

**City of Rainier
City Council Meeting
August 3, 2026
6 p.m.
Rainier City Hall**

Mayor Jerry Cole called the meeting to order at 6 p.m.

Council Present: Mayor Jerry Cole, Scott Cooper, Robert duPlessis, Jeremy Howell, Mike Kreger, Paul Langner, Charleen Ratkie and Denise Watson

Council Absent: None

City Attorney Present: No

City Staff Present: W. Scott Jorgensen, City Administrator; Russ Reigel, Public Works Director; Elisha Shulda, Finance Director

Flag Salute

Mayor's Address—Mayor Jerry Cole presented plaques to city staff for their help with Rainier Days.

Visitor Comments—City Administrator W. Scott Jorgensen read remarks into the record from Aldercrest subdivision resident Gary Landers. He's requesting streetlights and maintenance in his neighborhood. Rainier School District Superintendent Chad Holloway gave a presentation on the bond that might be appearing on the May 2027 ballot. It does not include new buildings, but improved entrances and better separation between middle and high school students. The portables on the campus were supposed to be temporary but are now beyond their useful lives and are being shut down. The roofs are aging and in poor shape, and so are the windows, doors, mechanical, heating, cooling and ventilation systems. A long-term facilities committee has already met twice and will again September 9.

Approval of the Agenda—Councilor Paul Langner moved to add Resolution 26-08-01 to the agenda. That motion was seconded by Kreger. Councilors Scott Cooper, Robert duPlessis, Kreger, Jeremy Howell, Langner, Charleen Ratkie and Denise Watson all voted in favor. None were opposed. Langer moved to add Inclusive Spreadsheet of Fees and Charges to the agenda. That motion was seconded by duPlessis. Cooper, duPlessis, Kreger, Howell, Langner, Ratkie and Watson all voted in favor. None were opposed.

Consider Approval of the Consent Agenda

Consider Approval of the July 6, 2026 Regular Council Meeting Minutes and Monthly Financial Statements—Kreger moved to approve the consent agenda. That motion was seconded by Watson. Cooper, duPlessis, Kreger, Howell, Langner, Ratkie and Watson all voted in favor. None were opposed.

New Business

a. Rainier Oregon Historical Museum Request—Cole said that the request is for the use of a piece of the city-owned lot adjacent to the museum so a steam donkey can be put on

permanent display. Duane Bernard from the ROHM said that location is visible from the Senior Center. The 99-year lease would be for the northwest corner of the city lot in a 25 foot by 25 foot area. Cole said met on site with Bernard, Kreger and Public Works Director Russ Reigel. Bernard said he hopes to have the steam donkey in place some time in September. Kreger moved to direct staff to work with the city attorney to draft the 99-year lease, and authorized Cole to sign it. That motion was seconded by Langner. Cooper, duPlessis, Kreger, Howell, Langner, Ratkie and Watson all voted in favor. None were opposed.

b. Rainier School District Superintendent Chad Holloway Presentation

c. Rainier School District Intergovernmental Agreement—Langner said he was recusing himself, as he is a member of the Rainier School District Board of Education. Cole said he favors removing the section stating that the City will take over the maintenance and repair of the line. Council agreed by consensus. Kreger moved to approve the IGA as amended. That motion was seconded by Watson. Cooper, duPlessis, Kreger, Howell, Ratkie and Watson all voted in favor. None were opposed. Langner abstained.

d. Banking Transition Update—Finance Director Elisha Shulda said the paperwork for the account signers has been completed and the new account is open. She still has to set up the online account number and hopes to have that done for the next round of accounts payable. The rest of the process should move quickly. There are still outstanding checks from the current bank, but those will process and no more are being issued from that account. The credit card terminal from the current bank has stopped working, but staff is setting up a new one with the new bank. Cole said he wanted to make sure that any charges from the credit card company get passed on accordingly.

e. Comcast Franchise Agreement—Jorgensen said that the proposed agreement has been reviewed by the city attorney. It mostly maintains the status quo. The biggest difference is that it allows for Public, Education and Government fees to go to KLTv for the purpose of providing public access to residents. Langner moved to approve the agreement. That motion was seconded by Kreger. Cooper, duPlessis, Kreger, Howell, Langner, Ratkie and Watson all voted in favor. None were opposed.

f. Approval of an Agreement with NW Watersheds for Backwater Evaluation—Reigel said that backwash goes from the water plant to the sewer plant. The purpose of this proposed agreement is to figure out how much water it is, provide three options for diverting it and helping the City with its permitting through the Department of Environmental Quality (DEQ). Funding for this would come out of the water capital fund. Langner moved to approve the agreement. That motion was seconded by Kreger. Cooper, duPlessis, Kreger, Howell, Langner, Ratkie and Watson all voted in favor. None were opposed.

g. Approval of a Bid for Senior Center Roof Repairs—Reigel said he recommends the bid by Safe Cover. They were contracted to replace the roof at the Eagles Lodge and got the job done quickly. Langer moved to approve the bid by Safe Cover. That motion was seconded by Ratkie. Cooper, duPlessis, Kreger, Howell, Langner, Ratkie and Watson all voted in favor. None were opposed.

h. Resolution 26-08-01—Kreger moved to approve the resolution. That motion was seconded by Ratkie. Cooper, duPlessis, Kreger, Howell, Langner, Ratkie and Watson all voted in favor. None were opposed.

i. Inclusive Spreadsheet of Fees and Charges—Langner moved to direct staff to prepare an inclusive spreadsheet with all of the City's fees and charges. That motion was seconded by Kreger. Cooper, duPlessis, Kreger, Howell, Langner, Ratkie and Watson all voted in favor. None were opposed.

Unfinished Business

- a. Wastewater Plant MAO—Reigel said there is a September 25 deadline to submit a report to DEQ for the next round of collections system repairs. The next round of smoke testing will be taking place mid-August, and will be for the east side of town and the Debast area.
- b. Emergency Operations Plan Review—Council agreed by consensus to table this matter to the next meeting.
- c. E-Bike Discussion—Council agreed by consensus to table this matter to the next meeting.

Reports—Shulda said that the auditors are coming the last week of August. Jorgensen said he and Reigel had a meeting about funding options for a screw press at the wastewater plant. He also attended a farewell luncheon for retired Clatskanie Administrator Greg Hinkleman. He, Reigel, Langner and Cooper attended a meeting about funding sources for backup water supplies. Jorgensen, Reigel and Cole met with a field representative for Congresswoman Suzanne Bonamici. He and Cole conducted oral boards for a police officer candidate, and he and Watson represented the City at the recent Community Resource Fair at the C.C. Rider building. He's also been conducting elections official duties.

City Calendar/Announcements—Jorgensen said the deadline to file for council positions 1, 3, 4 and 5 and the mayor's position is August 18 for incumbents and August 25 for all other candidates. The next Rainier Chamber of Commerce meeting is August 13 at noon, with a ribbon cutting ceremony for Columbia River Treasures to take place right after.

Cole adjourned the meeting at 8:08 p.m.

Mayor Jerry Cole

W. Scott Jorgensen, City Administrator

CITY OF RAINIER
CASH ON HAND/GENERAL LEDGER RECONCILIATION REPORT
CHECKING ACCOUNTS AND LOCAL GOVERNMENT POOL ACCOUNT
7/01/2026-7/31/2026

ACCOUNT REGISTER SUMMARY	CKS/DEBITS	DEP/CREDITS
Ending Balance	347,283.05	

New Ending Balance	347,283.05	0.00	0.00	<u>347,283.05</u>
---------------------------	------------	------	------	-------------------

BANK STATEMENT SUMMARY	CKS/DEBITS	DEP/CREDITS
Ending Balance SHCU 760072-1	34,535.92	
Ending Balance SHCU 760072-2	453,884.45	
Deposits not Shown on Statement		3,427.28
Outstanding Cks and Other Debits	103,007.48	
PERS Outstanding	41,557.12	
PERS Adjustment		
Ending Balance	488,420.37	3,427.28
		<u>347,283.05</u>

0.00

LGIP STATEMENT SUMMARY	CKS/DEBITS	DEP/CREDITS
Beginning Balance	5,207,664.24	
Deposits		\$ 18,167.85
Withdrawals	450,000.00	
Interest		16,977.92
S/C		
In Transit Transfer		
Ending Balance	5,207,664.24	35,145.77
		<u>4,792,810.01</u>

TOTAL CASH	5,140,093.06
-------------------	---------------------

GENERAL LEDGER RECONCILIATION
7/01/2026-7/31/2026

	07/01/26 Beginning Balance	Total Revenue	Total Expense	Liabilities	07/31/26 Ending Balance
Fund					
10 General	2,599,475.68	588,873.03	741,705.66		2,446,643.05
20 Debt	342,598.94	3,819.19	13,717.00		332,701.13
30 Sewer	137,508.74	56,552.63	92,863.78		101,197.59
40 Water	399,597.37	87,530.47	94,448.11		392,679.73
50 Timber	998,352.29	0.00	41,069.20		957,283.09
60 Street	159,660.27	13,049.59	43,185.73		129,524.13
65	0.00				0.00
70	0.00				0.00
81 Special Projects	287,225.30	0.00	9,451.90		277,773.40
83 Sewer Capital	55,785.52	0.00	42,114.50		13,671.02
84 Water Capital	247,631.09	0.00	0.00		247,631.09
85 Transportation Capital	179,836.38	0.00	0.00		179,836.38
90 Library Trust	67,168.51	52.11	6,068.17		61,152.45
					0.00
General Ledger Total	5,474,840.09				5,140,093.06

0.00

Completed by: _____ Date: _____ Approved by: _____ Date: _____

Accounts Payable

Check Detail

User: Elisha
Printed: 09/01/2026 - 12:23PM



Check Number	Check Date				Amount
0186 - QCL, Inc. Line Item Account					
16044	08/26/2026				
Inv	62026				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>			
07/31/2026	Random USDOT McConnell	30-300-620010			38.00
07/31/2026	Random USDOT McConnell	60-600-620010			39.00
07/31/2026	Random USDOT McConnell	40-400-620010			38.00
Inv 62026 Total					115.00
16044 Total:					115.00
0186 - QCL, Inc. Total:					115.00
022 - Stephen D. Petersen, LLC Line Item Account					
16014	08/12/2026				
Inv	57292				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>			
07/30/2026	Atty: Civil	10-060-621016			1,275.00
Inv 57292 Total					1,275.00
Inv	6677522				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>			
07/30/2026	Mower Tire R&M	10-090-622505			29.52
Inv 6677522 Total					29.52
16014 Total:					1,304.52
022 - Stephen D. Petersen, LLC Total:					1,304.52
029 - Quill Corporation Line Item Account					
16012	08/12/2026				
Inv	48774284				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>			
05/01/2026	Supplies	60-600-620010			28.00
05/01/2026	Supplies	40-400-620010			27.99
05/01/2026	Supplies	30-300-620010			27.99

Check Number	Check Date			Amount
Inv 48774284 Total				83.98
16012 Total:				83.98
029 - Quill Corporation Total:				83.98
030 - True Value Line Item Account				
16049	08/26/2026			
Inv	JULY			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/31/2026	WTP R&M	60-600-622504	6.09	
07/31/2026	Parks R&M	10-090-622504	23.92	
07/31/2026	WTP R&M	40-400-622504	20.99	
07/31/2026	WWTP R&M	30-300-622504	124.96	
07/31/2026	WWTP - Credit	30-300-620010	-78.07	
07/31/2026	City Hall R&M	10-020-622504	64.97	
07/31/2026	Marina	10-095-620012	22.77	
Inv JULY Total				185.63
16049 Total:				185.63
030 - True Value Total:				185.63
035 - Wilcox & Flegel Line Item Account				
15976	07/29/2026			
Inv	CL28258			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/15/2026	PW Fuel	30-300-620016	96.09	
Inv CL28258 Total				96.09
15976 Total:				96.09
15977	07/29/2026			
Inv	CL27881			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/15/2026	PD Fuel	10-100-620012	1,066.52	
Inv CL27881 Total				1,066.52
15977 Total:				1,066.52
16022	08/12/2026			
Inv	1038872			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/17/2026	WWTP R&M	30-300-622504	136.56	

Check Number	Check Date			Amount
Inv 1038872 Total				136.56
Inv CL30299				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/31/2026	PW Fuel	30-300-620016		202.62
07/31/2026	PW Fuel	40-400-620016		202.62
07/31/2026	PW Fuel	60-600-620016		202.62
Inv CL30299 Total				607.86
16022 Total:				744.42
16023 08/12/2026				
Inv CL29755				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/31/2026	PD Fuel	10-100-620012		1,048.63
Inv CL29755 Total				1,048.63
16023 Total:				1,048.63
16053 08/26/2026				
Inv CL32112				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/15/2026	PW Fuel	30-300-620016		197.89
08/15/2026	PW Fuel	40-400-620016		197.90
08/15/2026	PW Fuel	60-600-620016		197.90
Inv CL32112 Total				593.69
16053 Total:				593.69
16054 08/26/2026				
Inv CL31751				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/15/2026	PD Fuel	10-100-620012		922.98
Inv CL31751 Total				922.98
16054 Total:				922.98
035 - Wilcox & Flegel Total:				4,472.33
043 - Cowlitz Clean Sweep Inc Line Item Account				
15987 08/12/2026				
Inv 1374003				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/04/2026	July Street Sweeping	60-600-620205		1,201.75

Check Number	Check Date			Amount
Inv 1374003 Total				1,201.75
15987 Total:				1,201.75
043 - Cowlitz Clean Sweep Inc Total:				1,201.75
044 - Columbia River PUD Line Item Account				
15984	08/12/2026			
Inv 168				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/06/2026	Power	30-300-620014	294.37	
Inv 168 Total				294.37
Inv 169				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/06/2026	Power	60-600-620014	59.22	
Inv 169 Total				59.22
Inv 7500				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/06/2026	Power	40-400-620014	50.08	
08/06/2026	Power	60-600-620014	47.34	
Inv 7500 Total				97.42
Inv 77473				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/06/2026	Power	40-400-620014	47.81	
Inv 77473 Total				47.81
15984 Total:				498.82
044 - Columbia River PUD Total:				498.82
053 - Grainger Line Item Account				
15957	07/29/2026			
Inv 9000250960				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/10/2026	Park	10-090-620010	300.00	
Inv 9000250960 Total				300.00
Inv 9978491307				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/08/2026	Park	10-090-620010	158.54	
07/08/2026	Launch	10-095-622503	158.54	

Check Number	Check Date		Amount
07/08/2026	Marina	10-095-620012	158.54
Inv 9978491307 Total			475.62
15957 Total:			775.62
15992	08/12/2026		
Inv 9026761263			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/30/2026	Supplies	60-600-620010	78.57
07/30/2026	Supplies	40-400-620010	78.57
07/30/2026	Supplies	30-300-620010	78.56
07/30/2026	Marina	10-095-620012	35.70
07/30/2026	Launch	10-095-622503	35.70
Inv 9026761263 Total			307.10
15992 Total:			307.10
053 - Grainger Total:			1,082.72
057 - Cowlitz River Rigging Inc Line Item Account			
15988	08/12/2026		
Inv 83147			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/20/2026	Water R&M	40-400-622504	99.08
Inv 83147 Total			99.08
15988 Total:			99.08
16031	08/26/2026		
Inv 85436			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/05/2026	WTP R&M	40-400-622504	115.96
08/05/2026	Street R&M	60-600-622504	115.96
08/05/2026	Sewer R&m	30-300-622504	115.96
Inv 85436 Total			347.88
Inv 86527			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/13/2026	Sewer R&M	30-300-622504	37.49
08/13/2026	Water R&M	40-400-622504	37.50
08/13/2026	Park R&M	10-090-622504	37.49
Inv 86527 Total			112.48
16031 Total:			460.36

Check Number	Check Date				Amount
057 - Cowlitz River Rigging Inc Total:					559.44
060 - One Call Concepts Inc Line Item Account					
16001	08/12/2026				
Inv	6070455				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>			
07/31/2026	Locates	40-400-620010	6.32		
07/31/2026	Locates	60-600-620010	6.32		
07/31/2026	Locates	30-300-620010	6.32		
Inv 6070455 Total				18.96	
16001 Total:					18.96
060 - One Call Concepts Inc Total:					18.96
077 - CIS Trust Line Item Account 10-000-350013					
15946	07/30/2026				
Inv					
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>			
07/24/2026	PR Batch 00001.07.2026 Increment Life	10-000-350013	115.46		
07/24/2026	PR Batch 00001.07.2026 CCIS employee paid extra life	10-000-350009	252.33		
07/24/2026	PR Batch 00001.07.2026 ER Paid AD&D	10-000-350013	16.71		
Inv Total				384.50	
15946 Total:					384.50
16058	08/28/2026				
Inv					
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>			
08/26/2026	PR Batch 00001.08.2026 Increment Life	10-000-350013	115.46		
08/26/2026	PR Batch 00001.08.2026 CCIS employee paid extra life	10-000-350009	252.33		
08/26/2026	PR Batch 00001.08.2026 ER Paid AD&D	10-000-350013	16.71		
Inv Total				384.50	
16058 Total:					384.50
077 - CIS Trust Total:					769.00
078 - Watkins Tractor & Supply Co Line Item Account					
16020	08/12/2026				
Inv	552900				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>			
07/07/2026	Sewer R&M	30-300-622504	290.00		

Check Number	Check Date			Amount
Inv 552900 Total				290.00
16020 Total:				290.00
078 - Watkins Tractor & Supply Co Total:				290.00
079 - Oregon Teamster Employer Trust Line Item Account 10-000-350013				
15948	07/30/2026			
Inv				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/24/2026	PR Batch 00001.07.2026 Emplyee Health Ins Teamstrs	10-000-350013	1,458.08	
07/24/2026	PR Batch 00001.07.2026 Teamsters Health Ins ER Portio	10-000-350013	27,926.44	
Inv Total				29,384.52
15948 Total:				29,384.52
16060	08/28/2026			
Inv				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/26/2026	PR Batch 00001.08.2026 Teamsters Health Ins ER Portio	10-000-350013	27,926.44	
08/26/2026	PR Batch 00001.08.2026 Emplyee Health Ins Teamstrs	10-000-350013	1,458.08	
Inv Total				29,384.52
16060 Total:				29,384.52
079 - Oregon Teamster Employer Trust Total:				58,769.04
085 - Wilco Line Item Account				
16021	08/12/2026			
Inv 261266				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/16/2026	WWTP Chems	30-300-620111	181.53	
Inv 261266 Total				181.53
16021 Total:				181.53
085 - Wilco Total:				181.53
091 - Oregon DEQ Line Item Account				
16003	08/12/2026			
Inv R75262				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/31/2026	Loan Interest	20-200-670116	8,751.00	
07/31/2026	Loan Principal	20-200-670106	83,436.00	

Check Number	Check Date		Amount
Inv R75262 Total			92,187.00
16003 Total:			92,187.00
16004	08/12/2026		
Inv	R75262-LoanFee		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/31/2026	Loan Fee	20-200-670126	3,049.00
Inv R75262-LoanFee Total			3,049.00
16004 Total:			3,049.00
16005	08/12/2026		
Inv	R75263		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/31/2026	Loan Interest	20-200-670117	22,339.00
07/31/2026	Loan Principal	20-200-670107	212,998.00
Inv R75263 Total			235,337.00
16005 Total:			235,337.00
16006	08/12/2026		
Inv	R75263-LoanFee		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/31/2026	Loan Fee	20-200-670127	7,784.00
Inv R75263-LoanFee Total			7,784.00
16006 Total:			7,784.00
091 - Oregon DEQ Total:			338,357.00
097 - Columbia County Treasurer Line Item Account			
15983	08/12/2026		
Inv	COURT		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/12/2026	Jail Fee July 2026	10-080-621005	469.00
Inv COURT Total			469.00
15983 Total:			469.00
097 - Columbia County Treasurer Total:			469.00

Check Number	Check Date			Amount
1119 - Feltons' Heating & Cooling, Inc. Line Item Account				
16032	08/26/2026			
Inv	57175			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/12/2026	Sr Cener HVAC Repairs	10-020-630300		1,071.00
Inv 57175 Total				1,071.00
Inv	57295			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/12/2026	City Hall Qtrly Maint.	10-020-622504		225.00
Inv 57295 Total				225.00
Inv	57320			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/12/2026	Sr Center Furnace Motor Replace	10-020-630300		650.00
Inv 57320 Total				650.00
16032 Total:				1,946.00
1119 - Feltons' Heating & Cooling, Inc. Total:				1,946.00
132 - Springbrook (C/O Wells Fargo), SBRK Finance Holdings Inc. Line Item Account				
16013	08/12/2026			
Inv	024670			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/31/2026	Civic Pay	30-300-620010		81.50
07/31/2026	Civic Pay	40-400-620010		81.50
Inv 024670 Total				163.00
16013 Total:				163.00
132 - Springbrook (C/O Wells Fargo), SBRK Finance Holdings Inc. Total:				163.00
155 - League of Oregon Cities Line Item Account				
16039	08/26/2026			
Inv	2026-R 36347-18			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/18/2026	Scott Training	10-070-621017		59.00
Inv 2026-R 36347-18 Total				59.00
16039 Total:				59.00

Check Number	Check Date		Amount
155 - League of Oregon Cities Total:			59.00
182 - NW Natural Line Item Account			
15966	07/29/2026		
Inv	989961-8		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/09/2026	WTP Power	40-400-620014	40.16
Inv 989961-8 Total			40.16
15966 Total:			40.16
16042	08/26/2026		
Inv	989961-8		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/07/2026	WTP Power	40-400-620014	38.75
Inv 989961-8 Total			38.75
16042 Total:			38.75
182 - NW Natural Total:			78.91
211 - Superior Tire Services Line Item Account			
16047	08/26/2026		
Inv	6677522		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/30/2026	Mower Tire R&M	10-090-622505	29.52
Inv 6677522 Total			29.52
16047 Total:			29.52
211 - Superior Tire Services Total:			29.52
2126 - Sunset Auto Parts, Inc. Line Item Account			
16015	08/12/2026		
Inv	902838		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/29/2026	Sewer R&M	30-300-622504	215.03
Inv 902838 Total			215.03
16015 Total:			215.03
2126 - Sunset Auto Parts, Inc. Total:			215.03

Check Number	Check Date	Amount		
2140 - United States Treasury Line Item Account				
16017	08/12/2026			
Inv	93-6002241			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/03/2026	Q1 2025	10-010-622015	131.94	
Inv 93-6002241 Total			131.94	
16017 Total:				131.94
2140 - United States Treasury Total:				131.94
2198 - Copies Today Line Item Account				
16030	08/26/2026			
Inv	26-585			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/20/2026	Business Cards	10-100-620010	103.78	
Inv 26-585 Total			103.78	
16030 Total:				103.78
2198 - Copies Today Total:				103.78
2212 - OverDrive Line Item Account				
15967	07/29/2026			
Inv	H-0123621			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/01/2026	Overdrive	90-900-622012	6,068.17	
Inv H-0123621 Total			6,068.17	
15967 Total:				6,068.17
2212 - OverDrive Total:				6,068.17
2244 - O'Reilly Auto Parts Line Item Account				
16007	08/12/2026			
Inv	2505291850			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/14/2026	Car Expense	10-100-620011	98.88	
Inv 2505291850 Total			98.88	
Inv 2505292510				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		

Check Number	Check Date		Amount
07/16/2026	Car Expense	10-100-620011	211.99
Inv 2505292510	Total		211.99
16007	Total:		310.87
2244 - O'Reilly Auto Parts Total:			310.87
2325 - Phillips, Cynthia L. Line Item Account			
16008	08/12/2026		
Inv	August		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/12/2026	Judge - August	10-080-620205	225.00
Inv August	Total		225.00
16008	Total:		225.00
2325 - Phillips, Cynthia L. Total:			225.00
244 - Clatskanie PUD Line Item Account			
15953	07/29/2026		
Inv	July		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/17/2026	Power	60-600-620014	1,608.82
07/17/2026	Power	30-300-620014	2,219.52
07/17/2026	Power	10-050-620014	104.86
07/17/2026	Power	10-090-620014	204.22
07/17/2026	Power	10-100-620014	104.86
07/17/2026	Power	10-010-620014	104.86
07/17/2026	Power	40-400-620014	2,905.02
Inv July	Total		7,252.16
15953	Total:		7,252.16
16028	08/26/2026		
Inv	August		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/17/2026	Power	10-050-620014	114.52
08/17/2026	Power	10-010-620014	114.52
08/17/2026	Power	30-300-620014	2,010.85
08/17/2026	Power	10-100-620014	114.52
08/17/2026	Power	10-090-620014	254.17
08/17/2026	Power	60-600-620014	1,610.35
08/17/2026	Power	40-400-620014	2,831.58
Inv August	Total		7,050.51

Check Number	Check Date	Amount
16028 Total:		7,050.51
244 - Clatskanie PUD Total:		14,302.67
3000 - ALS Group USA, Corp. Line Item Account		
15950	07/29/2026	
Inv	36-51-723980	
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>
07/17/2026	Water Labs	40-400-620115
		325.00
Inv 36-51-723980 Total		325.00
15950 Total:		325.00
15979	08/12/2026	
Inv	36-51-724682	
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>
07/23/2026	Water Sampling	40-400-620115
		200.00
Inv 36-51-724682 Total		200.00
Inv	36-51-724995	
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>
07/27/2026	Water Sampling	40-400-620115
		584.00
Inv 36-51-724995 Total		584.00
Inv	36-51-726722	
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>
08/11/2026	Water Sampling	40-400-620115
		200.00
Inv 36-51-726722 Total		200.00
Inv	36-51-726725	
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>
08/11/2026	Water Sampling	40-400-620115
		200.00
Inv 36-51-726725 Total		200.00
15979 Total:		1,184.00
3000 - ALS Group USA, Corp. Total:		1,509.00
3021 - Marlin Business Bank Line Item Account		
16040	08/26/2026	
Inv	42547845	
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>
08/14/2026	Admin Copier	10-010-620201
		164.00

Check Number	Check Date	Amount
Inv 42547845 Total		164.00
16040 Total:		164.00
3021 - Marlin Business Bank Total:		164.00
3025 - Northstar Chemical, Inc. Line Item Account		
16000	08/12/2026	
Inv 347981		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>
08/06/2026	Water Chems	40-400-620111
		1,257.50
Inv 347981 Total		1,257.50
16000 Total:		1,257.50
3025 - Northstar Chemical, Inc. Total:		1,257.50
3115 - Jammie's Environmental, Inc. Line Item Account		
15995	08/12/2026	
Inv 260802		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>
08/03/2026	Sewer R&M Old Rainier Rd	30-300-622504
		1,603.00
Inv 260802 Total		1,603.00
15995 Total:		1,603.00
3115 - Jammie's Environmental, Inc. Total:		1,603.00
3150 - DuPlessis, Robert Line Item Account		
15990	08/12/2026	
Inv 2023		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>
08/12/2026	2023 Council Stipend - Check Re-issue	10-010-624009
		240.00
Inv 2023 Total		240.00
15990 Total:		240.00
3150 - DuPlessis, Robert Total:		240.00
335 - Vancouver Bolt And Supply Inc. Line Item Account		
15972	07/29/2026	

Check Number	Check Date		Amount
Inv	LO-150809		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/20/2026	Marina	10-095-622506	487.21
Inv LO-150809 Total			487.21
15972 Total:			487.21
16019	08/12/2026		
Inv	LO-151075		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/27/2026	Marina	10-095-622506	196.11
Inv LO-151075 Total			196.11
16019 Total:			196.11
335 - Vancouver Bolt And Supply Inc. Total:			683.32
3432 - Liga, Brian Line Item Account			
15998	08/12/2026		
Inv	2025		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/12/2026	Training Meals- check re-issue from 2025	30-300-622021	40.00
Inv 2025 Total			40.00
15998 Total:			40.00
3432 - Liga, Brian Total:			40.00
3490 - City Fire Protection & Alarm Line Item Account			
15952	07/29/2026		
Inv	127394		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/28/2026	Sr Center Replace 2 smoke detectors	10-020-630300	803.00
Inv 127394 Total			803.00
15952 Total:			803.00
3490 - City Fire Protection & Alarm Total:			803.00
3512 - Verizon Line Item Account			
15973	07/29/2026		

Check Number	Check Date		Amount
Inv	6148293151		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/10/2026	Phone	10-100-620014	407.88
Inv 6148293151 Total			407.88
15973 Total:			407.88
15974	07/29/2026		
Inv	6148276508		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/10/2026	PW Phones and Tablets	30-300-620014	92.03
07/10/2026	PW Phones and Tablets	60-600-620014	92.04
07/10/2026	PW Phones and Tablets	40-400-620014	92.03
Inv 6148276508 Total			276.10
15974 Total:			276.10
16050	08/26/2026		
Inv	6150751996		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/10/2026	PW Phones/Tablets	30-300-620014	92.03
08/10/2026	PW Phones/Tablets	60-600-620014	92.01
08/10/2026	PW Phones/Tablets	40-400-620014	92.03
Inv 6150751996 Total			276.07
16050 Total:			276.07
16051	08/26/2026		
Inv	6150768043		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/10/2026	PD Phones	10-100-620014	407.88
Inv 6150768043 Total			407.88
16051 Total:			407.88
3512 - Verizon Total:			1,367.93
3513 - Comcast Line Item Account			
15954	07/29/2026		
Inv	877810899001234		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
06/15/2026	Analog Phones & Wifi	10-090-620014	121.08
06/15/2026	Analog Phones & Wifi	30-300-620014	261.00
06/15/2026	Analog Phones & Wifi	10-090-620014	260.00
06/15/2026	Analog Phones & Wifi	10-100-620014	200.11

Check Number	Check Date		Amount
06/15/2026	Analog Phones & Wifi	60-600-620014	260.00
06/15/2026	Analog Phones & Wifi	40-400-620014	260.30
Inv 877810899001234 Total			1,362.49
15954 Total:			1,362.49
16029	08/26/2026		
Inv 877810899001234			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
03/15/2026	Analog Phones & Wifi	60-600-620014	260.00
03/15/2026	Analog Phones & Wifi	10-090-620014	260.00
03/15/2026	Analog Phones & Wifi	10-100-620014	200.11
03/15/2026	Analog Phones & Wifi	10-090-620014	122.64
03/15/2026	Analog Phones & Wifi	30-300-620014	261.00
03/15/2026	Analog Phones & Wifi	40-400-620014	260.30
Inv 877810899001234 Total			1,364.05
16029 Total:			1,364.05
3513 - Comcast Total:			2,726.54
3514 - Core & Main LP Line Item Account			
15955	07/29/2026		
Inv 32699			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/09/2026	Water labs	40-400-620111	560.23
Inv 32699 Total			560.23
15955 Total:			560.23
3514 - Core & Main LP Total:			560.23
3527 - Sause Bros. Line Item Account			
15969	07/29/2026		
Inv REFUND			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/20/2026	Refund unused portion hydrant meter deposit	40-400-615000	616.23
Inv REFUND Total			616.23
15969 Total:			616.23
3527 - Sause Bros. Total:			616.23
3545 - InRoads Credit Union Line Item Account			

Check Number	Check Date	Amount		
15958	07/29/2026			
Inv	1203			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/15/2026	Misc Int Fee	10-010-622015	8.41	
07/15/2026	City Hall Supplies	60-600-620010	73.02	
07/15/2026	City Hall Supplies	30-300-620010	73.01	
07/15/2026	Jerry Cole OMA Conf.	10-010-621017	525.00	
07/15/2026	City Hall Improve. - Blind	81-810-630100	264.40	
07/15/2026	City Hall Supplies	40-400-620010	73.02	
07/15/2026	Meeting Exp	10-010-622010	40.20	
07/15/2026	Intuit- REDCO	10-010-622015	38.00	
Inv 1203 Total				1,095.06
15958 Total:				1,095.06
15959	07/29/2026			
Inv	1070			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/15/2026	Interst Fee	10-010-622015	2.93	
07/15/2026	WWTP R&M	30-300-622504	122.52	
07/15/2026	Park & Plaza R&M	10-090-622504	121.45	
07/15/2026	McConnell WTP Operator 2 Cert. Program	40-400-620017	108.00	
Inv 1070 Total				354.90
15959 Total:				354.90
15960	07/29/2026			
Inv	0494			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/15/2026	PD- Supplies	10-100-620010	232.49	
Inv 0494 Total				232.49
15960 Total:				232.49
16035	08/26/2026			
Inv	1203			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/15/2026	Supplies	60-600-620010	30.21	
08/15/2026	REDCO- Intuit	10-010-622015	38.00	
08/15/2026	City Hall Supplies	10-020-620010	297.10	
08/15/2026	Vehicle R&M	40-400-622505	65.00	
08/15/2026	Zoom Subscription	10-010-622010	159.90	
08/15/2026	Admin Misc	10-070-622015	11.00	
08/15/2026	Supplies	30-300-620010	30.22	
08/15/2026	Vehicle R&M	30-300-622505	65.00	
08/15/2026	Supplies	40-400-620010	30.22	
08/15/2026	Vehicle R&M	60-600-622505	65.00	
08/15/2026	Admin Supplies	10-070-620010	48.65	

Check Number	Check Date		Amount
Inv 1203 Total			840.30
16035 Total:			840.30
16036	08/26/2026		
Inv 0494			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/15/2026	PD Supplies	10-100-620010	922.25
08/15/2026	Uniform Gear	10-100-621018	16.99
Inv 0494 Total			939.24
Inv 1070			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/15/2026	Senior Center	10-020-630300	37.76
Inv 1070 Total			37.76
16036 Total:			977.00
3545 - InRoads Credit Union Total:			3,499.75
3577 - Wasco County Landfill, Inc. Line Item Account			
16052	08/26/2026		
Inv 30453B042			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/15/2026	Bio Solids	30-300-622502	1,385.36
Inv 30453B042 Total			1,385.36
16052 Total:			1,385.36
3577 - Wasco County Landfill, Inc. Total:			1,385.36
3644 - More Power Computers, Inc. Line Item Account			
15999	08/12/2026		
Inv 18561			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/30/2026	City Hall Switch (admin office)	10-010-622510	154.00
07/30/2026	City Hall Switch (admin office)	10-050-622510	150.00
07/30/2026	City Hall Switch (admin office)	60-600-622510	150.00
07/30/2026	City Hall Switch (admin office)	40-400-622510	150.00
07/30/2026	City Hall Switch (admin office)	30-300-622510	150.00
Inv 18561 Total			754.00
Inv 18575			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	

Check Number	Check Date		Amount
08/01/2026	IT Monthly Agreement	50-500-622510	236.58
08/01/2026	IT Monthly Agreement	10-050-622510	473.16
08/01/2026	IT Monthly Agreement	10-010-622510	202.76
08/01/2026	IT Monthly Agreement	30-300-622510	574.55
08/01/2026	IT Monthly Agreement	10-100-622510	871.53
08/01/2026	IT Monthly Agreement	60-600-622510	574.55
08/01/2026	IT Monthly Agreement	40-400-622510	566.55
Inv 18575 Total			3,499.68
Inv 18576			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/03/2026	City Hall Switch (admin office)	10-050-622510	20.71
08/03/2026	City Hall Switch (admin office)	50-500-622510	63.54
08/03/2026	City Hall Switch (admin office)	40-400-622510	63.54
08/03/2026	City Hall Switch (admin office)	10-010-622510	51.22
08/03/2026	City Hall Switch (admin office)	60-600-622510	63.54
08/03/2026	City Hall Switch (admin office)	30-300-622510	59.54
08/03/2026	City Hall Switch (admin office)	10-100-622510	119.71
Inv 18576 Total			441.80
Inv 18577			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/03/2026	Monthly Backup	30-300-622510	6.50
08/03/2026	Monthly Backup	10-010-622510	6.50
08/03/2026	Monthly Backup	40-400-622510	6.50
08/03/2026	Monthly Backup	60-600-622510	6.50
08/03/2026	Monthly Backup	10-100-622510	6.50
08/03/2026	Monthly Backup	10-050-622510	6.50
Inv 18577 Total			39.00
15999 Total:			4,734.48
16041 08/26/2026			
Inv 18616			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/14/2026	IT Support	10-010-630128	131.25
08/14/2026	IT Support	60-600-630128	131.25
08/14/2026	IT Support	40-400-630128	131.25
08/14/2026	IT Support	30-300-630128	131.25
Inv 18616 Total			525.00
16041 Total:			525.00
3644 - More Power Computers, Inc. Total:			5,259.48
3647 - Language Line Services, Inc. Line Item Account			
15997	08/12/2026		

Check Number	Check Date			Amount
Inv	11995588			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/31/2026	Translation Services	10-080-621005		11.27
Inv 11995588 Total				11.27
15997 Total:				11.27
3647 - Language Line Services, Inc. Total:				11.27
3664 - SAIF Line Item Account				
16045	08/26/2026			
Inv	1002309974			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/01/2026	Workers Comp	10-090-615002		223.37
08/01/2026	Workers Comp	10-080-615002		223.37
08/01/2026	Workers Comp	10-030-615002		223.37
08/01/2026	Workers Comp	30-300-615002		3,350.66
08/01/2026	Workers Comp	60-600-615002		2,233.82
08/01/2026	Workers Comp	10-010-615002		223.37
08/01/2026	Workers Comp	40-400-615002		3,350.67
08/01/2026	Workers Comp	10-070-615002		223.37
08/01/2026	Workers Comp	10-100-615002		12,285.77
Inv 1002309974 Total				22,337.77
16045 Total:				22,337.77
3664 - SAIF Total:				22,337.77
3669 - Comcast Business Line Item Account				
15985	08/12/2026			
Inv	279509292			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/12/2026	Phones	10-050-620014		44.00
08/12/2026	Phones	10-070-620014		45.56
08/12/2026	Phones	30-300-620014		61.00
08/12/2026	Phones	10-100-620014		127.96
08/12/2026	Phones	40-400-620014		61.00
08/12/2026	Phones	60-600-620014		61.00
08/12/2026	Phones	10-080-621005		53.24
Inv 279509292 Total				453.76
15985 Total:				453.76
3669 - Comcast Business Total:				453.76
378 - Nelson, Sloan Line Item Account				

Check Number	Check Date		Amount
15965	07/29/2026		
Inv	REFUND		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/28/2026	Refund unused hydrant meter deposit	40-400-615000	684.06
Inv REFUND Total			684.06
15965 Total:			684.06
378 - Nelson, Sloan Total:			684.06
3799 - KLTV Line Item Account			
15996	08/12/2026		
Inv	491		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/04/2026	April-June Council Meetings	10-010-622010	513.00
Inv 491 Total			513.00
15996 Total:			513.00
3799 - KLTV Total:			513.00
3800 - Central Welding Supply Co Inc Line Item Account			
15951	07/29/2026		
Inv	0002749974		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/15/2026	Water R&M	40-400-622504	41.20
Inv 0002749974 Total			41.20
15951 Total:			41.20
15981	08/12/2026		
Inv	2757951		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/28/2026	Marina	10-095-622506	96.69
Inv 2757951 Total			96.69
15981 Total:			96.69
3800 - Central Welding Supply Co Inc Total:			137.89
3822 - Pointe Pest Control -OR LLC Line Item Account			
15968	07/29/2026		

Check Number	Check Date		Amount
Inv	4586118		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/18/2026	WWTP Contracted Services	30-300-620205	120.00
Inv 4586118 Total			120.00
15968 Total:			120.00
3822 - Pointe Pest Control -OR LLC Total:			120.00
3829 - Urling, Alexander W, Urling (Skip) Line Item Account			
15971	07/29/2026		
Inv	67		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/06/2026	Planner- June	10-030-621006	313.44
Inv 67 Total			313.44
15971 Total:			313.44
16018	08/12/2026		
Inv	122		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/03/2026	Planner- July	10-030-621006	218.75
Inv 122 Total			218.75
16018 Total:			218.75
3829 - Urling, Alexander W, Urling (Skip) Total:			532.19
3831 - First Citizens Bank & Trust Co. (CiT) Line Item Account			
15956	07/29/2026		
Inv	49481488		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/14/2026	Copier Lease	10-100-620021	125.00
Inv 49481488 Total			125.00
15956 Total:			125.00
16033	08/26/2026		
Inv	49648859		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/14/2026	Copier Lease - P.D.	10-100-620021	125.00
Inv 49648859 Total			125.00

Check Number	Check Date	Amount
16033 Total:		125.00
3831 - First Citizens Bank & Trust Co. (CiT) Total:		250.00
3835 - Solutions YES LLC Line Item Account		
15970	07/29/2026	
Inv 496733		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>
07/27/2026	PD Copier Lease	10-100-620021
		44.34
Inv 496733 Total		44.34
15970 Total:		44.34
16046	08/26/2026	
Inv INV496733		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>
07/27/2026	PD Copier	10-100-620021
		44.34
Inv INV496733 Total		44.34
16046 Total:		44.34
3835 - Solutions YES LLC Total:		88.68
3855 - Clatskanie Builders Supply Line Item Account		
15982	08/12/2026	
Inv #7301		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>
07/31/2026	Marina	10-095-622506
		372.24
Inv #7301 Total		372.24
15982 Total:		372.24
3855 - Clatskanie Builders Supply Total:		372.24
3870 - Groat Bros., Inc. Line Item Account		
16034	08/26/2026	
Inv 47440		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>
08/14/2026	Bio Solids to Wasco	30-300-622502
		1,500.00
Inv 47440 Total		1,500.00

Check Number	Check Date	Amount
16034 Total:		1,500.00
3870 - Groat Bros., Inc. Total:		1,500.00
3877 - Titan Tree Care LLC Line Item Account		
16016	08/12/2026	
Inv		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>
07/28/2026	Tree Removal 29770 Old Rainier Rd	60-600-622504
		2,000.00
Inv Total		2,000.00
16016 Total:		2,000.00
3877 - Titan Tree Care LLC Total:		2,000.00
3912 - Delta Operations/The Automation Group INC Line Item Account		
15989	08/12/2026	
Inv C002897		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>
07/01/2026	WTP Prof. Services- June	40-400-620201
		2,675.78
Inv C002897 Total		2,675.78
Inv C002944		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>
08/01/2026	WTP Prof. Services- July	40-400-620201
		2,675.78
Inv C002944 Total		2,675.78
15989 Total:		5,351.56
3912 - Delta Operations/The Automation Group INC Total:		5,351.56
3915 - Koch Management Services LLC Line Item Account		
15964	07/29/2026	
Inv 1183		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>
07/25/2026	July WWTP Management	30-300-620201
		3,750.00
Inv 1183 Total		3,750.00
15964 Total:		3,750.00
16038	08/26/2026	

Check Number	Check Date		Amount
Inv 1188			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/25/2026	August WWTP Management	30-300-620201	3,750.00
Inv 1188 Total			3,750.00
16038 Total:			3,750.00
3915 - Koch Management Services LLC Total:			7,500.00
3922 - Cimco-GC Systems, LLC Line Item Account			
16026	08/26/2026		
Inv 6750			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/31/2026	Maint & Rebuild of Valves	84-840-633045	5,727.00
Inv 6750 Total			5,727.00
16026 Total:			5,727.00
3922 - Cimco-GC Systems, LLC Total:			5,727.00
3925 - Phillips, John Line Item Account			
16043	08/26/2026		
Inv COURT			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/14/2026	Restitution 24-N-006542,006543	10-080-621005	150.00
Inv COURT Total			150.00
16043 Total:			150.00
3925 - Phillips, John Total:			150.00
3939 - TransUnion Risk & Alternative, Data Solutions, Inc. Line Item Account			
16048	08/26/2026		
Inv 373430-202607.1			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/20/2026	PD Supplies	10-100-620010	100.00
Inv 373430-202607.1 Total			100.00
16048 Total:			100.00
3939 - TransUnion Risk & Alternative, Data Solutions, Inc. Total:			100.00

Check Number	Check Date		Amount
3944 - Jeffrey W. Norgren Line Item Account			
15962	07/29/2026		
Inv	26-0157		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/24/2026	Annual Fire Extinguisher Inspections	30-300-622504	203.25
07/24/2026	Annual Fire Extinguisher Inspections	10-020-622504	203.25
07/24/2026	Annual Fire Extinguisher Inspections	40-400-622504	203.25
07/24/2026	Annual Fire Extinguisher Inspections	60-600-622504	203.25
Inv 26-0157 Total			813.00
15962 Total:			813.00
3944 - Jeffrey W. Norgren Total:			813.00
3978 - kelley Create Co Line Item Account			
15963	07/29/2026		
Inv	2380111		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/14/2026	Admin Copier	10-010-620101	159.46
Inv 2380111 Total			159.46
15963 Total:			159.46
16037	08/26/2026		
Inv	IN2411693		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/14/2026	Admin Copier	10-010-620201	208.80
Inv IN2411693 Total			208.80
16037 Total:			208.80
3978 - kelley Create Co Total:			368.26
3983 - Iron Horse LLC Line Item Account			
15961	07/29/2026		
Inv	2628*01		
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
04/22/2026	Collection System Rehab Project	83-830-638027	33,620.00
Inv 2628*01 Total			33,620.00
15961 Total:			33,620.00
3983 - Iron Horse LLC Total:			33,620.00

Check Number	Check Date			Amount
3985 - FLASH ALERT, irx, LLC Line Item Account				
15991	08/12/2026			
Inv	5649			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/01/2026	Subscription	10-010-622020		175.00
Inv 5649 Total				175.00
15991 Total:				175.00
3985 - FLASH ALERT, irx, LLC Total:				175.00
3994 - Consolidated Supply Co Line Item Account				
15986	08/12/2026			
Inv	S013016041.0001			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/29/2026	Water R&M	40-400-622504		2,434.66
Inv S013016041.0001 Total				2,434.66
15986 Total:				2,434.66
3994 - Consolidated Supply Co Total:				2,434.66
3998 - Primo/Blue Triton Brands, Inc Line Item Account				
16011	08/12/2026			
Inv	104549			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/04/2026	Supplies	10-050-620010		24.97
08/04/2026	Supplies	40-400-620010		24.98
08/04/2026	Supplies	60-600-620010		24.98
08/04/2026	Supplies	10-100-620010		24.98
08/04/2026	Supplies	30-300-620010		24.97
Inv 104549 Total				124.88
Inv	104881			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/04/2026	Water Cooler	10-050-620010		8.98
Inv 104881 Total				8.98
16011 Total:				133.86
3998 - Primo/Blue Triton Brands, Inc Total:				133.86
3999 - PNW Custom Chassis, LLC Line Item Account				

Check Number	Check Date		Amount
16009	08/12/2026		
Inv 2495			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/30/2026	Marina	10-095-622506	1,269.12
Inv 2495 Total			1,269.12
16009 Total:			1,269.12
3999 - PNW Custom Chassis, LLC Total:			1,269.12
4008 - American Leak Detection Line Item Account			
15980	08/12/2026		
Inv 00623649			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/29/2026	Water R&M	40-400-622504	745.00
Inv 00623649 Total			745.00
15980 Total:			745.00
4008 - American Leak Detection Total:			745.00
4009 - 2nd Mouse Studio Line Item Account			
15978	08/12/2026		
Inv			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/10/2026	Quilt Frame	10-010-622015	350.00
Inv Total			350.00
15978 Total:			350.00
4009 - 2nd Mouse Studio Total:			350.00
4010 - Hancock, Susie Line Item Account			
15993	08/12/2026		
Inv REFUND			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/16/2026	Refund - overpayment	10-010-622015	10.00
Inv REFUND Total			10.00
15993 Total:			10.00
4010 - Hancock, Susie Total:			10.00

Check Number	Check Date	Amount		
581 - Home Depot Credit Services Line Item Account				
15994	08/12/2026			
Inv	July			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/08/2026	Sr Center Toilet Seats	10-020-630300	64.88	
07/08/2026	Water R&M	40-400-622504	124.45	
Inv July Total			189.33	
15994 Total:			189.33	
581 - Home Depot Credit Services Total:			189.33	
605 - Points S Tire Factory Line Item Account				
16010	08/12/2026			
Inv	1082296			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/31/2026	PD Car Expense	10-100-620011	718.97	
Inv 1082296 Total			718.97	
16010 Total:			718.97	
605 - Points S Tire Factory Total:			718.97	
643 - Vilardi Electric, Inc Line Item Account				
15975	07/29/2026			
Inv	10045			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/14/2026	R&M	40-400-622504	250.00	
Inv 10045 Total			250.00	
15975 Total:			250.00	
643 - Vilardi Electric, Inc Total:			250.00	
673 - Cintas Corporation Line Item Account				
16027	08/26/2026			
Inv	JULY			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/31/2026	City Hall Rugs	10-090-620010	109.99	
Inv JULY Total			109.99	
16027 Total:			109.99	

Check Number	Check Date	Amount		
673 - Cintas Corporation Total:		109.99		
978 - Bud Clary Ford Hyundai Line Item Account				
16024	08/26/2026			
Inv	96055404/1			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/14/2026	Maverick Repairs (DEF in tank)	30-300-622505	1,416.28	
08/14/2026	Maverick Repairs (DEF in tank)	40-400-622505	1,416.28	
08/14/2026	Maverick Repairs (DEF in tank)	60-600-622505	1,416.29	
Inv 96055404/1 Total		4,248.85		
16024 Total:		4,248.85		
978 - Bud Clary Ford Hyundai Total:		4,248.85		
985 - AFLAC Line Item Account 10-000-350020				
15945	07/30/2026			
Inv				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/24/2026	PR Batch 00001.07.2026 AFLAC	10-000-350020	197.53	
Inv Total		197.53		
15945 Total:		197.53		
16057	08/28/2026			
Inv				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
08/26/2026	PR Batch 00001.08.2026 AFLAC	10-000-350020	197.53	
Inv Total		197.53		
16057 Total:		197.53		
985 - AFLAC Total:		395.06		
995 - Teamsters Local No. 58 Line Item Account 10-000-350005				
15949	07/30/2026			
Inv				
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>		
07/24/2026	PR Batch 00001.07.2026 Dues	10-000-350005	892.00	
Inv Total		892.00		
15949 Total:		892.00		

Check Number	Check Date		Amount
16061	08/28/2026		
Inv			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/26/2026	PR Batch 00001.08.2026 Dues	10-000-350005	878.00
Inv Total			878.00
16061 Total:			878.00
995 - Teamsters Local No. 58 Total:			1,770.00
996 - Oregon Department of Revenue Line Item Account			
16002	08/12/2026		
Inv COURT			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/12/2026	July 2026	10-080-621005	1,122.25
Inv COURT Total			1,122.25
16002 Total:			1,122.25
996 - Oregon Department of Revenue Total:			1,122.25
ORSGP - Oregon Savings Growth Plan Line Item Account			
15947	07/30/2026		
Inv			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
07/24/2026	PR Batch 00001.07.2026 Oregon Growth Savings Plan	10-000-350018	800.00
07/24/2026	PR Batch 00001.07.2026 After Tax Oregon Savings Growt	10-000-350018	25.00
Inv Total			825.00
15947 Total:			825.00
16059	08/28/2026		
Inv			
<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
08/26/2026	PR Batch 00001.08.2026 After Tax Oregon Savings Growt	10-000-350018	25.00
08/26/2026	PR Batch 00001.08.2026 Oregon Growth Savings Plan	10-000-350018	800.00
Inv Total			825.00
16059 Total:			825.00
ORSGP - Oregon Savings Growth Plan Total:			1,650.00

UB*00080 - CARPENTER, PATRICIA Line Item Account

16025	08/26/2026			
	Inv			
	<u>Line Item Date</u>	<u>Line Item Description</u>	<u>Line Item Account</u>	
	08/19/2026	Refund Check 001923-000, 415 WEST D ST	40-000-200000	303.67
	Inv Total			303.67
16025 Total:				303.67
UB*00080 - CARPENTER, PATRICIA Total:				303.67
Total:				552,214.39

TABLE OF CONTENTS

I.	INTRODUCTION.....	1
	A. Statement of Purpose	1
	B. Guiding Principals	1
	C. Management Direction.....	3
	D. Resource Assessment.....	3
II.	PROPERTY DESCRIPTION.....	4
III.	EXISTING CONDITIONS	6
	A. Riparian Management Areas.....	7
	B. Stand Descriptions	8
	C. Threatened and Endangered Species Regulations.....	21
IV.	FOREST ACTION PLAN.....	22
	A. Harvest Units	23
	B. Stand Improvement Projects	24
V.	ROAD PLAN.....	25
VI.	FIRE PROTECTION PLAN	27
VII.	RULES FOR WATERSHED ACTIVITIES.....	28
VIII.	MANAGEMENT ACTIVITY SCHEDULE	31
IX.	MANAGEMENT REVENUE AND EXPENSE SCHEDULE.....	32
X.	GLOSSARY.....	33
APPENDICES		
	A. Original Forest Inventory Reports	

2

(

C

I. INTRODUCTION

In December 1995 Pacific Forest Consultants, Inc. (PFC) produced a forest resource management plan for the City of Rainier's (CR) municipal watershed. This 1995 plan presented three alternative forest management action plans. CR has implemented a combination of the original alternatives that emphasizes water quality, biodiversity, and variations in forest structure. In addition this approach has met harvest volume and revenue targets significantly enhancing CR's ability to service the needs of the citizens of the City of Rainier.

The current management plan presented in this document is in some respects an update of the 1995 in that it contains all of the elements of the forest action plan for the next four year period, i.e. 2003 through 2006. This plan also summarizes the last seven years of forest management activity, and presents a new forest map.

A. Statement of Purpose

The purpose of the City of Rainier's municipal watershed is to provide a high quality water source for the citizens of Rainier while providing opportunities for periodic income and timber stand improvement.

B. Guiding Principles

1. In order to provide regular oversight of all forestry activities within the watershed the City Council will be responsible for review of all activities within said watershed.

2. Timber harvest shall be the minimum necessary to meet the demonstrated capital and forest improvement needs of the City.

3. Timber harvest within the watershed shall strive to adhere to a sustained yield philosophy of harvesting less than the projected annual growth of timber on the overall watershed area.

4. City staff will work closely with adjoining landowners to limit access to and disturbance of the watershed. Occasionally, and where economically feasible, the City may acquire additional property within the watershed through purchase or trade.

5. Based on information and advice from staff, and citizen input, the City Council will revise and update the Watershed Management Plan, policies and procedures to reflect scientific and technical developments. This review should be completed at least once every four years.

6. The City may monitor the effects of forestry activities on water quality (to include, as a minimum, temperature and turbidity) and flow in the watershed. Monitoring should be conducted throughout the year and results should be provided to the Council and the public upon request.

7. All logging, road building, reforestation, and thinning activities in the watershed will exceed the minimum standards established by the state and federal governments for watersheds at the time of such activities. Any such activity will not proceed until a detailed plan of action, including riparian setbacks and all measures that will be taken to assure such compliance, has been submitted to Council for approval.

8. All work in the watershed will be done during dry periods, whenever possible, to minimize the impact of such work, except when market conditions for targeted areas dictate a wet weather show and the City approves the activity.

9. Road building will be limited to the minimum necessary for fire suppression and planned timber harvest. Whenever possible, timber harvests will be planned to take advantage of existing roads.

10. All human access to the watershed will be controlled to minimize disturbances and risks of fire. No smoking will be allowed in the watershed.

11. All fuels and potential hazardous chemicals to the water supply shall be stored in areas not drained by the watershed.

12. No healthy trees older than 150 years shall be removed unless absolutely necessary.

13. All activities will be supervised to ensure compliance with these principles, the Watershed Management Plan, Implementing Instructions and state and federal law. When able, the City of Rainier may actively participate in state and federal programs designed to improve the health of forestland and restore its ability to maintain a diverse and stable ecosystem.

C. Management Direction

The City of Rainier provided direction for development of a forest resource management plan for their municipal watershed which would protect water quality and address forest management activities for the next four year period, recognizing the timber resources as a single component of the entire forest ecosystem.

The management goals indicated by the City include;

1. An analysis of potential income based on a sustained yield,
2. The desire to manage the forest resources under a program to improve the resource and maintain and improve forest health, and
3. The need to improve access and road maintenance throughout the ownership for management and fire protection, while
4. Ensuring that water quality is not compromised.

D. Resource Assessment

During the fall of 1995 Pacific Forest Consultants, Inc. conducted a forest resource inventory to collect information regarding timber species composition, size, age, quality, stocking level, growing capacity and volume on the CR's ownership. The timber inventory results by stand are included as *Appendix A - Original Forest Inventory Reports*. The information provides direction toward stand improvement, silvicultural opportunities, transportation requirements and harvest equipment requirements. During the development of the 1995 plan PFC personnel, to facilitate management activities and improve fire protection capabilities, developed a transportation system and road maintenance plan.

There has not been any new inventory data collected since 1995. Rather the initial timber inventory has been edited to approximate conditions as of January 1, 2003. Timber volumes have been depleted to reflect timber harvests. Thinned and unharvested stands have been "grown" using a growth and yield model based upon *Washington Department of Natural Resource report #41, Empirical Growth and Yield Tables for the Douglas-fir Zone, Charles J. Chambers, 1989.*

The updated forest inventory is presented in Table 3, Stand Inventory Summary, on pages 11 and 12.

C

C

C

II. PROPERTY DESCRIPTION

The City of Rainier's municipal watershed is located approximately 1 mile south of the city of Rainier, entirely in Columbia County, Oregon. The County Assessor's office identifies 1,437 acres within the ownership. Table 1, below summarizes the ownership by section and tax lot. Neer Road a paved County Road runs along and through portions of the Eastern area of the Watershed. There are two major transmission lines that run through southern portions, and Fox Creek, the source of the City's water runs through the middle of the watershed. The map on the following page, Exhibit 1 – Topography of the Watershed, show the property boundary and the physical features of the watershed.

TABLE 1
Tax Lots and Acreage of the Watershed
Township 7 North, Range 2 West

Section	Tax Assessor's Map Number	Tax Lot Number	Acreage
21	7221	200	10.00
		300	230.40
	7221A	300	2.14
27	7227	500	118.65
28	7228	100	520.00
33	7233	100	243.71
34	7234	400	2.59
		500	309.39
Total			1,436.88



III. EXISTING CONDITIONS

The watershed consists of nearly all of the Fox Creek drainage, including several of its minor tributaries, many of which are merely seasonal drainages. There is also a small dam on Fox Creek which supports a reservoir that is approximately one acre in size.

The riparian and adjacent areas tend to be occupied by mixtures of hardwoods and conifers and the upland areas tend to be dominated by conifer. The primary species of trees found within the watershed consist of Douglas-fir (*Pseudotsuga menziesii*), western hemlock (*Tsuga heterophylla*), grand fir (*Abies grandis*), western red cedar (*Thuja plicata*), red alder (*Alnus rubra*), bigleaf maple (*Acer macrophyllum*), and black cottonwood (*Populus trichocarpa*).

Concentrations of mature conifer and hardwoods are scattered throughout the watershed, however, Douglas-fir plantations ranging in age from 2 to 25 years and greater are the dominant forest type. These plantations are in generally good condition and require only periodic entries for spraying, thinning or interplanting. Mature conifer and hardwood timber are located in stands throughout the watershed.

Forest Health in the watershed is excellent. One of the major concerns in commercial forest areas to the west of the watershed is Swiss needle cast. Current understanding of Swiss needle cast is limited but the scientific consensus indicated this area of Columbia County will not be significantly affected. There are several stands requiring some type of treatment to enhance growth and productivity, but by and large, the forested areas of the watershed are growing rapidly and are sure to continue their development, into healthy and valuable timber.

The terrain throughout the majority of the ownership consists of moderate drainages and ridges with mild to moderate side slopes and presents no unusual obstacles for forest management activities. There are a few steep slopes, mostly in the northern portions of the watershed that require care to avoid soil erosion. In terms of logging systems, approximately 25% of the forested area requires at least partial suspension cable yarding, with the remainder suitable for ground based yarding equipment in dry weather.

The road system within the ownership will continue to be upgraded through construction of new roads and reconstruction of old roads to improve access and facilitate resource protection. Continued maintenance of the existing rock roads has been a focus of management activities. The old road grades and spur roads within harvested units also require maintenance and improvement to minimize their affect on water quality and to retain their integrity. The Road Plan beginning on page 25 addresses these concerns.



A. Riparian Management Areas

While many of the drainages requiring protection have been identified on the maps and in the stand descriptions there may be additional drainages that will be identified at the time activities are undertaken. Irregardless of whether, all water sources within the ownership will be treated as domestic water sources with regard to management activities. The riparian management area (RMA) width regulations, were used as a minimum for delineating streamside protection zones within the watershed. The state is still in the process of classifying streams within the watershed. For stand acreages used in this management plan, widths of 50 feet were used for small type F streams. The state of Oregon has classified Fox creek a small type F stream from the north property line to a point 600 feet south of the fork in the stream which is itself south of the reservoir. Above this point, that is to say south of this point, Fox creek is currently unsurveyed and therefore not classed. A request to have this portion of the creek classified by the state is pending. The protection zones may be increased in some instances, due to management considerations, terrain, etc., but in all cases the minimum will be established using the State regulations. The RMAs mapped comprise approximately 10.3 acres under conformance to the current Oregon Forest Practices regulations, and contain approximately 125 MBF.

C

C

C

B. Stand Descriptions

A map identifying the timber stands is found on page 10. The table below summarizes the watershed's current condition in comparison to the 1996 condition as addressed in the December 1995 management plan. This distribution of acres with their associated timber volumes in thousand board feet (MBF) by age class shows the dynamic nature of the watershed, i.e. although several million feet of timber have been harvested since 1996 the current timber volume is approximately 1.5 million feet greater than the January 1996 volume.

TABLE 2

Seven Year Comparison of Timber Age Classes

Age Class	January 1996		January 2003	
	Acres	MBF	Acres	MBF
0 to 5	12.5	-	143.5	-
6 to 10	130.2	-	29.3	-
11 to 15	245.9	-	130.5	-
15 to 20	135.7	85.4	206.5	-
21 to 25	229.5	1,273.7	188.0	554.7
26 to 30	-	-	198.2	1,892.4
31 to 35	61.7	757.2	20.6	331.5
36 to 40	64.2	949.5	61.7	1,223.8
41 to 50	302.7	4,068.6	171.0	3,525.2
51 and older	161.9	2,669.1	192.4	3,811.7
Totals	1,344.3	9,803.5	1,341.7	11,339.3

The stands from the December 1995 plan were created through delineation of homogeneous populations within the ownership, with the boundaries identified on aerial photography. For the current management plan these stands have been edited to reflect timber harvests and other differentiating management activity. While the stands represent independent units within the ownership, boundaries of harvest units may include portions of more than a single stand, simply because the silvicultural alternatives are applicable for all of the stands included within the harvest unit, or due to topographic considerations.

The silvicultural alternatives developed for each stand are predicated upon stand age, growth rate, stocking levels, and species composition. Well stocked, younger stands may benefit from a precommercial or commercial thinning by redistributing growth thus providing more growing space for the remaining trees. This alternative may not be suitable for older, poorly stocked stands with a significantly lower growth rate.

The growth rates for the stands are dependent upon the stocking levels, stand age and the 50 year site index. The 50 year site index is a function of tree age and height growth. The numbers

C

C

C

shown in Table 3 under 50-year site index represent approximate tree height at age 50 years. The periodic growth rate, used as a percentage for this report, represents seven-year growth increments (January 1996 through January 2003). Those stands exhibiting less than 4% annual growth were targeted first under the traditional forestry alternative for conversion to younger, faster growing stands.

The logging system requirements were developed during the field data collection of the timber inventory. The logging system selected for any stand was dependent upon potential access and topography, even though several stands may be included in a harvest unit.

A summary of the timber stand inventory information is shown on Table 3 on pages 11 and 12. This table shows the stand acres, approximate age, the 50 year site index (which is a measure of the growing potential), the number of stems per acre by species, net volume per acre by species in thousand board feet (MBF), the estimated periodic annual increment (P.A.I.), represented as an annual growth rate, the stand structure designation, logging system requirements, and potential silvicultural alternatives. The abbreviations under Silvicultural Alternatives are: PCT - precommercial thinning; CT - commercial thinning; CC - clearcut; PC - partial cut, i.e. shelterwood, seed tree.

C

O

C

DELOREME

© 2001 Delorme, Topo USA® 3.0

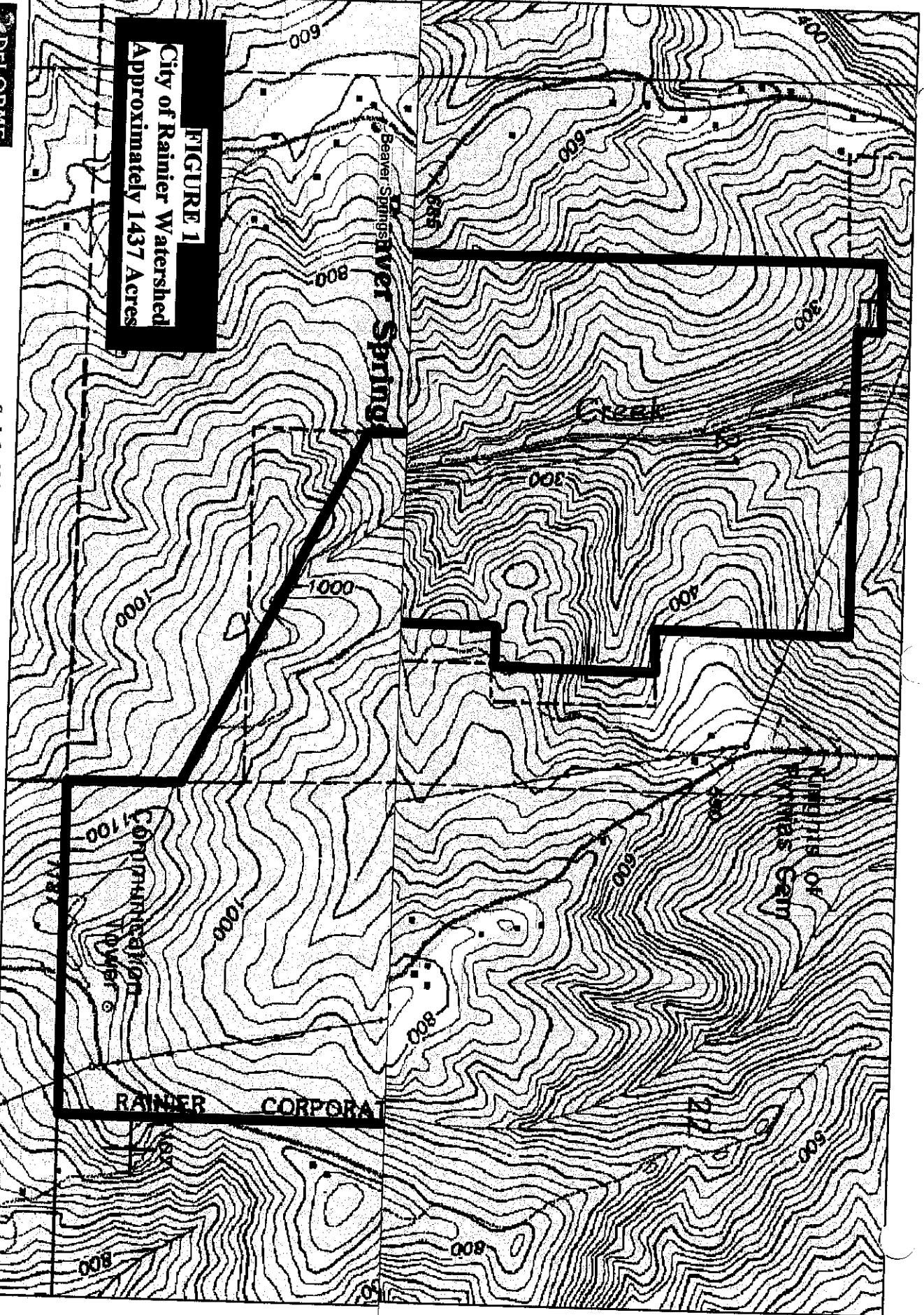
Zoom Level: 13-3 Datum: WGS84

Scale 1 : 12,000

1" = 1,000.00 ft



FIGURE 1
City of Rainier Watershed
Approximately 1437 Acres



C

O

C

TABLE 3

City of Rainier Watershed - Forest Inventory Summary

Stand Number	Acres	Year of Origin	Site Index	Trees per Acre	Major Species	PAI SV6	January 2003 Projected Net Volume (MBF) per Acre							Net MBF Total
							DF	WH	Cedar	Alder	Maple	OH	Total	
1	25.7	1942	120	145	Maple	3.8	1.0	0.8	1.4	3.8	7.4	-	14.3	368.7
2	9.4	1959	137	227	DF	6.4	27.8	-	1.1	1.5	1.1	-	31.5	296.2
3	3	1996	137	350	DF	-	-	-	-	-	-	-	-	-
4	58.7	1985	130	450	DF	-	-	-	-	-	-	-	-	-
5	35.1	1959	137	143	MH	6.7	3.9	1.2	5.7	3.6	7.4	0.6	22.5	788.1
6	47.1	1950	141	134	DF	4.6	10.5	0.9	1.9	3.8	3.1	0.8	21.0	987.9
7	106.8	1954	134	132	RA	5.8	4.1	0.7	2.7	8.8	2.4	-	18.6	1,990.5
8	18.8	1973	130	900	RA	-	-	-	-	-	-	-	-	-
9	53.5	1981	130	860	DF	-	-	-	-	-	-	-	-	-
10	83.1	1980	140	577	DF	12.0	1.2	-	-	0.1	-	-	1.3	108.4
11	20.6	1970	135	251	DF	13.0	14.1	0.6	-	0.5	0.9	-	16.1	331.5
12	50.4	1951	116	124	RA	5.3	3.7	0.7	2.4	10.9	2.5	-	20.2	1,017.2
13	8.6	1983	135	357	DF	-	-	-	-	-	-	-	-	-
14	3.4	1955	101	296	RA	5.9	2.6	-	-	49.6	-	-	52.2	177.4
15	61.7	1964	142	134	MC	8.9	5.7	5.7	4.5	3.7	0.2	-	19.8	1,223.8
16	8.6	1985	140	534	DF	-	-	-	-	-	-	-	-	-
17	10.6	1978	103	125	RA	11.5	3.4	0.2	3.0	7.2	1.3	-	15.0	159.4
18	16.7	1974	135	369	DF	17.0	18.1	-	0.2	0.5	0.4	-	19.2	320.3
19	10.3	1996	95	350	DF	-	-	-	-	-	-	-	-	-
20	113	1990	130	599	RA	-	-	-	-	-	-	-	-	-
21	43.9	1998	101	350	DF	-	-	-	-	-	-	-	-	-
22	96.8	1976	140	180	DF	15.0	8.0	0.1	-	0.2	-	-	8.3	800.8
23	2.1	1984	135	250	DF	-	-	-	-	-	-	-	-	-
24	16.3	1959	107	145	RA	3.5/6	1.7	4.0	4.6	4.7	1.8	-	16.7	273.0
25	6.9	NA	120	5	Brush	-	-	-	-	-	-	-	-	-
26	16.7	1983	140	428	DF	-	-	-	-	-	-	-	-	-
27	5.1	1944	146	66	DF	3.5	43.6	-	-	-	-	-	43.6	222.6
28	65.9	1972	135	150	DF	15.0	11.7	-	-	-	-	-	11.7	771.3
29	3.9	1981	130	373	RA	20.0	-	-	0.6	1.9	-	-	2.6	10.1
30	37.7	1982	146	438	DF	-	-	-	-	-	-	-	-	-
31	15.4	1987	135	813	RA	-	-	-	-	-	-	-	-	-
32	16.7	1982	135	374	DF	-	-	-	-	-	-	-	-	-
33	11.6	1978	135	428	DF	35.0	11.6	-	-	-	-	-	11.6	134.6

TABLE 3
City of Rainier Watershed - Forest Inventory Summary

Stand Number	Acres	Year of Origin	Site Index	Trees per Acre	Major Species	PAI SV6	January 2003 Projected Net Volume (MBF) per Acre							Net MBF Total
							DF	WH	Cedar	Alder	Maple	OH	Total	
34	21.4	1986	135	775	RA		-	-	-	-	-	-	-	-
35	16.7	1978	140	438	DF	32.3	6.7	-	1.2	0.6	-	-	8.5	142.2
36	12	1982	135	705	DF		-	-	-	-	-	-	-	-
37	50	1937	120	132	DF	3.3	6.3	0.1	1.2	10.8	-	-	18.4	920.7
38	19.3	1985	135	667	RA		-	-	-	-	-	-	-	-
39	8.6	1980	135	426	DF		-	-	-	-	-	-	-	-
40	4.7	1985	135	220	RA		-	-	-	-	-	-	-	-
41	14.1	1950	105	173	RA	4.9	6.4	-	0.6	13.2	0.7	-	20.9	294.6
42	2.1	1988	136	1000	RA									-
43	2.9	1996	140	250	DF									-
44	2.5	1997	140	400	DF									-
45	16.1	1996	120	300	DF									-
46	53.7	1999	120	350	DF									-
47	40.4	1998	124	350	DF									-
RMZ	10.3													
Roads	33.5													
NC & PL	44.5													
Totals	1436.9													11,339.2

C

C

C

CITY OF RAINIER WATERSHED

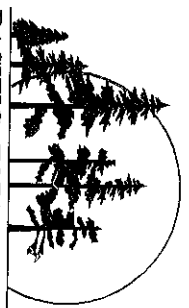
COLUMBIA COUNTY
TOWNSHIP 7 NORTH, RANGE 2 WEST
SECTIONS 21, 27, 28, 33, 34

SCALE: 1" = 1,000'

0 500' 1,000' 1,500' 2,000'

LEGEND

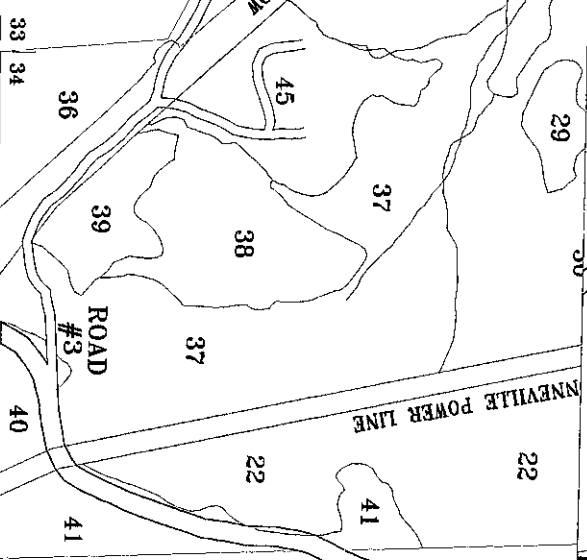
- 22 | 23 PROJECT BOUNDARY
- 27 | 26 SECTION CORNERS
- STREAMS, LAKES
- PAVED ROAD
- EXISTING ROCKED ROAD - DRIVABLE
- EXISTING ROCKED ROAD - NOT DRIVABLE
- ROAD TO BE RECONSTRUCTED BEFORE HARVEST
- PROPOSED NEW CONSTRUCTION
- TIMBER STAND & NUMBER
- NON COMMERCIAL



PACIFIC FOREST CONSULTANTS INC.

200 N. EDWARDS
NEWBERG OR. 97132
(503) 537-9300

4 | 3



Stand #1 - This stand consists of predominately medium stocked pulp and sawlog quality hardwoods with scattered conifer volume throughout. The average age of this stand is approximately 60 years. The conifer and maple timber growing in this stand exhibits a declining growth rate; therefore, there is no apparent silvicultural or economic benefit to a commercial thinning or partial cutting. A stand of this stocking and age will not readily redistribute growth as would a younger, evenly spaced stand. The recommended management practice is to clear-cut the stand and replant to begin to fully utilize the available growing space, leaving an appropriate buffer along Fox Creek, which is the eastern stand boundary. Cable yarding would be required in this stand because of the relatively steep terrain. Access would be provided by improving to haul road the skid road that runs up through stand # 4 and onto the top (west side) of stand # 1.

Stand #2 - This stand consists of medium to well stocked, 43 year old, small Douglas-fir sawtimber, growing at a relatively healthy rate. The majority of this stand could be commercially thinned now or in the near future to redistribute growth. The terrain in this stand is suitable for ground based yarding equipment. A secondary rocked road that comes off the main road and runs up through the stand would provide access.

Stand #3 - This stand was clear-cut in 1998 and planted to Douglas-fir. A stocking survey should be undertaken in 2003 to verify planting survival and plan for any required maintenance activity.

Stand #4 - This stand is an approximately 17-year-old Douglas-fir plantation that is over stocked with 300 trees per acre. The majority of these stems are Douglas-fir with a significant amount of Red Alder and Red Cedar. Brush competition has become less a factor as the trees have managed to overtop this brush. The brush will eventually be shaded out and die. This stand should be considered for precommercial thinning. When needed, opening up skid roads that come off the main road and run up through the stand would provide access.

Stand #5 - This is a very diverse, medium stocked stand of mixed conifer and hardwoods, with an average age of approximately 43 years. Overall, the growth rate has slowed and the stand is mature and ready for harvest any time. The conventional forestry practice would be to clear-cut the stand and replant to begin to fully utilize the available growing space, leaving a riparian buffer along Fox Creek which runs along the western stand boundary. However, it is feasible to partial cut or clear-cut small patches, or some combination thereof. The northern quarter of the stand may not be harvestable, or may require special attention due to several creeks and associated RMA's. The terrain is suitable for ground based logging systems in the majority of this stand. Access would be provided by opening up an old road grade that comes off the main road and runs through most of the stand.



Stand #6 - This stand consists of medium stocked mixed conifer and hardwoods with the majority of the volume being Douglas-fir, Alder and Maple. The conifer age varies from 35 to 70 years with the average between approximately 45 and 50. Overall, the growth rate has slowed and the stand is mature and ready for harvest at any time. The conventional forestry practice would be to clear-cut the stand and replant to begin to fully utilize the available growing space. However, it is feasible to partial cut or clear-cut small patches, or some combination thereof. The majority of the stand has terrain suitable for ground based logging systems. The extreme southern end, which contains a very nice patch of large, well stocked Douglas-fir will require a cable yarding system. Also, there is a small creek in that end that may require a buffer. Access would be provided by opening up an old skid road that comes off the main road and runs up through stand #5 and into #6. Some new road construction off of this system would be required.

Stand #7 - This stand consists of a medium stocked mixture of conifer and hardwoods, mainly Douglas-fir, Cedar, Alder and Maple. The conifer age varies from 35 to 70 years with the average between approximately 40 and 45. The majority of the timber in this stand is still growing at a relatively healthy rate. The stocking level and species composition does not warrant commercial thinning. The conventional forestry practice would be to clear-cut the stand and replant to begin to fully utilize the available growing space, leaving an appropriate buffer along Fox Creek which is the eastern stand boundary. However, it is feasible to partial cut or clear-cut small patches, or some combination thereof. A combination of ground based equipment and cable yarding would be required in this stand. Opening up several old skid roads that come off the main road and run up into the stand would provide access.

Stand #8 - This stand consists of an overstocked mixture of conifer and hardwoods, with red alder dominating by sheer numbers. The conifer age varies from 10 to 40 years with the average near 20. The alder is averaging over 600 stems per acre, thus negatively affecting stand health and productivity. Lack of access and steep slopes make thinning this type uneconomical at present. A conversion to Douglas-fir is tentatively scheduled in 2005 years, thus allowing the existing stems to reach pulp size for the hardwoods and small sawlog size for the conifer. Any harvest planning for this type should include coordinating harvests with stands #5 & 6. In this way the road development and logging costs could be much more cost effective.

Stand #9 - This stand consists of an overstocked Douglas-fir plantation of 400+ trees per acre and a mixture of alder, maple, cedar and brush. Total stems per acre are 800+ with an average conifer age of 17 years. Maple and brush are impeding Douglas-fir growth, however, spraying at this time will probably yield marginal results. Stand health is moderately good and the trees are still growing fairly well. In those areas fully stocked with Douglas-fir a precommercial thinning will be undertaken during the time frame of this management plan. In the areas not fully stocked with conifers, limited opportunities for re-clearing and replanting exist due to the steep slopes and limited access. These areas should be left to mature as best they can and harvested when ready. It would be possible to do some limited hand releasing and intermittent hand clearing and replanting.

C

C

C

Commercial thinning would probably not be feasible due to steep terrain. Cable yarding will be required for most of this unit when it matures.

Stand #10 - This stand consists of a fully stocked to overstocked Douglas-fir plantation approximately 15 years of age. There are also alder and maple stems scattered throughout and several small brush pockets. The hardwoods and brush do not appear to be greatly inhibiting the development of the conifer, therefore no treatment for brush control is needed. This stand is ready for an immediate precommercial thinning to set the stage for a commercial thinning in 10 years. The terrain is gentle enough to allow ground skidding or shovel logging methods throughout the unit. Access is currently possible by foot traffic only because of overgrowth along the road. The main access road is rocky and requires immediate treatment to preserve its integrity, improve road clearance and provide a fire protection buffer.

Stand #11 - This stand consists of a moderate to fully stocked stand of 32 year old Douglas-fir with a small component of hemlock, alder and maple. The trees are thrifty and are growing well enough to require a commercial thinning, which will redistribute growth, anytime in the next 5 to 10 years. Access is currently by an old road that runs along the south end of the type, which will require some reconstruction and side clearance at time of harvest. This road should then be maintained for its benefit as a fire protection buffer.

Stand #12 - This stand is composed of a widely varied mixture of hardwoods and conifers with an average age of approximately 40 years. The conifers appear in clumps and scattered pockets and generally are lower quality, domestic sawlogs. The alder is predominately sawlog quality and appears to be thriving in most areas. The conventional forestry practice would be to clear-cut the stand and replant with Douglas-fir to begin to fully utilize the available growing space. When planning harvests for this stand, consideration should be given to breaking up the stand into 2 or 3 smaller harvest units and spreading the operations over a 5 to 10 year period. Ground yarding equipment could be utilized for about half of this unit. The northern portion would require cable yarding. Access is currently limited and will require new construction from all directions, particularly the south.

Stand #13 - This stand consists of a fully stocked plantation of 17 year old Douglas-fir. A precommercial thinning during this plan's time frame should be considered. Ground based skidding would best suit this unit. Access is from the power line road to the west.

Stand #14 - This stand is a small, mostly alder type with a scattering of Douglas-fir. The average age of all species is 42 years. Alder is a mixture of pulp and sawlogs. A clear-cut harvest and replanting to Douglas-fir is recommended when market conditions warrant. Ground based yarding is preferable and access is from the powerline road to the east.

C

C

C

Stand #15 - This stand consists of a mature, mixed type composed of Douglas-fir, hemlock, cedar, alder and maple. The average age is approximately 38 years and overall stand health is good. Stocking levels vary widely across the unit, which is strung out along the west side of Fox creek. Ground based yarding equipment could be utilized in most areas and access is from the east requiring a bridge across Fox creek. There is also a road to the west through type #10, however, new road construction would be required in several locations to access type #15. Harvests in selected areas over several years would be desirable because of the clumpy nature of the timber. Fox creek will require substantial buffers to protect wetlands formed by beaver ponds in some areas.

Stand #16 - This stand consists of a fully stocked 17-year-old Douglas-fir plantation with scattered alder and brush pockets. The terrain is generally suitable to ground based equipment and access is from a rocked road to the west and north. A precommercial thinning will be needed during this plan's time frame.

Stand #17 - This stand consists of a poorly stocked mixed type composed of alder, Douglas-fir, cedar, hemlock and maple. The average age of all species is approximately 25 years and overall stand health is good. The terrain is moderate and will require careful planning to use ground based equipment. Access is limited and best available from the east and north. No treatment or activity is recommended for the next 5 year period. Future harvests could be scheduled along with harvests in stands #11 and #18.

Stand #18 - This stand consists of a fully stocked stand of 29 year old Douglas-fir reproduction. The southern portion of this unit has been precommercially thinned with excellent results. The terrain is favorable for ground based equipment and access is from the west via a rocked road. This road is in need of immediate maintenance to restore and maintain its integrity. This stand should be considered for a commercial thinning as soon as markets warrant.

Stand #19 - This stand was clear-cut in the summer of 1997 and planted to two-year-old Douglas-fir the following winter. Initial tree survival was excellent, but the stand is currently under heavy competition from brush species and should be sprayed in 2003.

Stand #20 - This stand consists of a large plantation of 12 year old Douglas-fir reproduction. The terrain is moderate to steep and favors cable yarding for over 70% of the area. Access is from a good quality rocked road on the west and a spur road from the north. These roads are in need of maintenance to insure their integrity. Brush and alder were treated by helicopter spraying a 2,4 D compound in the spring of 2002. The western portion of this stand should be monitored to ensure that competition does not adversely affect the plantation. Potentially the western portion of this stand may need a fall herbicide application to control brush species.



Stand #21 - This stand consists of a well stocked Douglas-fir plantation established with 2 year old seedlings in the Spring of 2000. This stand was originally a portion of Stand #7. A stocking survey should be performed in 2003 to ensure adequate survival in this stand. There are numerous maple sprouts that should be treated no later than 2004. The temporary road that was constructed as part of this harvest must be put to bed to minimize erosion.

Stand #22 - This stand consists of a fairly large, well stocked stand of 26 year old Douglas-fir. Overall stand health is very good. The terrain in this unit favors ground based logging systems and access is good from all sides. This unit was precommercially thinned in 1985 and commercially thinned in 1997 with excellent results. This is perhaps the premiere unit in the watershed, representing the full potential of high site ground to produce rapid, healthy regeneration of a Douglas-fir forest. A second commercial thinning should be considered for this stand in 4 or 5 years. If commercial thinning is not feasible at that time it should be considered annual for the next fifteen years of this stands development. Eventually this stand should be harvested to coincide with favorable market conditions.

Stand #23 - This stand consists of a small, healthy and fast growing Douglas-fir plantation, approximately 18 years of age. The unit is fully stocked and requires no treatment at this time. The terrain favors ground based yarding systems and access is from a paved road from the east.

Stand #24 - This stand consists of a mixture 43 year old alder with older conifer component (largely cedar) and older maple. The average age of the stand as a whole is closer to 65 years. Stocking levels in this unit are moderate at best, and overall stand health is fair to good. The terrain is moderate but could tolerate ground based yarding equipment. Access is from the west from a paved road. This unit could be scheduled for a harvest at any time when market conditions are favorable.

Stand #25 - This stand consists of brush with only a few scattered young conifers. The terrain favors ground based logging equipment and access is from a rocky road from the south. This stand should be cleared and planted with Douglas-fir seedlings as soon as it is practical to work with adjacent stands.

Stand #26 - This stand consists of an overstocked stand of 20-year-old Douglas-fir reproduction. Overall stand health is good. The terrain is favorable for ground based logging systems and access is from the rocky power line road from the west. This unit must be evaluated for precommercial thinning and/or commercial thinning as soon as possible.



Stand #27 - This stand consists of a mature stand of large sawlog size Douglas-fir timber. The average stand age is approximately 60 years. Overall stand health is variable with healthy trees in the south portion and root rot pockets in the north portion. This type borders on Fox creek and is in close proximity to a series of beaver ponds, which have created a wetlands effect. The terrain favors ground based logging systems and access is from the northeast from a rocked road. Recommend a selective harvest in areas outside the RMA with an emphasis on salvaging diseased and down timber. Harvest scheduling should take market and weather conditions into account.

Stand #28 - This stand consists of a well-stocked stand of 22-year-old Douglas-fir that has reached small sawlog size. This is an excellent growing site similar to type #22. Overall stand health is excellent due in part to a precommercial thinning, which occurred about 17 years ago. In 1997 it was commercially thinned, and it is expected that this stand could be commercially thinned once again before its final harvest. Terrain is favorable to ground based systems and access is excellent from 2 rocked roads on both sides of the unit. If a second commercial thinning is not feasible during this plan's time frame it should be reconsidered annually for the next fifteen years of this stand's development. Eventually this stand should be harvested to coincide with favorable market conditions.

Stand #29 - This stand consists primarily of brush and small alder with a scattering of Douglas-fir and cedar. This unit is small in size and is surrounded by stand #30 which is fully stocked Douglas-fir plantation. The terrain favors ground based yarding equipment. Access is from a spur road coming from the west. This unit could either be cleared immediately and replanted with thrifty Douglas-fir seedlings or left to mature for 10 years and then cleared. Type #30 will be ready for thinning in the near future and this unit could be converted at that time.

Stand #30 - This stand consists of a fully stocked Douglas-fir plantation approximately 20 years of age. Overall stand health is good, but could have been improved with a precommercial thinning 5 years ago. Thinning options should be considered immediately to determine the type and timing of thinning. Terrain is favorable to ground based logging systems and access is from the power line road from the east.

Stand #31 - This stand consists of a fully stocked stand of 15-year-old Douglas-fir with a dense mixture of alder and brush. Stand health is currently good to excellent. This unit along with stand #32 was sprayed to control vegetation in 1977. Terrain in this unit favors ground based logging systems and access is from a spur road off the powerline road from the east. This unit should be evaluated in 2003 for a precommercial thinning.

C

C

C

Stand #32 - This stand consists of fully stocked 20-year-old Douglas-fir reproduction. The terrain favors ground skidding equipment and access is from the east from a rocked powerline road. Brush and alder competition should be evaluated in 2003 for a spring application. This stand should also be evaluated for precommercial/commercial thinning options in order to redistribute growth on fewer stems.

Stand #33 - This stand consists of an overstocked Douglas-fir plantation with little or no brush or hardwood competition. Stand age is 25 years and overall health and vigor is good. The terrain favors ground skidding equipment and access is from a rocked powerline road from the west and a spur to the north. This stand should also be evaluated for precommercial/commercial thinning options as soon as is practical.

Stand #34 - This stand consists of an overstocked Douglas-fir plantation with heavy alder and brush competition. The Douglas-fir is beginning to suffer in vigor because of the competition from alder and brush and from too many stems. The terrain favors ground skidding equipment and access if from a rocked powerline road from the west. Alder competition should be evaluated for a 2003 spring spray project. An assessment of the commercial/precommercial thinning options will also be needed in 2003.

Stand #35 - This stand consists of a rapidly maturing Douglas-fir plantation 25 years of age. Stocking levels are excellent and stand health is good. The terrain favors ground skidding equipment and access is from all sides. A commercial thinning will be scheduled as markets warrant.

Stand #36 - This stand consists of an approximately 20 year old Douglas-fir plantation that is well stocked and growing well. Alder competition is moderate, however the Douglas-fir is beginning to overtop and out compete it. The terrain favors ground based logging equipment and access is from the rocked powerline road from the east. This stand will be evaluated in the winter of 2003 for alder competition and thinning considerations.

Stand #37 - This stand consists of mature large sawlog size Douglas-fir and good quality alder. Average stand age is 65 years and stand health and vigor is good. The fir is concentrated in central areas, making partial and patch cuts a desirable alternative when harvesting. The terrain generally favors ground based logging equipment and access is from the powerline road from the west. Recommend harvesting select areas over a series of entries as market conditions warrant. Care should be exercised when laying out units so that buffer areas are created between this stand and stand #45 until this stand has had sufficient time to thoroughly green up. Care should also be exercised with the inventory data for this stand since it is a remnant of a larger stand #37 and it is believed that the higher volume area of the old stand was harvested first.



Stand #38 - This stand consists of a 17-year-old Douglas-fir plantation. Alder has been a major concern in the past. The terrain in this unit favors ground skidding equipment and access is from the rocked powerline road and a spur road from the west. This stand will be evaluated in the winter of 2003 for alder competition and thinning considerations.

Stand #39 - This stand consists of a 22 year old Douglas-fir plantation which is moderately stocked. Alder and brush are having a minor impact at this time. The terrain favors ground based skidding equipment and access is from the rocked powerline road from the west. No treatment is needed at this time.

Stand #40 - This stand consists of a poorly to non-stocked area of brush and alder. This unit slopes away from the watershed and is thus not a contributing unit to the flow of water. The terrain is mild and favors ground based equipment. Access is from a rocked road from the powerline from the east. Recommend clearing and planting to Douglas-fir as soon as is practical.

Stand #41 - This stand consists of predominately mature alder with a fair component of mature Douglas-fir. The average age of the stand is 50 years and overall health and vigor is good. The terrain favors ground based logging equipment and access if from a paved road on the north and a rocked road from the powerline to the west. Recommend harvesting this unit as market conditions warrant and replanting with thrifty Douglas-fir seedlings.

Stand #42 - This stand consists of a very small Douglas-fir plantation that has been struggling with alder competition. Stand age is 14 years and overall health and vigor is good. Terrain favors ground based equipment and access is from the powerline road from the south. Recommend either a hand release or spring spray to retard the alder.

Stand 43 - This stand is a small opening on either side of a rocked road near the BPA powerline. It was planted in 1998 and is developing well. Stocking is light but sufficient for forest management purposes. No treatments are expected to be need through the next planning horizon.

Stand #44 - This stand consists of a very small Douglas-fir plantation that was planted with two-year-old Douglas-fir in 1999. A stocking survey should be undertaken in 2003 to verify planting survival and plan for any required maintenance activity.

Stand #45 - Harvested in the summer of 1996 this stand was formerly a portion of stand #37. It was planted in the late winter of 1997 with 2-year-old Douglas-fir. A 2002 inspection indicated that tree survival and growth was excellent. This stand has a marginal amount of competing alder



and could benefit from spraying. In conjunction with a herbicide application on another stand portions of this stand should be sprayed.

Stand #46 - This stand was harvested in 2000 and planted in the late winter of 2001 with two year old Douglas-fir. A stocking survey should be undertaken in 2003 to verify planting survival and plan for any required maintenance activity.

Stand #47 - Harvested in the summer of 2000, this stand was formerly a portion of stand #12. It was planted in the late winter of 2001 with 2-year-old Douglas-fir. A 2002 inspection indicated that tree survival after one year was excellent. This stand will be monitored for brush and hardwood competition. It is reasonable to expect some future plantation maintenance activity for this stand.

C. Threatened and Endangered Species Regulations

The following state and federal regulations may apply to forestry operations in the City of Rainier's watershed.

I. Oregon Department of Forestry - Forest Practices Act (Section 629-24-810)

Northern Spotted Owl nesting sites: If the State Forester determines that an operation will conflict with protection of a nesting site of the northern spotted owl, the operator must obtain the State Forester's approval of a written plan before commencing the operation. The written plan, at a minimum, must address how the operation will be conducted to provide for the following:

➤ A 70 acre area of suitable spotted owl habitat, encompassing the nest site, to be maintained as suitable spotted owl habitat.

➤ Prevention of disturbances resulting from operation activities, which cause owls to flush from the nesting site. Such disturbances must be prevented during the critical period of use for nesting. The critical period of use is the time period between March 1 and September 30, each year.

The nesting site includes the tree, when known, containing a spotted owl nest; or when not specifically known includes any activity center of a pair of spotted owls. An activity center is a location determined by the State Forester to have been reliably identified as being occupied by an adult pair of spotted owls, capable of breeding. Such determinations must be supported by repeated observation of the owls in close proximity or observation of nesting behavior.

C

C

C

2. U.S. Fish and Wildlife Service - Endangered Species Act

Section 9 of the Endangered Species Act prohibits the "taking" of a threatened or endangered species. "Take" is defined as a means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct; and has been interpreted by the U.S. Fish and Wildlife Service to include adverse modification of habitat. "Incidental take" is defined as any taking otherwise prohibited if such taking is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity (e.g., timber harvest). Risk of incidental take of spotted owls or marbled murrelets could be greatly reduced by conducting surveys prior to the initiation of timber harvest, road construction, or other land management activities.

IV. FOREST ACTION PLAN

The watershed currently has 510 acres in <21 year old plantations, 386 acres in 21 to 30 year old plantations, 82 acres of 31 to 40 year old stands, 233 acres of 41 to 50 year old stands, and 192 acres in stands 51 years and older. Approximately 10 acres exist in streamside protection, approximately 45 acres in noncommercial timberland and 34 acres in roads, generating a net total operating acreage of 1,342.

The basic management approach used in this plan emphasizes water quality, biodiversity, and variations in forest structure while supplying a sustainable flow of forest products and revenue for the benefit of the citizen of CR. To reach this long term goal on the ownership the key planning strategy is to balance the age class distribution of the timber resources and the spatial distribution of the stands representing the desired age classes. An analysis of the capability of the ownership to produce harvestable timber, based upon the number of acres exclusive of riparian management zones, on a 50 year rotation generates an harvest area of approximately 27 acres. An evaluation of the potential growth of the watershed's forest resources shows that the ownership, excluding riparian management areas, is growing approximately 400 MBF per year.

A review of the distribution of age classes of timber shown above indicates that 27 percent (363 acres) of the watershed consists of mature timber (over 40 years of age). An effort to provide a more balanced age distribution would concentrate harvesting efforts in those stands with timber in age classes over 40 years. These stands include # 1,2,5,6,7,12,24,27,37 and 41.

The primary consideration of protecting water quality would direct a distribution of harvesting activity to mitigate the impact on other resources through small harvest units and geographic separation. The emphasis is on situating the harvest units so they are not adjacent to recent activity and minimize the impact on any single sub-drainage of the watershed. There are four harvest units proposed for this current management period, providing one harvest in each year over the four year planning period. Although these units could be combined into one year or two years, which may be referable for market conditions (i.e., capturing markets highs when they exist to

maximize harvest revenue), these units are presented in on annual basis. All things being equal the annual harvest of small units best meets the overall management objects of CR by providing time and spatially separated units that minimize adverse affects and provide flexibility for management response.

A. Harvest Units

Harvest Unit #1: This harvest area consists of a clear-cut of stands #24 and #41. This unit totals approximately 30 acres in size over three geographically separated areas. The timber in this harvest consist of a majority hardwoods with significant volume of Douglas-fir red cedar and hemlock. Log quality of the conifers shows medium to large sawlogs, while the hardwoods are expected to yield at least 40 percent sawlog and the remainder in pulpwood. A clear-cut of these areas is proposed, with replanting of Douglas-fir in all harvest areas.

The majority of stand #24 will be harvested with partially suspended cable yarding machines. Both areas of stand #41 and the remainder of stand #24 will be harvested with ground-based equipment. This harvest is planned for early spring 2003 and therefore extreme care will be employed to minimize ground compaction and excessive soil disturbance. Access would be provided by from Neer Road with only the construction of temporary spur roads into the harvest areas.

This proposed harvest would yield approximately 560 MBF of all species generating gross revenues of \$280,000. Expenses for this sale include \$95,000 for logging, line surveying, taxes, management fees, reforestation, and road construction. Net revenues for this harvest would be \$185,000.

Harvest Unit #2: This harvest area consists of a clear-cut of stand #1 situated in the north west corner of the watershed and totals approximately 26 acres. The stand averages 14.3 mbf/acre, all species. The breakdown of volume per acre by species can be found in the volume summary table on page 11. Hardwoods are the dominant component by volume and will probably generate the majority of the revenue by a small margin. A clear-cut of this area is proposed, followed by replanting with thrifty Douglas-fir seedlings.

This stand contains some brushy areas and some moderate to steep slopes. Since 80% of stand #1 will require cable yarding, it is safe to assume that cable-yarding equipment will be required for this harvest. In addition to the steep slopes this unit is adjacent to Fox Creek. These concerns will require ground surveys to determine slope stability and the necessity of using RMA buffers in excess of 100 feet. If adverse conditions require additional protection measures, the overall harvest size will be reduced.

Assuming that no acreage adjustment is required this harvest would include approximately 390 mbf. Also assuming that this harvest is undertaken during dry weather, the gross revenue of this project is estimated to be \$164,000. Logging costs, taxes, management fees, reforestation and an

C

O

C

additional expense for new road construction of \$22,000 brings total costs to \$81,000. The net revenue for this harvest would be \$83,000.

Harvest Unit #3: This harvest consists of four small clear-cut areas throughout the northeastern portion of the watershed. This harvest addresses several management goals by providing for road improvement, enhancing forest health, and developing watershed stand diversity. The units of this harvest are stand #14, the northern portion of stand #27, and two portions of stand #15. These four areas total 26 acres. These stands are generally a majority of conifer although hardwoods a significant portion of the volume. This stand will be harvested with ground based yarding equipment. Approximately 3,500 feet of reconstruction is required to implement this harvest. The area would be replanted with Douglas-fir seedlings.

This proposed harvest would yield approximately 350 MBF of primarily Douglas-fir and red alder sawlogs, generating gross revenues of \$374,000. Costs of harvesting, management fees, taxes, and planting would total \$122,000. Costs for new road construction and reconstruction would be \$33,000 making net revenues for this harvest equal \$219,000. These costs assume a dry weather harvest of these areas.

Harvest Unit #4: This harvest consists of a clear-cut of the southern 23 acres of stand #6 which is a stand of mixed conifers and mixed hardwoods. Both tractor yarding and cable yarding equipment is required for harvesting this area. Approximately 39 stations of new road construction is included in this project. The road construction passes through the northern half of this unit and ends near the boundary of stand #8. This road construction is the first phase of the construction of the northeastern road system. The area would be replanted with Douglas-fir seedlings.

This harvest would yield approximately 560 MBF of mixed conifer and hardwoods, generating gross revenue of approximately \$265,000. Expenses for logging, taxes, management fees and reforestation total \$93,000. An additional expense of \$47,000.00 would be required for new road construction and reconstruction. Net revenues for this harvest would be \$125,000.

B. Stand Improvement Projects

The proposed stand improvement projects consist of seedling release from brush and hardwood competition in recently harvested units, precommercial thinning to improve spacing in older plantations and commercial thinning in the oldest plantations to improve spacing while producing limited income.

Prior to these activities several stands need to be surveyed to determine the extent that improvement projects should be prescribed. This new survey work is required because of the age of the forest inventory (field work 1995). Two general types of surveys will be undertaken; stocking surveys of very young stands to determine seedling survival and vegetation competition, and stocking surveys of 10 to 20 year old stands to determine the precommercial or commercial thinning

C

C

C

The watershed's current Transportation system consists of approximately 5.4 miles of improved road and 3.2 miles of unimproved road that will be utilized as part of the road network. Two main roads; Watershed Road on the north and Neer Road along the east boundary of the watershed access the watershed. There is one access point on the North side and three access points

Roads will be constructed and maintained with water quality as the highest priority. Poorly constructed and maintained roads contribute to long-term sedimentation with potential long-lasting damage to water, timber and wildlife resources. It is important to protect the investment of new road construction with routine maintenance and repair.

Although the entire ownership of CR's watershed is comprised of approximately 1,437 acres, access is somewhat limited. There has been a considerable distance of roads constructed over the years; however, the lack of road maintenance has resulted in many of the older roads becoming overgrown and consequently unusable. The watershed is being managed for a number of resources, the most significant of which water quality. It is thus important to provide proper access to the resources to successfully manage and protect them from the threat of fire and other natural occurrences. While the Road Plan identifies the location of all existing and proposed roads needed to facilitate timber management and harvesting over the majority of the ownership, construction will be in stages, and only as needed. The funds needed for road improvement, construction and maintenance can be obtained from harvest revenues given proper planning.

V. ROAD PLAN

Those stands requiring some degree of commercial thinning to improve spacing while producing limited income are estimated to total 105 acres. The estimated volume that would be generated by creating a 20 foot by 20 foot spacing in each unit is 275 MBF. The gross value of these small logs would be about \$117,000. Logging costs, taxes and management fees would total \$69,000. The estimated net revenue for these commercial thinning projects is \$48,000.

The area of the stands that would require precommercial thinning (PCT) is estimated to be two-thirds of the total survey area or 210 acres. This activity is important to release those seedlings exhibiting superior growth and survival characteristics. Stands selected are typically overstocked with sapling size Douglas-fir regeneration that has begun to suffer from over competition for nutrients, moisture and light. The estimated cost for these stand improvement projects is \$33,000.

If all of these areas require spraying or alternative treatment of brush and hardwood to improve survival and growth this project would cover 244 acres. The estimated cost for this project is \$10,500.

potential and requirements. These young stand surveys will cover stands #3, #19, #21, #32, #34, #36, #38, #42, #44, #45, #46 and #47. The thinning surveys will cover stands #4, #9, #13, #16, #20, #26, #30, #31 and #33. Depending on the results of these surveys the following list may be significantly altered to include or delete specific areas.

C

O

C

on the east side of the watershed. All access points are currently gated. The stand map located on page 10 identifies existing roads (improved and unimproved), proposed reconstruction and new construction is included at the end of this report.

Main Access Road. There is currently 2.0 miles of existing gravel road that will be utilized as part of the main access road. Forty-eight stations (0.9 miles) of road will be reconstructed and forty-four stations (0.8 miles) of new road will need to be constructed to complete the main road. This road (Road #1) will provide the main access through the middle of the watershed. A breakdown of the costs is shown as Exhibit A.

Other Rocked Roads. There is another 3.4 miles of existing rocked road (Roads #2, #3, #4 & #5) that will need to have maintenance completed. Lack of routine maintenance has left portions of these roads in a condition where they are presently not drivable. Maintenance should be completed as soon as possible to prevent further deterioration. Maintenance needs and associated costs are shown on Exhibit A. Once the roads have been brought up to standard, they should be maintained according to the Annual Maintenance Schedule outlined in Exhibit B.

Future Roads. In addition to the reconstruction and new construction mentioned above, 2.3 miles of reconstruction and 5.0 miles of new road will be needed to access future harvest units. This will be completed in numerous stages and the costs offset by timber harvest revenue. Costs projections for this reconstruction and new construction are as follows:

Reconstruction:	\$950/station*
New construction:	\$1,200/station*

* one station equals 100 feet.

Maintenance Projects. These projects will be scheduled in conjunction with activities in or near the specific stands. Need and Status of these and new maintenance projects will be address each operating season.

Stand #10 – The main access road is rocked and requires immediate treatment to preserve its integrity, improve road clearance and provide a fire protection buffer.

Stand #11 - Access is currently by an old road that runs along the south end of the type, which will require some reconstruction and side clearance at time of harvest. This road should then be maintained for its benefit as a fire protection buffer.

Stand #18 - Access is from the west via a rocked road that is in need of immediate maintenance to restore and maintain its integrity.

Stand #21 - The temporary road that was constructed as part of this harvest must be put to bed to minimize erosion.



VI. FIRE PROTECTION PLAN

The objective of the fire plan is to provide effective response to all fires within and adjacent to the ownership. An effective plan will minimize the time of response, cost of suppression, and limit damage to the forest resources. The plan consists of two phases: those management activities that can be performed on the ownership to mitigate the effect of fire, and the action plan, designed to provide sufficient information to enlist all potential resources, both public and private, to provide suppression support. The action plan is included in the management plan as Appendix C.

The management activities that can be incorporated into the management plan to increase fire protection capabilities for the watershed would be: improved transportation system throughout the ownership, with a road identification system to facilitate effective, on-site location for response teams; develop good maps and distribute to all potential suppression resources; develop and identify, both in the field and on maps, sources of water; provide all gates at access points with the same lock system, and ensure that potential suppression resources can readily obtain keys for access; utilize roads near the perimeter of the ownership as fuel buffers, and improve their effectiveness by heavily thinning stands near these roads and along ownership boundaries (where adjacent land is not already clear-cut), and removing ground fuels as much as is practical.

The potential to improve the transportation system has been addressed by the Road Plan above. Water sources exist at points along Fox creek and at the reservoir. As the existing roads are reconstructed, opportunities to provide an additional water source, by impounding water with the road fill, will be evaluated.

Those areas of the ownership along Neer Road could be thinned, and fuels removed (or under burned) to provide an effective fuel break. Any other stands along the ownership boundary, but not adjacent to clearcuts, could be thinned as well. Another alternative would be to select other roads within the ownership, and their adjacent stands to utilize as fuel breaks by thinning the stands. This would provide additional revenue to the City as well.

C

C

C

VII. RULES FOR WATERSHED ACTIVITIES

The Oregon State Forest Practices Act (FFA) shall provide a procedural baseline for all activities within the watershed. The guidelines for operations within the watershed incorporate the FFA and the Slope Stability and Landslide Hazard Evaluation.

1. Written plans will be filed with the State Forester for all operations requiring such under Rule 629-24-107.

2. All operations regarding timber harvesting and road construction and maintenance will be limited to periods of dry weather, unless written permission is granted by the City of Rainier.

3. Riparian Management Areas: For mapping associated with this management plan, widths of 100 feet, 70 feet and 50 feet were used for large, medium and small streams, respectively. Stream reaches with moderate or high erosion hazard will remain unharvested. Stream reaches with low erosion hazard may be harvested as allowed under the Oregon Forest Practices Act. Buffers should be maintained along ephemeral streams draining into mainstem streams determined to have moderate to high erosion hazard. Such precautions would aid in protecting stream water quality during periods of high flow. If harvest activities are to occur in such areas, limited overstory removal with maintenance of understory vegetation would yet provide sufficient protection from erosion. The protection zones may be increased in some instances, due to management considerations, terrain, etc., but in all cases the minimum will be established using the State regulations. No equipment operation is permitted within the riparian management areas without approval by the State Forester and City personnel. Any yarding through the riparian management zones must be approved by the State Forester and City personnel, and would require full suspension. During timber falling, efforts should be taken to ensure protection of leave trees and buffer zones.

4. Reforestation: All harvested areas will be reforested the following planting season, with species subject to State approval. All recently reforested areas will be periodically evaluated for compliance with State regulations regarding stocking as a minimum, and those areas requiring supplemental planting will be promptly planted.

5. Road Construction: Roads will be located, designed and constructed using the State regulations as a minimum. Roads should be located to minimize impact on water quality, avoiding steep, potentially unstable areas, minimize stream crossings, cross streams at right angles, and use existing roads as much as is practical. Road design should reflect minimal damage to soil and water, with minimum width as necessary, with stable cut and fill slopes, and providing effective surface and subsurface drainage. All roads located on side slopes greater than 50% will require full bench construction and end hauling. Roads located on slopes less than 50% will be evaluated with site-specific geotechnical input for end haul requirements. During road construction, ensure that material is deposited to



minimize potential impact on soil and water. Exposed soils will be stabilized as soon as possible with vegetation, rip rapping, compacting, etc. Stream crossings will be conducted to minimize soil and water disturbance, with installation of drainage structures as rapidly as is feasible.

6. Harvesting: Ground based yarding equipment will be restricted to slopes less than 35%, unless circumstances dictate otherwise. Skid trails and yarding paths should be designated to reduce disturbance to vegetation and soils within ephemeral drainages. Full suspension yarding will be used across streams. In addition, skid trails should be placed along contours to avoid creation of gullies that may concentrate overland flow of water and deliver it directly to stream channels. All skid trails shall be located to minimize soil and water disturbance, and shall have water diversions to provide effective drainage. No equipment operation is permitted within the riparian management areas without approval by the State Forester and City personnel. Any yarding through the riparian management zones must be approved by the State Forester and City personnel, and would require full suspension. During timber falling, efforts should be taken to ensure protection of leave trees and buffer zones. Harvesting operations will adhere to regulations relative to clear-cut size, and location in regard to adjacent harvest activity, whether within the ownership or occurring on adjacent landowners.

7. Wildlife: All State and Federal regulations regarding protection of wildlife and associated habitat relative to the watershed and surrounding ownership will be followed. All snags will be retained in harvest units during harvest operations. If a snag presents a safety hazard, the snag will be felled and left on the ground unyarded. During all harvest operations, previously existing down logs will be left unyarded to maintain adequate down log densities. In stands that have been identified as having insufficient down log densities (Appendix F) cull logs will be left on site to meet recommended levels.

The following guidelines have been developed for contractors and operators working within the watershed.

1. All gates shall remain closed and locked, unless log hauling activity is occurring. Gates found open after normal log hauling hours shall be closed and locked.

2. Privies or suitable toilet facilities shall be provided on-site, prior to construction or harvest activity. These facilities shall not be located within 500 feet of any stream, spring or seep, secured from potential uncontrolled movement, and maintained at necessary intervals. These facilities must be relocated with the project activity, no further than the fire box.

3. Absorbent pads shall be placed on the ground, or under stationary equipment to prevent soil contamination by petroleum product leaks. No petroleum products shall be discharged within the watershed. If fluids are changed on-site, the waste materials must be disposed of properly, outside of the watershed. Should leaks or spills occur, complete removal of contaminated soil may be required.

C

C

C

4. No road emulsions or dust control products may be applied to road surfaces (except water) without prior approval from the City.

5. No pumping of water from the streams is permitted without prior approval from the City.

6. No operation of equipment is permitted in or through any stream, spring, or other flow discharging area.

7. No slash piles for burning shall be constructed within 200 feet of any stream or spring.

8. No fuel will be stored within 1000 feet of any stream.

9. All skid trails shall have water diversion devices installed prior to moving out of the harvest area, or before the rain season begins (usually near the middle of October).

10. Normal firefighting equipment as required by the State Forester must be readily available on-site, and in proper working condition.

11. Signs for logging activity must be posted on public roadways during logging operations, as cautionary procedure.

C

C

C

VIII. MANAGEMENT ACTIVITY SCHEDULE

This section of the report details the schedule of activity necessary to complete the proposed actions for the current management cycle.

2003

- Layout, market, and administer the harvest of unit #1.
- Conduct stand surveys for reforestation and thinning.
- Select contractor for helicopter spraying.
- Order seedlings for planting of harvest unit #1 in winter of 2004.
- Administer seedling release of brush and maple dominated stands.
- Identify water sources with potential development as impoundments.

2004

- Administer reforestation of Harvest unit #1.
- Select contractor and administer precommercial thinning.
- Administer seedling release of alder dominated stands.
- Verify property lines for harvest unit #2 and order survey as necessary
- Layout, market, and administer the harvest of unit #2.
- Identify areas within stands that would benefit from a commercial thinning.
- Order seedlings for Harvest Unit #2.
- Develop impoundments to store water for fire suppression.

2005

- Administer reforestation of Harvest Unit #2.
- Verify property lines for harvest unit #3 and order survey as necessary
- Layout, market, and administer the harvest of unit #3.
- Administer commercial thinning operations.
- Order seedlings for Harvest Unit #3.
- Evaluate the planted harvest units #1 and #2 for seedling release treatment.

2006

- Administer reforestation of Harvest Unit #3.
- Verify property lines for harvest unit #4 and order survey as necessary
- Layout, market, and administer the harvest of unit #4.
- Order seedlings for Harvest Unit #4.
- Select contractor for helicopter spraying.
- Administer seedling release of alder dominated stands.
- Administer harvest operations associated with Harvest Unit #4.
- Order seedlings for Harvest Unit #4.
- Evaluate the planted harvest unit #3 for seedling release treatment
- Administer seedling release of brush and maple dominated stands



IX. MANAGEMENT REVENUE AND EXPENSE SCHEDULE

The revenues and expenses in Table 4, below, are in 2003 dollars, and have not been adjusted for time or inflation.

TABLE 4

Year	Activity	Revenue	Expense
2003	Harvest Unit #1	\$280,000	
	Logging		(\$65,000)
	Road Construction		(\$2,900)
	Reforestation		(\$6,000)
	Taxes		(\$1,600)
	Management Fee		(\$14,700)
	Stocking Surveys		(\$3,700)
	Seedling Release		(\$6,000)
	Net Revenue	\$180,100	
	Harvest Unit #2	\$164,200	
2004	Logging		(\$45,200)
	Road Construction		(\$22,200)
	Reforestation		(\$5,000)
	Taxes		(\$1,000)
	Management Fee		(\$7,700)
	Road Maintenance		(\$1,500)
	Seedling Release		(\$4,500)
	Net Revenue	\$77,100	
	Harvest Unit #3	\$374,700	
	Logging		(\$93,800)
2005	Road Construction		(\$33,300)
	Reforestation		(\$5,200)
	Taxes		(\$2,100)
	Management Fee		(\$20,700)
	Stocking Surveys		(\$800)
	Road Maintenance		(\$3,000)
	Net Revenue	\$215,800	
	Harvest Unit #4	\$264,900	
	Logging		(\$72,300)
	Road Construction		(\$46,800)
2006	Reforestation		(\$4,600)
	Taxes		(\$1,500)
	Management Fee		(\$14,500)
	Road Maintenance		(\$1,500)
	Seedling Release		(\$1,800)
	Net Revenue	\$121,900	
	Total Net Revenue	\$594,900	

C

C

C

X. MANAGEMENT REVENUE AND EXPENSE SCHEDULE

The revenues and expenses in Table 4, below, are in 2003 dollars, and have not been adjusted for time or inflation.

TABLE 4

Year	Activity	Revenue	Expense
2003	Harvest Unit #1	\$280,000	
	Logging		(\$65,000)
	Road Construction		(\$2,900)
	Reforestation		(\$6,000)
	Taxes		(\$1,600)
	Management Fee		(\$14,700)
	Stocking Surveys		(\$3,700)
	Seedling Release		(\$6,000)
	Net Revenue	\$180,100	
	Harvest Unit #2	\$164,200	
2004	Logging		(\$45,200)
	Road Construction		(\$22,200)
	Reforestation		(\$5,000)
	Taxes		(\$1,000)
	Management Fee		(\$7,700)
	Road Maintenance		(\$1,500)
	Seedling Release		(\$4,500)
	Net Revenue	\$77,100	
	Harvest Unit #3	\$374,700	
	Logging		(\$93,800)
2005	Road Construction		(\$33,300)
	Reforestation		(\$5,200)
	Taxes		(\$2,100)
	Management Fee		(\$20,700)
	Stocking Surveys		(\$800)
	Road Maintenance		(\$3,000)
	Net Revenue	\$215,800	
	Harvest Unit #4	\$264,900	
	Logging		(\$72,300)
	Road Construction		(\$46,800)
2006	Reforestation		(\$4,600)
	Taxes		(\$1,500)
	Management Fee		(\$14,500)
	Road Maintenance		(\$1,500)
	Seedling Release		(\$1,800)
	Net Revenue	\$121,900	
	Total Net Revenue	\$594,900	



X. GLOSSARY

50 Year Site Index

A particular measure of site class, based on the height of the dominant trees in a stand at 50 years total age.

Age Class

A distinct aggregation of trees originating from a single natural disturbance or regeneration cutting.

Cable Logging

A system of logging using wire rope in which the winches are in a fixed position

Clearcutting

A method of regenerating an even-aged stand in which a new age class develops in a fully exposed microclimate after removal, in a single cutting, of all trees in the previous stand. Regeneration is from natural seeding, direct seeding, planted seedlings, and/or advance reproduction. Harvesting may be done in groups or patches, or in strips. In the Clearcutting System, the management unit or stand in which regeneration, growth and yield are regulated consists of the individual clearcut stand.

Commercial Thinning

Any type of thinning producing merchantable material, at least to the value of the direct costs of harvesting.

Helicopter Logging

A system of logging in which the logs are removed from the cutting area to a landing by helicopter. This method is used in roadless areas or in areas where other logging methods might prove too damaging to the surrounding terrain.

High Lead

A method of logging in which the logs are yarded from the cutting area to a landing using a cable system that holds the logs partially or totally off the ground to avoid obstructions. The cable system runs from a spar tree or pole to an anchor stump, with one end of the line rigged high on the spar tree to provide ground clearance.

MBF

Thousand board feet.

MMBF

Million board feet.

Maturity

1. Physiological Maturity - A loose term for the stage at which a tree or other plant has attained full development, particularly height, and is in full seed production. This concept is applicable to a crop or stand, provided it is narrowly even-aged. Thereafter, a decline in

C

C

C

attained full development, particularly height, and is in full seed production. This concept is applicable to a crop or stand, provided it is narrowly even-aged. Thereafter, a decline in vigor, health and, for woody species, soundness marks the stage of over maturity, termed if decay is the critical factor, the age of decline.

2. Management Maturity - The stage at which a tree, crop or stand best fulfills the purpose for which it was maintained, e.g. produces the best possible supply of specified products or earns a specific rate of interest.

3. Economic Maturity - Of a tree, crop or stand, the age beyond which value-increased is insufficient to earn a specified rate of interest.

Partial Cutting

Tree removal other than clearcutting, i.e. taking only part of the stand.

Precommercial Thinning (PCT)

A thinning that does not yield trees of commercial value, usually designed to improve crop spacing.

Riparian

Of vegetation growing in close proximity to a watercourse, lake, swamp or spring.

Shelterwood

A method of regenerating an even-aged stand in which a new age class develops beneath the partially-shaded micro-environment provided by the residual trees. The sequence of treatments can include three distinct types of cuttings: 1) an optional preparatory harvest to enhance conditions for seed production; 2) an establishment harvest to prepare the seed bed and to create a new age class; 3) a removal harvest to release established regeneration from competition with the overstory. Harvesting may be done uniformly throughout the stand, in groups, patches, or in strips.

A variant on this method is one in which some or all of the shelter trees are retained, well beyond the normal period of retention, to attain goals other than regeneration. The resulting stand may be two-aged or tend towards an uneven-aged condition as a consequence of both an extended period of regeneration establishment and the retention of reserve trees that may represent one or more age classes.

Snag

A standing, dead (dying) tree, or portion of a tree, from which most of the foliage, limbs, etc. have fallen.

Silviculture

The art and science of controlling the establishment, growth, composition, health, and quality of forests and woodlands. Silviculture entails the manipulation of forests and woodland vegetation in stands and on landscapes to meet the diverse needs and values of landowners and society on a sustainable basis.

Site Class
A classification of site quality, usually expressed in terms of ranges of dominant tree height at a given age or potential mean annual increment at culmination.

Stand
A contiguous group of trees sufficiently uniform in age class distribution, composition, and structure, and growing on a site of sufficiently uniform quality, to be a distinguishable unit.

Stocking
An indication of growing-space occupancy relative to a pre-established standard. Common indices of stocking are based on percent occupancy, basal area, relative density, and crown competition factor.

Structure, Stand
Of a forest crop or stand, the distribution and representation of age and/or size, particularly diameter classes and of crown or other tree classes.

Thinning
A cutting made to reduce stand density of trees primarily to improve growth, enhance forest health, and/or to recover potential mortality.

C

C

C

Appendix A Original Forest Inventory Reports

Pacific Forest Consultants, Inc.
12-05-1995 13:53:16

Page 1
Type 1

OWNERSHIP: City of Rainier
UNIT NUMBER: 1
LOCATION:

(T, 7N, R, 2W, Sec. 21)
Top diameter used for this type is 6 inches or 30 percent of DBH.

CRUISE RESULTS OF TYPE #1

Number of Acres: 25.7

50 Year Douglas-fir Site Index: 120

Number of Variable Plots: 26

Stand BH Age: 48

BAF Used: 27.78

Species	DBH	Height	Merch.	Basal	# Of	Gross	Net	Gross	Net	Volume	Volume	Net
---	Average	---	---	---	Per Acre	BF Per Acre	BF Total	---	---	BF Total	---	---
Douglas-fir	19.3	72	6	5	790	763	20,350	19,606	17,900	30,370	77,630	146,222
Hemlock	18.0	62	5	5	700	650	17,900	16,695	17,900	30,370	77,630	146,222
Red Cedar	23.4	59	14	7	1,180	1,055	30,370	27,102	30,370	77,630	146,222	146,222
Red Alder	11.3	40	32	54	3,020	2,887	77,630	74,195	77,630	146,222	146,222	146,222
Maple	15.6	40	81	97	6,000	5,690	154,130	146,222	154,130	77,630	146,222	146,222
TOTALS	15.7	44	139	169	11,690	11,043	300,380	283,820	300,380	77,630	146,222	146,222

Douglas-fir Grade Breakdown by Sort and Log Length

Sort	Length	Average	#2 Saw	#3 Saw	#4 Saw	Total
Sort	Class	Length	--- Net BF Total	---	---	---
1 Sort	10-19	16	0	0	1,483	1,483
	20-24	22	0	0	467	467
	36-40	39	14,197	3,460	0	17,656
1 Sort Total:		28	14,197	3,460	1,950	19,606
Douglas-fir Total:			14,197	3,460	1,950	19,606

Maple Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	#4 Saw	Total
8 Sort	20-24	24	0	2,554	1,455	4,009
	25-29	27	0	4,778	0	4,778
	30-35	32	25,400	17,272	1,702	44,374
	36-40	38	8,458	0	961	9,419
8 Sort Total:		31	33,858	24,604	4,119	62,580
9 Sort	10-19	16	0	0	14,087	14,087
	20-24	21	0	0	8,869	8,869
	25-29	27	0	0	13,345	13,345
	30-35	32	0	0	18,508	18,508
	36-40	38	0	1,098	27,734	28,832
9 Sort Total:		26	0	1,098	82,543	83,642
Maple Total:				33,858	25,702	86,662
						146,222

12-05-1995 14:00:16

OWNERSHIP: City of Rainier
UNIT NUMBER: 1
LOCATION: (T. 7N, R. 2W, S6

Top diameter used for this type is 6 inches or 30 percent of DBH.

Number of Acres: 9.4

Number of Variable Plots: 8

Stand BH Age: 31

BAF Used: 33.61

Species	DBH	Average Merch. Height	Basal Area -Per Acres	# Of Stems -Per Acres	Gross Volume -Per Acres	Net Volume -Per Acres	Gross Volume Total	Net Volume Total
Douglas-fir	14.4	58	168	184	18,640	18,007	175,220	169,262
Red Cedar	13.3	31	17	24	770	739	7,270	6,951
Red Alder	15.7	51	13	10	1,010	962	9,520	9,044
Maple	16.7	36	13	9	770	710	7,270	6,674
TOTALS	14.5	54	210	227	21,200	20,418	199,280	191,929

Standard error of the mean net volume per acre = 9.6%
68.3% probability that the total net volume per acre
is between 18,467 MBF and 22,369 MBF Scribner scale.

Douglas-Fir Grade Breakdown by Sort and Log Length

Sort	Length	Class	Average Length	#2 Saw	Net BF Total	#3 Saw	#4 Saw	Total
1 Sort	10-19	17	0	0	0	14,572	14,572	14,572
	20-24	21	0	0	0	6,003	6,003	6,003
	25-29	27	0	0	711	2,330	2,330	3,041
	30-35	33	0	9,557	2,843	12,400	12,400	12,400
	36-40	38	28,553	101,849	0	130,402	130,402	130,402
1 Sort Total:		29	28,553	112,117	25,749	166,418		
7 Sort	36-40	36	0	2,843	0	2,843		
7 Sort Total:		36	0	2,843	0	2,843		
Douglas-fir Total:				28,553	114,961	25,749	169,262	

Red Cedar Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	- Net BF Total	#3 Saw	#4 Saw	Total
1 Sort	10-19	18	0	1,698	1,698	0	1,698
	20-24	24	0	2,093	2,093	0	2,093
	30-35	30	0	1,896	1,896	0	1,896
	36-40	40	1,264	1,264	0	0	1,264
1 Sort Total:		24	1,264	5,687	5,687	0	6,951
Red Cedar Total:							
			1,264	5,687			6,951

Red Alder Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	- Net BF Total	#3 Saw	#4 Saw	Total
8 Sort	20-24	24	2,133	0	2,133	0	2,133
	30-35	30	3,396	1,145	1,145	0	4,542
8 Sort Total:		28	5,529	1,145	1,145	0	6,674
9 Sort	10-19	18	0	395	395	0	395
	20-24	22	0	1,975	1,975	0	1,975
9 Sort Total:		21	0	2,370	2,370	0	2,370
Red Alder Total:							
			5,529	3,515			9,044

Maple Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	- Net BF	#2 Saw	#4 Saw	Total
8 Sort	20-24	20	0	1,619	0	1,619	3,120
	36-40	36	3,120	0	0	3,120	1,619
8 Sort Total:							4,739
9 Sort	36-40	40	0	1,935	0	1,935	1,935
9 Sort Total:							1,935
Maple Total:							6,674

Ownership: City of Rainier
Unit Number: 1
Location: (T. 7N, R. 2W, Sec. 21)

CRUISE RESULTS OF TYPE #3

Number of Acres: 3
50 Year Douglas-fir Site Index: 137
Number of Fixed Plots: 3
Stand BH Age: 8

DBH	Number of Trees /Acre
Douglas-fir	17
Alder	17
Totals	1,251

OWNERSHIP: City of Rainier
UNIT NUMBER: 1

(T. 7N, R. 2W, Sec. 21)

Top diameter used for this type is 6 inches or 30 percent of DBH.

CRUISE RESULTS OF TYPE #5

Number of Acres: 35.1

Number of Variable Plots: 17

Stand BH Age: 31

BAF Used: 40

Species	DBH	Average Merch. Height	--Per Basal Area	--Acres # Of Stems	--BF Per Gross Volume	Net Volume	-----BF Total Gross Volume	Net Volume
Douglas-fir	15.9	62	21	22	2,540	2,456	89,200	86,222
Hemlock	24.5	92	5	1	820	798	28,910	27,997
Red Cedar	21.4	49	59	37	3,970	3,609	139,410	126,690
Red Alder	16.7	57	24	16	2,410	2,296	84,490	80,606
Maple	16.0	43	64	66	4,970	4,704	174,430	165,094
Cottonwood	27.0	92	2	<1	420	414	14,620	14,536
TOTALS	18.3	51	174	143	15,130	14,277	531,040	501,145

Standard error of the mean net volume per acre = 17.1%
68.3% probability that the total net volume per acre is between 11,839 MBF and 16,716 MBF Scribner scale.

Douglas-fir Grade Breakdown by Sort and Log Length

Sort	Length	Class	Average	#2 Saw	#3 Saw	#4 Saw	Total
1 Sort	10-19	17	0	0	3,634	3,634	3,634
	20-24	23	0	0	7,268	7,268	7,268
	25-29	26	0	0	4,377	4,377	4,377
	30-35	33	0	0	13,132	13,132	13,132
	36-40	39	38,321	19,491	0	57,812	57,812
1 Sort Total:		29	38,321	32,622	15,279	86,222	86,222
Douglas-fir Total:							
			38,321	32,622	15,279	86,222	

Douglas-fir Total:

Hemlock Grade Breakdown by Sort and Log Length

Sort	Length	Class	Average	#2 Saw	#3 Saw	#4 Saw	Total
1 Sort	10-19	17	0	0	0	1,074	1,074
	36-40	36	19,243	7,681	1,074	26,924	27,997
1 Sort Total:							27,997
Hemlock Total:							27,997

Red Cedar Grade Breakdown by Sort and Log Length

Sort	Length	Class	Average	#2 Saw	#3 Saw	#4 Saw	Total
1 Sort	10-19	17	0	0	0	7,020	7,020
	20-24	22	0	2,973	5,616	8,589	11,149
	25-29	27	0	0	11,149	2,891	18,335
	30-35	30	0	15,444	2,891	18,335	81,597
	36-40	37	6,855	74,742	0	81,597	126,690
1 Sort Total:							126,690
Red Cedar Total:							126,690

Red Alder Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	#2 Saw	#3 Saw	#4 Saw	Total
8 Sort	20-24	22	0	11,149	3,056	0	11,149
	30-35	30	24,694	13,627	9,167	0	41,377
	36-40	36	0	9,167	0	0	9,167
8 Sort Total:		28	24,694	33,944	3,056		61,693
9 Sort	10-19	14	0	1,404	1,404	0	1,404
	20-24	22	0	2,230	2,230	0	2,230
	25-29	28	0	1,652	1,652	0	1,652
	30-35	32	0	7,516	7,516	0	7,516
	36-40	38	0	6,112	6,112	0	6,112
9 Sort Total:		28	0	18,913	18,913	0	18,913
Red Alder Total:			24,694	33,944	21,968		80,606

Maple Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	#2 Saw	#3 Saw	#4 Saw	Total
8 Sort	20-24	23	11,397	0	6,029	0	17,426
	30-35	30	15,940	11,067	0	0	27,006
	36-40	37	22,629	4,047	0	0	26,676
8 Sort Total:		30	49,966	15,114	6,029		71,108
9 Sort	10-19	14	0	0	10,489	10,489	10,489
	20-24	21	0	0	8,259	8,259	8,259
	25-29	28	0	0	10,076	10,076	10,076
	30-35	31	0	4,955	22,381	27,337	27,337
	36-40	39	0	0	37,825	37,825	37,825
9 Sort Total:		28	0	4,955	89,030		93,985
Maple Total:			49,966	20,069	95,059		165,094

OWNERSHIP: City of Rainier
UNIT NUMBER: 1
LOCATION:
(T. 7N, R. 2W, Sec. 21)

Top diameter used for this type is 6 inches or 30 percent of DBH.

CRUISE RESULTS OF TYPE #6

Number of Acres: 47.1

50 Year Douglas-fir Site Index: 141

Number of Variable Plots: 23

Stand BH Age: 41

BAF Used: 27.78

---Average---
Species DBH Height Merch. Basal # Of Area Stems
Douglas-fir 20.5 84 54 33 8,180 7,647 385,140 360,162
Hemlock 17.6 62 6 4 790 658 37,090 31,004
Red Cedar 18.9 43 28 25 1,500 1,410 70,830 66,389
Red Alder 13.6 48 30 38 2,910 2,780 136,930 130,958
Maple 17.7 43 33 29 2,390 2,233 112,360 105,187
Cottonwood 13.3 57 5 6 600 575 28,160 27,079
TOTALS 18.0 59 156 134 16,360 15,303 770,500 720,778

Standard error of the mean net volume per acre = 12.6%
68.3% probability that the total net volume per acre is between 13,369 MBF and 17,237 MBF Scribner scale.

Douglas-fir Grade Breakdown by Sort and Log Length

Sort	Length	Average	Length	#2 Saw	#3 Saw	#4 Saw	Util.	Cut	Total
1 Sort	10-19	16	0	512	7,282	0	0	0	7,794
	20-24	21	0	0	7,794	0	0	0	7,794
	25-29	27	0	6,030	4,836	0	0	0	10,866
	30-35	32	0	27,705	0	0	0	0	27,705
	36-40	39	214,129	91,875	0	0	0	0	316,528
1 Sort Total:		32	214,129	126,122	19,911	4,836	5,689	370,686	

Douglas-fir Total:

214,129 126,122 19,911 4,836 5,689 370,686

Hemlock Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	#3 Saw	#4 Saw	Gross BF	Total
1 Sort	10-19	14	0	0	0	0	5,063	5,063
	20-24	22	0	0	0	910	0	910
	30-35	31	0	8,704	2,332	0	0	11,036
	36-40	36	13,084	5,973	0	0	0	19,058
1 Sort Total:		31	13,084	14,677	3,243	5,063	36,067	36,067
Hemlock Total:								
				13,084	14,677	3,243	5,063	36,067

Red Cedar Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	#2 Saw	#3 Saw	#4 Saw	Total
1 Sort	10-19	14	0	0	0	8,988	8,988	8,988
	20-24	22	0	683	3,413	4,096	8,988	19,115
	25-29	26	0	740	5,860	6,599	19,115	27,591
	30-35	31	0	17,408	1,707	0	0	19,115
	36-40	38	3,755	23,836	0	0	0	27,591
1 Sort Total:		23	3,755	42,666	19,968	66,389	66,389	66,389
Red Cedar Total:								
				42,666	19,968	66,389	66,389	66,389

Red Alder Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Length	Net BF Total	#2 Saw	#3 Saw	#4 Saw	Total
8 Sort	25-29	28	0	3,470	0	5,291	6,258	44,202	3,470
	30-35	32	0	49,493	0	0	0	0	49,493
	36-40	38	6,827	13,084	0	0	0	0	13,084
8 Sort Total:		32	12,117	66,048	9,728	44,202	0	0	66,048
9 Sort	10-19	16	0	11,036	0	9,728	11,036	0	11,036
	20-24	20	0	9,728	0	0	0	0	9,728
	25-29	26	0	1,024	0	0	0	0	1,024
	30-35	34	0	6,030	0	0	0	0	6,030
	36-40	39	0	37,091	0	0	0	0	37,091
9 Sort Total:		27	0	64,910	0	0	0	0	64,910
Red Alder Total:			12,117	130,958	9,728	109,112	0	0	130,958

Maple Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Length	Net BF Total	#2 Saw	#3 Saw	#4 Saw	Total
8 Sort	20-24	22	18,147	18,147	0	2,731	7,225	0	18,147
	30-35	32	0	9,956	0	0	0	0	9,956
	36-40	38	5,177	30,891	0	0	0	0	30,891
8 Sort Total:		34	23,324	58,993	18,944	16,725	0	0	58,993
9 Sort	10-19	16	0	10,866	0	9,557	10,866	0	10,866
	20-24	22	0	4,210	0	4,210	4,210	0	4,210
	25-29	27	0	7,623	0	7,623	7,623	0	7,623
	30-35	32	0	11,548	0	10,297	11,548	0	11,548
	36-40	38	0	11,947	0	7,452	11,947	0	11,947
9 Sort Total:		23	0	46,194	7,054	39,139	0	0	46,194
Maple Total:			23,324	105,187	25,998	55,865	0	0	105,187



Cottonwood Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	#2 Saw	Total
8 Sort	30-35	32	11,093	11,093	5,575	5,575
	36-40	40	5,575	5,575	16,668	16,668
8 Sort Total:						
9 Sort	10-19	16	1,593	1,593	1,138	1,593
	20-24	20	1,138	1,138	7,680	7,680
	36-40	40	7,680	7,680	10,411	10,411
9 Sort Total:						
Cottonwood Total:						
27,079 27,079						



OWNERSHIP: City of Rainier
UNIT NUMBER: 1
LOCATION:

(T. 7N, R. 2W, Sec. 21 & 28)

Top diameter used for this type is 6 inches or 30 percent of DBH.

CRUISE RESULTS OF TYPE #7

Number of Acres: 150.7
50 Year Douglas-fir Site Index: 134

Number of Variable Plots: 60
Stand BH Age: 36
BAF Used: 27.78

---Average---
Species DBH Height Merch. Basal Area # Of Stems
Douglas-fir 22.1 83 18 10 2,930 2,753 442,090 414,807
Hemlock 18.9 73 3 2 490 471 74,240 70,960
Red Cedar 20.8 53 27 17 1,900 1,788 286,840 269,398
Red Alder 13.4 48 63 81 6,230 5,934 939,020 894,225
Maple 16.5 45 23 21 1,710 1,619 258,160 243,930

TOTALS 16.7 54 134 132 13,270 12,563 2,000,350 1,893,320
Standard error of the mean net volume per acre = 8.2%
68.3% probability that the total net volume per acre is between 11,531 MBF and 13,596 MBF Scribner scale.

Douglas-fir Grade Breakdown by Sort and Log Length

Sort	Length	Average	#2 Saw	#3 Saw	#4 Saw	Util.	Cull	Total
1 Sort	10-19	17	0	4,535	12,210	3,070	0	19,816
	20-24	22	5,791	558	7,187	0	419	13,955
	25-29	28	0	3,210	0	0	0	3,210
	30-35	33	7,884	13,187	0	0	0	21,072
	36-40	38	239,395	120,849	0	0	0	360,244
1 Sort Total:		32	253,071	142,339	19,397	3,070	419	418,296

Douglas-fir Total: 253,071 142,339 19,397 3,070 419 418,296



Hemlock Grade Breakdown by Sort and Log Length

Sort	Length	Class	Average	#2 Saw	#3 Saw	#4 Saw	Total
1 Sort	10-19	16	0	0	0	1,116	1,116
	30-35	32	8,094	2,372	0	10,466	10,466
	36-40	38	30,980	28,398	0	59,378	59,378
1 Sort Total:		34	39,074	30,770	1,116	70,960	70,960
Hemlock Total:							
			39,074	30,770	1,116		

Red Cedar Grade Breakdown by Sort and Log Length

Sort	Length	Class	Average	#3 Saw	#4 Saw	Total
1 Sort	10-19	16	0	8,652	8,652	8,652
	20-24	22	0	16,676	16,676	16,676
	25-29	26	3,558	4,117	7,675	7,675
	30-35	32	152,736	4,814	157,550	157,550
	36-40	38	78,845	0	78,845	78,845
1 Sort Total:		29	235,139	34,259	269,398	269,398
Red Cedar Total:						
			235,139	34,259	269,398	

Red Alder Grade Breakdown by Sort and Log Length

Sort	Length	Class	Average	Length	Net BF Total	#2 Saw	#3 Saw	#4 Saw	Gross BF	Total
8 Sort	20-24	21	10,675	9,140	14,164	0	33,980	4,954	0	33,980
	25-29	26	0	4,954	0	0	0	0	0	0
	30-35	32	57,703	56,238	219,509	0	333,450	58,540	0	333,450
	36-40	37	33,561	14,164	10,815	0	58,540	0	0	58,540
8 Sort Total:		31	101,940	84,496	244,488	0	430,925	0	0	430,925
9 Sort	10-19	16	0	1,047	54,633	628	56,308	89,032	0	56,308
	20-24	21	0	0	89,032	0	48,702	108,080	0	48,702
	25-29	27	0	0	48,702	0	108,080	161,806	0	108,080
	30-35	32	0	0	108,080	0	161,806	0	0	161,806
	36-40	39	0	0	161,806	0	0	0	0	0
9 Sort Total:		26	0	1,047	462,253	628	463,928	0	0	463,928
Red Alder Total:			101,940	85,543	706,742	628	894,853	0	0	894,853

Maple Grade Breakdown by Sort and Log Length

Sort	Length	Class	Average	Length	Net BF Total	#2 Saw	#3 Saw	#4 Saw	Total
8 Sort	10-19	16	8,861	0	3,628	0	8,861	0	8,861
	20-24	24	0	3,628	0	0	3,628	0	3,628
	25-29	28	5,163	8,233	0	0	13,397	0	13,397
	30-35	32	37,887	38,655	10,955	0	87,497	0	87,497
8 Sort Total:		29	51,912	50,516	10,955	0	113,383	0	113,383
9 Sort	10-19	17	0	0	17,653	0	17,653	0	17,653
	20-24	23	0	0	10,466	0	10,466	0	10,466
	25-29	26	0	0	7,326	0	7,326	0	7,326
	30-35	32	0	0	29,724	0	29,724	0	29,724
	36-40	38	0	0	65,378	0	65,378	0	65,378
9 Sort Total:		28	0	0	130,547	0	130,547	0	130,547
Maple Total:			51,912	50,516	141,502	0	243,930	0	243,930

Ownership:
City of Rainier
Unit Number:
I
Location:
(T. 7N, R. 2W, Sec. 21 & 28)

CRUISE RESULTS OF TYPE #8

Number of Acres: 18.8
50 Year Douglas-fir Site Index: 130
Number of Fixed Plots: 19
Stand BH Age: 17

DBH	Number of Trees /Acre
Douglas-fir	2
	4
Red Cedar	20
	3
	11
	18
	32
	16
	3
	12
	14
	16
	22
Alder	2
	4
	6
	8
	10
	12
	2
	4
	6
	8
	10
	12
Maple	2
	4
	6
	8
	10
	12
	11
	5
	18
	32
	18
	21
	8
Totals	899

C

O

C

Ownership: City of Rainier
Unit Number: 1
Location: (T. 7N, R. 2W, Sec. 28)

CRUISE RESULTS OF TYPE #9

Number of Acres: 53.5
50 Year Douglas-fir Site Index: 130
Number of Fixed Plots: 27
Stand BH Age: 9

	DBH	Number of Trees /Acre
Douglas-fir	2	28
	4	133
	6	209
	8	57
Hemlock	0	2
	2	2
Red Cedar	2	44
	4	22
Alder	0	9
	2	46
	4	44
Maple	2	83
	4	157
	6	17
	8	6
Totals		859

OWNERSHIP: City of Rainier
UNIT NUMBER: 1
LOCATION:

(T. 7N, R. 2W, Sec. 28 & 33)

Top diameter used for this type is 6 inches or 30 percent of DBH.

CRUISE RESULTS OF TYPE #10

Number of Acres: 83.1
50 Year Douglas-fir Site Index: 140
Number of Variable Plots: 27
Stand BH Age: 11
BAF Used: 20

Species	DBH	Height	Merch.	Basal	# of	Gross	Net	Gross	Net
---Average---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---
Douglas-fir	7.2	8	91	410	820	535	68,330	44,443	0
Red Alder	3.5	0	4	109	30	0	2,770	0	0
Maple	3.0	0	2	58	0	0	0	0	0
TOTALS	6.9	7	98	577	860	534	71,100	44,443	0

Standard error of the mean net volume per acre = 12.9%
68.3% probability that the total net volume per acre
is between 466 MBF and 604 MBF Scribner scale.

Douglas-fir Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total
1 Sort	10-19	14	44,443	44,443
1 Sort Total:		14	44,443	44,443

Red Alder Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total
Red Alder Total:				0

OWNERSHIP: City of Rainier
UNIT NUMBER: 1
LOCATION:
(T. 7N, R. 2W, Sec. 28)

Top diameter used for this type is 6 inches or 30 percent of DBH.

CRUISE RESULTS OF TYPE #11

Number of Acres: 20.6

50 Year Douglas-fir Site Index: 135

Number of Variable Plots: 20

Stand BH Age: 21

BAF Used: 27.78

---Average---
Species DBH Height Area Basal # Of
Douglas-fir 11.5 31 118 198 6,570 6,013 135,400 123,867
Hemlock 10.5 33 3 5 250 243 5,150 5,007
Red Alder 9.3 18 10 27 290 206 5,920 4,235
Maple 9.0 20 8 21 390 379 7,980 7,811
TOTALS 11.2 30 139 251 7,500 6,840 154,460 140,921

Standard error of the mean net volume per acre = 11.6%
68.3% probability that the total net volume per acre
is between 6,047 MBF and 7,634 MBF Scribner scale.

Douglas-fir Grade Breakdown by Sort and Log Length

Sort Length Average Length Class Length
- Net BF Total - #3 Saw #4 Saw Total

1 Sort	10-19	20-24	25-29	30-35	36-40	30	84,839	39,029	123,867
1 Sort Total:	16	21	26	33	38	30	84,839	39,029	123,867

Douglas-fir Total:

84,839 39,029 123,867

Hemlock Grade Breakdown by Sort and Log Length

Sort	Length	Average	- Net BF Total	#3 Saw	#4 Saw	Total
1 Sort	25-29	28	0	1,860	1,860	1,860
1 Sort	36-40	36	3,147	0	3,147	3,147
1 Sort Total:						
		32	3,147	1,860		5,007
Hemlock Total:						
			3,147	1,860		5,007

Red Alder Grade Breakdown by Sort and Log Length

Sort	Length	Average	Net BF Total	#4 Saw	Total
9 Sort	20-24	22	1,202	1,202	1,202
9 Sort	25-29	26	1,517	1,517	1,517
9 Sort	36-40	40	1,517	1,517	1,517
9 Sort Total:					
		28	4,235	4,235	4,235
Red Alder Total:					
			4,235	4,235	4,235

Maple Grade Breakdown by Sort and Log Length

Sort	Length	Average	Net BF Total	#4 Saw	Total
9 Sort	10-19	16	1,373	1,373	1,373
9 Sort	20-24	22	3,004	3,004	3,004
9 Sort	25-29	27	3,434	3,434	3,434
9 Sort Total:					
		22	7,811	7,811	7,811
Maple Total:					
			7,811	7,811	7,811

OWNERSHIP: City of Rainier
UNIT NUMBER: 1
LOCATION:

(T. 7N, R. 2W, Sec. 27 & 28)

Top diameter used for this type is 6 inches or 30 percent of DBH.

CRUISE RESULTS OF TYPE #12

Number of Acres: 90.8

Number of Variable Plots: 32
Stand BH Age: 38
BAF Used: 27.78

Species	DBH	Height	Merch.	Area	Basal	# of	Gross	Net	Volume	Gross	Net	Volume
---Average---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---
Douglas-fir	27.6	106	13	4	2,650	2,577	241,050	233,955	44,221	45,560	150,084	156,784
Hemlock	13.8	62	4	5	500	487	45,560	44,221	150,084	159,620	169,710	172,727
Red Cedar	19.3	45	34	23	1,760	1,653	159,620	150,084	169,710	172,727	172,727	172,727
Red Alder	14.9	56	73	75	7,990	7,610	725,280	690,987	156,784	169,710	172,727	172,727
Maple	19.3	56	21	17	1,870	1,727	169,710	156,784	172,727	172,727	172,727	172,727
TOTALS	17.7	58	145	124	14,770	14,053	1,341,220	1,276,031	1,276,031	1,276,031	1,276,031	1,276,031

Standard error of the mean net volume per acre = 10.2%
68.3% probability that the total net volume per acre
is between 12,615 MBF and 15,491 MBF Scribner scale.

Douglas-fir Grade Breakdown by Sort and Log Length

Sort	Length	Class	Average	Length	Net BF Total	#3 Saw	#4 Saw	Gross BF	Util.	Total
1 Sort	10-19	17	0	0	0	0	1,655	788	2,444	2,444
	20-24	24	0	0	0	0	788	0	0	788
	25-29	27	0	0	0	2,917	0	0	0	2,917
	36-40	38	199,902	28,693	0	0	0	0	0	228,595
1 Sort Total:			35	199,902	31,609	2,444	788	234,743		
Douglas-fir Total:				199,902	31,609	2,444	788	234,743		

Hemlock Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	#3 Saw	#4 Saw	Total
1 Sort	10-19	17	0	17,736	0	7,331	7,331
1 Sort	36-40	39	17,736	19,155	0	7,331	36,890
1 Sort Total:		28	17,736	19,155	7,331	44,221	
Hemlock Total:							
			17,736	19,155	7,331	44,221	

Red Cedar Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	#3 Saw	#4 Saw	Total
1 Sort	10-19	15	0	14,662	14,662	16,159	14,662
1 Sort	20-24	23	3,468	12,691	1,577	7,725	16,159
1 Sort	25-29	27	6,148	1,577	1,104	13,479	7,725
1 Sort	30-35	32	12,376	1,104	3,705	98,059	13,479
1 Sort	36-40	38	94,354	3,705	3,737	150,084	98,059
1 Sort Total:		27	116,347	33,737	150,084		
Red Cedar Total:							
			116,347	33,737	150,084		

Red Alder Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	#2 Saw	Net BF Total	#3 Saw	#4 Saw	Gross BF	Total
8 Sort	10-19	16	0	0	0	0	0	2,365	2,365
	25-29	28	0	0	0	0	0	0	946
	30-35	30	24,988	0	45,404	23,017	0	0	93,409
	36-40	37	121,234	223,786	7,410	0	0	0	352,430
8 Sort Total:		35	146,222	269,190	31,373			2,365	449,149
9 Sort	10-19	16	0	1,025	27,431	0	0	0	28,456
	20-24	22	0	0	35,156	0	0	0	35,156
	25-29	27	0	0	19,628	0	0	0	19,628
	30-35	32	0	0	43,354	0	0	0	43,354
	36-40	38	0	2,838	114,770	0	0	0	117,608
9 Sort Total:		27	0	3,862	240,340			0	244,202
Red Alder Total:			146,222	273,052	271,712			2,365	693,351

Maple Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	#2 Saw	Net BF Total	#3 Saw	#4 Saw	Total
8 Sort	20-24	24	8,828	2,838	0	0	0	11,666
	25-29	28	0	1,971	0	0	0	1,971
	30-35	31	19,864	9,774	1,498	0	0	31,136
	36-40	38	34,447	17,736	0	0	0	52,183
8 Sort Total:		34	63,139	32,319	1,498			96,956
9 Sort	10-19	15	3,468	0	5,833	0	0	9,301
	20-24	21	0	0	15,686	0	0	15,686
	25-29	27	0	2,995	9,932	0	0	12,927
	30-35	33	7,646	0	5,991	0	0	13,637
	36-40	39	0	0	8,277	0	0	8,277
9 Sort Total:		24	11,114	2,995	45,719			59,829
Maple Total:			74,254	35,314	47,217			156,784

Ownership: City of Rainier
Unit Number: 1
Location: (T. 7N, R. 2W, Sec. 27)

CRUISE RESULTS OF TYPE #13

Number of Acres: 8.6
50 Year Douglas-fir Site Index: 135
Number of Fixed Plots: 8
Stand BH Age: 7

Number of Trees /Acre	DBH	
Douglas-fir	2	175
Alder	4	144
Totals	2	38
		357

C

O

C

OWNERSHIP: City of Rainier
UNIT NUMBER: 1
LOCATION:

(T. 7N, R. 2W, Sec. 28)

Top diameter used for this type is 6 inches or 30 percent of DBH.

CRUISE RESULTS OF TYPE #14

Number of Acres: 3.4

50 Year Red Alder Site Index: 101

Number of Variable Plots: 3

Stand BH Age: 35

BAF Used: 27.78

Species	DBH	Height	Merch.	Basal	# Of	Gross	Net	Gross	Net
---	Average---	---	---	---	Per Acre---	BF Per Acre---	BF Per Acre---	BF Total-----	BF Total-----
Douglas-fir	14.5	51	19	139	19	1,750	1,713	5,950	5,825
Red Alder	10.7	35	139	276	10,320	9,769	35,070	33,216	39,040
TOTALS	11.1	37	157	296	12,070	11,482	41,020		

Standard error of the mean net volume per acre = 12.4%
68.3% probability that the total net volume per acre
is between 10,061 MBF and 12,904 MBF Scribner scale.

Douglas-fir Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	- Net BF Total	#3 Saw	#4 Saw	Total
1 Sort	20-24	24	0	1,858	0	1,858	1,858
	30-35	34	850	0	0	0	3,117
	36-40	40	3,117	0	0	0	5,825
1 Sort Total:		30	3,967	1,858	0	0	5,825
Douglas-fir Total:			3,967	1,858	0	0	5,825

Red Alder Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	- Net BF Total	#3 Saw	#4 Saw	Total
8 Sort	30-35	31	0	8,312	0	8,312	8,312
8 Sort	36-40	38	3,337	0	3,337	0	3,337
8 Sort Total:		33	3,337	8,312		11,649	
9 Sort	10-19	17	0	7,273	0	7,273	7,273
	25-29	26	0	2,046	0	2,046	2,046
	30-35	33	0	4,502	0	4,502	4,502
	36-40	37	0	7,745	0	7,745	7,745
9 Sort Total:		25	0	21,567		21,567	
Red Alder Total:			3,337	29,878		33,216	

C

C

C

OWNERSHIP: City of Rainier
 UNIT NUMBER: 1
 LOCATION:

(T. 7N, R. 2W, Sec. 28 & 33)

Top diameter used for this type is 6 inches or 30 percent of DBH.

CRUISE RESULTS OF TYPE #15

Number of Acres: 61.7 50 Year Douglas-fir Site Index: 142

Number of Variable Plots: 32 Stand BH Age: 27 BAF Used: 33.61

Species	DBH	Height	Merch.	Basal	# of	Gross	Net	Gross	Net
---	Average	---	---	Per Acre	---	Per Acre	---	Per Acre	---
Douglas-fir	15.3	56	30	42	3,360	3,164	207,370	195,191	192,663
Hemlock	18.7	66	26	20	3,230	3,123	199,600	192,663	154,429
Red Cedar	23.6	53	40	22	2,710	2,503	167,130	154,429	126,304
Red Alder	12.7	35	32	48	2,540	2,047	156,830	126,304	5,444
Maple	14.3	26	3	3	90	88	5,700	5,444	674,029
TOTALS	17.9	51	131	134	11,940	10,924	736,630	674,029	

Standard error of the mean net volume per acre = 13.0%
 68.3% probability that the total net volume per acre
 is between 9,502 MBF and 12,347 MBF Scribner scale.

Douglas-fir Grade Breakdown by Sort and Log Length

Sort	Length	Average	Net BF Total	#3 Saw	#4 Saw	Gross BF	Util.	Total
Sort	Length	Average	Net BF Total	#3 Saw	#4 Saw	Gross BF	Util.	Total
1 Sort	10-19	18	0	0	4,018	1,555	5,573	5,573
	20-24	22	0	583	3,175	0	3,759	3,759
	25-29	26	0	0	3,435	0	3,435	3,435
	30-35	33	0	37,586	4,212	0	41,799	41,799
	36-40	38	44,845	97,336	0	0	142,181	142,181
1 Sort Total:		33	44,845	135,506	14,840	1,555	196,746	196,746
Douglas-fir Total:			44,845	135,506	14,840	1,555	196,746	196,746

C

C

C

Hemlock Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	#2 Saw	#3 Saw	#4 Saw	Total
1 Sort	20-24	21	0	0	0	7,712	7,712
	25-29	28	0	0	0	3,370	3,370
	30-35	32	0	47,566	0	47,566	47,566
	36-40	37	85,282	48,733	0	134,015	134,015
1 Sort Total:		32	85,282	96,299	11,082	192,663	192,663
Hemlock Total:							
			85,282	96,299	11,082		

Red Cedar Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	#3 Saw	#4 Saw	Total
1 Sort	10-19	15	0	1,166	1,166	1,166
	20-24	21	518	11,211	11,730	11,730
	25-29	27	713	1,685	2,398	2,398
	30-35	32	69,081	0	69,081	69,081
	36-40	38	70,053	0	70,053	70,053
1 Sort Total:		29	140,366	14,063	154,429	154,429
Red Cedar Total:						
			140,366	14,063		

Red Alder Grade Breakdown by Sort and Log Length

Sort	Length	Class	Average	Length	#2 Saw	Net BF Total	#3 Saw	#4 Saw	Gross BF	Cull	Total
8 Sort	10-19	13	14,775	13,285	1,879	13,220	13,414	0	5,897	0	7,777
	20-24	24	14,775	13,285	1,879	13,220	13,414	0	5,897	0	27,995
	30-35	32	13,285	6,092	0	6,092	13,414	0	0	0	32,791
8 Sort Total:		26	28,060	21,191	13,414	5,897	68,563				
9 Sort	10-19	16	0	0	0	15,618	15,618	0	0	0	15,618
	20-24	23	0	0	0	15,942	15,942	0	0	0	15,942
	25-29	27	0	0	0	14,905	14,905	0	0	0	14,905
	30-35	32	0	0	0	5,703	5,703	0	0	0	5,703
	36-40	39	0	0	0	11,470	11,470	0	0	0	11,470
9 Sort Total:		24	0	0	0	63,638	63,638	0	0	0	63,638
Red Alder Total:			28,060	21,191	77,052	5,897	132,201				

Maple Grade Breakdown by Sort and Log Length

Sort	Length	Class	Average	Length	#4 Saw	Net BF Total	Total
9 Sort	20-24	23	3,499	1,944	3,499	1,944	3,499
	25-29	26	1,944	5,444	1,944	5,444	1,944
9 Sort Total:		24	5,444	5,444	5,444	5,444	5,444
Maple Total:			5,444	5,444	5,444	5,444	5,444

Ownership:
City of Rainier
Unit Number:
1
Location:
(T. 7N, R. 2W, Sec. 28)

CRUISE RESULTS OF TYPE #16

Number of Acres: 8.6
50 Year Douglas-fir Site Index: 140
Number of Fixed Plots: 9
Stand BH Age: 6

DBH	Number of Trees /Acre
Douglas-fir	83
4	272
6	56
2	117
4	6
Maple	534
Totals	

OWNERSHIP: City of Rainier
UNIT NUMBER: 1
LOCATION:

(T. 7N, R. 2W, Sec. 28)

Top diameter used for this type is 6 inches or 30 percent of DBH.

CRUISE RESULTS OF TYPE #17

Number of Acres: 10.7
50 Year Red Alder Site Index: 103

Number of Variable Plots: 11
Stand BH Age: 21
BAF Used: 20

Species	DBH	Height	Merch.	Basal	# Of	Gross	Net	Gross	Net	Volume	Volume	Volume	Volume
---Average---	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre
Douglas-fir	15.9	48	20	17	1,640	1,593	17,530	17,042	837	15,019	35,874	6,362	75,133
Hemlock	11.0	24	2	3	80	78	880	837	837	15,019	35,874	6,362	75,133
Red Cedar	19.4	40	31	23	1,480	1,404	15,840	15,019	15,019	35,874	6,362	75,133	75,133
Red Alder	11.7	36	49	81	3,480	3,353	37,240	35,874	35,874	6,362	75,133	75,133	75,133
Maple	22.5	58	7	3	670	595	7,140	6,362	6,362	75,133	75,133	75,133	75,133
TOTALS	15.4	41	109	125	7,350	7,021	78,620	75,133	75,133	75,133	75,133	75,133	75,133

Standard error of the mean net volume per acre = 25.3%
68.3% probability that the total net volume per acre is between 5,243 MBF and 8,801 MBF Scribner scale.

Douglas-fir Grade Breakdown by Sort and Log Length

Sort	Length	Average	#2 Saw	#3 Saw	#4 Saw	Total
1 Sort	10-19	17	0	0	1,226	1,226
	30-35	32	1,615	1,362	0	2,977
	36-40	38	4,883	7,957	0	12,840
1 Sort Total:		31	6,498	9,319	1,226	17,042
Douglas-fir Total:			6,498	9,319	1,226	17,042

Hemlock Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	#4 Saw	Total
1 Sort	20-24	22	837	837		837
1 Sort Total:		22	837	837		837
Hemlock Total:						
			837	837		837

Red Cedar Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	#3 Saw	#4 Saw	Total
1 Sort	10-19	14	0	1,362			1,362
	20-24	23	0	875			875
	25-29	28	661	0			661
	30-35	30	895	1,342			2,237
	36-40	38	9,883	0			9,883
1 Sort Total:		28	11,439	3,580			15,019
Red Cedar Total:							
			11,439	3,580			15,019

Red Alder Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	#3 Saw	#4 Saw	Total
8 Sort	30-35	32	1,070	0			1,070
	36-40	37	4,105	1,401			5,506
8 Sort Total:		36	5,175	1,401			6,576
9 Sort	10-19	17	0	4,533			4,533
	20-24	22	0	4,980			4,980
	25-29	26	0	4,358			4,358
	30-35	32	0	2,724			2,724
	36-40	38	0	12,704			12,704
9 Sort Total:		26	0	29,299			29,299
Red Alder Total:							
			5,175	30,699			35,874

Maple Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	- Net BF	#2 Saw	#4 Saw	Total
8 Sort	20-24	24	2,451	0	0	0	2,451
	30-35	30	1,128	0	0	0	1,128
	36-40	36	1,634	0	0	0	1,634
8 Sort Total:		28	5,214	0	0	0	5,214
9 Sort	10-19	18	0	175	175	175	175
	20-24	20	0	195	195	195	195
	30-35	30	0	311	311	311	311
	36-40	40	0	467	467	467	467
9 Sort Total:		28	0	1,148	1,148	1,148	1,148
Maple Total:			5,214	1,148	1,148	1,148	6,362

OWNERSHIP: City of Rainier
UNIT NUMBER: 1
LOCATION:

(T. 7N, R. 2W, Sec. 28 & 33)

Top diameter used for this type is 6 inches or 30 percent of DBH.

CRUISE RESULTS OF TYPE #18

Number of Acres: 16.7 50 Year Douglas-fir Site Index: 135

Number of Variable Plots: 16 Stand BH Age: 16 BAF Used: 27.78

---Average---
Merch. Basal Area # Of
DBH Height Area Stems
Species

Douglas-fir	11.1	29	142	300	6,570	6,023	109,780	100,585
Red Cedar	25.5	42	7	2	70	63	1,100	1,044
Red Alder	8.7	11	10	62	180	177	3,040	2,958
Maple	10.5	13	3	6	140	134	2,350	2,233
TOTALS	11.6	28	163	369	6,960	6,396	116,270	106,818

Standard error of the mean net volume per acre = 15.1%
68.3% probability that the total net volume per acre
is between 5,430 MBF and 7,363 MBF Scribner scale.

Douglas-fir Grade Breakdown by Sort and Log Length

Sort Length Average Length Class
----- Net BF Total -----
#2 Saw #3 Saw #4 Saw Total

1 Sort	10-19	16	0	0	0	17,658	17,658
	20-24	23	0	0	0	10,148	10,148
	25-29	26	0	0	0	18,441	18,441
	30-35	32	0	0	0	39,057	39,057
	36-40	38	4,900	10,380	6,031	0	15,281
1 Sort Total:		25	4,900	43,406	52,279	100,585	100,585

Douglas-fir Total: 4,900 43,406 52,279 100,585

Red Cedar Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	#3 Saw	Total
1 Sort	36-40	39	1,044	1,044		1,044
1 Sort Total:		39	1,044	1,044		1,044
Red Cedar Total:						
			1,044	1,044		1,044

Red Alder Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	#4 Saw	Total
9 Sort	30-35	32	2,958	2,958		2,958
9 Sort Total:		32	2,958	2,958		2,958
Red Alder Total:						
			2,958	2,958		2,958

Maple Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	#4 Saw	Total
9 Sort	10-19	12	2,233	2,233		2,233
9 Sort Total:		12	2,233	2,233		2,233
Maple Total:						
			2,233	2,233		2,233

(T. 7N, R. 2W, Sec. 28 & 33)

CRUISE RESULTS OF TYPE #19

Number of Variable Plots: 10
Stand BH Age: 51
BAF Used: 27.78

Species	DBH	Average Merch. Height	Basal Area	# of Stems	Per Acre Gross	Per Acre Net	Volume	Volume	Net
Douglas-fir	15.6	51	19	19	1,650	1,564	17,000	16,109	
Red Cedar	30.0	57	6	1	12,290	253	3,030	2,604	
Red Alder	13.7	48	133	152	12,560	12,070	129,330	124,325	
TOTALS	14.5	48	158	172	14,500	13,887	149,360	143,038	

Standard error of the mean net volume per acre = 10.6%
68.3% probability that the total net volume per acre
is between 12,417 MBF and 15,357 MBF Scribner scale.

Douglas-fir Grade Breakdown by Sort and Log Length

Sort	Length	Class	Average	Net BF Total	#2 Saw	#3 Saw	#4 Saw	Total
1 Sort	10-19	18	0	0	0	0	801	801
	30-35	32	0	0	0	0	0	2,518
	36-40	38	2,032	10,759	0	0	0	12,790
1 Sort Total:		33	2,032	13,277			801	16,109
Douglas-fir Total:								
			2,032	13,277			801	16,109

Red Cedar Grade Breakdown by Sort and Log Length

Sort	Length	Average	- Net BF Total	#3 Saw	#4 Saw	Total
1 Sort	20-24	20	0	258	258	258
	25-29	26	286	0	286	286
	30-35	32	2,060	0	2,060	2,060
1 Sort Total:		28	2,346	258	2,604	2,604
Red Cedar Total:						
			2,346	258		2,604

Red Alder Grade Breakdown by Sort and Log Length

Sort	Length	Average	- Net BF Total	#2 Saw	#3 Saw	#4 Saw	Total
8 Sort	25-29	26	2,489	0	18,999	0	2,489
	30-35	32	8,527	18,999	27,669	55,195	85,893
8 Sort Total:		32	11,016	18,999	27,669	57,685	114,679
9 Sort	10-19	16	0	0	4,721	4,721	4,721
	20-24	22	0	0	8,241	8,241	8,241
	25-29	27	0	0	6,610	6,610	6,610
	30-35	33	0	0	9,757	9,757	9,757
	36-40	39	0	0	37,312	37,312	37,312
9 Sort Total:		30	0	0	66,641	66,641	66,641
Red Alder Total:							
			11,016	18,999	94,310	124,325	144,330

Ownership:
Unit Number:
Location:
City of Rainier
1
(T. 7N, R. 2W, Sec. 27, 28 & 33)

CRUISE RESULTS OF TYPE #20

Number of Acres: 113
50 Year Douglas-fir Site Index: 130
Number of Fixed Plots: 37
Stand BH Age: 3

Number of Trees /Acre	DBH	
93	0	Douglas-fir
145	2	Alder
24	0	Maple
336	2	Totals
1	2	
599		

OWNERSHIP: City of Rainier
UNIT NUMBER: 1
LOCATION:

(T. 7N, R. 2W, Sec. 36)

Top diameter used for this type is 6 inches or 30 percent of DBH.

CRUISE RESULTS OF TYPE #22

Number of Acres: 96.8
50 Year Douglas-fir Site Index: 140
Number of Variable Plots: 24
Stand BH Age: 15
BAF Used: 20

Species	DBH	Merch.	Height	Basal	# of	Gross	Net	Gross	Net	Volume	Volume	Net
---	---	---	---	---	---	---	---	---	---	---	---	---
Douglas-fir	10.8	25	115	211	5,070	4,752	491,020	459,961	3,469	0	6,534	469,964
Hemlock	26.0	60	<1	<1	40	36	3,630	3,469	3,630	0	0	0
Red Cedar	7.0	0	<1	3	40	0	3,630	0	14,840	0	6,534	0
Red Alder	6.4	3	8	44	150	68	14,840	6,534	14,840	0	6,534	0
TOTALS	10.6	24	125	258	5,300	4,855	513,120	469,964	513,120	0	6,534	469,964

Standard error of the mean net volume per acre = 6.9%
68.3% probability that the total net volume per acre
is between 4,520 MBF and 5,190 MBF Scribner scale.

Douglas-fir Grade Breakdown by Sort and Log Length

Sort	Length	Average	- Net BF Total	#3 Saw	#4 Saw	Total
Sort	Class	Length	Average	#3 Saw	#4 Saw	Total
1 Sort	10-19	16	0	81,393	81,393	81,393
	20-24	22	0	142,941	142,941	142,941
	25-29	27	0	108,577	108,577	108,577
	30-35	32	92,928	26,378	119,306	119,306
	36-40	36	7,744	0	7,744	7,744
1 Sort Total:		24	100,672	359,289	459,961	459,961
Douglas-fir Total:			100,672	359,289	459,961	459,961

Hemlock Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	
1 Sort	36-40	36	3,469	3,469	
1 Sort Total:		36	3,469	3,469	
					Hemlock Total:
					3,469

Red Cedar Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	
					0
					Red Cedar Total:

Red Alder Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	#4 Saw	Total
9 Sort	10-19	14	6,534	6,534		
9 Sort Total:		14	6,534	6,534		
Red Alder Total:						6,534

Ownership: City of Rainier
Unit Number: 1
Location: (T. 7N, R. 2W, Sec. 27)

CRUISE RESULTS OF TYPE #23

Number of Acres: 2.1
50 Year Douglas-fir Site Index: 135
Number of Fixed Plots: 3
Stand BH Age: 6

Number of Trees /Acre	DBH	Douglas-fir	Totals
250	4		250

OWNERSHIP: City of Rainier
UNIT NUMBER: 1
LOCATION: (T. 7N, R. 2W, Sec. 27)

Top diameter used for this type is 6 inches or 30 percent of DBH.

CRUISE RESULTS OF TYPE #24

Number of Acres: 16.3 50 Year Red Alder Site Index: 107

Number of Variable Plots: 16 Stand BH Age: 30 BAF Used: 27.78

Species	DBH	Height	Merch.	Basal	# of	Gross	Net	Gross	Net
---	---	---	---	---	---	Per Acre	Per Acre	Per Acre	Per Acre
Douglas-fir	22.3	73	10	6	1,240	1,162	20,290	18,933	43,300
Hemlock	25.4	77	19	6	2,880	2,656	46,890	58,639	59,885
Red Cedar	20.2	48	66	46	3,910	3,598	63,790	58,639	59,885
Red Alder	13.1	44	49	59	3,860	3,674	62,860	59,885	59,885
Maple	17.3	36	33	28	1,440	1,384	23,520	22,556	22,556
TOTALS	18.4	49	177	145	13,330	12,473	217,350	203,313	203,313

Standard error of the mean net volume per acre = 10.1%
68.3% probability that the total net volume per acre is between 11,208 MBF and 13,738 MBF Scribner scale.

Douglas-fir Grade Breakdown by Sort and Log Length

Sort	Length	Average	Net BF	#3 Saw	#4 Saw	Gross BF	Total
Sort	Class	Length	---	---	---	---	---
1 Sort	10-19	18	0	0	142	0	142
	20-24	20	1,189	0	453	283	1,924
	25-29	28	0	283	0	0	283
	30-35	32	0	3,792	0	0	3,792
	36-40	38	8,462	4,613	0	0	13,075
1 Sort Total:		30	9,651	8,688	594	283	19,216
Douglas-fir Total:			9,651	8,688	594	283	19,216

Hemlock Grade Breakdown by Sort and Log Length

Sort	Length	Average	#2 Saw	Net BF Total	#3 Saw	#4 Saw	Gross BF	Util.	Total
1 Sort	10-19	18	0	0	0	170	0	0	170
	20-24	20	0	0	283	0	0	0	283
	25-29	26	0	0	368	0	0	0	368
	30-35	32	2,377	3,821	0	0	2,094	0	8,292
	36-40	38	33,621	2,660	0	0	0	0	36,282
1 Sort Total:		34	35,999	7,132	170	2,094	45,395		
Hemlock Total:									

Red Cedar Grade Breakdown by Sort and Log Length

Sort	Length	Average	#3 Saw	Net BF Total	#4 Saw	Total
1 Sort	10-19	15	0	5,660	5,660	5,660
	20-24	22	2,660	5,009	7,670	5,660
	25-29	26	566	0	566	566
	30-35	32	32,857	0	32,857	566
	36-40	37	11,886	0	11,886	566
1 Sort Total:		24	47,970	10,669	58,639	58,639
Red Cedar Total:						

Red Alder Grade Breakdown by Sort and Log Length

Sort	Length	Class	Average	- Net BF Total	#3 Saw	#4 Saw	Total
8 Sort	30-35	32	2,066	22,811	1,557	24,876	
8 Sort	36-40	40	0	1,557		1,557	
8 Sort Total:			33	2,066	24,367	26,433	
9 Sort	10-19	16	0	6,056		6,056	
9 Sort	20-24	21	0	2,490		2,490	
9 Sort	25-29	26	0	2,490		2,490	
9 Sort	36-40	39	0	22,414		22,414	
9 Sort Total:			28	0	33,452	33,452	
Red Alder Total:							
			2,066	57,819		59,885	

Maple Grade Breakdown by Sort and Log Length

Sort	Length	Class	Average	- Net BF Total	#2 Saw	#4 Saw	Total
8 Sort	30-35	32	1,472	0	1,472		
8 Sort	36-40	40	2,745	0	2,745		
8 Sort Total:			37	4,217	0	4,217	
9 Sort	10-19	16	0	2,887		2,887	
9 Sort	20-24	20	0	877		877	
9 Sort	25-29	26	0	3,113		3,113	
9 Sort	30-35	32	0	3,141		3,141	
9 Sort	36-40	39	0	8,320		8,320	
9 Sort Total:			26	0	18,339	18,339	
Maple Total:							
			4,217	18,339		22,556	

Ownership:
City of Rainier
Unit Number:
1
Location:
(T. 7N, R. 2W, Sec. 33)

CRUISE RESULTS OF TYPE #26

Number of Acres: 16.7
50 Year Douglas-fir Site Index: 140
Number of Fixed Plots: 16
Stand BH Age: 8

Number of	DBH	Trees /Acre
Douglas-fir	1	6
	2	28
	4	200
	6	144
	8	3
Alder	2	47
Totals		428

Top diameter used for this type is 6 inches or 30 percent of DBH.

Number of Acres: 5.1
50 Year Douglas-fir Site Index: 146
Number of Variable Plots: 5
Stand BH Age: 47
BAF Used: 40

Species	DBH	Height	Basal Area	# of Stems	Gross Volume	Net Volume	Gross Volume	Net Volume
---Average---								
		Merch.	--Per Acre--	--Per Acre--	--Bf Per Acre--	Net	---Bf Total---	Net
					Gross	Gross	Gross	Gross
					Net	Net	Net	Net

Douglas-fir	24.9	95	200	66	35,590	34,304	181,520	174,950
TOTALS	24.9	95	200	66	35,590	34,304	181,520	174,950

Standard error of the mean net volume per acre = 6.1%
68.3% probability that the total net volume per acre
is between 32,210 MBF and 36,398 MBF Scribner scale.

Douglas-fir Grade Breakdown by Sort and Log Length

Sort	Length	Class	Average	Net BF Total	#2 Saw	#3 Saw	#4 Saw	Gross BF	Util.	Total
1 Sort	10-19	15	3,386	0	1,918	326	5,630	8,405	938	19,625
	20-24	22	7,058	449	898	0	0	0	0	0
	25-29	28	0	938	0	0	0	0	0	0
	30-35	32	16,238	3,386	0	0	0	0	0	0
	36-40	39	107,386	33,293	0	0	0	0	0	0
1 Sort Total:		33	134,069	38,066	2,815	326	175,277			
Douglas-fir Total:			134,069	38,066	2,815	326	175,277			

OWNERSHIP: City of Rainier
UNIT NUMBER: 1
LOCATION:

(T, 7N, R, 2W, Sec. 33 & 34)

Top diameter used for this type is 6 inches or 30 percent of DBH.

CRUISE RESULTS OF TYPE #28

Number of Acres: 65.9
50 Year Douglas-fir Site Index: 135

Number of Variable Plots: 22
Stand BH Age: 18
BAF Used: 27.78

Species	DBH	Height	Merch.	Basal	# Of	Gross	Net	Gross	Net	Volume	Volume	Net
---Average---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---	---Per Acre---
Douglas-fir	11.6	31	139	211	7,690	7,451	506,690	491,044	TOTALS	11.6	31	139

Standard error of the mean net volume per acre = 9.6%
68.3% probability that the total net volume per acre is between 6,736 MBF and 8,167 MBF Scribner scale.

Douglas-fir Grade Breakdown by Sort and Log Length

Sort	Length	Average	- Net BF Total	#4 Saw	Total
1 Sort	10-19	14	5,242	4,660	9,902
	20-24	23	0	47,432	47,432
	25-29	26	3,994	142,795	146,789
	30-35	32	192,723	32,703	225,426
	36-40	37	61,495	0	61,495
1 Sort Total:		28	263,455	227,590	491,044
Douglas-fir Total:			263,455	227,590	491,044

OWNERSHIP: City of Rainier
UNIT NUMBER: 1
LOCATION: (T. 7N, R. 2W, Sec. 34)

Top diameter used for this type is 6 inches or 30 percent of DBH.

CRUISE RESULTS OF TYPE #29

Number of Acres: 3.9
50 Year Douglas-fir Site Index: 130

Number of Variable Plots: 4
Stand BH Age: 9
BAF Used: 20

Species	DBH	Height	Merch.	Basal	# of	Gross	Net	Gross	Net	Volume	Volume	Net
---Average---	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre
Douglas-fir	4.0	0	5	57	0	230	0	175	0	900	0	683
Red Cedar	16.0	15	15	17	17	910	540	540	175	3,530	0	2,106
Red Alder	8.9	9	85	294	4	0	0	0	0	0	0	0
Maple	15.0	27	5	4	4	0	0	0	0	0	0	0
TOTALS	9.9	10	110	373	1,140	715	4,430	2,788	0	0	0	0

Standard error of the mean net volume per acre = 20.2%
68.3% probability that the total net volume per acre is between 571 MBF and 859 MBF Scribner scale.

Red Cedar Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	#4 Saw	Total
9 Sort	20-24	22	683	683	683	683
9 Sort Total:		22	683	683	683	683
Red Cedar Total:				683	683	683

Red Alder Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	#4 Saw	Total
9 Sort	10-19	16	741	488	878	741
	20-24	22	488	878		488
	25-29	26	878			878
9 Sort Total:		20	2,106	2,106		2,106
Red Alder Total:			2,106	2,106		2,106

OWNERSHIP: City of Rainier
UNIT NUMBER: 1
LOCATION:

(T. 7N, R. 2W, Sec. 34)

Top diameter used for this type is 6 inches or 30 percent of DBH.

CRUISE RESULTS OF TYPE #30

Number of Acres: 37.7 50 Year Douglas-fir Site Index: 146

Number of Variable Plots: 19 Stand BH Age: 9 BAF Used: 20

Species	DBH	Height	Merch. Basal	Area	Stems	# Of	Gross	Net	Volume	Gross	Volume	Net
---	Average---			Per Acre--	BF Per Acre-					BF Total		
Douglas-fir	6.5	0	72	347	0	0	0	0	0	0	0	0
Red Alder	2.7	0	3	91	0	0	0	0	0	0	0	0
TOTALS	6.3	0	75	438	0	0	0	0	0	0	0	0

Ownership:
Unit Number:
Location:
City of Rainier
1
(T. 7N, R. 2W, Sec. 33)

CRUISE RESULTS OF TYPE #31

Number of Acres: 15.4
50 Year Douglas-fir Site Index: 135
Number of Fixed Plots: 15
Stand BH Age: 3

DBH	Number of Trees /Acre
Douglas-fir	23
	257
	3
	6
	8
Alder	0
	17
	460
Cononwood	20
Totals	813

Ownership: City of Rainier
Unit Number: 1
Location: (T. 7N, R. 2W, Sec. 33)

CRUISE RESULTS OF TYPE #32

Number of Acres: 16.6
50 Year Douglas-fir Site Index: 137
Number of Fixed Plots: 16
Stand BH Age: 8

Number of Trees /Acre	DBH	
3	0	Douglas-fir
28	2	
103	4	
184	6	
22	8	
3	10	Red Cedar
19	2	Alder
9	4	
3	6	
374		Totals

Don't show out for DMC

OWNERSHIP: City of Rainier
UNIT NUMBER: 1
LOCATION:

(T, 7N, R, 2W, Sec. 33)

Top diameter used for this type is 6 inches or 30 percent of DBH.

CRUISE RESULTS OF TYPE #33

Number of Acres: 11.6

50 Year Douglas-fir Site Index: 135

Number of Variable Plots: 12

Stand BH Age: 12

BAF Used: 20

Species	DBH	Height	Merch.	Basal	# Of	Gross	Net	Gross	Net	Volume	Volume	Volume	Volume
---	---	---	---	---	---	---	---	---	---	---	---	---	---
Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre	Per Acre
117	416	2,310	1,423	26,780	16,511	0	0	0	0	0	0	0	0
7	5.0	7	0	118	428	2,310	1,423	26,780	16,511	0	0	0	0
TOTALS	7.5	7	118	428	2,310	1,423	26,780	16,511	0	0	0	0	0

Standard error of the mean net volume per acre = 13.3%
68.3% probability that the total net volume per acre is between 1,234 MBF and 1,613 MBF Scribner scale.

Douglas-fir Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	#4 Saw	Total
1 Sort	10-19	14	16,511	16,511		
1 Sort Total:		14	16,511	16,511		
Douglas-fir Total:				16,511		16,511

Ownership:
Unit Number:
Location:
City of Rainier
1
(T. 7N, R. 2W, Sec. 33)

CRUISE RESULTS OF TYPE #34

Number of Acres:	21.4	50 Year Douglas-fir Site Index:	135
Number of Fixed Plots:	21	Stand BH Age:	5

DBH	Number of Trees /Acre
Douglas-fir	0
	2
Red Cedar	8
	10
Alder	2
	10
Totals	474
	775

OWNERSHIP: City of Rainier
UNIT NUMBER: 1
LOCATION:

(T. 7N, R. 2W, Sec. 33)

Top diameter used for this type is 6 inches or 30 percent of DBH.

CRUISE RESULTS OF TYPE #35

Number of Acres: 16.7
50 Year Douglas-fir Site Index: 140
Number of Variable Plots: 18
Stand BH Age: 13
BAF Used: 20

Species	DBH	Height	Merch.	Basal	# of	--BF Per Acre--	Net	Gross	Volume
---	---	---	---	---	---	---	---	---	---
Douglas-fir	8.0	10	107	372	1,540	940	25,740	15,698	1,484
Red Cedar	18.4	28	6	4	180	166	3,020	2,765	1,484
Red Alder	5.0	3	6	62	120	89	2,020	1,484	1,484
TOTALS	8.4	11	118	438	1,840	1,194	30,780	19,947	19,947

Standard error of the mean net volume per acre = 13.0%
68.3% probability that the total net volume per acre is between 1,039 MBF and 1,350 MBF Scribner scale.

Douglas-fir Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	- Net BF Total	#4 Saw	Total
Sort	Class	Length	Average	- Net BF Total	#4 Saw	Total
1 Sort	10-19	14	0	11,041	3,860	11,041
1 Sort	20-24	21	798	3,860	4,657	4,657
1 Sort Total:		16	798	14,900	15,698	15,698
Douglas-fir Total:				14,900	15,698	15,698

Red Cedar Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	#4 Saw	Total
1 Sort	20-24	24	798	798		798
	25-29	27	1,967	1,967		1,967
1 Sort Total:		26	2,765	2,765		2,765
Red Cedar Total:						
2,765						

Red Alder Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	#4 Saw	Total
9 Sort	20-24	24	798	798		798
	25-29	27	1,967	1,967		1,967
9 Sort	10-19	12	1,484	1,484		1,484
9 Sort Total:		12	1,484	1,484		1,484
Red Alder Total:						
1,484						

OWNERSHIP: City of Rainier
UNIT NUMBER: 1
LOCATION:

(T. 7N, R. 2W, Sec. 34)

Top diameter used for this type is 6 inches or 30 percent of DBH.

CRUISE RESULTS OF TYPE #36

Number of Acres: 12 50 Year Douglas-fir Site Index: 135

Number of Variable Plots: 10 Stand BH Age: 8 BAF Used: 20

---Average---
DBH Height Merch. Basal Area # Of Gross Volume Net Volume
Species

Douglas-fir	6.2	0	72	371	0	0	0	0	0	0	0	0
Red Alder	3.1	0	14	334	0	0	0	0	0	0	0	0
TOTALS	5.7	0	86	705	0	0	0	0	0	0	0	0

OWNERSHIP: City of Rainier
UNIT NUMBER: 1
LOCATION:

(T. 7N, R. 2W, Sec. 34)

Top diameter used for this type is 6 inches or 30 percent of DBH.

CRUISE RESULTS OF TYPE #37

Number of Acres: 65.1
50 Year Douglas-fir Site Index: 120

Number of Variable Plots: 31
Stand BH Age: 53
BAF Used: 33.61

Species	DBH	Height	Merch. Basal	Area	# of Stems	Gross Volume	Net Volume	Gross Volume	Net Volume
Douglas-fir	25.2	96	61	25	11,440	11,097	744,840	722,396	561,048
Hemlock	16.0	41	1	<1	50	44	2,960	2,894	62,605
Red Cedar	15.1	42	17	19	1,000	962	65,290	62,605	561,048
Red Alder	14.8	55	87	88	9,190	8,618	598,320	561,048	561,048
TOTALS	18.6	68	166	132	21,680	20,721	1,411,410	1,348,943	1,348,943

Standard error of the mean net volume per acre = 8.8%
68.3% probability that the total net volume per acre is between 18,890 MBF and 22,552 MBF Scribner scale.

Douglas-fir Grade Breakdown by Sort and Log Length

Sort	Length	Average	Net BF Total	#4 Saw	Total
1 Sort	10-19	17	0	635	5,364
	20-24	22	0	1,976	8,117
	25-29	26	0	8,399	13,763
	30-35	31	7,270	13,269	20,539
	36-40	39	551,943	122,670	674,613
1 Sort Total:		35	559,213	146,950	722,396
Douglas-fir Total:			559,213	146,950	722,396

Hemlock Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	#3 Saw	Total
1 Sort	36-40	40	2,894	2,894	2,894	2,894
1 Sort Total:		40	2,894	2,894	2,894	2,894
=====						
Hemlock Total:			2,894	2,894	2,894	2,894

Red Cedar Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	#3 Saw	#4 Saw	Total
1 Sort	10-19	17	9,811	9,811	9,811	9,811	9,811
	20-24	20	2,400	2,400	2,400	2,400	2,400
	25-29	28	6,211	6,211	6,211	6,211	6,211
	30-35	32	11,152	11,152	11,152	11,152	11,152
	36-40	38	30,279	30,279	30,279	30,279	30,279
1 Sort Total:		26	41,431	41,431	41,431	21,174	62,605
=====							
Red Cedar Total:			41,431	41,431	21,174	62,605	62,605

Red Alder Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	#2 Saw	Net BF Total	#3 Saw	#4 Saw	Gross BF	Util.	Total
8 Sort	25-29	28	6,917	0	0	0	0	0	0	6,917
	30-35	30	88,579	90,132	0	0	0	0	0	217,107
	36-40	38	40,513	52,089	0	0	0	0	0	97,684
8 Sort Total:		32	136,010	142,221	43,478	0	0	0	0	321,708
9 Sort	10-19	16	0	0	0	0	0	0	0	7,129
	20-24	22	0	0	0	0	0	0	0	24,350
	25-29	27	0	0	0	0	0	0	0	17,857
	30-35	31	0	0	0	0	0	0	0	59,500
	36-40	39	0	0	0	0	0	0	0	132,269
9 Sort Total:		31	0	2,753	236,588	1,765	0	0	0	241,105
Red Alder Total:			136,010	144,973	280,065	1,765	0	0	0	562,813

Ownership: City of Rainier
Unit Number: 1
Location: (T. 7N, R. 2W, Sec. 33 & 34)

CRUISE RESULTS OF TYPE #38

Number of Acres: 19.3
50 Year Douglas-fir Site Index: 135
Number of Fixed Plots: 18
Stand BH Age: 5

DBH	Number of Trees/Acre
Douglas-fir	0
	2
Alder	0
	2
	311
	47
Totals	667

Ownership:
Unit Number:
Location:
City of Rainier
1
(T. 7N, R. 2W, Sec. 34)

CRUISE RESULTS OF TYPE #39

Number of Acres: 8.6
50 Year Douglas-fir Site Index: 135
Number of Fixed Plots: 8
Stand BH Age: 10

DBH	Number of Trees/Acre
Douglas-fir	2
	4
	6
Alder	2
	4
	6
Maple	2
	4
Totals	426

Ownership:
Unit Number:
Location:
City of Rainier
1
(T. 7N, R. 2W, Sec. 34)

CRUISE RESULTS OF TYPE #40

Number of Acres: 4.7
Number of Fixed Plots: 5
50 Year Douglas-fir Site Index: 135
Stand BH Age: 5

DBH	Number of Trees /Acre
Alder	2
	4
	6
Maple	2
	10
Totals	220

OWNERSHIP: City of Rainier
UNIT NUMBER: 1
LOCATION:

(T. 7N, R. 2W, Sec. 34)

Top diameter used for this type is 6 inches or 30 percent of DBH.

CRUISE RESULTS OF TYPE #41

Number of Acres: 14.1 50 Year Red Alder Site Index: 105

Number of Variable Plots: 14 Stand BH Age: 39 BAF Used: 27.78

---Average---
DBH Merch. Basal # Of Gross Net
Species Height Area Stems Volume Volume
-----BF Total-----

Douglas-fir	23.0	75	40	16	4,860	4,582	68,460	64,602
Red Cedar	18.0	39	12	7	480	427	6,830	6,015
Red Alder	13.6	43	119	143	9,810	9,427	138,350	132,926
Maple	17.2	39	10	7	530	510	7,470	7,190
TOTALS	16.1	50	181	173	15,680	14,945	221,110	210,733

Standard error of the mean net volume per acre = 10.2%
68.3% probability that the total net volume per acre is between 13,416 MBF and 16,475 MBF Scribner scale.

Douglas-fir Grade Breakdown by Sort and Log Length

Sort Length Average Length Class Length
---- Net BF Total ----
#4 Saw

1 Sort	10-19	16	0	0	168	168
	20-24	20	1,035	0	420	1,455
	30-35	33	0	3,329	1,035	4,365
	36-40	38	47,955	10,660	0	58,615
1 Sort Total:		36	48,990	13,989	1,623	64,602

Douglas-fir Total: 48,990 13,989 1,623 64,602

Red Cedar Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	Net BF Total	#3 Saw	#4 Saw	Total
1 Sort	10-19	14	0	1,343	0	1,343	1,343
	30-35	32	1,035	3,637	0	3,637	3,637
	36-40	40	3,637	4,672	1,343	6,015	6,015
1 Sort Total:		31	4,672	1,343	6,015		
Red Cedar Total:							
			4,672	1,343	6,015		

Red Alder Grade Breakdown by Sort and Log Length

Sort	Class	Average Length	#2 Saw	#3 Saw	#4 Saw	Total
8 Sort	10-19	16	1,903	0	0	1,903
	25-29	26	0	2,406	0	2,406
	30-35	32	0	10,268	30,972	41,240
	36-40	40	0	0	1,958	1,958
8 Sort Total:		32	1,903	12,674	32,931	47,507
9 Sort	10-19	17	0	0	6,911	6,911
	20-24	22	0	0	7,470	7,470
	25-29	26	0	0	4,001	4,001
	30-35	32	0	0	18,913	18,913
	36-40	39	0	0	48,123	48,123
9 Sort Total:		30	0	0	85,418	85,418
=====						
Red Alder Total:						
			1,903	12,674	118,349	132,926

Maple Grade Breakdown by Sort and Log Length

Sort	Class	Length	Average	- Net BF Total	#3 Saw	#4 Saw	Total
8 Sort	30-35	32	2,126	0	2,126	0	2,126
	36-40	38	0	2,126	2,126	0	2,126
8 Sort Total:		35	2,126	2,126	2,126	4,253	
9 Sort	20-24	20	0	280	280	280	
	25-29	26	0	867	867	867	
	30-35	32	0	1,091	1,091	1,091	
	36-40	40	0	699	699	699	
9 Sort Total:		28	0	2,938	2,938	2,938	
Maple Total:			2,126	5,064	7,190		

Ownership: City of Rainier
Unit Number: 1
Location: (T. 7N, R. 2W, Sec. 28)

CRUISE RESULTS OF TYPE #42

Number of Acres: 2.1
50 Year Douglas-fir Site Index: 136
Number of Fixed Plots: 3
Stand BH Age: 2

DBH	Number of Trees /Acre
Douglas-fir	67
Alder	317
Totals	733
	1,117

Application for serving on Citizen
Advisory Boards/Committees
City of Rainier

Date: October 2, 2024

Name: Janet Sedgley

Mailing Address: 112 W. 10th Street, Rainier, OR 97048

Street Address: 112 W. 10th Street, Rainier, OR 97048

Phone Number: 406-370-4796

Email address: sedgley@gmail.com

Length of Residence in Rainier: 3 years (since Labor Day Weekend 2021)

Are you a registered voter in the City of Rainier? Yes

I'm interested in serving on: Library Board, Park Advisory Board, Planning commission

1. Why are you interested in serving on this Board or Committee?

I believe it's important to give back to your community. But I also enjoy getting to know my neighbors better and helping others. Plus, as a resident, it is beneficial to me personally if Rainier prospers.

2. What strengths do you possess to contribute to this Board or Committee?

I believe I am a good researcher, analyzer and problem solver. I have always been good with connecting with people and remembering what matters to them. I have a master's degree in communication and years of experience working with and teaching / training students, staff and faculty in technology and working with individuals with disabilities.

3. Do you have previous or current experience in community affairs? If so, please explain.

- AFS (American Field Students) international and intercultural programs volunteer, Columbia Pacific Team, Springs 2023 & 2024
- Member of Columbia County Rotary and Rainier Chamber of Commerce
- Volunteer with Braver Angels, Montana State Coordinator and Oregon volunteer, 2020-present. BraverAngels.org
- Volunteer technical support for East Missoula Community Council in Missoula, MT (they use my Zoom instance for their hybrid meetings)
- International Friendship program volunteer, University of Montana, 1989-2000
- Missoula City/County Planning Board, 1989-91
- Creator and Director, ESL summer program for Reedwood Friends Church, Portland, 1981

DISCUSSION DRAFT | AUGUST 24, 2026

Veterans Way / U.S. 30 Intersection Safety Concepts

City Council and Public Works Brief | Rainier, Oregon

Prepared for: City of Rainier City Council and Public Works staff**Location:** U.S. 30 (W B Street) at Veterans Way, Rainier, Oregon**Purpose:** Initial policy and project-development discussion**Status:** Concept-level analysis; not for design, bid, or construction

RECOMMENDED DIRECTION: Pursue an ODOT-coordinated lane-reduction pilot as the near-term safety project. Retain the roundabout only as a long-term option pending a 10% feasibility study focused on railroad queuing, freight movements, utilities, and right-of-way.

Decision summary

The lane-reduction concept moves the transition to additional highway lanes approximately 300 yards west of Veterans Way, leaving one through lane in each direction at the intersection and retaining a short turn pocket. It is lower-cost, reversible, and can be evaluated as a pilot before permanent pavement work.

A compact single-lane roundabout could offer the strongest reduction in severe angle and turning crashes, but the immediately adjacent railroad crossing is a major feasibility constraint. Queue storage, railroad warning-system modifications, truck and over-dimension vehicle paths, and staged construction would drive both approval risk and cost.

Alternative	Construction	All-in likely	Planning range
Lane reduction / merge relocation	\$0.87 M	\$1.30 M	\$0.8-\$1.8 M
Single-lane roundabout	\$6.95 M	\$10.70 M	\$8-\$14 M

All amounts are August 2026 planning dollars. Ranges include concept-stage uncertainty but not future inflation or a railroad grade separation.

AI-ASSISTANCE NOTICE: OpenAI Codex was used for research synthesis, preliminary cost modeling, concept-image generation/editing, and document production. The analysis has not been reviewed or sealed by a licensed transportation engineer. See Appendix A for the full public-facing disclosure and conversation summary.

1. Existing setting and project purpose

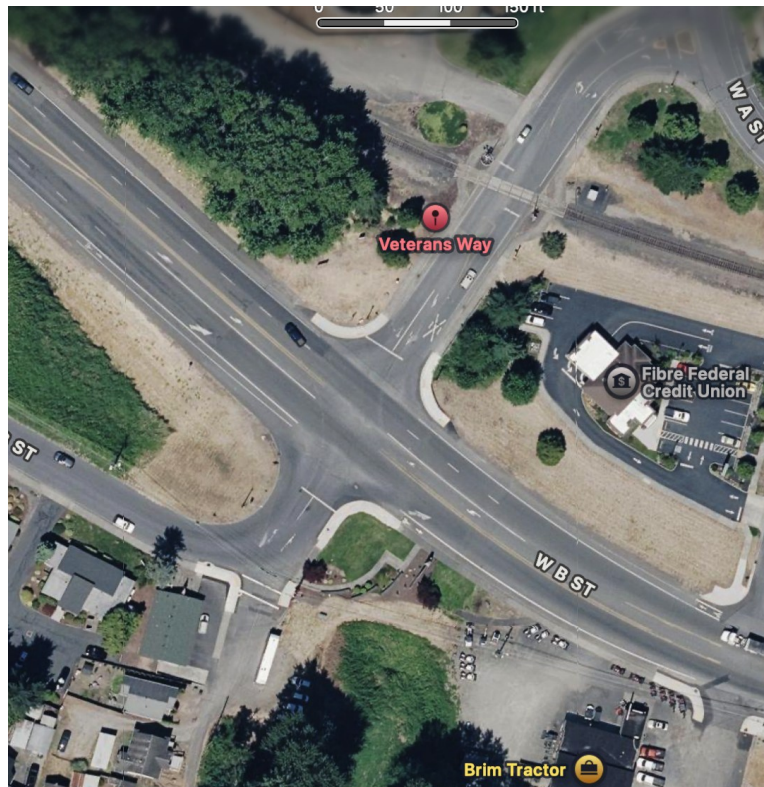


Figure 1. Supplied satellite image of the study intersection. Image is a planning reference, not survey-grade mapping.

Key conditions visible in the source image

- U.S. 30 runs northwest-southeast through a broad paved intersection and transitions between lane configurations west of Veterans Way.
- Veterans Way crosses an active railroad immediately north of the highway intersection, leaving limited storage between the tracks and the highway.
- The state route serves local traffic, transit, heavy trucks, and through travel; freight accommodation is a controlling design requirement.
- Commercial access, pedestrian crossings, drainage, utilities, existing curb ramps, and construction staging must be evaluated during design.

Safety objectives

- Reduce high-speed lane changing, merging, and sideswipe conflicts near Veterans Way.
- Reduce the number and severity of angle and turning conflicts.
- Make the speed transition into Rainier more self-enforcing and understandable.
- Preserve safe truck, transit, emergency-response, pedestrian, and railroad operations.

IMPORTANT: No site-specific turning counts, queue observations, speed study, railroad operating data, crash diagram, survey, utility mapping, or geotechnical information was available for this brief. Those inputs are required before selecting a preferred alternative.

2. Alternative 1 - lane reduction and westward merge relocation



Figure 2. AI-assisted lane-reduction concept. The approximately 300-yard transition point lies beyond the west edge of the supplied image.

Concept. Provide one through lane in each direction at and west of Veterans Way, retain a short left-turn pocket where operationally justified, and convert surplus pavement to a striped buffer or other channelization. The permanent version assumes localized milling and overlay so obsolete lane lines and arrows do not remain visible.

Expected advantages

- Lower capital cost and shorter delivery time than full intersection reconstruction.
- Reversible pilot installation is possible before committing to permanent pavement work.
- Fewer merge and lane-choice decisions at the intersection and a more legible gateway speed transition.
- Can largely remain within the existing paved highway footprint.

Issues requiring analysis

- Peak-hour capacity, truck platoons, turning queues, transit operations, and emergency response.
- Exact taper length and placement relative to posted speed, sight distance, driveways, and the railroad approach.
- ODOT pavement-marking and rail-division approval for changes within the railroad crossing influence area.
- Treatment of unused pavement: painted buffer, shoulder, raised median, bicycle space, or future gateway treatment.

SAFETY EVIDENCE: FHWA reports overall crash reductions of 19-47% for conventional four-to-three-lane road diets. This short intersection treatment is not identical, so that range should not be used as a prediction for Veterans Way. [5]

Alternative 1 cost breakdown

Component	Likely 2026 cost
Traffic study, survey, preliminary design, and ODOT/rail review	\$180,000
Temporary traffic control	\$120,000
Localized 2-inch milling, overlay, and pavement repairs	\$350,000
Remove obsolete markings; install striping, arrows, and markers	\$120,000
Regulatory, warning, and guide signs; delineators	\$60,000
Minor curb, drainage, and accessibility adjustments	\$80,000
Mobilization, inspection, testing, and environmental controls	\$140,000
Concept-stage contingency	\$250,000
TOTAL PLANNING BUDGET	\$1,300,000

Planning range and assumptions

Recommended planning range: \$0.8-\$1.8 million. The lower end assumes limited pavement repair and uncomplicated approvals. The upper end assumes a larger overlay area, night work, additional traffic-control phases, drainage or curb work, and higher small-quantity pricing.

Pilot option

A temporary paint-and-delineator pilot is expected to cost approximately \$300,000-\$550,000, including traffic engineering, temporary traffic control, installation, observation, public communication, adjustment/removal, and contingency. A pilot should establish baseline and post-installation measurements before judging success.

Pilot measure	Suggested evaluation
Vehicle speeds	Before/after 85th-percentile and high-end speed distribution
Queues and delay	AM/PM peak, freight peaks, and railroad activation periods
Conflicts	Lane changes, hard braking, turning conflicts, and blocked tracks
Users	Truck, transit, emergency-response, pedestrian, and business feedback
Crash performance	Monitor over an appropriate period; do not rely on short-term counts alone

3. Alternative 2 - compact single-lane roundabout



Figure 3. AI-assisted roundabout concept. Geometry is illustrative and has not been checked with survey or vehicle-turning software.

Concept. Construct a compact, truck-capable, single-lane roundabout centered largely within the existing broad paved area. Include raised splitter islands, a mountable truck apron, set-back pedestrian crossings, lighting, signing, drainage, and reconstructed approaches.

Expected advantages

- Slower, self-enforcing vehicle paths and elimination of high-speed right-angle conflicts.
- Potentially strong reduction in fatal and serious-injury crash risk if the design is feasible and properly sized.
- One-lane pedestrian crossings with splitter-island refuge.
- A permanent gateway-speed transition at the western entrance to Rainier.

Primary feasibility risks

- Vehicle queues must not extend onto the railroad tracks; queue detection, gates, or other control changes may be required.
- U.S. 30 freight and over-dimension movements require swept-path analysis and documented coordination with ODOT freight stakeholders.
- Roundabout construction would require multiple stages while maintaining highway, local, railroad, pedestrian, and business access.
- Utility conflicts, drainage reconstruction, right-of-way, contaminated material, and railroad flagging are not yet known.

SAFETY EVIDENCE: FHWA identifies roundabouts as a proven safety countermeasure and reports approximately 82% fewer fatal and injury crashes when converting a two-way-stop intersection to a roundabout. This national value is not a site-specific forecast. [6]

Roundabout cost breakdown

Component	Likely 2026 cost
Survey, traffic analysis, geotechnical work, design, and environmental/rail applications	\$1,100,000
Mobilization, construction survey, and environmental controls	\$500,000
Construction staging and traffic control	\$600,000
Demolition, excavation, and aggregate base	\$750,000
Asphalt pavement and approach reconstruction	\$1,100,000
Central island, truck apron, splitter islands, curbs, walks, and ADA work	\$900,000
Drainage and water-quality work	\$400,000
Lighting, electrical work, signs, and markings	\$600,000
Railroad flagging, gate/signal changes, and queue-protection allowance	\$1,500,000
Utility relocations	\$500,000
Landscaping and restoration	\$100,000
Minor right-of-way/access allowance	\$250,000
Concept-stage contingency	\$2,400,000
TOTAL PLANNING BUDGET	\$10,700,000

Planning range and major exclusion

Recommended planning range: \$8-\$14 million. The \$1.5 million railroad allowance assumes the at-grade crossing remains and is modified as necessary. If ODOT or the railroad requires grade separation, this estimate is no longer applicable and the project becomes a much larger capital program.

RAILROAD CONSTRAINT: ODOT guidance states that intersections near at-grade railroad crossings are generally discouraged and that roundabout queue storage must prevent vehicles from stopping on the tracks. A formal railroad diagnostic and crossing order process should begin during scoping. [7] [9]

FREIGHT CONSTRAINT: ODOT requires state-highway roundabouts to address freight and over-dimension vehicles through case-specific coordination and documented agreement on an appropriately sized design. [8]

4. Cost basis and market calibration

The estimates are concept-level planning allowances in August 2026 dollars. They combine approximate quantities visible in the supplied aerial, unweighted median unit prices from ODOT's 2026 bid workbook through July 27, 2026, current Oregon prevailing-wage requirements, and recent ODOT project totals. They are not engineer's estimates or contractor quotes.

Representative ODOT Region 2 bid medians

Pay item	2026 median
Flaggers	\$82/hour
2-inch pavement milling	\$41/square yard
Level 3, 1/2-inch asphalt mixture	\$160/ton
Aggregate base	\$38.71/ton
General excavation	\$34.50/cubic yard
Concrete curb and gutter	\$60/foot
Concrete walks	\$15/square foot
18-inch storm pipe at 5-foot depth	\$250/foot
Standard-sheeting sign panels	\$30/square foot
Stripe removal	\$5/foot

Source: ODOT 2026 bid data workbook. Medians are unweighted and include available Region 2 entries; small quantities and complex staging can be materially higher. [2] [3]

Prevailing-wage calibration

Oregon's July 5, 2026 rate book establishes wage-plus-fringe floors for covered public works. Examples before applicable zone or shift premiums include \$94.37/hour for highway stripers, \$62.14/hour for laborer/flaggers, approximately \$72-\$73/hour for common paving-equipment operators, and \$99.54/hour for Columbia County electricians. These are wage floors, not contractor billing rates; bid unit prices include overhead, equipment, insurance, risk, and profit. [4]

Current ODOT roundabout comparisons

Project	ODOT total	Status / note
U.S. 395 at Punkin Center	\$7.1 M	Estimated through construction; bids anticipated 2027
OR 62 at OR 234	\$8.2 M	Single-lane roundabout in design
OR 99W Orrs/Clow Corner	\$11.44 M	Design and construction; completed 2025

Sources: ODOT project pages. The comparison projects do not appear to share the same immediate railroad constraint. [10] [11] [12]

5. Evaluation and recommended program

Criterion	Lane reduction	Roundabout
All-in likely budget	\$1.3 M	\$10.7 M
Reversibility	High; pilot feasible	Low; permanent reconstruction
Delivery complexity	Moderate	High
Railroad interface	Approval/marketing review	Major queue and signal risk
Freight accommodation	Lane/taper review	Swept paths and formal stakeholder agreement
Severe-crash potential	Moderate, site-dependent	Potentially strong if feasible
Right-of-way exposure	Low	Unknown; potentially moderate
Recommended role	Near-term pilot/permanent project	Long-term option after feasibility study

Recommended council direction

1. Direct staff to request an ODOT Region 2 scoping meeting for a one-lane-each-direction treatment extending approximately 300 yards west of Veterans Way.
2. Develop a reversible pilot plan with traffic counts, speed data, turning movements, truck percentages, queue monitoring, railroad observations, emergency-response review, and public communication.
3. Set pilot performance measures and an evaluation period before installation; define in advance what would trigger adjustment, removal, or permanent construction.
4. If the roundabout remains of interest, authorize a limited 10% feasibility study rather than full design. The first gate should be railroad queue feasibility and freight vehicle accommodation.
5. Return to council with ODOT feedback, refined cost ranges, funding options, schedule, and a recommendation supported by measured data.

Minimum next-step technical work

- Five years of intersection and segment crash data, with collision diagrams and severity review.
- Weekday and weekend turning counts, speed study, truck classification, transit and emergency-response review.
- Railroad train frequency, activation duration, crossing order, queue observations, and diagnostic meeting.
- Survey, right-of-way, utility, drainage, ADA, access, and pavement-condition screening.
- Concept plans with design-vehicle and over-dimension swept paths, construction staging, and updated quantity-based estimates.
- Public engagement with nearby businesses, residents, freight operators, transit providers, and accessibility stakeholders.

PROCUREMENT NOTE: Use the planning ranges for programming only. Do not use them to authorize construction, compare bids, or promise a final project cost. A licensed engineer should develop the next estimate from surveyed concept plans and documented assumptions.

Appendix A - AI assistance, provenance, and public-record disclosure

DISCLOSURE STATEMENT: This brief was prepared with material assistance from OpenAI Codex, an AI assistant. AI was used to synthesize public sources, analyze an ODOT bid-price workbook, develop preliminary planning-cost ranges, generate/edit conceptual roadway images, draft text, create tables, and format this Word document. Human and agency review is required before the document is relied upon, adopted, published, or used to support a decision.

AI system and work performed

- System: OpenAI Codex in the Codex desktop environment. The working environment identified the assistant as GPT-5-based; the precise production model snapshot was not exposed to the user or document author.
- Research tools: web search and page retrieval were used for current ODOT, BOLI, FHWA, Oregon AI-governance, and OpenAI documentation.
- Spreadsheet analysis: AI-assisted code summarized ODOT's 2026 bid workbook and calculated representative Region 2 medians.
- Image production: an AI image-generation/editing tool modified the supplied satellite image to create the two illustrative concepts. The resulting road geometry is not survey-based or engineering-validated.
- Document production: AI-assisted code generated this DOCX, embedded images and hyperlinks, applied styles, and supported accessibility and visual-layout checks.

Human and agency responsibilities

- The requestor selected the location, alternatives, intended audience, and requirement for transparent AI disclosure.
- No licensed engineer, ODOT representative, railroad representative, attorney, procurement officer, or City of Rainier official has reviewed or approved this brief as part of its preparation.
- The City should independently verify every material fact, estimate, image, and recommendation; obtain legal, engineering, records-management, and communications review as appropriate; and identify the accountable human decision-maker.
- AI output must not be the sole basis for an official statement, project selection, procurement action, or final decision.

Data, privacy, and source provenance

Inputs consisted of the requestor's written instructions, a supplied satellite screenshot, publicly accessible government sources, and the generated work products. No confidential city records or protected personal information were intentionally provided. The source and reuse rights for the supplied satellite screenshot were not independently verified; confirm permission or replace it with authorized GIS/aerial imagery before broad external publication.

Public records and retention

Oregon state guidance says AI prompts and responses generally are public records when they document government business or support decisions, recommends disclosure for external AI-assisted documents, and requires human review. That guidance applies directly to covered state executive-branch entities and is used here as a transparency benchmark; the City should apply its own policies, retention schedule, public-records obligations, and legal advice. The relevant prompt/response record should be retained separately if this brief enters City business records. [13] [14]

Conversation scope disclosed

Initial user request, August 24, 2026:

“Attached is a satellite view of the intersection of Veterans Way and Highway 30 (B St) in Rainier, Oregon. We are looking at a way to make this intersection safer. One idea is to move the spot where the highway turns from one to two lanes west of the intersection further west so we only have one lane each direction somewhere around 300 yards west of the intersection. The other is to put a roundabout where the intersection is. Give me images of both ideas as well as a cost breakdown in today's dollars and prevailing prices in this part of Oregon.”

Follow-up user request, August 24, 2026:

“Put this in a city council and public works ready document, disclosing our chat with all the appropriate AI details when building a public document with AI assistance. Put this in Word format.”

Representative image-prompt summaries:

- Concept 1: preserve the supplied aerial and existing streets/railroad; show one through lane each direction at Veterans Way, move the merge approximately 300 yards west beyond the image frame, retain a short turn pocket, and hatch surplus pavement.
- Concept 2: preserve the supplied aerial and railroad; show a compact single-lane, truck-capable roundabout with a mountable apron, splitter islands, crosswalks, realistic approach tie-ins, and maximum feasible storage before the tracks.

Known AI limitations

- Generative AI can produce inaccurate, incomplete, or fabricated details even when sources are cited.
- The concept images may distort dimensions, lane geometry, pavement markings, property boundaries, or vehicle paths.
- The cost model uses approximate quantities and medians; it does not replace contractor pricing or an engineer's estimate.
- Source pages and policies can change. Verify current versions at the time of any official action.
- This document is not legal advice, engineering advice, a traffic-control plan, environmental documentation, or a procurement document.

Sources and notes

- [1] Satellite image supplied by the requestor: Veterans way.png Received August 24, 2026; image provenance and publication rights not independently verified.
- [2] [ODOT - Bid Item Prices](#) Explains the statewide bid-data workbooks and fields.
- [3] [ODOT - 2026 Bid Data Program workbook](#) Workbook downloaded and summarized; last-updated date shown in the workbook was July 27, 2026.
- [4] [Oregon BOLI - July 5, 2026 Prevailing Wage Rate Book](#)
- [5] [FHWA - Why Consider a Road Diet?](#)
- [6] [FHWA - Roundabouts: Proven Safety Countermeasure](#)
- [7] [ODOT Highway Design Manual, Part 500 - Intersection Design](#) Includes Section 509.18 on roundabouts near railroad crossings.
- [8] [ODOT DES-02 - Roundabouts on the State Highway System](#) Freight and over-dimension vehicle coordination requirements.
- [9] [ODOT Pavement Markings Manual - January 2026](#) Railroad-crossing marking approval requirements.
- [10] [ODOT - U.S. 395: Punkin Center Safety Improvements](#)
- [11] [ODOT - OR 62 at OR 234 Roundabout](#)
- [12] [ODOT - OR 99W Orrs Corner Road to Clow Corner Road](#)
- [13] [Oregon Enterprise Information Services - Artificial Intelligence](#) State transparency, human-review, disclosure, and public-record guidance used as a benchmark.
- [14] [Oregon EIS - Updated Interim Generative AI Access and Usage Guidance](#)
- [15] [OpenAI Developers - Codex and image-generation documentation index](#) OpenAI describes Codex as a coding agent and provides image-generation/editing documentation.

Cost-method note

Region 2 medians were calculated from the ODOT 2026 workbook by filtering the bid-data worksheet by item description and Region 2, then taking the unweighted median of positive calculated unit prices. Bid ranking was incomplete for some 2026 entries, so the primary regional medians include all available bidder ranks. This method is appropriate for market calibration but not for a final engineer's estimate. Small quantities, night work, rail flagging, utility uncertainty, mobilization, staging, and risk can materially increase costs.

Document-control note

This version is dated August 24, 2026. Update cost data, wage rates, project comparisons, source links, and AI disclosure before reissuing after a material lapse of time or after receipt of engineering data. Maintain revision history if the document is incorporated into a City agenda packet or project file.

1 BEFORE THE ENVIRONMENTAL QUALITY COMMISSION
2 OF THE STATE OF OREGON

3 IN THE MATTER OF:

4 CITY OF RAINIER

6 Permittee.

)
)
)
)
)
)

AMENDMENT NO. 4

MUTUAL AGREEMENT AND
ORDER NO. WQ/M-NWR-2022-044

8 WHEREAS:

9 1. On January 9, 2023, the Department of Environmental Quality (DEQ) and Permittee
10 entered into Mutual Agreement and Order (MAO) No. WQ/M-NWR-2022-044.

11 2. Paragraph 17 of the MAO states that the MAO may be amended by mutual
12 agreement of DEQ and the Permittee.

13 3. On January 9, 2024, the Permittee and DEQ executed Amendment No. 1 to the
14 MAO which revised the corrective action schedule set forth in Section II, Paragraph 11.A. of the
15 MAO and extended the deadline to submit a Final SEP Report to September 30, 2024.

16 4. On February 11, 2025, the Permittee and DEQ executed Amendment No. 2 to the
17 MAO which resolved additional violations and revised the corrective action schedule set forth in
18 Section II, Paragraph 11.A of the MAO.

19 5. On May 15, 2025, the Permittee and DEQ executed Amendment No. 3 to the MAO
20 which incorporated Permittee's approved Supplemental Environmental Project (SEP) into the
21 MAO as Attachment D and required that the SEP be completed and a final report submitted to
22 DEQ by September 30, 2025.

23 6. On July 3, 2025, Permittee requested further adjustments to the corrective action
24 schedule set forth in Section II, Paragraph 11.A. of the MAO to provide additional time for the
25 Permittee to address underlying inflow and infiltration problems that have contributed to the past
26 violations of the Permittee's wastewater permit.

1 NOW THEREFORE, it is stipulated and agreed that the MAO is amended as follows:

2 1. The corrective action schedule set forth in Section II, Paragraph 11.A. of the MAO
3 is amended as follows:

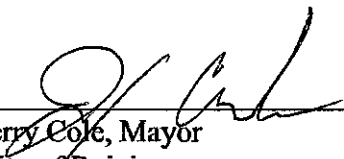
Task	Due Date
5. <u>Wastewater Treatment Plant Improvements</u>	
a. Submit an application for SRF funding or other funding sources.	April 15, 2025
b. Complete and submit a preliminary design report to DEQ for review and approval.	September 19, 2027
c. Respond to DEQ's comments on the preliminary design report.	Within 30 days of receiving DEQ's comments.
d. Submit 60% plans and specifications to DEQ for review.	April 15, 2028
e. Submit 90% plans and specifications to DEQ for review and approval.	November 19, 2028
f. Respond to DEQ's comments on the 90% plans and specifications and prepare final contract documents.	Within 30 days of receiving DEQ's comments.
g. Finalize contract documents and funding for construction.	May 18, 2029
h. Solicit contractor bids and execute construction contracts for WWTP upgrades.	August 17, 2029
i. Complete construction of WWTP upgrades.	August 30, 2031
6. <u>Collection System Improvements</u>	

1	a. Correct inflow issues as identified in Attachment C and	September 26, 2025
2	submit a report to DEQ that certifies that the projects	
3	identified in Attachment C were completed.	
4	b. Complete, and submit to DEQ, additional flow	July 17, 2026
5	monitoring and analysis (2025/26).	
6	c. Complete the following sewer line repairs and submit a	September 25, 2026
7	report to DEQ that certifies that the repairs were	
8	completed:	
9	i. Line the West D Street sewer line from manhole	
10	A27 (3rd Street) to A26 (4th Street).	
11	ii. Repair or replace the following manholes: A23,	
12	A28B, A42, A60, A93, A94C, A96, and A102.	
13	d. Submit progress reports to DEQ that describe the	September 26, 2025
14	progress made to date towards completion of the	January 30, 2026
15	repairs identified in Paragraph 11.A.6.c. above. The	May 29, 2026
16	reports must include, at a minimum, when the	
17	contractors who will be completing the work were	
18	engaged, when the work started, when the work is	
19	expected to be completed, and any issues that have	
20	arisen that may prevent completion of the repairs by the	
21	deadline set forth in Paragraph 11.A.6.c. above.	
22	e. Submit a flow monitoring and analysis plan for the	September 25, 2026
23	sewer collection system describing the work planned	
24	for the 2026/27 wet season.	
25	f. Complete, and submit to DEQ, additional flow	July 16, 2027
26		

1 monitoring and analysis (2026/27).

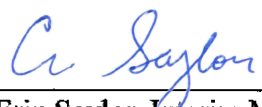
2
3
4 **CITY OF RAINIER (PERMITTEE)**

5
6 9/24/25
7 Date

8 
9 Jerry Cole, Mayor
10 City of Rainier

11 **DEPARTMENT OF ENVIRONMENTAL QUALITY**
12 **and ENVIRONMENTAL QUALITY COMMISSION**

13 9/25/2025
14 Date

15 
16 Erin Saylor, Interim Manager
17 Office of Compliance and Enforcement
18 on behalf of DEQ pursuant to OAR 340-012-0170
19 on behalf of the EQC pursuant to OAR 340-011-0505
20
21
22
23
24
25
26

September 2026 DEQ Progress Report

MAO Amendment #4 – Section 6(c)

This progress report summarizes the status of the projects identified in MAO Amendment #4, Section 6(c), as well as additional sewer system work completed since the May 2026 progress report.

1. MAO Amendment #4 – Section 6(c) Projects

MAO Amendment #4, Section 6(c), identifies the following projects for completion by September 25, 2026:

1. Line the West D Street sewer line from 3rd Street to 4th Street.
2. Repair or replace manholes A23, A28B, A42, A60, A93, A94C, A96, and A102.

2. Project Status

Project	Status
West D Street Sewer Line	Completed October 8, 2025. .
Manholes	Manholes A23, A28B, A42, A60, A93, A94C, A96, and A102 were completed in April 2026. The work was completed along with repairs to 11 additional manholes.

3. Progress Since May 2026 Report

- The City has lined approximately 3,640 feet of sewer line from the school to the City limits.
- Smoke testing was conducted on the East side of town and in the Adler Lane area off Debast Road.
- Smoke testing identified a cross-connection between the sewer and stormwater lines.
- Smoke testing also identified one residence and the old high school with downspouts connected to the sewer system.

4. Summary

The City has completed the projects identified in MAO Amendment #4, Section 6(c), including the West D Street sewer lining and the specified manhole work. Additional sewer rehabilitation and system investigation activities have continued since the May 2026 report, including 3,640 feet of sewer lining and smoke testing to identify potential sources of infiltration or cross-connections.



Fact Sheet

Principal Forgiveness- Interim Fact Sheet

What is Principal Forgiveness?

Principal forgiveness is an additional subsidy that reduces the amount of principal a Clean Water State Revolving Fund borrower is required to pay back on a loan. To receive an award of principal forgiveness, a project must be eligible and there must be principal forgiveness funds available at the time of loan signing.

Updates for 2026

The program is currently reviewing limits for principal forgiveness. Reduced principal forgiveness limits are expected to be established in Fall 2026. If you have questions about potential funding levels, please consult Chris Marko, Program Coordinator.

The program will revise this fact sheet as more information becomes available.

Important Reminders

- Communities should not assume that their loans will receive principal forgiveness.
- Principal forgiveness is not guaranteed.

What makes a Borrower and Project Eligible for Principal Forgiveness

- Eligibility is determined by meeting any one of the following criteria:
- Affordability: Borrowers who meet the affordability criteria (refer to IUP); or
- Rate Payer Hardship: Borrowers with a rate payer hardship or rate reduction program that benefits low-income populations with their sewer utility bill.
- Green/ Sustainability: Projects that meet the EPA criteria to
 - incorporate environmentally innovative and/or green infrastructure practices; or
 - conserve water; or
 - conserve energy; or
- Stormwater: projects that address stormwater.

When is Eligibility for Principal Forgiveness determined?

- Eligibility for either a borrower or a project is determined as part of application review and scoring.
- Eligible recipients for principal forgiveness are identified on the Intended Use Plan (IUP).

When is Principal Forgiveness awarded?

- Eligible borrowers must first:
 - Meet all loan requirements by successfully completing required loan documents and exhibits; and
 - Be ready to sign a loan agreement.
- Principal forgiveness amounts are determined and finalized at ***loan signing***.

Why are the Principal Forgiveness limits changing?

- Beginning in Fall 2026, the amount of principal forgiveness available is decreasing for planning, design, and construction loans. Loans signed before then will not be affected.
- These changes are in response to reductions in federal funding from the Infrastructure Investment and Jobs Act (IIJA). DEQ is revising its Principal Forgiveness priority strategy to make sure funding is distributed effectively and continues to support projects.

More updates to this fact sheet will be shared as they become available.

Principal Forgiveness for Emerging Contaminants

- Availability of principal forgiveness for emerging contaminants funding is specific to IIJA federal funding which is expiring in the next few years.

How does Principal Forgiveness benefit the Borrower?

- Principal forgiveness benefits the borrower in the following ways:
 - Throughout the active loan period principal forgiveness is applied to each loan disbursement to reduce the amount that is accruing interest.
 - Once the project is complete and the borrower is ready to start repayment, the total loan amount (principal) is reduced by the principal forgiveness award amount. This reduced amount is the principal for repayment. Meaning, the amount the borrower has to repay is reduced at the start of the repayment period.

How can I learn more about Principal Forgiveness?

- Current borrowers: Please continue working with your assigned Project Officer.
- General questions about the changes: Contact the Program Coordinator, Chris Marko, or Program Analyst, Alli Miller.

Contact information can be found on the [CWSRF Program Contacts](#) webpage.

How can I start the loan conversation with CWSRF?

If you have project in mind and are ready to start a conversation with CWSRF, please submit [a Loan Information Request Form](#).

Non-discrimination statement

DEQ does not discriminate on the basis of race, color, national origin, disability, age, sex, religion, sexual orientation, gender identity, or marital status in the administration of its programs and activities. For translations or alternate formats, visit DEQ's [Civil Rights and Environmental Justice page](#).

From: KRAMER Rebecca * DEQ <Rebecca.KRAMER@deq.oregon.gov>
Sent: Tuesday, August 18, 2026 2:34 PM
To: Abby Bradshaw <abradshaw@policyinnovation.org>; Preston Van Meter <pvanmeter@westyost.com>
Cc: Scott Jorgensen <Sjorgensen@cityofrainier.com>; Russ Reigel <rreigel@cityofrainier.com>; GRAEPER Melyssa * DEQ <Melyssa.GRAEPER@deq.oregon.gov>
Subject: Agenda Call 20 Aug @10.30 - Rainier, SRF and EPIC re: Application 73256 WWTP Improvements

Good Afternoon,

This is the proposed Agenda for the call on Thursday.

~ Intros (5 mins)

[RK [DEQ SRF]] DEQ SRF: Rebecca

EPIC- Abby

Rainier – Scott, Russ, Preston (West Yost)

~ SRF Changes to Principal Forgiveness (15-20 mins)

~ new policy and timing – effective 1 Oct 2026

[RK [DEQ SRF]]

The linked fact sheet is short primer about PF and why it is changing; the majority of information in the primer will remain the same, however, . . .

After 1 Oct, SRF principal forgiveness eligibility rules and potential, maximum awards will be changing.

Eligibility will be focus more on smaller population communities; the potential maximum award for ANY community will be \$500,000 (life of loan). This \$500,000 aligns with the pre-IIJA funding maximum PF award

~ Impacts to changes on Rainier's current WWTP application

[RK [DEQ SRF]

Eligibility – the eligibility changes do NOT impact the current application.

Amount – as long as I request the SRF loan officers to begin drafting the loan agreement before 1 Oct 2026, this application will be eligible under the pre 1 Oct PF rules - up to 50% of the loan amount but not to exceed \$2,000,000 for the life of the loan. Reminder – this is POTENTIAL award, not actual award. I do not know if or how much PF will be awarded.'

Post 1 Oct SRF PF rules will apply to all future Rainier applications.

~ **Status of Rainier's efforts (15-20 mins)**

~ **Coll Sys Improvements**

[RK [DEQ SRF]]

Rainier has done construction work to reduce **I&I** improve collection system infrastructure in several priority areas; continues to study, test, and report on these reductions per the MAO; and to identify future locations for I&I collection systems priority improvements.

Rainier is preparing the next DEQ progress report and future reports will most likely show the impacts of this I&I reduction work on WWTP flows.

Rainier remain in consistent coordination with DEQ Engineers.

The **Facility Plan** may need to be amended to update flows, etc. based on the impacts of this work.

WWTP – the screw press, centrifuge, and related Bio-solids acceptance are currently the high priority WWTP improvements.

~ **Tech Assist tasks – EPIC and RCAC**

Abby continues to support Rainier to coordinate several tasks and relationships.

A **Rate Study**, perhaps with RCAC, is recommended in order to get a better understanding of current system assets, impacts of system assets improvements, and how to afford those improvements.

SRF related Options for Rainier (10 mins)

~ SRF loan process

[RK [DEQ SRF]]

Signing the loan agreement does NOT create the debt obligation for the community; it creates the obligation for SRF to hold the funding for the community.

Only when the community gets funds from the loan, and only as much as they request is the debt real. Think of a credit card limit – you only pay interest on when and how much you use, not on the card limit.

Benefits of drafting this WWTP improvements application now for **\$4mill** only to be used for design and other pre-construction related activities:

~ provides Rainier access to \$4mill to complete WWTP improvement related, pre-construction tasks.

It does not OBLIGATE Rainier to use this money; it only holds that money within SRF for Rainier should they need it.

~ maximizes potential PF award under pre 1 Oct 26 policies.

~ Rainier will still be able to increase the loan amount later when ready to start construction, if needed.

However, the potential PF award will NOT be increased if and when the loan amount is increased.

~ Rainier will have about 3-5 years to use these funds. During which continued I&I/ collection system improvements can be made; the Facility Plan can be amended; design

and specs for the screw press, centrifuge, and other WWTP improvements can move forward.

At the end of this “pre-construction” period, we can review status and how much \$\$ is needed for WWTP improvements

~ Shows to regulators and funding partners Rainier’s commitment to move forward and address these issues.

Potential downsides:

~ Rainier may be locked into the current interest rates, so even if rates go down in the future this loan rates may not be decreased with general market rate changes. Caveat – if the market rates when this loan is ready to go into repayment are lower than the loan rates, SRF and Rainier can discuss a rate reduction for the repayment period.

~ Interest accrued

As soon Rainier requests funds from the loan, interest on that amount will begin to accrue. And on each subsequent request for funds.

Note – interest is charged ONLY the amount paid out, not the total loan award amount.

~ Eligible expenses are only for work or improvements related to the WWTP. That includes FP amendments, but does NOT include collection systems work or testing, etc.

Wrap Up/ Action Items/ Next Steps

[RK [DEQ SRF]]

Rebecca – this notes email.

Add this application to the List of Loans to be Drafted, probably next week.

Drafting will include loan officers financial analysis/ underwriting or Rainier’s fiscal reality.

Current, SRF does not need any documents from Rainier, but loan officers may ask for something.

This drafting process usually takes 30-45 days.

The draft loan agreement will include the PF award (if any), the interest rate, and the draft repayment/ amortization schedule.

Rainier/ EPIC

Prepare informational item re: this update for 17 Sept 26 Rainier City Council meeting.

This can be just informational; at this time – there is no formal SRF requirement.

The CWSRF website has useful fact sheets and text.

Rebecca can participate in meeting via Teams, or in person if needed.

Abby will participate virtually.

Oct 2026 Council meeting is target meeting for the SRF required loan approval document.

SRF will work with Rainier/ Abby on the necessary SRF documents after draft loan agreement is ready.

Abby

Coordinate/ schedule update call with RCAC, SRF, Rainier - probably mid-Sept.

All:

Future Rainier SRF applications: Rainier is welcome to submit is new application for Collection System improvements work, should they choose to.

Thank You, Rebecca Kramer



Project Officer, Clean Water SRF [NWR]

Oregon DEQ

700 NE Multnomah Street, Suite #600

Portland, OR 97232

O:503.229.6018|M: 503-915-6869

rebecca.kramer@deq.oregon.gov

DISCLOSURE NOTICE: Messages to and from this e-mail address may be subject to Oregon Public Records Law.

TECHNICAL MEMORANDUM

Flow Monitoring Analysis Plan for Infiltration & Inflow Reduction and Wet-Weather Flow Management

Prepared For: Department of Environmental Quality (DEQ)

Prepared By: City of Rainer

Project: Wastewater Collection System and Treatment Plant Flow Management

Date: August 2026

1. Purpose

The purpose of this technical memorandum is to document the City's evaluation of elevated wastewater flows during wet-weather conditions, identify known sources of infiltration and inflow (I&I), and outline proposed projects intended to reduce excessive flows to the wastewater treatment system.

Flow monitoring has identified elevated peak flows during storm events. Based on the observed high peaking factors and increased flows during rainfall, the City has identified several areas requiring additional investigation and corrective action.

The proposed work consists of three related projects:

1. Rehabilitation of a sewer line serving the school area.
 2. Investigation and correction of identified stormwater-to-sanitary sewer connections.
 3. Evaluation of alternatives for diverting water treatment-plant filter backwash water during periods of high winter flows.
-

2. Project No. 1 – Sewer Line Rehabilitation

2.1 Existing Conditions

Flow monitoring identified a high peaking factor and significant increases in wastewater flow during storm events. These observations indicate a substantial amount of infiltration and inflow entering the sewer collection system.

One area of particular concern is the sewer line serving the school. Field observations indicate that the sewer line appears to cross beneath approximately two or possibly three creeks as it travels downhill toward Old Rainier Road.

The creek crossings represent potential locations for groundwater and surface-water infiltration, particularly during periods of elevated creek flow and rainfall.

2.2 Implemented Improvements

The City contracted with Iron Horse to rehabilitate the affected sewer line by lining the existing pipe. This project was time sensitive because of the rugged terrain and had to be done during dry weather and when school was not in session.

The rehabilitation limits are:

- **Beginning point:** Meserve Road
- **Ending point:** Old Rainier Road
- **Approximate length:** 3640 feet
- **General alignment:** Downhill through the wooded area toward Old Rainier Road

Pipe lining was selected as the rehabilitation method to reduce infiltration while minimizing the disturbance associated with complete excavation and replacement of the existing sewer.

2.3 Expected Benefit

The primary objective of the rehabilitation is to reduce roughly 200,000 gallons per day of groundwater and storm-related infiltration from entering the collection system through the existing sewer pipe and its associated creek crossings.

Reducing I&I in this area is expected to reduce wet-weather wastewater flows conveyed to the treatment plant and improve the overall hydraulic performance of the collection system.

3. Project No. 2 – Smoke Testing and Cross-Connection Correction

3.1 Investigation

The City conducted smoke testing during August in areas identified as concerns based on the flow monitoring results and observations of abnormal flows in specific manholes.

Approximately 80 percent of the east side of town was evaluated, along with a housing development located off Debast Road.

3.2 Findings

Smoke testing did not identify apparent problems within the housing development off Debast Road.

Testing on the east side of town identified the following conditions:

1. A cross-connection between the sanitary sewer and stormwater system.
2. A residential house downspout connected to the sanitary sewer.
3. Downspouts at the former high school connected to the sanitary sewer.

These conditions represent sources of inflow that can introduce stormwater directly into the sanitary sewer system during rainfall.

3.3 Corrective Action

The City proposes to:

- Disconnect the identified stormwater-to-sanitary sewer cross-connection by December 1, 2026.
- Disconnect the residential downspout from the sanitary sewer by December 1, 2026.
- Disconnect the former high school downspouts from the sanitary sewer by December 1, 2026.
- Verify that the corrected connections discharge to an appropriate stormwater drainage system.

3.4 Expected Benefit

Correction of these connections should reduce direct stormwater inflow to the sanitary sewer during rainfall events.

The corrective work will complement the proposed sewer rehabilitation described in Project No. 1 and is intended to reduce the magnitude and frequency of wet-weather flow increases reaching the wastewater treatment plant.

4. Project No. 3 – Treatment Plant Filter Backwash Water Management

4.1 Existing Conditions

During winter periods when river turbidity is elevated, the water treatment process requires more frequent flushing of the clarifiers and backwashing of the filters.

The increased frequency of these activities generates additional wastewater during the same period when the sanitary sewer system is already experiencing elevated winter flows.

Consequently, filter backwash and related process water can add to the hydraulic loading experienced by the wastewater treatment plant during the wet season.

4.2 Proposed Evaluation

The City contracted with Northwest Watersheds on August 8th, 2026, to evaluate alternatives for diverting filter backwash water away from the sewer treatment system during periods of elevated winter flow.

Potential receiving-water alternatives identified for evaluation include:

- Columbia River
- Fox Creek

The evaluation would determine whether diversion of the backwash water is technically feasible and environmentally appropriate.

4.3 Alternatives and Cost Evaluation

Northwest Watersheds proposed to develop three alternatives for managing or diverting the filter backwash water.

For each alternative, the evaluation should include, as applicable:

- Description of the proposed diversion approach.
- Required infrastructure.
- Hydraulic considerations.
- Operational requirements.
- Environmental considerations.
- Applicable regulatory requirements.
- Estimated capital cost.
- Estimated operation and maintenance costs.
- Advantages and disadvantages.
- Permitting considerations.

The three alternatives and associated cost estimates will provide the City and DEQ with a basis for evaluating the most appropriate long-term approach.

5. Overall Flow-Reduction Strategy

The three projects address different contributors to elevated wastewater flows.

Project No. 1 addresses infiltration entering the collection system through an aging sewer line and potential creek crossings.

Project No. 2 addresses direct stormwater inflow resulting from identified cross-connections and improperly connected downspouts.

Project No. 3 addresses additional treatment-plant hydraulic loading associated with water-treatment-process backwash during periods when winter wastewater flows are already elevated.

Together, these projects provide a phased approach to reducing excessive wet-weather hydraulic loading and improving the City's overall wastewater flow management.

6. Recommended Implementation

The City proposes the following general implementation sequence:

Phase 1 – Collection System Corrections

1. Further investigate the identified sewer/stormwater cross-connection and disconnect it by December 1, 2026.
2. Disconnect the identified residential and former high school downspouts from the sanitary sewer by December 1, 2026.
3. Document completion of the corrective work.
4. Continue flow monitoring to evaluate changes in wet-weather flows.

Phase 2 – Sewer Rehabilitation

1. Completed lining 3,640 feet of sewer line on August 21, 2026.
2. Confirm the locations and conditions of the creek crossings.
3. Used CIPP to line the sewer line from Meserve Road to Old Rainier Road.

4. Conduct post-construction flow monitoring to evaluate I&I reduction.

Phase 3 – Backwash Water Alternatives

1. Evaluate the feasibility of diverting filter backwash water.
 2. Develop three alternatives.
 3. Prepare preliminary cost estimates for each alternative.
 4. Evaluate environmental and regulatory requirements.
 5. Present alternatives to the City and DEQ for review.
 6. Select the preferred alternative following technical and regulatory review.
-

7. Monitoring and Documentation

The City plans to continue to use flow monitoring to evaluate the effectiveness of the completed and proposed improvements during the 26/27 wet season. Primarily in basins where work has been completed such as basin 2, 3, and 6.

Documentation should include:

- Flow-monitoring data.
- Rainfall information associated with monitoring events.
- Locations of identified I&I sources.
- Documentation of completed corrective actions.
- Sewer rehabilitation records.
- Post-rehabilitation flow data.
- Evaluation of backwash-water alternatives.
- Project costs and implementation status.

This information can be used to demonstrate progress toward reducing excessive wet-weather flows and to support future discussions with DEQ.

8. Conclusion

The City's flow monitoring and field investigations have identified significant opportunities to reduce excessive wet-weather flows entering and/or being conveyed through the wastewater system.

The primary collection-system improvements include rehabilitation of approximately 3640 feet of sewer between Meserve Road and Old Rainier Road and correction of identified stormwater-to-sanitary sewer connections.

In addition, the City proposes evaluating alternatives for managing filter backwash water during the winter wet season. Three alternatives, including associated cost estimates, will be developed for consideration.

Implementation of these projects is intended to reduce I&I, reduce unnecessary hydraulic loading on the wastewater treatment plant, and improve the City's ability to manage elevated winter and storm-event flows.

Prepared for DEQ Review

City: City of Rainier

Prepared by: Russ Reigel

Title: Public Works Director

Date: 8/21/2026

City Administrator Report
September 14, 2026 Rainier Council Meeting

Mayor Cole and Members of the Council,

Along with Mayor Cole and Council President Kreger, I met with Oregon State Director for USDA Rural Development James Carmack on July 30.

I participated in the August 3 NW Innovation Hub regional partner meeting. The next day, I met with Brian Fawcett from Columbia PUD about power poles for the Aldercrest subdivision.

On August 7, I added updated fee schedules to the City's website.

I performed elections official duties throughout the entire month and attended the August 11 Library Board and August 12 Columbia County Coalition meetings.

Columbia River Treasures had its ribbon cutting ceremony on August 13. I attended that and the Rainier Chamber of Commerce meeting that day and also participated in oral boards for a police officer candidate.

Councilor Watson and I met with KLTN Executive Director Corbin Reitel August 13. The two of us and Councilor Cooper then met with More Power Technology Group right after.

On August 18, I met with officials from the Oregon Department of Fish and Wildlife about Fox Creek. A site visit has been scheduled for late October.

Public Works Director Russ Reigel and I met August 20 with officials from the Oregon Department of Environmental Quality regarding financing for capacity upgrades to the wastewater plant.

I met with City Forester Pat McCoy August 24 and assisted in the annual audit. Two days later, I attended the Senior Center board meeting.

August 27, I completed online procurement training provided by the League of Oregon Cities.

Lastly, Mayor Cole and I met with the organizer of the Rainier River Jam concert series September 3.

At Your Service,

W. Scott Jorgensen, Executive MPA
City Administrator

Merchant Fee's

In Office Payments

	%	Per Item Rate	May-26	Jun-26
In Person	2.55%	\$ 0.10	36	37
Keyed	3.45%	\$ 0.20	54	50
			\$ 602.74	\$ 580.25

Web Payments

*rate varies depending on gross sales

Month with AutoPay's	1.44%	\$ 915.70
Month without	1.70%	\$ 383.15

September Council Update

1. River pump station raw water pump was installed on September 3rd.
2. Iron horse completed lining the school sewer line. The line was a little longer than estimated so balance of the project was covered by the remaining state infrastructure money.
3. Brian Liga was approved to take the level #3 sewer treatment exam. He is currently signed up for test prep course.
4. Richards Drive slide repair started September 3rd. had to remove a little more material than expected due to the garbage found (tires, wood, car parts) and poor fill material. Hope to have slide area repaired by September 11th.
5. This year's Dam inspection was completed September 2nd. Inspector was very happy with all our repairs. He is going to extend the inspections interval from yearly back out to 2 or possibly 3 years.
6. Trees on 13th street
 - a. A tree split and fell in a back yard from a plotted city street by Old Rainier Road. We had titon tree service remove the other half left hanging over the house.
 - b. 1 week later another tree split and fell next door at the end of 13th street and landed on a car. The other half is leaning toward the house. There are 4 trees left in that city right away all overgrown with ivy. **I recommend we have all 4 removed. I have an estimate from titon tree service to remove all for trees and clean up the mess for \$2500.**
7. The old aeration basin and digester were cleaned out on September 4th. Both units are on a 3-year cleaning cycle, this minimizes solid sludge from covering the diffusers and disrupting the process.
8. As per the MAO I have included a copy of the collection system progress report for September and the flow monitoring analysis plan for I & I reduction



LICENSED/BONDED/INSURED

Titan Tree Care LLC

Oregon CCB#219736

Owner/Estimator: Dorian Graff

Office/Scheduling: Kasey Brown

Field: (503)841-9788 /Office: (360)747-3712

CUSTOMER NAME: Russ Reigel/City of Rainier

PHONE NUMBER: 503-313-5871

EMAIL: rreigel@cityofrainier.com

LOCATION OF JOB: 29808 Old Rainier Rd, Rainier, OR 97048

- Take down 4 maple trees
- Clean up mess on or past the berm

TOTAL: \$2500

ACCEPTANCE OF PROPOSAL: All work is guaranteed as specified, and the above work is to be performed in accordance with the discussions and specifications outlined above. All work is to be completed in a professional and timely manner. Payments are accepted in the form of cash and checks. If necessary, we can arrange a payment plan before completing the work outlined above. Our payment options are as follows: 6 months with a 10% fee added to the overall total of work to be performed. A 15% late fee will be added to the total for a late payment or missed payment. The above specifications, prices, and conditions are satisfactory, and I hereby accept the above proposal. I authorize Titan Tree Care, LLC to do the work as outlined above, and payments will be made as discussed and agreed upon.

THANK YOU FOR YOUR BUSINESS!