a variable log length cruise program that computes volumes from the cruiser's measurements of tree diameter, form (taper) and merchantable bole height. Defect and breakage was graded out of the tree by the cruiser in the field.

A sample of merchantable trees on 51 plots was cruised. Plot centers were determined by using stereo aerial photos to delineate 3 timber types, determining a set number of plots for each type, and distributing these plots roughly proportionately through out the type by manually picking plot locations on a map showing only timber types (no aerial photo-in order to avoid any bias). These plot locations were then transferred to the aerial photo and GPS coordinates were determined and then downloaded into portable GPS units which were used to locate plot centers in the field. Plots were marked by hanging a double ribbon at eye height.

A basal area factor (BAF) of 40 was used to sight trees "in" or "out" at d4h. Of the 51 total plots taken, 4.3 trees per plot were cruised for a total of 221 trees. Tree diameters were measured at d4h (four feet above the ground) using a diameter tape and visual estimation. The smallest conifer tree considered to be merchantable had to contain at least one 12-foot log with a scaling diameter of five inches, yielding 10 board feet. Tree heights were measured using a relaskop, digital range finder, and visual estimates. All of the merchantable conifer species were cruised to a six-inch top diameter or to a top diameter equal to 25% of the d4h, whichever was greater. The hardwoods were cruised to a four-inch top diameter, or to a top diameter equal to 25% of the d4h, whichever was greater. Log lengths were assigned according to current industry standards. Red Alder log lengths were assigned to meet specific grades for various saw log diameters, and for pulpwood utilization.

ACCESS AND LOGGING

The subject property is located off of Boulder Creek Road and Jones Creek Road, about 7 miles northeast of the City of Camas, in Clark County, Washington. The subject property is shown on the attached map.

There are only short sections of gravel road accessing the very southerly portion of the parcels. There are some old overgrown skid trails throughout the site. Some of the timber may be more efficiently accessed through roads on adjacent owners Longview Timber and the State of Washington. To access all of the timber a minimum of a crossing at Boulder Creek and a crossing at Jones Creek will likely be required. The property is generally sloping from 10-60% with occasional flatter areas on the ridge tops and steeper areas near the creeks and draws. The flatter areas near roads can be logged using tractor or shovel ground based systems. The steeper areas primarily along the creeks and draws and areas further from the road and isolated by draws will require cable yarding including some longer distance cable yarding. The majority of the site will be cable yarded.

For this timber cruise and appraisal, road and logging costs were estimated based on various assumptions including:

- two major creek crossings
- 2 miles of new road construction
- majority of logging to be cable yarding
- conifer logs to Kalama
- Red alder logs to Longview
- Red alder and Bitter Cherry pulp logs requiring cable logging to be left in the woods (with current prices cable yarded Red alder pulp has a negative value)

CITY'S NEXT STEPS PRIOR TO HARVEST

If the City decides to move forward with a timber or log sale, there are a number of logging engineering tasks which will need to be completed. In order to prepare the site for a timber harvest additional work will need to be done. This work would include:

- developing a road plan (determining the most efficient road layout potentially utilizing adjoining roads as well as bridges across Boulder and Jones Creek for access)
- bridge crossing layout and permitting
- developing a harvest plan (utilizing the most efficient logging systems for the terrain and roads utilizing skyline profiles, etc.)
- acquire timber access easements from adjoining property owners (if needed)
- obtain DNR permit for the timber harvest
- obtain DNR permits for the Bridge crossings (if needed)
- work with DNR to layout riparian management zone buffers
- work with DNR to determine what harvest level (if any) can be achieved in the riparian management zone
- State Environmental Policy Act (SEPA) permitting
- create road construction documents
- create bridge construction documents (if needed)
- create timber sale or logging contract and specifications
- road construction inspection
- logging inspection

We would be happy to provide a scope of work and estimate for any or all of the above tasks.

ATTACHMENTS

Included with this report are:

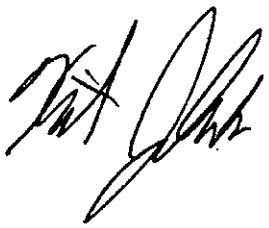
- Valuation Spreadsheet
- Cruise Map
- Definitions for abbreviations used in cruise report
- Detailed Cruise Reports (The detailed cruise reports include volumes, species, diameter class and log grades, and the statistical summary)

DISCLAIMER

The accuracy of the volumes, species, quality and costs reflected in any report or information provided are neither guaranteed nor warranted. Information provided is based upon limited sampling and estimates which may or may not reflect total volumes, value, species, quality or costs and which may be subject to error by reason of access, title, damage, disease, acts of governmental entities, economic change, or other relevant circumstances. The risk of any inaccuracies in any information or report is assumed by the recipient of such information or report.

Please call if you have any questions.

Very Truly Yours,
AKS Engineering & Forestry, LLC.



AMERICAN SOCIETY of CONSULTING ARBORISTS

CERTIFIED ARBORIST

KEITH JEHNKE
CERTIFICATE NUMBER PN-1905
EXPIRATION DATE: 6/30/2013

Keith Jehnke, PE, PLS, Principal;
Certified Arborist #PN-1908, Certified Tree Risk Assessor #192
Member, American Society of Consulting Arborists

Definitions for Abbreviations Used in Reports

SP	-Species
YRS	-Age of timber
D4H	-Diameter of tree four feet above the stump
FF	-Form Factor: the ratio of the diameter outside bark at 16 feet above the stump compared to D4H
BOL HGT	-Bole height: the length of the tree bole measured to the minimum merchantable top
BA/A SQFT	-Basal Area per acre measured in square feet
TREE/AC	-Number of trees per acre
LOGS/AC	-Number of log segments per acre based on the cruise
AVE CF	-Average net volume in cubic feet in each log segment
AVE BF	-Average net volume in board feet in each log segment
PER ACRE CF	-Net volume per acre in cubic feet
PER ACRE BF	-Net volume per acre in board feet
TOTAL CUNITS	-Total net volume in cunits (one cunit equals 100 cubic feet)
TOTAL MBF	-Total net volume in MBF (one MBF equals 1000 board feet), includes utility volume

Species

DF	-	Douglas fir
OGDF	-	Old Growth Doug Fir
BM	-	Bigleaf maple
GF	-	Grand fir
MY	-	Myrtle
POC	-	Port Orford-cedar
RA	-	Red alder
RC	-	Western red cedar
WH	-	Western hemlock
TO	-	Tan oak
OK	-	Oregon white oak
MA	-	Pacific madrone
DFD	-	Douglas fir, dead
RCD	-	Red Cedar, dead
SS	-	Sitka spruce
CH	-	Cherry
CQ	-	Chinquapin
PP	-	Ponderosa Pine
SP	-	Sugar Pine
WP	-	White Pine
LP	-	Lodgepole pine

EXPORT SORT LIST

HI-LINE (12" & up) Hiline #2S and better, 12"-29" diameter, S.M. surface, minimum 8 ring/in. outer 1/3, max. knot size 1 1/2", up to 8 knots well distributed.

MID-LINE (12" & up) Midline #2S and better, 12"-29" diameter no grain restriction, max. knot size 2", up to 10 knots well distributed.

LO-LINE (12" & up) Lowline - midline #2S and better, 12" + diameters, smooth surface on 1/2 of log, max. knot size 2 1/2, up to 20 knots well scattered.

HI-LINE Hiline #3S, S.M. appearance, 8"-11" diameter, fine grain outer 1/3, max. knot (8" & 11") size 1/2" well distributed.

MID-LINE Mid-line #3S, 8"-11" diameter, no grain restriction, max. knot size 1", up to 20 (8" - 11") knots/log.

LO-LINE (8" - 11") Lowline #3S and better, 8"-11" diameter, #2S surface, coarse grain allowed, max. knot size 2", up to 20 knots/log.

DOMESTIC Domestic sort, lowline, with defects. Not suitable for current export market.

CHIP LOG Logs best suited to be marketed on a tonnage basis for chipping.

CULL Unmerchantable logs.

Project: Camas Watershed Cruise and Appraisal (AKS #2800)

Value: Cruise Volume

Species:	Volume in MBF		Delivered Log Value		Logging Expenses		Stumpage Value		Total Value
Douglas-fir (DF)	33,306	@	$540	-	$249	=	$290.9767	to give	$9,691,269
Western Hemlock (WH)	739	@	$480	-	$244	=	$235.9767	to give	$174,387
Red Alder (RA)-Saw	1,339	@	$665	-	$253	=	$411.9767	to give	$551,637
Red Alder (RA)-Pulp*	280	@	$240	-	$272	=	$0.0000	to give	$0
Bitter Cherry (CH)-Pulp*	300	@	$240	-	$272	=	$0.0000	to give	$0
Total	35,964								**$10,417,293**

*At current log prices cable yarded Red alder pulp and Bitter Cherry pulp have a negative value-therefore they would be left in the woods.

Total Delivered Log Value=	$19,230,395	Total Logging Expenses=	$8,813,102
Percentage to Owner=	54		

To come to the "Appraised Value", being the value which a knowledgeable purchaser would pay for the timber:

Step 1: Include a 10% reduction in the Total Value to account for the purchaser's "Profit and Risk" for the outlay of capital;
Calculate the Discount for Profit and Risk for the outlay of capital:

Profit and Risk Discounted Value=Total Value - 10% of Total Value (for profit and risk)= $9,375,563

Step 2: Calculate the purchasers "deduction" from the Profit and Risk Discounted Value to pay the State Timber Excise Tax. To calculate the Excise Tax, take 95% of the Profit and Risk Discounted Value calculated above, add in the "other considerations" which were included in the logging costs such as roads, surveying, culverts and bridges, and subtract 5% of this total for the State Timber Excise Tax which on all public timber sales is paid by the purchaser.
Calculate the Discount for State Timber Excise Tax Paid by the Purchaser:

Discount for Excise Tax =((95% of Total Value Discounted for Profit and Risk) + (other considerations)) * (Excise Tax of 5%)

Purchaser's State Excise Tax Discount=(($8,857,127) + ($318,000)) * (5%)= $461,239

Step 3: To calculate the total Appraised Value, subtract the Purchaser's State Excise Tax Discount (calculated in step 2) from the Profit and Risk Discounted Value (calculated in Step 1).

Total Appraised Value = $9,375,563-$461,239= $8,914,324

TOTAL APPRAISED VALUE=$8,915,000

Costs:

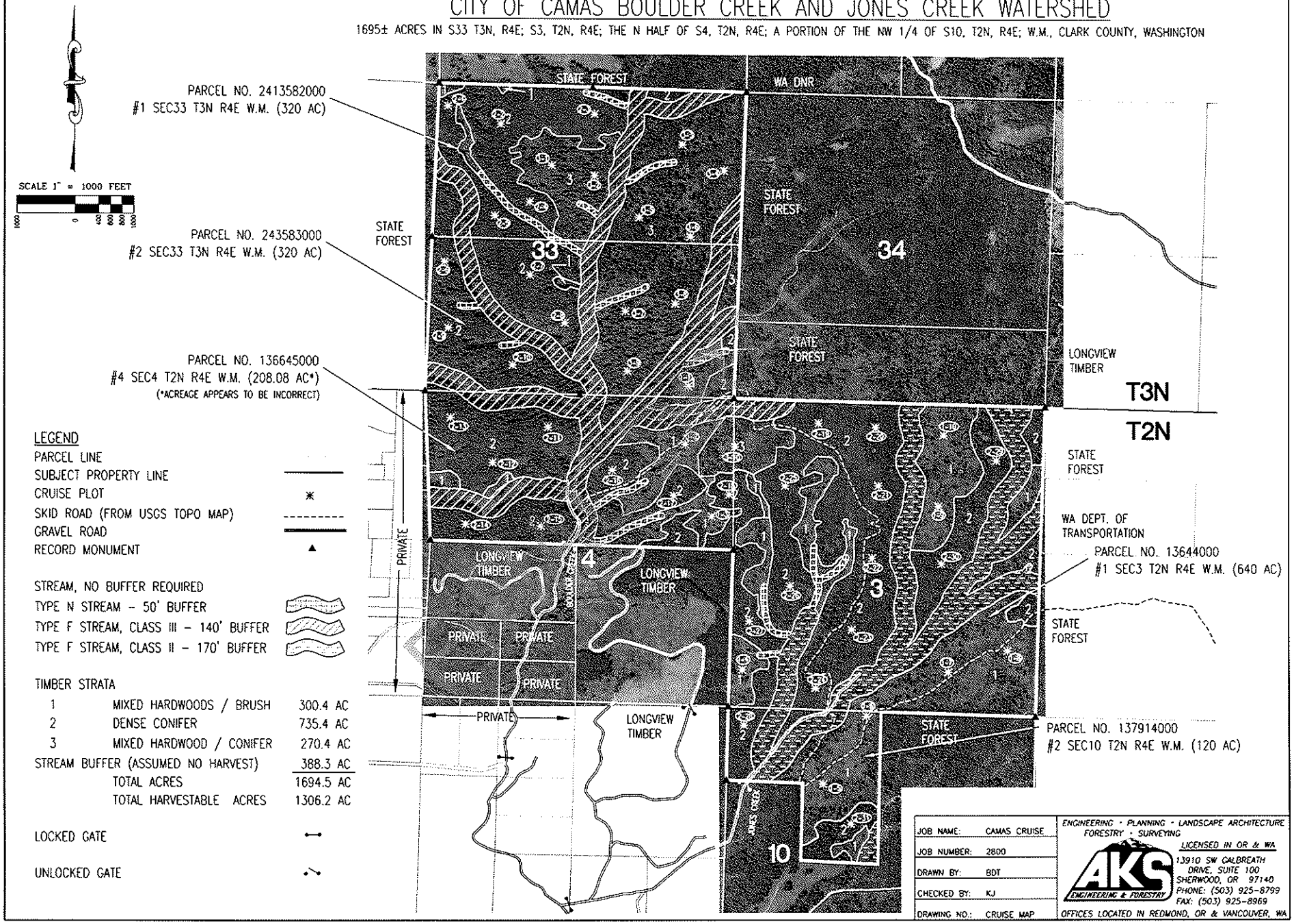
	Species	DF	WH	RA-Saw	RA-Pulp	CH-Pulp
Variable Costs per MBF	Delivered Log Price	$540	$480	$665	$240	$240
	Falling Cost	$36	$36	$36	$36	$36
	Yarding Cost	$145	$145	$145	$145	$145
	Trucking Cost	$54	$49	$58	$77	$77
	Administration	$5	$5	$5	$5	$5
	Allocated Fixed Costs	$9	$9	$9	$9	$9
	Stumpage Value	$291	$236	$412	($32)	($32)
	Expenses	$249	$244	$253	$272	$272
	Allocated fixed Costs					

Fixed Costs to be allocated	Road Construction	$60,000	Cost per MBF=	$9
	Rock*	$0		
	Surveying	$55,000		
	Culverts	$3,000		
	Bridges	$200,000		
	Total:	$318,000		

* Assumes harvesting during the summer.

CITY OF CAMAS BOULDER CREEK AND JONES CREEK WATERSHED

1695± ACRES IN S33 T3N, R4E; S3, T2N, R4E; THE N HALF OF S4, T2N, R4E; A PORTION OF THE NW 1/4 OF S10, T2N, R4E; W.M., CLARK COUNTY, WASHINGTON



LEGEND

PARCEL LINE	
SUBJECT PROPERTY LINE	———
CRUISE PLOT	*
SKID ROAD (FROM USGS TOPO MAP)	- - - - - - - -
GRAVEL ROAD	═══
RECORD MONUMENT	▲
STREAM, NO BUFFER REQUIRED	
TYPE N STREAM - 50' BUFFER	
TYPE F STREAM, CLASS III - 140' BUFFER	
TYPE F STREAM, CLASS II - 170' BUFFER	

TIMBER STRATA

1	MIXED HARDWOODS / BRUSH	300.4 AC
2	DENSE CONIFER	735.4 AC
3	MIXED HARDWOOD / CONIFER	270.4 AC
STREAM BUFFER (ASSUMED NO HARVEST)		388.3 AC
	TOTAL ACRES	1694.5 AC
	TOTAL HARVESTABLE ACRES	1306.2 AC

LOCKED GATE

UNLOCKED GATE

JOB NAME:	CAMAS CRUISE
JOB NUMBER:	2800
DRAWN BY:	BDT
CHECKED BY:	KJ
DRAWING NO.:	CRUISE MAP

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PHONE: (503) 925-8799
FAX: (503) 925-8969
OFFICES LOCATED IN REDMOND, OR & VANCOUVER, WA

Project

TC PSPCSTGR
CH2M

Species, Sort Grade - Board Foot Volumes (Project)

T02N R04E S03 Ty0001	300.40
T02N R04E S03 Ty0002	735.40
T02N R04E S03 Ty0003	270.40

Project: CAMAS
Acres 1,306.20

Page 1
Date 7/6/2011
Time 1:58:14PM

32"+

Spp	S So Gr T rt ad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent of Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Bd Ft	CF/ Lf	Logs Per /Acre
RA	2S 2M	47	1.3	596	588	768			83	17	26	74			20	140	1.40	4.2
RA	3S 3M	9		109	109	142		100					100		32	140	1.03	.8
RA	4S 4M	26		329	329	1339 429	33	67			2	47		51	31	41	0.53	8.0
RA	PU PU	18	4.9	226	215	281	74	26			8	45	4	43	27	21	0.46	10.2
RA	**Totals**	5	1.5	1,259	1,241	1,620	22	31	39	8	14	55	9	21	27	53	0.63	23.2
DF	DO2M	28	1.6	7,461	7,342	9,590			48	52	2		1	97	38	380	2.15	19.3
DF	DO3M	18	1.3	4,505	4,447	5,808		97	3		1	1	9	89	39	95	0.83	46.8
DF	DO4M	10		2,548	2,548	3,328	89	11			30	33	16	22	24	27	0.44	95.3
DF	PU PU	1	3.7	206	198	259	52	48			54	3		42	22	32	0.55	6.3
DF	HI 2M	4		1,267	1,267	1,655			56	44				100	40	332	2.04	3.8
DF	HI 3M	1		103	103	134		100						100	40	120	0.68	.9
DF	LO SM		6.1	152	143	187				100				100	40	1840	8.25	.1
DF	LO 2M	20	.3	5,031	5,014	6,550			47	53				100	40	463	2.29	10.8
DF	LO 3M	4		1,028	1,028	1,342		78	22			6		94	38	135	0.86	7.6
DF	M 2M	9		2,219	2,219	2,899			47	53				100	40	419	2.46	5.3
DF	M 3M	5	1.0	1,201	1,189	1,554		75	25					100	40	134	0.84	8.9
DF	**Totals**	93	.9	25,721	25,498	33,306	9	25	33	33	4	4	4	89	32	124	1.02	205.0
CH	PU PU	100		230	230	300	100				18	82			12	8	0.19	27.4
CH	**Totals**	1		230	230	300	100				18	82			12	8	0.19	27.4
WH	DO2M	34	2.4	199	194	254			100				54	46	36	209	1.33	.9
WH	DO3M	55	7.8	336	310	405		100						100	40	114	0.85	2.7
WH	DO4M	11		62	62	81	100				55	45			20	21	0.42	2.9
WH	**Totals**	2	5.2	597	566	739	11	55	34		6	5	18	71	31	86	0.81	6.5
Totals			1.0	27,806	27,535	35,966	11	26	33	31	5	7	4	84	29	105	0.95	262.2

TC PLOGSTBF

Log Stock Table - Percent Board Feet

CH2M **Project: CAMAS** **Acres 1,306.20**

T02N R04E S03 Ty0001	300.40
T02N R04E S03 Ty0002	735.40
T02N R04E S03 Ty0003	270.40

CuFt: S **BdFt: W**

Date 7/6/2011
Time 2:15:47PM

Spp	S T	Sort	Grd	Log Len	Gross MBF	Def %	Net MBF	% Spc	Percent Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
RA		2S	2M	12	95		95	5.9						100.0						
RA		2S	2M	16	111	9.1	101	6.3							100.0					
RA		2S	2M	22	275		275	16.9							52.7	47.3				
RA		2S	2M	26	297		297	18.3						48.7	51.3					
RA		3S	3M	32	142		142	8.8					100.0							
RA		4S	4M	12	10		10	.6			100.0									
RA		4S	4M	22	20		20	1.3		100.0										
RA		4S	4M	26	103		103	6.4			100.0									
RA		4S	4M	30	77		77	4.8		100.0										
RA		4S	4M	40	219		219	13.5		19.9	80.1									
RA		PU	PU	12	12		12	.8		100.0										
RA		PU	PU	19	10		10	.6		100.0										
RA		PU	PU	21	26		26	1.6		100.0										
RA		PU	PU	22	14		14	.8		100.0										
RA		PU	PU	27	18		18	1.1		100.0										
RA		PU	PU	30	69		69	4.3		100.0										
RA		PU	PU	31	10		10	.6		100.0										
RA		PU	PU	40	88	16.7	73	4.5			100.0			39.4						
RA		PU	PU	41	48		48	3.0		100.0	43.8									
RA		Totals			1,645	1.5	1,620	4.5		21.5	22.3		8.8	14.8	24.6	8.0				
DF		DO	2M	16	78		78	.2						100.0						
DF		DO	2M	18	77		77	.2						100.0						
DF		DO	2M	20	41		41	.1						100.0						
DF		DO	2M	32	115		115	.3						100.0						
DF		DO	2M	36	110		110	.3						100.0						
DF		DO	2M	40	9,325	1.7	9,170	27.5						14.8	18.2	35.7	17.7	13.5		
DF		DO	3M	15	4		4	.0			100.0									
DF		DO	3M	18	64		64	.2						100.0						
DF		DO	3M	21	7		7	.0			100.0									
DF		DO	3M	26	42		42	.1				100.0								
DF		DO	3M	31	10		10	.0			100.0									
DF		DO	3M	32	426		426	1.3			3.0	56.0	30.1		10.9					
DF		DO	3M	34	107		107	.3			15.6		84.4							
DF		DO	3M	36	213	1.4	210	.6			14.0	61.1		24.9						
DF		DO	3M	37	13		13	.0				100.0								
DF		DO	3M	40	4,998	1.5	4,925	14.8			33.1	32.6	34.3							

TC PLOGSTBF

Log Stock Table - Percent Board Feet

CH2M **Project: CAMAS** **Acres 1,306.20**

T02N R04E S03 Ty0001	300.40
T02N R04E S03 Ty0002	735.40
T02N R04E S03 Ty0003	270.40

CuFt: S **BdFt: W**

Date 7/6/2011
Time 2:15:47PM

Spp	S T	Sort	Grd	Log Len	Gross MBF	Def %	Net MBF	% Spc	Percent Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
DF		DO	4M	12	34		34	.1		84.9	15.1									
DF		DO	4M	13	56		56	.2		71.7	28.3									
DF		DO	4M	14	136		136	.4		40.6	59.4									
DF		DO	4M	15	190		190	.6		55.7	42.6	1.7								
DF		DO	4M	16	18		18	.1		100.0										
DF		DO	4M	17	148		148	.4		84.3	8.5	7.2								
DF		DO	4M	18	163		163	.5		100.0										
DF		DO	4M	19	184		184	.6		96.4	3.6									
DF		DO	4M	20	61		61	.2		100.0										
DF		DO	4M	21	20		20	.1		100.0										
DF		DO	4M	22	84		84	.3		90.2	9.8									
DF		DO	4M	23	114		114	.3		68.3	19.5	12.3								
DF		DO	4M	24	97		97	.3		42.9			57.1							
DF		DO	4M	26	36		36	.1		100.0										
DF		DO	4M	27	160		160	.5		94.4	5.6									
DF		DO	4M	28	222		222	.7		100.0										
DF		DO	4M	29	183		183	.5		92.7	7.3									
DF		DO	4M	30	170		170	.5		100.0										
DF		DO	4M	31	31		31	.1		62.4	37.6									
DF		DO	4M	32	36		36	.1		100.0										
DF		DO	4M	33	246		246	.7		100.0										
DF		DO	4M	34	92		92	.3		100.0										
DF		DO	4M	35	128		128	.4		100.0										
DF		DO	4M	36	131		131	.4		100.0										
DF		DO	4M	37	143		143	.4		100.0										
DF		DO	4M	38	72		72	.2		100.0										
DF		DO	4M	39	41		41	.1		100.0										
DF		DO	4M	40	271		271	.8		100.0										
DF		DO	4M	41	60		60	.2		100.0										
DF		PU	PU	14	5		5	.0				100.0								
DF		PU	PU	19	116		116	.3		100.0										
DF		PU	PU	20	20		20	.1		100.0										
DF		PU	PU	24	9		9	.0			100.0									
DF		PU	PU	40	120	8.3	110	.3				100.0								
DF		HI	2M	40	1,655		1,655	5.0						38.6		17.6	30.4		13.4	
DF		HI	3M	40	134		134	.4				100.0								

TC PLOGSTBF

Log Stock Table - Percent Board Feet

CH2M **Project: CAMAS** **Acres 1,306.20**

T02N R04E S03 Ty0001	300.40
T02N R04E S03 Ty0002	735.40
T02N R04E S03 Ty0003	270.40

CuFt: S **BdFt: W**

Date 7/6/2011
Time 2:15:47PM

Spp	S T	So rt	Grd	Log Len	Gross MBF	Def %	Net MBF	% Spc	Percent Net Volume by Scaling Diameter in Inches 2-3 4-5	6-7 8-9	10-11 12-13	14-15 16-19	20-23 24-29	30-39 40+
DF		LO	SM	40	199	6.1	187	.6						100.0
DF		LO	2M	40	6,571		6,550	19.7			6.4	26.6 23.5	34.4 6.0	3.0
DF		LO	3M	30	80		80	.2		100.0				
DF		LO	3M	36	43		43	.1		100.0				
DF		LO	3M	40	1,219		1,219	3.7		42.9	32.5 24.6			
DF		ME	2M	40	2,899		2,899	8.7			21.9	15.5 16.3	32.5 13.8	
DF		ME	3M	40	1,569		1,554	4.7	15.3	51.4	23.2 16.4	9.1	39.2	
DF		Totals			33,596		33,306	92.6	9.3	6.0 11.3	8.2 12.4	13.0 17.4	15.1 6.1	1.2
CH		PU	PU	20	53		53	17.6	100.0					
CH		PU	PU	23	122		122	40.5	100.0					
CH		PU	PU	29	126		126	41.9	100.0					
CH		Totals			300		300	.8	100.0					
WH		DO	2M	32	136		136	18.4				100.0		
WH		DO	2M	40	124	5.0	118	16.0			100.0			
WH		DO	3M	40	439	7.8	405	54.8		14.2 27.9	57.9			
WH		DO	4M	12	7		7	1.0	100.0					
WH		DO	4M	18	37		37	5.0	100.0					
WH		DO	4M	27	18		18	2.4	100.0	18.7	47.0	34.4		
WH		DO	4M	28	19		19	2.5	100.0					
WH		Totals			779	5.2	739	2.1	10.9	7.8 15.3	31.7 16.0	18.4		
Total		All Species			36,321		35,966	100.0	10.7	6.7 10.7	8.6 12.5	13.5 16.5	14.0 5.7	1.1

TC PSTATS
CH2M

PROJECT STATISTICS

PROJECT CAMAS

DATE 7/6/2011

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
02N	04E	03	CAMAS	0001	1,306.20	51	221	S	W
02N	04E	03	CAMAS	0002					
02N	04E	03	CAMAS	0003					

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	51	221	4.3		
CRUISE	49	220	4.5	262,162	.1
DBH COUNT					
REFOREST					
COUNT					
BLANKS	2				
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	191	125.3	16.3	55	46	181.6	25,721	25,498	6,584	6,584
R ALDER	17	17.4	15.0	44		21.3	1,259	1,241	397	397
CHERRY	6	54.3	6.5	16		12.5	230	230	63	63
WHEMLOCK	6	3.6	17.1	59	1	5.8	597	566	161	161
TOTAL	*220*	*200.7*	*14.2*	*43*		*221.2*	*27,806*	*27,535*	*7,205*	*7,205*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	SAMPLE TREES - BF LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
DOUG FIR	104.2	7.5	438	473	509			
R ALDER	91.2	22.8	72	93	114			
CHERRY	118.0	52.5	4	8	13			
WHEMLOCK	42.2	18.8	135	167	198			
TOTAL	*113.1*	*7.6*	*391*	*423*	*455*	*511*	*128*	*57*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	SAMPLE TREES - CF LOW	AVG	HIGH	# OF TREES REQ. 5	10	INF. POP. 15
DOUG FIR	86.7	6.3	103	110	117			
R ALDER	66.6	16.6	24	29	33			
CHERRY	117.4	52.3	1	2	4			
WHEMLOCK	34.9	15.5	40	47	54			
TOTAL	*94.4*	*6.4*	*93*	*99*	*105*	*356*	*89*	*40*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	TREES/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	102.3	14.3	107	125	143			
R ALDER	299.0	41.8	10	17	25			
CHERRY	418.1	58.5	23	54	86			
WHEMLOCK	423.9	59.3	1	4	6			
TOTAL	*113.6*	*15.9*	*169*	*201*	*233*	*515*	*129*	*57*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	BASAL AREA/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	64.8	9.1	165	182	198			
R ALDER	306.2	42.8	12	21	30			
CHERRY	383.5	53.7	6	13	19			
WHEMLOCK	459.8	64.3	2	6	10			
TOTAL	*42.1*	*5.9*	*208*	*221*	*234*	*71*	*18*	*8*

CL 68.1 SD: 1.0	COEFF VAR.%	S.E.%	NET BF/ACRE LOW	AVG	HIGH	# OF PLOTS REQ. 5	10	INF. POP. 15
DOUG FIR	76.3	10.7	22,777	25,498	28,220			
R ALDER	370.9	51.9	597	1,241	1,884			
CHERRY	599.3	83.8	37	230	422			

TC PSTATS
CH2M

PROJECT STATISTICS

PROJECT CAMAS

DATE 7/6/2011

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
02N	04E	03	CAMAS	0001	1,306.20	51	221	S	W
02N	04E	03	CAMAS	0002					
02N	04E	03	CAMAS	0003					

CL 68.1	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD: .00	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15
WHEMLOCK	473.1	66.2	191	566	940			
TOTAL	*65.5*	*9.2*	*25,010*	*27,535*	*30,059*	*171*	*43*	*19*

CL 68.1	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	66.3	9.3	5,974	6,584	7,195			
R ALDER	334.6	46.8	211	397	582			
CHERRY	548.5	76.7	15	63	112			
WHEMLOCK	467.1	65.4	56	161	266			
TOTAL	*53.6*	*7.5*	*6,665*	*7,205*	*7,745*	*115*	*29*	*13*

TC PLOGSTVB
CH2M

Log Stock Table - MBF

T02N R04E S03 Ty0001	300.40
T02N R04E S03 Ty0002	735.40
T02N R04E S03 Ty0003	270.40

Project: CAMAS
Acres 1,306.20

Date 7/6/2011
Time 1:58:13PM

Spp	ST	Sort	Grade	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
RA		2S	2M	12	95		95	5.9						95						
RA		2S	2M	16	111	9.1	101	6.3							101					
RA		2S	2M	22	275		275	16.9							145	130				
RA		2S	2M	26	297		297	18.3						145	152					
RA		3S	3M	32	142		142	8.8					142							
RA		4S	4M	12	10		10	.6			10									
RA		4S	4M	22	20		20	1.3		20										
RA		4S	4M	26	103		103	6.4			103									
RA		4S	4M	30	77		77	4.8		77										
RA		4S	4M	40	219		219	13.5		44	175									
RA		PU	PU	12	12		12	.8		12										
RA		PU	PU	19	10		10	.6		10										
RA		PU	PU	21	26		26	1.6		26										
RA		PU	PU	22	14		14	.8		14										
RA		PU	PU	27	18		18	1.1		18										
RA		PU	PU	30	69		69	4.3		69										
RA		PU	PU	31	10		10	.6		10										
RA		PU	PU	40	88	16.7	73	4.5			73									
RA		PU	PU	41	48		48	3.0		48										
RA		Totals			1,645	1.5	1,620	4.5		349	361		142	240	398	130				
DF		DO	2M	16	78		78	.2						78						
DF		DO	2M	18	77		77	.2						77						
DF		DO	2M	20	41		41	.1						41						
DF		DO	2M	32	115		115	.3						115						
DF		DO	2M	36	110		110	.3						110						
DF		DO	2M	40	9,325	1.7	9,170	27.5						1358	1670	3275	1627	1241		
DF		DO	3M	15	4		4	.0			4									
DF		DO	3M	18	64		64	.2						64						
DF		DO	3M	21	7		7	.0			7									
DF		DO	3M	26	42		42	.1				42								
DF		DO	3M	31	10		10	.0			10									
DF		DO	3M	32	426		426	1.3			13	238	128		46					
DF		DO	3M	34	107		107	.3			17		91							
DF		DO	3M	36	213	1.4	210	.6			29	128		52						
DF		DO	3M	37	13		13	.0				13								
DF		DO	3M	40	4,998	1.5	4,925	14.8			1631	1606	1688							

TC PLOGSTVB
CH2M

Log Stock Table - MBF

T02N R04E S03 Ty0001	300.40
T02N R04E S03 Ty0002	735.40
T02N R04E S03 Ty0003	270.40

Project: CAMAS
Acres 1,306.20

Date 7/6/2011
Time 1:58:13PM

Spp	ST	Sort	Grade	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
DF		DO	4M	12	34		34	.1		29	5									
DF		DO	4M	13	56		56	.2		40	16									
DF		DO	4M	14	136		136	.4		55	81									
DF		DO	4M	15	190		190	.6		106	81	3								
DF		DO	4M	16	18		18	.1		18										
DF		DO	4M	17	148		148	.4		125	13	11								
DF		DO	4M	18	163		163	.5		163										
DF		DO	4M	19	184		184	.6		178	7									
DF		DO	4M	20	61		61	.2		61										
DF		DO	4M	21	20		20	.1		20										
DF		DO	4M	22	84		84	.3		76	8									
DF		DO	4M	23	114		114	.3		78	22	14								
DF		DO	4M	24	97		97	.3		41		55								
DF		DO	4M	26	36		36	.1		36										
DF		DO	4M	27	160		160	.5		151	9									
DF		DO	4M	28	222		222	.7		222										
DF		DO	4M	29	183		183	.5		169	13									
DF		DO	4M	30	170		170	.5		170										
DF		DO	4M	31	31		31	.1		19	12									
DF		DO	4M	32	36		36	.1		36										
DF		DO	4M	33	246		246	.7		246										
DF		DO	4M	34	92		92	.3		92										
DF		DO	4M	35	128		128	.4		128										
DF		DO	4M	36	131		131	.4		131										
DF		DO	4M	37	143		143	.4		143										
DF		DO	4M	38	72		72	.2		72										
DF		DO	4M	39	41		41	.1		41										
DF		DO	4M	40	271		271	.8		271										
DF		DO	4M	41	60		60	.2		60										
DF		PU	PU	14	5		5	.0				5								
DF		PU	PU	19	116		116	.3		116										
DF		PU	PU	20	20		20	.1		20										
DF		PU	PU	24	9		9	.0			9									
DF		PU	PU	40	120	8.3	110	.3				110								
DF		HI	2M	40	1,655		1,655	5.0						640		291	504	221		
DF		HI	3M	40	134		134	.4				134								

TC PLOGSTVB
CH2M

Log Stock Table - MBF

T02N R04E S03 Ty0001	300.40
T02N R04E S03 Ty0002	735.40
T02N R04E S03 Ty0003	270.40

Project: CAMAS
Acres 1,306.20

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Date 7/6/2011
Time 1:58:13PM

Spp	ST	Sort	Grade	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
DF		LO	SM	40	199	6.1	187	.6											187	
DF		LO	2M	40	6,571		6,550	19.7						419	1741	1542	2255	392	200	
DF		LO	3M	30	80		80	.2				80								
DF		LO	3M	36	43		43	.1				43								
DF		LO	3M	40	1,219		1,219	3.7				523	396	301						
DF		ME	2M	40	2,899		2,899	8.7						635	449	473	942	400		
DF		ME	3M	40	1,569		1,554	4.7				798	360	255	141					
DF		Totals			33,596		33,306	92.6		3113	1987	3749	2717	4143	4338	5794	6046	2033	386	
CH		PU	PU	20	53		53	17.6		53										
CH		PU	PU	23	122		122	40.5		122										
CH		PU	PU	29	126		126	41.9		126										
CH		Totals			300		300	.8		300										
WH		DO	2M	32	136		136	18.4							136					
WH		DO	2M	40	124	5.0	118	16.0						118						
WH		DO	3M	40	439	7.8	405	54.8			57	113	235							
WH		DO	4M	12	7		7	1.0		7										
WH		DO	4M	18	37		37	5.0		37										
WH		DO	4M	27	18		18	2.4		18										
WH		DO	4M	28	19		19	2.5		19										
WH		Totals			779	5.2	739	2.1		81	57	113	235	118	136					
Total		All Species			36,321		35,966	100.0		3843	2406	3862	3093	4501	4872	5924	6046	2033	386	

Type 1

T TSPCSTGR
CH2M

Species, Sort Grade - Board Foot Volumes (Type)

Project: CAMAS

Page 1
Date 7/6/2011
Time 1:58:14PM

T02N R04E S03 T0001

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt
02N	04E	03	CAMAS	0001	300.40	10	28	S	W

T02N R04E S03 T0001

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Bd Ft	CF/ Lf	Logs Per /Acre
RA		2S	2M	57	1.3	2,591	2,558	768			83	17	26	74			20	140	1.40	18.3
RA		3S	3M	11		472	472	142		100					100		32	140	1.03	3.4
RA		4S	4M	15		702	702	211	46	54			5	95			26	32	0.52	22.2
RA		PU	PU	17	6.3	771	722	217	66	34			5	35	5	56	27	23	0.50	31.7
RA	**Totals**			41	1.8	4,537	4,455	1,338	18	25	48	10	16	63	11	9	25	59	0.71	75.7
CH		PU	PU	100		999	999	300	100				18	82			12	8	0.19	119.3
CH	**Totals**			9		999	999	300	100				18	82			12	8	0.19	119.3
DF		DO	2M	51	2.4	2,057	2,008	603			36	64				100	40	338	2.01	5.9
DF		DO	3M	5		192	192	58		100					100		32	140	1.21	1.4
DF		DO	4M	10		421	421	126	100				7	14	15	64	33	33	0.50	12.6
DF		LO	2M	34		1,292	1,292	388			37	63				100	40	547	2.88	2.4
DF	**Totals**			36	1.2	3,961	3,912	1,175	11	5	31	53	1	2	7	91	35	175	1.28	22.3
WH		DO	2M	32		452	452	136			100				100		32	230	1.52	2.0
WH		DO	3M	57	9.2	860	781	235		100						100	40	151	1.14	5.2
WH		DO	4M	11		138	138	41	100				57	43			18	19	0.47	7.2
WH	**Totals**			13	5.5	1,450	1,371	412	10	57	33		6	4	33	57	28	96	0.98	14.3
Type Totals					1.9	10,947	10,736	3,225	22	19	35	24	9	35	11	44	20	46	0.67	231.6

TC TLOGSTBF

CH2M

Log Stock Table - Percent Board Feet

Project: CAMAS

T02N R04E S03 T0001

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02N	04E	03	CAMAS	0001	300.40	10	28

T02N R04E S03 T0001

Page 1

Date 7/6/2011

Time 2:06:03PM

S Spp T	So rt	Grd	Log Len	Gross MBF	% Def	Net MBF	% Spc	Percent Net Volume by Scaling Diameter in Inches 2-3 4-5	6-7 8-9	10-11 12-13	14-15 16-19	20-23 24-29	30-39 40+
RA	2S	2M	12	95		95	7.1			100.0			
RA	2S	2M	16	111		101	7.6				100.0		
RA	2S	2M	22	275		275	20.5				52.7 47.3		
RA	2S	2M	26	297		297	22.2			48.7	51.3		
RA	3S	3M	32	142		142	10.6			100.0			
RA	4S	4M	12	10		10	.8		100.0				
RA	4S	4M	22	20		20	1.5	100.0					
RA	4S	4M	26	103		103	7.7		100.0				
RA	4S	4M	30	77		77	5.8	100.0					
RA	PU	PU	19	10		10	.8	100.0					
RA	PU	PU	21	26		26	1.9	100.0					
RA	PU	PU	22	14		14	1.0	100.0					
RA	PU	PU	27	18		18	1.4	100.0					
RA	PU	PU	30	18		18	1.4	100.0					
RA	PU	PU	31	10		10	.8	100.0					
RA	PU	PU	40	88		73	5.5		100.0				
RA	PU	PU	41	48		48	3.6	100.0					
RA	Totals			1,363	1.8	1,338	41.5	18.0	13.9	10.6 17.9	29.8 9.7		
CH	PU	PU	20	53		53	17.6	100.0					
CH	PU	PU	23	122		122	40.5	100.0					
CH	PU	PU	29	126		126	41.9	100.0					
CH	Totals			300		300	9.3	100.0					
DF	DO	2M	40	618		603	51.3			36.1	63.9		
DF	DO	3M	32	58		58	4.9			100.0			
DF	DO	4M	20	8		8	.7	100.0					
DF	DO	4M	22	7		7	.6	100.0					
DF	DO	4M	24	11		11	.9	100.0					
DF	DO	4M	31	19		19	1.6	100.0					
DF	DO	4M	37	15		15	1.3	100.0					
DF	DO	4M	40	66		66	5.6	100.0					
DF	LO	2M	40	388		388	33.0				37.4	62.6	
DF	Totals			1,190	1.2	1,175	36.4	10.8		4.9 18.5	45.1	20.7	
WH	DO	2M	32	136		136	33.0				100.0		
WH	DO	3M	40	258		235	57.0			100.0			
WH	DO	4M	12	7		7	1.8	100.0					
WH	DO	4M	18	16		16	4.0	100.0					
WH	DO	4M	27	18		18	4.3	100.0					
WH	Totals			436	5.5	412	12.8	10.1		57.0	33.0		
Total	All Species			3,288	1.9	3,225	100.0	22.0	5.8	13.5 14.2	16.6 20.5	7.5	

TC TSTATS

STATISTICS

PAGE 1

CH2M **PROJECT CAMAS** DATE 7/6/2011

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
02N	04E	03	CAMAS	0001	300.40	10	28	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	10	28	2.8		
CRUISE	9	27	3.0	76,378	.0
DBH COUNT					
REFOREST					
COUNT					
BLANKS	1				
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
R ALDER	13	54.6	15.8	44		74.3	4,537	4,455	1,351	1,351
CHERRY	5	179.9	6.7	18		43.4	999	999	275	275
DOUG FIR	6	12.6	21.0	67	7	30.4	3,961	3,912	1,010	1,010
WHEMLOCK	3	7.2	19.2	59	3	14.4	1,450	1,371	393	393
TOTAL	*27*	*254.3*	*10.8*	*27*		*162.5*	*10,947*	*10,736*	*3,029*	*3,029*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 %	COEFF		SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
R ALDER	87.4	25.2	79	106	133			
CHERRY	100.0	49.7	5	10	15			
DOUG FIR	65.5	29.2	333	470	607			
WHEMLOCK	28.9	20.0	157	197	236			
TOTAL	*125.0*	*24.5*	*135*	*179*	*223*	*648*	*162*	*72*

CL: 68.1 %	COEFF		SAMPLE TREES - CF			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
R ALDER	66.6	19.2	25	31	37			
CHERRY	99.4	49.4	1	3	4			
DOUG FIR	52.8	23.5	89	117	144			
WHEMLOCK	14.3	9.9	50	56	61			
TOTAL	*106.2*	*20.8*	*38*	*48*	*58*	*468*	*117*	*52*

CL: 68.1 %	COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
R ALDER	138.1	45.9	30	55	80			
CHERRY	214.8	71.5	51	180	308			
DOUG FIR	153.1	50.9	6	13	19			
WHEMLOCK	316.2	105.2		7	15			
TOTAL	*141.5*	*47.1*	*135*	*254*	*374*	*886*	*222*	*98*

CL: 68.1 %	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
R ALDER	137.4	45.7	40	74	108			
CHERRY	185.9	61.9	17	43	70			
DOUG FIR	140.7	46.8	16	30	45			
WHEMLOCK	316.2	105.2		14	30			
TOTAL	*50.6*	*16.8*	*135*	*163*	*190*	*113*	*28*	*13*

CL: 68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
R ALDER	179.8	59.8	1,789	4,455	7,120			
CHERRY	260.4	86.6	133	999	1,865			
DOUG FIR	161.7	53.8	1,807	3,912	6,017			
WHEMLOCK	316.2	105.2		1,371	2,813			
TOTAL	*93.5*	*31.1*	*7,395*	*10,736*	*14,078*	*387*	*97*	*43*

TC TSTATS

CH2M

STATISTICS

PROJECT **CAMAS**

DATE 7/6/2011

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
02N	04E	03	CAMAS	0001	300.40	10	28	S	W

CL: 68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.	S.E.%	LOW	AVG	HIGH	5	10	15

CL: 68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
R ALDER	160.8	53.5	628	1,351	2,074			
CHERRY	235.2	78.3	60	275	490			
DOUG FIR	153.5	51.1	494	1,010	1,526			
WHEMLOCK	316.2	105.2		393	806			
TOTAL	*86.1*	*28.6*	*2,161*	*3,029*	*3,897*	*328*	*82*	*36*

TC TreeList
CH2M

Plot Tree List

Project **CAMAS**

Page 1
Date 7/6/2011

TWP	RGE	SC	TRACT	Type	Acres	Plots	Trees	CuFt S	BdFt W
02N	04E	03	CAMAS	0001	300.40	10	28		

Plot	Tree No	PF	A	Spc	S	C T	DBH	FP	FF	T D	BoleHgt	TotHgt	PRDVT	BfCf SgLnFiFiP	BfCf SgLnFiFiP	BfCf SgLnFiFiP	BfCf SgLnFiFiP	BfCf SgLnFiFiP
0011	0001	40	3	RA			18.0	16	85	D	18	50		00--				
0011	0002	40	3	RA			24.0	16	90	D	45	65		0012	CP--			
0011	0003	40	3	RA			12.0	16	80	D	35	43		44304				
0011	0004	40	3	RA			14.0	16	83	D	38	47		00--				
0012	0001	40	3	RA			19.0				48	78						
0012	0002	40	3	DF			28.0	16	90	F	105	135		L240	9240	94--		
0012	0003	40	3	DF			28.0	16	88	F	66	89		L240	94--			
0012	0004	40	3	RA			14.0	16	91	D	47	74		CP406				
0013	0001	40	3	DF			27.0	16	89	F	79	110		9240	94--			
0014	0001	40	3	RA			17.0	16	90	D	42	65		22162	4422			
0014	0002	40	3	RA			24.0	16	89	D	39	62		2222	4412	00--		
0014	0003	40	3	RA			15.0	16	88	D	37	59		2212	CP--			
0015	0001	40	3	DF		0												
0016	0001	40	3	CH			6.0	10		D	16			CP--1				
0016	0002	40	3	CH			6.0	10		D	12			00--				
0017	0001	40	3	RA			18.0	16		D	56			2226	CP--			
0017	0002	40	3	RA			20.0	16		D	70			2226	CP--			
0017	0003	40	3	RA			12.0	16		D	50			44264	CP--			
0017	0004	40	3	RA			18.0	16		D	55			2222	CP--			
0017	0005	40	3	RA			17.0	16		D	54			3332	CP--			
0018	0001	40	3	CH			8.5	16		D	22			CP--				
0019	0001	40	3	DF			13.0	16	89	F	47			006	94--			
0019	0002	40	3	CH			7.0	16	86	D	25			CP--				
0019	0003	40	3	CH			8.0	16		D	32			CP--				
0110	0001	40	3	DF			21.0	16		F	73			92402	94--			
0110	0002	40	3	WH			18.0	16	91	F	60			93404	94--			
0110	0003	40	3	WH			19.0	16		F	54			93404	94--			
0110	0004	40	3	WH			21.0	16		F	65			004	9232	94--		
0110	0005	40	3	DF			26.0	16		F	95			92402	9332	94--		

TC PLOTTREELIST

CH2M

Plot Tree List - Volumes

Project CAMAS

Date 7/6/2011

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CRUISED DATE
02N	04E	03	CAMAS	0001	300.40	10	28	7/1/2011

Plot No.	Tree No.	Age	SI	Spp St	Trees Me.	Ct.	DBH	16' FF	Tot Ht.	BA /Ac.	Trees /Ac.	Logs /Ac.	Net CuFt/Ac.	Net BdFt/Ac.	Total CUNITS	Total MBF
0011	0001	60		RA	1		18.0	85	50	55.4	31.33					
	0002	60		RA	1		24.0	90	65	49.4	15.72	15.7	607	314	182	9
	0003	60		RA	1		12.0	80	43	62.5	79.58	79.6	1,100	2,387	331	72
	0004	60		RA	1		14.0	83	47	58.1	54.32					
0011					4		15.1	83	47	225.3	180.94	95.3	1,708	2,702	513	81
0012	0001	60		RA		1	15.0	85	58	53.1	39.02	54.0	965	3,182	290	96
	0002	60		DF	1		28.0	90	135	49.4	11.55	34.6	2,225	10,625	668	319
	0003	60		DF	1		28.0	88	89	51.7	12.08	24.2	1,520	5,194	457	156
	0004	60		RA	1		14.0	91	74	48.3	45.18	45.2	1,010	2,259	304	68
0012					3	1	18.6	88	76	202.4	107.83	158.0	5,720	21,260	1,718	639
0013	0001	60		DF	1		27.0	89	110	50.5	12.70	25.4	1,739	6,350	522	191
0013					1		27.0	89	110	50.5	12.70	25.4	1,739	6,350	522	191
0014	0001	60		RA	1		17.0	90	65	49.4	31.33	62.7	1,033	3,760	310	113
	0002	60		RA	1		24.0	89	62	50.5	16.07	32.1	967	4,340	290	130
	0003	60		RA	1		15.0	88	59	51.7	42.09	84.2	970	3,367	291	101
0014					3		17.6	89	62	151.5	89.49	179.0	2,970	11,467	892	344
0015	0001	60		DF												
0015											0.00					
0016	0001	60		CH	1		6.0	58	32	118.9	605.58	605.6				
	0002	60		CH	1		6.0	58	20	118.9	605.58					
0016					2		6.0	58	26	237.8	1,211.17	605.6				
0017	0001	60		RA	1		18.0	90	61	49.4	27.94	55.9	1,288	5,030	387	151
	0002	60		RA	1		20.0	86	77	54.1	24.79	49.6	1,635	6,197	491	186
	0003	60		RA	1		12.0	80	60	62.5	79.58	159.2	1,385	3,979	416	120
	0004	60		RA	1		18.0	90	60	49.4	27.94	55.9	1,298	5,030	390	151
	0005	60		RA	1		17.0	90	59	49.4	31.33	62.7	1,253	4,699	376	141
0017					5		15.9	85	62	264.7	191.59	383.2	6,859	24,936	2,061	749
0018	0001	60		CH	1		8.5	76	26	69.3	175.74	175.7	767	1,757	230	53
0018					1		8.5	76	26	69.3	175.74	175.7	767	1,757	230	53
0019	0001	60		DF	1		13.0	89	62	50.5	54.79	54.8	873	2,191	262	66
	0002	60		CH	1		7.0	86	32	54.1	202.37	202.4	660	4,047	198	122
	0003	60		CH	1		8.0	74	46	73.0	209.26	209.3	1,324	4,185	398	126
0019					3		8.4	81	42	177.6	466.41	466.4	2,857	10,424	858	313
0110	0001	60		DF	1		21.0	88	86	51.7	21.47	42.9	1,685	5,583	506	168
	0002	60		WH	1		18.0	91	71	48.3	27.33	54.7	1,418	4,920	426	148
	0003	60		WH	1		19.0	91	63	48.3	24.53	49.1	1,235	3,680	371	111
	0004	60		WH	1		21.0	92	74	47.3	19.65	39.3	1,275	5,108	383	153
	0005	60		DF	1		26.0	89	108	50.5	13.70	41.1	2,059	9,177	618	276
0110					5		20.6	90	77	246.0	106.69	227.1	7,672	28,469	2,305	855
TYPE					27	1	10.8		39	162.5	254.26	231.6	3,029	10,736	9,100	3,225

TC TLOGSTVB

CH2M

Log Stock Table - MBF

Project: CAMAS

T02N R04E S03 T0001

T02N R04E S03 T0001

Page 1

Date 7/6/2011

Time 2:07:31PM

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02N	04E	03	CAMAS	0001	300.40	10	28

Spp	S T	So rt	Gr de	Log Len	Gross MBF	% Def	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
RA		2S	2M	12	95		95	7.1						95						
RA		2S	2M	16	111	9.1	101	7.6							101					
RA		2S	2M	22	275		275	20.5							145	130				
RA		2S	2M	26	297		297	22.2						145	152					
RA		3S	3M	32	142		142	10.6					142							
RA		4S	4M	12	10		10	.8			10									
RA		4S	4M	22	20		20	1.5		20										
RA		4S	4M	26	103		103	7.7			103									
RA		4S	4M	30	77		77	5.8		77										
RA		PU	PU	19	10		10	.8		10										
RA		PU	PU	21	26		26	1.9		26										
RA		PU	PU	22	14		14	1.0		14										
RA		PU	PU	27	18		18	1.4		18										
RA		PU	PU	30	18		18	1.4		18										
RA		PU	PU	31	10		10	.8		10										
RA		PU	PU	40	88	16.7	73	5.5			73									
RA		PU	PU	41	48		48	3.6		48										
RA		Totals			1,363	1.8	1,338	41.5		241	186		142	240	398	130				
CH		PU	PU																	
CH		PU	PU	20	53		53	17.6		53										
CH		PU	PU	23	122		122	40.5		122										
CH		PU	PU	29	126		126	41.9		126										
CH		Totals			300		300	9.3		300										
DF		DO	2M	40	618	2.4	603	51.3						218		385				
DF		DO	3M	32	58		58	4.9					58							
DF		DO	4M	20	8		8	.7		8										
DF		DO	4M	22	7		7	.6		7										
DF		DO	4M	24	11		11	.9		11										
DF		DO	4M	31	19		19	1.6		19										
DF		DO	4M	37	15		15	1.3		15										
DF		DO	4M	40	66		66	5.6		66										
DF		LO	2M	40	388		388	33.0								145	243			
DF		Totals			1,190	1.2	1,175	36.4		126			58	218		530	243			
WH		DO	2M	32	136		136	33.0							136					
WH		DO	3M	40	258	9.2	235	57.0					235							
WH		DO	4M	12	7		7	1.8		7										
WH		DO	4M	18	16		16	4.0		16										
WH		DO	4M	27	18		18	4.3		18										
WH		Totals			436	5.5	412	12.8		41			235		136					
Total All Species					3,288	1.9	3,225	100.0		710	186		434	458	534	660	243			

Type 2

T TSPCSTGR
CH2M

Species, Sort Grade - Board Foot Volumes (Type)

Project: CAMAS

Page 1
Date 7/6/2011
Time 1:45:49PM

T02N R04E S03 T0002 Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt	T02N R04E S03 T0002
02N	04E	03	CAMAS	0002	735.40	31	149	S	W	

Spp	ST	Sort	Grad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log Ln Ft	Bd Ft	CF/ Lf	Logs Per /Acre
DF		DO	2M	21	2.3	6,902	6,747	4,962			51	49	4		2	94	36	356	2.15	19.0
DF		DO	3M	19	1.7	6,087	5,984	4,401		97	3		2	1	6	91	39	90	0.82	66.4
DF		DO	4M	12		3,697	3,697	2,718	91	9			32	33	16	18	24	26	0.44	141.6
DF		PU	PU	1	4.5	302	289	212	44	56			44	4		52	23	36	0.60	8.0
DF		HI	2M	6		1,762	1,762	1,296			61	39				100	40	324	2.07	5.4
DF		HI	3M	1		183	183	134		100						100	40	120	0.68	1.5
DF		LO	SM		6.1	271	254	187				100				100	40	1840	8.25	.1
DF		LO	2M	17	.5	5,350	5,321	3,913			37	63				100	40	524	2.53	10.1
DF		LO	3M	6		1,615	1,615	1,188		88	12			7		93	38	129	0.83	12.5
DF		ME	2M	10	.0	3,112	3,112	2,289			60	40				100	40	381	2.35	8.2
DF		ME	3M	7	1.0	2,133	2,113	1,554		75	25					100	40	134	0.84	15.8
DF	**Totals**			98	1.1	31,414	31,075	22,853	11	31	30	28	5	5	4	86	31	108	0.94	288.6
WH		DO	2M	36	5.0	169	160	118			100					100	40	190	1.18	.8
WH		DO	3M	52	5.7	246	232	170		100						100	40	86	0.62	2.7
WH		DO	4M	12		53	53	39	100				52	48			22	24	0.37	2.2
WH	**Totals**			1	4.8	468	445	327	12	52	36		6	6		88	33	77	0.66	5.8
RA		4S	4M	100		119	119	88		100						100	40	60	0.43	2.0
RA	**Totals**			0		119	119	88		100						100	40	60	0.43	2.0
Type Totals					1.1	32,000	31,639	23,268	11	31	30	28	5	5	4	86	31	107	0.93	296.3

TC TLOGSTBF

CH2M

Log Stock Table - Percent Board Feet

Project: CAMAS

T02N R04E S03 T0002

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02N	04E	03	CAMAS	0002	735.40	31	149

T02N R04E S03 T0002

Date 7/6/2011

Time 1:45:50PM

S Spp	T	So rt	Grd	Log Len	Gross MBF	% Def	Net MBF	% Spc	Percent Net Volume by Scaling Diameter in Inches 2-3 4-5	6-7 8-9	10-11 12-13	14-15 16-19	20-23 24-29	30-39 40+
DF		DO	2M	16	78		78	.3			100.0			
DF		DO	2M	18	77		77	.3			100.0			
DF		DO	2M	20	41		41	.2			100.0			
DF		DO	2M	32	115		115	.5			100.0			
DF		DO	2M	36	110		110	.5			100.0			
DF		DO	2M	40	4,656		4,542	19.9			13.5	19.3 26.9	27.7 12.6	
DF		DO	3M	15	4		4	.0		100.0				
DF		DO	3M	18	64		64	.3			100.0			
DF		DO	3M	21	7		7	.0		100.0				
DF		DO	3M	26	42		42	.2		100.0				
DF		DO	3M	31	10		10	.0		100.0				
DF		DO	3M	32	275		275	1.2		4.6 52.9	25.7	16.9		
DF		DO	3M	36	104		101	.4		14.9 85.1				
DF		DO	3M	37	13		13	.1		100.0				
DF		DO	3M	40	3,957		3,884	17.0		37.7 31.4	31.0			
DF		DO	4M	12	30		30	.1	82.8	17.2				
DF		DO	4M	13	44		44	.2	91.1	8.9				
DF		DO	4M	14	115		115	.5	29.6	70.4				
DF		DO	4M	15	173		173	.8	54.7	43.4 1.9				
DF		DO	4M	17	128		128	.6	86.5	9.9 3.7				
DF		DO	4M	18	163		163	.7	100.0					
DF		DO	4M	19	174		174	.8	96.1	3.9				
DF		DO	4M	20	52		52	.2	100.0					
DF		DO	4M	21	20		20	.1	100.0					
DF		DO	4M	22	77		77	.3	89.3	10.7				
DF		DO	4M	23	114		114	.5	68.3	19.5 12.3				
DF		DO	4M	24	12		12	.1	100.0					
DF		DO	4M	26	13		13	.1	100.0					
DF		DO	4M	27	146		146	.6	93.9	6.1				
DF		DO	4M	28	222		222	1.0	100.0					
DF		DO	4M	29	169		169	.7	100.0					
DF		DO	4M	30	132		132	.6	100.0					
DF		DO	4M	32	24		24	.1	100.0					
DF		DO	4M	33	198		198	.9	100.0					
DF		DO	4M	34	92		92	.4	100.0					
DF		DO	4M	35	128		128	.6	100.0					
DF		DO	4M	36	24		24	.1	100.0					
DF		DO	4M	37	105		105	.5	100.0					
DF		DO	4M	38	72		72	.3	100.0					
DF		DO	4M	39	41		41	.2	100.0					
DF		DO	4M	40	189		189	.8	100.0					
DF		DO	4M	41	60		60	.3	100.0					
DF		PU	PU	19	74		74	.3	100.0					
DF		PU	PU	20	20		20	.1	100.0					
DF		PU	PU	24	9		9	.0		100.0				
DF		PU	PU	40	120		110	.5		100.0				
DF		HI	2M	40	1,296		1,296	5.7			38.7	22.4 38.9		
DF		HI	3M	40	134		134	.6		100.0				
DF		LO	SM	40	199		187	.8						100.0
DF		LO	2M	40	3,934		3,913	17.1			6.8	17.7 18.8	41.6 10.0	5.1

TC TLOGSTBF

CH2M

Log Stock Table - Percent Board Feet

Project: CAMAS

T02N R04E S03 T0002

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02N	04E	03	CAMAS	0002	735.40	31	149

T02N R04E S03 T0002

Page 2
Date 7/6/2011
Time 1:45:50PM

S Spp	T	So rt	Grd	Log Len	Gross MBF	% Def	Net MBF	% Spc	Percent Net Volume by Scaling Diameter in Inches 2-3 4-5	6-7 8-9	10-11 12-13	14-15 16-19	20-23 24-29	30-39 40+
DF		LO	3M	30	80		80	.3		100.0				
DF		LO	3M	36	43		43	.2		100.0				
DF		LO	3M	40	1,065		1,065	4.7		49.1	37.2 13.7			
DF		M	2M	40	2,289		2,289	10.0			27.7	19.6 12.3	22.9 17.5	
DF		M	3M	40	1,569		1,554	6.8		51.4	23.2 16.4	9.1		
DF		Totals			23,102	1.1	22,853	98.2	11.2	7.6 14.1	8.9 12.7	10.9 12.0	14.9 6.0	1.7
WH		DO	2M	40	124		118	36.0			100.0			
WH		DO	3M	40	181		170	52.0		33.7 66.3				
WH		DO	4M	18	21		21	6.3	100.0					
WH		DO	4M	28	19		19	5.7	100.0					
WH		Totals			344	4.8	327	1.4	12.0	17.5 34.5	36.0			
RA		4S	4M	40	88		88	100.0		100.0				
RA		Totals			88		88	.4		100.0				
Total		All Species			23,533	1.1	23,268	100.0	11.2	8.1 14.3	8.7 13.0	10.7 11.8	14.6 5.9	1.7

TC TSTATS

STATISTICS

PAGE 1

CH2M PROJECT CAMAS DATE 7/6/2011

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
02N	04E	03	CAMAS	0002	735.40	31	149	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	31	149	4.8		
CRUISE	31	149	4.8	142,632	.1
DBH COUNT					
REFOREST					
COUNT					
BLANKS					
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	145	188.4	15.2	51	61	236.9	31,414	31,075	8,420	8,420
WHEMLOCK	3	3.5	15.2	59	1	4.5	468	445	125	125
R ALDER	1	2.0	12.0	50		1.6	119	119	34	34
TOTAL	*149*	*194.0*	*15.2*	*51*		*243.0*	*32,000*	*31,639*	*8,580*	*8,580*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 %	COEFF		SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	118.9	9.9	385	427	470			
WHEMLOCK	58.7	40.6	81	137	192			
R ALDER								
TOTAL	*120.2*	*9.8*	*378*	*419*	*460*	*577*	*144*	*64*

CL: 68.1 %	COEFF		SAMPLE TREES - CF			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	97.3	8.1	93	101	109			
WHEMLOCK	51.0	35.3	25	38	52			
R ALDER								
TOTAL	*98.4*	*8.1*	*91*	*99*	*107*	*386*	*97*	*43*

CL: 68.1 %	COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	79.0	14.2	162	188	215			
WHEMLOCK	401.4	72.0	1	4	6			
R ALDER	556.8	99.9	0	2	4			
TOTAL	*75.3*	*13.5*	*168*	*194*	*220*	*226*	*57*	*25*

CL: 68.1 %	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	41.5	7.5	219	237	255			
WHEMLOCK	409.4	73.5	1	4	8			
R ALDER	556.8	99.9	0	2	3			
TOTAL	*39.1*	*7.0*	*226*	*243*	*260*	*61*	*15*	*7*

CL: 68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	50.6	9.1	28,253	31,075	33,897			
WHEMLOCK	466.2	83.7	73	445	818			
R ALDER	556.8	99.9	0	119	238			
TOTAL	*48.7*	*8.7*	*28,877*	*31,639*	*34,402*	*95*	*24*	*11*

CL: 68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	38.6	6.9	7,837	8,420	9,004			
WHEMLOCK	442.4	79.4	26	125	225			
R ALDER	556.8	99.9	0	34	68			
TOTAL	*36.4*	*6.5*	*8,019*	*8,580*	*9,140*	*53*	*13*	*6*

TC TLOGSTVB
CH2M

Log Stock Table - MBF

Project: CAMAS

T02N R04E S03 T0002

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02N	04E	03	CAMAS	0002	735.40	31	149

T02N R04E S03 T0002
Page 1
Date 7/6/2011
Time 1:45:52PM

Spp	S T	So rt	Gr de	Log Len	Gross MBF	% Def	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
DF		DO	2M	16	78		78	.3						78						
DF		DO	2M	18	77		77	.3						77						
DF		DO	2M	20	41		41	.2						41						
DF		DO	2M	32	115		115	.5						115						
DF		DO	2M	36	110		110	.5						110						
DF		DO	2M	40	4,656	2.5	4,542	19.9						615	877	1220	1257	572		
DF		DO	3M	15	4		4	.0			4									
DF		DO	3M	18	64		64	.3						64						
DF		DO	3M	21	7		7	.0			7									
DF		DO	3M	26	42		42	.2				42								
DF		DO	3M	31	10		10	.0			10									
DF		DO	3M	32	275		275	1.2			13	145	71		46					
DF		DO	3M	36	104	2.9	101	.4			15	86								
DF		DO	3M	37	13		13	.1				13								
DF		DO	3M	40	3,957	1.8	3,884	17.0			1464	1218	1202							
DF		DO	4M	12	30		30	.1		25	5									
DF		DO	4M	13	44		44	.2		40	4									
DF		DO	4M	14	115		115	.5		34	81									
DF		DO	4M	15	173		173	.8		95	75	3								
DF		DO	4M	17	128		128	.6		110	13	5								
DF		DO	4M	18	163		163	.7		163										
DF		DO	4M	19	174		174	.8		167	7									
DF		DO	4M	20	52		52	.2		52										
DF		DO	4M	21	20		20	.1		20										
DF		DO	4M	22	77		77	.3		69	8									
DF		DO	4M	23	114		114	.5		78	22	14								
DF		DO	4M	24	12		12	.1		12										
DF		DO	4M	26	13		13	.1		13										
DF		DO	4M	27	146		146	.6		137	9									
DF		DO	4M	28	222		222	1.0		222										
DF		DO	4M	29	169		169	.7		169										
DF		DO	4M	30	132		132	.6		132										
DF		DO	4M	32	24		24	.1		24										
DF		DO	4M	33	198		198	.9		198										
DF		DO	4M	34	92		92	.4		92										
DF		DO	4M	35	128		128	.6		128										
DF		DO	4M	36	24		24	.1		24										
DF		DO	4M	37	105		105	.5		105										
DF		DO	4M	38	72		72	.3		72										
DF		DO	4M	39	41		41	.2		41										
DF		DO	4M	40	189		189	.8		189										
DF		DO	4M	41	60		60	.3		60										
DF		PU	PU	19	74		74	.3		74										
DF		PU	PU	20	20		20	.1		20										
DF		PU	PU	24	9		9	.0			9									
DF		PU	PU	40	120	8.3	110	.5				110								
DF		HI	2M	40	1,296		1,296	5.7						501	291	504				
DF		HI	3M	40	134		134	.6				134								
DF		LO	SM	40	199	6.1	187	.8											187	
DF		LO	2M	40	3,934	.5	3,913	17.1						264	693	736	1627	392	200	

TC TLOGSTVB
CH2M

Log Stock Table - MBF

Project: CAMAS

T02N R04E S03 T0002

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02N	04E	03	CAMAS	0002	735.40	31	149

T02N R04E S03 T0002

Date 7/6/2011
Time 1:45:52PM

Spp	S T	So rt	Gr de	Log Len	Gross MBF	% Def	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
DF		LO	3M	30	80		80	.3				80								
DF		LO	3M	36	43		43	.2				43								
DF		LO	3M	40	1,065		1,065	4.7				523	396	146						
DF		M	2M	40	2,289		2,289	10.0						635	449	281	525	400		
DF		M	3M	40	1,569	1.0	1,554	6.8				798	360	255	141					
DF		Totals			23,102	1.1	22,853	98.2		2566	1746	3215	2029	2900	2498	2741	3409	1364	386	
WH		DO	2M	40	124	5.0	118	36.0						118						
WH		DO	3M	40	181	5.7	170	52.0			57	113								
WH		DO	4M	18	21		21	6.3		21										
WH		DO	4M	28	19		19	5.7		19										
WH		Totals			344	4.8	327	1.4		39	57	113		118						
RA		4S	4M	40	88		88	100.0			88									
RA		Totals			88		88	.4			88									
Total All Species					23,533	1.1	23,268	100.0		2605	1891	3328	2029	3017	2498	2741	3409	1364	386	

TC TreeList **Plot Tree List** Page 1

CH2M **Project CAMAS** Date 7/6/2011

TWP	RGE	SC	TRACT	Type	Acres	Plots	Trees	CuFt	BdFt
02N	04E	03	CAMAS	0002	735.40	31	149	S	W

Plot	Tree No	PF	A	Spc	S	C T	DBH	FP	FF	T D	Bole Hgt	Tot Hgt	PRDVT	BfCf SgLnFiFiP	BfCf SgLnFiFiP	BfCf SgLnFiFiP	BfCf SgLnFiFiP	BfCf SgLnFiFiP
0021	0001	40	3	DF			16.0	16	89	F	38	95		94--2	00--			
0021	0002	40	3	DF			31.0	16	90	H	110	144		92406	9240	94--		
0021	0003	40	3	DF			31.0	16	90	H	108	149		L2402	92404	CP--		
0021	0004	40	3	DF			29.0	16	90	H	95	129		L2402	9340	94--		
0021	0005	40	3	DF			31.0	16	90	H	102	140		L240	9240	94--		
0021	0006	40	3	DF			16.0	16	89	F	70	110		M340	94--			
0022	0001	40	3	DF			22.0	16	90	F	90	125		92402	9340	00--		
0022	0002	40	3	DF			26.0	16	90	F	105	135		9240	9340	94--		
0022	0003	40	3	DF			23.0	16	90	F	100	132		L240	9340	94--		
0022	0004	40	3	DF			30.0	16	90	G	106	145		9240	9240	94--		
0022	0005	40	3	DF			32.0	16	90	H	106	142		9240	9240	94--		
0023	0001	40	3	DF			20.0	16	90	F	85	135		H240	9340			
0023	0002	40	3	DF			15.0	16	89	F	71	114		9340	94--			
0023	0003	40	3	DF			21.0	16	90	F	86	137		H240	9340			
0023	0004	40	3	DF			20.0	16	90	F	80	129		M240	94--			
0023	0005	40	3	DF			19.0	16	90	F	79	121		M340	94--			
0024	0001	40	3	DF			22.0	16	90	F	109	138		L240	9340	94--		
0024	0002	40	3	DF			25.0	16	90	F	120	149		H240	9240	94--		
0024	0003	40	3	DF			20.0	16	90	F	106	137		L240	9340	94--		
0025	0001	40	3	DF			14.0	16	89	F	60	111		9340	94--			
0025	0002	40	3	DF			16.0	16	90	F	86	120		9340	9326	94--		
0025	0003	40	3	DF			20.0	16	90	F	95	126		9240	9332	94--		
0025	0004	40	3	DF			21.0	16	90	F	98	130		L240	9332	94--		
0025	0005	40	3	DF			16.0	16	89	F	72	116		93402	94--			
0025	0006	40	3	DF			15.0	16	89	F	65	110		93402	94--			
0025	0007	40	3	DF			19.0	16	90	F	78	121		9240	94--			
0025	0008	40	3	DF			32.0	16	90	H	100	141		L240	9240	94--		
0026	0001	40	3	DF			32.0	16	90	H	115	148		L240	9240	93--		
0026	0002	40	3	DF			15.0	16	87	F	40	70		94--4				
0026	0003	40	3	DF			33.0	16	90	H	114	166		92404	9240	93--		
0026	0004	40	3	DF			26.0	16	90	F	100	135		H240	9340	94--		
0026	0005	40	3	DF			25.0	16	89	F	80	115		M240	94--			
0027	0001	40	3	DF			36.0	16	90	I	100	125		L240	9240	00--		
0027	0002	40	3	DF			32.0	16	90	H	98	137		M240	9240	93--		
0027	0003	40	3	DF			30.0	16	90	G	104	142		M240	9240	93--		
0028	0001	40	3	DF			12.0	16	89	F	72	109		M340	94--			
0028	0002	40	3	DF			14.0	16	89	F	75	110		L340	94--			
0028	0003	40	3	DF			19.0	16	90	F	95	132		H240	L340	94--		
0028	0004	40	3	DF			20.0	16	90	F	93	125		M240	L336	94--		
0028	0005	40	3	DF			17.0	16	90	F	87	117		L340	9340			
0029	0001	40	3	DF			22.0	16	90	F	86	130		L240	9340			

TWP	RGE	SC	TRACT	Type	Acres	Plots	Trees	CuFt S	BdFt W
02N	04E	03	CAMAS	0002	735.40	31	149		

Plot	Tree No	PF	A	Spc	S	C T	DBH	FP	FF	T D	BoleHgt	TotHgt	PRDVT	BfCf SgLnFiFiP	BfCf SgLnFiFiP	BfCf SgLnFiFiP	BfCf SgLnFiFiP	BfCf SgLnFiFiP
0029	0002	40	3	DF			28.0	16	90	G	105	138		L240	9240	94--		
0029	0003	40	3	DF			35.0	16	90	I	106	150		L240	9240	94--		
0029	0004	40	3	DF			32.0	16	90	H	100	148		L240	9240	94--		
0029	0005	40	3	DF			24.0	16	90	F	96	135		L240	9340	94--		
0210	0001	40	3	DF			16.0	16	89	F	52	97		9336	94--			
0210	0002	40	3	DF			19.0	16	89	F	68	100		9236	94--			
0211	0001	40	3	DF			15.0	16	89	F	61	103		M340	94--			
0211	0002	40	3	DF			12.0	16	89	F	45	92		93402				
0211	0003	40	3	DF			16.0	16	89	F	71	105		93402	94--			
0211	0004	40	3	DF			9.0	16	87	F	18	69		94--				
0211	0005	40	3	DF			16.0	16	89	F	72	100		9340	94--			
0212	0001	40	3	DF			25.0	16	90	F	103	131		L240	9340	94--		
0212	0002	40	3	DF			10.0	16	88	F	29	89		94--				
0212	0003	40	3	DF			18.0	16	90	F	82	124		L240	94--			
0212	0004	40	3	DF			21.0	16	90	F	85	128		M340	9340	00--		
0212	0005	40	3	DF			15.0	16	89	F	63	107		M340	94--			
0212	0006	40	3	DF			14.0	16	89	F	56	98		9340	94--			
0212	0007	40	3	DF			10.0	16	87	F	34	72		94--				
0212	0008	40	3	DF			35.0	16	90	I	82	129		9240	9340	00--		
0213	0001	40	3	DF			17.0	16	93	F	70	112		L340	94--			
0213	0002	40	3	DF			31.0	16	90	G	106	132		9240	9240	94--		
0213	0003	40	3	DF			17.0	16	89	F	75	115		L340	94--			
0213	0004	40	3	DF			10.0	16	89	F	60	98		9340	94--			
0213	0005	40	3	DF			11.0	16	89	F	64	95		9340	94--			
0213	0006	40	3	DF			12.0	16	89	F	70	101		9340	94--			
0213	0007	40	3	DF			8.0	16	85	F	15	60		94--				
0213	0008	40	3	DF			15.0	16	89	F	71	109		L340	94--			
0214	0001	40	3	DF			16.0	16	88	F	62	86		9340	94--			
0214	0002	40	3	DF			28.0	16	90	G	88	136		9240	9340	00--		
0214	0003	40	3	DF			33.0	16	90	H	96	123		L240	9240	94--		
0215	0001	40	3	DF			16.0	16	90	F	61	117		L340	94--			
0215	0002	40	3	DF			30.0	16	90	H	86	128		M240	9340	00--		
0215	0003	40	3	DF			30.0	16	90	H	88	129		L240	9340	00--		
0215	0004	40	3	DF			42.0	16	90	J	120	164		L240	9240	93--		
0216	0001	40	3	DF			8.0	16	82	F	26	50		9414	00--			
0216	0002	40	3	DF			37.0	16	90	I	100	152		M240	L240	94--		
0216	0003	40	3	DF			46.0	16	90	K	115	158		L1401	9240	93--		
0216	0004	40	3	DF			23.0	16	89	F	88	113		H240	9340			
0216	0005	40	3	DF			38.0	16	90	I	115	159		M240	L240	93--		
0217	0001	40	3	DF			24.0	16	89	F	82	112		9240	9440			
0217	0002	40	3	DF			18.0	16	89	F	85	115		M340	9340			
0217	0003	40	3	DF			20.0	16	89	F	81	110		L240	94--			
0217	0004	40	3	DF			15.0	16	89	F	70	105		L340	94--			
0217	0005	40	3	DF			14.0	16	89	F	69	100		H340	94--			

TWP	RGE	SC	TRACT	Type	Acres	Plots	Trees	CuFt S	BdFt W
02N	04E	03	CAMAS	0002	735.40	31	149		

Plot	Tree No	PF	A	Spc	S	C T	DBH	FP	FF	T D	BoleHgt	TotHgt	PRDVT	BfCf SgLnFiFiP	BfCf SgLnFiFiP	BfCf SgLnFiFiP	BfCf SgLnFiFiP	BfCf SgLnFiFiP
0217	0006	40	3	DF			20.0	16	90	F	90	128		M240	9340			
0217	0007	40	3	DF			27.0	16	89	G	78	109		924001	93--2			
0217	0008	40	3	DF			20.0	16	90	F	87	125		M240	9340			
0217	0009	40	3	DF			9.0	10	82	F	16	50		94--				
0218	0001	40	3	DF			9.0	16	84	F	20	57		94--				
0218	0002	40	3	DF			21.0	16	89	F	84	116		92402	9340			
0218	0003	40	3	DF			17.0	16	89	F	75	112		9340	94--			
0218	0004	40	3	DF			16.0	16	88	F	56	91		M340	94--			
0218	0005	40	3	DF			16.0	16	89	F	62	92		93404	94--			
0219	0001	40	3	DF			13.0	16	88	F	49	80		9340				
0219	0002	40	3	DF			25.0	16	89	F	69	93.		92404	94282			
0219	0003	40	3	DF			7.0	6	85	F	8	58		00--				
0219	0004	40	3	DF			12.0	6	87	F	28	75		94--				
0219	0005	40	3	DF			18.0	6	89	F	60	96		93404	94--			
0220	0001	40	3	DF			18.0	6	87	F	40	70		9318	00--			
0220	0002	40	3	DF			17.0	6	85	F	38	60		94--				
0221	0001	40	3	DF			11.0	6	87	F	36	75		94--				
0221	0002	40	3	DF			9.0	6	87	F	30	71		94--				
0221	0003	40	3	DF			8.0	6	86	F	20	65		CP--				
0221	0004	40	3	DF			10.0	6	87	F	35	69		94--				
0222	0001	40	3	DF			19.0	6	89	F	80	110		M240	9440	00--		
0222	0002	40	3	DF			21.0	6	89	F	83	112		H240	9440			
0222	0003	40	3	DF			24.0	6	89	F	84	114		M240	9340			
0222	0004	40	3	DF			15.0	6	89	F	49	101		9340				
0223	0001	40	3	DF			14.0	6	88	F	57	89		9340	94--			
0223	0002	40	3	DF			12.0	6	89	F	47	95		93408				
0223	0003	40	3	DF			12.0	6	89	F	47	92		9340				
0224	0001	40	3	DF			15.0	16	88	F	60	85		CP4010	CP20	00--		
0224	0002	40	3	DF			11.0	16	88	F	55	90		9340	94--			
0224	0003	40	3	DF			14.0	16	88	F	60	87		M340	94--			
0224	0004	40	3	DF			16.0	16	89	F	69	96		9218	008	94--		
0224	0005	40	3	DF			11.0	16	87	F	41	75		94404				
0225	0001	40	3	DF			15.0	16	88	F	45	78		9340				
0225	0002	40	3	RA			12.0	16	91	D	50	71		4440	00--			
0226	0001	40	3	DF			19.0	16	89	F	61	96		M340	94--			
0226	0002	40	3	DF			11.0	16	88	F	28	78		94--				
0226	0003	40	3	DF			8.0	10	86	F	14	64		94--				
0226	0004	40	3	DF			20.0	16	89	F	72	103		H240	94--			
0226	0005	40	3	DF			15.0	16	89	F	60	95		M340	94--			
0227	0001	40	3	DF			21.0	16	89	F	77	110		M240	94--2			
0227	0002	40	3	DF			29.0	16	90	F	90	120		H240	9340	00--		
0227	0003	40	3	DF			19.0	16	89	F	88	115		L340	9340			

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TWP	RGE	SC	TRACT	Type	Acres	Plots	Trees	CuFt	BdFt
02N	04E	03	CAMAS	0002	735.40	31	149	S	W

Plot	Tree No	PF	A	Spc	S	C T	DBH	FP	FF	T D	BoleHgt	TotHgt	PRDVT	BfCf SgLnFiFiP	BfCf SgLnFiFiP	BfCf SgLnFiFiP	BfCf SgLnFiFiP	BfCf SgLnFiFiP
0227	0004	40	3	DF			11.0	16	87	F	24	76		94--				
0227	0005	40	3	WH			18.0	16	93	F	70	100		92402	94--			
0227	0006	40	3	WH			14.0	16	93	F	60	102		93402	94--			
0228	0001	40	3	DF			18.0	16	89	F	80	105		M240	9440	00--		
0228	0002	40	3	DF			13.0	16	88	F	50	90		L330	94--			
0228	0003	40	3	DF			9.0	16	86	F	20	68		94--				
0228	0004	40	3	DF			17.0	16	89	F	70	101		M3404	94--			
0228	0005	40	3	DF			15.0	16	89	F	63	101		9216	9340			
0228	0006	40	3	DF			7.0	7	85	F	8	58		00--				
0228	0007	40	3	DF			23.0	16	90	F	87	118		L240	9220	94--		
0228	0008	40	3	DF			14.0	16	89	F	59	98		M340	94--			
0229	0001	40	3	DF			16.5	16		F	77			9340	94--			
0229	0002	40	3	DF			13.0	16		F	64			9340	94--			
0229	0003	40	3	DF			35.0	16		I	106			9240	9240	94--		
0230	0001	40	3	DF			17.5	16		F	85			9232	9332	94--		
0230	0002	40	3	DF			23.0	16		F	90			9240	9332	94--		
0230	0003	40	3	WH			14.5	16		F	50			006	9340			
0230	0004	40	3	DF			16.5	16		F	74			9340	94--			
0231	0001	40	3	DF			29.0	16	89	H	82	110		92402	9340			
0231	0002	40	3	DF			36.0	16	90	I	90	130		9240	9332	94--		
0231	0003	40	3	DF			25.0	16	89	F	80	104		M240	94--			
0231	0004	40	3	DF			31.0	16	90	H	83	120		9240	9340			

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TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CRUISED DATE
02N	04E	03	CAMAS	0002	735.40	31	149	7/1/2011

Plot No.	Tree No	Age	SI	Spp St	Trees Me.	Ct.	DBH	16' FF	Tot Ht.	BA /Ac.	Trees /Ac.	Logs /Ac	Net CuFt/Ac.	Net BdFt/Ac.	Total CUNITS	Total MBF
0021	0001	60		DF	1		16.0	89	95	50.5	36.17	36.2	912	1,447	216	34
	0002	60		DF	1		31.0	90	144	49.4	9.42	28.3	2,341	10,458	555	248
	0003	60		DF	1		31.0	90	149	49.4	9.42	28.3	2,272	10,270	539	244
	0004	60		DF	1		29.0	90	129	49.4	10.77	32.3	2,062	9,259	489	220
	0005	60		DF	1		31.0	90	140	49.4	9.42	28.3	2,200	10,458	522	248
	0006	60		DF	1		16.0	89	110	50.5	36.17	72.3	1,627	6,510	386	154
0021					6		22.2	89	116	298.5	111.36	225.6	11,415	48,401	2,708	1,148
0022	0001	60		DF	1		22.0	90	125	49.4	18.71	37.4	1,918	7,670	455	182
	0002	60		DF	1		26.0	90	135	49.4	13.39	40.2	2,154	9,777	511	232
	0003	60		DF	1		23.0	90	132	49.4	17.12	51.3	2,095	9,242	497	219
	0004	60		DF	1		30.0	90	145	49.4	10.06	30.2	2,206	10,362	523	246
	0005	60		DF	1		32.0	90	142	49.4	8.84	26.5	2,272	11,229	539	266
0022					5		25.8	90	134	246.9	68.12	185.6	10,645	48,281	2,525	1,145
0023	0001	60		DF	1		20.0	90	135	49.4	22.64	45.3	1,815	6,791	431	161
	0002	60		DF	1		15.0	89	114	50.5	41.15	82.3	1,588	6,173	377	146
	0003	60		DF	1		21.0	90	137	49.4	20.53	41.1	1,854	7,186	440	170
	0004	60		DF	1		20.0	90	129	49.4	22.64	45.3	1,764	6,338	418	150
	0005	60		DF	1		19.0	90	121	49.4	25.08	50.2	1,708	6,019	405	143
0023					5		18.6	90	125	248.0	132.03	264.1	8,729	32,506	2,071	771
0024	0001	60		DF	1		22.0	90	138	49.4	18.71	56.1	2,315	10,850	549	257
	0002	60		DF	1		25.0	90	149	49.4	14.49	43.5	2,485	11,734	589	278
	0003	60		DF	1		20.0	90	137	49.4	22.64	67.9	2,210	9,733	524	231
0024					3		22.1	90	140	148.1	55.83	167.5	7,009	32,317	1,663	767
0025	0001	60		DF	1		14.0	89	111	50.5	47.24	94.5	1,407	5,196	334	123
	0002	60		DF	1		16.0	90	120	49.4	35.37	106.1	1,945	8,842	461	210
	0003	60		DF	1		20.0	90	126	49.4	22.64	67.9	2,053	9,054	487	215
	0004	60		DF	1		21.0	90	130	49.4	20.53	61.6	2,143	10,265	508	244
	0005	60		DF	1		16.0	89	116	50.5	36.17	72.3	1,652	6,148	392	146
	0006	60		DF	1		15.0	89	110	50.5	41.15	82.3	1,517	5,350	360	127
	0007	60		DF	1		19.0	90	121	49.4	25.08	50.2	1,697	6,019	402	143
	0008	60		DF	1		32.0	90	141	49.4	8.84	26.5	2,113	9,815	501	233
0025					8		17.6	89	118	398.4	237.01	561.4	14,527	60,690	3,446	1,440
0026	0001	60		DF	1		32.0	90	148	49.4	8.84	26.5	2,430	12,379	576	294
	0002	60		DF	1		15.0	87	70	52.8	43.06	43.1	1,012	1,723	240	41
	0003	60		DF	1		33.0	90	166	49.4	8.31	24.9	2,420	11,307	574	268
	0004	60		DF	1		26.0	90	135	49.4	13.39	40.2	2,084	9,376	494	222
	0005	60		DF	1		25.0	89	115	50.5	14.81	29.6	1,776	6,518	421	155
0026					5		22.8	88	104	251.5	88.43	164.3	9,721	41,302	2,306	980
0027	0001	60		DF	1		36.0	90	125	49.4	6.99	14.0	2,005	10,549	476	250
	0002	60		DF	1		32.0	90	137	49.4	8.84	26.5	2,102	9,726	499	231
	0003	60		DF	1		30.0	90	142	49.4	10.06	30.2	2,194	10,362	521	246
0027					3		32.4	90	136	148.1	25.89	70.7	6,302	30,637	1,495	727
0028	0001	60		DF	1		12.0	89	109	50.5	64.30	128.6	1,766	7,716	419	183
	0002	60		DF	1		14.0	89	110	50.5	47.24	94.5	1,739	7,558	413	179
	0003	60		DF	1		19.0	90	132	49.4	25.08	75.2	2,059	8,527	489	202
	0004	60		DF	1		20.0	90	125	49.4	22.64	67.9	2,030	8,601	482	204
	0005	60		DF	1		17.0	90	117	49.4	31.33	62.7	1,825	7,519	433	178
0028					5		15.5	89	115	249.1	190.58	428.9	9,419	39,922	2,234	947

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TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CRUISED DATE
02N	04E	03	CAMAS	0002	735.40	31	149	7/1/2011

Plot No.	Tree No.	Age	SI	Spp St	Trees Me.	Ct. DBH	16' FF	Tot Ht.	BA /Ac.	Trees /Ac.	Logs /Ac.	Net CuFt/Ac.	Net BdFt/Ac.	Total CUNITS	Total MBF
0029	0001	60		DF	1	22.0	90	130	49.4	18.71	37.4	1,892	7,857	449	186
	0002	60		DF	1	28.0	90	138	49.4	11.55	34.6	2,232	10,740	530	255
	0003	60		DF	1	35.0	90	150	49.4	7.39	22.2	2,295	11,752	544	279
	0004	60		DF	1	32.0	90	148	49.4	8.84	26.5	2,113	9,815	501	233
	0005	60		DF	1	24.0	90	135	49.4	15.72	47.2	1,983	8,331	470	198
0029					5	27.0	90	138	246.9	62.21	167.9	10,514	48,495	2,494	1,150
0210	0001	60		DF	1	16.0	89	97	50.5	36.17	72.3	1,233	3,978	292	94
	0002	60		DF	1	19.0	89	100	50.5	25.65	51.3	1,533	5,386	364	128
0210					2	17.3	89	98	101.0	61.81	123.6	2,766	9,364	656	222
0211	0001	60		DF	1	15.0	89	103	50.5	41.15	82.3	1,469	5,761	349	137
	0002	60		DF	1	12.0	89	92	50.5	64.30	64.3	1,101	3,858	261	92
	0003	60		DF	1	16.0	89	105	50.5	36.17	72.3	1,640	6,148	389	146
	0004	60		DF	1	9.0	87	69	52.8	119.62	119.6	494	2,392	117	57
	0005	60		DF	1	16.0	89	100	50.5	36.17	72.3	1,652	6,510	392	154
0211					5	12.5	88	87	254.8	297.40	410.9	6,356	24,670	1,508	585
0212	0001	60		DF	1	25.0	90	131	49.4	14.49	43.5	2,130	9,561	505	227
	0002	60		DF	1	10.0	88	89	51.7	94.70	94.7	767	2,841	182	67
	0003	60		DF	1	18.0	90	124	49.4	27.94	55.9	1,835	6,707	435	159
	0004	60		DF	1	21.0	90	128	49.4	20.53	41.1	1,854	7,186	440	170
	0005	60		DF	1	15.0	89	107	50.5	41.15	82.3	1,493	5,761	354	137
	0006	60		DF	1	14.0	89	98	50.5	47.24	94.5	1,361	4,724	323	112
	0007	60		DF	1	10.0	87	72	52.8	96.89	96.9	924	3,876	219	92
	0008	60		DF	1	35.0	90	129	49.4	7.39	14.8	1,783	7,613	423	181
0212					8	14.5	88	95	403.0	350.34	523.6	12,147	48,268	2,882	1,145
0213	0001	60		DF	1	17.0	93	112	46.2	29.34	58.7	1,534	6,162	364	146
	0002	60		DF	1	31.0	90	132	49.4	9.42	28.3	2,258	10,929	536	259
	0003	60		DF	1	17.0	89	115	50.5	32.04	64.1	1,738	7,048	412	167
	0004	60		DF	1	10.0	89	98	50.5	92.59	185.2	1,459	7,407	346	176
	0005	60		DF	1	11.0	89	95	50.5	76.52	153.0	1,583	6,887	376	163
	0006	60		DF	1	12.0	89	101	50.5	64.30	128.6	1,734	7,716	411	183
	0007	60		DF	1	8.0	85	60	55.4	158.60	158.6	551	3,172	131	75
	0008	60		DF	1	15.0	89	109	50.5	41.15	82.3	1,588	6,173	377	146
0213					8	12.1	88	89	403.5	503.96	858.7	12,447	55,493	2,953	1,316
0214	0001	60		DF	1	16.0	88	86	51.7	36.99	74.0	1,449	5,179	344	123
	0002	60		DF	1	28.0	90	136	49.4	11.55	23.1	1,909	7,969	453	189
	0003	60		DF	1	33.0	90	123	49.4	8.31	24.9	2,019	9,644	479	229
0214					3	22.0	89	102	150.4	56.86	122.0	5,376	22,792	1,275	541
0215	0001	60		DF	1	16.0	90	117	49.4	35.37	70.7	1,375	4,951	326	117
	0002	60		DF	1	30.0	90	128	49.4	10.06	20.1	1,827	8,249	433	196
	0003	60		DF	1	30.0	90	129	49.4	10.06	20.1	1,890	8,249	448	196
	0004	60		DF	1	42.0	90	164	49.4	5.13	15.4	2,467	13,294	585	315
0215					4	24.4	90	125	197.5	60.62	126.4	7,559	34,744	1,793	824
0216	0001	60		DF	1	8.0	82	50	59.5	170.42	170.4	651	3,408	154	81
	0002	60		DF	1	37.0	90	152	49.4	6.61	19.8	2,110	10,846	501	257
	0003	60		DF	1	46.0	90	158	49.4	4.28	12.8	2,402	12,409	570	294
	0004	60		DF	1	23.0	89	113	50.5	17.50	35.0	1,877	7,526	445	179
	0005	60		DF	1	38.0	90	159	49.4	6.27	18.8	2,363	12,791	561	303
0216					5	15.2	83	64	258.1	205.09	256.9	9,403	46,981	2,231	1,115
0217	0001	60		DF	1	24.0	89	112	50.5	16.07	32.1	1,869	7,073	443	168

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CRUISED DATE
02N	04E	03	CAMAS	0002	735.40	31	149	7/1/2011

Plot No.	Tree No.	Age	SI	Spp St	Trees Me.	Ct.	DBH	16' FF	Tot Ht.	BA /Ac.	Trees /Ac.	Logs /Ac.	Net CuFt/Ac.	Net BdFt/Ac.	Total CUNITS	Total MBF
0217	0002	60		DF	1		18.0	89	115	50.5	28.58	57.2	1,911	7,430	453	176
	0003	60		DF	1		20.0	89	110	50.5	23.15	46.3	1,804	6,481	428	154
	0004	60		DF	1		15.0	89	105	50.5	41.15	82.3	1,576	6,173	374	146
	0005	60		DF	1		14.0	89	100	50.5	47.24	94.5	1,657	7,086	393	168
	0006	60		DF	1		20.0	90	128	49.4	22.64	45.3	1,980	8,149	470	193
	0007	60		DF	1		27.0	89	109	50.5	12.70	25.4	1,742	5,715	413	136
	0008	60		DF	1		20.0	90	125	49.4	22.64	45.3	1,815	6,791	431	161
	0009	60		DF	1		9.0	82	50	59.5	134.65	134.7	584	2,693	139	64
0217					9		15.6	86	88	461.2	348.81	563.0	14,938	57,590	3,544	1,366
0218	0001	60		DF	1		9.0	84	57	56.7	128.32	128.3	592	2,566	140	61
	0002	60		DF	1		21.0	89	116	50.5	20.99	42.0	1,896	6,928	450	164
	0003	60		DF	1		17.0	89	112	50.5	32.04	64.1	1,738	7,048	412	167
	0004	60		DF	1		16.0	88	91	51.7	36.99	74.0	1,385	4,809	328	114
	0005	60		DF	1		16.0	89	92	50.5	36.17	72.3	1,416	4,340	336	103
0218					5		13.7	86	79	259.8	254.51	380.7	7,027	25,692	1,667	609
0219	0001	60		DF	1		13.0	88	80	51.7	56.04	56.0	1,180	3,923	280	93
	0002	60		DF	1		25.0	89	93	50.5	14.81	29.6	1,577	5,185	374	123
	0003	60		DF	1		7.0	85	58	55.4	207.16					
	0004	60		DF	1		12.0	87	75	52.8	67.29	67.3	2,106	2,019	500	48
	0005	60		DF	1		18.0	89	96	50.5	28.58	57.2	3,023	3,429	717	81
0219					5		11.3	86	69	260.9	373.87	210.1	7,885	14,555	1,871	345
0220	0001	60		DF	1		18.0	87	70	52.8	29.91	29.9	1,622	2,691	385	64
	0002	60		DF	1		17.0	85	60	55.4	35.12	35.1	3,718	1,405	882	33
0220					2		17.5	86	65	108.2	65.03	65.0	5,340	4,096	1,267	97
0221	0001	60		DF	1		11.0	87	75	52.8	80.08	80.1	2,950	3,203	700	76
	0002	60		DF	1		9.0	87	71	52.8	119.62	119.6	2,658	3,589	631	85
	0003	60		DF	1		8.0	86	65	54.1	154.94	154.9	1,774	3,099	421	74
	0004	60		DF	1		10.0	87	69	52.8	96.89	96.9	3,135	3,876	744	92
0221					4		9.3	87	69	212.6	451.53	451.5	10,518	13,766	2,495	327
0222	0001	60		DF	1		19.0	89	110	50.5	25.65	51.3	3,564	6,155	846	146
	0002	60		DF	1		21.0	89	112	50.5	20.99	42.0	3,637	5,879	863	139
	0003	60		DF	1		24.0	89	114	50.5	16.07	32.1	3,658	6,751	868	160
	0004	60		DF	1		15.0	89	101	50.5	41.15	41.2	2,805	2,881	666	68
0222					4		18.9	89	107	202.0	103.87	166.6	13,664	21,666	3,242	514
0223	0001	60		DF	1		14.0	88	89	51.7	48.32	96.6	3,440	4,349	816	103
	0002	60		DF	1		12.0	89	95	50.5	64.30	64.3	2,784	3,215	661	76
	0003	60		DF	1		12.0	89	92	50.5	64.30	64.3	2,784	3,858	661	92
0223					3		12.6	89	92	152.7	176.91	225.2	9,009	11,421	2,137	271
0224	0001	60		DF	1		15.0	88	85	51.7	42.09	84.2	1,515	5,472	359	130
	0002	60		DF	1		11.0	88	90	51.7	78.27	156.5	1,462	6,261	347	149
	0003	60		DF	1		14.0	88	87	51.7	48.32	96.6	1,439	5,315	341	126
	0004	60		DF	1		16.0	89	96	50.5	36.17	72.3	1,339	5,787	318	137
	0005	60		DF	1		11.0	87	75	52.8	80.08	80.1	1,092	3,203	259	76
0224					5		12.9	88	85	258.3	284.92	489.8	6,846	26,038	1,624	618
0225	0001	60		DF	1		15.0	88	78	51.7	42.09	42.1	1,065	2,525	253	60
	0002	60		RA	1		12.0	91	71	48.3	61.50	61.5	1,053	3,690	250	88
0225					2		13.3	90	74	100.0	103.59	103.6	2,118	6,216	503	147
0226	0001	60		DF	1		19.0	89	96	50.5	25.65	51.3	1,439	5,130	341	122

TC PLOTTREELIST

CH2M

Plot Tree List - Volumes

Project CAMAS

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Date 7/6/2011

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CRUISED DATE
02N	04E	03	CAMAS	0002	735.40	31	149	7/1/2011

Plot No.	Tree No.	Age	SI	Spp St	Trees Me.	Ct. DBH	16' FF	Tot Ht.	BA /Ac.	Trees /Ac.	Logs /Ac.	Net CuFt/Ac.	Net BdFt/Ac.	Total CUNITS	MBF
0226	0002	60		DF	1	11.0	88	78	51.7	78.27	78.3	720	2,348	171	56
	0003	60		DF	1	8.0	86	64	54.1	154.94	154.9	489	1,549	116	37
	0004	60		DF	1	20.0	89	103	50.5	23.15	46.3	1,595	5,324	378	126
	0005	60		DF	1	15.0	89	95	50.5	41.15	82.3	1,458	5,761	346	137
0226					5	12.1	87	77	257.2	323.15	413.1	5,701	20,112	1,352	477
0227	0001	60		DF	1	21.0	89	110	50.5	20.99	42.0	1,692	5,879	401	139
	0002	60		DF	1	29.0	90	120	49.4	10.77	21.5	1,844	7,428	437	176
	0003	60		DF	1	19.0	89	115	50.5	25.65	51.3	1,953	7,694	463	183
	0004	60		DF	1	11.0	87	76	52.8	80.08	80.1	628	1,602	149	38
	0005	60		WH	1	18.0	93	100	46.2	26.17	52.3	1,574	5,758	373	137
	0006	60		WH	1	14.0	93	102	46.2	43.26	86.5	1,405	5,624	333	133
0227					6	16.2	90	95	295.7	206.92	333.8	9,095	33,985	2,158	806
0228	0001	60		DF	1	18.0	89	105	50.5	28.58	57.2	1,877	6,858	445	163
	0002	60		DF	1	13.0	88	90	51.7	56.04	112.1	1,198	4,483	284	106
	0003	60		DF	1	9.0	86	68	54.1	122.42	122.4	565	2,448	134	58
	0004	60		DF	1	17.0	89	101	50.5	32.04	64.1	1,675	6,087	397	144
	0005	60		DF	1	15.0	89	101	50.5	41.15	82.3	1,418	5,761	336	137
	0006	60		DF	1	7.0	85	58	55.4	207.16					
	0007	60		DF	1	23.0	90	118	49.4	17.12	51.3	1,858	8,387	441	199
	0008	60		DF	1	14.0	89	98	50.5	47.24	94.5	1,396	5,196	331	123
0228					8	11.7	87	77	412.5	551.73	583.8	9,986	39,221	2,369	930
0229	0001	60		DF	1	16.5	89	97	50.5	34.01	68.0	1,872	7,482	444	177
	0002	60		DF	1	13.0	89	88	50.5	54.79	109.6	1,536	6,026	364	143
	0003	60		DF	1	35.0	90	123	49.4	7.39	22.2	2,295	11,752	544	279
0229					3	16.9	89	94	150.4	96.19	199.8	5,703	25,260	1,353	599
0230	0001	60		DF	1	17.5	89	105	50.5	30.23	90.7	1,823	7,558	433	179
	0002	60		DF	1	23.0	90	104	49.4	17.12	51.3	1,959	8,729	465	207
	0003	60		WH	1	14.5	93	62	46.2	40.33	40.3	902	2,420	214	57
	0004	60		DF	1	16.5	89	93	50.5	34.01	68.0	1,692	6,121	401	145
0230					4	17.2	90	87	196.6	121.69	250.4	6,376	24,828	1,513	589
0231	0001	60		DF	1	29.0	89	110	50.5	11.01	22.0	1,867	7,046	443	167
	0002	60		DF	1	36.0	90	130	49.4	6.99	21.0	1,958	10,130	465	240
	0003	60		DF	1	25.0	89	104	50.5	14.81	29.6	1,776	6,518	421	155
	0004	60		DF	1	31.0	90	120	49.4	9.42	18.8	1,821	7,820	432	186
0231					4	29.4	89	113	199.8	42.23	91.4	7,423	31,514	1,761	748
TYPE					149	15.2		89	243.0	193.95	296.3	8,580	31,639	63,094	23,268

Type 3

T TSPCSTGR
CH2M

Species, Sort Grade - Board Foot Volumes (Type)

Project: CAMAS

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Date 7/6/2011
Time 1:58:14PM

T02N R04E S03 T0003 Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees	CuFt	BdFt	T02N R04E S03 T0003
02N	04E	03	CAMAS	0003	270.40	10	44	S	W	

Spp	S T	So rt	Gr ad	% Net BdFt	Bd. Ft. per Acre Def%	Gross	Net	Total Net MBF	Percent Net Board Foot Volume: Log Scale Dia. 4-5	6-11	12-16	17+	Log Length 12-20	21-30	31-35	36-99	Average Log: Ln Ft	Bd Ft	CF/ Lf	Logs Per /Acre
DF		DO	2M	43	.7	14,984	14,886	4,025			46	54				100	40	424	2.17	35.1
DF		DO	3M	14		4,994	4,994	1,350		96	4				15	85	38	114	0.89	43.9
DF		DO	4M	6		1,785	1,785	483	78	22			21	34	15	30	25	29	0.43	61.2
DF		PU	PU			174	174	47	90	10			100				19	21	0.37	8.4
DF		HI	2M	4		1,331	1,331	360			39	61				100	40	366	1.89	3.6
DF		LO	2M	24		8,316	8,316	2,249			66	34				100	40	376	1.93	22.1
DF		LO	3M	2		572	572	155			100					100	40	200	1.18	2.9
DF		ME	2M	7		2,255	2,255	610				100				100	40	671	3.13	3.4
DF	**Totals**			98	.3	34,410	34,312	9,278	5	15	40	41	2	2	3	94	33	190	1.29	180.6
RA		4S	4M	67		484	484	131	33	67						100	40	56	0.60	8.6
RA		PU	PU	33	.0	236	236	64	100				20	80			24	17	0.34	14.1
RA	**Totals**			2		720	720	195	55	45			6	26		67	30	32	0.47	22.7
Type Totals					.3	35,130	35,032	9,473	6	16	39	40	2	2	3	93	33	172	1.21	203.4

TC TLOGSTBF

CH2M

Log Stock Table - Percent Board Feet

Project: CAMAS

T02N R04E S03 T0003

Twp	Rge	Sec	Tract	Type	Acres	Plots	Sample Trees
02N	04E	03	CAMAS	0003	270.40	10	44

T02N R04E S03 T0003

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Date 7/6/2011

Time 1:45:50PM

S Spp T	So rt	Grd	Log Len	Gross MBF	% Def	Net MBF	% Spc	Percent Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
DF	DO	2M	40	4,052		4,025	43.4						13.1		19.7	41.5	9.2	16.6	
DF	DO	3M	32	93		93	1.0				100.0								
DF	DO	3M	34	107		107	1.2			15.6		84.4							
DF	DO	3M	36	109		109	1.2			13.1	38.9		48.0						
DF	DO	3M	40	1,041		1,041	11.2			16.1	37.3	46.6							
DF	DO	4M	12	4		4	.0		100.0										
DF	DO	4M	13	12		12	.1			100.0									
DF	DO	4M	14	21		21	.2		100.0										
DF	DO	4M	15	17		17	.2		65.6	34.4									
DF	DO	4M	16	18		18	.2		100.0										
DF	DO	4M	17	20		20	.2		70.7		29.3								
DF	DO	4M	19	10		10	.1		100.0										
DF	DO	4M	24	73		73	.8		25.0			75.0							
DF	DO	4M	26	23		23	.2		100.0										
DF	DO	4M	27	14		14	.1		100.0										
DF	DO	4M	29	13		13	.1			100.0									
DF	DO	4M	30	38		38	.4		100.0										
DF	DO	4M	31	12		12	.1			100.0									
DF	DO	4M	32	12		12	.1		100.0										
DF	DO	4M	33	48		48	.5		100.0										
DF	DO	4M	36	107		107	1.2		100.0										
DF	DO	4M	37	22		22	.2		100.0										
DF	DO	4M	40	16		16	.2		100.0										
DF	PU	PU	14	5		5	.0				100.0								
DF	PU	PU	19	42		42	.5		100.0										
DF	HI	2M	40	360		360	3.9						38.5			61.5			
DF	LO	2M	40	2,249		2,249	24.2						6.9		46.6 29.4	17.1			
DF	LO	3M	40	155		155	1.7						100.0						
DF	M	2M	40	610		610	6.6								31.5	68.5			
DF	Totals			9,305		9,278	97.9		4.5	2.6	5.8	6.8	11.1	19.8	27.2	15.0	7.2		
RA	4S	4M	40	131		131	67.3		33.2	66.8									
RA	PU	PU	12	12		12	6.4		100.0										
RA	PU	PU	30	51		51	26.3		100.0										
RA	Totals			195		195	2.1		55.1	44.9									
Total	All Species			9,499		9,473	100.0		5.6	3.5	5.6	6.7	10.8	19.4	26.6	14.7	7.1		

TC TSTATS

STATISTICS

PAGE 1

CH2M **PROJECT CAMAS** DATE 7/6/2011

TWP	RGE	SECT	TRACT	TYPE	ACRES	PLOTS	TREES	CuFt	BdFt
02N	04E	03	CAMAS	0003	270.40	10	44	S	W

	PLOTS	TREES	TREES PER PLOT	ESTIMATED TOTAL TREES	PERCENT SAMPLE TREES
TOTAL	10	44	4.4		
CRUISE	9	44	4.9	43,151	.1
DBH COUNT					
REFOREST COUNT					
BLANKS	1				
100 %					

STAND SUMMARY

	SAMPLE TREES	TREES /ACRE	AVG DBH	BOLE LEN	REL DEN	BASAL AREA	GROSS BF/AC	NET BF/AC	GROSS CF/AC	NET CF/AC
DOUG FIR	40	78.8	21.5	80	45	198.9	34,410	34,312	7,783	7,783
R ALDER	3	18.1	12.8	41		16.1	720	720	323	323
CHERRY	1	62.7	6.0	10		12.3				
TOTAL	*44*	*159.6*	*16.2*	*48*		*227.3*	*35,130*	*35,032*	*8,106*	*8,106*

CONFIDENCE LIMITS OF THE SAMPLE

68.1 TIMES OUT OF 100 THE VOLUME WILL BE WITHIN THE SAMPLE ERROR

CL: 68.1 %	COEFF		SAMPLE TREES - BF			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	66.9	10.6	572	640	708			
R ALDER	65.5	45.3	26	47	68			
CHERRY								
TOTAL	*75.9*	*11.4*	*518*	*585*	*652*	*230*	*58*	*26*

CL: 68.1 %	COEFF		SAMPLE TREES - CF			# OF TREES REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	58.4	9.2	128	140	153			
R ALDER	39.3	27.2	15	20	26			
CHERRY								
TOTAL	*66.9*	*10.1*	*116*	*129*	*142*	*178*	*45*	*20*

CL: 68.1 %	COEFF		TREES/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	72.0	24.0	60	79	98			
R ALDER	316.2	105.2		18	37			
CHERRY	316.2	105.2		63	129			
TOTAL	*113.2*	*37.7*	*99*	*160*	*220*	*568*	*142*	*63*

CL: 68.1 %	COEFF		BASAL AREA/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	62.3	20.7	158	199	240			
R ALDER	316.2	105.2		16	33			
CHERRY	316.2	105.2		12	25			
TOTAL	*45.1*	*15.0*	*193*	*227*	*261*	*90*	*22*	*10*

CL: 68.1 %	COEFF		NET BF/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	72.5	24.1	26,035	34,312	42,589			
R ALDER	316.2	105.2		720	1,478			
CHERRY								
TOTAL	*68.1*	*22.7*	*27,094*	*35,032*	*42,970*	*205*	*51*	*23*

CL: 68.1 %	COEFF		NET CUFT FT/ACRE			# OF PLOTS REQ.		INF. POP.
SD: 1.0	VAR.%	S.E.%	LOW	AVG	HIGH	5	10	15
DOUG FIR	68.6	22.8	6,006	7,783	9,560			
R ALDER	316.2	105.2		323	663			
CHERRY								
TOTAL	*60.4*	*20.1*	*6,476*	*8,106*	*9,736*	*162*	*40*	*18*

TC PLOGSTVB
CH2M

Log Stock Table - MBF

T02N R04E S03 Ty0002 735.40
T02N R04E S03 Ty0003 270.40

Project: CAMAS
Acres 1,005.80

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Date 7/6/2011
Time 1:45:52PM

Spp	ST	Sort	Grade	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3 4-5	6-7 8-9	10-11 12-13	14-15 16-19	20-23 24-29	30-39 40+
DF		DO	4M	34	92		92	.3	92					
DF		DO	4M	35	128		128	.4	128					
DF		DO	4M	36	131		131	.4	131					
DF		DO	4M	37	127		127	.4	127					
DF		DO	4M	38	72		72	.2	72					
DF		DO	4M	39	41		41	.1	41					
DF		DO	4M	40	205		205	.6	205					
DF		DO	4M	41	60		60	.2	60					
DF		PU	PU	14	5		5	.0		5				
DF		PU	PU	19	116		116	.4	116					
DF		PU	PU	20	20		20	.1	20					
DF		PU	PU	24	9		9	.0		9				
DF		PU	PU	40	120	8.3	110	.3		110				
DF		HI	2M	40	1,655		1,655	5.2			640	291 504	221	
DF		HI	3M	40	134		134	.4		134				
DF		LO	SM	40	199	6.1	187	.6						187
DF		LO	2M	40	6,183		6,162	19.2			419	1741 1397	2012 392	200
DF		LO	3M	30	80		80	.2		80				
DF		LO	3M	36	43		43	.1		43				
DF		LO	3M	40	1,219		1,219	3.8		523	396 301			
DF		ME	2M	40	2,899		2,899	9.0			635	449 473	942 400	
DF		ME	3M	40	1,569		1,554	4.8		798	360 255	141		
DF		Totals			32,406		32,131	98.1	2987	1987 3749	2659 3925	4338 5263	4803 2033	386
RA		4S	4M	40	219		219	77.4	44	175				
RA		PU	PU	12	12		12	4.4	12					
RA		PU	PU	30	51		51	18.1	51					
RA		Totals			282		282	.9	107	175				
WH		DO	2M	40	124	5.0	118	36.0			118			
WH		DO	3M	40	181	5.7	170	52.0		57 113				
WH		DO	4M	18	21		21	6.3	21					
WH		DO	4M	28	19		19	5.7	19					

TC PLOGSTVB
CH2M

Log Stock Table - MBF

T02N R04E S03 Ty0002	735.40
T02N R04E S03 Ty0003	270.40

Project: CAMAS
Acres 1,005.80

Date 7/6/2011
Time 1:45:52PM

Spp	S T	So Grt	Grade	Log Len	Gross MBF	Def %	Net MBF	% Spc	Net Volume by Scaling Diameter in Inches 2-3	4-5	6-7	8-9	10-11	12-13	14-15	16-19	20-23	24-29	30-39	40+
WH		Totals			344	4.8	327	1.0		39		57		113		118				
Total		All Species			33,032		32,740	100.0		3133		2219		3862		2659		4043		4338		5263		4803		2033		386

TC TreeList **Plot Tree List** Page 1

CH2M **Project CAMAS** Date 7/6/2011

TWP	RGE	SC	TRACT	Type	Acres	Plots	Trees	CuFt S	BdFt W
02N	04E	03	CAMAS	0003	270.40	10	44		

Plot	Tree No	PF	A	Spc	S	C T	DBH	FP	FF	T D	BoleHgt	TotHgt	PRDVT	BfCf SgLnFiFiP	BfCf SgLnFiFiP	BfCf SgLnFiFiP	BfCf SgLnFiFiP	BfCf SgLnFiFiP
0031	0001	40	3	DF			26.0	16	90	F	99	132		9240	9340	94--		
0031	0002	40	3	DF			14.0	16	89	F	72	101		9340	94--			
0031	0003	40	3	DF			20.0	16	90	F	91	119		L240	94--			
0031	0004	40	3	DF			21.0	16	90	F	91	121		L240	9332	94--		
0032	0001	40	3	DF			19.0	16	89	F	75	110		H240	94--			
0032	0002	40	3	DF			11.0	16	88	F	20	55		CP--				
0032	0003	40	3	DF			40.0	16	90	J	97	130		9240	92402	CP--2		
0032	0004	40	3	DF			24.0	16	90	F	91	131		L240	9336	94--		
0032	0005	40	3	DF			20.0	16	90	F	89	126		L240	9332	94--		
0032	0006	40	3	DF			27.0	16	90	G	112	140		L240	9240	94--		
0033	0001	40	3	DF			29.0	16	90	G	94	140		L240	9336	94--		
0033	0002	40	3	DF			28.0	16	90	G	90	131		L240	9334	94--		
0033	0003	40	3	DF			20.0	16	89	F	64	97		9240	00--			
0033	0004	40	3	DF			29.0	16	90	G	90	136		M240	9334	94--		
0033	0005	40	3	DF			29.0	16	90	G	114	149		H240	9240	94--		
0034	0001	40	3	DF			25.0	16	90	F	82	120		92406	94402			
0034	0002	40	3	DF			18.0	16	89	F	68	101		9340	94--			
0034	0003	40	3	DF			13.0	16	88	F	56	88		9340	94--			
0034	0004	40	3	DF			18.0	16	89	F	78	112		L240	94--			
0034	0005	40	3	DF			22.0	16	89	F	75	103		L240	94--			
0035	0001	40	3	DF			23.0	16	90	F	110	151		9240	9340	94--		
0035	0002	40	3	DF			26.0	16	90	F	119	152		9240	9240	94--		
0035	0003	40	3	DF			26.0	16	90	F	100	145		M240	9340	94--2		
0035	0004	40	3	DF			34.0	16	90	H	121	160		9240	9240	9340	00--	
0035	0005	40	3	DF			21.0	16	90	F	85	119		9240	9340			
0035	0006	40	3	DF			31.0	16	90	H	120	156		M240	L240	9340		
0035	0007	40	3	DF			20.0	16	90	F	94	131		9240	9340	94--		
0035	0008	40	3	DF			27.0	16	90	G	117	164		9240	9240	93--		
0036	0001	40	3	RA			15.0	16	90	D	45	65		44404				
0036	0002	40	3	RA			14.0	16	90	D	55	68		4440	CP--			
0036	0003	40	3	RA			11.0	16	80	D	32	43		CP--				
0037	0001	40	3	DF			26.0	16	90	F	100	126		9240	9340	94--		
0037	0002	40	3	DF			22.0	16	90	F	102	130		L240	9340	94--		
0037	0003	40	3	DF			18.0	16	89	F	78	105		L340	94--			
0037	0004	40	3	DF			24.0	16	90	J	75	130		9240	00--			
0038	0001	40	3	CH			6.0	8	57	D	10	28		00--				
0038	0002	40	3	DF			32.0	16	90	H	78	119		9240	93--			
0038	0003	40	3	DF			35.0	16	90	I	85	122		9240	9340	00--		
0038	0004	40	3	DF			32.0	16	90	H	86	120		L240	9340	00--		
0039	0001	40	3	DF			21.0	16	90	F	98	127		9240	9340	94--		
0039	0002	40	3	DF			18.0	16	89	F	78	112		9240	94--			

TWP	RGE	SC	TRACT	Type	Acres	Plots	Trees	CuFt	BdFt
02N	04E	03	CAMAS	0003	270.40	10	44	S	W

Plot	Tree No	PF	A	Spc	S	C T	DBH	FP	FF	T D	BoleTot Hgt	Hgt	PRDVT	BfCf SgLnFiFiP	BfCf SgLnFiFiP	BfCf SgLnFiFiP	BfCf SgLnFiFiP	BfCf SgLnFiFiP
0039	0003	40	3	DF			25.0	16	90	F	115	140		9240	9240	94--		
0039	0004	40	3	DF			21.0	16	90	F	120	145		L240	9340	94--		
0039	0005	40	3	DF			35.0	16	90	I	100	142		9240	9240	94--		
0310	0001	40	3	DF		0												

TC PLOTTREELIST

CH2M

Plot Tree List - Volumes

Project CAMAS

Date 7/6/2011

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CRUISED DATE
02N	04E	03	CAMAS	0003	270.40	10	44	7/1/2011

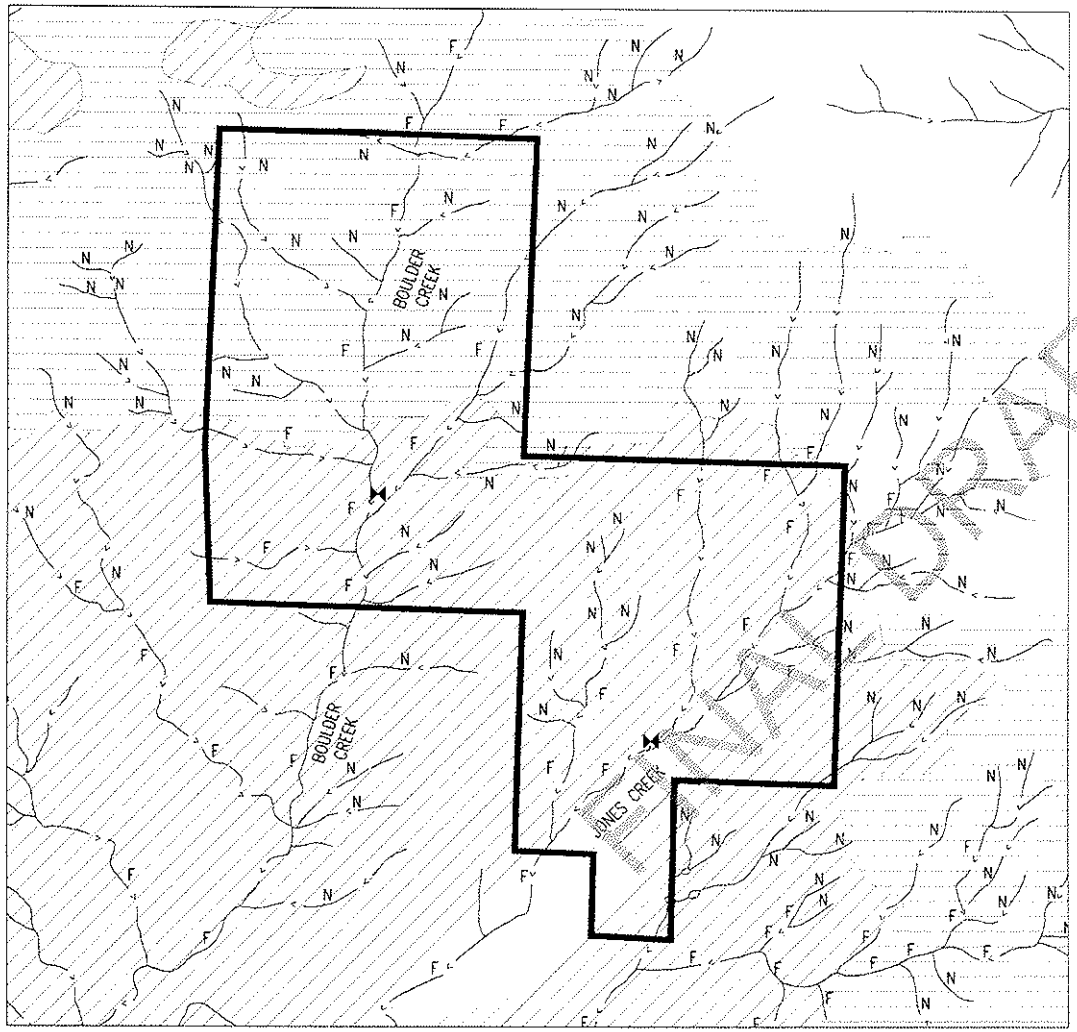
Plot No.	Tree No.	Age	SI	Spp SI	Trees Me.	Ct.	DBH	16' FF	Tot Ht.	BA /Ac.	Trees /Ac.	Logs /Ac	Net CuFt/Ac.	Net BdFt/Ac.	Total CUNITS	Total MBF
0031	0001	60		DF	1		26.0	90	132	49.4	13.39	40.2	2,079	9,376	562	254
	0002	60		DF	1		14.0	89	101	50.5	47.24	94.5	1,698	7,086	459	192
	0003	60		DF	1		20.0	90	119	49.4	22.64	67.9	1,999	9,281	541	251
	0004	60		DF	1		21.0	90	121	49.4	20.53	61.6	1,926	8,212	521	222
0031					4		18.7	90	113	198.6	103.80	264.2	7,702	33,954	2,083	918
0032	0001	60		DF	1		19.0	89	110	50.5	25.65	51.3	1,699	6,155	460	166
	0002	60		DF	1		11.0	88	55	51.7	78.27	78.3	507	1,565	137	42
	0003	60		DF	1		40.0	90	130	49.4	5.66	17.0	2,090	10,582	565	286
	0004	60		DF	1		24.0	90	131	49.4	15.72	47.2	1,921	8,017	519	217
	0005	60		DF	1		20.0	90	126	49.4	22.64	67.9	1,966	8,375	532	226
	0006	60		DF	1		27.0	90	140	49.4	12.42	37.3	2,324	10,930	629	296
0032					6		18.5	89	91	299.7	160.35	298.9	10,507	45,624	2,841	1,234
0033	0001	60		DF	1		29.0	90	140	49.4	10.77	32.3	2,045	9,689	553	262
	0002	60		DF	1		28.0	90	131	49.4	11.55	34.6	1,954	8,892	528	240
	0003	60		DF	1		20.0	89	97	50.5	23.15	23.1	1,275	4,629	345	125
	0004	60		DF	1		29.0	90	136	49.4	10.77	32.3	1,970	9,366	533	253
	0005	60		DF	1		29.0	90	149	49.4	10.77	32.3	2,398	11,735	648	317
0033					5		26.1	90	124	248.0	66.99	154.7	9,642	44,312	2,607	1,198
0034	0001	60		DF	1		25.0	90	120	49.4	14.49	29.0	1,759	5,505	476	149
	0002	60		DF	1		18.0	89	101	50.5	28.58	57.2	1,574	6,001	426	162
	0003	60		DF	1		13.0	88	88	51.7	56.04	112.1	1,338	4,483	362	121
	0004	60		DF	1		18.0	89	112	50.5	28.58	57.2	1,824	6,858	493	185
	0005	60		DF	1		22.0	89	103	50.5	19.13	38.3	1,710	6,313	462	171
0034					5		17.8	89	100	252.5	146.81	293.6	8,204	29,160	2,218	788
0035	0001	60		DF	1		23.0	90	151	49.4	17.12	51.3	2,269	10,441	614	282
	0002	60		DF	1		26.0	90	152	49.4	13.39	40.2	2,470	11,786	668	319
	0003	60		DF	1		26.0	90	145	49.4	13.39	40.2	2,084	9,376	563	254
	0004	60		DF	1		34.0	90	160	49.4	7.83	23.5	2,583	13,628	698	369
	0005	60		DF	1		21.0	90	119	49.4	20.53	41.1	1,854	7,186	501	194
	0006	60		DF	1		31.0	90	156	49.4	9.42	28.3	2,483	12,248	671	331
	0007	60		DF	1		20.0	90	131	49.4	22.64	67.9	2,017	8,601	545	233
	0008	60		DF	1		27.0	90	164	49.4	12.42	37.3	2,427	11,675	656	316
0035					8		24.9	90	143	395.1	116.74	329.7	18,187	84,941	4,918	2,297
0036	0001	60		RA	1		15.0	90	65	49.4	40.24	40.2	970	1,610	262	44
	0002	60		RA	1		14.0	90	68	49.4	46.19	92.4	1,197	3,696	324	100
	0003	60		RA	1		11.0	80	43	62.5	94.70	94.7	1,061	1,894	287	51
0036					3		12.8	85	54	161.3	181.14	227.3	3,228	7,199	873	195
0037	0001	60		DF	1		26.0	90	126	49.4	13.39	40.2	2,084	9,376	563	254
	0002	60		DF	1		22.0	90	130	49.4	18.71	56.1	2,086	9,353	564	253
	0003	60		DF	1		18.0	89	105	50.5	28.58	57.2	1,824	6,858	493	185
	0004	60		DF	1		24.0	90	130	49.4	15.72	15.7	1,346	6,288	364	170
0037					4		21.8	90	120	198.6	76.40	169.2	7,340	31,875	1,985	862
0038	0001	60		CH	1		6.0	57	28	123.1	627.02					
	0002	60		DF	1		32.0	90	119	49.4	8.84	17.7	1,719	7,250	465	196
	0003	60		DF	1		35.0	90	122	49.4	7.39	14.8	1,796	7,835	486	212
	0004	60		DF	1		32.0	90	120	49.4	8.84	17.7	1,797	7,781	486	210
0038					4		8.7	58	32	271.3	652.09	50.2	5,312	22,866	1,436	618
0039	0001	60		DF	1		21.0	90	127	49.4	20.53	61.6	2,174	10,265	588	278

TWP	RGE	SC	TRACT	TYPE	ACRES	PLOTS	TREES	CRUISED DATE
02N	04E	03	CAMAS	0003	270.40	10	44	7/1/2011

Plot No.	Tree No.	Age	Sl	Spp St	Trees Me.	Trees Ct.	DBH	16' FF	Tot Ht.	BA /Ac.	Trees /Ac.	Logs /Ac.	Net CuFt/Ac.	Net BdFt/Ac.	Total CUNITS	Total MBF
0039	0002	60		DF	1		18.0	89	112	50.5	28.58	57.2	1,824	6,858	493	185
	0003	60		DF	1		25.0	90	140	49.4	14.49	43.5	2,375	11,010	642	298
	0004	60		DF	1		21.0	90	145	49.4	20.53	61.6	2,477	11,908	670	322
	0005	60		DF	1		35.0	90	142	49.4	7.39	22.2	2,087	10,348	564	280
0039					5		22.3	90	130	248.0	91.52	246.0	10,938	50,389	2,958	1,363
0310	0001	60		DF												
0310											0.00					
TYPE					44		16.2		74	227.3	159.58	203.4	8,106	35,032	21,919	9,473

Appendix D

Stream Classification & Site Class Map



LEGEND

- PROPERTY BOUNDARY
- STREAMS
- DNR SITE CLASS II
- DNR SITE CLASS III

NOTE:
F = FISH STREAM
N = NON FISH STREAM

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

STREAM CLASSIFICATION AND SITE CLASS MAP

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DRAWN BY: KAL
CHECKED BY: KRH
DRAWING NO: D-1
SCALE: AS NOTED
DATE:

PREPARED FOR:
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CAMAS, WA 98607

CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

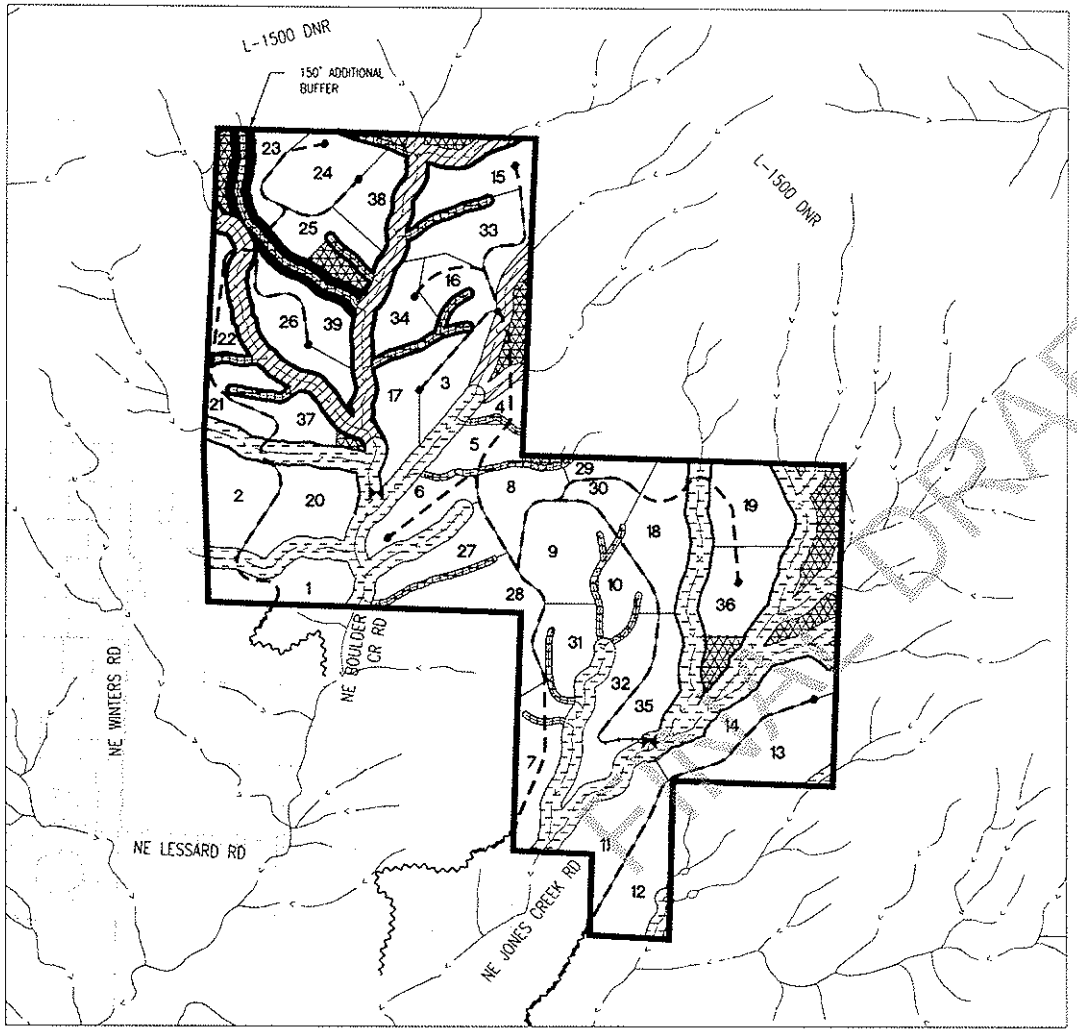
CAMAS WASHINGTON

CLARK COUNTY TAX MAP 3 4E SECTION 33, 2 4E SECTIONS 3 4 AND 10

JOB NUMBER 2800

SHEET D-1

Appendix E
Harvest Maps



LEGEND

- SITE BOUNDARY
- PROPERTY LINES
- EXISTING ROAD
- NEW ACCESS ROAD
- OPTIONAL ACCESS ROAD
- END OF ACCESS ROAD
- STREAMS
- TYPE F STREAM, SITE CLASS III - DNR REQ'D 140' RMZ EACH SIDE
- TYPE F STREAM, SITE CLASS II - DNR REQ'D 170' RMZ EACH SIDE
- TYPE N STREAM - DNR REQ'D 50' RMZ EACH SIDE
- ADDITIONAL STREAM BUFFER (WHERE SHOWN, WIDTH VARIES)
- RESERVE AREA
- NEW ROAD EASEMENT REQUIRED
- WATER INTAKE FACILITY

NOTES:

RMZ = RIPARIAN MANAGEMENT ZONE

ADDITIONAL RMZ'S FOR STREAMS ABOVE WATER INTAKE FACILITIES:
TYPE N STREAM - 50' ADDITIONAL RMZ EACH SIDE (TYPICAL) - 100' TOTAL
TYPE F STREAM, SITE CLASS II - 30' ADDITIONAL RMZ EACH SIDE (TYPICAL) - 200' TOTAL
TYPE F STREAM, SITE CLASS III - 60' ADDITIONAL RMZ EACH SIDE (TYPICAL) - 200' TOTAL

UNIT	HARVEST YEAR	APPROXIMATE ACREAGE	APPROXIMATE % AREA BY EMBED TYPE		
			TYPE 1	TYPE 2	TYPE 3
1	2013	33.8		100%	
2	2017	39.0	9%	91%	
3	2028	22.3			100%
4	2026	8.4	74%	26%	
5	2020	20.3	71%	29%	
6	2022	26.3	63%	37%	
7	2014	33.5	32%	68%	
8	2030	28.6	22%	11%	67%
9	2029	47.0	18%	66%	16%
10	2017	20.7	25%	75%	
11	2032	38.6	100%		
12	2014	29.3	64%	36%	
13	2017	48.5	100%		
14	2026	41.3	90%	10%	
15	2032	20.4			100%
16	2030	11.8			100%
17	2041	53.7			100%
18	2033	62.3	1%	99%	
19	2026	30.1	63%	37%	
20	2035	41.0	5%	95%	
21	2053	19.1		100%	
22	2032	15.0		100%	
23	2044	14.8	5%	95%	
24	2023	36.4		79%	21%
25	2047	36.3		30%	70%
26	2020	27.3		100%	
27	2014	26.1	31%	69%	3%
28	2026	40.8	42%	58%	
29	2035	12.5		100%	
30	2030	14.5	10%	77%	13%
31	2044	29.7	25%	75%	
32	2050	20.5	8%	92%	
33	2028	29.7			100%
34	2047	22.3			100%
35	2029	28.5		100%	
36	2041	33.6	51%	49%	
37	2044	17.9		100%	
38	2038	21.8		39%	61%
39	2050	23.4	4%	96%	

ENTRY	HARVEST YEAR	UNITS
1	2013	1
2	2017	2,13,27
3	2017	2,13,13
4	2020	5,8,26
5	2021	11,15,24
6	2026	24,19,28
7	2029	6,9,14
8	2031	16,22,23
9	2035	29,30,35
10	2038	33,36
11	2041	17,31
12	2044	23,31,37
13	2047	25,34
14	2050	32,39
15	2053	19,21

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

OVERALL HARVEST MAP

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DRAWN BY: KAL
CHECKED BY: KHH
DRAWING NO: E
SCALE: AS NOTED

PREPARED FOR:
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616 NE 4TH AVENUE
CAMAS, WA 98607

CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

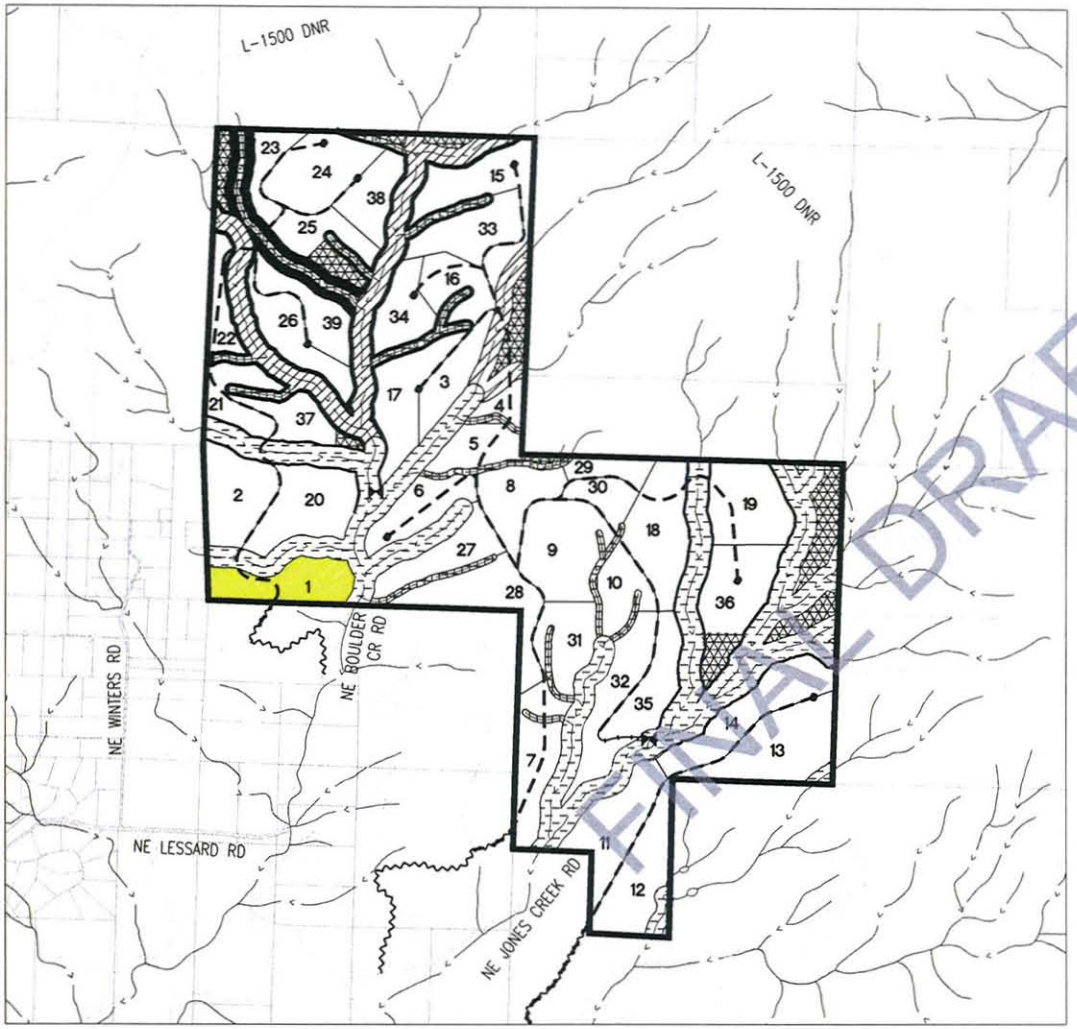
CAMAS WASHINGTON

CLARK COUNTY TAX MAP 3 4E SECTION 33, 2 4E SECTIONS 3 4 AND 10

DATE:

JOB NUMBER 2800

SHEET E-1



LEGEND

- SITE BOUNDARY
- PROPERTY LINES
- EXISTING ROAD
- NEW ACCESS ROAD
- OPTIONAL ACCESS ROAD
- END OF ACCESS ROAD
- STREAMS
- TYPE F STREAM, SITE CLASS III – DNR REQ'D 140' RMZ EACH SIDE
- TYPE F STREAM, SITE CLASS II – DNR REQ'D 170' RMZ EACH SIDE
- TYPE N STREAM – DNR REQ'D 50' RMZ EACH SIDE
- ADDITIONAL STREAM BUFFER (WHERE SHOWN, WIDTH VARIES)
- RESERVE AREA
- NEW ROAD EASEMENT REQUIRED
- WATER INTAKE FACILITY
- UNIT TO BE HARVESTED
- HARVESTED UNIT – (IN THE LAST 5 YEARS)
- HARVESTED UNIT – (OLDER THAN 5 YRS)

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

ENTRY 1 (2013) HARVEST MAP

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DRAWN BY: KAL | SCALE: AS NOTED
CHECKED BY: AHH

PREPARED FOR: CITY OF CAMAS, 616 NE 4TH AVENUE, CAMAS, WA 98607

CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

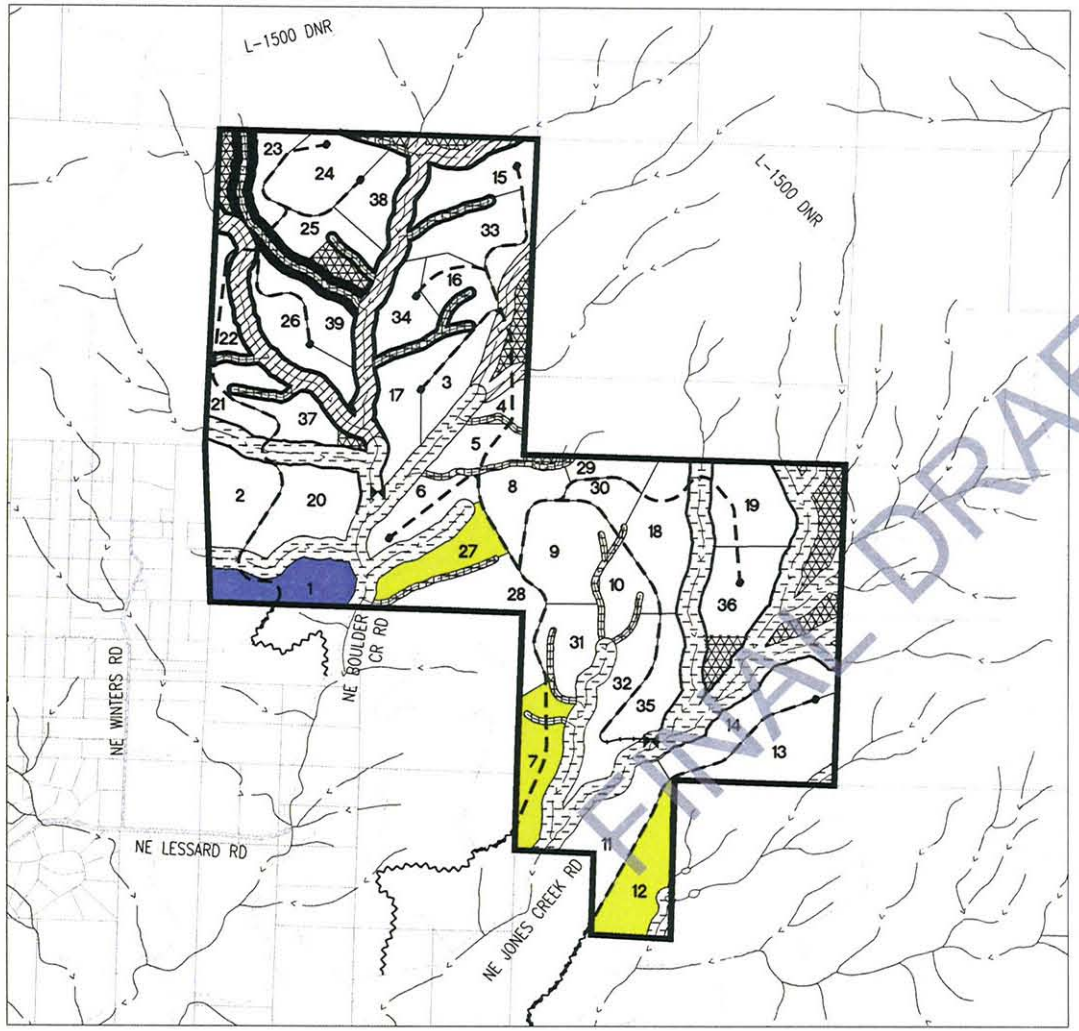
CAMAS WASHINGTON

CLARK COUNTY TAX MAP 3 4E SECTION 33, 2 4E SECTIONS 3 4 AND 10

DATE:

JOB NUMBER 2800

SHEET E-2



LEGEND

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- END OF ACCESS ROAD
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- WATER INTAKE FACILITY
- UNIT TO BE HARVESTED
- HARVESTED UNIT – (IN THE LAST 5 YEARS)
- HARVESTED UNIT – (OLDER THAN 5 YRS)

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

ENTRY 2 (2014) HARVEST MAP

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DRAWN BY:	KAL	SCALE:	AS NOTED
CHECKED BY:	AHH		

PREPARED FOR: CITY OF CAMAS
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CAMAS, WA 98607

CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

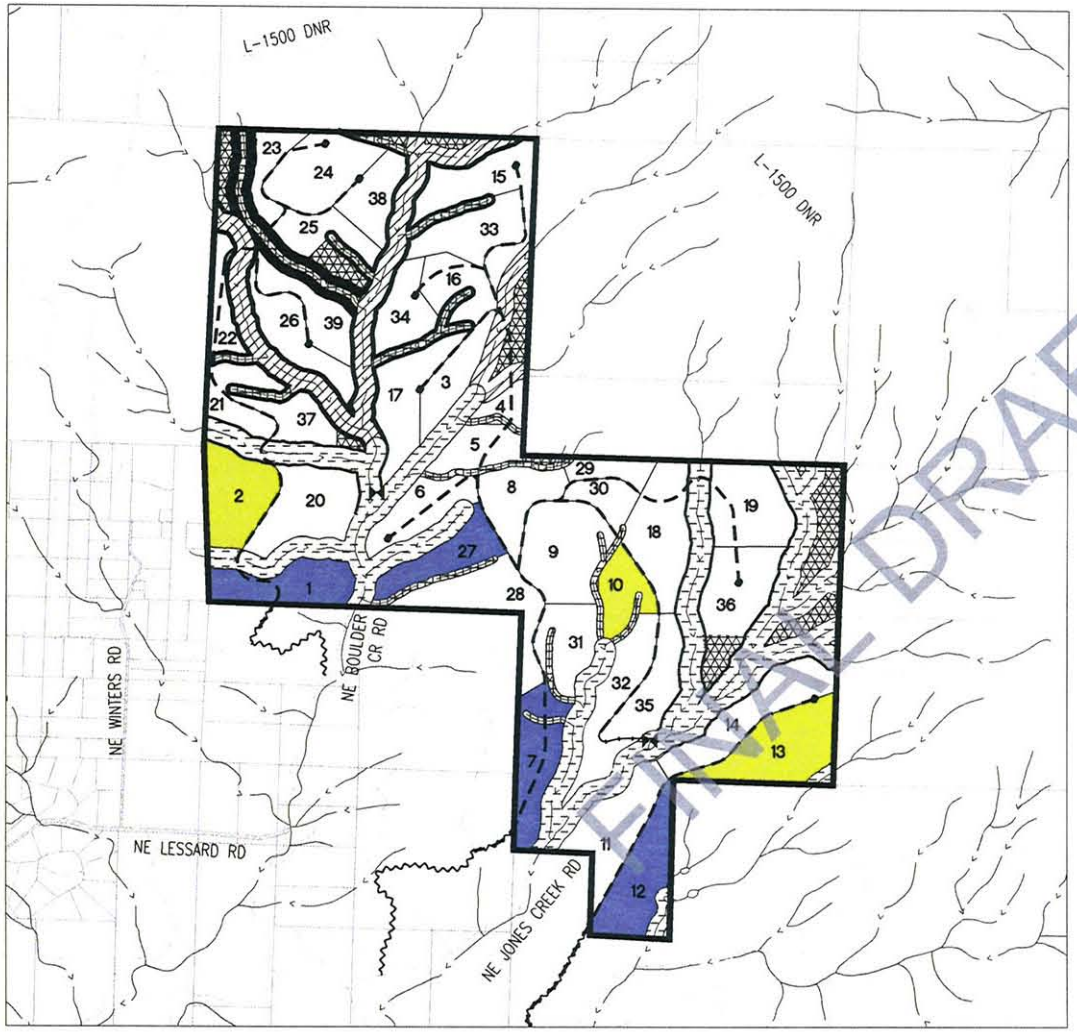
CAMAS WASHINGTON

CLARK COUNTY TAX MAP 3 4E SECTION 33, 2 4E SECTIONS 3 4 AND 10

DATE:

JOB NUMBER 2800

SHEET E-3



LEGEND

- SITE BOUNDARY
- PROPERTY LINES
- EXISTING ROAD
- NEW ACCESS ROAD
- OPTIONAL ACCESS ROAD
- END OF ACCESS ROAD
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- TYPE F STREAM, SITE CLASS II - DNR REQ'D 170' RMZ EACH SIDE
- TYPE N STREAM - DNR REQ'D 50' RMZ EACH SIDE
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- RESERVE AREA
- NEW ROAD EASEMENT REQUIRED
- WATER INTAKE FACILITY
- UNIT TO BE HARVESTED
- HARVESTED UNIT - (IN THE LAST 5 YEARS)
- HARVESTED UNIT - (OLDER THAN 5 YRS)

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

DATE:

ENTRY 3 (2017)
HARVEST MAP

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DRAWN BY: KAL
CHECKED BY: AHH
DRAWING NO.: F
SCALE: AS NOTED

PREPARED FOR:
CITY OF CAMAS
616 NE 4TH AVENUE
CAMAS, WA 98607

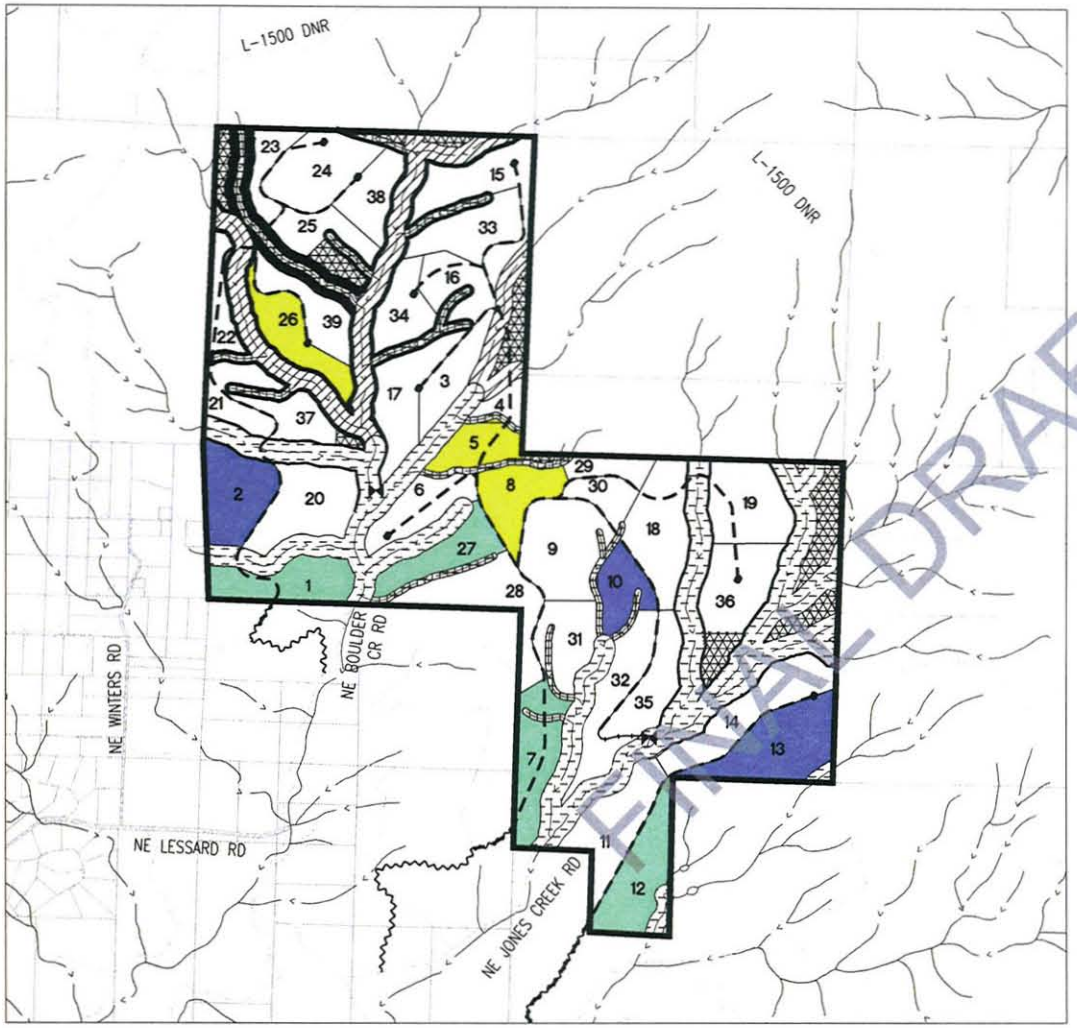
CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

CAMAS WASHINGTON

CLARK COUNTY TAX MAP 3 4E SECTION 33, 2 4E SECTIONS 3 4 AND 10

JOB NUMBER 2800

SHEET E-4



LEGEND

- SITE BOUNDARY
- PROPERTY LINES
- EXISTING ROAD
- NEW ACCESS ROAD
- OPTIONAL ACCESS ROAD
- END OF ACCESS ROAD
- STREAMS
- TYPE F STREAM, SITE CLASS III – DNR REQ'D 140' RMZ EACH SIDE
- TYPE F STREAM, SITE CLASS II – DNR REQ'D 170' RMZ EACH SIDE
- TYPE N STREAM – DNR REQ'D 50' RMZ EACH SIDE
- ADDITIONAL STREAM BUFFER (WHERE SHOWN, WIDTH VARIES)
- RESERVE AREA
- NEW ROAD EASEMENT REQUIRED
- WATER INTAKE FACILITY
- UNIT TO BE HARVESTED
- HARVESTED UNIT – (IN THE LAST 5 YEARS)
- HARVESTED UNIT – (OLDER THAN 5 YRS)

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

ENTRY 4 (2020) HARVEST MAP

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DRAWING NO.: E
SCALE: AS NOTED
DATE:

PREPARED FOR:
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616 NE 4TH AVENUE
CAMAS, WA 98607

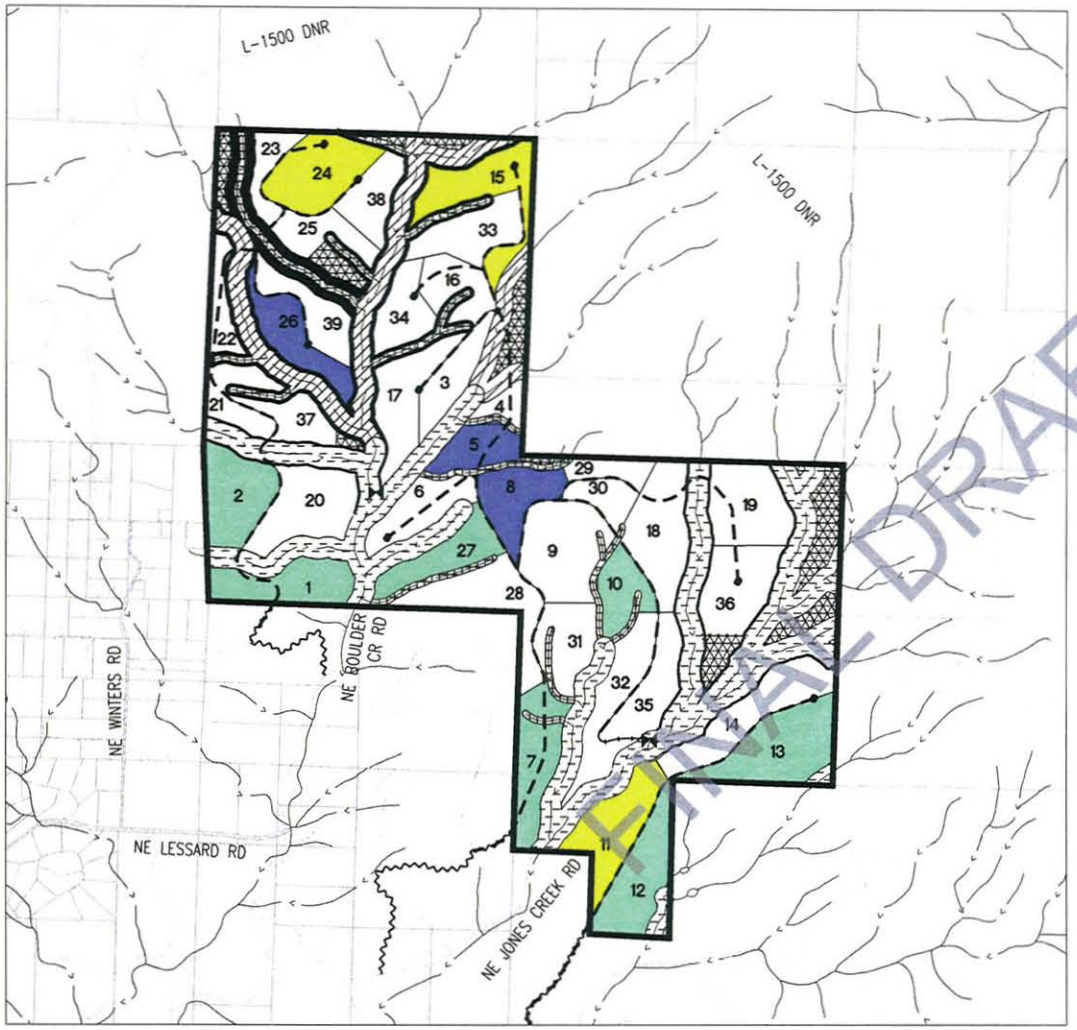
CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

CAMAS WASHINGTON

CLARK COUNTY TAX MAP 3 4E SECTION 33; 2 4E SECTIONS 3 4 AND 10

JOB NUMBER 2800

SHEET E-5



LEGEND

- SITE BOUNDARY
- PROPERTY LINES
- EXISTING ROAD
- NEW ACCESS ROAD
- OPTIONAL ACCESS ROAD
- END OF ACCESS ROAD
- STREAMS
- TYPE F STREAM, SITE CLASS III – DNR REQ'D 140' RMZ EACH SIDE
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- UNIT TO BE HARVESTED
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- HARVESTED UNIT – (OLDER THAN 5 YRS)

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

ENTRY 5 (2023) HARVEST MAP

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CHECKED BY: AHH

PREPARED FOR: CITY OF CAMAS, 616 NE 4TH AVENUE, CAMAS, WA 98607

CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

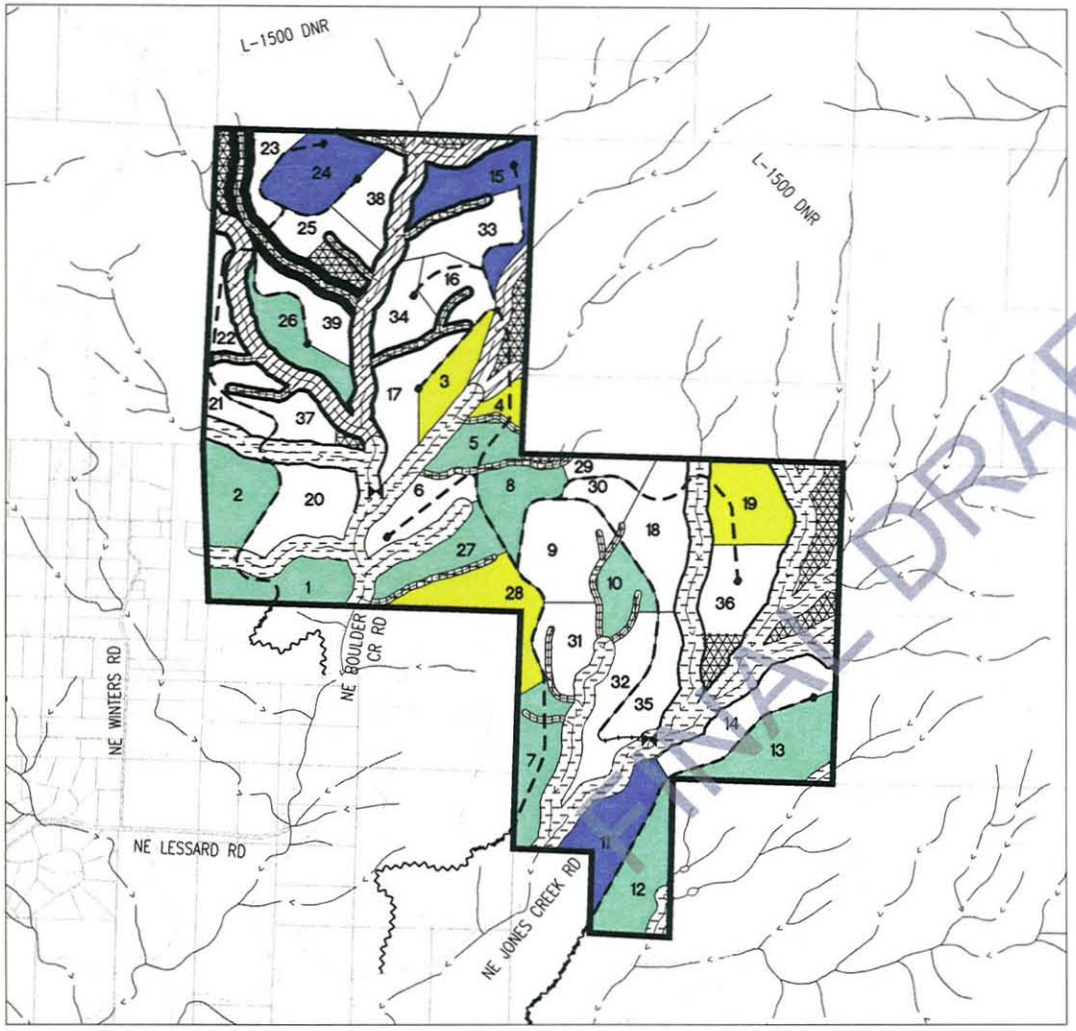
CAMAS WASHINGTON

CLARK COUNTY TAX MAP 3 4E SECTION 33, 2 4E SECTIONS 3 4 AND 10

DATE:

JOB NUMBER 2800

SHEET E-6



LEGEND

- SITE BOUNDARY
- PROPERTY LINES
- EXISTING ROAD
- NEW ACCESS ROAD
- OPTIONAL ACCESS ROAD
- END OF ACCESS ROAD
- STREAMS
- TYPE F STREAM, SITE CLASS III - DNR REQ'D 140' RMZ EACH SIDE
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- UNIT TO BE HARVESTED
- HARVESTED UNIT - (IN THE LAST 5 YEARS)
- HARVESTED UNIT - (OLDER THAN 5 YRS)

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

ENTRY 6 (2026) HARVEST MAP

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CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

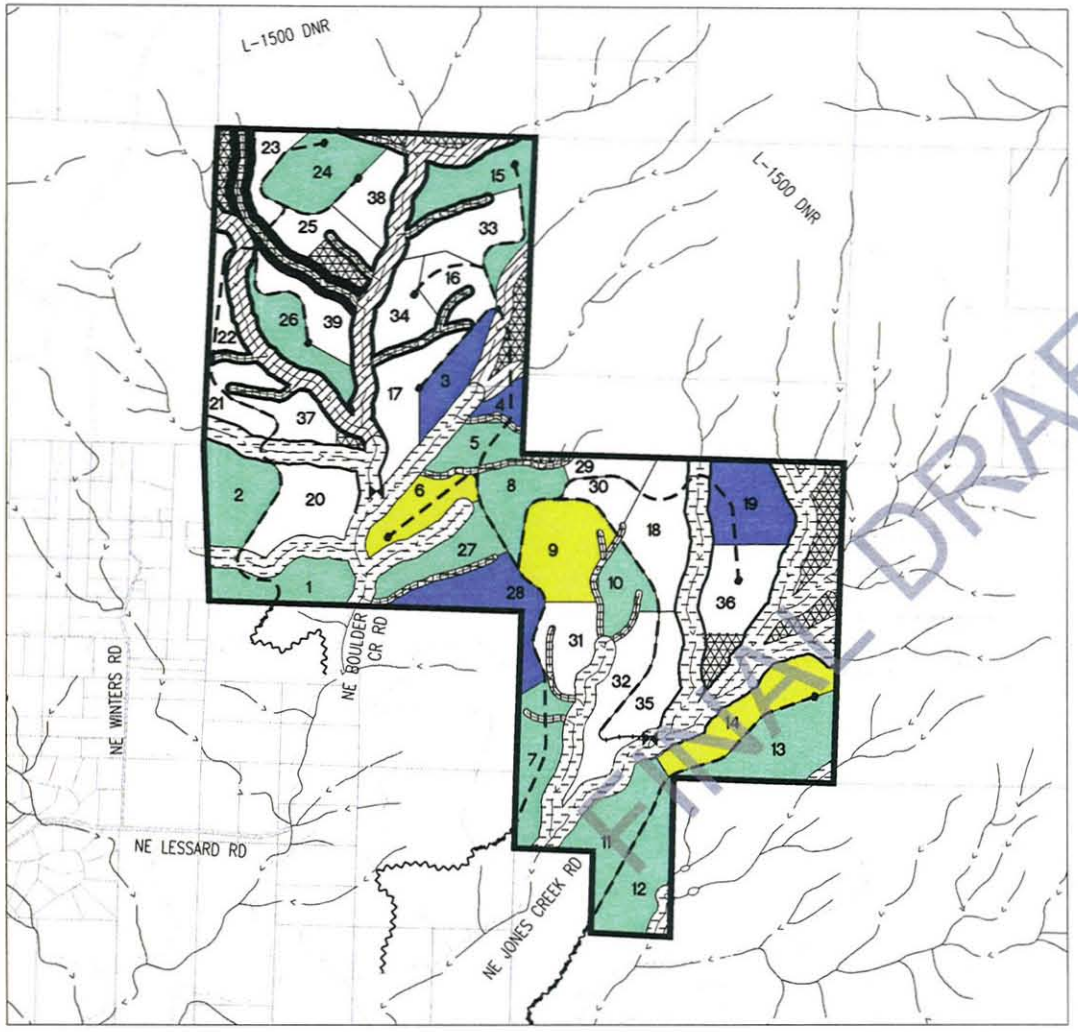
CAMAS WASHINGTON

CLARK COUNTY TAX MAP 3 4E SECTION 33, 2 4E SECTIONS 3 4 AND 10

DATE:

JOB NUMBER 2800

SHEET E-7



LEGEND

- SITE BOUNDARY
- PROPERTY LINES
- EXISTING ROAD
- NEW ACCESS ROAD
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- END OF ACCESS ROAD
- STREAMS
- TYPE F STREAM, SITE CLASS III - DNR REQ'D 140' RMZ EACH SIDE
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- UNIT TO BE HARVESTED
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- HARVESTED UNIT - (OLDER THAN 5 YRS)

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

ENTRY 7 (2029)
HARVEST MAP

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CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

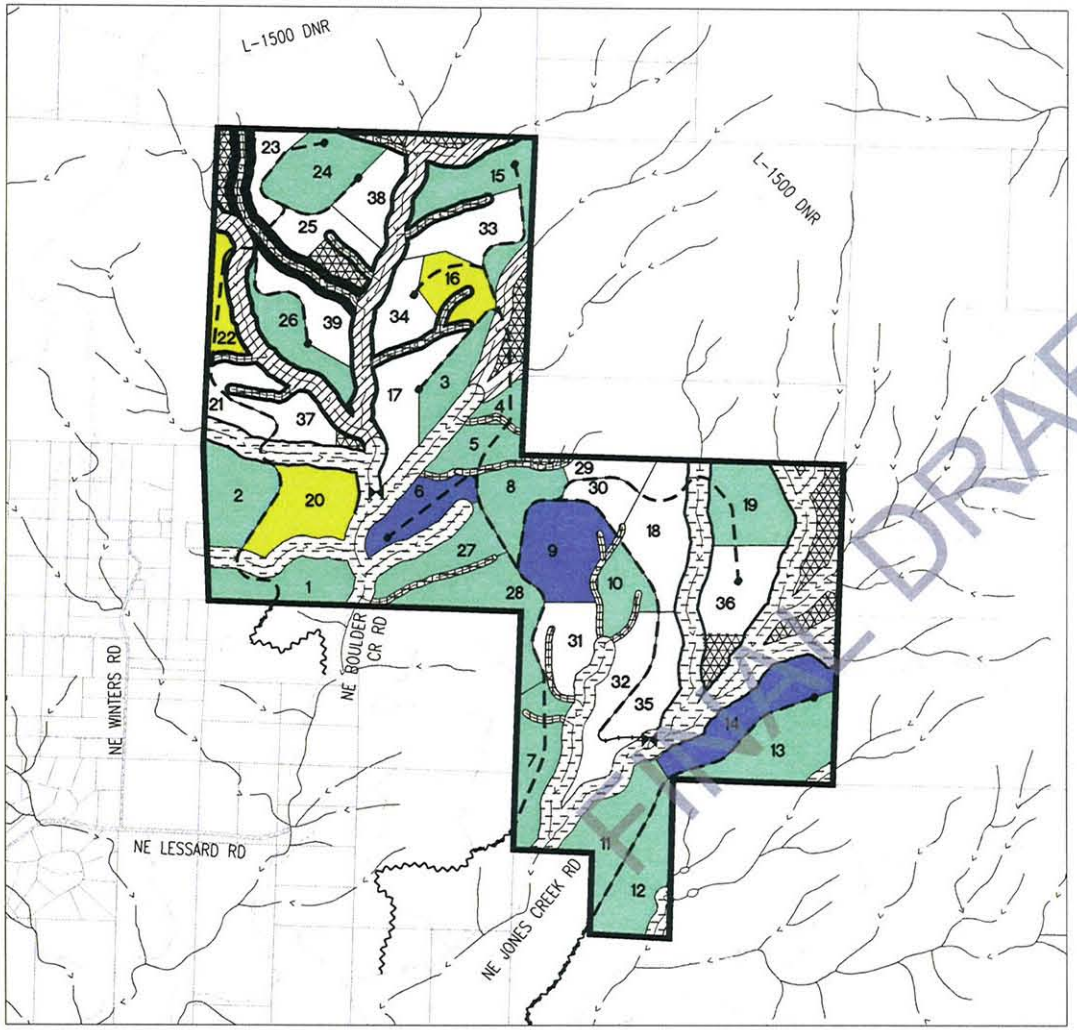
CAMAS WASHINGTON

CLARK COUNTY TAX MAP 3 4E SECTION 33; 2 4E SECTIONS 3 4 AND 10

DATE:

JOB NUMBER 2800

SHEET E-8



LEGEND

- SITE BOUNDARY
- PROPERTY LINES
- EXISTING ROAD
- NEW ACCESS ROAD
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- END OF ACCESS ROAD
- STREAMS
- TYPE F STREAM, SITE CLASS III - DNR REQ'D 140' RMZ EACH SIDE
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- HARVESTED UNIT - (OLDER THAN 5 YRS)

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

ENTRY 8 (2032) HARVEST MAP

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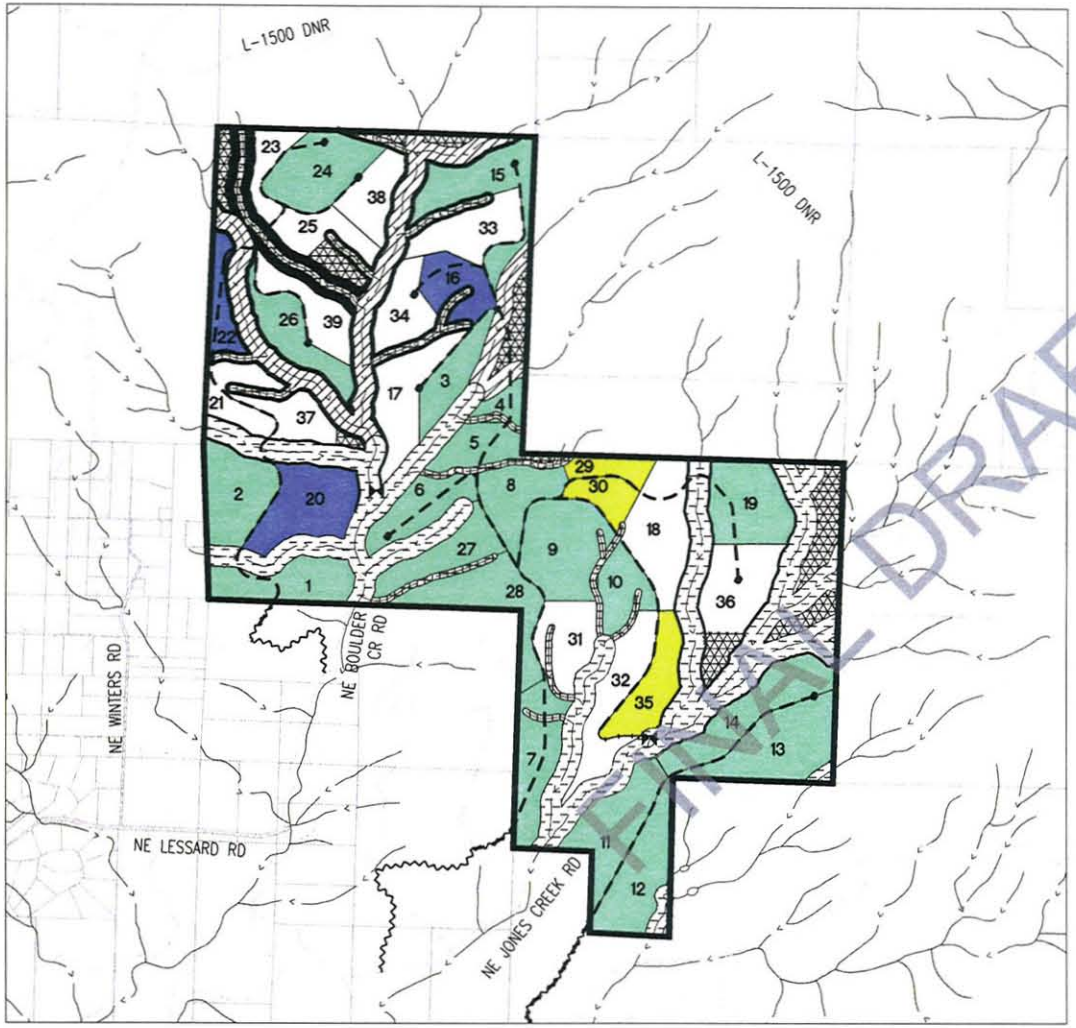
CLARK COUNTY TAX MAP 3 4E SECTION 33, 2 4E SECTIONS 3 4 AND 10

DATE:

JOB NUMBER 2800

SHEET E-9



LEGEND

- SITE BOUNDARY
- PROPERTY LINES
- EXISTING ROAD
- NEW ACCESS ROAD
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- END OF ACCESS ROAD
- STREAMS
- TYPE F STREAM, SITE CLASS III – DNR REQ'D 140' RMZ EACH SIDE
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- UNIT TO BE HARVESTED
- HARVESTED UNIT – (IN THE LAST 5 YEARS)
- HARVESTED UNIT – (OLDER THAN 5 YRS)

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

DATE:

ENTRY 9 (2035) HARVEST MAP

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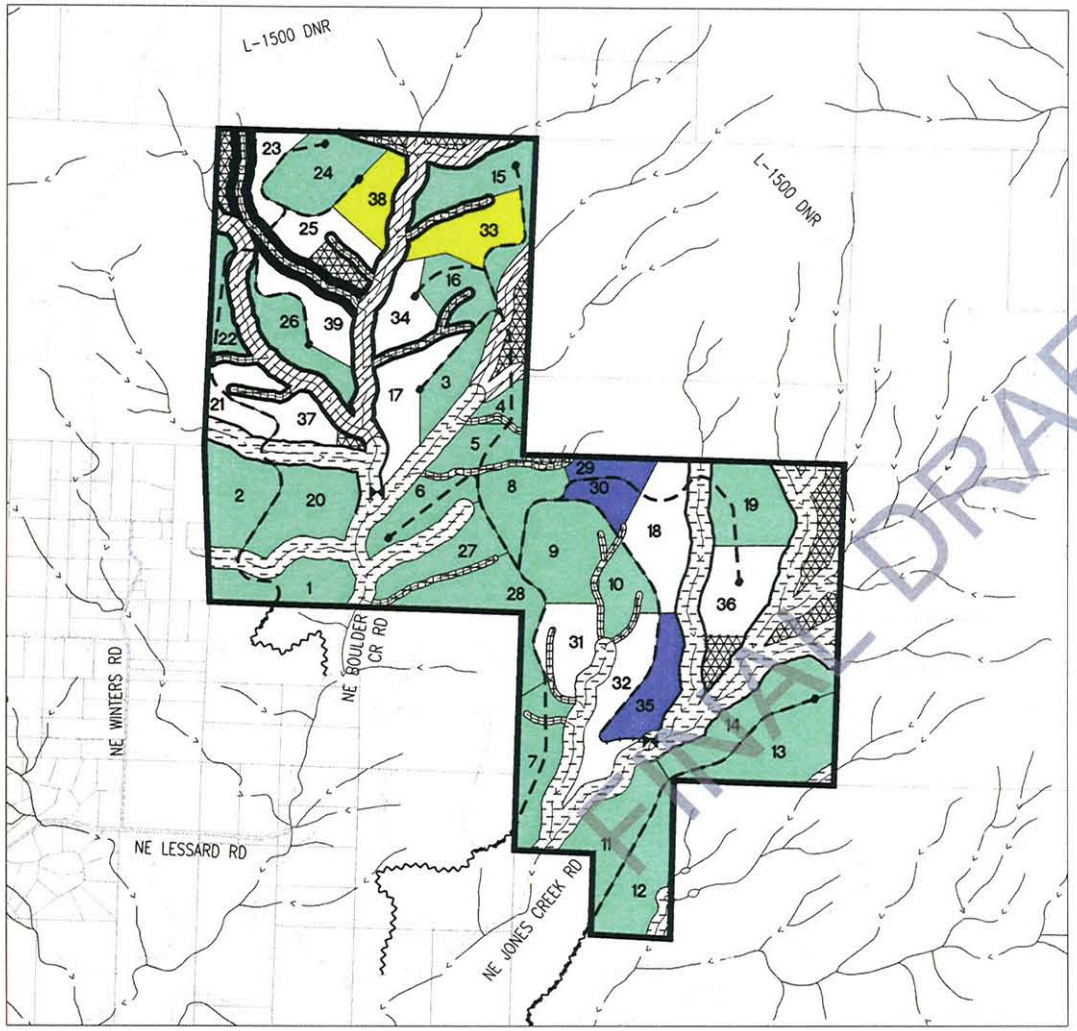
CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

CAMAS WASHINGTON

CLARK COUNTY TAX MAP 3 4E SECTION 33, 2 4E SECTIONS 3 4 AND 10

JOB NUMBER 2800

SHEET E-10



LEGEND

- SITE BOUNDARY
- PROPERTY LINES
- EXISTING ROAD
- NEW ACCESS ROAD
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- END OF ACCESS ROAD
- STREAMS
- TYPE F STREAM, SITE CLASS III - DNR REQ'D 140' RMZ EACH SIDE
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- UNIT TO BE HARVESTED
- HARVESTED UNIT - (IN THE LAST 5 YEARS)
- HARVESTED UNIT - (OLDER THAN 5 YRS)

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

ENTRY 10 (2038) HARVEST MAP

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DRAWING NO: E
SCALE: AS NOTED

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CAMAS, WA 98607

CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

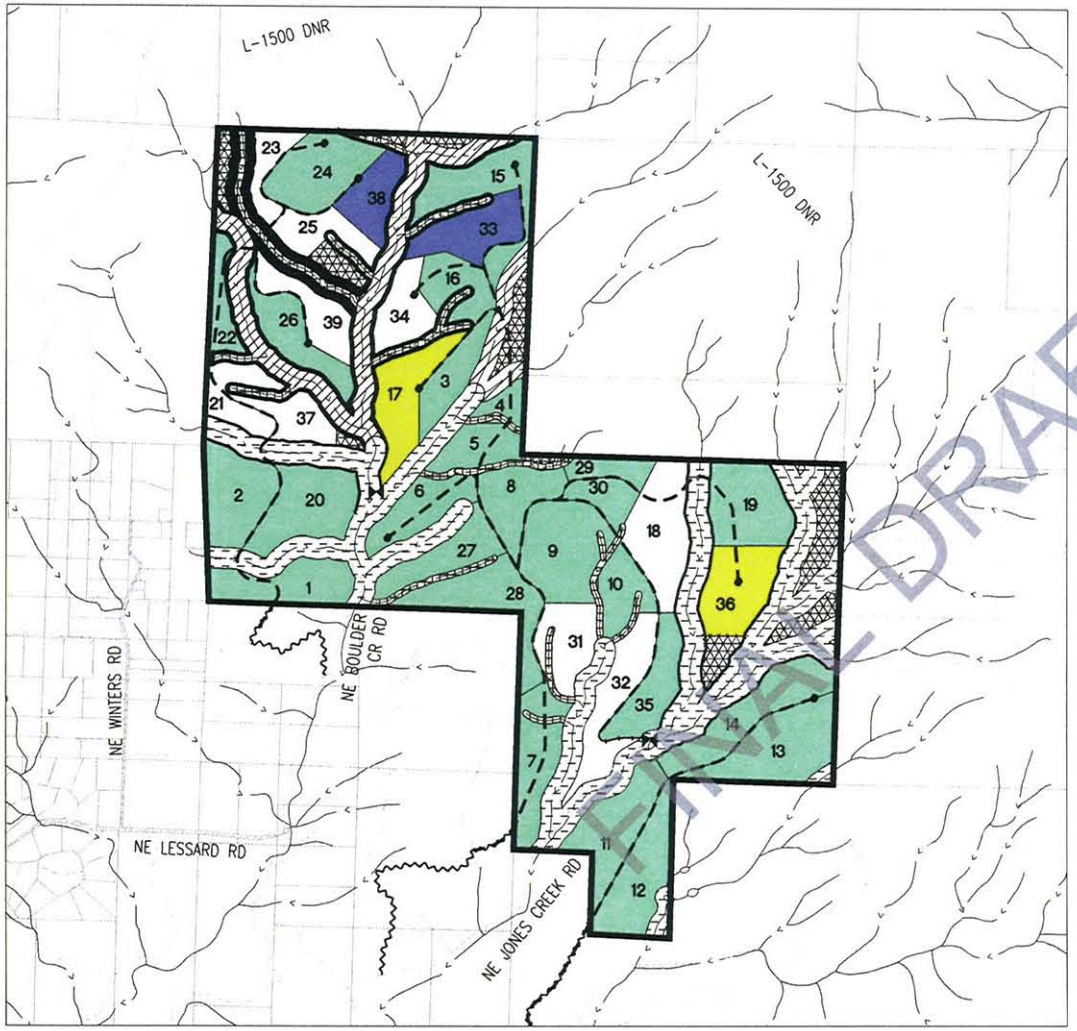
CAMAS WASHINGTON

CLARK COUNTY TAX MAP 3 4E SECTION 33, 2 4E SECTIONS 3 4 AND 10

DATE:

JOB NUMBER 2800

SHEET E-11



LEGEND

- SITE BOUNDARY
- PROPERTY LINES
- EXISTING ROAD
- NEW ACCESS ROAD
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- END OF ACCESS ROAD
- STREAMS
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- HARVESTED UNIT - (OLDER THAN 5 YRS)

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

ENTRY 11 (2041) HARVEST MAP

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DRAWN BY:	KAL	SCALE:	AS NOTED
CHECKED BY:	AHH		

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CAMAS, WA 98607

CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

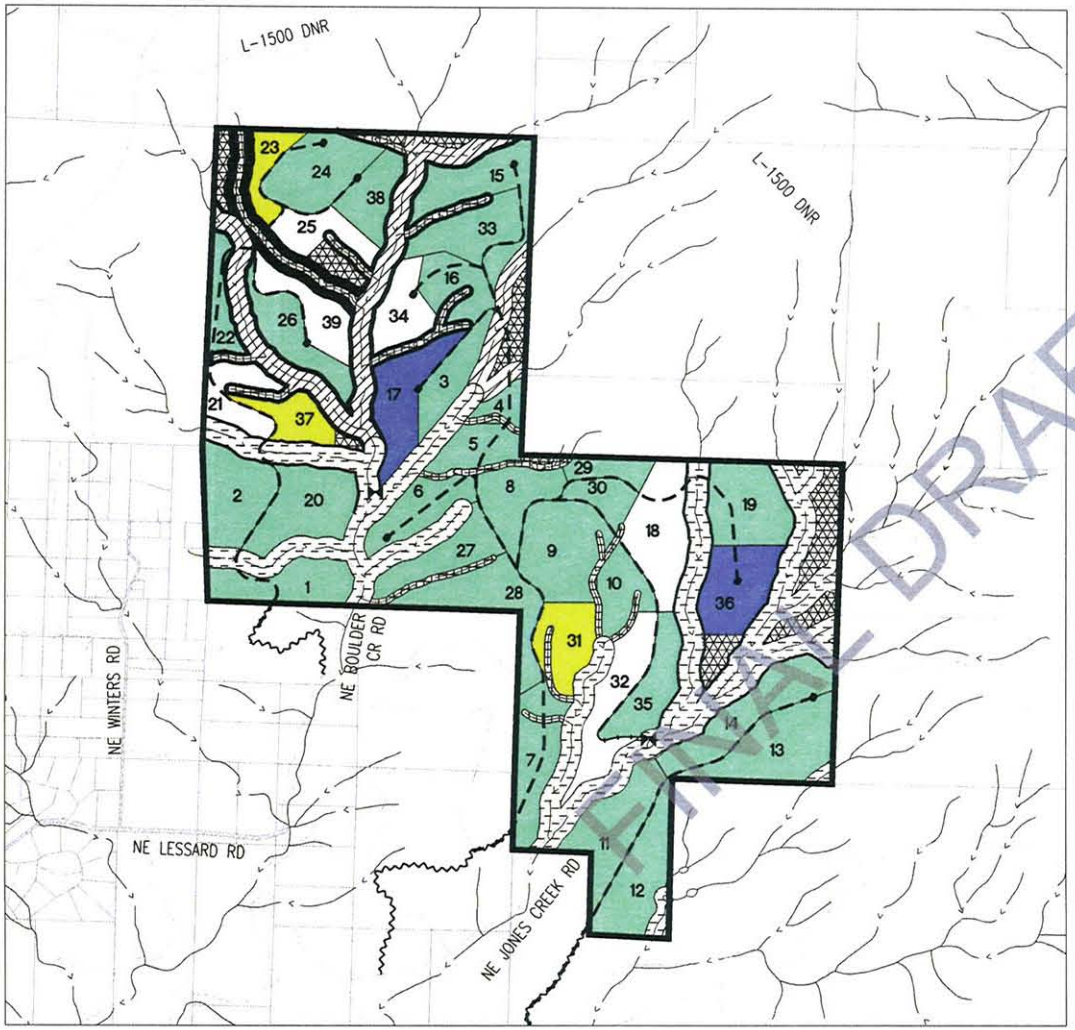
CAMAS WASHINGTON

CLARK COUNTY TAX MAP 3 4E SECTION 33, 2 4E SECTIONS 3 4 AND 10

DATE:

JOB NUMBER 2800

SHEET E-12



LEGEND

- SITE BOUNDARY
- PROPERTY LINES
- EXISTING ROAD
- NEW ACCESS ROAD
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- END OF ACCESS ROAD
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- HARVESTED UNIT - (OLDER THAN 5 YRS)

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

ENTRY 12 (2044) HARVEST MAP

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PREPARED FOR: CITY OF CAMAS, 616 NE 4TH AVENUE, CAMAS, WA 98607

CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

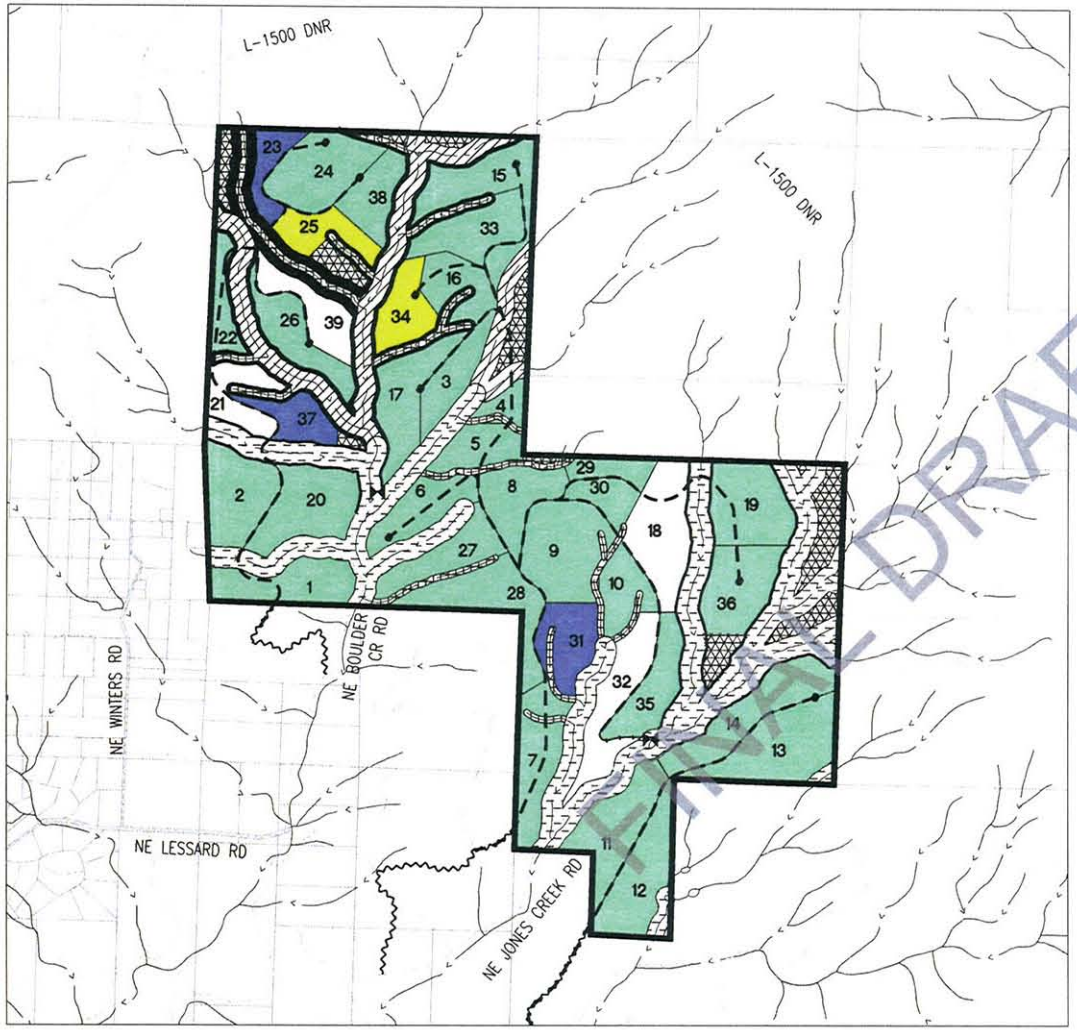
CAMAS WASHINGTON

CLARK COUNTY TAX MAP 3 4E SECTION 33, 2 4E SECTIONS 3 4 AND 10

DATE:

JOB NUMBER 2800

SHEET E-13



LEGEND

- SITE BOUNDARY
- PROPERTY LINES
- EXISTING ROAD
- NEW ACCESS ROAD
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- END OF ACCESS ROAD
- STREAMS
- TYPE F STREAM, SITE CLASS III - DNR REQ'D 140' RMZ EACH SIDE
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- HARVESTED UNIT - (OLDER THAN 5 YRS)

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

ENTRY 13 (2047) HARVEST MAP

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CHECKED BY: AHH
DRAWING NO: E
SCALE: AS NOTED

PREPARED FOR:
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616 NE 4TH AVENUE
CAMAS, WA 98607

CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

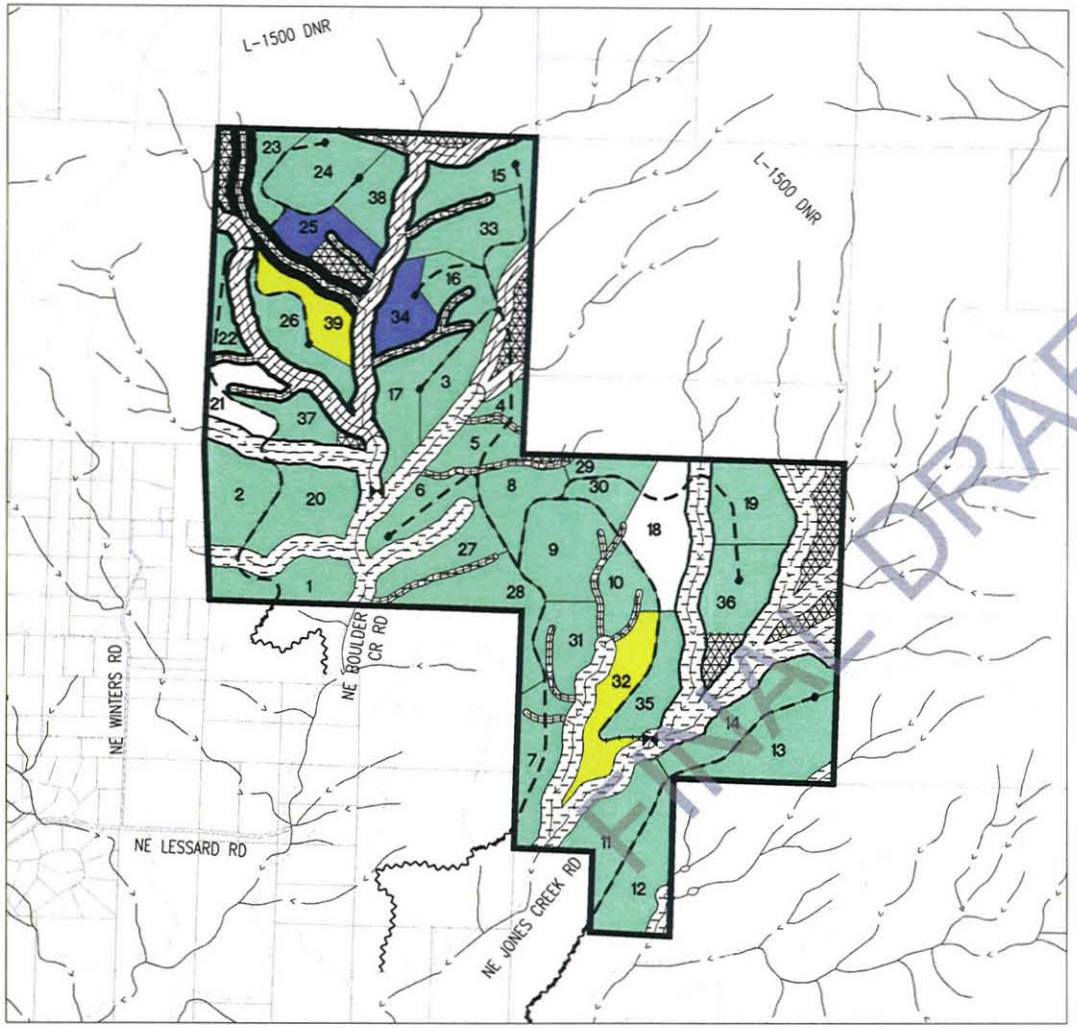
CAMAS WASHINGTON

CLARK COUNTY TAX MAP 3 4E SECTION 33, 2 4E SECTIONS 3 4 AND 10

DATE:

JOB NUMBER 2800

SHEET E-14



LEGEND

- SITE BOUNDARY
- PROPERTY LINES
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- HARVESTED UNIT – (OLDER THAN 5 YRS)

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

ENTRY 14 (2050) HARVEST MAP

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DRAWN BY: KAL
CHECKED BY: AHH
DRAWING NO.: E
SCALE: AS NOTED
DATE:

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616 NE 4TH AVENUE
CAMAS, WA 98607

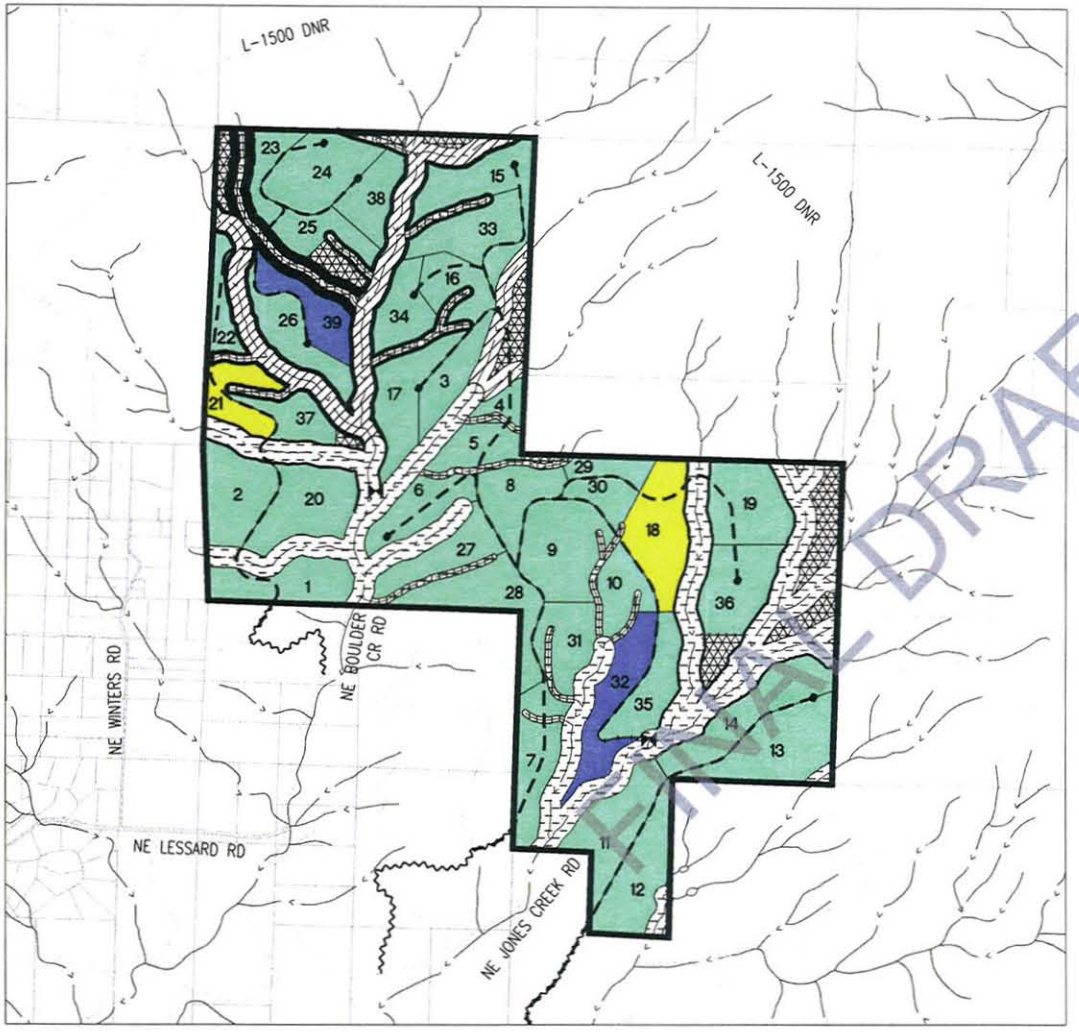
CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

CAMAS WASHINGTON

CLARK COUNTY TAX MAP 3 4E SECTION 33, 2 4E SECTIONS 3 4 AND 10

JOB NUMBER 2800

SHEET E-15



LEGEND

- SITE BOUNDARY
- PROPERTY LINES
- EXISTING ROAD
- NEW ACCESS ROAD
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- END OF ACCESS ROAD
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- TYPE F STREAM, SITE CLASS III - DNR REQ'D 140' RMZ EACH SIDE
- TYPE F STREAM, SITE CLASS II - DNR REQ'D 170' RMZ EACH SIDE
- TYPE N STREAM - DNR REQ'D 50' RMZ EACH SIDE
- ADDITIONAL STREAM BUFFER (WHERE SHOWN, WIDTH VARIES)
- RESERVE AREA
- NEW ROAD EASEMENT REQUIRED
- WATER INTAKE FACILITY
- UNIT TO BE HARVESTED
- HARVESTED UNIT - (IN THE LAST 5 YEARS)
- HARVESTED UNIT - (OLDER THAN 5 YRS)

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

ENTRY 15 (2053) HARVEST MAP

ENGINEERING · PLANNING · SURVEYING · FORESTRY
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13910 SW GALBREATH DR., SUITE 100
SHERWOOD, OR 97140
PHONE: (503) 925-8799
FAX: (503) 925-8969
AKS ENGINEERING & FORESTRY
Offices Located In:
SHERWOOD, OREGON
SALEM, OREGON
VANCOUVER, WASHINGTON
www.aks-eng.com

DESIGNED BY:	AHH	DRAWING NO:	E
DRAWN BY:	KAL	SCALE:	AS NOTED
CHECKED BY:	AHH		

PREPARED FOR: CITY OF CAMAS
616 NE 4TH AVENUE
CAMAS, WA 98607

CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

CAMAS WASHINGTON

CLARK COUNTY TAX MAP 3 4E SECTION 33, 2 4E SECTIONS 3 4 AND 10

DATE:

JOB NUMBER 2800

SHEET E-16

APPENDIX F

RESOURCE PROTECTION MAP

LEGEND

- SITE BOUNDARY
- STREAMS
- TYPE F STREAM, SITE CLASS III - DNR REQ'D 140' RMZ EACH SIDE
- TYPE F STREAM, SITE CLASS II - DNR REQ'D 170' RMZ EACH SIDE
- TYPE N STREAM - DNR REQ'D 50' RMZ EACH SIDE
- ADDITIONAL STREAM BUFFER (WHERE SHOWN, WIDTH VARIES)
- RESERVE AREA
- WATER INTAKE FACILITY

NOTES:

RMZ = RIPARIAN MANAGEMENT ZONE

ADDITIONAL RMZ'S FOR STREAMS ABOVE WATER INTAKE FACILITIES.
TYPE N STREAM - 50' ADDITIONAL RMZ EACH SIDE (TYPICAL) - 100' TOTAL
TYPE F STREAM, SITE CLASS II - 30' ADDITIONAL RMZ EACH SIDE (TYPICAL) - 200' TOTAL
TYPE F STREAM, SITE CLASS III - 60' ADDITIONAL RMZ EACH SIDE (TYPICAL) - 200' TOTAL

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

RESOURCE PROTECTION MAP

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DESIGNED BY: AMH
DRAWN BY: KAL
CHECKED BY: AMH
DRAWING NO. F-1
SCALE: AS NOTED
DATE:

PREPARED FOR:
CITY OF CAMAS
616 NE 4TH AVENUE
CAMAS, WA 98607

CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

CAMAS WASHINGTON

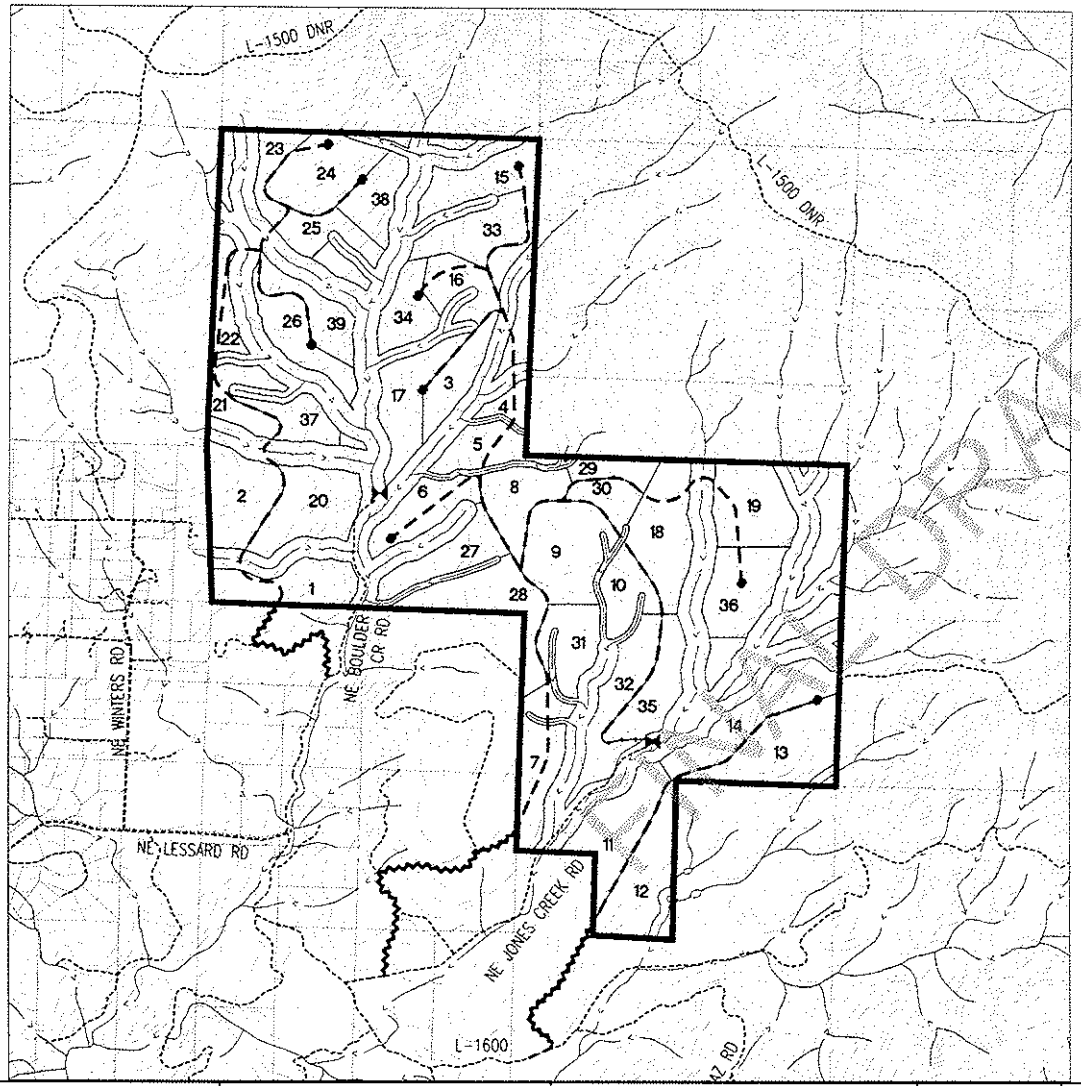
CLARK COUNTY TAX MAP 3 4E SECTION 33, 3 4E SECTIONS 3 4 AND 10

JOB NUMBER 2800

SHEET F-1

Appendix G

Road Maps and Standards



LEGEND

- SITE BOUNDARY
- EXISTING ROAD
- NEW ACCESS ROAD
- OPTIONAL ACCESS ROAD
- STREAMS
- 40' CONTOUR
- NEW ROAD EASEMENT REQUIRED
- WATER INTAKE FACILITY

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

ROAD PLAN MAP
ALTERNATIVE A

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SHERWOOD, OR 97140
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FAX (503) 925-8969
AKS ENGINEERING & FORESTRY
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DESIGNED BY: MH
DRAWN BY: KAL
CHECKED BY: MH
DRAWING NO: G-1, G-2
SCALE: AS NOTED
DATE:

PREPARED FOR: CITY OF CAMAS
616 NE 4TH AVENUE
CAMAS, WA 98607

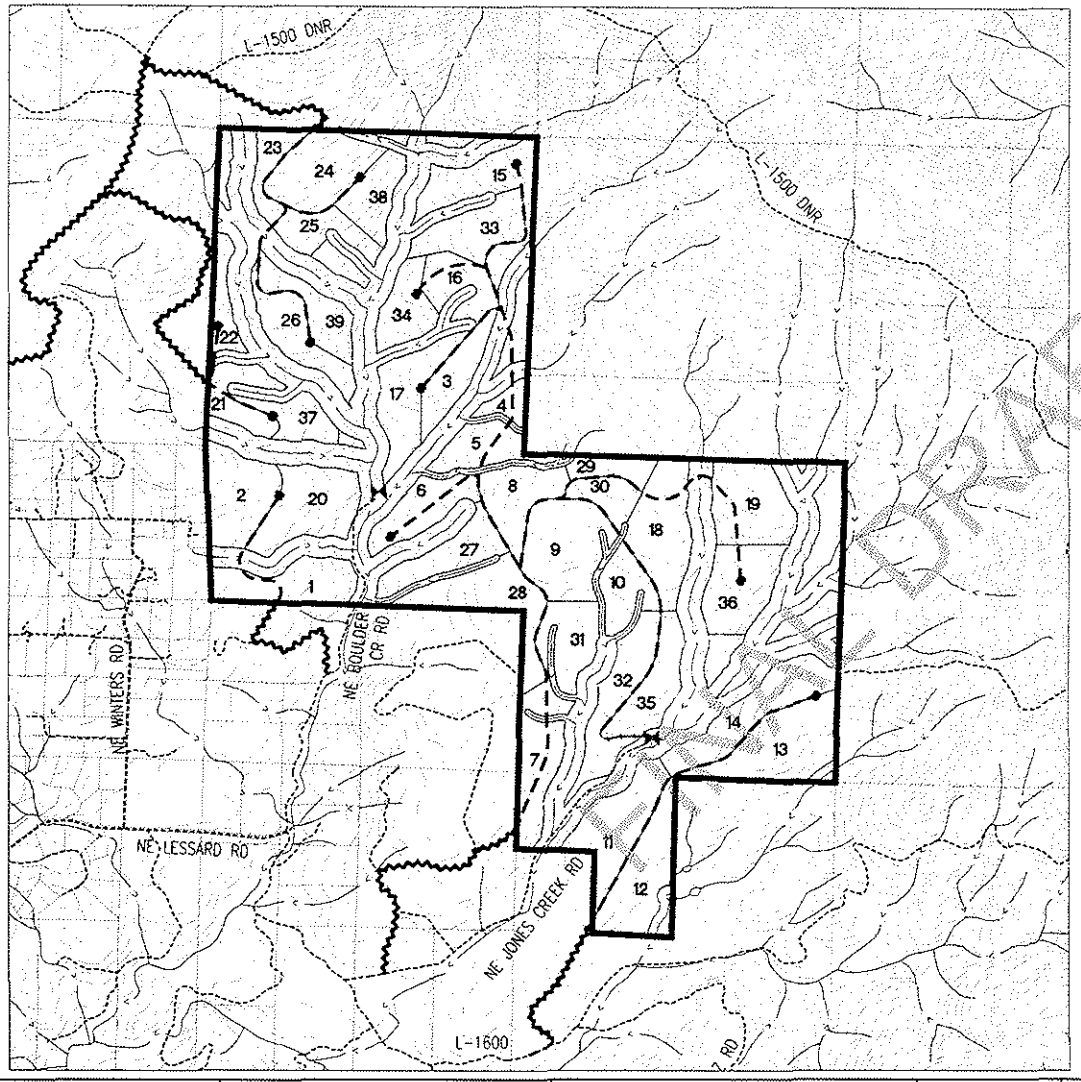
CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

CAMAS WASHINGTON

CLARK COUNTY TAX MAP 3 4E SECTION 35, 2 4E SECTIONS 3 4 AND 10

JOB NUMBER 2800

SHEET G-1



LEGEND

- SITE BOUNDARY
- EXISTING ROAD
- NEW ACCESS ROAD
- OPTIONAL ACCESS ROAD
- STREAMS
- 40' CONTOUR
- NEW ROAD EASEMENT REQUIRED
- WATER INTAKE FACILITY

SCALE 1" = 2000 FEET

2000 0 800 1200 1600 2000

NOTE: SCALE IS TRUE FOR 11X17 SHEETS

REVISIONS:

ROAD PLAN MAP ALTERNATIVE B

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www.aks-eng.com

DESIGNED BY:	AHH	DRAWING NO:	C-1, C-2
DRAWN BY:	KAL	SCALE:	AS NOTED
CHECKED BY:	AHH		

PREPARED FOR: CITY OF CAMAS
616 NE 4TH AVENUE
CAMAS, WA 98607

CITY OF CAMAS WATERSHED FOREST MANAGEMENT PLAN

CAMAS WASHINGTON

CLARK COUNTY TAX MAP 3 4E, SECTION 33, 2 4E SECTIONS 3 4 AND 10

DATE:

JOB NUMBER 2800

SHEET C-2

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AKS ENGINEERING & FORESTRY
WWW.AKS-ENG.COM
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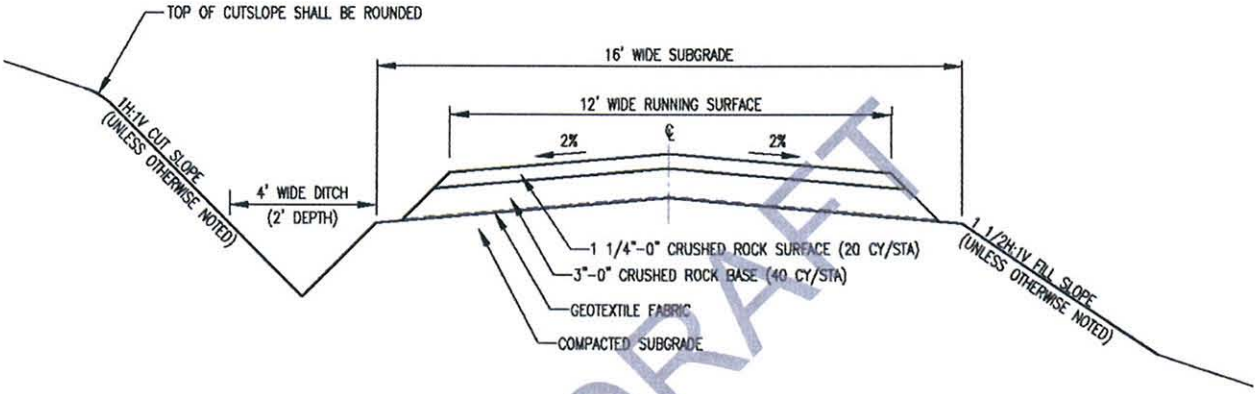
BOULDER CREEK AND JONES CREEK WATERSHED
CITY OF CAMAS

GENERAL ROAD CONSTRUCTION STANDARDS & SPECIFICATIONS



TYPICAL CROSS-SECTION (NEW CONSTRUCTION)
NOT TO SCALE

Clearing & Grubbing. This work shall consist of clearing, removing, and disposing of all trees, snags, down timber, stumps, brush, surface objects, organic material, and protruding obstructions within the clearing limits. The clearing limits shall extend 5 feet beyond the top of cut slope or toe of fill slope. All danger trees, leaners, and snags outside of the clearing limits that could fall onto the road shall be removed. Debris shall be scattered outside of the right-of-way though openings in the timber, except on areas where sideslopes exceed 50%, in which case the debris shall be transported to a suitable area and scattered.

Excavation and Grading. Excavation and grading shall not be performed when weather and/or soil conditions are such that damage will result to the existing subgrade or cause excessive erosion. All suitable excavated material shall be used for the construction of fills. Embankment material shall be free of woody debris, brush, muck, sod, frozen material, and other deleterious materials. All fills and culvert backfill shall be fully compacted in lifts of less than 8" loose measure. Compaction shall be accomplished by traveling all surfaces from shoulder to shoulder with a sheep's foot vibratory roller until visible deflection ceases or the roller "walks out". A minimum of three passes shall be made over the entire width and length of each lift. Moisture conditioning (drying or watering) shall be performed as necessary to achieve adequate compaction. Fill slopes shall be constructed at 1 1/2H:1V and cut slopes shall be constructed at 1H:1V unless otherwise specified. The top of cut slopes shall be rounded. Unless road designs show otherwise, all roads shall be on a balanced cross-section, except when slopes exceed 50%, in which case the road shall be on a full bench. Excess excavation shall not be side-cast where material will enter a stream course or any other sensitive area.

Fill Slope Armoring. Where fill slope armoring is specified, #2 pit run shall be placed and tamped on the fill slope starting at the toe of fill. Compacted depth of fill armoring shall be at least 6 inches.

Road Width Requirements. The standard subgrade width shall be 16 feet. Additional width shall be added to fills and horizontal curves as follows:

- For fill heights greater than 3 feet but less than 6 feet, add 1 foot of subgrade width to each shoulder.
- For fill heights greater than 6 feet, add 2 feet of subgrade width to each shoulder.
- Widen subgrade and surfacing on the inside shoulder of curves by an amount equal to 400 divided by the curve radius.

Subgrade Compaction and Processing. Subgrade surfaces on all new roads shall be graded and compacted prior to rocking. Compaction shall be accomplished by traveling all surfaces from shoulder to shoulder with a sheep's foot vibratory roller until visible deflection ceases or the roller "walks out". A minimum of three passes shall be made over the entire width and length of the subgrade.

Ditches and Drainage. Construct "V" ditch 4 feet wide and 2 feet deep (below subgrade) unless otherwise specified. Subgrades and surface rock shall be crowned at least 2% unless otherwise specified. "No ditch" road segments shall be outsloped at 1% with 6-inch deep waterbars installed every 100 feet unless otherwise specified. Culverts shall be installed as shown on the plans and specified on the road construction notes. Culverts shall be skewed according to flow direction and placed at a minimum slope of 5%. Care shall be taken to thoroughly compact backfill material around the haunches of the culvert for even load distribution. Culverts shall be installed with a minimum of 1 foot of cover (measured from top of subgrade). Sumps (approx. 2 cy) shall be excavated at the inlet to reduce clogging, and Carsonite markers shall be placed beside the inlet of each culvert. Rip-rap energy dissipaters (5 CY each) shall be placed beneath the outlet of culverts discharging onto slopes exceeding 40%. Culverts shall not be installed in a manner than creates an outlet drop. Excess length shall be trimmed back to ground level.

Turnouts. Increase road width by 8 feet for both subgrade and surfacing at locations shown on the plans, the road construction notes, and/or specified in the field. Length shall be a minimum of 50 feet unless otherwise noted, plus 25 foot tapered approaches at each end. Surfacing shall consist of at least 20 CY (loose measure) of 3"-0" compacted base rock and 10 CY of 1 1/4"-0" compacted surface rock, unless otherwise specified.

Turnarounds. Turnarounds shall extend 40 feet from road edge and be at least 15 feet wide unless otherwise specified. Surfacing shall consist of at least 20 CY (loose measure) of 3"-0" compacted base rock.

Intersections. Intersections shall be constructed with additional subgrade width and surfacing material as specified in the road construction notes to allow for wide turns.

Landings. Landings shall be constructed 50 feet wide by 50 feet long unless otherwise specified. Each landing shall be rocked with at least 72 CY (loose measure) of #2 pit run. Landings shall be crowned at least 2%.

Geotextile Road Fabric. Road fabric shall be installed between the subgrade and base rock where specified. Joints shall be lapped at least 2 feet. Material shall be Marafi 140N or approved equal.

Surfacing. Base rock, surface rock, and traction coat rock shall be shaped to a crowned section unless otherwise specified and compacted with a smooth-drum vibratory roller to achieve a surface that is smooth and uniform. Where surfacing is to be applied to an existing road, all potholes and washboard sections shall be cut out and graded smooth prior to surface rock placement. Where traction coat is specified, it shall be placed on top of the standard surfacing as specified.

Free-Draining Fill Construction. Where free-draining fill construction is required and/or specified, #2 pit run rock shall be imported and used for fill base construction up to a minimum depth of 3 feet. Free-draining fill material shall be covered with geotextile road fabric to separate pit run and common fill material.

Seeding and Erosion Control. As road segments are completed, all exposed or disturbed soils shall be hand-seeded with a forage seed mixture as follows (or approved equal):

26% Annual Rye
25% Orchard Grass
17% New Zealand White Clover
15% Perrenial Rye
7% Birdsfoot Trefoil
6% Red Clover
4% Aliske Clover

Seed Mixture shall be applied at a rate of 100 pounds/ acre with 200 pounds/ acre of fertilizer (16-20-0).

Fills slopes greater than 6 feet in height shall be hydro-seeded. Hydro-seeding mixture and application rates shall be approved prior to placement.

WASHINGTON STATE DEPARTMENT OF
Natural Resources
Doug Sutherland - Commissioner of Public Lands

Right-of-way Application Instructions & Information

The Right-of-way Application is an official request to use or obtain access across State land managed by the Washington Department of Natural Resources (DNR) for right-of-way purposes. The application is used to assess the feasibility of the applicant's proposal from legal, environmental and land management perspectives.

Prior to submitting an application,or if you have any questions regarding the Right-of-way Application, please consult with a DNR region representative at the appropriate region office listed below.

Region/Phone #	Address	Counties Served
Northeast Region (509) 684-7474	225 South Silke Road P.O. Box 190 Colville, WA 99114	Lincoln*, Spokane, Stevens, Pend Oreille, Ferry, Okanogan
Northwest Region (360) 856-3500	919 North Township St. Sedro Woolley, WA 98284	Whatcom, Island, San Juan, Skagit, Snohomish*
Olympic Region (360) 374-6131	411 Tillicum Lane Forks, WA 98331	Clallam, Jefferson, Grays Harbor* (north half)
South Puget Sound Region (360) 825-1631	950 Farman Street North Enumclaw, WA 98022	Pierce, King, Kitsap, Mason, Lewis*, Thurston*, Snohomish*
Southeast Region (509) 925-8510	713 Bowers Road Ellensburg WA 98926	Adams, Benton, Douglas, Chelan, Franklin, Grant, Kittitas, Yakima, Klickitat, Walla Walla, Columbia, Whitman, Garfield, Asotin, Lincoln*
Pacific Cascade Region (360) 577-2025	601 Bond Road P.O. Box 280 Castle Rock, WA 98611	Wahkiakum, Cowlitz, Clark, Skamania, Thurston*, Lewis*, Pacific, Grays Harbor* (south half)

*Two regions share jurisdiction in these counties

The Department may deny an incomplete application. The submittal and acceptance of this application does not constitute a grant of any right and does not guarantee a grant of any right. All grants will be made by an ensuing easement or permit.

I. Applicant Information

PART A: Applicant

(1) **Name:** Enter the full legal name of the entity(ies) requesting access. (Enter the name as it is intended to be shown on the easement or permit, if granted.)

(2) **Date:** Enter the date of which this application is made.

(3) **Address:** Enter the applicant's mailing address.

(4) **Phone 1:** Enter the applicant's primary contact number.
Phone 2: Enter the applicant's secondary contact number.

If you wish to add additional contact numbers, please include them on a separate attachment.

(5) **E-mail:** *Optional.* Enter the applicant's e-mail address.

(6) **Billing Address:** *Optional.* Enter billing address if different from the address listed above.

(7) **Legal Entity:** Check the applicable entity.

ENTITY	DESCRIPTION
Individual, Multiple Individuals, or Married Couple	May include single persons, joint tenancy (two or more persons are joint and equal owners of the property); guardians of incompetent persons or minors; tenancy in common (multiple owners who have an undivided interest in the whole property); joint ownership of community property; List spouses or other individuals names. Include middle names.
Corporation	May include: Corporations Sole (bishops, overseers, presiding elders of any church or religious domination); Non-profit Corporations; Sole Proprietorship List state of registration.
General Partnership	Guided by the Uniform Partnership Act (Chapter 25.04 RCW).
Limited Liability Company (LLC)	Guided by Chapter 25.25 RCW. Formed when filed a Certificate of Formation is filed with the State. List state of registration.
Limited Partnership	Guided by the Washington Uniform Limited Partnership Act (RCW 25.10.010). List state of registration.
Governmental Agency	Cities, towns, Indian lands, federal agencies (BIA, BLM, BPA, etc.), state agencies, counties, public utility districts, school districts, diking districts, irrigation districts, etc.
Other	Please describe: May include, but not limited to: fraternal societies, granges, agricultural cooperative societies, churches, trustees, etc.

(8) **Relationship to Applicant:** If you are applying on behalf of yourself, check "Self". If you are applying on behalf of a corporate, governmental, or other entity, check "Representative".

If "Representative" is checked, complete "Part B. Applicant's Representative". If "Self" is checked, proceed with "Section II. Right-of-way Proposal".

PART B: Applicant's Representative

(a) Representative Name and Title: Enter full name and working title of representative (e.g., Manager, Executive Officer, Attorney, County Commissioner, Engineer).

(b) Type of Representative: List type of representative. Representatives may include:

- Executor/Administrator - Confirmed, appointed, or acting under the order of a court.
- Guardian –Confirmed, appointed, or acting under the order of a court.
- Trustees – May be appointed in numerous situations to act on the behalf of the deceased, corporations, etc.
- Attorney at Law – May act as landowners representative, but may not contract or convey in the place or name of the landowner.
- Attorney-in-Fact – Acts on behalf of the landowner with written power of attorney from landowner. This person may not be an attorney.
- Consultant or Agent – Appointed or acting on behalf of the landowner.

(c) Address: Enter the representative's mailing address.

(d) Phone: Enter the representative's primary contact number.

(e) E-mail: *Optional.* Enter the representative's e-mail address.

II. Right-of-way Proposal

PART A: Description

(9) **What are you applying for?** Check easement and/or permit. The department may grant access across State lands in two forms:

- Permit or License
- Easements

Permits and licenses are a permissive use of the landowner's land. They are revocable at will of the owner and are not assignable, transferable, or inheritable. Permits or licenses may be granted for other short-term temporary proposals.

Easements are a privilege to use the land of another or an interest in the land. They are a legal grant of property rights that are assignable, transferable, inheritable, and non-revocable unless there are terms in the easement allowing termination or by mutual consent of both parties. Easements may be granted in perpetuity (forever) or terminate on a given date.

It is the sole decision of the State whether you will be granted a permit or easement for your state purpose.

(10) **Estimated Start Date of Proposal:** Enter the estimated start date of your proposal.

(11) **Length of Time requested for the easement or permit:** Enter the length of time needed for the easement or permit in years or months.

There is no guarantee that the easement or permit will be granted for the requested length of time.

(12) **Type of Use:** Check all that apply and enter the requested information for each type requested, including measurements (width, length, and acres).

Each easement or permit is granted for a specific type and purpose, e.g., utility easement for electrical transmission line.

The following lists the common types of uses that the Department grants.

- Movement of valuable materials across public lands. (RCW 79.36.350)
- Road rights-of-way for local governments and state agencies. (RCW 79.36.440)
- Railroad rights-of-way. (RCW 79.36.450)
- Irrigation ditches, drainage ditches, and diking projects by organized districts. (RCW 79.36.540)
- Utility and communication lines. (RCW 79.36.510)
- Overflow rights. (RCW 79.36.570)
- Other purposes as determined on a site-specific basis by the Department

(13) **Describe the proposed use of DNR-managed land and the benefitting parcel:**

(a) Explain the proposed use of the right-of-way on DNR-managed land, i.e., hauling timber, hauling rock, bury a fiber optic line, etc.

(b) If the easement or permit will benefit a specific parcel or parcels, describe the use of the benefitting parcel (e.g., forest management, residential property, vineyards, rock pit).

(14) **Volume of timber, rock, or agricultural products:** ***Road Use Permits Only*** **-** Enter the volume of timber in thousand board feed (Mbf), the cubic yards or tons of rock; or a common measurement of other valuable materials. Also, include the number of acres from which valuable material will be removed.

(15) **Removal of valuable materials:** Check appropriate box. If valuable materials will be removed, enter the estimated volume in thousand board feet (Mbf) that will be removed during the term of the permit or easement.

(16) **Aquatic Lands:** Check appropriate box. Please contact Aquatic Resources Division at (360) 902-1100 if the proposed right-of-way crosses aquatic lands or if you don't know if the proposal crosses aquatic lands. See "Boundaries of State-owned Aquatic Lands" for assistance in determining where State-owned aquatic lands begin and end.

PART B: Location

(17) **Legal description of right-of-way proposal:** Enter the legal description for each section, township, and range of the proposed right-of-way and the proposed use on DNR-managed land. For example:

Subdivision (¼¼ or Lot #)	Section	Township	RANGE		County	Type of Use as listed in Part II.A. above
SW¼SW¼	16	17	2	☒W ☐E	Thurston	Road – Resource Use
SW¼NW¼	16	17	2	☒W ☐E	Thurston	Road – Resource Use; Utility – Electrical Distribution Line

Please attach an additional sheet if additional legal descriptions apply.

(18) **Map:** Please include a copy of the map showing the proposed right-of-way. ***At a minimum,*** *the applicant is responsible for submitting a preliminary map for review by the Department prior to acceptance of this application.*

(a) A Record of Survey meeting **requirements of Title 58 RCW and Chapter 332-130 WAC,** created by or under the direct supervision of a Licensed Professional Land Surveyor, is required to be submitted prior to the final issuance of a permit or license as determined by the Department and for the following types of rights-of-way:

- New construction.
- County roads and highways.
- Utilities.
- Drainage or irrigation easements.
- Railroads.
- Realignment of existing roads.
- Any grant across aquatic lands. Exemptions are provided for recreational docks and mooring buoys per RCW 79.90.105 and for those permits issued as a right-of-entry.

The Department allows the submission of a preliminary map with an application for an easement grant as a precursor to the applicant submitting a record of survey.

The applicant is responsible for:

i) All costs and work associated with creating, submitting, revising and recording the Record of Survey.
ii) Submitting a preliminary Record of Survey for review and approval by the Department prior to approval of the agreement.
iii) Recording the final Record of Survey with the county auditor's office.
iv) Submitting a digital copy in AutoCAD.DWG or DXF (drawing exchange format) of the final survey.
v) Submitting two full size copies and one 8½" X 11" copy and of the recorded survey including the auditor's recording information to the Department.

PLEASE CONTACT THE REGION OFFICE FOR A LIST OF SPECIFIC REQUIREMENTS FOR RECORDS OF SURVEY.

(b) Please include a preliminary map (preliminary map may be produced from orthophotos, USGS Quad maps, engineered road plans, etc.) on 8½" X 11" white paper **for all other easement and road use permit grants over existing roads** that includes the following:

- Applicant/grantee name.
- Section, township and range.
- County.
- Show section or sub-division lines.
- State the width, length and acres of the right-of-way.
- Differentiate with mapping symbols new construction, reconstruction, and existing road segments.
- Clearly label grantor parcel.
- Legend.
- North arrow.
- Scale bar.
- Orthophoto identification number and date if the right-of-way was drawn from an orthophoto.
- Drawn to a scale of sufficient size and detail to clearly show the location and dimensions of the proposed right-of-way.
- **Any other data necessary for the complete understanding of the exhibit map. If, in the opinion of the department, such information is lacking, the map may be rejected.**

A Department of Natural Resources Forest Practices Map may be used to create the preliminary map.

Revisions: Due to the nature of road construction, the as-built location of the road may differ from the mapped location. The Department may require a revised map or survey to reflect the as-built location. The applicant will be responsible for recording the revised map with the county.

(19) Legal description of benefitting parcel: *If you have a copy of the deed showing the parcel requiring access, please include a copy of the deed with the application. If a deed is attached or if the proposed right-of-way does not access a specific parcel (such as a utility transmission line), question 19 does not need to be completed.*

Enter the legal description for each section, township, and range of the parcel that will be served by the easement or permit. Per the above example in question 17, road and utility access is desired across portions of Section 16, Township 17 North, Range 2 West, W.M.,

in Thurston County to access a parcel in the N½, Section 17, Township 17 North, Range 2 West, W.M. in Thurston County. The following would be entered into the table on the application:

Subdivision (¼¼ or Lot #)	Section	Township	RANGE		County
N½	17	17	2	☒W ☐E	Thurston

Please attach an additional sheet if additional legal descriptions apply. For complex legal descriptions please contact the region.

III. Disclaimer and Signature

Please sign and date the application. By signing and dating the application, you have certified that the answers are true to the best of your knowledge.

Application Processing

This application will be reviewed by the Department of Natural Resources upon receipt at one of the DNR region offices. Applicants will be notified in writing if the application is accepted for further review. This application may be rejected at any time during the application process.

Completion of this application form and notice of acceptance of the application is not approval of your project. An executed **permit or easement is required to operate on state lands.**

Other Requirements

Copies of all approved government regulator permits must be submitted to one of the DNR region offices before issuance of a DNR right-of-way agreement. Your project may require the following permits or environmental reviews:

- Forest Practice Application (FPA): Required by Department of Natural Resources, Forest Practices Division for activities conducted on forest lands related to growing, harvesting or processing timber and are regulated by the Forest Practices Act. Activities include road construction and maintenance, thinning and salvage of trees, harvesting, reforestation, brush control, and using fertilizers or pesticides.
- Hydraulic Project Approval (HPA): Required by the Department of Fish and Wildlife if the project includes work that will use, divert, obstruct, or change the natural flow or bed of any fresh or salt water of the state.
- State Environmental Policy Act (SEPA) Checklist: Required for all non-exempt government actions. Statutory exemptions are listed in Chapter 43.21C RCW and categorical exemptions are listed in WAC 197-11-800 through 890.
- Other city, county, state, or federal permits.

Thank you for doing business with the State of Washington Department of Natural Resources.

WASHINGTON STATE DEPARTMENT OF
Natural Resources
Peter Goldmark - Commissioner of Public Lands

Right-of-way Application

I. Applicant Information

PART A: Applicant

(1) Name: _____ (2) Date: _____
Full Corporate Name or Individual Name

(3) Address: _____
Street Address *Apartment/Unit #*

_____
City *State* *ZIP Code*

(4) Phone 1: ( ) - Phone 2: ( ) - (5) E-mail: _____

(6) Is billing address the same as shown above? YES ☐ NO ☐ If no, please enter billing address:

Billing Address: _____
Street Address or PO Box *City* *State* *ZIP Code*

(7) Legal Entity - Please check the applicable entity listed below:

☐	Individual, Multiple Individuals, Married Couple.....	Spouses/Individual Name: _____
☐	Corporation.....	State of Registration: _____
☐	General Partnership	
☐	Limited Liability Company.....	State of Registration: _____
☐	Limited Partnership.....	State of Registration: _____
☐	Governmental Agency	
☐	Other.....	Please describe: _____

(8) Relationship to Applicant: ☐ SELF ☐ REPRESENTATIVE If Applicant's Representative, please complete Part B.

PART B: Applicant's Representative

(a) Representative Name: _____
First Name *Last Name* *Title*

(b) Type of Representative (guardian, attorney, employee, etc.): _____

(c) Address: _____
Street Address *City* *State* *ZIP Code*

(d) Phone: ( ) (e) E-mail: _____

II. Right-of-way Proposal

PART A: Description

(9) What are you applying for? ☐ EASEMENT ☐ PERMIT/LICENSE

(10) Estimated Start Date of Proposal: _____

(11) Length of Time Requested for the Easement or Permit: YEARS: _____ **OR** MONTHS: _____

(12) Type of Use (*Check all that apply.*)

☐ Road	Purpose:	☐ Resource Use (e.g., removal of timber, rocks, crops, or other valuable materials) ☐ Administrative ☐ Public Use (e.g., county roads, city streets, highways) ☐ Any/All Purpose	☐ New Construction:	Width (ft): Length (ft): Acres:
			☐ Existing:	Width (ft): Length (ft): Acres:
☐ Trail	Purpose:	☐ Public Use ☐ Personal	☐ New Construction:	Width (ft): Length (ft): Acres:
			☐ Existing:	Width (ft): Length (ft): Acres:
	Type (motorized (ORV), non-motorized, multi-use, hiking, etc.):			
☐ Communication Line	Type *(phone, fiber optic, etc.)*:		☐ New Construction:	Width (ft): Length (ft): Acres:
	Location *(overhead, buried, etc.)*:		☐ Existing:	Width (ft): Length (ft): Acres:
	Who will the line serve? *(i.e., residential, commercial)*		How many units will the line serve?	
☐ Railroad	Describe:		☐ New Construction:	Width (ft): Length (ft): Acres:
			☐ Existing:	Width (ft): Length (ft): Acres:
☐ Utility Line	Type *(sewer, power, domestic water, gas, etc.)*:		☐ New Construction:	Width (ft): Length (ft): Acres:
	Location *(overhead, buried, etc.)*:		☐ Existing:	Width (ft): Length (ft): Acres:
	Describe Facility *(6" double wall pipe, 500 KV Transmission Line, etc.)*:			
	Who will the line serve? *(i.e., residential, commercial)*		How many units will the line serve?	
☐ Well, Irrigation, Diking	Describe:		☐ New Construction:	Width (ft): Length (ft): Acres:
			☐ Existing:	Width (ft): Length (ft): Acres:
☐ Beam Path, View, Light, Air, Open Space	Describe:			Acres:
☐ Overflow, Reservoir	Describe:			Acres:

☐ Other?	Describe:

(13)(a) Describe the proposed use of the right-of-way on DNR-managed land and, if applicable, (b) the proposed use of the property which will benefit from the easement or permit: _____

(14) *Road Use Permits Only* - If you are applying for a road use permit, please estimate the volume of timber, rock, or agricultural products to be hauled and number of acres from which valuable materials will be removed:

Mbf: _____ Cubic Yards: _____

Tons: _____ Acres from which valuable material will be removed: _____

(15) Will timber or other valuable materials need to be removed from state land as part of this proposal? ☐ NO ☐ YES: Type of valuable material: _____ Volume to be removed: _____

(16) Does this proposal cross aquatic lands*? YES ☐ NO ☐ DON'T KNOW ☐
**RCW 79.105.060 "Aquatic lands" means all tidelands, shorelands, harbor areas, and the beds of navigable waters."*
If "Yes", please contact Aquatic Resources Division at 360-902-1100.

Part B: Location

(17) Please enter the legal description(s) of the proposed easement or permit.

Subdivision (¼¼ or Lot #)	Section	Township	Range	County	Type of Use (As listed in Part II.A. above.)
			☐W ☐E		
			☐W ☐E		
			☐W ☐E		
			☐W ☐E		
			☐W ☐E		
			☐W ☐E		
			☐W ☐E		
			☐W ☐E		

Please attach an additional sheet if additional legal descriptions apply.

(18) **A map must be included with this application.** ***(At a minimum,*** *the applicant is responsible for submitting a preliminary map for review by the Department prior to acceptance of this application.)* Please refer to Application Instructions and contact the region office for a complete list map requirements.

(19) Please enter the legal description(s) below ***OR*** attach a copy of the deed for each benefitting parcel (i.e., the property that the easement or permit accesses or where valuable materials will be removed).

Subdivision (¼¼ or Lot #)	Section	Township	RANGE	County
			☐W ☐E	
			☐W ☐E	
			☐W ☐E	
			☐W ☐E	
			☐W ☐E	
			☐W ☐E	
			☐W ☐E	
			☐W ☐E	

Please attach an additional sheet if additional legal descriptions apply.

III. Disclaimer and Signature

I certify that my answers are true and complete to the best of my knowledge. I understand that the submittal and acceptance of this application does not constitute the State's grant of any right, does not guarantee a grant of any right and any use of State land without permission will be considered a trespass.

This application will expire if the applicant does not contact in writing the Department for two years after the submittal date.

Applicant: _____
(Please Print)

Signature: _____ Date: _____

Title: _____
(Please Print)

INTERAL USE ONLY					
Region					
Received by:					Date:
Reviewed By:					Date:
Region:					
Application Complete?	☐ YES	☒ NO. List incomplete sections:			
Application Accepted?	☒ YES	☒ NO. Reason for denial:			Date:
Submitted to Title and Records Office (TRO):	☐ YES ☐ NO	TRO File Number Requested?		☐ YES ☐ NO	Date:
SEPA Required?	☐ YES ☐ NO	If "No", please list statutory (Chapter 43.21C RCW) or categorical (WAC 197-11-800 through 890) exemption:			
Title and Records Office					
Date Received:					
Title Examiner:					
File Number:					

Appendix H

Forest Practices Permit Application Instructions & Forms; RMAP Checklist

Western Washington Forest Practices Application/Notification Information and Instructions

Table of Contents

General Information

You may need a Forest Practices Application/Notification (FPA/N) form for any of the following activities on forest land. Please contact the DNR region office to see if you need one.

- Harvesting timber;
- Salvaging logs, stumps, or snags;
- Constructing forest roads;
- Installing or replacing culverts/bridges on forest roads;
- Constructing or expanding gravel pits on forest land for forestry use; or
- Using aircraft to apply chemicals

FPA/N forms are on DNR's Forest Practices website http://www.dnr.wa.gov/BusinessPermits/Topics/SmallForestLandownerOffice/Pages/fp_sflo_overview.aspx . They are also at DNR Region offices. These forms must be legible for electronic scanning. Please:

- Type or use ink
- Do not use whiteout. If you make mistakes, cross them out and initial your changes.
- Do not write in the margins
- Include comments on a separate page. Include the number each comment refers to.
- Include an activity map. Map standards are in these instructions. You can download a map from the Forest Practices web site. Maps are also at DNR region offices.
- Use additional maps to help explain your proposal (if needed)

If your FPA/N is complete, DNR will mail you a postcard. If it is incomplete, DNR will contact you and explain why.

Laws and Rules

Copies of the laws and rules can be found on the DNR's website and DNR Region Offices. See page 30 of these instructions for a list of frequently viewed pages on the DNR Forest Practices website, including links to laws and rules. The Revised Code of Washington (RCW) for forest practices are Chapter 76.09 RCW and Chapter 76.13 RCW. RCWs are state laws. Forest Practices rules are Washington Administrative Code (WAC) 222. The Forest Practices Board Manual provides technical advice to help follow the rules.

Hazardous Leave Trees & Utility Lines

Trees that fall into any electrical utility lines have serious consequences. Not only can they injure people or property near the line, but hitting a line may cause power outages, surges, fires, and other damage. Downed lines still conducting electricity are especially dangerous. Leave trees left within one and one half lengths of electrical lines have the potential to fall into utility lines. This is a very serious situation and leave trees must be removed.

Forest Practices Application/Notification Fees

Fees are charged ***only if*** you are harvesting timber. Harvesting timber includes salvaging snags, down wood, dying trees, or stumps. Make checks payable to the "Department of Natural Resources".

The fee is **$0.00**, if you are not harvesting timber, salvaging wood, or selling wood.

The fee is **$50.00**, if you are harvesting timber, salvaging wood, or selling wood and you are not converting the land to a use incompatible with growing timber. This includes non-conversions on platted lands that are outside the city limits or the Urban Growth Area.

The fee is **$50.00**, if you are renewing an approved application or notification.

The fee is **$500.00**, if you are harvesting timber, and

- You are converting the land to a use that is incompatible with growing timber; or
- The forest land is located inside the city limits or urban growth boundary.
  EXCEPT the fee is $50.00 if the landowner provides:
  - A letter signed by the landowner stating the landowner will not convert the land to a non-commercial forestry use for ten (10) years AND a written forest management plan approved by the DNR; OR
  - A Conversion Option Harvest Plan (COHP) approved and signed by the county or city.

Reference: RCW 76.09.065

Permits From Other Agencies

If you have a permit from another agency (such as a Bald Eagle Management Plan, Clearing and Grading, Hydraulic Project Approval, Shoreline) - then your FPA/N and Activity Map must be consistent with the permit(s) requirements.

If you are converting, you may need a construction stormwater permit from the Department of Ecology. If your construction project involves one or more acres, and will potentially discharge stormwater to typed waters or wetlands, then you need a Construction Stormwater General Permit before operating. A permit application and related documents are at: http://www.ecy.wa.gov/programs/wq/stormwater/construction and at the Water Quality Program, Department of Ecology, P.O. Box 47600, Olympia, WA, 98504-7600; (360) 407-6600.

Programs for Small Forest Landowners

Field forest practice foresters are located around the state to offer limited assistance to small forest landowners with completing forest practices applications. Assistance does not include writing or completing management plans. You can request assistance through a region office for:

- **Long-Term Application:** Landowners may apply for a long-term forest practices application that will be valid for 3-15 years. A long-term application may initially require more work than a 2 year application, but allows the landowner more flexibility over time.
- **Alternate Plans:** These site specific management plans allow more flexibility than the forest practices rules typically allow. All resources must still be adequately protected.
- **Forest Practices Process Assistance:** Landowners can get help with completing forest practices applications and with rule explanations.

Staff located in Olympia can answer general questions for the following programs. Assistance is limited and does not include writing or completing management plans:

- **Forest Riparian Easement Program (FREP):** When harvesting near water or wetlands, a forested buffer is required to be left to protect the aquatic resources. FREP compensates landowners for timber that is required by law to be left.
- **Family Forest Fish Passage Program (FFFPP):** Many culverts on forest road stream crossings block fish passage. Funding from the FFFPP is available to help pay to fix fish passage barriers.
- **Forest Stewardship Program:** This program provides forest management advice and help in developing forest stewardship plans. A stewardship plan could make you eligible for cost share, certification, or recognition programs.

For more information, call 360-902-1400 for Olympia staff, see our website www.dnr.wa.gov/sflo, or contact one of the DNR Region Offices listed below.

DNR Western Washington Region Offices

(Business hours are 8:00 am to 4:30 pm)

Northwest Region
919 N Township St
Sedro-Woolley, WA 98284
Tel: (360) 856-3500
Fax: (360) 856-2150

Includes: Island, San Juan, Skagit, Snohomish, and Whatcom counties

Olympic Region
411 Tillicum Lane
Forks, WA 98331
Tel: (360) 374-2800
Fax: (360) 374-5446

Includes: Clallam, north half of Grays Harbor, and Jefferson counties

Pacific Cascade Region
601 Bond Rd
P.O. Box 280
Castle Rock, WA 98611
Tel: (360) 577-2025
Fax: (360) 274-4196

Includes: Clark, Cowlitz, south half of Grays Harbor, Lewis, Pacific, Thurston, Skamania, and Wahkiakum counties

South Puget Sound Region
950 Farman Ave. N
Enumclaw, WA 98022
Tel: (360) 825-1631
Fax: (360) 825-1672

Includes: King, Kitsap, Mason, and Pierce counties

Instructions for Western Washington
Forest Practices Application/Notification

(Includes the entire Wind River drainage in Skamania County)

1. **Landowner, Timber Owner, and Operator.**

   Print the name, address, and phone number of the Landowner, Timber Owner, and Operator. If all three are the same, write "Same as Landowner" in the TIMBER OWNER and OPERATOR boxes. Email addresses are optional. DNR will mail copies of the "Notice of Decision" to the landowner, timber owner, and operator. You must notify the DNR if any of these three changes.

2. **Contact person**

   Print the name and phone number of the primary contact person. Email addresses are optional. This person will be contacted only when the FPA/N is processed. DNR will not send copies of the approval or disapproval (Notice of Decision) to the contact person.

NOTE: You are required to verify water types, except type S waters, within 200 feet of your proposed forest practices activities prior to submitting a Forest Practices Application / Notification. Use the Additional Information section, additional pages, the Water Type Classification Worksheet, or a Water Type Modification form to explain how you verified water types.

- See pages 21-22 for water typing requirements and information.

3. **Are you a small forest landowner?**

   Large Forest Landowners: Annually harvest more than 2 million board feet of timber from their own land.

   Small Forest Landowners: Annually harvest 2 million board feet or less from their own land.

   Reference: WAC 222-16-010 ("forest landowner")

4. **What is the Forest Tax Registration Account Number?**

   Contact the Washington State Department of Revenue's Forest Tax Program to look up an existing Forest (timber) tax number or to apply for a new one. Their phone number is 1-800-548-8829. You can get tax forms and information from their website at: http://www.dor.wa.gov

5. **Are you substituting prescriptions from an approved state or federal conservation agreement or watershed analysis?** *Write "HCP" or "Using Prescriptions" in tables that apply. Attach or reference on file prescriptions and/or crosswalks.*

   State or federal conservation agreement (habitat conservation plan / HCP)

   If you answered "Yes" because of an HCP:

   - Write "HCP" in the tables that apply.
   - Include a copy of the HCP prescriptions and indicate which WACs are being substituted in the Additional Information section of your FPA or as an attachment (i.e. "crosswalk") to your FPA.
   - OR If you have HCP prescriptions or an HCP crosswalk on file with the DNR, please reference which prescriptions you will be using and which WACs are being substituted.

   Reference: WAC 222-12-041

   Watershed analysis

   Contact your local DNR region office to see if your land is within an area with an approved Watershed Analysis and if prescriptions apply.

   If your land is within a Watershed Analysis area, you may have to follow the prescriptions from the analysis. If you do not want to use the prescriptions, your FPA/N will be a Class IV-Special and require a State Environmental Policy Act (SEPA) checklist or SEPA determination.

   If your land is within a Watershed Analysis area that has approved prescriptions, you must complete the Watershed Analysis worksheet and submit it with you FPA/N. See page 28 of these instructions.

   If you answered "yes" because of watershed analysis prescriptions:

   - Write "prescriptions apply" in the appropriate tables.
     - Attach copies of the prescriptions.

   Each Watershed Analysis is on the DNR Forest Practices website listed on page 30 of these instructions.

   References: WAC 222-16-050 (1) (d) (iii), Chapter 222-22 WAC.

6. **What is the legal description of your forest practice?**

Example:

¼ ¼ (quarter quarter)	Section	Township	Range	E/W	Tax Parcel Number	County
NW ¼ NW ¼	30	10	5	W	12345678912345678912 3	Cowlitz

Give the legal description of your forest practice to the nearest 40 acres (such as NW¼ NW¼), Section, Township, and Range (including East or West).

Tax parcel numbers are for all lands, **except** those that are designated as forest land of long-term commercial significance under the Growth Management Act (chapter 36.70A RCW).

List the county where the forest practice is located. For help, see your property deed or contact the county assessor's office.

Example of a ¼, ¼ breakdown of a section: The northwest quarter of the northwest quarter is tinted gray in the section breakdown.

NW, NW	NE, NW	NW, NE	NE, NE
SW, NW	SE, NW	SW, NE	SE, NE
NW, SW	NE, SW	NW, SE	NE, SE
SW, SW	SE, SW	SW, SE	SE, SE

7. **Have you reviewed this forest practices activity area to determine whether it may involve historic sites and/or Native American cultural resources?**

DNR will review your application to determine whether it may involve Native American cultural resources. If it does, you are required to meet with the affected tribe or tribes with the objective of agreeing on a plan for protection of the archaeological or cultural value.

If you know or are unsure that your application involves Native American cultural resources, you are encouraged to contact the affected tribe or tribes as soon as possible. If the activity meets any of the criteria below it is recommended that the landowner consult with the affected Indian Tribe(s) as to possible impacts before submittal of the FPA/N.

Areas that are most likely to contain Native American cultural resources are:

- Along defined ridge lines and at saddles
- Flat ground near natural water (including terraces)
- Talus slopes
- Cedar tree stands containing older, scarred trees

For information on contacting tribes, visit the Washington State Tribal Directory at http://www.goia.wa.gov. Your DNR region office can also identify which tribe(s) to contact.

8. **Do you have a DNR approved Road Maintenance and Abandonment Plan (RMAP)?**

[ ] No. *If No, is a Checklist RMAP required? (see instructions below)* [ ] No. [ ] Yes *Include a copy of the RMAP Checklist.*

[ ] Yes. *List the RMAP number:* _____.

Checklist RMAP: A Small Forest Landowner Checklist RMAP is a checklist of existing road conditions, but doesn't include a road work schedule like a standard RMAP (see below). If you are a small forest landowner (if yes to number 3), please answer the following questions to see if a Checklist RMAP is required:

A. Is this FPA/N for timber harvest or salvage?
   No. A Checklist is not required
   Yes. A Checklist may be required. Go to B
B. Are you hauling timber on existing forest roads on your property?
   No. A Checklist is not required
   Yes. A Checklist may be required. Go to C

C. Do you own more than 80 acres of forest land in Washington State?
Yes. A Checklist is required with this FPA/N
No. A Checklist may be required. Go to D

D. Is this FPA/N on a block of forest land that contains more than 20 contiguous acres?
Yes. A Checklist is required with this FPA/N
No. A Checklist is not required. Ask DNR for an informational brochure.

Road Maintenance and Abandonment Plan (RMAP): A Road Maintenance and Abandonment Plan (RMAP) is a forest road inventory and schedule for any needed road work. It is prepared by the landowner and approved by DNR. Large forest landowners are required to have an RMAP. A small forest landowner may submit an RMAP. Answer "yes" to number 9i for any road work that will be reported as an accomplishment on your annual RMAP Accomplishment Report.

NOTES:

- A checklist RMAP form is available at the Forest Practices website listed on page 30 of these instructions.
- Even if you do not have an RMAP requirement, your forest roads must still meet the road maintenance requirements in WAC 222-24-052.
- Contact the DNR region office for RMAP information.

References: WAC 222-24-050, WAC 222-24-051, WAC 222-24-0511.

9. Is this forest practice application/notification: *(Answer every question)*

a. Within the city limits or the urban growth area?

If you do not know if the property is located within a city or an urban growth area, contact your county planning department or assessor's office.

If you answered "Yes," include **one** of the following:

- A State Environmental Policy Act (SEPA) checklist or SEPA Determination, and copies of any required, approved, clearing and/or grading permits from the local government. Make sure your FPA/N reflects any SEPA conditions.
- A Conversion Option Harvest Plan (COHP). See number 9e.
- A signed statement of intent to keep the property in forestry for 10 years. Include a 10 year management plan.

References: RCW 76.09.050, WAC 222-10-010, and WAC 222-16-050(2).

b. In a public park?

If you answered "Yes", a SEPA checklist or SEPA Determination is required unless you are harvesting/salvaging less than 5,000 board feet within a developed public park. Make sure your FPA/N reflects any SEPA conditions.

References: RCW 76.09.050, WAC 222-10-010, and WAC 222-16-050(1) (c).

c. Within 500 feet of a public park?

If you answered "yes," enter the name of the public park.

References: WAC 222-20-100(1).

d. On land that has been platted?

If you do not know if the land was platted after January 1, 1960, call the county assessor.

If you answered "Yes", include a State Environmental Policy Act (SEPA) checklist or SEPA Determination, and copies of any required, approved, clearing and/or grading permits from the local government. Make sure your FPA/N reflects any SEPA conditions.

References: RCW 76.09.050, chapter 58.17 RCW, WAC 222-10-010, and WAC 222-16-050(2)

e. In an approved Conversion Option Harvest Plan (COHP) from the local government? *If yes, include a copy.*

A COHP is a city or county approved plan that allows you to harvest your timber and keep the option to either convert it or replant it when your property is located in an urban growth area. Not every county allows COHPs. Contact the local government planning department for more information.

References: WAC 222-16-010 and WAC 222-16-050(2) (d) (ii).

f. Within 200' of the Ordinary High Mark (OHWM) or floodway of type S water? If yes, does the activity require a Substantial Development Permit? [ ] Yes [ ] No *If yes include a copy of your Substantial Development Permit.*

Type S waters are considered "Shorelines of the State." and are shown on the DNR Activity Map. Counties and cities regulate activities within 200 feet of "Shorelines of the State". If you are conducting activities within 200 feet of a "Shoreline of the State" you must:

- Contact the county or city in which your property is located to verify that proposed activities are in compliance with the local shorelines master plan. Your FPA/N needs to reflect any requirements of the shorelines master plan.
  - o If the county or city requires a substantial development permit for your activity, a copy of the substantial development permit is required to process your forest practices permit.

Reference: RCW 90.58.140, WAC 222-50-020 (3)

g. A request for a multi-year permit?

Multi-year permits are valid from 3 to 5 years (others are valid for 2 years). Not every application qualifies as a multi-year permit. The qualifications are:

- Using prescriptions from an approved watershed analysis;
- Performing roadwork from an approved Road Maintenance and Abandonment Plan*, if the roadwork is scheduled to take longer than two years; or
- Performing an approved alternate plan.

*Except a Checklist RMAP - these do not qualify for a multi-year permit.

NOTE: Renewals of multi-year permits are valid for 2 years.

References: WAC 222-20-015

h. An Alternate Plan?

An alternate plan offers alternatives to certain Forest Practices rules. Requirements are detailed in WAC 222-12-040 and WAC 222-12-0401.

i. For road work that is included in an approved Road Maintenance and Abandonment Plan (RMAP)?

Check "No" if your FPA/N is not for road work associated with a DNR approved RMAP.

Check "Yes" if any part of your FPA is for work that is associated with a DNR approved RMAP. List the RMAP number in number 8.

Contact the DNR region office for RMAP information.

j. Within 50 miles of saltwater and do you own more than 500 acres of forest land?

Mark "Yes" and complete the Marbled Murrelet form only if:

- Harvesting timber (includes salvaging) or constructing roads within 50 miles of saltwater; And
- The landowner owns 500 acres or more forest land in Washington State, And
- The landowner does not have an approved state and /or federal conservation agreement with prescriptions that include the marbled murrelet. If the landowner has an agreement, submit a copy of the prescriptions (or reference the prescriptions on file at the region office) and list the forest practices rules that are being substituted.

10. If constructing or abandoning forest roads and/or installing, removing, or replacing crossings in typed water, complete the table below. Show the road and crossing locations and identifiers on your Activity Map. Include abandonment plans for temporary roads and abandonment projects. Installation and removal of crossings in Type S or F Waters also require a Hydraulic Project Approval (HPA) permit from the Washington State Department of Fish and Wildlife (WDFW). This FPA serves as your request for an HPA.

Example:

Road Identifier *(Name, Number)*	Road Construction		Abandonment Plans	
	Length (feet)	Steepest Side-slope (%)	Length (feet)	Abandonment Date
1200 Rd.				
Spur A	900	25%	900	8/08
2400 Rd.			500	8/08
1400 Rd.				8/08

Crossing Identifier *(Letter, Number, or FFFPP)*	Installing, Removing, or Replacing Structures in Typed Water			
	Water Type *(S, F, Np, Ns)*	Activity *(Install, Replace, Remove)*	Structure *(Culvert, Bridge, Ford)*	Proposed Size *(Dimensions of new structure)*
1	F	Install	Culvert	60" X 24'
2	Np	Replace	Culvert	48" X 40'
3	Np	Remove		
FFFPP	F	Replace	Culvert	60" X 40'

Road Identifier: This is the same number or name of the road shown on your Activity Map.

Road Construction: This is new forest roads and any roadwork (except routine maintenance) outside an existing forest road prism.

Length: Enter the total road construction length (in feet), including temporary roads.

Steepest Side Slope: Enter the percent (%) of the steepest side slope (not road grade) crossed during construction.

Abandonment Plans: Include temporary roads and existing roads you plan to abandon. You must include a written plan that shows how the road will be left to:

- Control erosion
- Maintain water movement within wetlands and other natural drainages
- Prevent four-wheeled highway vehicles from entering the point of closure
- Restore water crossings - such as remove culverts and fill, etc.

Length: Enter the total road abandonment length (in feet).

Abandonment Date: This is the date the abandonment will be completed by.

Contact the DNR region office when your road abandonment is complete. If the abandonment is acceptable, DNR will send written approval.

Crossing Identifier: Enter one identifier per crossing. Show crossings along with their identifiers on your Activity Map.

- If you are planning to replace a culvert or bridge with funding from the Family Forest Fish Passage Program, enter "FFFPP" as your crossing identifier. If you have more than one crossing being funded by FFFPP, enter "FFFPP1, FFFPP2," etc.
  - If you are a Small Forest Landowner who would like to enroll in the FFFPP or for more information on this program see page 30 of these instructions for Small Forest Landowner Office website link or call your local DNR region office.

Installing, Removing, or Replacing Structures in Typed Water: Enter one activity per crossing.

Installing, removing, or replacing water crossings may require a Hydraulic Project Approval (HPA) from the Washington Department of Fish and Wildlife (WDFW). Your FPA is also your request for an HPA. See page 23 for additional information.

Water Type: Enter the water type S, F, Np, or Ns at the crossing.

Activity: Enter the activity that you are proposing: installing, removing, or replacing a structure.

- Installing, removing, or replacing water crossings on S and F waters always require HPAs.

Structure: Enter the structure type you propose to install: culvert, bridge, or ford.

- You are required to submit a plan view and a cross-section view diagram for each Type Np water crossing. See page 23 for additional information.

Proposed Size: Enter the dimensions of the structure you are proposing to install.

- If an activity requires an HPA, the HPA will specify the structure size and installation or removal process requirements.
- Minimum structure sizes on type S or F waters:
  - DNR requires they are large enough to pass 100-year flood waters
  - WDFW conditions their HPA to protect fish (sizes, installation, etc)
- **Minimum** structure sizes in type Np or Ns waters:
  - Permanent culverts must be at least 24" for Type Np Waters and 18" for Type Ns Waters.
  - Structures must be large enough to pass 100 year flood waters.
  - Structures must be large enough so branches from adjacent trees will not plug them (consideration for passage of woody debris)
  - There are two charts in Forest Practices Board Manual Section 3 to determine culvert sizes
    - Use either chart
    - Landowners can offer different methods to determine culvert size, but DNR must accept the method

You must show the following on your activity map:

- Existing roads
- Forest road construction
- Temporary forest roads
- Forest road abandonment
- End haul and overhaul areas
- New or replaced water crossings (culverts, bridges, and fords)
- Family Forest Fish Passage Program (FFFPP) sites

References: WAC 222-16-010, WAC 222-24-040, WAC 222-24-052(3), and Forest Practices Board Manual Section 3.

11. If depositing spoils, and/or expanding or developing a rock pit for forestry use, complete the table below. Show locations and identifiers on your Activity Map.

Example:

Spoil Area Identifier *(Number, Letter)*	Cubic Yards of Spoils Deposited	Rock Pit Identifier *(Name, Number, Letter*	Acres of Rock Pit Developed	Acres of Rock Pit Expanded
A	100	1200 Pit	1	
		1300 Pit		.5

Spoil Area Identifier. Enter the same number or letter of the spoil area that you show on your Activity Map.

Cubic Yards of Spoils Deposited. Enter the spoil volume in cubic yards. If you need to cut or remove timber, show this as a separate harvest unit in 13.

Rock Pit Identifier: Enter the same name, number, or letter of the pit that shows on your Activity Map.

Acres of Rock Pit Developed. This is the acres of new rock pit. ***If you need a Surface Mine Reclamation Permit for this pit - do not include it on this chart - instead put the amount of timber that will be removed for the project in number 13.*** Enter the acres of forest land that will be disturbed as part of the project. Show any timber cut as a separate harvest unit in number 13. If the new rock pit includes more than one forest landowner, each landowner will need to sign the FPA/N or submit separate FPA/Ns.

Acres of Rock Pit Expanded. This is the acres of expansion of an existing rock pit. ***If you need a Surface Mine Reclamation Permit for this pit - do not include it on this chart - instead put the amount of timber that will be removed for the project in number 13.*** Enter the acres of forest land that will be disturbed as part of the expansion project. Show any timber cut as a separate harvest unit in number 13. If the rock pit includes more than one forest landowner, each landowner will need to sign the FPA/N or submit separate FPA/Ns.

You must show the following on your activity map:

- Spoil areas and identifiers
- Location and identifiers of new and expanded rock pits

References: WAC 222-24-060

12. If operating in or within 200 feet of a wetland, complete the table below. Show the boundaries of each wetland, along with its identifier, and WMZ on your Activity Map.

Example:

Wetland Identifier *(Number, Letter)*	Wetland Type *(A, B, or Forested)*	Planned Activities in Wetland	Planned Activities in WMZ	Total Wetland Area *(acres)*	How many acres are you draining?	How many acres are you filling?
1	A	Road	Road	2.5		0.6
2	B		Harvest	0.5	0	0

Wetland Identifier. Enter a different wetland identifier for each wetland. Show the identifiers on the activity map.

Wetland Type. Enter the type of each separate wetland: A, B, or Forested. Include all types and sizes of wetlands that you are proposing to fill or drain. For timber harvest in forested wetlands, only include those that are greater than 3 acres in size. To determine wetland type, see WAC 222-16-035.

Planned Activities in Wetland. Enter the type of activity in each separate wetland. For timber harvest restrictions, see WAC 222-30-020.

Planned Activities in WMZ. Enter the type of activity in each separate wetland management zone.

Total Wetland Area. Enter the total area (in acres) of each separate wetland. You do not need to include forested wetlands less than 3 acres in size.

How many acres are you draining? Enter the total acres of each separate wetland you will drain. If draining more than ½ an acre of an individual wetland, include a SEPA checklist or SEPA Determination. For additional mapping and substitution requirements, see WAC 222-24-015.

How many acres are you filling? Enter the total acres of each separate wetland you are filling. If filling more than ½ an acre of an individual wetland, include a SEPA checklist or SEPA Determination. For additional mapping and substitution requirements, see WAC 222-24-015.

You must show the following on your Activity Map:

- Boundaries, types (A, B, or forested wetlands greater than 3 acres), and identifiers (how you marked it on your map) of all wetlands inside your forest practice and within 200 feet of your forest practice
- Wetland management zones (WMZs)

References: Board Manual Section 8, WAC 222-16-035, WAC 222-16-036, WAC 222-30-020(6), (7), & (8).

If not harvesting or salvaging timber, skip to number 23.

13. If harvesting or salvaging timber, complete the table below. Show all harvest areas and unit numbers on your Activity Map. For even aged harvest units also show green-up information on your Activity Map.

Example:

Unit Number	Harvest Type *(Even-aged, Uneven-aged, Salvage, Right-of-Way,)*	Yarding Method *(Rubber Tired Skidder, Tracked Skidder, Dozer, Shovel, Full Suspension Cable, Leading End Suspension Cable, No Suspension Cable, Helicopter, Animal)*	Acres to be Harvested	Volume to be Harvested *(mbf)*	Volume to be Harvested *(%)*	Steepest Slope in Harvest Unit *(%)*
1	Even-aged	Cable - Full Suspension	6	240	100%	60%
2	Uneven-aged	Rubber-tired Skidder	30	1, 050	40%	35%
3	Salvage	Dozer	20	4	20%	25%
4	Right-of-way	Dozer	0.5	5	100%	10%

Unit number. Each individual harvest unit must have a unique unit number. An individual harvest unit may be crossed by roads or streams with single-wide RMZs and still be shown as one harvest unit. A harvest unit crossed by a double-wide RMZ must be shown as two individual harvest units and identified by different, unique unit numbers. Show the harvest unit number(s) on the activity map. Do not use letters or symbols. You may be asked to provide directions or a map to your harvest unit(s).

Harvest Type. Enter one of the following for each unit: Even-age, Uneven-age, Salvage, Right-of-Way, Even-age and Salvage, Uneven-age and Salvage Harvest, Right-of-Way and Salvage, Even-age and Right-of-Way, Uneven-age and Right-of-Way. See below and WAC 222-16-010 for definitions of each harvest type.

Even-aged Methods: See WAC 222-16-010 for a complete definition.

- Clearcut: If clearcutting on islands, see WAC 222-30-110.
- Seed tree: leave 20 or fewer trees per acre. Leave trees must be at least 10 inches in diameter with at least 1/3 live crown.
- Shelter-wood: leave 20 or fewer trees per acre. Leave trees must be at least 10 inches in diameter with at least 1/3 live crown.
- Shelter-wood: leave less than 150 trees per acre. Leave trees must be at least 5 years old or average 4 feet in height
- Partial cutting: leave less than 50 trees per acre. Leave trees must be at least 10 inches in diameter with at least 1/3 live crown.
- Over-story removal: take more than 5, 000 bf per acre and leaving less than 50 trees per acre. The leave trees must be at least 10 feet high.

- Other methods: leave 6 or fewer trees per acre. Leave trees must be at least 10 inches in diameter with at least 1/3 live crown.

Uneven-aged Methods: Any removal of standing trees other than those listed under Even-aged Methods.

Salvage: removing snags, down logs, windthrow, stumps, bolts, dead or dying wood.

Right-of-way: areas harvested to allow for road construction, rock pit development or expansion, or deposition of spoils from road construction and/or rock pit development.

Harvest Method. Enter one or more of the following for each harvest unit. If a cable harvest system is within the same unit as a ground based harvest system, provide details in the Additional Information section or indicate on a map which area will be utilizing a cable harvest system.

- Rubber tired skidder
- Dozer
- Shovel
- Tracked skidder
- Full suspension cable
- Leading end suspension cable
- No suspension cable
- Helicopter
- Animal

Acres to be Harvested. Enter the number of acres harvested in each unit.

Volume to be Harvested (mbf). Enter the volume in thousand board feet (mbf) that will be harvested (includes salvage). Example: 13,000 board feet = 13 mbf.

Volume to be Harvested (%). Enter the percent (%) of the volume to be harvested and/or salvaged out of the total timber volume (live, dead, down, or dying).

Reference: WAC 222-16-050(4) (e)

Steepest Slope in Harvest Unit (%). Enter the percent (%) of the steepest slope within the unit.

You must show the following on your Activity Map:

- Unit boundaries and numbers (not names or symbols) as identified in the table.
- Clumped WRTs and GRTs within even-aged harvest units.
- Landings.
- Surrounding stand ("green up") information on even-aged harvest units:
  - Land ownership: If land adjacent to the proposed harvest unit is not forest land, label it "Not Forest Land." If you do not own the adjacent land, write "Not Owned."
  - The location of adjacent stands;
  - Estimated average of each stand's forest age class;
  - Estimated linear feet of the perimeter (total distance around) each harvest unit by age-class; and:
  - Estimated total acres of contiguous stands that are less than 4 feet tall or 5 years old or less, on land that you own.

References: WAC 222-16-010, WAC 222-30-025, and WAC 222-24-060

14. Reforestation. Check the appropriate box(es).

Example:

[X] Planting. Tree Species: Douglas-fir

[ ] Natural. *Include a Natural Regeneration Plan. A sample plan is included in these instructions.*

Not required because of the following:

[ ] I am converting some or all of this land to non-forest land in the next 3 years or lands are exempted under WAC 222-34-050.

[ ] Individual dead, dying, down, or windthrown trees will be salvaged.

[ ] Trees are removed under a thinning program reasonably expected to maximize the long-term productivity of commercial timber.

[ ] I am leaving at least 100 vigorous, undamaged, and well-distributed saplings or merchantable trees per acre.

[ ] An average of 190 tree seedlings per acre are established on the harvest area and my harvest will not damage it.

[ ] Road right-of-way or rock pit development harvest only.

Reforestation can be artificial (planting tree seedlings) or natural (relying on leave trees to re-seed).
References: WAC 222-34-010

15. Mark following harvest activities that will be done in or over typed water. Describe them in number 25, Additional Information. This is also your request for a WDFW Hydraulics Project Approval (HPA).

Example:

Activity	Type S Water	Type F Water	Type Np Water	Type Ns Water
Equipment Crossing			X	
Ground Skidding			X	
Suspending Cables		X		
Cable Yarding		X		
Falling and Bucking				

Indicate which activity you will be doing over which water type by marking the appropriate box with an "X".

- Show the activity location(s) on your Activity Map or describe them in number 25 or additional pages.
- Describe how the activities will take place.
- See page 23 for additional information needed for your HPA.

Note: Equipment crossing is driving equipment across water, not taking equipment across an existing bridge or culvert on a road.

16. Is the taxpayer eligible for the EARR Tax Credit?

If you are paying state forest excise taxes on this timber harvest and your harvest is impacted by certain forest practices rules, you may be eligible for a tax credit. State law requires the applicant to answer this question and for DNR to verify it. DNR's verification is on the Notice of Decision Page.

- Answer "Yes" if any portion of your timber haul route is within an approved Road Maintenance and Abandonment Plan (this includes small forest landowner Checklist RMAP).
- Answer "Yes" if this timber harvest is limited due to the Forest Practices rules, Habitat Conservation Plan, or Approved Watershed Analysis in the following areas:
  - Riparian areas
  - Wetlands
  - Steep or unstable slopes
- Answer "No" if none of the above apply.

References: RCW 84.33.0775

If you own MORE than 80 forested acres in Washington, skip to number 21.

17. Are you using the exempt 20-acre parcel riparian management zone (RMZ) rule? [ ] No [ ] Yes

- This rule is WAC 222-30-023. Answer questions 1-5 below to see if you qualify to use this rule.
- If you choose no, skip to number 21.
- If you choose yes, continue to number 18 to see if you will be covered by the DNR's Incidental Take Permit for certain endangered and threatened fish species.

Answer these questions to see if you qualify to use the exempt 20-acre riparian management zones (RMZs).

1. Has the water type been field verified?
   Yes: Go to 2
   No: Contact your local DNR region office
2. Is there a Watershed Analysis Riparian Prescription in effect as of 1/1/99? (ask your local DNR region office)
   Yes: You do not qualify to use the 20-acre exempt rule. Instead, you must follow the prescription. Leave numbers 18, 19, and 20 blank, and go to number 21.
   No: Go to 3

3. Do you own less than 80 acres of forest land in the state?
   Yes: Go to 4
   No: You do not qualify to use the 20-acre exempt rule. Leave numbers 18, 19, and 20 blank, and go to number 21.
4. Is this forest practice on tax parcels that are 20 contiguous acres or less?
   Yes: Go to 5
   No: You do not qualify to use the 20-acre exempt rule. Leave numbers 18, 19, and 20 blank, and go to number 21.
5. You qualify to use the 20-acre exempt rule, but you could choose to leave the RMZ buffers described in numbers 21 and 22. There may be consequences to using the 20-acre exempt rule. Not every landowner who uses this rule will be authorized under DNR's Incidental Take Permits. Read the information below and answer the questions in number 18 before making your decision.

18. Choose the answer below that best fits your situation. Mark your answer in number 18 of your FPA. Show all RMZs on your Activity Map.

[ ] **a. ALL of the following apply to me and my land:**

- Between June 5, 2006 and today's date I have always owned less than 80 acres of forestland in Washington.
- Between June 5, 2006 and today's date this parcel has always been 20 acres or less of contiguous ownership.
- Between June 5, 2006 and today's date this parcel has always been owned by me or someone else that has owned less than 80 acres of forestland in Washington.

If all of the above apply to you and your land, you are authorized* under DNR's Incidental Take Permits if you use the 20-acre exempt RMZ rule.

*This authorization is subject to change depending on changes to habitat. Please contact your local DNR Region office for more information.

b. ONE OR MORE of the following apply to me and/or my land. Mark all that apply:

[ ] I currently own more than 80 acres of forestland in Washington.
[ ] Between June 5, 2006 and today's date I have owned more than 80 acres of forestland in Washington.
[ ] Between June 5, 2006 and today's date this parcel has been more than 20 acres of contiguous ownership.
[ ] Between June 5, 2006 and today's date this parcel has been owned by someone that has owned more than 80 forested acres in Washington.

If any of the above applies to you and/or your land AND you use the 20-acre exempt RMZ rule on any of your forest land, you are **not** authorized under the state's Incidental Take Permits.

You will be authorized if you use the standard RMZ buffers in questions 21 and 22.

Background for the state's Incidental Take Permits for certain endangered and threatened fish species:

- The U.S. Fish and Wildlife Service and the National Marine Fisheries Service have listed some fish species in Washington State as threatened or endangered under the Endangered Species Act (ESA).
- Cutting trees along streams can affect threatened or endangered fish and cause "incidental take", as defined in the ESA.
- If you cause "incidental take" without authorization, you may be in violation of the ESA.
- The state received authorization (called Incidental Take Permits) for "incidental take" of listed fish.
- If you use RMZ buffers described in numbers 21 and 22, you are authorized under the state's Incidental Take Permits.
- If you use the 20-acre exempt RMZ rule, you may not be authorized under the state's Incidental Take Permits. Answer number 18 above to see if you and your property are authorized under the state's Incidental Take Permits.

Reference: For more information on Incidental Take permits, see the "Forest Practices Habitat Conservation Plan" (FPHCP) section of the Forest Practices Division website listed on page 30 of these instructions. Included on this site is a complete list of species covered by the FPHCP: see Table 1.3 on pages 25-28.

19. **If harvesting within 115 feet of a type S or F water on an exempt 20-acre parcel complete the table below. Show RMZs and stream segment identifiers on your Activity Map. Stream shade analysis calculation requirements are explained in the instructions for "Are you harvesting within the maximum RMZ?"**

Stream Segment Identifier *(Letter)*	Water Type *(S, F)*	Segment Length *(feet)*	Bankfull Width *(feet)*	Maximum RMZ Width *(feet)*	Are you harvesting within the maximum RMZ? *(Y/N)*
A	F	570	35	86	Y
B	F	315	4	29	N
C	S	200	80	115	Y

Stream Segment Identifier. Enter a different stream identifier (letter) for each stream segment. Show the identifiers on the activity map.

Water Type. Enter the water type S or F. See Water Typing Requirements on page 21 for more information.

Segment Length: Enter the length of the segment in feet. This includes stream lengths or any portion of the perimeter of a lake or pond to which you are applying an RMZ.

Bankfull Width. Enter the width in feet measured at bankfull width. See Board Manual Section 2.

Maximum RMZ Width. Enter the "RMZ Maximum Width" per the table in WAC 222-30-023(1)

Are you harvesting within the maximum RMZ? Enter yes or no. You may harvest within the maximum RMZ if:

- You include stream shade analysis calculations when you are harvesting trees within the maximum RMZ or 75 feet, whichever is **less.** See Forest Practices Board Manual Section 1 for shade analysis calculation methods.
  - Example 1: If the maximum RMZ is 58 feet and you plan on harvesting trees within 58 feet of a type S or F water, you need to evaluate the available shade from trees within 58 feet of the water.
  - Example 2: If the maximum RMZ is 86 feet and you plan on harvesting trees within 86 feet of a type S or F water, you need to evaluate the available shade from trees within only 75 feet of the water.
  - EXCEPTION: WAC 222-30-040(5) allows the harvest of shade trees for constructing and maintaining road crossings and for yarding corridors.
- You leave the required wildlife trees (5 per acre)
- You leave the required riparian area leave trees (see the table in WAC 222-30-023(1))

You must show the following on your activity map:

- Stream segment identifiers
- Riparian management zones

References: WAC 222-30-023, WAC 222-30-040, WAC 222-30-060, Forest Practices Board Manual Section 1

20. **Are you harvesting within 29 feet of a Type Np water on a 20 acre exempt parcel?**

No: Skip to number 23.

Yes: You will need to describe your leave tree strategy in number 25, Additional Information. Then skip to number 23.

Your leave tree strategy must be arranged to accommodate the following on EACH side of the Np water:

- Leave at least 29 conifer or deciduous trees every 1000 lineal feet
- Leave trees are within 29 feet of bankfull width
- Leave trees need to be 6 inches in diameter or larger

You must show the following on your activity map:

- Stream segment identifiers
- Riparian management zones

21. **If harvesting within 200 feet of any Type S or F water, complete the table below. Include DFC for all inner zone harvest unless you have an HCP prescription. Show RMZs, CMZs, and stream segment identifiers on your Activity Map.** Example:

Stream Segment Identifier *(Letter)*	Water Type *(S or F)*	Site Class (I – V)	Stream Width *(feet)*	Is there a CMZ?	RMZ Harvest Code(s)	DFC Run Number	Total width of RMZ *(feet)*
A	F	I	15'	No	E, G	5	200'
B	F	II	30'	No	E, L	7	170'
C	F	II	15'	No	E, H, I, L	2	170'
D	HCP						

Stream Segment Identifier. Enter a different stream identifier (letter) for each stream segment. Do not use the letters S, F, or N.

Water Type. For non-HCP lands, enter the stream type (S or F) for each stream segment identifier. If the landowner is substituting prescriptions from an approved HCP, write "HCP" in the space and follow the instructions for number 5.

Site Class. Enter the Site Class. Site class maps are available on the Forest Practices website listed on page 30 of these instructions or from DNR Region Offices.

Stream Width. The stream width is the bankfull width. See Board Manual Section 2.

Is there a CMZ? Enter "Yes" or "No." If there is a CMZ, include details of the physical and historical evidence used to delineate the CMZ on the ground in number 25, Additional Information. See Board Manual Section 2.

RMZ Harvest Code.

- RMZs are required on both sides of a stream.
- Treat each side of a stream as a separate RMZ segment.
- Measure RMZs for Type S or F waters horizontally from the outer edge of the BFW or CMZ, whichever is greater.
- Shade Requirements for S and F Waters: Leave all appropriate shade if you are harvesting within 75 feet of the bankfull width or Channel Migration Zone, whichever is greater. See the Board Manual Section 1 for guidance. EXCEPTION: WAC 222-30-040(5) allows the harvest of shade trees in connection with the construction and maintenance of road crossings or the creation and use of yarding corridors. See WAC 222-30-060 for yarding corridor restrictions.

Enter the code(s) from the list below

RMZ HARVEST CODES	
Inner and Outer Zones A - Alternate Plan. *Include Alternate Plan* **Inner Zone** *Include DFC printouts for each stream segment where standing or down wood will be removed* B - No Inner Zone Harvest C - Hardwood Conversion D - Thinning from below - Option 1 E - Leave trees closest to water - Option 2 F - Salvage G - Stream-adjacent Parallel Road H - Constructing a New Stream Crossing I - Road Construction or Day-lighting J - Yarding Corridors	**Outer Zone** K - No Outer Zone Harvest L - Leaving 20 trees per acre evenly distributed M - Leave trees clumped on sensitive features N - Leave trees exchanged for LWD placement strategy Include a copy of the placement plan O - Leave trees exchanged for CMZ basal area P - Leave trees exchanged for excess inner zone basal area in conjunction with an Option 2 inner zone harvest Q - Salvage **See the next page for additional harvest code information.**

Inner and Outer Zones RMZ Harvest Codes

A - Alternate Plan You must include a copy of the Alternate Plan.

Inner Zone RMZ Harvest Codes - Choose all that apply. NOTE: Desired Future Condition (DFC) software is available at the Forest Practices website listed on page 30 of these instructions. This software allows you print DFC calculations as required for harvest codes C-J.

B - No Inner Zone Harvest

C - Hardwood Conversion This is a converting a hardwood-dominated stand within the inner zone to a conifer-dominated stand. The requirements are in WAC 222-30-021(1)(i).

You must include the following:

- A DFC printout that shows the conversion unit does not meet stand requirements.
- Evidence the conversion unit can be converted to a conifer stand. Evidence includes conifer stumps, historical photos, soil information, or the presence of a conifer under-story.
- Where, when, and how the landowner has successfully completed a hardwood conversion.
- Evidence of adequate shade (see Forest Practices Board Manual Section 1)
- A map with the following:
  - Ownership 500 feet upstream and downstream of the conversion unit
  - Boundaries of conversion units and no-harvest units
- The percent harvest proposed within the conversion units.

D - Thinning from below (Option 1). You must include DFC printouts for each stream segment where standing or down wood will be removed.

Reference: Chart in WAC 222-30-021(1)(b)(ii)(B)(I)

E - Leaving trees closest to water (Option 2) You must include DFC printouts for each stream segment where standing or down wood will be removed

NOTE: You cannot use Option 2 for site class III on streams greater than10 feet, because of the minimum floor (100 ft) constraint.

Reference: Chart in WAC 222-30-021(1)(b)(ii)(B)(II)

F - Salvage in the Inner Zone. You must include DFC printout.

- You may salvage standing **snags and stumps** if stand requirements are met.
- You may salvage **down wood** if stand requirements are met and you leave at least 194 down wood pieces per acre.

References: WAC 222-30-045(3)

G - Stream-adjacent parallel road. If stand requirements cannot be met because of a stream-adjacent parallel road, use this code.

You must include:

- Basal area calculations for the road area within the core and inner zones.
- If you are leaving trees to make up for a basal area deficiency, include a tree count.

References: WAC 222-30-021(1) (b) (iii).

H - Constructing a new stream crossing. If the crossing is not adjacent to a harvest unit, use only the trees within the right-of-way limits for basal area calculations.

You may remove right-of-way trees in the **core zone** if:

- They are not part of large woody debris (LWD) placement strategy
- Stand requirements are met

You may take the right-of-way trees in the **inner zone** if

- Stand requirements are met

You must include DFC printout.

References: WAC 222-30-021(1).

I - Road construction or day-lighting. You must include DFC printout.

References: WAC 222-30-021(1).

J - Yarding Corridors. If wood will be removed from the inner zone, include a copy of the DFC printout. Wood can be cut, but not removed from the core zone.

References: WAC 222-30-021(1).

Outer Zone RMZ Harvest Codes - Choose all that apply

K - No Outer Zone Harvest

L - Leaving 20 trees per acre evenly distributed

M - Leave trees clumped on sensitive features

N - Outer zone leave trees exchanged for LWD placement strategy. You must include a copy of the LWD plan.

O - Outer zone leave trees exchanged for CMZ basal area. You must include:

- The CMZ basal area calculations
- The number of leave trees that will remain in the outer zone

P - Outer zone leave trees exchanged for excess inner zone basal area in conjunction with an Option 2 inner zone harvest. You must include the number of leave trees that will remain after harvest.

Q - Salvage. You may salvage standing snags or stumps or down wood in the outer zone if:

- Leave tree requirements are met: 20 trees per acre (unless using placement strategies or offsets allowed in WAC 222-30-021(1)(c) (iv))
- Down wood requirements are met (2 or more down logs per acre harvested) WAC 222-30-020 (1)

Reference: WAC 222-30-045 (4)

DFC Run Number. Enter the Desired Future Condition (DFC) Run Number shown on the top of your DFC worksheet. Desired Future Condition (DFC) web program is available at the Forest Practices website.

Total width of RMZ. RMZ widths for Type S or F waters are dependent on stream width and site class.

1) Look up the site class on the maps. Site class maps are available on the Forest Practices website listed on page 30 of these instructions or from DNR Region Offices.
2) Measure the bankfull width - see the Forest Practices Board Manual Section 2
3) Look up the RMZ width - they are the same for no inner zone harvest, Option 1, or Option 2.

References: RMZ diagram on page 24, WAC 222-30-021and Forest Practices Board Manual Section 7.

You must show the following on your activity map:

- Stream segment identifiers (don't use the letters S, F, or N - use numbers or other letters)
- Channel Migration Zone (CMZ)
- New road crossings (Harvest Code H)
- Road construction or day-lighting (Harvest Code I)
- Yarding corridors where trees will be removed from the Inner Zone (Harvest Code J)
- Location of a trees that are left to make up basal area deficiency due to the presence of a stream adjacent parallel road (Harvest Code G)

References: WAC 222-30-060, WAC 222-30-021(1).

22. If harvesting within 50 feet of Type Np water, complete the table below. Show RMZs and stream segment identifiers on your Activity Map.

Example:

Stream Segment Identifier *(Letter)*	Total Stream Length in Harvest Unit *(feet)*	Length of No-Harvest Buffers in Harvest Unit *(feet)*	Stream Segment Identifier *(Letter)*	Total Stream Length in Harvest Unit *(feet)*	Length of No-Harvest Buffers in Harvest Unit *(feet)*
A	100'	100'	C	250'	200'
B	75'	75'			

RMZ buffers are required for Type Np waters and for sensitive sites.

To determine total length of required buffers, you may use the Western Washington Type Np Water Worksheet on page 26. Mark the boundaries of all riparian buffers affected by your proposal on the ground.

You must show the following on your activity map:

- Stream Segment Identifiers
- Streams that are on the ground, but not on the DNR Activity Map
- Boundaries of all RMZs
- Boundaries of all sensitive sites

- 50 foot no cut buffer segments (end points) OR describe them in number 25, Additional Information.

References: WAC 222-30-021(2) (b), WAC 222-16-010, WAC 222-16-031

23. **How are the following marked on the ground?** Specify colors of flagging, paint, tags or describe other features used for boundary markings. If you use number 25, Additional Comments or an attachment for boundary marking descriptions, write "see Additional Information" or "attached." Boundaries need to be marked on the ground prior to submitting your FPA/N. If field markings are absent during field review, your FPA/N may be disapproved due to incomplete information.

    Example:

    Harvest Boundaries: N. boundary is County road, E. boundary is pasture, all others are orange paint and flags.

    Describe how your boundaries are designated. Recognizable features such as roads, fence lines, stand age class differences, etc., may be used as boundaries. See below for boundary marking requirements specific to landscape features.

    Clumped Wildlife Reserve Trees/Green Recruitment Trees: Clumped leave trees are in RMZs / WMZs.

    If your wildlife reserve and green recruitment trees (WRTs / GRTs) are clumped enter a description here. You don't need to mark clumped WRTs/GRTs that are within RMZs, WMZs, etc. See WAC 222-30-020 for more information.

    Right-of way limits/road centerlines: Centerlines marked with blue paint and flags. R/W marked with pink paint.

    Road centerlines must be marked. Right-of-way limits only need to be marked when they are outside of timber harvest unit boundaries.

    Riparian Management Zone Boundaries and Leave/Take Trees: Orange paint and flagging.

    Specify the colors of paint or flagging used to mark riparian management zones and individual leave trees. If you are proposing an Alternate Plan you only need to mark samples that represent your harvest strategies and the land on which they are occurring. See WAC 222-30-021.

    Channel Migration Zone: Pink flagging.

    Specify the colors of paint or flagging used to mark the edge of channel migration zones.

    Wetland Management Zone Boundaries and Leave/Take Trees: Orange paint and flags.

    the colors of paint or flagging used to mark wetland management zones.

24. **Are you converting the land to non-forestry use within 3 years of harvest?**

    Answer "No" if you are keeping the land in forestry use. If you mark "No", the county or city may deny all development permits on this parcel for the next 6 years. Please contact the county or city for more information.

    Answer "Yes" if you are taking the land out of forestry use (such as converting to pasture, crops, home-site, etc) Make sure you marked "Reforestation Not Required" on number 14.You must include a SEPA checklist or SEPA Determination.

    References: WAC 222-20-050 and RCW 76.09.060(3).

25. **Additional Information**: You may include additional information in the space provided or on a separate page. Include the number that each comment refers to. You may also include multiple maps to help explain your proposal.

26. **Signature Blocks:** The Landowner, Timber Owner, and Operator (as shown in number 1) must EACH legibly print and sign their names and record the date of signature before this application can be accepted. If all three are the same, only the LANDOWNER box needs to be signed and dated. Stamped signatures and/or electronic signatures are not acceptable.

    Note: A perpetual timber rights owner may sign as the Landowner. A perpetual timber rights owner does not own the land, but has permanent rights to all the timber on the land. They may submit a FPA/N without the forest landowner's signature if:

    - The forest practice is not a conversion;
    - The perpetual timber owner's name is in the timber owner block in number 1;
    - The perpetual timber owner signs the FPA/N as the timber owner;
    - The perpetual timber owner gives DNR proof that the forest landowner has a copy of the FPA/N.

    References: RCW 76.09.067

Activity Map Requirements

All FPA/N's must have an Activity Map. Activity maps can be found on the DNR Forest Practices website listed on page 30 of these instructions. You may also create one with your own GIS. Do not show the location of Threatened or Endangered Species or Cultural Resources on this map.

What Must Be Shown on the Activity Map?

Water

- New Streams, Lakes or Wetlands within proposal and 200 feet of its perimeter
- Crossed out waters (*water on the map, but not on the ground)*
- Wetland boundaries

Road Activities

- Corrections to mapped roads
- New or replaced water crossings
- Proposed new roads
- Temporary roads
- Proposed abandoned roads
- New or expanded rock pits
- Spoil areas
- End haul and/or overhaul

Harvest Activities

- Unit boundaries *(harvest, salvage, right-of-way, rock pits)*
- Unit numbers – do not use names or symbols
- Landings

Harvest Activities

- Overhead utility lines
- Clumped WRTs and GRTs
- Buffers *(RMZs, WMZs, Sensitive Sites)*
- Stream Segment Identifiers (*for RMZ harvest)*
- Wetland Identifiers
- CMZs
- Inner zone harvest for yarding corridors across Type S and F Waters
- Location of trees left for basal area deficiency due to stream adjacent parallel road
- Even-aged harvest must show adjacent land information:
  - If not forest land, label it "Not Forest Land."
  - If you do not own the adjacent land, write "Not Owned."
  - Estimated average forest age class;
  - Estimated total acres of contiguous stands that are less than 4 feet tall or 5 years old or less, on land that you own.
  - Estimated linear feet of the perimeter (total distance around) each harvest unit by age-class.

What are the Map Standards?

- Use 1":1000' DNR Activity map found on the DNR Forest Practices website OR
- You may use larger scale maps or company GIS maps to show details of harvest and road activities. NOTE: The DNR region may ask for vicinity maps to go with large scale maps.
- Use black ink
- Do not use white-out
- Do not use color pencils or highlighters - do not use yellow or red shading
- Include a legend
- Do not write in the margins
- Use more than one map if you need to
- Do not fax these maps to DNR

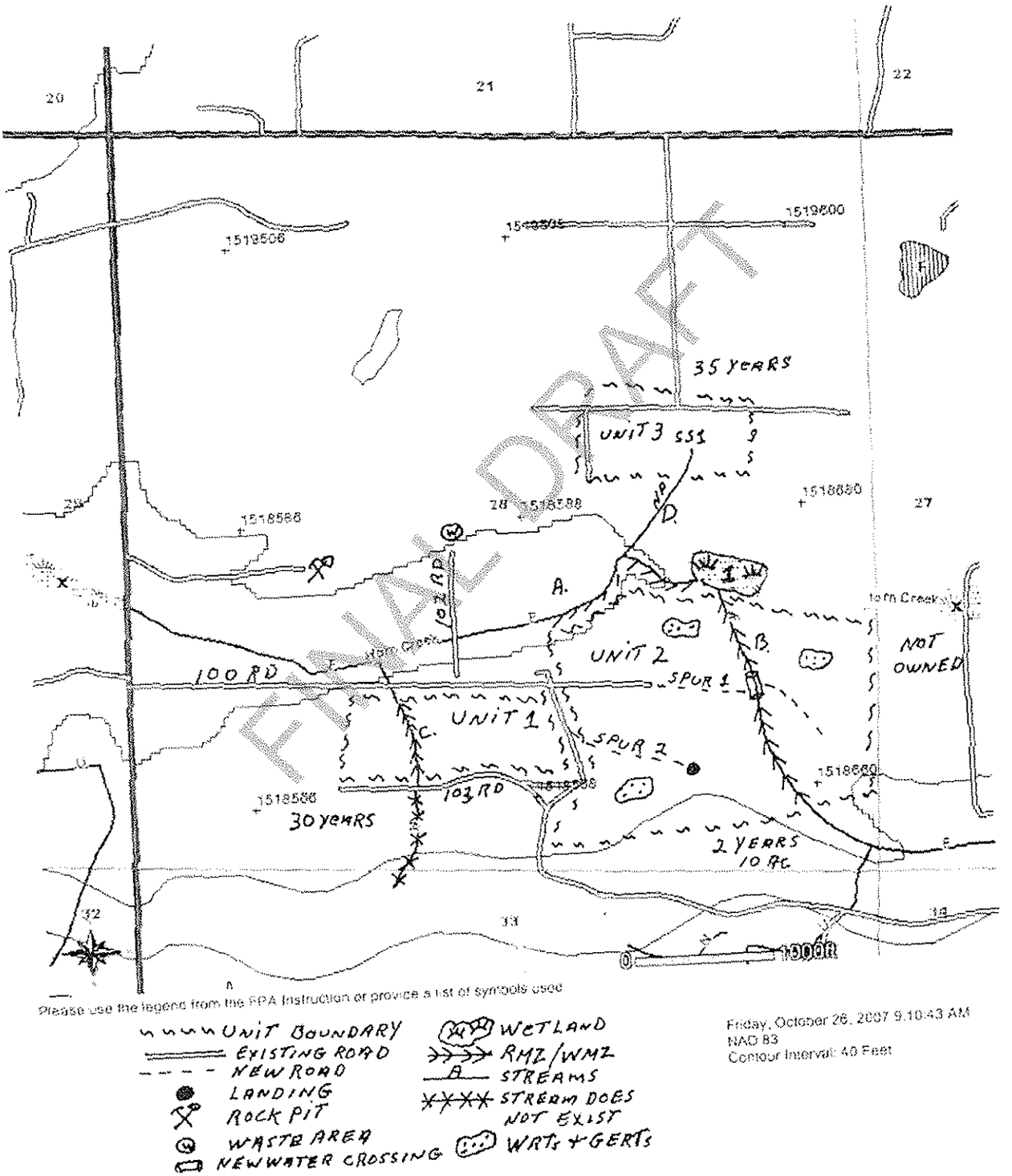
What Additional Items Must Company GIS Maps Show?

- Current DNR water and wetland layers
- DNR Geographic registration TIC marks using NAD83
- Contour lines with elevations (maximum 40' interval)
- Section, township and range lines and numbers & corners
- Scale bar - scale within the range of 1" = 200' to 1" = 1,000'
- North arrow
- ¼" margin on all sides
- Sizes: Letter, Legal, or Tabloid

FOREST PRACTICE ACTIVITY MAP

TOWNSHIP 17 NORTH HALF 0, RANGE 3 EAST (W.M.) HALF 0, SECTION 28

Application #: **EXAMPLE**



Please use the legend from the FPA Instruction or provide a list of symbols used

- UNIT BOUNDARY
- EXISTING ROAD
- NEW ROAD
- LANDING
- ROCK PIT
- WASTE AREA
- NEW WATER CROSSING
- WETLAND
- RMZ/WMZ
- STREAMS
- STREAM DOES NOT EXIST
- WRTs + GERTs

Friday, October 26, 2007 9:10:43 AM
NAD 83
Contour Interval: 40 Feet

Water Typing Requirements

You are required to verify and identify water types and wetlands within 200 feet of your proposed forest practices activities prior to turning in a Forest Practices Application/Notification (FPA/N). Call the DNR region office if you need help classifying water types or wetlands. Exception: type S (shorelines) waters don't need to be verified and can't be changed as these are determined by the Washington State Department of Ecology.

How water types affect your FPA/N: specific water types have specific buffer requirements.

- If you thought the stream was a type Np and left a Type Np buffer, and DNR determines it to be a Type F, your FPA will be disapproved.
- If you thought the stream was a Type Np, but left a Type F RMZ, and DNR determines it to be a Type F, your FPA will not be disapproved for this reason.

Step 1: Get a DNR Activity Map from Forest Practices website listed on page 30 of these instructions. They are also available at DNR region offices.

Step 2: Check the locations and types of all streams, ponds, lakes, and wetlands that are on the ground

- Within the boundaries of your forest practice and
- Within 200 feet on all sides of the outer boundaries of your forest practice.
  - See WAC 222-16-031 and Forest Practices Board Manual Section 13 for water typing information
  - See the Water Type Classification Worksheet in these instructions for help
  - See WAC 222-16-035 for wetland typing information

Step 3: Update the DNR Activity Map so that it accurately shows the correct water and wetland types and their locations as they exist on the ground. These include type F, Np, and Ns waters and type A, B, and forested wetlands greater than three acres in size.

- For water bodies not shown on the Activity Map:
  - Draw the stream, lake, pond, or wetland on the map.
  - Write on the map the correct water type or an identifier that will match it to your FPA/N.
- For water bodies that are labeled with an incorrect water type or no water type, write on the map the correct water type or give it an identifier that will match it to your Forest Practices Application/Notification (FPA/N).
- For water bodies that don't exist, cross them off the Activity Map (use a series of x's or hatches). This includes streams labeled as "U" for "unidentified." Explain in the Additional Information section of your FPA/N how you decided that the water bodies do not exist (i.e. you walked the area and didn't find any water or defined channels).
- Note: The updated map that you create is only for your FPA/N and doesn't result in an update to DNR's maps.

Step 4: Explain in your FPA/N how you verified the water types, including how you determined that a water type shown on the map doesn't exist on the ground.

Include one or more of the following with your FPA/N:

- Explain in the Additional Information section of your FPA/N or on additional pages how you determined each water type. Include:
  - Site visit date(s).
  - The area visited (the area covered by your property, length of stream observed, etc.).
  - Observations (stream width, stream gradient, no water, no channel, etc.).
  - For Np water describe how you found the uppermost point of perennial flow.
- Water Type Classification Worksheet(s) that is included in these instructions.
- Water Type Modification Forms
  - These aren't required with your FPA/N.
  - Use these when you want to change the water type map in DNR's system.
  - See the Water Type Modification form and instructions for more information.
  - These can be downloaded from the Forest Practices website listed on page 30 of these instructions. They are also available at DNR Region Offices.
  - Note: If you base your riparian management zones on a proposed water type change, and DNR cannot process this change before the Decision Date, DNR may disapprove your FPA/N.

○ Western Washington Water Type Classification Worksheet

Stream/Segment ID: _____ Stream/Segment ID: _____ Stream/Segment ID: _____

1. Do you have a protocol survey? (See the Board Manual Section 13.) Or, does the stream have waiver characteristics? (See WAC 222-16-031(3) (b) (ii).)

[ ] No. Continue	[ ] No. Continue.	[ ] No. Continue.
[ ] Yes.	[ ] Yes.	[ ] Yes.
[ ] Fish found. Type F water. Stop.	[ ] Fish found. Type F water. Stop.	[ ] Fish found. Type F water. Stop.
[ ] No fish. Continue to #6.	[ ] No fish. Continue to # 6.	[ ] No fish. Continue to #6
[ ] Yes. Meets waiver criteria.	[ ] Yes. Meets waiver criteria.	[ ] Yes. Meets waiver criteria.

2. List the date Stream observations were made for water typing.

Date observed: _____	Date observed: _____	Date observed: _____
Continue.	Continue.	Continue.

3. Were fish observed or are fish known to use the stream any time of the year?

[ ] Yes. Type F water. Stop.	[ ] Yes. Type F water. Stop.	[ ] Yes. Type F water. Stop.
[ ] No. Continue.	[ ] No. Continue.	[ ] No. Continue.

4. Is the average BFW two feet or wider? AND, is the average stream gradient less than or equal to 16%?

[ ] Yes. Type F water. Stop.	[ ] Yes. Type F water. Stop.	[ ] Yes. Type F water. Stop.
[ ] No. Continue.	[ ] No. Continue.	[ ] No. Continue.

5. Is the average BFW two feet or wider? AND, is the average stream gradient between 16% and 20%? AND, is the contributing basin to the stream greater than 50 acres?

[ ] Yes. Type F water. Stop.	[ ] Yes. Type F water. Stop.	[ ] Yes. Type F water. Stop.
[ ] No. Continue.	[ ] No. Continue.	[ ] No. Continue.

6. Does the stream segment contain water at all times during a normal rainfall year?

[ ] Yes. Type Np water. Go to 9	[ ] Yes. Type Np water. Go to 9	[ ] Yes. Type Np water. Go to 9
[ ] No. Continue.	[ ] No. Continue.	[ ] No. Continue.

7. Is the stream segment downstream of a perennial source of water?

[ ] Yes. Type Np water. Go to9	[ ] Yes. Type Np water. Go to 9	[ ] Yes. Type Np water. Go to 9
[ ] No. Continue.	[ ] No. Continue.	[ ] No. Continue.

8. Is the stream physically connected by an above-ground channel to Type S, F, or Np water?

[ ] Yes, Type Ns water.	[ ] Yes, Type Ns water.	[ ] Yes, Type Ns water.
[ ] No, non-typed water.	[ ] No, non-typed water.	[ ] No, non-typed water.

9. Describe how you determined the uppermost point of perennial flow. Include a description of its location and show the point on a map (Use a separate piece of paper if necessary).

Stream/Segment ID _____ Description:

Hydraulic Project Approval (HPA) Information

NOTE: You are required to submit plan and cross-section view diagrams for each **Type Np** water crossing.

Work in or over Type S and F water requires a Hydraulic Project Approval (HPA) permit from the Washington Department of Fish and Wildlife (WDFW).

If you already have a blanket HPA from WDFW, you don't need to submit these views. Instead, write the HPA number in number 25, Additional Comments of the FPA.

You can get a Hydraulic Project Approval in two ways:

1. Apply for a Joint Aquatic Resource Permit Application (JARPA) from the Washington Department Fish and Wildlife (WDFW).

OR

2. Your FPA can serve as your request for HPA. Answer FPA numbers 10 and 15 **and** submit the plan and cross section views as detailed below.

WDFW will require additional information to fulfill your request for HPA if it isn't already included with your FPA. Your HPA may be delayed if you don't include the information below.

Drawings must be sized to scale, prepared with black ink, drawn clearly, and have legible writing.

A. Plan View. This drawing illustrates the project area as if you were looking down at the site from overhead. The Plan View drawing must contain the following existing and proposed information:

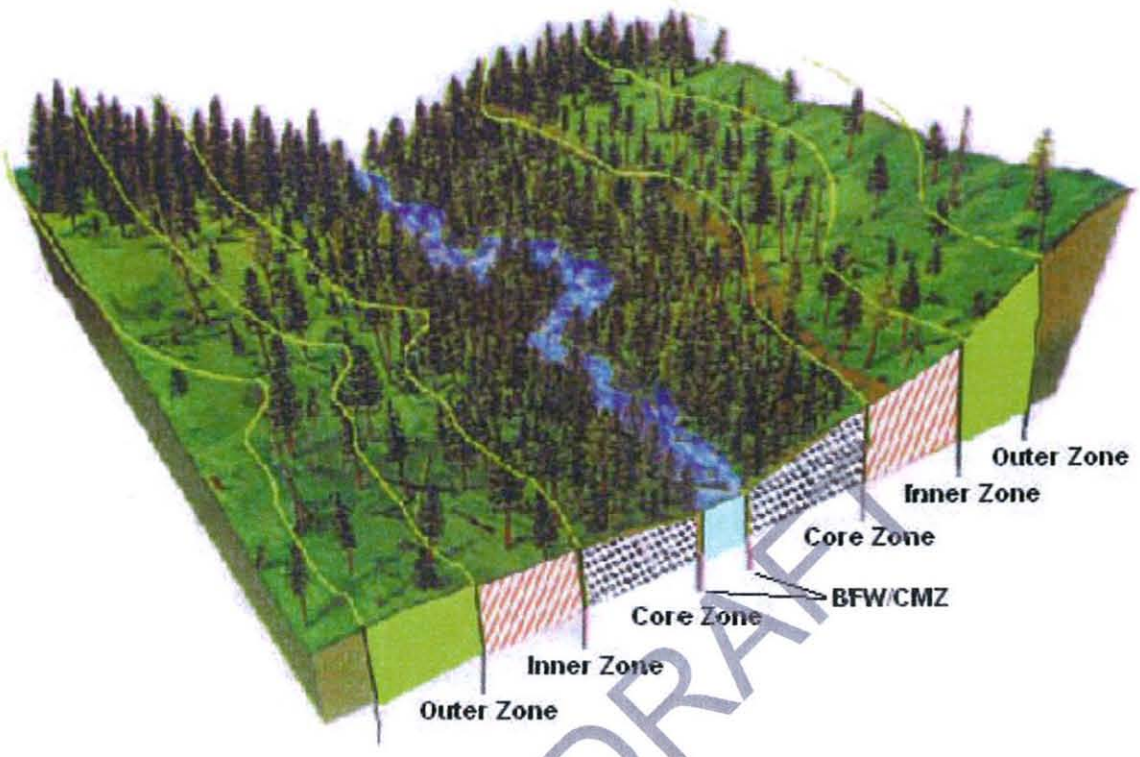
   1) Latitude and longitude of the crossing;
   2) North arrow;
   3) Name of water body and direction of water flow;
   4) Dimensions of the activity or structure, distance from property lines, and the distance it extends into the water body beyond the bankfull width;
   5) Show all existing structures found on the site and on adjoining properties;
   6) If fill material will be deposited, identify the type of material, amount of material in cubic yards, and area in acres to be filled;
   7) If the project requires dredging, identify the type of material, amount of material in cubic yards, and area in acres to be dredged;
   8) Show all completed portions of the activity;
   9) Show the location and type of all existing aquatic, wetland, riparian, and upland vegetation; and
   10) Show erosion control measures, including the stabilization of disturbed areas, etc.

B. Cross-Section View. These drawings provide a side and/or front illustration of your proposed project area – as if you were looking at it from the side and/or front. Cross Section View drawing must contain the following existing and proposed information:

   1) Location of water lines;
   2) Water depth or tidal elevation on the water-ward or waterside of your project;
   3) Dimensions of the activity or structure, and the distance it extends into the water body beyond the bankfull width;
   4) Indicate dredging and/or fill grades;
   5) Indicate contours and elevations;
   6) Indicate the type and location of material to be used for construction purposes and the method of construction; and
   7) Indicate the height of all structure.

Additional information may be required depending on project type. For details visit http://wdfw.wa.gov/hab/hpapage.htm.

Type S and F Riparian Management Zone Cross-Section



Bankfull Width (BFW) means:

(a) For streams - the measurement of the lateral extent of the water surface elevation perpendicular to the channel at bankfull depth. In cases where multiple channels exist, bankfull width is the sum of the individual channel widths along the cross-section. See the Board Manual Section 2.

(b) For lakes, ponds, and impoundments - line of mean high water.

(c) For tidal water - line of mean high tide.

(d) For periodically inundated areas of associated wetlands - line of periodic inundation, which will be found by examining the edge of inundation to ascertain where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland.

Channel Migration Zone (CMZ) means the area where the active channel of a stream is prone to move and this results in a potential near-term loss of riparian function and associated habitat adjacent to the stream (See Board Manual Section 2 for descriptions and illustrations of CMZs, delineation guidelines), except as modified by a permanent levee or dike. For this purpose, near-term means the time scale required to grow a mature forest.

Core Zone means the 50 foot buffer of a Type S or Type F water, measured horizontally from the outer edge of the bankfull width or the outer edge of the channel migration zone, whichever is greater.

Inner Zone means the area measured horizontally from the outer boundary of the core zone of a Type S or F water to the outer limit of the inner zone. The outer limit of the inner zone is determined based on the width of the affected water, site class, and the management option chosen for timber harvest within the inner zone.

Outer Zone means the area measured horizontally between the outer boundary of the inner zone and the RMZ width as specified in the Western Washington RMZ tables in WAC 222-30-021. RMZ width is measured from the outer edge of the bankfull width or the outer edges of the channel migration zone whichever is greater.

References:

- See Board Manual Section 2 for information about bankfull width and channel migration zones.
- See WAC 222-30-021 for information about Western Washington core, inner, and outer zones

Not required to be submitted with your FPA/N

Inner Zone Hardwood Conversion Worksheet

1. Do you own 500 feet upstream and 500 feet downstream of the conversion unit?

   [ ] Yes. Go to question 2.

   [ ] No. Stop, does not qualify

2. Do the riparian areas next to the conversion unit have the required shade described in WAC 222-30-040 or have a 75-foot buffer with trees 40 feet tall on both sides of the stream 500 feet above and below the harvest unit?

   [ ] Yes. Go to question 3.

   [ ] No. Stop, does not qualify.

3. Is there evidence that the conversion unit area can be successfully reforested with conifer and support development of a conifer stand?

   [ ] Yes. Go to question 4.

   [ ] No. Stop, does not qualify.

4. Does the RMZ core or inner zone within the conversion unit contain a stream adjacent parallel road?

   [ ] Yes. Stop, does not qualify.

   [ ] No. Go to question 5.

5. Has the landowner successfully performed post-harvest treatment to convert a hardwood dominated stand to a conifer stand?

   [ ] Yes. Go to question 6.

   [ ] No. Go to question 6.

6. Are there fewer than 57 conifer trees per acre equal to or larger than 8 inches in diameter at breast height in the conversion unit area?

   [ ]Yes. Go to question 7.

   [ ] No. Stop, does not qualify.

7. Are there fewer than 100 conifer trees per acre larger than 4 inches in diameter at breast height in the conversion unit area?

   [ ] Yes. Go to question 8.

   [ ] No. Stop, does not qualify.

8. Does the stand meet desired future condition requirements (WAC 222-30-021(1) (b)?

   [ ] Yes. Stop, stand does not qualify.

   [ ] No. Provided you correctly answered all the above questions the proposed unit qualifies for hardwood conversion in the inner zone.

Not required to be submitted with your FPA/N

Western Washington Type Np RMZ Worksheet

A. Without regard to ownership, determine the total length of each separate Type Np stream system where at least a portion of the system is within the harvest unit. This includes the branching network of a Type Np system above the confluence with Type S or F water. See WAC 222-30-021.

Note: There can be more than one Type Np system within a harvest unit and each system requires a separate length determination. Use a separate worksheet for each Type Np system.

B. Determine which of the options below best fits the total length determined for a specific Type Np system. Circle the letter next to the best fit (i.e. letter a., b. or c.).

a. If the total Type Np system length (not just the length within the harvest unit) is less than 300': Leave a two-sided, 50' buffer on the entire length of the Type Np water. Show the RMZ on the Activity Map.

STOP, WORKSHEET COMPLETED.

b. If the total length is greater than 300' but less than 1000': Starting at the confluence with Type S or F water, leave a buffer that is the greater of 300' or 50% of the entire length of the Type Np water. In addition, buffer all sensitive sites on the Type Np stream that were not already buffered by the 300' or 50% requirement. Show the RMZ on the Activity Map.

STOP, WORKSHEET COMPLETED.

c. If the total length is greater than 1000': Leave a two-sided, 50' buffer on the first 500' of the Type N stream above the confluence with Type S or F water. Complete i. through vi. below.

i. Determine the total length of the Type Np system. _____Feet

ii. Refer to the table below to determine the minimum % of buffer required on that portion of the Type Np water upstream of the first 500' from the confluence of Type S or F water. _____%

iii. Determine the length of Type Np water within the harvest unit that is upstream of the first 500' from the confluence of Type S or F water. _____Feet

iv. Determine the total length of buffering needed upstream of the first 500' from the confluence of Type S or F water. (% in ii. times length in iii. = required buffer) _____Feet

v. Determine the total length of all required buffering established to protect sensitive sites along the Type Np water within the harvest unit above the first 500' from the confluence of Type S or F water. _____Feet

vi. If the required buffer length in v. is less than the length in iv, determine the length of additional buffering required. (Length in iv. minus length in v. = additional buffer) _____Feet

The buffering must be placed in priority areas. Show the buffers on the Activity Map.

Minimum percent of length of Type Np waters to be buffered when more than 500 feet upstream from the confluence of Type S or F water.

Total length of a Type Np water upstream from the confluence of a Type S or F water.	Percent of length of Type Np water that must be protected with a 50 foot no harvest buffer more than 500 feet upstream from the confluence of a Type S or F water.
1001 – 1300 feet	19%
1301 – 1600 feet	27%
1601 – 2000 feet	33%
2001 – 2500 feet	38%
2501 – 3500 feet	42%
3501 – 5000 feet	44%
Greater than 5000 feet	45%

WASHINGTON STATE DEPARTMENT OF
Natural Resources

For DNR Region Office Use Only	
FPA/N #:	
Region:	
Received Date:	

Forest Practices Application/Notification

Natural Regeneration Plan

Western Washington

If you use this form, include a map showing the locations of your seed source.

Landowner Name: _____

The landowner is responsible for meeting Forest Practices reforestation requirements.

Legal Description: _____

Harvest is scheduled to occur (month/year): _____

Check one of the following:

[ ] The landowner proposes an alternate plan (WAC 222-34-010(6) for natural reforestation as attached.

OR

[ ] The landowner agrees to follow all the requirements listed below (WAC 222-34-010(5)).

- There is a seed source available that is capable of producing well-formed trees of a commercial tree species.
- The landowner will not harvest this seed source until _____, or earlier if DNR issues a reforestation inspection report.
- The seed source:
  - Is shown on an attached map
  - Is marked on the ground
  - Is at least 8 seed trees per acre
  - Is within 400 feet of areas requiring reforestation
- The regeneration will be protected from competing vegetation and allowed to establish, grow, and survive

Watershed Analysis Worksheet

(Use a separate worksheet for each Watershed Analysis)

Watershed Analysis Name: _____

Check all of the following that apply:

- ☐ I have reviewed the Watershed Analysis Prescription documents. My proposal is not located on or adjacent to any of the described features. Prescriptions do not effect my proposal.
- ☐ I have reviewed the descriptions and maps for all prescriptions.
  My proposal is located on or adjacent to the following prescription areas:
  - ☐ Surface Erosion Prescriptions
  - ☐ Mass Wasting Prescriptions
  - ☐ Hydrology Prescriptions
  - ☐ Water Quality
  - ☐ Water Supply / Public Works
  - ☐ Riparian – applicable to landowners using the 20 acre exempt RMZ rule

Complete the following information for each prescription that affects your proposal or is adjacent to your proposal. Identify the resource sensitivity name and if you are implementing the prescriptions or not. Attach required reports and additional information as necessary.

Resource Sensitivity Name/No: _____ Implementing Prescription: ☐ Yes ☐ No

Describe harvest techniques proposed	
Describe road techniques proposed	
Describe other techniques proposed	

Resource Sensitivity Name/No: _____ Implementing Prescription: ☐ Yes ☐ No

Describe harvest techniques proposed	
Describe road techniques proposed	
Describe other techniques proposed	

Resource Sensitivity Name/No: _____ Implementing Prescription: ☐ Yes ☐ No

Describe harvest techniques proposed	
Describe road techniques proposed	
Describe other techniques proposed	

DNR USE ONLY Reviewed by:_____ Date:_____

Watershed Analysis Worksheet Instructions

This form must be submitted along with your Forest Practice Application/Notification (FPA) form if:

- You are harvesting timber (including salvage) or constructing roads within or adjacent to an approved Watershed Analysis area. OR
- If you answered yes to Question # 5 of the FPA because you are substituting Watershed Analysis Prescriptions.

A separate worksheet should be used for each Watershed Analysis.

The following information must be included in the space provided or on additional pages.

- The name of the Watershed Analysis where your proposal is located.
- Check all of the boxes that apply regarding your review of Watershed Analysis Prescriptions.
- Indicate each Resource Sensitivity Name (prescription name) that may affect your proposal.
- Indicate if you are implementing the prescription.
- Describe the specific harvest, road and other techniques you will use to implement the prescription.

  Many prescriptions provide a landowner with a variety of different operational options. Sufficient detail needs to be included so that we can evaluate your proposal.

If your proposal is located on an area of resource sensitivity (prescription) AND you are choosing not to follow the prescription your FPA will processed as a Class IV-Special and require a State Environmental Policy Act (SEPA) checklist.

Web References

At the DNR Forest Practices Homepage:
http://www.dnr.wa.gov/BusinessPermits/forestPractices/Pages/home.aspx
you will find links to a variety of forest practices related topics. Call one of the region offices listed on page 3 of these instructions if you need help with the DNR Forest Practices web site. Frequently viewed topics and their web addresses are listed below.

NOTE: The "Search" function that shows on each page of the DNR website is a helpful way to find Forest Practices and other information provided on the DNR's website.

- **Forest Practices Division Home Page**
  http://www.dnr.wa.gov/AboutDNR/Divisions/FPD/Pages/home.aspx
- **Small Forest Landowner Office**
  http://www.dnr.wa.gov/BusinessPermits/Topics/SmallForestLandownerOffice/Pages/fp_sflo_overview.aspx
- **Forest Practices Forms & Instructions**
  http://www.dnr.wa.gov/BusinessPermits/Topics/ForestPracticesApplications/Pages/fp_forms.aspx
  - ► Go to the "**FPARS Mapping Tool**" to create and print **Activity, Site Class, Water Type, Resource, or Base Maps.** This link is located on the right side of the screen under "RELATED LINKS" on the Forest Practices Forms and Instructions web page.

  This web page also provides links to forms in the following categories:
  - o Forest Practices Application/Notification (FPA/N)
  - o Alternate Plans
  - o Marbled Murrelet
  - o Aerial Chemical
  - o Long-Term Applications (for Small Forest Landowners)
  - o FPA/N Transfer, Renewal, Amendment (for already submitted FPA/N's)
  - o Forest Practices Application Review System (FPARS – this DNR's web-based FPA/N review system)
  - o Continuing Forest Landowner Obligation
  - o Small Forest Landowner – Checklist RMAP, Overstocked Stand Template, Fish Passage Cost Share
  - o Water Typing
  - o Desired Future Condition Worksheet (DFC) and instructions
  - o State Environmental Policy Act (SEPA)
- **Forest Practices Habitat Conservation Plan**
  http://www.dnr.wa.gov/BusinessPermits/Topics/ForestPracticesHCP/Pages/fp_hcp.aspx
- **Forest Practices Board Manual**
  http://www.dnr.wa.gov/BusinessPermits/Topics/ForestPracticesRules/Pages/fp_board_manual.aspx
- **Forest Practices Rules and Act**
  http://www.dnr.wa.gov/BusinessPermits/Topics/ForestPracticesRules/Pages/fp_rules.aspx
- **Forest Practices Illustrated**
  http://www.dnr.wa.gov/BusinessPermits/Topics/ForestPracticesRules/Pages/fp_fpi.aspx
- **Watershed Analysis**
  http://www.dnr.wa.gov/ResearchScience/Topics/WatershedAnalysis/Pages/fp_watershed_analysis.aspx

Other State Agencies Websites:

- Department of Fish and Wildlife's Habitat website: http://www.wdfw.wa.gov/
- Department of Revenue's website: http://www.dor.wa.gov/
- Department of Ecology's On-Line Permit Assistance Center: *(On-line questionnaire to see which permits you need for your project)* http://www.ecy.wa.gov/programs/sea/pac/index.html
- Legislature website: http://www.leg.wa.gov/LawsAndAgencyRules/ (*Includes all the state's laws – Revised Code of Washington (RCW) – and rules – Washington Administrative Code (WAC)*
- The Department of Archeology and Historic Preservation (DAHP) - http://www.dahp.wa.gov/.
- State Tribal Directory - http://www.goia.wa.gov
- Environmental Hearings Office. *(Information on appealing FPA/N Decisions and DNR's enforcement actions):* http://www.eho.wa.gov/Boards_FPAB.aspx
- Office of Regulatory Assistance (helps clarify how rules, regulations and government requirements apply to environmental permitting and business licensing) http://www.ora.wa.gov

WASHINGTON STATE DEPARTMENT OF
Natural Resources

Forest Practices Application/Notification
Western Washington

For DNR Region Office Use Only	
FPA/N #:	
Region:	
Received Date:	

PLEASE USE THE INSTRUCTIONS TO COMPLETE THIS APPLICATION.
TYPE OR PRINT IN INK.

1. **Landowner, Timber Owner, and Operator**

Legal Name of LANDOWNER	Legal Name of TIMBEROWNER	Legal Name of OPERATOR
Mailing Address:	Mailing Address:	Mailing Address:
City, State, Zip	City, State, Zip	City, State, Zip
Phone ( ) Email:	Phone ( ) Email:	Phone ( ) Email:

2. **Contact person**

Contact Person:	Phone ( ) Email:

NOTE: You are required to verify water types, except type S waters, within 200 feet of your proposed forest practices activities prior to submitting a Forest Practices Application / Notification. Use the Additional Information section, additional pages, the Water Type Classification Worksheet and/or a Water Type Modification form to explain how you verified water types. See instructions.

3. **Are you a small forest landowner?**
   [ ] No. [ ] Yes. *See instructions.*

4. **If you are harvesting timber, enter the Forest Tax Reporting Account Number of the Timber Owner:** _____
   For tax reporting information or to receive a tax number, call the Department of Revenue at 1-800-548-8829.

5. **Are you substituting prescriptions from an approved state or federal conservation agreement or watershed analysis?**
   [ ] No. [ ] Yes. *Write "HCP" or "Using Prescriptions" in tables that apply. Attach or reference on file prescriptions and/or crosswalks.*

6. **What is the legal description of your forest practice?**

¼ ¼ (quarter quarter)	Section	Township	Range	E/W	Tax Parcel Number	County

7. **Have you reviewed this forest practices activity area to determine whether it may involve historic sites and/or Native American cultural resources?** *Read the instructions before answering this question.*

   [ ] No. [ ] Yes.

8. **Do you have a DNR approved Road Maintenance and Abandonment Plan (RMAP)?**

   [ ] No. *If No, is a Checklist RMAP required? (see instructions)* [ ] No. [ ] Yes *Include a copy of the RMAP Checklist.*

   [ ] Yes. *List the RMAP number:* _____.

9. **Is this forest practice application/notification:** ***(Answer every question)***

   a. [ ] No [ ] Yes Within city limits or inside an urban growth area? *IF YES SEE INSTRUCTIONS FOR ADDITIONAL REQUIRED DOCUMENTS.*

   b. [ ] No [ ] Yes Within a public park? *If Yes, include SEPA Environmental Checklist or SEPA Determination - except for harvesting/salvaging less than 5,000 board feet within a developed public park.*

   c. [ ] No [ ] Yes Within 500 feet of a public park? Park name: _____

   d. [ ] No [ ] Yes On land that has been platted? *If it was short or long platted after January 1, 1960, include a SEPA Environmental Checklist or SEPA Determination.*

   e. [ ] No [ ] Yes In an approved Conversion Option Harvest Plan (COHP) from the local government? *If yes, include a copy.*

   f. [ ] No [ ] Yes Within 200' of the Ordinary High Water Mark (OHWM) or floodway of Type S water? If yes, does the activity require a Substantial Development Permit? [ ] No [ ] Yes *If yes include a copy of your Substantial Development Permit. See instructions for information.*

   g. [ ] No [ ] Yes A request for a multi-year permit? If yes, length requested: [ ] 3 years [ ] 4 years or [ ] 5 years. *Not everyone qualifies for a multi-year permit. See instructions for details.*

   h. [ ] No [ ] Yes An Alternate Plan? *If yes, include a copy.*

   i. [ ] No [ ] Yes For work that is included in an approved Road Maintenance and Abandonment Plan (RMAP)?

   j. [ ] No [ ] Yes Within 50 miles of saltwater **and** do you own more than 500 acres of forest land in Washington State? *If Yes - include the "Marbled Murrelet Form" or attach/reference HCP prescriptions.*

10. **If constructing or abandoning forest roads and/or installing, removing, or replacing crossings in typed water, complete the table below. Show the road and crossing locations and identifiers on your Activity Map. Include abandonment plans for temporary roads and abandonment projects. Installation and removal of crossings in Type S or F Waters also require a Hydraulic Project Approval (HPA) permit from the Washington State Department of Fish and Wildlife (WDFW). This FPA serves as your request for an HPA (see instructions).**

Road Identifier *(Name, Number)*	Road Construction		Abandonment Plans		Crossing Identifier *(Letter, Number, or FFFPP)*	Installing, Removing, or Replacing Structures in Typed Water			
	Length (feet)	Steepest Side-slope (%)	Length (feet)	Abandonment Date		Water Type *(S, F, Np, Ns)*	Activity *(Install, Replace, Remove)*	Structure *(Culvert, Bridge, Ford)*	Proposed Size *(Dimensions of new structure)*

11. **If depositing spoils and/or expanding or developing a rock pit for forestry use, complete the table below. Show locations and identifiers on your Activity Map.**

Spoil Area Identifier *(Number, Letter)*	Spoils Deposited *(Cubic Yards)*	Rock Pit Identifier *(Name, Number, Letter)*	Acres of New Rock Pit Developed	Acres of Existing Rock Pit Expanded

12. **If operating in or within 200 feet of a wetland, complete the table below. Show the boundaries of each wetland, along with its identifier, and WMZ on your Activity Map.**

Wetland Identifier *(Number, Letter)*	Wetland Type *(A, B or Forested)*	Planned Activities in Wetland	Planned Activities in WMZ	Total Wetland Area *(acres)*	How many acres are you draining?	How many acres are you filling?

If not harvesting or salvaging timber, skip to number 23.

13. **If harvesting or salvaging timber, complete the table below. Show all harvest areas and unit numbers on your Activity Map. For even aged harvest units also show surrounding stand information on your Activity Map.**

Unit Number	Harvest Type *(Choose one option per harvest unit from the list in the instructions)*	Yarding Method *(Rubber Tired Skidder, Tracked Skidder, Dozer, Shovel, Full Suspension Cable, Leading End Suspension Cable, No Suspension Cable, Helicopter, Animal)*	Acres to be Harvested	Volume to be Harvested *(mbf)*	Volume to be Harvested *(%)*	Steepest Slope in Harvest Unit *(%)*

14. **Reforestation. You must check the appropriate box(es).**

[ ] Planting. Tree Species: _____

[ ] Natural. *Include a Natural Regeneration Plan*

Not required because of one or more of the following:

- [ ] I am converting some or all of this land to non-forest land in the next 3 years or lands are exempted under WAC 222-34-050.
- [ ] Individual dead, dying, down, or windthrown trees will be salvaged.
- [ ] Trees are removed under a thinning program reasonably expected to maximize the long-term productivity of commercial timber.
- [ ] I am leaving at least 100 vigorous, undamaged, and well-distributed saplings or merchantable trees per acre.
- [ ] An average of 190 tree seedlings per acre are established on the harvest area and my harvest will not damage it.
- [ ] Road right-of-way or rock pit development harvest only.

15. **Mark and describe the following harvest activities that will be done in or over typed water. Describe them in number 25, Additional Information.**

Activity	Type S Water	Type F Water	Type Np Water	Type Ns Water
Equipment Crossing				
Ground Skidding				
Suspending Cables				
Cable Yarding				
Falling and Bucking				

16. **Is the taxpayer eligible for the EARR Tax Credit?** [ ] No [ ] Yes

If you own MORE than 80 forested acres in Washington, skip to number 21.

17. Are you using the exempt 20-acre parcel riparian management zone (RMZ) rule on type S, F, or Np waters?

[ ] No *If no, skip to number 21.*

[ ] Yes *If yes, continue to number 18. See instructions for qualifications and information.*

18. Choose the answer below that best fits your situation. Show all RMZs on your Activity Map.

[ ] **a.** ALL of the following apply to me and my land:

- Between June 5, 2006 and today's date I have always owned less than 80 acres of forestland in Washington.
- Between June 5, 2006 and today's date this parcel has always been 20 acres or less of contiguous ownership.
- Between June 5, 2006 and today's date this parcel has always been owned by me or someone else that has owned less than 80 acres of forestland in Washington.

b. ONE OR MORE of the following apply to me and/or my land (check all that apply):

[ ] I currently own more than 80 acres of forestland in Washington.

[ ] Between June 5, 2006 and today's date I have owned more than 80 acres of forestland in Washington.

[ ] Between June 5, 2006 and today's date this parcel has been more than 20 acres of contiguous ownership.

[ ] Between June 5, 2006 and today's date this parcel has been owned by someone that has owned more than 80 forested acres in Washington.

19. If harvesting within 115 feet of a type S or F water on an exempt 20-acre parcel complete the table below. Show RMZs and stream segment identifiers on your Activity Map. Include stream shade analysis calculation if you are harvesting within 75 feet or the maximum RMZ, which ever is LESS.

Stream Segment Identifier *(letter)*	Water Type *(S, F)*	Segment Length *(feet)*	Bankfull Width *(feet)*	Maximum RMZ Width *(feet)*	Are you harvesting within the maximum RMZ? *(Y/N)*

20. Are you harvesting within 29 feet of a Type Np water on a 20 acre exempt parcel?

[ ] No *Skip to number 23.*

[ ] Yes *See instructions and describe leave tree strategy in number 25. Then skip to number 23.*

21. If harvesting within 200 feet of any of Type S or F waters, complete the table below. Include DFC for all inner zone harvests unless you have an HCP prescription. Show RMZs, CMZs, and stream segment identifiers on your Activity Map.

Stream Segment Identifier *(Letter)*	Water Type *(S or F)*	Site Class *(I-V)*	Stream Width *(feet)*	Is there a CMZ? (Y/N)	RMZ Harvest Code(s) *(see instructions)*	DFC Run Number	Total width of RMZ *(feet)*

22. If harvesting within 50 feet of Type Np water, complete the table below. Show RMZs and stream segment identifiers on your Activity Map.

Stream Segment Identifier *(letter)*	Total Stream Length in Harvest Unit *(feet)*	Length of No-Harvest, 50-foot Buffers in Harvest Unit *(feet)*	Stream Segment Identifier *(letter)*	Total Stream Length in Harvest Unit *(feet)*	Length of No-Harvest, 50-foot Buffers in Harvest Unit *(feet)*

23. **How are the following marked on the ground?** ***(Flagging, paint, road, fence, etc)***

Harvest Boundaries: _____

Clumped Wildlife Reserve Trees/Green Recruitment Trees: _____

Right-of-way limits/road centerlines: _____

Riparian Management Zone Boundaries and Leave/Take Trees: _____

Channel Migration Zone: _____

Wetland Management Zone Boundaries and Leave/Take Trees: _____

24. **Are you converting the land to non-forestry use within 3 years of harvest?**
[ ] No [ ] Yes *Include a SEPA checklist or SEPA Determination and copies of approved Clearing and Grading Permit*

25. **Additional Information (attach additional pages if necessary):**

26. **We acknowledge the following:**
- **The information on this application/notification is true.**
- **We understand this proposed forest practice is subject to:**
  - **The Forest Practices Act and Rules AND**
  - **All other federal, state or local regulations.**
- **Compliance with the Forest Practices Act and Rules does not ensure compliance with the Endangered Species Act or other federal, state or local laws.**
- **If we said that we would not convert the land to non-forestry use, the county or city may deny development permits on this parcel for the next 6 years.**
- **The following may result in an unauthorized incidental take of certain endangered or threatened fish species:**
  - **Conversion of land to non-forestry use.**
  - **Harvesting within the maximum RMZ on a 20-acre exempt parcel that was acquired after June 5, 2006.**

Signature of LANDOWNER*	**Signature of TIMBER OWNER** (If different than landowner)	**Signature of OPERATOR** (If different than landowner)
Print Name:	Print Name:	Print Name:
Date:	Date:	Date:

NOTE: If you are a "Perpetual Timber Rights Owner," and are submitting this without the Landowner's Signature, provide written evidence the landowner has been notified.

WASHINGTON STATE DEPARTMENT OF
Natural Resources

For DNR Use Only	
Checklist #:	

SMALL FOREST LANDOWNER CHECKLIST RMAP

WHEN TO SUBMIT A CHECKLIST RMAP

Submit this checklist with your Forest Practices Application/Notification (FPA/N) for harvest or salvage. If you have already submitted a Checklist for these roads, please contact the DNR region office. The Checklist is for existing roads on your forest land that have been used by anyone for a forest practice since 1974. Do not include haul roads on your neighbor's property. Do not include skid trails.

THIS CHECKLIST APPLIES TO *(Check one)*

☐ The forest roads on my forest land that I will use for this FPA/N. Minimum Required

☐ All the forest roads on my forest land. Assessing all your forest roads is optional. If you choose this, you will not be required to submit additional checklists with future FPA/N's. If you check this box, include a DNR Activity Map(s) that shows all your forest roads. Maps are available at DNR region offices and on the DNR website at: http://www.dnr.wa.gov/BusinessPermits/Topics/ForestPracticesApplications/Pages/fp_fpars.aspx. You need to know the legal description (section, township, and range) of your roads in order to request a map.

OPTIONAL: The approximate total number of miles of forest road assessed in this Checklist is:_____
This information will be used for statewide statistics. Your help gathering this information is appreciated.

FOREST ROAD ASSESSMENT

Please complete this section after you have assessed your forest roads.

☐ I need help with this section. *(If you check this box, you may leave the rest of the boxes in this section blank. DNR will contact you)*

The following boxes describe common sediment issues. Check all that apply.

☐ Water from the road or ditch runs directly into typed water.

☐ Water flows under, over, or around the culvert.

☐ The culvert keeps filling with dirt.

☐ The road has large cracks.

☐ The road has sinkholes. *(Not a pothole – but a hole that you can't drive over)*

☐ Dirt from the uphill side of the road keeps falling into the ditch-line before regularly scheduled maintenance.

☐ Dirt from the cut-slope keeps falling downhill into or near a stream, pond, or wetland.

☐ The road crosses typed water *(a culvert, bridge or ford exists)*.

☐ My forest roads do not have any of these issues.

FAMILY FOREST FISH PASSAGE PROGRAM

This is a cost-share program to fix fish passage barriers, such as culverts. Not all culverts are fish passage barriers. If yours is, you may qualify. Please contact the DNR's Small Forest Landowner Office in Olympia at (360) 902-1400 or see www.dnr.wa.gov/BusinessPermits/Topics/SmallForestLandownerOffice/Pages/fp_sflo_fffpp.aspx

ORPHANED ROADS
State law requires DNR to keep an inventory of orphaned roads that pose a risk to public safety or to public resources. Your help with this inventory is requested.

Orphaned roads include:
- Roads on your forest land that someone hauled timber on before 1974.

Orphaned roads do not include:
- Skid trails,
- Roads on your forest land that someone will drive a pick-up truck on for forestry use,
- Roads on your forest land that someone will use for log or rock trucks.

Check one of these boxes

☐ I do not have orphaned roads that I think pose a risk to public resources or public safety – such as houses, highways, county roads, streams, ponds, or wetlands.

☐ I have orphaned roads that I think may pose a risk to public resources or public safety – such as houses, highways, county roads, streams, ponds or wetlands. *(Please show the locations of all these orphaned roads on a separate DNR Activity Map. This is not the same map that shows your harvest)*

☐ I need help identifying orphaned roads.

ROAD MAINTENANCE OBLIGATIONS
All forest landowners have a legal obligation to maintain all their forest roads on all their forest land to the extent necessary to prevent damage to public resources. This includes forest roads not shown on this Checklist. Maintenance rules are in WAC 222-24-052. Best Management Practices (BMP's) for road maintenance are in the Forest Practices Board Manual Section 3. Both are in the forest practices rule book or on the DNR website at:
http://www.dnr.wa.gov/BusinessPermits/ForestPractices/Pages/Home.aspx

Road maintenance includes:
- Inspecting forest roads and fixing damage before, during, and after hauling timber and/or rock
- Keeping drainage structures (relief culverts, ditches, water bars, dips, etc.) and water crossings functional
- Making sure water from roads and ditches do not flow directly into streams, ponds, or wetlands

LANDOWNER INFORMATION

I certify that at the time I submit this FPA/N I am a small forest landowner because:
- I have an average annual timber harvest level of two million board feet or less from my own forest land in Washington State; and
- I have not exceeded this average annual harvest level in the last three years; and
- I will not exceed this average annual harvest level for the next ten years.

Printed Name of Landowner:_____

Landowner Signature(s):_____

Complete this section only if you are not submitting an FPA/N

Mailing Address:_____

City:_____ State:_____ Zip Code:_____

E-Mail Address (optional):_____ Phone Number:_____

Printed Name of Contact Person (If different from landowner):_____

E-Mail Address (optional):_____ Phone Number:_____

Appendix I

Calendar of Activities

CALENDAR OF ACTIVITIES

Activity	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Permit Applications	X	X	X	X	X	X	X	X	X	X	X	X
Road Design and Layout	X	X	X	X	X	X	X	X	X	X	X	X
Road Construction						X	X	X	X			
Stream Crossing Construction							X	X	X			
Harvesting						X	X	X	X			
Order Seedlings		X	X									
Planting	X	X	X									
Seedling Survival Survey									X	X		
Vegetation Management (Herbicide Application)			X	X					X	X		
Vegetation Management (Hand Cutting)	X	X	X					X	X	X	X	X
Stream Surveys								X	X			
Road Maintenance: as needed: prior to, during, and after harvest, and, if needed in an emergency.					X	X	X	X	X	X		
Check Culverts and road conditions: prior to onset of winter rains; after major storm events; at end of winter.	X	X	X	X						X	X	X