APPENDIX K

WEP SOILS, WETLANDS, AND WATER RESOURCES INFORMATION

Appendix K1: Waterbodies and Wetlands Crossed by WEP

Appendix K2: Potential Landslide Hazard Areas Crossed by WEP

Appendix K3: Private Wells within 200 Feet of Workspace

Appendix K4: Site-specific Waterbody and Wetland Crossing Plans

Appendix K5: Fish and Waterbody Tables

APPENDIX K1

WATERBODIES AND WETLANDS CROSSED BY THE WEP

Table K1-1:

Waterbodies Crossed by the WEP

Name	Waterbody Identification	Milepost	U.S. Geological Survey Hydrologic Unit Code	Water Resource Inventory Area	Flow Type	Stream Width (ft)	FERC Class	Washington Department of Ecology Designated Use				DNR Stream Type[a]	DNR Aquatic Land (Y/N)	Proposed Crossing Method	Loop Number
								Aquatic (Y/N)	Recreational (Y/N)	Water Supply (Y/N)	Misc. (Y/N)				
Unnamed	S1_LO1_054	1244.30	17080002	WRIA 27 Lewis	Ephemeral	2	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_056	1245.25	17080002	WRIA 27 Lewis	Ephemeral	1	Minor	N	N	N	N	U	N	Dry Open Cut	Loop 1
Burris Creek	S3_LO1_048	1245.41	17080002	WRIA 27 Lewis	Intermittent	3	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_049	1246.26	17080005	WRIA 26 Cowlitz	Intermittent	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_002	1246.91	17080003	WRIA 27 Lewis	Perennial	4	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_003	1247.03	17080003	WRIA 27 Lewis	Perennial	4	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Canyon Creek	S1_LO1_004	1247.22	17080003	WRIA 27 Lewis	Intermittent	10	Intermediate	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_005	1247.48	17080003	WRIA 27 Lewis	Perennial	4	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_006	1247.69	17080003	WRIA 27 Lewis	Perennial	9	Minor	N	N	N	N	U	N	Dry Open Cut	Loop 1
Mill Creek	S1_LO1_007	1248.01	17080003	WRIA 27 Lewis	Perennial	7	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_008	1248.17	17080003	WRIA 27 Lewis	Perennial	12	Intermediate	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_009	1248.26	17080003	WRIA 27 Lewis	Perennial	5	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_011	1248.35	17080003	WRIA 27 Lewis	Perennial	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_001	1249.52	17080003	WRIA 27 Lewis	Perennial	4	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_002	1249.60	17080003	WRIA 27 Lewis	Intermittent	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_003	1249.64	17080003	WRIA 27 Lewis	Perennial	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_004	1249.73	17080003	WRIA 27 Lewis	Perennial	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_006	1250.10	17080003	WRIA 27 Lewis	Perennial	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_007	1250.17	17080003	WRIA 27 Lewis	Perennial	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_008	1250.44	17080003	WRIA 27 Lewis	Perennial	6	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_009	1250.56	17080003	WRIA 27 Lewis	Perennial	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_010	1250.82	17080003	WRIA 27 Lewis	Perennial	4	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_007	1251.15	17080003	WRIA 27 Lewis	Perennial	4	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Cedar Creek	S3_LO1_001	1251.41	17080003	WRIA 27 Lewis	Perennial	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Cedar Creek	S3_LO1_003	1251.42	17080003	WRIA 27 Lewis	Intermittent	1	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_004	1251.92	17080003	WRIA 27 Lewis	Perennial	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_009	1252.73	17080003	WRIA 27 Lewis	Perennial	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Kalama River	S3_LO1_012	1253.39	17080003	WRIA 27 Lewis	Perennial	238	Major	Y	Y	Y	Y	S	Y	Aerial Span	Loop 1
Unnamed	S1_LO1_013	1254.08	17080003	WRIA 27 Lewis	Perennial	5	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_014	1254.13	17080003	WRIA 27 Lewis	Perennial	9	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_010	1254.28	17080003	WRIA 27 Lewis	Ephemeral	1	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_015	1254.39	17080003	WRIA 27 Lewis	Perennial	4	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_016	1255.20	17080003	WRIA 26 Cowlitz	Intermittent	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_015	1255.40	17080003	WRIA 26 Cowlitz	Perennial	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_014	1255.53	17080003	WRIA 26 Cowlitz	Perennial	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_011	1255.86	17080003	WRIA 26 Cowlitz	Perennial	2	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_012	1256.24	17080003	WRIA 26 Cowlitz	Perennial	3	Minor	Y	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_013	1256.42	17080003	WRIA 26 Cowlitz	Perennial	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Owl Creek	S1_LO1_019	1257.08	17080003	WRIA 26 Cowlitz	Perennial	15	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_020	1257.28	17080003	WRIA 26 Cowlitz	Ephemeral	9	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_022	1257.64	17080003	WRIA 26 Cowlitz	Perennial	8	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_023	1257.66	17080003	WRIA 26 Cowlitz	Intermittent	13	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_018	1257.85	17080003	WRIA 26 Cowlitz	Ephemeral	2	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_019	1257.90	17080003	WRIA 26 Cowlitz	Intermittent	2	Minor	N	N	N	N	U	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_020	1258.00	17080005	WRIA 26 Cowlitz	Ephemeral	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_024	1258.59	17080005	WRIA 26 Cowlitz	Perennial	4	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_016	1259.27	17080005	WRIA 26 Cowlitz	Perennial	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_017	1259.47	17080005	WRIA 26 Cowlitz	Perennial	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_018	1259.64	17080005	WRIA 26 Cowlitz	Perennial	1	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_019	1259.92	17080005	WRIA 26 Cowlitz	Perennial	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_020	1260.24	17080005	WRIA 26 Cowlitz	Intermittent	1	Minor	Y	Y	Y	Y	N	N	Dry Open Cut	Loop 1
Coweeman River	S2_LO1_022	1260.49	17080005	WRIA 26 Cowlitz	Perennial	80	Intermediate	N	N	N	N	S	Y	Dry Open Cut	Loop 1
Unnamed	S2_LO1_023	1260.77	17080005	WRIA 26 Cowlitz	Perennial	3	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_024	1260.83	17080005	WRIA 26 Cowlitz	Perennial	4	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_025	1261.27	17080005	WRIA 26 Cowlitz	Intermittent	8	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_024	1261.33	17080005	WRIA 26 Cowlitz	Perennial	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_021	1261.71	17080005	WRIA 26 Cowlitz	Ephemeral	4	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_023	1261.98	17080005	WRIA 26 Cowlitz	Perennial	6	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_025	1262.66	17080005	WRIA 26 Cowlitz	Perennial	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_029	1262.94	17080005	WRIA 26 Cowlitz	Perennial	7	Minor	N	N	N	N	U	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_031	1263.17	17080005	WRIA 26 Cowlitz	Perennial	2	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_038	1263.49	17080005	WRIA 26 Cowlitz	Perennial	7	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_039	1263.53	17080005	WRIA 26 Cowlitz	Ephemeral	1	Minor	N	N	N	N	U	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_040	1263.77	17080005	WRIA 26 Cowlitz	Perennial	11	Intermediate	N	N	N	N	N	N	Dry Open Cut	Loop 1

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Waterbodies Crossed by the WEP

Name	Waterbody Identification	Milepost	U.S. Geological Survey Hydrologic Unit Code	Water Resource Inventory Area	Flow Type	Stream Width (ft)	FERC Class	Washington Department of Ecology Designated Use				DNR Stream Type[a]	DNR Aquatic Land (Y/N)	Proposed Crossing Method	Loop Number
								Aquatic (Y/N)	Recreational (Y/N)	Water Supply (Y/N)	Misc. (Y/N)				
Unnamed	S1_LO1_042	1263.81	17080005	WRIA 26 Cowlitz	Perennial	4	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_025	1264.13	17080005	WRIA 53 Cowlitz	Ephemeral	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
South Fork Ostrander Creek	S2_LO1_021	1264.91	17080005	WRIA 26 Cowlitz	Perennial	20	Intermediate	Y	Y	Y	Y	S	N	Dry Open Cut	Loop 1
Unnamed	SP_LO1_001	1265.12	17080005	WRIA 26 Cowlitz	Intermittent	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Ostrander Creek	S1_LO1_057	1265.25	17080005	WRIA 26 Cowlitz	Perennial	40	Intermediate	Y	Y	Y	Y	S	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_058	1265.93	17080005	WRIA 26 Cowlitz	Intermittent	6	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_045	1266.50	17080005	WRIA 26 Cowlitz	Perennial	1	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_048	1266.75	17080005	WRIA 26 Cowlitz	Intermittent	2	Minor	N	N	N	N	N	N	Span	Loop 1
Unnamed	S2_LO1_051	1267.04	17080005	WRIA 26 Cowlitz	Ephemeral	1	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_054	1267.37	17080005	WRIA 26 Cowlitz	Perennial	4	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_026	1267.63	17080005	WRIA 26 Cowlitz	Perennial	3	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_027	1267.91	17080005	WRIA 26 Cowlitz	Intermittent	1	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_028	1267.97	17080005	WRIA 26 Cowlitz	Intermittent	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_029	1268.35	17080005	WRIA 26 Cowlitz	Intermittent	3	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_030	1268.56 and 1268.63	17080005	WRIA 26 Cowlitz	Perennial	4	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Coal Mine Creek	S1_LO1_032	1269.36	17080005	WRIA 26 Cowlitz	Perennial	20	Intermediate	Y	Y	Y	Y	F	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_034	1269.83	17080005	WRIA 26 Cowlitz	Ephemeral	1	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_035	1269.89	17080005	WRIA 26 Cowlitz	Ephemeral	1	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_027	1270.66	17080005	WRIA 26 Cowlitz	Intermittent	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_028	1270.87	17080005	WRIA 26 Cowlitz	Intermittent	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_029	1271.10	17080005	WRIA 26 Cowlitz	Intermittent	3	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_035	1271.41	17080005	WRIA 26 Cowlitz	Perennial	3	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_036	1271.89	17080005	WRIA 26 Cowlitz	Perennial	2	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_038	1272.12	17080005	WRIA 26 Cowlitz	Perennial	4	Minor	Y	N	N	N	N	N	Dry Open Cut	Loop 1
Salmon Creek	S3_LO1_039	1272.23	17080005	WRIA 26 Cowlitz	Perennial	4	Minor	Y	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_040	1272.42	17080005	WRIA 26 Cowlitz	Perennial	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_033	1273.11	17080005	WRIA 26 Cowlitz	Perennial	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_032	1273.13	17080005	WRIA 26 Cowlitz	Perennial	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_014	1273.58	17080005	WRIA 26 Cowlitz	Perennial	2	Minor	Y	Y	Y	Y	U	N	Dry Open Cut	Loop 1
Toutle River	S3_LO1_013	1274.42	17080005	WRIA 26 Cowlitz	Perennial	415	Major	Y	Y	Y	Y	S	Y	Wet Open Cut	Loop 1
Unnamed	S3_LO1_041	1275.69	17080005	WRIA 26 Cowlitz	Intermittent	4	Minor	Y	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S4_LO1_003	1275.88	17080005	WRIA 26 Cowlitz	Intermittent	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S4_LO1_002	1276.08 and 1276.18	17080005	WRIA 26 Cowlitz	Ephemeral	2	Minor	Y	Y	Y	Y	N	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_062	1277.77	17080005	WRIA 26 Cowlitz	Perennial	7	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_061	1277.81	17080005	WRIA 26 Cowlitz	Perennial	15	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_060	1278.12	17080005	WRIA 26 Cowlitz	Intermittent	5	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_055	1278.82	17080005	WRIA 26 Cowlitz	Perennial	11	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 1
Hill Creek	S2_LO1_056	1279.17	17080005	WRIA 26 Cowlitz	Perennial	10	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S4_LO1_004	1279.33	17080005	WRIA 26 Cowlitz	Ephemeral	6	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S4_LO1_005	1279.72	17080005	WRIA 26 Cowlitz	Intermittent	2	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S4_LO1_006	1280.07 and 1280.24	17080005	WRIA 26 Cowlitz	Intermittent	4	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S4_LO1_007	1280.28	17080005	WRIA 26 Cowlitz	Intermittent	6	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Roadside ditch	S4_LO1_008	1280.32	17080005	WRIA 26 Cowlitz	Ephemeral	4	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Foster Creek	S1_LO1_046	1280.82	17080005	WRIA 26 Cowlitz	Perennial	30	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_034	1281.52	17080005	WRIA 26 Cowlitz	Perennial	4	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_035	1281.69	17080005	WRIA 26 Cowlitz	Ephemeral	1	Minor	N	N	N	N	U	N	Dry Open Cut	Loop 1
Cowlitz River	S2_LO1_036	1282.51	17080005	WRIA 26 Cowlitz	Perennial	280	Major	Y	Y	Y	Y	S	Y	HDD	Loop 1
Unnamed	S3_LO1_047	1282.65	17080005	WRIA 26 Cowlitz	Perennial	4	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_043	1283.37	17080005	WRIA 26 Cowlitz	Perennial	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_047	1283.74	17080005	WRIA 26 Cowlitz	Ephemeral	1	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_048	1284.56	17080005	WRIA 26 Cowlitz	Perennial	20	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_049	1284.78	17080005	WRIA 26 Cowlitz	Ephemeral	1	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_050	1284.92	17080005	WRIA 26 Cowlitz	Intermittent	12	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 1
Lacamas Creek	S2_LO1_038	1285.35	17080005	WRIA 26 Cowlitz	Perennial	7	Minor	N	N	N	N	S	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_039	1285.43	17080005	WRIA 26 Cowlitz	Ephemeral	1	Minor	N	N	N	N	X	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_037	1286.17	17080005	WRIA 26 Cowlitz	Perennial	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S3_LO1_046	1286.77	17080005	WRIA 26 Cowlitz	Perennial	3	Minor	N	N	N	N	X	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_051	1287.51	17080005	WRIA 26 Cowlitz	Intermittent	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S1_LO1_052	1287.90	17080005	WRIA 26 Cowlitz	Intermittent	9	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_040	1288.11	17080005	WRIA 26 Cowlitz	Intermittent	6	Minor	N	N	N	N	U	N	Dry Open Cut	Loop 1

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								Aquatic (Y/N)	Recreational (Y/N)	Water Supply (Y/N)	Misc. (Y/N)				
Unnamed	S2_LO1_041	1288.14	17080005	WRIA 26 Cowlitz	Ephemeral	1	Minor	N	N	N	N	U	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_044	1288.52	17080005	WRIA 26 Cowlitz	Perennial	10	Intermediate	N	N	N	N	N	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_043	1288.56	17080005	WRIA 26 Cowlitz	Perennial	12	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	S2_LO1_045	1288.90	17080005	WRIA 26 Cowlitz	Intermittent	1	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 1
Olequa Creek	S2_LO1_046	1289.32	17080005	WRIA 26 Cowlitz	Perennial	10	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 1
Unnamed	1291.5	1291.42	17100103	WRIA 23 Upper Chehalis	Intermittent	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 2
Unnamed	1292.4	1292.65	17100103	WRIA 23 Upper Chehalis	Intermittent	4	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 2
Unnamed	1293.1	1293.20 and 1293.26	17100103	WRIA 23 Upper Chehalis	Intermittent	4	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 2
Newaukum River	1294.2	1294.13	17100103	WRIA 23 Upper Chehalis	Perennial	126	Major	N	N	N	N	S	Y	HDD	Loop 2
Unnamed	1295.1	1295.08	17100103	WRIA 23 Upper Chehalis	Intermittent	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 2
Unnamed	1295.4	1295.44	17100103	WRIA 23 Upper Chehalis	Perennial	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 2
Unnamed	1296.1	1296.14	17100103	WRIA 23 Upper Chehalis	Perennial	1	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 2
Unnamed	1296.45	1296.50	17100103	WRIA 23 Upper Chehalis	Perennial	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 2
Unnamed	1296.6	1296.66	17100103	WRIA 23 Upper Chehalis	Perennial	5	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 2
Berwick Creek	1296.9	1296.78	17100103	WRIA 23 Upper Chehalis	Perennial	6	Minor	Y	Y	Y	Y	F	N	Dry Open Cut	Loop 2
Dillenbaugh Creek	1297.6	1297.41	17100103	WRIA 23 Upper Chehalis	Perennial	8	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 2
Unnamed	1298.0	1297.97	17100103	WRIA 23 Upper Chehalis	Perennial	4	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 2
Salzer Creek	1299	1299.03	17100103	WRIA 23 Upper Chehalis	Perennial	7	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 2
Unnamed	1299.95	1299.93	17100103	WRIA 23 Upper Chehalis	Perennial	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 2
Unnamed	1300.2	1300.05	17100103	WRIA 23 Upper Chehalis	Perennial	6	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 2
Unnamed	1300.9	1300.78	17100103	WRIA 23 Upper Chehalis	Perennial	4	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 2
S. Hanaford Creek	1301.6	1301.68	17100103	WRIA 23 Upper Chehalis	Perennial	6	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 2
Unnamed	S2_LO2_002	1303.23	17100103	WRIA 23 Upper Chehalis	Intermittent	2	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 2
Unnamed	S2_LO2_001	1303.50	17100103	WRIA 23 Upper Chehalis	Intermittent	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 2
Unnamed	S3_LO2_001	1304.26	17100103	WRIA 23 Upper Chehalis	Intermittent	5	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 2
Unnamed	S3_LO2_004	1305.14	17100103	WRIA 23 Upper Chehalis	Perennial	5	Minor	Y	Y	Y	Y	U	N	Dry Open Cut	Loop 2
Packwood Creek	S3_LO2_005	1305.28	17100103	WRIA 23 Upper Chehalis	Perennial	4	Minor	Y	Y	Y	Y	F	N	Dry Open Cut	Loop 2
Hanaford Creek	S3_LO2_006	1306.25	17100103	WRIA 23 Upper Chehalis	Perennial	5	Minor	Y	Y	Y	Y	F	N	Dry Open Cut	Loop 2
Snyder Creek	S3_LO2_007	1306.55	17100103	WRIA 49 Upper Chehalis	Perennial	4	Minor	Y	Y	Y	Y	F	N	Dry Open Cut	Loop 2
Unnamed	S4_LO2_002	1307.66	17100103	WRIA 23 Upper Chehalis	Ephemeral	2	Minor	Y	Y	Y	Y	N	N	Dry Open Cut	Loop 2
North Hanaford Creek	S4_LO2_001	1307.69	17100103	WRIA 23 Upper Chehalis	Ephemeral	2	Minor	Y	Y	Y	Y	N	N	Dry Open Cut	Loop 2
Unnamed	S1_LO2_100	1307.94	17100103	WRIA 23 Upper Chehalis	Perennial	12	Intermediate	Y	Y	Y	Y	N	N	Dry Open Cut	Loop 2
Unnamed	S1_LO2_101	1308.33	17100103	WRIA 23 Upper Chehalis	Perennial	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 2
Thompson Creek	S1_LO2_103	1308.97	17100103	WRIA 23 Upper Chehalis	Perennial	20	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 2
Skookumchuck River	S2_LO2_004	1309.36	17100103	WRIA 23 Upper Chehalis	Perennial	90	Intermediate	Y	Y	Y	Y	S	N	Dry Open Cut	Loop 2
Unnamed	S4_LO2_003	1310.72	17100103	WRIA 23 Upper Chehalis	Intermittent	2	Minor	Y	Y	Y	Y	N	N	Dry Open Cut	Loop 2
Unnamed	S4_LO2_004	1310.79	17100103	WRIA 23 Upper Chehalis	Intermittent	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 2
Unnamed	S4_LO2_005	1311.07	17100103	WRIA 23 Upper Chehalis	Ephemeral	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 2
Unnamed	S4_LO2_006	1311.19	17100103	WRIA 23 Upper Chehalis	Ephemeral	2	Minor	N	N	N	N	U	N	Dry Open Cut	Loop 2
Unnamed	S4_LO2_007	1311.23	17100103	WRIA 23 Upper Chehalis	Ephemeral	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 2
Unnamed	S4_LO2_008	1311.41	17100103	WRIA 23 Upper Chehalis	Intermittent	4	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 2
Unnamed	S4_LO2_009	1311.43	17100103	WRIA 23 Upper Chehalis	Intermittent	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 2
Unnamed	S2_LO2_008	1311.65	17100103	WRIA 23 Upper Chehalis	Perennial	4	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 2
Unnamed	S2_LO2_007	1312.14	17100103	WRIA 23 Upper Chehalis	Perennial	5	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 2
Unnamed	S2_LO2_005	1312.60	17100103	WRIA 23 Upper Chehalis	Intermittent	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 2
Unnamed	S1_LO2_104	1313.05	17100103	WRIA 23 Upper Chehalis	Perennial	8	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 2
Unnamed	S2_LO2_010	1313.35	17100103	WRIA 23 Upper Chehalis	Ephemeral	1	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 2
Unnamed	S2_LO2_009	1313.80	17100103	WRIA 23 Upper Chehalis	Ephemeral	1	Minor	N	N	N	N	U	N	Dry Open Cut	Loop 2
Unnamed	S4_LO2_010	1314.86	17100103	WRIA 23 Upper Chehalis	Intermittent	1	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 2
Unnamed	S4_LO2_011	1314.96	17100103	WRIA 13 Deschutes	Intermittent	2	Minor	Y	Y	Y	Y	U	N	Dry Open Cut	Loop 2
Deschutes River	SP_LO2_001	1315.10	17100103	WRIA 13 Deschutes	Perennial	78	Intermediate	Y	Y	Y	Y	S	Y	Dry Open Cut	Loop 2
Unnamed	S1_LO3_002	1339.33	17110019	WRIA 12 Chambers - Clover	Intermittent	10	Intermediate	Y	Y	Y	Y	N	N	Dry Open Cut	Loop 3
Tributary to Clover Creek	FL-3	1339.74 and 1339.79	17110019	WRIA 12 Chambers - Clover	Intermittent	1	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 3
Unnamed	S1_LO3_003	1342.22	17110014	WRIA 10 Puyallup - White	Ephemeral	1	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 3
Unnamed	S1_LO3_004	1342.62	17110014	WRIA 10 Puyallup - White	Ephemeral	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 3
Unnamed	S2_LO3_002	1346.10	17110019	WRIA 12 Chambers - Clover	Intermittent	2	Minor	Y	Y	Y	Y	N	N	Dry Open Cut	Loop 3
Unnamed	S3_LO3_004	1346.82	17110019	WRIA 12 Chambers - Clover	Perennial	2	Minor	Y	Y	Y	Y	U	N	Dry Open Cut	Loop 3

Table K1-1:

Waterbodies Crossed by the WEP

Name	Waterbody Identification	Milepost	U.S. Geological Survey Hydrologic Unit Code	Water Resource Inventory Area	Flow Type	Stream Width (ft)	FERC Class	Washington Department of Ecology Designated Use				DNR Stream Type[a]	DNR Aquatic Land (Y/N)	Proposed Crossing Method	Loop Number
								Aquatic (Y/N)	Recreational (Y/N)	Water Supply (Y/N)	Misc. (Y/N)				
Unnamed	S3_LO3_003	1346.97	17110014	WRIA 10 Puyallup - White	Perennial	2	Minor	Y	Y	Y	Y	N	N	Dry Open Cut	Loop 3
Unnamed	S3_LO3_002	1347.92	17110014	WRIA 10 Puyallup - White	Perennial	3	Minor	Y	Y	Y	Y	F	N	Dry Open Cut	Loop 3
Puyallup River	S3_LO3_001	1347.98	17110014	WRIA 10 Puyallup - White	Perennial	191	Major	Y	Y	Y	Y	S	Y	Trenchless	Loop 3
Unnamed Agricultural Ditch	S4_LO3_101	1349.23 and 1349.27	17110014	WRIA 10 Puyallup - White	Intermittent	19	Intermediate	N	N	N	N	N	N	Dry Open Cut	Loop 3
Roadside ditch	S4_LO3_102	1349.31	17110014	WRIA 10 Puyallup - White	Intermittent	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 3
Salmon Creek	S1_LO3_005	1349.99	17110014	WRIA 10 Puyallup - White	Perennial	12	Intermediate	Y	Y	Y	Y	F	N	Dry Open Cut	Loop 3
Unnamed	S1_LO3_006	1350.05	17110014	WRIA 10 Puyallup - White	Perennial	3	Minor	Y	Y	Y	Y	F	N	Dry Open Cut	Loop 3
Unnamed	S1_LO4_001	1357.14	17110013	WRIA 9 Duwamish - Green	Perennial	20	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 4
Unnamed	S1_LO4_002	1357.17	17110013	WRIA 9 Duwamish - Green	Perennial	6	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 4
Unnamed	S1_LO4_003	1357.31	17110013	WRIA 9 Duwamish - Green	Perennial	8	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 4
Covington Creek	S3_LO4_001	1359.62	17110013	WRIA 9 Duwamish - Green	Perennial	25	Intermediate	N	N	N	N	S	N	Span	Loop 4
Unnamed	S4_LO4_001	1360.98	17110013	WRIA 9 Duwamish - Green	Perennial	14	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 4
Unnamed	S4_LO4_002	1361.48	17110013	WRIA 9 Duwamish - Green	Intermittent	4	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 4
Cranmar Creek	S1_LO4_004	1362.66	17110013	WRIA 9 Duwamish - Green	Perennial	14	Intermediate	N	N	N	N	F	N	Trenchless	Loop 4
Issaquah Creek	S1_LO5_001	1371.05	17110012	WRIA 8 Cedar - Sammamish	Perennial	30	Intermediate	Y	Y	Y	Y	F	N	Dry Open Cut	Loop 5
Unnamed	S3_LO5_003	1371.51	17110012	WRIA 8 Cedar - Sammamish	Perennial	3	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 5
Unnamed	S1_LO5_005	1371.73	17110012	WRIA 8 Cedar - Sammamish	Perennial	12	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 5
Fifteenmile Creek	S2_LO5_006	1371.96	17110012	WRIA 8 Cedar - Sammamish	Perennial	21	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 5
Unnamed	S2_LO5_005	1372.35	17110012	WRIA 8 Cedar - Sammamish	Perennial	5	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 5
Unnamed	S2_LO5_002	1372.60	17110012	WRIA 8 Cedar - Sammamish	Perennial	6	Minor	Y	Y	Y	Y	F	N	Dry Open Cut	Loop 5
Unnamed	S2_LO5_001	1372.69	17110012	WRIA 8 Cedar - Sammamish	Perennial	4	Minor	Y	Y	Y	Y	U	N	Dry Open Cut	Loop 5
Unnamed	S4_LO5_002	1373.66	17110012	WRIA 8 Cedar - Sammamish	Perennial	10	Intermediate	Y	Y	Y	Y	F	N	Dry Open Cut	Loop 5
Unnamed	S2_LO5_010	1374.25	17110012	WRIA 8 Cedar - Sammamish	Perennial	5	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 5
Unnamed	S2_LO5_009	1374.57	17110012	WRIA 8 Cedar - Sammamish	Ephemeral	1	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 5
Unnamed	S2_LO5_007	1374.92	17110012	WRIA 8 Cedar - Sammamish	Ephemeral	1	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 5
Unnamed	S3_LO5_007	1375.88	17110012	WRIA 8 Cedar - Sammamish	Perennial	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 5
East Fork Issaquah Creek	S2_LO5_004	1376.12	17110012	WRIA 8 Cedar - Sammamish	Perennial	16	Intermediate	Y	Y	Y	Y	F	N	Span	Loop 5
Unnamed	S2_LO5_003	1376.21	17110012	WRIA 8 Cedar - Sammamish	Intermittent	6	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 5
North Fork Issaquah Creek	S3_LO5_004	1377.34	17110012	WRIA 8 Cedar - Sammamish	Perennial	4	Minor	Y	Y	Y	Y	F	N	Dry Open Cut	Loop 5
Unnamed	S3_LO5_005	1378.08	17110012	WRIA 8 Cedar - Sammamish	Perennial	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 5
Unnamed	S1_LO5_002	1379.62	17110012	WRIA 8 Cedar - Sammamish	Intermittent	20	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 5

Table K1-1:

Waterbodies Crossed by the WEP

Name	Waterbody Identification	Milepost	U.S. Geological Survey Hydrologic Unit Code	Water Resource Inventory Area	Flow Type	Stream Width (ft)	FERC Class	Washington Department of Ecology Designated Use				DNR Stream Type[a]	DNR Aquatic Land (Y/N)	Proposed Crossing Method	Loop Number
								Aquatic (Y/N)	Recreational (Y/N)	Water Supply (Y/N)	Misc. (Y/N)				
Tributary to Lake Sammamish	SN-45	1381.25	17110012	WRIA 8 Cedar - Sammamish	Intermittent	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 5
George Davis Creek	SP_LO5_001	1381.31	17110012	WRIA 8 Cedar - Sammamish	Perennial	3	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 5
Unnamed	S4_LO6_002	1395.98	17110011	WRIA 7 Snohomish	Ephemeral	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 6
Unnamed	S4_LO6_005	1396.59	17110011	WRIA 7 Snohomish	Ephemeral	1	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 6
Elliott Creek	S4_LO6_003	1396.71	17110011	WRIA 7 Snohomish	Perennial	10	Intermediate	N	N	N	N	F	N	Span	Loop 6
Unnamed	S4_LO6_101	1397.36 and 1397.52	17110011	WRIA 7 Snohomish	Perennial	5	Minor	Y	N	N	N	F	N	Dry Open Cut	Loop 6
Snohomish River	S4_LO6_004	1397.56	17110011	WRIA 7 Snohomish	Perennial	900	Major	Y	Y	Y	Y	S	Y	Trenchless	Loop 6
Unnamed	S1_LO6_002	1398.19	17110011	WRIA 7 Snohomish	Intermittent	4	Minor	Y	Y	Y	Y	N	N	Dry Open Cut	Loop 6
Unnamed	S1_LO6_003	1398.62	17110011	WRIA 7 Snohomish	Perennial	8	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 6
Unnamed	S1_LO6_004	1399.44	17110011	WRIA 7 Snohomish	Perennial	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 6
Unnamed	S1_LO6_005	1399.67	17110011	WRIA 7 Snohomish	Perennial	12	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 6
Unnamed	S2_LO6_001	1400.46	17110011	WRIA 7 Snohomish	Perennial	11	Intermediate	N	N	N	N	N	N	Dry Open Cut	Loop 6
Unnamed	S2_LO6_002	1401.53	17110011	WRIA 7 Snohomish	Perennial	8	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 6
French Creek	S3_LO6_001	1402.42	17110011	WRIA 7 Snohomish	Perennial	10	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 6
Unnamed	S1_LO6_008	1404.64	17110011	WRIA 7 Snohomish	Intermittent	4	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 6
Unnamed	S1_LO6_007	1405.39	17110011	WRIA 7 Snohomish	Perennial	6	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 6
Pilchuck River	S3_LO6_002	1407.81	17110011	WRIA 7 Snohomish	Perennial	82	Intermediate	Y	Y	Y	Y	S	Y	Dry Open Cut	Loop 6
Tributary to Walker Creek	MV-25	1439.07	17110007	WRIA 3 - Lower Skagit - Samish	Perennial	6	Minor	F	N	N	N	F	N	Dry Open Cut	Loop 7
Unnamed	S4_LO8_008	1440.25 and 1440.27	17110007	WRIA 3 Lower Skagit - Samish	Intermittent	4	Minor	N	N	N	N	S	N	Dry Open Cut	Loop 8
East Fork Nookachamps Creek	S4_LO8_007	1440.42	17110007	WRIA 3 Lower Skagit - Samish	Perennial	50	Intermediate	Y	Y	Y	Y	S	N	Dry Open Cut	Loop 8
Unnamed	S4_LO8_005	1441.21	17110007	WRIA 3 Lower Skagit - Samish	Intermittent	4	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 8
Unnamed	S4_LO8_004	1441.28	17110007	WRIA 3 Lower Skagit - Samish	Intermittent	4	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 8
Turner Creek	S4_LO8_003	1441.44	17110007	WRIA 3 Lower Skagit - Samish	Perennial	9	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 8
Unnamed	S2_LO8_004	1442.10	17110007	WRIA 3 Lower Skagit - Samish	Intermittent	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 8
Unnamed	S2_LO8_003	1442.68	17110007	WRIA 3 Lower Skagit - Samish	Perennial	10	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 8
Unnamed	S4_LO8_002	1444.26	17110007	WRIA 3 Lower Skagit - Samish	Intermittent	5	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 8
Unnamed	S1_LO9_001	1453.67	17110002	WRIA 3 Lower Skagit - Samish	Perennial	4	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 9
Unnamed	S1_LO9_002	1453.76	17110002	WRIA 3 Lower Skagit - Samish	Perennial	12	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 9
Mills Creek	S1_LO9_003	1454.18	17110002	WRIA 3 Lower Skagit - Samish	Perennial	20	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 9
Unnamed	S1_LO9_004	1454.40	17110002	WRIA 3 Lower Skagit - Samish	Perennial	15	Intermediate	Y	Y	Y	Y	N	N	Dry Open Cut	Loop 9
Unnamed	S1_LO9_006	1454.51	17110002	WRIA 3 Lower Skagit - Samish	Perennial	3	Minor	Y	Y	Y	Y	N	N	Dry Open Cut	Loop 9
Unnamed	S1_LO9_007	1454.57	17110002	WRIA 3 Lower Skagit - Samish	Intermittent	5	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 9
Unnamed	S1_LO9_008	1454.61	17110002	WRIA 3 Lower Skagit - Samish	Perennial	3	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 9
Unnamed	S2_LO9_010	1454.81	17110002	WRIA 3 Lower Skagit - Samish	Ephemeral	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 9
Unnamed	S2_LO9_009	1454.90	17110002	WRIA 3 Lower Skagit - Samish	Intermittent	4	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 9
Unnamed	S2_LO9_008	1454.91	17110002	WRIA 3 Lower Skagit - Samish	Intermittent	12	Intermediate	N	N	N	N	F	N	Dry Open Cut	Loop 9
Unnamed	S2_LO9_007	1455.22	17110002	WRIA 3 Lower Skagit - Samish	Intermittent	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 9
Unnamed	S2_LO9_006	1455.42	17110002	WRIA 3 Lower Skagit - Samish	Intermittent	2	Minor	Y	Y	Y	Y	N	N	Dry Open Cut	Loop 9

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Waterbodies Crossed by the WEP

Name	Waterbody Identification	Milepost	U.S. Geological Survey Hydrologic Unit Code	Water Resource Inventory Area	Flow Type	Stream Width (ft)	FERC Class	Washington Department of Ecology Designated Use				DNR Stream Type[a]	DNR Aquatic Land (Y/N)	Proposed Crossing Method	Loop Number
								Aquatic (Y/N)	Recreational (Y/N)	Water Supply (Y/N)	Misc. (Y/N)				
Unnamed	S2_LO9_005	1455.54	17110002	WRIA 3 Lower Skagit - Samish	Intermittent	3	Minor	Y	Y	Y	Y	N	N	Dry Open Cut	Loop 9
Unnamed	S2_LO9_004	1455.63	17110002	WRIA 3 Lower Skagit - Samish	Intermittent	6	Minor	Y	Y	Y	Y	N	N	Dry Open Cut	Loop 9
Unnamed	S2_LO9_003	1455.71	17110002	WRIA 3 Lower Skagit - Samish	Intermittent	3	Minor	Y	Y	Y	Y	N	N	Dry Open Cut	Loop 9
Unnamed	S2_LO9_002	1455.87	17110002	WRIA 3 Lower Skagit - Samish	Intermittent	8	Minor	Y	Y	Y	Y	F	N	Dry Open Cut	Loop 9
Unnamed	S2_LO9_001	1456.03	17110002	WRIA 3 Lower Skagit - Samish	Intermittent	11	Intermediate	N	N	N	N	N	N	Dry Open Cut	Loop 9
Unnamed	S3_LO9_002	1456.62	17110002	WRIA 3 Lower Skagit - Samish	Intermittent	2	Minor	Y	Y	Y	Y	F	N	Dry Open Cut	Loop 9
Little Innis Creek	S3_LO9_003	1457.40	17110002	WRIA 3 Lower Skagit - Samish	Perennial	10	Intermediate	Y	Y	Y	Y	F	N	Dry Open Cut	Loop 9
Unnamed	S4_LO9_002	1457.70	17110002	WRIA 3 Lower Skagit - Samish	Ephemeral	1	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 9
Unnamed	S4_LO9_001	1457.88	17110002	WRIA 3 Lower Skagit - Samish	Ephemeral	4	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 9
Unnamed	S4_LO9_003	1458.87	17110003	WRIA 3 Lower Skagit - Samish	Ephemeral	6	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 9
Samish River	S2_LO9_011	1460.01	17110004	WRIA 3 Lower Skagit - Samish	Perennial	10	Intermediate	Y	Y	Y	Y	F	N	Dry Open Cut	Loop 9
Unnamed	S2_LO9_012	1460.42	17110004	WRIA 1 - Nooksack	Intermittent	4	Minor	Y	Y	Y	Y	F	N	Dry Open Cut	Loop 9
Landing Strip Creek	SP_LO9_001	1461.32	17110004	WRIA 1 - Nooksack	Perennial	6	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 9
South Fork Nooksack River	S4_LO9_101	1461.56	17110004	WRIA 1 - Nooksack	Perennial	170	Major	N	N	N	N	S	Y	HDD	Loop 9
Breckenridge Creek	S-22	1478.87	17110001	WRIA 1 - Nooksack	Perennial	30	Intermediate	Y	Y	Y	Y	S	N	Dry Open Cut	Loop 10
Kinney Creek	S-21	1479.05	17110001	WRIA 1 - Nooksack	Perennial	8	Minor	N	N	N	N	F	N	Dry Open Cut	Loop 10
Tributary to Kinney Creek	S-16	1479.99	17110001	WRIA 1 - Nooksack	Intermittent	2	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 10
Tributary to Lake	S-9	1481.02	17110001	WRIA 1 - Nooksack	Perennial	3	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 10
Tributary to Lake	S-7	1481.40	17110001	WRIA 1 - Nooksack	Perennial	4	Minor	N	N	N	N	N	N	Dry Open Cut	Loop 10
Saar Creek	S-4B	1482.80	17110001	WRIA 1 - Nooksack	Perennial	12	Intermediate	N	N	N	N	S	N	Dry Open Cut	Loop 10
Saar Creek	S-4A	1483.08	17110001	WRIA 1 - Nooksack	Perennial	12	Intermediate	N	N	N	N	S	N	Dry Open Cut	Loop 10

[a] DNR Stream Types: F= Contain Fish Habitat, S= Shoreline of the state, Np=Perennial non-fish streams, Ns=Seasonal non-fish streams, U= Untyped water feature

Y/N - yes or no

Table K1-2

Wetlands Crossed by the WEP

Wetland Crossings

Wetland	Milepost	Cowardin Classification[a, c]	Wetland Category (Ecology)[b]	Length of Ditch Excavated in Wetland (feet)	Acres of Wetland in Permanent Easement	Acres of Wetland in the Temporary Construction ROW	Acres of Wetland in ATWS	Crosses CAO Wetland Buffer (Y/N)	Total Permanent Wetland Disturbance (acres)	Total Temporary Wetland Disturbance (acres)	Agricultural Wetland (Y/N)	Wetland Crossing >75 ft (width)
Woodland Loop												
W1_LO1_049	1244.29	PEM	IV	97.601	0.505	0.132	2.679	Y	0.000	3.315	Y	TRUE
W1_LO1_050	1244.62	PEM	IV	184.154	0.166	0.113	0.000	Y	0.000	0.279	Y	TRUE
W1_LO1_051	1245.24	PEM	IV	12.796	0.191	0.000	0.000	Y	0.000	0.191	N	TRUE
W4_LO1_001	1246.74	PEM	IV	85.581	0.122	0.000	0.000	Y	0.000	0.122	N	FALSE
W1_LO1_001	1247.48	PEM	IV	38.288	0.119	0.003	0.000	Y	0.000	0.122	N	TRUE
W1_LO1_003	1247.65	PEM	IV	191.540	0.338	0.000	0.000	Y	0.000	0.338	N	TRUE
W1_LO1_002	1247.66	PFO	IV	0.000	0.019	0.000	0.000	Y	0.019	0.000	N	FALSE
W1_LO1_005	1247.73	PEM	IV	76.657	0.086	0.000	0.000	Y	0.000	0.086	N	FALSE
W1_LO1_007	1248.25	PEM	IV	38.716	0.054	0.002	0.000	Y	0.000	0.056	Y	TRUE
W1_LO1_008	1248.30	PEM	IV	114.647	0.140	0.000	0.000	Y	0.000	0.140	Y	FALSE
W2_LO1_001	1248.97	PEM	IV	0.000	0.074	0.000	0.000	Y	0.000	0.074	N	FALSE
W2_LO1_001	1248.97	PFO	IV	0.000	0.000	0.000	0.000	Y	0.000	0.000	N	FALSE
W2_LO1_002	1249.15	PEM	IV	11.863	0.041	0.000	0.000	Y	0.000	0.041	N	TRUE
W2_LO1_003	1249.52	PEM	III	8.620	0.029	0.000	0.000	Y	0.000	0.029	N	TRUE
W2_LO1_004	1250.09	PEM	III	0.000	0.006	0.000	0.000	Y	0.000	0.006	N	TRUE
W2_LO1_005	1250.56	PEM	III	25.138	0.019	0.000	0.000	Y	0.000	0.019	N	TRUE
W3_LO1_007	1251.15	PEM	III	24.985	0.032	0.000	0.000	Y	0.000	0.033	N	TRUE
W3_LO1_001	1251.41	PEM	IV	0.000	0.011	0.000	0.000	Y	0.000	0.011	N	TRUE
W3_LO1_002	1251.71	PEM	IV	69.274	0.141	0.000	0.000	Y	0.000	0.141	N	TRUE
W3_LO1_003	1251.90	PEM	IV	14.033	0.049	0.000	0.000	Y	0.000	0.049	N	TRUE
W3_LO1_003	1251.90	PFO	IV	14.033	0.032	0.000	0.000	Y	0.032	0.000	N	TRUE
W3_LO1_004	1252.00	PEM	IV	0.000	0.023	0.000	0.000	Y	0.000	0.023	N	TRUE
W3_LO1_005	1252.04	PEM	IV	85.222	0.059	0.000	0.000	Y	0.000	0.059	N	TRUE
W3_LO1_006	1252.08	PEM	IV	32.690	0.024	0.000	0.000	Y	0.000	0.024	N	TRUE
W3_LO1_009	1252.61	PEM	III	76.093	0.114	0.000	0.000	Y	0.000	0.114	Y	TRUE
W1_LO1_010	1254.13	PSS	IV	5.976	0.040	0.003	0.000	Y	0.043	0.000	N	TRUE
W1_LO1_011	1254.55	PEM	IV	14.109	0.027	0.000	0.000	Y	0.000	0.027	N	TRUE
W1_LO1_012	1254.73	PEM	IV	17.794	0.049	0.000	0.000	Y	0.000	0.049	N	TRUE
W1_LO1_013	1254.80	PEM	IV	10.338	0.011	0.001	0.000	Y	0.000	0.012	N	TRUE
W2_LO1_012	1254.99	PEM	IV	21.780	0.026	0.000	0.000	Y	0.000	0.026	N	TRUE
W2_LO1_011	1255.31	PEM	III	57.203	0.103	0.000	0.000	Y	0.000	0.103	N	FALSE
W2_LO1_010	1255.63	PEM	IV	35.990	0.029	0.006	0.000	Y	0.000	0.035	N	TRUE
W2_LO1_006	1256.24	PEM	III	0.000	0.046	0.001	0.000	Y	0.000	0.046	N	TRUE
W2_LO1_006	1256.24	PFO	III	0.000	0.001	0.000	0.000	Y	0.001	0.000	N	TRUE
W2_LO1_008	1256.42	PSS	III	0.000	0.003	0.000	0.000	Y	0.003	0.000	N	TRUE
W2_LO1_007	1256.42	PEM	IV	204.252	0.350	0.001	0.000	Y	0.000	0.351	N	TRUE
W2_LO1_009	1256.67	PEM	IV	131.248	0.124	0.000	0.000	Y	0.000	0.124	N	TRUE
W1_LO1_014	1257.00	PEM	IV	426.507	0.695	0.000	0.000	Y	0.000	0.695	Y	FALSE
W1_LO1_015	1257.26	PEM	III	137.333	0.263	0.000	0.000	Y	0.000	0.263	Y	FALSE
W1_LO1_016	1257.31	PEM	III	928.502	1.349	0.000	0.000	Y	0.000	1.349	Y	FALSE
W1_LO1_017	1257.56	PEM	IV	0.000	0.106	0.000	0.000	Y	0.000	0.106	Y	TRUE
W1_LO1_018	1257.60	PEM	III	201.831	0.341	0.000	0.000	Y	0.000	0.341	Y	FALSE
W1_LO1_019	1257.64	PEM	III	309.828	0.464	0.000	0.000	Y	0.000	0.464	Y	FALSE
W2_LO1_015	1257.83	PEM	IV	1.164	0.044	0.036	0.000	Y	0.000	0.080	N	TRUE
W2_LO1_016	1257.85	PEM	IV	43.168	0.026	0.003	0.000	Y	0.000	0.028	N	TRUE
W2_LO1_017	1257.89	PEM	IV	75.764	0.172	0.015	0.000	Y	0.000	0.187	N	TRUE
W1_LO1_021	1258.21	PEM	IV	716.067	0.938	0.000	0.000	Y	0.000	0.938	Y	FALSE
W1_LO1_022	1258.58	PEM	III	0.000	0.052	0.000	0.000	Y	0.000	0.052	Y	TRUE
W1_LO1_020	1258.83	PEM	III	22.566	0.077	0.000	0.000	Y	0.000	0.077	N	TRUE
W3_LO1_013	1259.39	PEM	IV	68.114	0.077	0.000	0.000	Y	0.000	0.077	N	TRUE
W3_LO1_014	1259.46	PEM	IV	80.872	0.071	0.005	0.000	Y	0.000	0.076	N	TRUE
W3_LO1_014	1259.46	PFO	IV	80.872	0.000	0.015	0.000	Y	0.015	0.000	N	TRUE
W3_LO1_015	1259.61	PEM	III	171.136	0.131	0.002	0.000	Y	0.000	0.133	N	TRUE
W3_LO1_015	1259.61	PFO	III	171.136	0.000	0.026	0.000	Y	0.026	0.000	N	TRUE
W3_LO1_016	1259.73	PEM	IV	105.390	0.047	0.000	0.000	Y	0.000	0.047	N	TRUE
W3_LO1_017	1259.93	PEM	IV	7.059	0.019	0.000	0.000	Y	0.000	0.019	N	TRUE
W3_LO1_018	1260.25	PEM	IV	51.379	0.048	0.008	0.000	Y	0.000	0.056	N	TRUE
W1_LO1_024	1260.33	PEM	IV	0.000	0.004	0.005	0.000	Y	0.000	0.009	Y	TRUE
W1_LO1_025	1260.35	PEM	IV	553.472	0.978	0.258	0.515	Y	0.000	1.751	Y	TRUE
W2_LO1_018	1260.76	PEM	IV	4.153	0.108	0.000	0.000	Y	0.000	0.108	Y	TRUE
W2_LO1_020	1260.83	PEM	II	0.000	0.000	0.000	0.000	Y	0.000	0.000	Y	FALSE
W3_LO1_024	1261.05	PEM	III	52.498	0.086	0.000	0.000	Y	0.000	0.086	N	TRUE

Table K1-2

Wetlands Crossed by the WEP

Wetland Crossings

Wetland	Milepost	Cowardin Classification[a, c]	Wetland Category (Ecology)[b]	Length of Ditch Excavated in Wetland (feet)	Acres of Wetland in Permanent Easement	Acres of Wetland in the Temporary Construction ROW	Acres of Wetland in ATWS	Crosses CAO Wetland Buffer (Y/N)	Total Permanent Wetland Disturbance (acres)	Total Temporary Wetland Disturbance (acres)	Agricultural Wetland (Y/N)	Wetland Crossing >75 ft (width)
W3_LO1_023	1261.21	PEM	IV	41.996	0.067	0.000	0.000	Y	0.000	0.067	N	FALSE
W3_LO1_019	1261.65	PEM	IV	9.020	0.022	0.000	0.000	Y	0.000	0.022	N	TRUE
W3_LO1_020	1261.69	PEM	IV	124.702	0.222	0.000	0.000	Y	0.000	0.222	N	TRUE
W3_LO1_021	1261.81	PEM	IV	24.027	0.066	0.000	0.000	Y	0.000	0.066	N	TRUE
W3_LO1_022	1261.97	PEM	IV	0.000	0.037	0.000	0.000	Y	0.000	0.037	N	TRUE
W3_LO1_025	1262.06	PEM	IV	33.254	0.045	0.000	0.000	Y	0.000	0.045	N	TRUE
W1_LO1_023	1262.66	PEM	IV	142.584	0.156	0.000	0.000	Y	0.000	0.156	N	TRUE
W1_LO1_026	1262.88	PEM	IV	83.428	0.112	0.002	0.000	Y	0.000	0.113	N	TRUE
W1_LO1_027	1262.98	PEM	III	28.650	0.062	0.000	0.000	Y	0.000	0.062	N	TRUE
W1_LO1_032	1263.49	PEM	IV	41.937	0.155	0.000	0.000	Y	0.000	0.155	N	TRUE
W1_LO1_033	1263.50	PEM	IV	264.386	0.399	0.000	0.000	Y	0.000	0.399	N	TRUE
W1_LO1_034	1263.76	PEM	III	46.629	0.139	0.000	0.000	Y	0.000	0.139	N	TRUE
W1_LO1_035	1263.80	PEM	IV	0.000	0.037	0.000	0.000	Y	0.000	0.037	N	TRUE
W1_LO1_055	1265.11	PEM	IV	297.321	0.582	0.049	0.001	Y	0.000	0.632	Y	TRUE
W1_LO1_054	1265.26	PEM	II	0.000	0.532	0.000	0.000	Y	0.000	0.532	N	FALSE
W1_LO1_054	1265.26	PFO	II	0.000	0.015	0.000	0.000	Y	0.015	0.000	N	FALSE
W1_LO1_053	1265.47	PEM	IV	36.349	0.050	0.000	0.000	Y	0.000	0.051	N	TRUE
W1_LO1_052	1265.80	PEM	IV	22.109	0.034	0.000	0.000	Y	0.000	0.034	N	TRUE
W1_LO1_057	1265.93	PEM	IV	31.553	0.078	0.000	0.000	Y	0.000	0.078	N	TRUE
W1_LO1_056	1266.02	PEM	IV	47.094	0.078	0.000	0.000	Y	0.000	0.078	N	TRUE
W1_LO1_036	1266.55	PEM	IV	195.381	0.754	0.000	0.000	Y	0.000	0.754	N	TRUE
W2_LO1_044	1266.92	PEM	IV	349.819	0.519	0.064	0.000	Y	0.000	0.583	N	TRUE
W2_LO1_045	1267.03	PEM	IV	193.701	0.314	0.041	0.000	Y	0.000	0.355	Y	TRUE
W2_LO1_046	1267.17	PEM	IV	0.000	0.047	0.000	0.000	Y	0.000	0.047	N	TRUE
W2_LO1_047	1267.35	PEM	IV	262.550	0.397	0.169	0.000	Y	0.000	0.566	N	TRUE
W3_LO1_027	1267.97	PEM	III	37.107	0.058	0.013	0.000	Y	0.000	0.071	N	TRUE
W3_LO1_028	1268.44	PEM	IV	28.544	0.034	0.016	0.000	Y	0.000	0.049	N	FALSE
W3_LO1_029	1268.51	PEM	II	289.231	0.489	0.118	0.000	Y	0.000	0.607	Y	FALSE
W3_LO1_029	1268.51	PSS	II	289.231	0.000	0.013	0.000	Y	0.013	0.000	Y	FALSE
W3_LO1_029	1268.51	PFO	II	289.231	0.016	0.000	0.000	Y	0.016	0.000	Y	FALSE
W3_LO1_030	1268.87	PEM	IV	158.295	0.228	0.122	0.000	Y	0.000	0.350	N	FALSE
W3_LO1_031	1269.17	PEM	IV	38.142	0.039	0.016	0.000	Y	0.000	0.056	N	FALSE
W3_LO1_031	1269.17	PFO	IV	38.142	0.000	0.001	0.000	Y	0.001	0.000	N	FALSE
W1_LO1_029	1269.35	PEM	IV	101.082	0.152	0.030	0.000	Y	0.000	0.182	Y	TRUE
W1_LO1_030	1269.39	PEM	II	206.678	0.184	0.103	0.000	Y	0.000	0.287	Y	TRUE
W1_LO1_031	1269.42	PFO	II	0.000	0.192	0.000	0.000	Y	0.192	0.000	Y	TRUE
W2_LO1_022	1270.66	PEM	III	49.780	0.090	0.016	0.000	Y	0.000	0.105	N	TRUE
W2_LO1_021	1270.69	PFO	III	0.000	0.003	0.000	0.000	Y	0.003	0.000	N	TRUE
W2_LO1_023	1270.87	PEM	IV	23.134	0.051	0.000	0.000	Y	0.000	0.051	N	TRUE
W2_LO1_024	1271.10	PEM	IV	85.625	0.056	0.000	0.000	Y	0.000	0.056	N	TRUE
W3_LO1_032	1271.41	PEM	IV	32.760	0.024	0.000	0.000	Y	0.000	0.024	N	TRUE
W3_LO1_033	1271.89	PEM	IV	2.551	0.025	0.000	0.000	Y	0.000	0.025	N	TRUE
W3_LO1_034	1272.23	PEM	III	46.457	0.066	0.014	0.000	Y	0.000	0.080	N	TRUE
W3_LO1_035	1272.32	PEM	III	18.748	0.045	0.001	0.000	Y	0.000	0.046	N	TRUE
W2_LO1_025	1273.43	PEM	IV	0.000	0.000	0.000	0.000	Y	0.000	0.000	Y	TRUE
W3_LO1_012	1273.58	PEM	IV	22.391	0.032	0.009	0.000	Y	0.000	0.041	N	TRUE
W3_LO1_026	1273.96	PEM	IV	0.000	0.000	0.000	0.000	Y	0.000	0.000	Y	TRUE
W3_LO1_010	1274.01	PEM	III	67.644	0.120	0.000	0.000	Y	0.000	0.120	Y	FALSE
W4_LO1_007	1275.89	PEM	IV	0.000	0.110	0.000	0.000	Y	0.000	0.110	N	TRUE
W4_LO1_006	1275.95	PSS	IV	0.000	0.004	0.018	0.000	Y	0.021	0.000	N	TRUE
W4_LO1_005	1276.04	PFO	IV	120.595	0.109	0.000	0.000	Y	0.109	0.000	N	FALSE
W4_LO1_004	1276.09	PFO	IV	50.188	0.049	0.000	0.000	Y	0.049	0.000	N	FALSE
W4_LO1_003	1276.17	PFO	IV	94.435	0.189	0.061	0.000	Y	0.250	0.000	N	TRUE
W4_LO1_002	1276.25	PEM	IV	70.284	0.038	0.000	0.000	Y	0.000	0.038	N	TRUE
W1_LO1_058	1277.81	PEM	III	36.664	0.054	0.019	0.000	Y	0.000	0.074	N	FALSE
W2_LO1_048	1278.81	PEM	II	296.654	0.402	0.075	0.000	Y	0.000	0.477	N	FALSE
W2_LO1_049	1278.94	PEM	IV	102.021	0.214	0.008	0.000	Y	0.000	0.223	N	TRUE
W2_LO1_050	1278.96	PEM	IV	16.001	0.027	0.002	0.000	Y	0.000	0.029	N	TRUE
W2_LO1_051	1279.17	PEM	II	84.322	0.113	0.022	0.000	Y	0.000	0.135	N	FALSE
W4_LO1_008	1279.72	PSS	III	35.454	0.035	0.000	0.000	Y	0.035	0.000	N	FALSE
W4_LO1_009	1279.83	PEM	IV	0.000	0.044	0.000	0.000	Y	0.000	0.044	N	TRUE
W4_LO1_011	1280.30	PEM	IV	324.274	0.743	0.000	0.000	Y	0.000	0.743	Y	FALSE
W1_LO1_037	1280.38	PEM	III	246.778	0.534	0.000	0.016	Y	0.000	0.550	Y	FALSE

Table K1-2

Wetlands Crossed by the WEP

Wetland	Milepost	Cowardin Classification[a, c]	Wetland Category (Ecology)[b]	Length of Ditch Excavated in Wetland (feet)	Acres of Wetland in Permanent Easement	Acres of Wetland in the Temporary Construction ROW	Acres of Wetland in ATWS	Crosses CAO Wetland Buffer (Y/N)	Total Permanent Wetland Disturbance (acres)	Total Temporary Wetland Disturbance (acres)	Agricultural Wetland (Y/N)	Wetland Crossing >75 ft (width)
Wetland Crossings												
W1_LO1_038	1280.50	PFO	II	0.000	0.054	0.000	0.000	Y	0.054	0.000	N	FALSE
W1_LO1_039	1280.78	PEM	II	3402.312	5.238	0.046	0.000	Y	0.000	5.283	Y	FALSE
W2_LO1_026	1281.38	PEM	IV	84.441	0.122	0.000	0.000	Y	0.000	0.122	Y	FALSE
W2_LO1_027	1281.69	PEM	III	21.576	0.044	0.000	0.000	Y	0.000	0.044	Y	FALSE
W3_LO1_043	1282.70	PEM	II	311.424	0.000	0.000	0.002	Y	0.000	0.377	N	TRUE
W3_LO1_043	1282.75	PFO	II	0.000	0.000	0.000	0.168	Y	0.168	0.000	N	TRUE
W3_LO1_043	1282.82	PSS	II	0.000	0.000	0.000	0.809	Y	0.809	0.000	N	TRUE
W3_LO1_042	1282.89	PFO	III	0.000	0.000	0.000	0.000	Y	0.000	0.000	N	FALSE
W3_LO1_041	1282.95	PEM	IV	0.000	0.000	0.000	0.000	Y	0.000	0.000	N	FALSE
W3_LO1_039	1283.14	PFO	III	0.000	0.034	0.000	0.000	Y	0.034	0.000	N	FALSE
W3_LO1_039	1283.14	PEM	III	100.942	0.090	0.000	0.000	Y	0.000	0.090	N	FALSE
W3_LO1_037	1283.39	PEM	III	38.830	0.038	0.000	0.000	Y	0.000	0.038	N	FALSE
W3_LO1_036	1283.42	PEM	III	0.000	0.072	0.000	0.000	Y	0.000	0.072	N	FALSE
W3_LO1_038	1283.48	PFO	III	0.000	0.011	0.000	0.000	Y	0.011	0.000	N	FALSE
W1_LO1_040	1284.06	PEM	IV	0.000	0.000	0.000	0.000	Y	0.000	0.000	Y	FALSE
W1_LO1_041	1284.34	PEM	IV	107.573	0.363	0.000	0.000	Y	0.000	0.363	Y	FALSE
W1_LO1_043	1284.76	PSS	II	33.341	0.076	0.001	0.000	Y	0.076	0.000	N	TRUE
W2_LO1_032	1285.30	PEM	IV	74.731	0.252	0.005	0.012	Y	0.000	0.268	N	TRUE
W2_LO1_033	1285.35	PEM	III	55.857	0.090	0.000	0.000	Y	0.000	0.090	N	TRUE
W2_LO1_034	1285.67	PEM	III	1693.575	2.499	0.000	0.000	Y	0.000	2.499	N	TRUE
W2_LO1_031	1285.80	PFO	IV	102.206	0.167	0.000	0.000	Y	0.167	0.000	N	FALSE
W2_LO1_029	1286.03	PEM	IV	2074.774	3.389	0.000	0.000	Y	0.000	3.389	N	FALSE
W2_LO1_030	1286.19	PFO	III	0.000	0.000	0.000	0.000	Y	0.000	0.000	N	FALSE
W3_LO1_044	1286.80	PEM	IV	196.367	0.298	0.000	0.000	Y	0.000	0.298	N	FALSE
W3_LO1_044	1286.81	PFO	IV	0.000	0.001	0.000	0.000	Y	0.001	0.000	N	FALSE
W1_LO1_044	1287.41	PFO	III	0.000	0.034	0.000	0.000	Y	0.034	0.000	N	TRUE
W1_LO1_045	1287.48	PEM	IV	425.543	0.731	0.153	0.000	Y	0.000	0.883	Y	TRUE
W1_LO1_047	1287.74	PSS	IV	58.314	0.105	0.000	0.000	Y	0.106	0.000	Y	TRUE
W1_LO1_048	1288.01	PSS	IV	144.393	0.299	0.057	0.000	Y	0.356	0.000	Y	TRUE
W2_LO1_035	1288.24	PEM	II	1684.681	2.681	0.274	0.077	Y	0.000	3.032	Y	TRUE
W2_LO1_039	1288.47	PEM	IV	514.054	0.878	0.241	0.000	Y	0.000	1.119	Y	TRUE
W2_LO1_038	1288.57	PSS	II	168.592	0.344	0.072	0.000	Y	0.416	0.000	N	TRUE
W2_LO1_037	1288.70	PEM	IV	571.094	0.816	0.094	0.000	Y	0.000	0.909	N	TRUE
W2_LO1_036	1288.75	PEM	IV	241.211	0.359	0.000	0.000	Y	0.000	0.359	N	TRUE
W2_LO1_040	1288.88	PSS	IV	206.151	0.302	0.000	0.000	Y	0.302	0.000	N	FALSE
W2_LO1_042	1288.93	PEM	III	237.473	0.354	0.000	0.000	Y	0.000	0.354	N	FALSE
W2_LO1_043	1289.33	PEM	III	129.965	0.178	0.001	0.000	Y	0.000	0.179	Y	TRUE
W2_LO1_041	1289.35	PEM	III	474.719	0.812	0.220	0.000	Y	0.000	1.032	Y	TRUE
CS-1E	1289.49	PEM	IV	45.287	0.000	0.000	0.042	Y	0.000	0.042	Y	TRUE
CS-1A	1289.56	PEM	IV	0.000	0.000	0.000	2.188	Y	0.000	2.188	Y	TRUE
Woodland Subtotal									**3.377**	**45.819**		
Chehalis Loop												
1291.5	1291.41	PSS	III	190.115	0.084	0.071	0.276	Y	0.431	0.000	Y	TRUE
1291.5	1291.41	PFO	III	190.115	0.022	0.181	0.000	Y	0.203	0.000	Y	TRUE
1291.5	1291.41	PEM	III	190.115	5.259	0.504	0.000	Y	0.000	5.763	Y	TRUE
1292.4	1292.26	PFO	III	0.000	0.166	0.452	0.053	Y	0.671	0.000	N	TRUE
1292.4	1292.26	PEM	III	0.000	3.297	0.001	0.000	Y	0.000	3.298	N	TRUE
1292.8	1292.77	PEM	III	1702.917	2.956	0.777	0.000	Y	0.000	3.733	Y	TRUE
1292.8	1292.77	PFO	III	1702.917	0.055	0.065	0.000	Y	0.120	0.000	Y	TRUE
1293.1	1293.10	PEM	III	589.893	2.558	0.099	0.238	Y	0.000	2.895	Y	TRUE
1293.1	1293.10	PFO	III	589.893	0.212	0.280	0.000	Y	0.492	0.000	Y	TRUE
1293.8	1293.64	PEM	II	1314.839	2.046	0.000	0.000	Y	0.000	2.046	N	TRUE
1293.8	1293.64	PFO	II	1314.839	0.172	0.309	0.000	Y	0.481	0.000	N	TRUE
1294.2	1294.13	PFO	II	0.000	0.000	0.000	0.023	Y	0.023	0.000	Y	TRUE
1294.2	1294.13	PSS	II	0.000	0.752	0.110	1.377	Y	2.239	0.000	Y	TRUE
1294.7	1294.41	PEM	IV	430.466	0.945	0.272	11.446	Y	0.000	12.663	Y	TRUE
1294.8	1294.53	PEM	III	1525.733	2.718	0.594	0.318	Y	0.000	3.630	N	TRUE
1294.8	1294.53	PSS	III	1525.733	0.080	0.069	0.133	Y	0.282	0.000	N	TRUE
1294.8	1294.53	PFO	III	1525.733	0.028	0.072	0.000	Y	0.100	0.000	N	TRUE
1294.9	1294.90	PFO	III	236.550	0.368	0.018	0.000	Y	0.386	0.000	N	TRUE
1295.1	1295.08	PEM	III	65.215	0.086	0.032	0.000	Y	0.000	0.117	N	TRUE
1295.2	1295.20	PFO	IV	35.474	0.050	0.000	0.000	Y	0.050	0.000	N	TRUE

Table K1-2

Wetlands Crossed by the WEP

Wetland Crossings

Wetland	Milepost	Cowardin Classification[a, c]	Wetland Category (Ecology)[b]	Length of Ditch Excavated in Wetland (feet)	Acres of Wetland in Permanent Easement	Acres of Wetland in the Temporary Construction ROW	Acres of Wetland in ATWS	Crosses CAO Wetland Buffer (Y/N)	Total Permanent Wetland Disturbance (acres)	Total Temporary Wetland Disturbance (acres)	Agricultural Wetland (Y/N)	Wetland Crossing >75 ft (width)
1295.4	1295.43	PFO	II	51.101	0.007	0.000	0.000	Y	0.007	0.000	Y	TRUE
1295.4	1295.43	PEM	II	51.101	0.086	0.014	0.001	Y	0.000	0.101	Y	TRUE
1295.9	1295.96	PEM	III	120.763	0.182	0.000	0.000	Y	0.000	0.182	N	FALSE
1295.9	1295.96	PFO	III	120.763	0.037	0.000	0.000	Y	0.037	0.000	N	FALSE
1296.1	1296.14	PEM	II	19.280	0.019	0.000	0.000	Y	0.000	0.019	N	TRUE
1296.1	1296.14	PFO	II	19.280	0.014	0.022	0.000	Y	0.036	0.000	N	TRUE
1296.15	1296.15	PEM	III	46.612	0.047	0.000	0.000	Y	0.000	0.047	N	TRUE
1296.15	1296.15	PFO	III	46.612	0.024	0.016	0.000	Y	0.039	0.000	N	TRUE
1296.45	1296.50	PEM	II	74.515	0.059	0.000	0.000	Y	0.000	0.059	Y	TRUE
1296.45	1296.50	PFO	II	74.515	0.063	0.037	0.000	Y	0.100	0.000	Y	TRUE
1296.6	1296.66	PFO	II	68.177	0.108	0.030	0.000	Y	0.137	0.000	N	TRUE
1296.9	1296.73	PFO	II	634.092	1.102	0.220	0.000	Y	1.321	0.000	N	TRUE
1297.6	1297.40	PFO	I	113.268	0.207	0.035	0.000	Y	0.242	0.000	N	TRUE
1298.0	1297.96	PEM	II	0.000	0.111	0.000	0.000	Y	0.000	0.111	N	TRUE
1298.0	1297.96	PFO	II	0.000	0.146	0.000	0.000	Y	0.146	0.000	N	TRUE
1298.5	1298.36	PEM	III	369.672	0.604	0.054	0.000	Y	0.000	0.658	N	TRUE
1298.5	1298.36	PFO	III	369.672	0.004	0.000	0.000	Y	0.004	0.000	N	TRUE
1298.5	1298.36	PSS	III	369.672	0.000	0.129	0.000	Y	0.129	0.000	N	TRUE
1299	1298.99	PEM	II	225.169	0.631	0.133	0.000	Y	0.000	0.764	Y	TRUE
1299.1	1299.11	PEM	II	249.322	0.429	0.000	0.000	Y	0.000	0.429	Y	FALSE
1299.8	1299.73	PFO	IV	0.000	0.133	0.000	0.000	Y	0.133	0.000	N	TRUE
1299.8	1299.73	PEM	IV	0.000	0.861	0.032	0.000	Y	0.000	0.893	N	TRUE
1299.95	1299.93	PEM	III	0.000	0.060	0.012	0.000	Y	0.000	0.072	N	TRUE
1299.95	1299.93	PFO	III	0.000	0.008	0.005	0.000	Y	0.013	0.000	N	TRUE
1300.2	1300.05	PEM	III	94.967	0.132	0.014	0.023	Y	0.000	0.169	N	TRUE
1300.9	1300.78	PEM	II	0.000	0.035	0.000	0.000	Y	0.000	0.035	N	FALSE
1300.9	1300.78	PFO	II	0.000	0.014	0.000	0.000	Y	0.014	0.000	N	FALSE
1301.5	1301.46	PEM	IV	644.490	0.960	0.315	2.274	Y	0.000	3.549	Y	TRUE
1301.6	1301.59	PEM	III	464.061	2.707	0.739	0.258	Y	0.000	3.705	Y	TRUE
1302.8	1302.71	PEM	III	273.857	0.488	0.000	0.000	Y	0.000	0.488	N	FALSE
1303.2	1303.01	PEM	IV	148.350	0.168	0.062	0.000	Y	0.000	0.231	N	TRUE
1303.2	1303.01	PFO	IV	148.350	0.099	0.000	0.000	Y	0.099	0.000	N	TRUE
1303.3	1303.10	PEM	III	79.753	0.186	0.040	0.000	Y	0.000	0.225	N	TRUE
1303.3	1303.10	PFO	III	79.753	0.087	0.000	0.000	Y	0.087	0.000	N	TRUE
W2_LO2_002	1303.23	PSS	IV	32.876	0.080	0.000	0.000	Y	0.080	0.000	N	TRUE
W2_LO2_001	1303.49	PEM	IV	107.573	0.146	0.000	0.000	Y	0.000	0.146	N	TRUE
W3_LO2_001	1304.18	PEM	IV	0.000	0.018	0.000	0.000	Y	0.000	0.018	N	TRUE
W3_LO2_002	1304.30	PEM	III	25.400	0.048	0.010	0.135	Y	0.000	0.192	N	TRUE
W3_LO2_003	1304.40	PEM	IV	105.508	0.149	0.074	0.000	Y	0.000	0.223	N	TRUE
W3_LO2_004	1304.46	PSS	III	341.806	0.496	0.197	0.000	Y	0.693	0.000	N	TRUE
W3_LO2_004	1304.46	PEM	III	341.806	1.317	0.655	0.000	Y	0.000	1.973	N	TRUE
W3_LO2_005	1304.89	PEM	III	86.488	0.118	0.053	0.000	Y	0.000	0.172	N	TRUE
W3_LO2_007	1305.15	PEM	III	809.106	1.164	0.541	0.000	Y	0.000	1.704	N	TRUE
W3_LO2_008	1305.71	PEM	IV	13.002	0.016	0.000	0.000	Y	0.000	0.016	N	TRUE
W3_LO2_009	1306.16	PEM	III	457.323	0.765	0.251	0.000	Y	0.000	1.015	Y	TRUE
W3_LO2_012	1306.55	PEM	IV	56.662	0.092	0.029	0.000	Y	0.000	0.121	Y	TRUE
W3_LO2_010	1306.57	PEM	IV	132.546	0.174	0.078	0.000	Y	0.000	0.252	Y	TRUE
W3_LO2_010	1306.57	PFO	IV	132.546	0.001	0.000	0.000	Y	0.001	0.000	Y	TRUE
W4_LO2_008	1306.71	PEM	IV	110.001	0.216	0.045	0.000	Y	0.000	0.261	Y	TRUE
W4_LO2_007	1306.80	PEM	IV	103.362	0.183	0.043	0.000	Y	0.000	0.226	N	TRUE
W4_LO2_006	1307.00	PEM	IV	89.647	0.150	0.043	0.000	Y	0.000	0.193	N	TRUE
W4_LO2_005	1307.11	PEM	IV	275.803	0.566	0.052	0.000	Y	0.000	0.619	N	TRUE
W4_LO2_004	1307.22	PEM	IV	313.095	0.635	0.060	0.022	Y	0.000	0.718	N	TRUE
W4_LO2_003	1307.47	PEM	IV	44.832	0.071	0.023	0.000	Y	0.000	0.094	N	TRUE
W4_LO2_002	1307.66	PEM	IV	49.600	0.062	0.022	0.000	Y	0.000	0.084	N	TRUE
W4_LO2_001	1307.69	PEM	IV	52.081	0.081	0.008	0.000	Y	0.000	0.089	N	TRUE
W1_LO2_100	1307.92	PEM	IV	127.391	0.170	0.001	0.000	Y	0.000	0.171	N	TRUE
W1_LO2_101	1308.33	PEM	III	62.026	0.073	0.013	0.000	Y	0.000	0.086	N	TRUE
W1_LO2_102	1308.66	PEM	III	79.153	0.078	0.000	0.000	Y	0.000	0.078	N	TRUE
W1_LO2_103	1308.75	PEM	III	1040.415	1.196	0.241	0.000	Y	0.000	1.436	N	TRUE
W1_LO2_103	1308.75	PFO	III	1040.415	0.125	0.128	0.000	Y	0.253	0.000	N	TRUE
W1_LO2_105	1309.05	PSS	III	0.000	0.000	0.000	0.103	Y	0.103	0.000	N	TRUE
W4_LO2_009	1310.21	PEM	IV	144.500	0.136	0.171	0.000	Y	0.000	0.307	N	TRUE

Table K1-2

Wetlands Crossed by the WEP

Wetland	Milepost	Cowardin Classification[a, c]	Wetland Category (Ecology)[b]	Length of Ditch Excavated in Wetland (feet)	Acres of Wetland in Permanent Easement	Acres of Wetland in the Temporary Construction ROW	Acres of Wetland in ATWS	Crosses CAO Wetland Buffer (Y/N)	Total Permanent Wetland Disturbance (acres)	Total Temporary Wetland Disturbance (acres)	Agricultural Wetland (Y/N)	Wetland Crossing >75 ft (width)
Wetland Crossings												
W4_LO2_010	1310.79	PEM	IV	44.457	0.052	0.016	0.000	Y	0.000	0.067	Y	TRUE
W4_LO2_011	1311.19	PEM	IV	42.122	0.045	0.000	0.000	Y	0.000	0.045	N	TRUE
W4_LO2_012	1311.40	PEM	III	60.951	0.069	0.002	0.000	Y	0.000	0.071	N	TRUE
W4_LO2_013	1311.43	PEM	III	34.063	0.041	0.005	0.000	Y	0.000	0.046	N	TRUE
W2_LO2_007	1311.64	PSS	II	94.769	0.111	0.025	0.000	Y	0.136	0.000	N	TRUE
W2_LO2_006	1312.36	PEM	IV	48.528	0.142	0.000	0.000	Y	0.000	0.142	N	TRUE
W2_LO2_005	1312.60	PEM	IV	75.614	0.171	0.031	0.000	Y	0.000	0.201	N	TRUE
W2_LO2_004	1312.65	PEM	IV	110.066	0.223	0.020	0.000	Y	0.000	0.242	N	TRUE
W2_LO2_003	1312.72	PEM	IV	118.563	0.178	0.047	0.031	Y	0.000	0.256	N	TRUE
W1_LO2_104	1313.05	PEM	III	165.798	0.300	0.058	0.000	Y	0.000	0.359	N	TRUE
W2_LO2_009	1313.34	PEM	IV	144.716	0.234	0.055	0.000	Y	0.000	0.290	N	TRUE
W2_LO2_008	1313.80	PEM	IV	97.394	0.132	0.005	0.000	Y	0.000	0.138	N	TRUE
W4_LO2_014	1314.60	PEM	IV	95.315	0.126	0.032	0.007	Y	0.000	0.165	N	TRUE
W4_LO2_015	1314.72	PEM	IV	143.037	0.230	0.010	0.000	Y	0.000	0.240	N	TRUE
W4_LO2_016	1314.86	PEM	IV	164.323	0.161	0.052	0.000	Y	0.000	0.213	N	TRUE
W4_LO2_017	1314.95	PEM	IV	90.458	0.080	0.001	0.000	Y	0.000	0.082	N	TRUE
JW-WA-3-2	1315.03	PSSC	No Rating	416.712	0.681	0.202	0.000	Y	0.883	0.000	N	TRUE
Chehalis Subtotal									**10.170**	**58.633**		
Sumner South												
FL-7	1339.15	PSS	III	135.815	0.128	0.072	0.031	Y	0.231	0.000	N	TRUE
W1_LO3_002	1339.30	PEM	III	19.874	0.077	0.000	0.000	Y	0.000	0.077	N	TRUE
FL-5	1339.34	PEM	III	58.681	0.343	0.139	0.000	Y	0.000	0.482	N	TRUE
W1_LO3_001	1339.80	PFO	III	388.026	0.544	0.222	0.000	Y	0.766	0.000	Y	TRUE
W1_LO3_005	1341.91	PFO	IV	0.000	0.022	0.000	0.000	Y	0.022	0.000	N	TRUE
W1_LO3_004	1341.94	PSS	IV	654.728	1.113	0.000	0.000	Y	1.113	0.000	N	FALSE
W1_LO3_003	1342.03	PFO	IV	0.000	0.001	0.000	0.000	Y	0.001	0.000	N	FALSE
W1_LO3_101	1342.11	PEM	IV	0.000	0.000	0.000	0.155	Y	0.000	0.155	Y	TRUE
W1_LO3_006	1342.19	PEM	IV	564.174	0.813	0.015	0.000	Y	0.000	0.829	N	TRUE
W1_LO3_007	1342.33	PEM	IV	171.487	0.275	0.000	0.000	Y	0.000	0.275	N	FALSE
W1_LO3_008	1342.45	PFO	IV	59.037	0.189	0.000	0.000	Y	0.189	0.000	N	FALSE
W2_LO3_001	1344.47	PFO	III	0.000	0.030	0.000	0.000	Y	0.030	0.000	N	FALSE
W2_LO3_003	1345.17	PEM	IV	33.562	0.046	0.012	0.000	Y	0.000	0.058	N	FALSE
W2_LO3_004	1345.27	PFO	II	124.382	0.161	0.021	0.000	Y	0.182	0.000	N	FALSE
W2_LO3_005	1346.09	PEM	II	76.100	0.103	0.000	0.000	Y	0.000	0.103	N	FALSE
W3_LO3_003	1346.82	PEM	III	116.121	0.249	0.000	0.000	Y	0.000	0.249	Y	FALSE
W3_LO3_003	1346.82	PSS	III	116.121	0.155	0.000	0.000	Y	0.155	0.000	Y	FALSE
W4_LO3_101	1346.91	PEM	IV	0.000	0.000	0.000	1.024	Y	0.000	1.024	N	TRUE
W3_LO3_002	1346.96	PEM	III	656.121	0.716	0.000	0.000	Y	0.000	0.716	N	FALSE
W3_LO3_002	1346.96	PSS	III	656.121	0.223	0.000	0.000	Y	0.223	0.000	N	FALSE
W4_LO3_102	1347.31	PEM	IV	0.000	0.000	0.000	0.066	Y	0.000	0.066	Y	TRUE
W3_LO3_001	1347.94	PSS	III	34.352	0.016	0.000	0.143	Y	0.159	0.000	Y	FALSE
W4_LO3_103	1349.07	PEM	IV	913.579	1.549	0.256	0.149	Y	0.000	1.954	Y	TRUE
WP_LO3_007	1349.07	PEM	No Rating	0.000	0.000	0.000	0.389	Y	0.000	0.389	Y	TRUE
W1_LO3_010	1349.54	PEM	IV	312.363	0.506	0.132	0.025	Y	0.000	0.663	Y	TRUE
W1_LO3_009	1349.98	PEM	III	382.103	0.479	0.052	0.000	Y	0.000	0.531	N	TRUE
W2_LO3_006	1350.46	PEM	IV	96.673	0.152	0.000	0.000	Y	0.000	0.152	N	TRUE
Sumner South Subtotal									**3.072**	**7.724**		
Sumner North A												
WP_LO4_001	1356.90	PFO	No Rating	0.000	0.000	0.000	0.044		0.044	0.000	Y	FALSE
W1_LO4_001	1357.13	PEM	III	59.196	0.101	0.026	0.000	Y	0.000	0.127	Y	TRUE
W1_LO4_002	1357.18	PEM	III	164.698	0.296	0.000	0.000	Y	0.000	0.296	Y	FALSE
W1_LO4_003	1357.77	PEM	III	80.990	0.182	0.012	0.000	Y	0.000	0.194	N	TRUE
W2_LO4_004	1358.11	PEM	III	260.025	0.454	0.000	0.000	Y	0.000	0.454	N	FALSE
W2_LO4_005	1358.29	PEM	III	288.613	0.404	0.000	0.000	Y	0.000	0.404	N	FALSE
W2_LO4_003	1358.49	PEM	III	58.558	0.047	0.000	0.000	Y	0.000	0.047	N	FALSE
W2_LO4_002	1358.69	PEM	II	477.196	0.661	0.000	0.000	Y	0.000	0.661	N	FALSE
W2_LO4_001	1358.86	PEM	III	0.000	0.003	0.000	0.000	Y	0.000	0.003	N	FALSE
W4_LO4_001	1360.93	PEM	III	673.467	1.203	0.163	0.000	Y	0.000	1.367	Y	TRUE
W4_LO4_002	1362.43	PEM	IV	326.606	0.500	0.000	0.000	Y	0.000	0.500	N	FALSE
Sumner North A Subtotal									**0.044**	**4.055**		

Table K1-2

Wetlands Crossed by the WEP

Wetland	Milepost	Cowardin Classification[a, c]	Wetland Category (Ecology)[b]	Length of Ditch Excavated in Wetland (feet)	Acres of Wetland in Permanent Easement	Acres of Wetland in the Temporary Construction ROW	Acres of Wetland in ATWS	Crosses CAO Wetland Buffer (Y/N)	Total Permanent Wetland Disturbance (acres)	Total Temporary Wetland Disturbance (acres)	Agricultural Wetland (Y/N)	Wetland Crossing >75 ft (width)
Wetland Crossings												
Sumner North B												
W1_LO5_001	1370.93	PEM	III	5.791	0.063	0.000	0.000	Y	0.000	0.063	N	TRUE
W1_LO5_003	1371.00	PEM	III	291.665	0.396	0.113	0.000	Y	0.000	0.509	N	TRUE
W1_LO5_004	1371.06	PEM	II	479.812	0.580	0.052	0.002	Y	0.000	0.634	N	TRUE
W1_LO5_006	1371.65	PEM	IV	268.210	0.308	0.000	0.000	Y	0.000	0.308	N	TRUE
W1_LO5_005	1371.72	PEM	IV	61.018	0.052	0.000	0.000	Y	0.000	0.052	N	TRUE
W2_LO5_002	1371.96	PEM	II	35.947	0.093	0.000	0.000	Y	0.000	0.093	N	FALSE
W2_LO5_001	1372.73	PEM	IV	105.062	0.119	0.000	0.000	Y	0.000	0.119	N	TRUE
W4_LO5_004	1373.29	PEM	IV	774.401	1.268	0.281	0.000	Y	0.000	1.549	N	TRUE
W4_LO5_003	1373.66	PFO	III	0.000	0.024	0.000	0.000	Y	0.024	0.000	N	FALSE
W2_LO5_006	1374.50	PEM	IV	49.791	0.081	0.002	0.000	Y	0.000	0.083	N	TRUE
W2_LO5_005	1374.67	PEM	IV	35.337	0.129	0.010	0.000	Y	0.000	0.138	N	TRUE
W2_LO5_004	1374.87	PEM	IV	170.214	0.327	0.000	0.000	Y	0.000	0.327	N	TRUE
W2_LO5_003	1375.19	PEM	IV	349.489	0.456	0.001	0.000	Y	0.000	0.458	N	TRUE
W3_LO5_004	1375.86	PSS	III	103.498	0.088	0.000	0.000	Y	0.088	0.000	N	FALSE
W3_LO5_005	1375.88	PSS	IV	0.000	0.003	0.000	0.000	Y	0.003	0.000	N	FALSE
1376.9	1376.82	PEM	No Rating	116.519	0.686	0.000	0.000	Y	0.000	0.686	N	FALSE
W3_LO5_001	1377.30	PSS	II	524.042	0.888	0.247	0.045	Y	1.180	0.000	N	TRUE
W3_LO5_002	1378.06	PSS	III	167.511	0.293	0.000	0.000	Y	0.293	0.000	N	FALSE
W4_LO5_002	1378.55	PFO	III	0.000	0.029	0.000	0.000	Y	0.029	0.000	N	TRUE
W4_LO5_001	1379.07	PSS	I	360.051	0.597	0.081	0.000	Y	0.678	0.000	N	TRUE
W1_LO5_002	1379.62	PFO	II	18.819	0.035	0.000	0.000	Y	0.035	0.000	N	FALSE
SN-48	1380.18	PFO	III	0.000	0.002	0.000	0.000	Y	0.002	0.000	N	TRUE
SN-48	1380.18	PSS	III	0.000	0.133	0.000	0.000	Y	0.133	0.000	N	TRUE
SN-46	1380.72	PFO	III	0.000	0.001	0.000	0.000	Y	0.001	0.000	N	TRUE
SN-44	1381.30	PEM	I	0.000	1.219	0.000	0.034	Y	0.000	1.253	N	TRUE
SN-44	1381.30	PSS	I	0.000	0.161	0.174	0.000	Y	0.335	0.000	N	TRUE
SN-44	1381.30	PFO	I	0.000	0.041	0.044	0.121	Y	0.207	0.000	N	TRUE
Sumner North B Subtotal									**3.008**	**6.273**		
Snohomish												
W3_LO6_001	1394.35	PSS	IV	0.000	0.063	0.000	0.000	Y	0.063	0.000	N	TRUE
W3_LO6_002	1394.42	PSS	II	71.620	0.116	0.000	0.000	Y	0.116	0.000	N	FALSE
W3_LO6_003	1394.46	PSS	II	336.077	0.041	0.000	0.000	Y	0.041	0.000	N	TRUE
W3_LO6_003	1394.46	PEM	II	336.077	0.253	0.000	0.000	Y	0.000	0.253	N	FALSE
W3_LO6_004	1394.80	PEM	IV	6.346	0.123	0.000	0.000	Y	0.000	0.123	N	TRUE
W3_LO6_005	1394.83	PEM	IV	108.473	0.094	0.000	0.000	Y	0.000	0.094	N	TRUE
W3_LO6_006	1394.88	PEM	IV	66.443	0.089	0.000	0.000	Y	0.000	0.089	N	FALSE
W3_LO6_008	1395.32	PSS	III	0.000	0.041	0.000	0.000	Y	0.041	0.000	N	FALSE
W3_LO6_007	1395.35	PSS	III	0.000	0.153	0.000	0.000	Y	0.153	0.000	N	TRUE
W3_LO6_009	1395.42	PSS	III	379.023	0.597	0.000	0.000	Y	0.597	0.000	N	FALSE
W3_LO6_010	1395.57	PEM	IV	204.778	0.200	0.005	0.000	Y	0.000	0.205	N	TRUE
W4_LO6_003	1395.99	PEM	III	240.373	0.335	0.086	0.000	Y	0.000	0.421	Y	TRUE
W4_LO6_004	1396.61	PSS	IV	6.735	0.104	0.000	0.000	Y	0.104	0.000	N	TRUE
W4_LO6_005	1396.63	PEM	III	323.885	0.515	0.000	0.000	Y	0.000	0.515	N	TRUE
W4_LO6_102	1397.19	PEM	III	119.496	0.200	0.075	0.000	Y	0.000	0.275	Y	TRUE
W4_LO6_103	1397.43	PSS	III	0.000	0.000	0.000	3.503	Y	3.503	0.000	Y	TRUE
W1_LO6_002	1398.08	PEM	IV	52.881	0.045	0.000	0.000	Y	0.000	0.045	N	TRUE
W1_LO6_003	1398.08	PFO	IV	0.000	0.024	0.012	0.000	Y	0.035	0.000	N	TRUE
W1_LO6_004	1398.19	PEM	III	67.976	0.059	0.000	0.000	Y	0.000	0.059	Y	TRUE
W1_LO6_005	1398.58	PEM	IV	50.047	0.037	0.039	0.000	Y	0.000	0.076	N	TRUE
W1_LO6_006	1398.60	PEM	III	157.116	0.252	0.054	0.000	Y	0.000	0.306	N	TRUE
W1_LO6_007	1398.62	OW	No Rating	0.000	0.016	0.000	0.000	Y	0.016	0.000	N	TRUE
W1_LO6_008	1398.67	PEM	III	463.390	0.650	0.280	0.000	Y	0.000	0.930	N	TRUE
W1_LO6_009	1399.07	PFO	III	0.000	0.029	0.000	0.000	Y	0.029	0.000	N	TRUE
W1_LO6_011	1399.34	PEM	IV	135.691	0.163	0.008	0.000	Y	0.000	0.171	N	TRUE
W1_LO6_012	1399.41	PEM	IV	192.276	0.290	0.033	0.000	Y	0.000	0.323	N	TRUE
W1_LO6_015	1399.74	PEM	III	154.673	0.121	0.000	0.000	Y	0.000	0.121	N	TRUE
W2_LO6_001	1400.34	PEM	IV	69.437	0.048	0.000	0.000	Y	0.000	0.048	N	TRUE
W2_LO6_003	1400.43	PEM	IV	95.367	0.096	0.000	0.000	Y	0.000	0.096	N	FALSE
W2_LO6_005	1400.87	PEM	II	3537.883	3.917	3.386	0.000	Y	0.000	7.303	Y	TRUE
W2_LO6_004	1401.48	PFO	II	143.687	0.766	0.000	0.000	Y	0.766	0.000	N	TRUE
WP_LO6_001	1401.65	PEM	No Rating	0.000	0.016	0.000	0.000	Y	0.000	0.016	Y	TRUE

Table K1-2

Wetlands Crossed by the WEP

Wetland	Milepost	Cowardin Classification[a, c]	Wetland Category (Ecology)[b]	Length of Ditch Excavated in Wetland (feet)	Acres of Wetland in Permanent Easement	Acres of Wetland in the Temporary Construction ROW	Acres of Wetland in ATWS	Crosses CAO Wetland Buffer (Y/N)	Total Permanent Wetland Disturbance (acres)	Total Temporary Wetland Disturbance (acres)	Agricultural Wetland (Y/N)	Wetland Crossing >75 ft (width)
Wetland Crossings												
W4_LO6_101	1402.90	PEM	IV	46.131	0.059	0.034	0.469	Y	0.000	0.562	Y	TRUE
W1_LO6_016	1404.19	PEM	III	275.161	0.391	0.110	0.274	Y	0.000	0.775	N	TRUE
W1_LO6_017	1404.33	PEM	III	76.702	0.143	0.000	0.000	Y	0.000	0.143	N	FALSE
W1_LO6_018	1404.41	PEM	I	161.267	0.332	0.000	0.000	Y	0.000	0.332	N	FALSE
WP_LO6_002	1405.21	PFO	No Rating	0.000	0.002	0.010	0.000	Y	0.011	0.000	N	TRUE
W1_LO6_019	1405.34	PEM	II	287.890	0.373	0.011	0.000	Y	0.000	0.384	N	TRUE
W2_LO6_006	1405.85	PEM	IV	479.945	0.718	0.000	0.000	Y	0.000	0.718	N	FALSE
W2_LO6_007	1406.04	PEM	IV	410.200	0.447	0.172	0.000	Y	0.000	0.619	Y	TRUE
W2_LO6_008	1406.38	PSS	III	111.335	0.410	0.000	0.000	Y	0.410	0.000	N	FALSE
W2_LO6_009	1406.54	PEM	IV	411.006	0.593	0.000	0.000	Y	0.000	0.593	Y	FALSE
W2_LO6_011	1407.45	PEM	III	530.784	0.676	0.000	0.000	Y	0.000	0.676	N	FALSE
W3_LO6_011	1408.20	PEM	III	98.849	0.110	0.000	0.000	Y	0.000	0.110	Y	FALSE
W3_LO6_011	1408.20	PFO	III	98.849	0.003	0.000	0.000	Y	0.003	0.000	Y	FALSE
W4_LO6_008	1408.35	PEM	III	58.247	0.086	0.003	0.000	Y	0.000	0.088	N	TRUE
W4_LO6_010	1408.96	PEM	IV	72.865	0.061	0.000	0.000	Y	0.000	0.061	N	FALSE
MV-71	1409.32	PSS	II	160.373	0.196	0.000	0.000	Y	0.196	0.000	N	TRUE
MV-71	1409.32	PEM	II	160.373	0.035	0.000	0.000	Y	0.000	0.035	N	TRUE
MV-71	1409.32	PFO	II	160.373	0.001	0.000	0.000	Y	0.001	0.000	N	TRUE
MV-70	1409.39	PEM	III	0.000	0.001	0.003	0.000	Y	0.000	0.004	N	TRUE
MV-70	1409.39	PSS	III	0.000	0.000	0.004	0.000	Y	0.004	0.000	N	TRUE
Snohomish Subtotal									**6.092**	**16.568**		
Mt Vernon South (Proxy Data)												
MV-17	1436.79	PFO	III	0.000	0.060	0.000	0.000	Y	0.060	0.000	N	TRUE
MV-20	1437.79	PFO	II	105.887	0.491	0.144	0.000	Y	0.635	0.000	N	TRUE
MV-20	1437.79	PSS	II	105.887	1.561	0.069	0.000	Y	1.629	0.000	N	TRUE
MV-21a	1438.45	PFO	III	201.418	0.334	0.096	0.060	Y	0.490	0.000	N	TRUE
MV-21b	1438.55	PFO	III	39.253	0.105	0.000	0.021	Y	0.126	0.000	N	TRUE
MV-21c	1438.58	PFO	III	190.784	0.265	0.093	0.002	Y	0.360	0.000	N	TRUE
MV-22	1438.73	PFO	III	153.715	0.241	0.000	0.000	Y	0.241	0.000	N	FALSE
MV-23a	1438.88	PEM	IV	387.662	0.704	0.000	0.000	Y	0.000	0.704	Y	FALSE
MV-23b	1438.98	PEM	IV	0.000	0.108	0.000	0.000	Y	0.000	0.108	Y	TRUE
MV-24	1439.03	PEM	IV	54.802	0.246	0.000	0.000	Y	0.000	0.246	Y	TRUE
MV-27a	1439.13	PEM	III	140.171	0.166	0.063	0.000	Y	0.000	0.228	Y	TRUE
MV-27b	1439.19	PEM	III	755.201	1.286	0.348	0.319	Y	0.000	1.952	Y	TRUE
MV-29.1	1439.34	PEM	IV	416.643	0.661	0.197	0.000	Y	0.000	0.858	N	TRUE
MV-29.2	1439.44	PEM	IV	0.000	0.000	0.000	0.003	Y	0.000	0.003	N	TRUE
MV-29.3	1439.48	PEM	IV	202.917	0.369	0.147	0.000	Y	0.000	0.516	N	TRUE
MV-28	1439.53	PFO	IV	22.127	0.030	0.013	0.000	Y	0.043	0.000	N	TRUE
MV-29.4	1439.58	PEM	IV	50.799	0.113	0.010	0.007	Y	0.000	0.130	Y	TRUE
MV-29.5	1439.62	PEM	IV	0.000	0.029	0.000	0.051	Y	0.000	0.080	Y	TRUE
MV-29.6	1439.64	PEM	IV	15.776	0.088	0.175	0.000	Y	0.000	0.263	Y	TRUE
MV-29.7	1439.64	PEM	IV	0.000	0.046	0.000	0.027	Y	0.000	0.073	Y	TRUE
MV-29.8	1439.68	PEM	IV	0.000	0.003	0.000	0.015	Y	0.000	0.018	Y	TRUE
MV-30a	1439.86	PEM	III	628.965	1.078	0.325	0.000	Y	0.000	1.404	Y	TRUE
MV-31	1440.15	PEM	III	0.000	0.000	0.000	0.318	Y	0.000	0.318	Y	TRUE
Mt. Vernon South Subtotal									**3.584**	**6.900**		
Mt. Vernon North A												
W4_LO8_009	1440.26	PEM	III	135.859	0.205	0.037	0.000	Y	0.000	0.242	Y	TRUE
W4_LO8_008	1440.59	PEM	IV	0.000	0.000	0.000	0.000	Y	0.000	0.000	Y	TRUE
W4_LO8_007	1440.62	PEM	IV	216.024	0.371	0.091	0.000	Y	0.000	0.463	Y	TRUE
W4_LO8_006	1441.06	PEM	IV	144.627	0.250	0.083	0.000	Y	0.000	0.333	Y	TRUE
W4_LO8_005	1441.10	PEM	IV	896.077	1.540	0.415	0.000	Y	0.000	1.955	Y	TRUE
W4_LO8_004	1441.45	PSS	III	37.118	0.096	0.000	0.000	Y	0.096	0.000	Y	FALSE
W2_LO8_005	1441.81	PEM	IV	100.921	0.118	0.029	0.000	Y	0.000	0.147	N	TRUE
W2_LO8_004	1442.10	PEM	III	101.460	0.167	0.000	0.000	Y	0.000	0.167	N	FALSE
W2_LO8_003	1442.50	PEM	III	515.916	0.874	0.246	0.000	Y	0.000	1.120	N	TRUE
W2_LO8_002	1442.78	PEM	IV	30.819	0.063	0.000	0.000	Y	0.000	0.063	Y	TRUE
W2_LO8_001	1442.92	PEM	IV	665.874	1.278	0.088	0.000	Y	0.000	1.366	N	TRUE
W4_LO8_001	1444.26	PEM	IV	26.421	0.019	0.004	0.000	Y	0.000	0.023	N	TRUE
W4_LO8_003	1444.59	PEM	IV	0.000	0.024	0.000	0.000	Y	0.000	0.024	N	TRUE
W4_LO8_002	1444.61	PEM	IV	169.748	0.117	0.000	0.000	Y	0.000	0.117	N	TRUE
Mt. Vernon North A Subtotal									**0.096**	**6.021**		

Table K1-2

Wetlands Crossed by the WEP

Wetland	Milepost	Cowardin Classification[a, c]	Wetland Category (Ecology)[b]	Length of Ditch Excavated in Wetland (feet)	Acres of Wetland in Permanent Easement	Acres of Wetland in the Temporary Construction ROW	Acres of Wetland in ATWS	Crosses CAO Wetland Buffer (Y/N)	Total Permanent Wetland Disturbance (acres)	Total Temporary Wetland Disturbance (acres)	Agricultural Wetland (Y/N)	Wetland Crossing >75 ft (width)
Wetland Crossings												
Mt. Vernon North B												
W1_LO9_001	1453.68	PEM	IV	0.000	0.020	0.000	0.000	Y	0.000	0.020	N	TRUE
W1_LO9_002	1453.71	PEM	IV	6.061	0.036	0.006	0.000	Y	0.000	0.042	N	TRUE
W1_LO9_003	1453.77	PEM	IV	0.000	0.024	0.055	0.000	Y	0.000	0.078	N	TRUE
W1_LO9_004	1453.86	PEM	IV	77.019	0.067	0.019	0.000	Y	0.000	0.085	N	TRUE
W1_LO9_005	1454.21	PEM	IV	127.311	0.154	0.000	0.000	Y	0.000	0.154	N	TRUE
W1_LO9_006	1454.34	PEM	II	306.644	0.271	0.018	0.000	Y	0.000	0.289	N	TRUE
W1_LO9_007	1454.49	PSS	III	0.000	0.000	0.000	0.000	Y	0.000	0.000	N	TRUE
W1_LO9_008	1454.60	PSS	III	0.000	0.028	0.000	0.000	Y	0.028	0.000	N	TRUE
W1_LO9_008	1454.60	PEM	III	0.000	0.082	0.000	0.000	Y	0.000	0.082	N	TRUE
W1_LO9_009	1454.67	PEM	III	208.238	0.354	0.000	0.000	Y	0.000	0.354	N	TRUE
W2_LO9_004	1455.13	PEM	III	0.000	0.123	0.000	0.000	Y	0.000	0.123	N	TRUE
WP_LO9_004	1455.27	PFO	No Rating	0.000	0.000	0.000	0.161	Y	0.161	0.000	Y	TRUE
W2_LO9_003	1455.45	PEM	IV	0.000	0.000	0.018	0.000	Y	0.000	0.018	N	TRUE
W2_LO9_002	1455.67	PEM	III	65.303	0.073	0.000	0.000	Y	0.000	0.073	N	TRUE
W2_LO9_001	1455.80	PEM	III	459.601	0.640	0.048	0.000	Y	0.000	0.688	N	TRUE
W3_LO9_001	1457.22	PEM	IV	35.870	0.016	0.000	0.000	Y	0.000	0.016	N	TRUE
W4_LO9_001	1457.70	PEM	IV	66.509	0.057	0.012	0.000	Y	0.000	0.069	N	TRUE
W4_LO9_002	1457.76	PSS	III	342.636	0.312	0.088	0.000	Y	0.400	0.000	N	TRUE
W4_LO9_003	1458.31	PEM	III	636.447	1.050	0.182	0.000	Y	0.000	1.232	Y	TRUE
W4_LO9_004	1458.48	PEM	I	642.533	0.791	0.514	0.000	Y	0.000	1.305	Y	TRUE
W4_LO9_006	1458.74	PEM	IV	157.053	0.125	0.121	0.000	Y	0.000	0.246	Y	TRUE
W4_LO9_005	1458.83	PEM	IV	225.268	0.182	0.206	0.000	Y	0.000	0.388	Y	TRUE
W3_LO9_002	1458.89	PEM	III	276.019	0.203	0.176	0.000	Y	0.000	0.378	Y	TRUE
WP_LO9_001	1458.92	PEM	No Rating	0.000	0.000	0.000	0.025	Y	0.000	0.025	Y	TRUE
W3_LO9_003	1459.04	PEM	IV	209.555	0.134	0.003	0.000	Y	0.000	0.137	N	TRUE
W3_LO9_003	1459.04	PFO	IV	209.555	0.000	0.069	0.000	Y	0.069	0.000	N	TRUE
W3_LO9_004	1459.13	PEM	III	468.678	0.379	0.428	0.000	Y	0.000	0.807	Y	TRUE
W3_LO9_005	1459.25	PEM	III	721.818	0.581	0.657	0.000	Y	0.000	1.238	Y	TRUE
W2_LO9_005	1459.89	PEM	II	3028.364	3.632	2.766	0.000	Y	0.000	6.398	Y	TRUE
RF-2	1461.22	PEM	IV	110.177	0.149	0.076	0.056	Y	0.000	0.281	Y	TRUE
WP_LO9_003	1461.51	PSS	No Rating	233.175	0.108	0.000	0.174	Y	0.282	0.000	Y	FALSE
Mt. Vernon North B Subtotal									**0.940**	**14.526**		
Sumas												
S-21	1479.01	PEM	II	16.536	0.484	0.006	0.000	Y	0.000	0.490	Y	TRUE
S-21	1479.01	PFO	II	16.536	0.017	0.035	0.000	Y	0.052	0.000	Y	TRUE
S-21	1479.01	PSS	II	16.536	0.066	0.040	0.000	Y	0.106	0.000	Y	TRUE
S-20	1479.23	PEM	IV	583.727	0.951	0.086	0.000	Y	0.000	1.037	Y	TRUE
S-20	1479.23	PSS	IV	583.727	0.000	0.001	0.000	Y	0.001	0.000	Y	TRUE
S-19	1479.56	PEM	IV	55.607	0.061	0.009	0.000	Y	0.000	0.070	N	TRUE
S-18	1479.74	PEM	IV	94.793	0.157	0.000	0.000	Y	0.000	0.157	N	FALSE
S-17	1479.87	PEM	III	556.327	0.986	0.065	0.000	Y	0.000	1.051	N	TRUE
S-16	1479.99	PFO	III	0.000	0.000	0.000	0.000	Y	0.000	0.000	N	FALSE
S-16	1479.99	PEM	III	0.000	0.091	0.000	0.000	Y	0.000	0.091	N	FALSE
S-14	1480.03	PEM	III	81.377	0.155	0.000	0.000	Y	0.000	0.155	Y	FALSE
S-14	1480.03	PSS	III	81.377	0.005	0.000	0.000	Y	0.005	0.000	Y	FALSE
S-13	1480.39	PEM	III	0.000	0.091	0.000	0.000	Y	0.000	0.091	Y	TRUE
S-13	1480.39	PFO	III	0.000	0.002	0.000	0.000	Y	0.002	0.000	Y	TRUE
S-13	1480.39	PSS	III	0.000	0.000	0.000	0.000	Y	0.000	0.000	Y	TRUE
S-12	1480.71	PEM	III	3.229	0.015	0.000	0.000	Y	0.000	0.015	N	FALSE
S-11	1480.87	PEM	III	92.507	0.136	0.001	0.000	Y	0.000	0.138	Y	TRUE
S-11	1480.87	PSS	III	92.507	0.000	0.000	0.000	Y	0.000	0.000	Y	TRUE
S-10	1480.92	PEM	III	0.000	0.283	0.003	0.000	Y	0.000	0.286	Y	TRUE
S-9	1481.01	PEM	II	0.000	0.000	0.000	0.000	Y	0.000	0.000	Y	TRUE
S-9	1481.01	PSS	II	0.000	0.036	0.007	0.000	Y	0.043	0.000	Y	TRUE
S-6	1482.25	PEM	III	0.000	0.001	0.000	0.000	Y	0.000	0.001	Y	TRUE
S-4B	1482.80	PEM	III	2.723	0.006	0.003	0.000	Y	0.000	0.009	Y	TRUE
S-4A	1483.07	PEM	III	16.329	0.021	0.013	0.000	Y	0.000	0.034	Y	TRUE
S-2	1483.98	PEM	IV	679.669	0.885	0.526	0.000	Y	0.000	1.411	Y	TRUE
WP_L010_001	1484.18	PEM	No Rating	0.000	0.000	0.000	4.710	Y	0.000	4.710	Y	TRUE
S-1	1484.31	PEM	IV	140.518	0.234	0.117	0.000	Y	0.000	0.351	Y	TRUE
Sumas Subtotal									**0.209**	**10.098**		
WEP Totals				**91934.124**	**143.776**	**27.412**	**35.647**	See Table 2A-5 for Totals adjusted for Cowardin Class.				

Table K1-2

Wetlands Crossed by the WEP

Wetland Crossings

Wetland	Milepost	Cowardin Classification[a, c]	Wetland Category (Ecology)[b]	Length of Ditch Excavated in Wetland (feet)	Acres of Wetland in Permanent Easement	Acres of Wetland in the Temporary Construction ROW	Acres of Wetland in ATWS	Crosses CAO Wetland Buffer (Y/N)	Total Permanent Wetland Disturbance (acres)	Total Temporary Wetland Disturbance (acres)	Agricultural Wetland (Y/N)	Wetland Crossing >75 ft (width)

[a] Cowardin et al. (1979) class based on vegetation: PEM = Palustrine emergent; PSS = Palustrine scrub-shrub; PFO = Palustrine forested; PSSC= Palustrine scrub-shrub seasonally flooded.

[b] Wetland category according to the Ecology rating system (Hruby, 2008).

[c] In cases where multiple Cowardin classes were described for a single feature in the Evergreen Report, the most sensitive class (PFO>PSS>PEM) was used.

Notes:

ROW = right-of-way

ATWS = additional temporary workspace

CAO = Critical Areas Ordinance

Y/N = yes or no

OW= Open Water wetland. Ecology does not have categories for nonvegetated wetlands.

Categorizing impacts as temporary or permanent assumes that the existing cleared easement is an accurate representation of Williams' easement, and the existing cleared easement following construction will be the same as the existing cleared easement.

PEM regardless if within the existing easement will be temporary impacts.

PSS inside existing easement would be permanent, outside existing easement would be temporary.

PFO regardless if within the existing easement will be permanent impacts because of the time it takes to grow trees.

Wetlands in this table are potentially subject to federal, state, and local jurisdiction. Final jurisdictional determinations, including the applicability of exemptions, are made by a case-by-case basis by the U.S. Army Corps of Engineers, Ecology, and local jurisdictions.

APPENDIX K2

POTENTIAL LANDSLIDE HAZARD AREAS CROSSED BY THE WEP

Table K2-1

Potential Landslide Hazard Areas Crossed by the WEP

Loop	Mapped Landslide Hazard From Milepost	Mapped Landslide Hazard To Milepost	Information Source	Type of Hazard
Woodland	1244.33	1244.40	WDNR, 2006	Potentially unstable slopes
Woodland	1260.62	1260.65	WDNR, 2006	Potentially unstable slopes
Woodland	1260.75	1260.84	WDNR, 2006	Potentially unstable slopes
Woodland	1260.85	1260.87	WDNR, 2006	Potentially unstable slopes
Woodland	1261.00	1261.05	WDNR, 2006	Potentially unstable slopes
Woodland	1261.25	1261.28	WDNR, 2006	Potentially unstable slopes
Woodland	1261.31	1261.43	WDNR, 2006	Potentially unstable slopes
Woodland	1271.78	1271.97	WDNR, 2006	Potentially unstable slopes
Woodland	1274.20	1274.21	WDNR, 2006	Potentially unstable slopes
Woodland	1275.21	1275.32	WDNR, 2006	Potentially unstable slopes
Woodland	1275.52	1275.53	WDNR, 2006	Potentially unstable slopes
Sumner South	1338.43	1338.58	Pierce County, 2011	Potential landslide hazard
Sumner South	1338.92	1339.01	Pierce County, 2011	Potential landslide hazard
Sumner South	1338.94	1338.96	Pierce County, 2003	20 to 40% slopes
Sumner South	1339.62	1339.82	Pierce County, 2011	Potential landslide hazard
Sumner South	1339.63	1339.65	Pierce County, 2003	20 to 40% slopes
Sumner South	1339.67	1339.68	Pierce County, 2003	20 to 40% slopes
Sumner South	1339.68	1339.68	Pierce County, 2003	20 to 40% slopes
Sumner South	1339.69	1339.70	Pierce County, 2003	20 to 40% slopes
Sumner South	1339.71	1339.73	Pierce County, 2003	20 to 40% slopes
Sumner South	1339.91	1339.93	Pierce County, 2011	Potential landslide hazard
Sumner South	1339.94	1339.97	Pierce County, 2011	Potential landslide hazard
Sumner South	1340.03	1340.05	Pierce County, 2011	Potential landslide hazard
Sumner South	1340.06	1340.16	Pierce County, 2001	Potential landslide hazard
Sumner South	1340.18	1340.67	Pierce County, 2011	Potential landslide hazard
Sumner South	1340.21	1340.22	Pierce County, 2003	20 to 40% slopes
Sumner South	1340.22	1340.28	Pierce County, 2003	20 to 40% slopes
Sumner South	1340.31	1340.35	Pierce County, 2003	20 to 40% slopes
Sumner South	1340.36	1340.39	Pierce County, 2003	20 to 40% slopes
Sumner South	1340.50	1340.50	Pierce County, 2003	20 to 40% slopes
Sumner South	1340.50	1340.51	Pierce County, 2003	20 to 40% slopes
Sumner South	1340.69	1340.74	Pierce County, 2011	Potential landslide hazard
Sumner South	1340.70	1340.72	Pierce County, 2003	20 to 40% slopes
Sumner South	1341.37	1341.45	Pierce County, 2011	Potential landslide hazard
Sumner South	1341.39	1341.39	Pierce County, 2003	20 to 40% slopes
Sumner South	1341.40	1341.42	Pierce County, 2003	20 to 40% slopes
Sumner South	1343.87	1343.92	Pierce County, 2011	Potential landslide hazard
Sumner South	1344.06	1344.07	Pierce County, 2003	20 to 40% slopes
Sumner South	1344.09	1344.09	Pierce County, 2003	20 to 40% slopes
Sumner South	1345.61	1345.64	Pierce County, 2003	20 to 40% slopes
Sumner South	1346.07	1346.07	Pierce County, 2003	20 to 40% slopes
Sumner South	1346.22	1346.24	Pierce County, 2003	20 to 40% slopes

Table K2-1

Potential Landslide Hazard Areas Crossed by the WEP

Loop	Mapped Landslide Hazard From Milepost	Mapped Landslide Hazard To Milepost	Information Source	Type of Hazard
Sumner South	1346.24	1346.32	Pierce County, 2003	20 to 40% slopes
Sumner South	1346.43	1346.51	Pierce County, 2003	20 to 40% slopes
Sumner South	1346.55	1346.57	Pierce County, 2003	20 to 40% slopes
Sumner South	1346.66	1346.66	Pierce County, 2003	20 to 40% slopes
Sumner South	1346.80	1346.83	Pierce County, 2003	20 to 40% slopes
Sumner South	1347.90	1347.93	Pierce County, 2011	Potential landslide hazard
Sumner South	1347.91	1347.91	Pierce County, 2003	20 to 40% slopes
Sumner South	1347.96	1347.98	Pierce County, 2011	Potential landslide hazard
Sumner South	1347.97	1347.98	Pierce County, 2003	20 to 40% slopes
Sumner South	1349.57	1349.57	Pierce County, 2003	20 to 40% slopes
Sumner South	1349.58	1349.58	Pierce County, 2003	20 to 40% slopes
Sumner South	1349.60	1349.60	Pierce County, 2003	20 to 40% slopes
Sumner South	1350.06	1350.16	Pierce County, 2003	20 to 40% slopes
Sumner South	1350.16	1350.16	Pierce County, 2003	40 to 100% slopes
Sumner South	1350.16	1350.18	Pierce County, 2003	20 to 40% slopes
Sumner South	1350.19	1350.19	Pierce County, 2003	20 to 40% slopes
Sumner South	1350.19	1350.19	Pierce County, 2003	20 to 40% slopes
Sumner South	1350.21	1350.28	Pierce County, 2003	20 to 40% slopes
Sumner South	1350.65	1350.91	Pierce County, 2011	Potential landslide hazard
Sumner South	1350.68	1350.72	Pierce County, 2003	20 to 40% slopes
Sumner South	1350.73	1350.77	Pierce County, 2003	20 to 40% slopes
Sumner South	1350.85	1350.87	Pierce County, 2003	20 to 40% slopes
Sumner South	1350.98	1351.08	Pierce County, 2011	Potential landslide hazard
Sumner South	1351.00	1351.01	Pierce County, 2003	20 to 40% slopes
Sumner South	1351.04	1351.06	Pierce County, 2003	20 to 40% slopes
Sumner South	1351.12	1351.25	Pierce County, 2011	Potential landslide hazard
Sumner South	1351.16	1351.19	Pierce County, 2003	20 to 40% slopes
Sumner South	1351.49	1351.63	Pierce County, 2011	Potential landslide hazard
Sumner South	1351.50	1351.51	Pierce County, 2003	20 to 40% slopes
Sumner South	1351.55	1351.58	Pierce County, 2003	20 to 40% slopes
Sumner North A	1357.18	1357.50	King County, 2006	any combination of: slopes greater than 15 percent, impermeable soils frequently interbedded with granular soils, springs or groundwater seepage, any area that has shown movement during the Holocene epoch or that is underlain by mass wastage debris of that epoch, any area potentially unstable as a result of rapid stream incision or stream bank erosion or undercutting by wave action, any area that shows evidence of snow avalanches, and any area located on an alluvial fan
Sumner North A	1359.58	1359.68	King County, 2006	any combination of: slopes greater than 15 percent, impermeable soils frequently interbedded with granular soils, springs or groundwater seepage, any area that has shown movement during the Holocene epoch or that is underlain by mass wastage debris of that epoch, any area potentially unstable as a result of rapid stream incision or stream bank erosion or undercutting by wave action, any area that shows evidence of snow avalanches, and any area located on an alluvial fan

Table K2-1

Potential Landslide Hazard Areas Crossed by the WEP

Loop	Mapped Landslide Hazard From Milepost	Mapped Landslide Hazard To Milepost	Information Source	Type of Hazard
Sumner North A	1360.83	1360.91	King County, 2006	any combination of: slopes greater than 15 percent, impermeable soils frequently interbedded with granular soils, springs or groundwater seepage, any area that has shown movement during the Holocene epoch or that is underlain by mass wastage debris of that epoch, any area potentially unstable as a result of rapid stream incision or stream bank erosion or undercutting by wave action, any area that shows evidence of snow avalanches, and any area located on an alluvial fan
Sumner North A	1361.11	1361.22	King County, 2006	any combination of: slopes greater than 15 percent, impermeable soils frequently interbedded with granular soils, springs or groundwater seepage, any area that has shown movement during the Holocene epoch or that is underlain by mass wastage debris of that epoch, any area potentially unstable as a result of rapid stream incision or stream bank erosion or undercutting by wave action, any area that shows evidence of snow avalanches, and any area located on an alluvial fan
Sumner North B	1376.13	1376.33	King County, 2006	any combination of: slopes greater than 15 percent, impermeable soils frequently interbedded with granular soils, springs or groundwater seepage, any area that has shown movement during the Holocene epoch or that is underlain by mass wastage debris of that epoch, any area potentially unstable as a result of rapid stream incision or stream bank erosion or undercutting by wave action, any area that shows evidence of snow avalanches, and any area located on an alluvial fan
Snohomish	1396.52	1396.55	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1396.56	1396.56	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1396.60	1396.60	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1396.69	1396.71	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1396.72	1396.74	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1396.90	1396.91	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1396.93	1396.95	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1396.94	1396.94	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1396.97	1396.98	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1397.03	1397.04	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1397.51	1397.52	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1397.94	1397.94	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1397.95	1397.99	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1398.21	1398.21	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet

Table K2-1

Potential Landslide Hazard Areas Crossed by the WEP

Loop	Mapped Landslide Hazard From Milepost	Mapped Landslide Hazard To Milepost	Information Source	Type of Hazard
Snohomish	1398.22	1398.23	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1398.24	1398.29	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1398.40	1398.40	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1400.25	1400.25	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1400.44	1400.45	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1401.56	1401.57	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1401.58	1401.58	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1402.91	1402.91	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1404.37	1404.38	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1404.38	1404.38	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1404.66	1404.66	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1407.72	1407.79	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1407.79	1407.80	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1408.36	1408.39	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet
Snohomish	1408.39	1408.39	Snohomish County, 1999	Slopes greater than 33% and an elevation change greater than 10 feet

Note: No potential landslides or steep slopes are mapped along the Chehalis, Mt. Vernon South, Mt. Vernon North A, Mt. Vernon North B, and Sumas loops. Large portions of these loops are located within Lewis, Thurston, and Skagit Counties, which do not have landslide information. The absence of information from these counties does not indicate that landslides are not a hazard.

WDNR = Washington State Department of Natural Resources

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Table K2-2

State and County Documented Landslide Hazards Crossed

Loop	Mapped Landslide Hazard From Milepost	Mapped Landslide Hazard To Milepost	Primary Information Source(s)	Landslide Hazard Information Provided by the Data Sources
Woodland	1245.21	1245.41	WDNR, 2006	Rotational-translational slide.
Woodland	1245.23	1245.24	WDNR, 2006	Translational slide.
Woodland	1245.45	1245.57	WDNR, 2006	Rotational slide.
Woodland	1246.24	1246.28	WDNR, 2006	Rotational slide.
Woodland	1246.51	1246.57	WDNR, 2006	Translational to flow slide.
Woodland	1247.63	1247.75	WDNR, 2006	Translational to flow slide. Very large slide complex. No evidence of recent movement.
Woodland	1249.38	1249.81	WDNR, 2006	Translational slide. Very large slide complex. No evidence of recent movement.
Woodland	1251.89	1251.98	WDNR, 2006	Translational to flow slide.
Woodland	1252.09	1252.44	WDNR, 2006	Rotational-translational slide. No evidence of recent movement.
Woodland	1253.08	1253.10	WDNR, 2006	Shallow landslide.
Woodland	1253.64	1253.93	WDNR, 2006	Rotational-translational slide. Reactivation of landslide caused by a natural gas pipeline failure in 1996. Later monitoring identified movement continuing into 1999.
Woodland	1254.27	1254.39	WDNR, 2006	Translational slide.
Woodland	1255.30	1255.63	WDNR, 2006 WDNR, 2010b	Deep-seated rotational-translational slide. Very large multipart slide. No evidence of recent movement.
Woodland	1259.27	1259.93	WDNR, 2006 WDNR, 2010b	Deep-seated rotational-translational slide.
Woodland	1261.35	1261.38	WDNR, 2006 WDNR, 2010b	Deep-seated rotational slide.
Woodland	1268.36	1268.67	WDNR, 2006 WDNR, 2010b	Deep-seated rotational-translational slide. Very large deep-seated rock slide. Possibly old rock avalanche complex.
Woodland	1268.98	1269.30	WDNR, 2006 WDNR, 2010b	Deep-seated rotational-translational slide.
Woodland	1269.71	1269.83	WDNR, 2006 WDNR, 2010b	Deep-seated translational slide.
Woodland	1270.10	1270.46	WDNR, 2006 WDNR 2010b	Deep-seated translational slide. Only evidence of recent activity is back-tilting trees.
Woodland	1270.46	1270.69	WDNR, 2006 WDNR, 2010b	Deep-seated rotational-translational slide. A small failure affecting the pipeline right-of-way. Possibly reactivation of toe of larger slide. Strain gauge installed on pipe.
Woodland	1271.10	1271.18	WDNR, 2006 WDNR, 2010b	Deep-seated rotational-translational slide. Small tension cracks noted along west edge of pipeline right-of-way. Possibly related to reactivation of this slide.
Woodland	1271.39	1271.47	WDNR, 2006 WDNR, 2010b	Deep-seated rotational-translational slide. Small tension cracks noted along west edge of pipeline right-of-way. Possibly related to reactivation of this slide.
Woodland	1272.43	1272.53	WDNR, 2006 WDNR, 2010b	Deep-seated translational slide. Pipeline rerouted across toe of this slide after the slide caused failure (explosion) of pipeline. Evidence of movement in recent past.
Woodland	1283.20	1283.50	WDNR, 2010a	Mapped landslide deposits.
Chehalis	1292.33	1292.45	WDNR, 2010a	Mapped landslide deposits.
Chehalis	1294.77	1295.16	WDNR, 2010a	Mapped landslide deposits.
Chehalis	1299.03	1299.45	WDNR, 2010a	Mapped landslide deposits.
Chehalis	1303.59	1303.84	WDNR, 2010a	Mapped landslide deposits.
Chehalis	1304.02	1304.04	WDNR, 2010a	Mapped landslide deposits.

Table K2-2

State and County Documented Landslide Hazards Crossed

Loop	Mapped Landslide Hazard From Milepost	Mapped Landslide Hazard To Milepost	Primary Information Source(s)	Landslide Hazard Information Provided by the Data Sources
Chehalis	1305.02	1305.11	WDNR, 2010a	Mapped landslide deposits.
Chehalis	1306.50	1306.97	WDNR, 2010a	Mapped landslide deposits.
Chehalis	1314.60	1314.77	WDNR, 2010b	Deep-seated.
Sumner North A	1357.18	1357.50	King County, 2006	Unknown.
Sumner North A	1359.58	1359.68	King County, 2006	Unknown.
Sumner North A	1360.83	1360.91	King County, 2006	Unknown.
Sumner North A	1361.11	1361.22	King County, 2006	Unknown.
Sumner North B	1373.50	1374.32	WDNR, 2010a	Mapped landslide deposits.
Sumner North B	1374.02	1374.17	WDNR, 2010b	Deep-seated earthflow.
Sumner North B	1376.13	1376.33	King County, 2006	Unknown.

Note: No state or county documented landslide hazards are mapped along the Sumner South, Snohomish, Mt. Vernon South, Mt. Vernon North A, Mt. Vernon North B, and Sumas loops. Large portions of these loops are located within Lewis, Thurston, and Skagit Counties, which do not have landslide information. The absence of information from these counties does not indicate that landslides are not a hazard.

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Table K2-3

Active Landslide Hazards Identified from Previous Northwest Operations Experience

Loop	Landslide ID No.	Mapped Landslide Hazard Milepost	Size (feet by feet)	Landslide Hazard	Movement	Landslide Cause	Mitigation/Monitoring [a]
Woodland	1	1245.27	700 x 1,000 old landslide, 50-70 x 100-150 recent failure	Recent small landslide about 10 feet west of right-of-way	Recent activation of smaller failure within old landslide. Visual monitoring indicates there is no ongoing slope instability.	Undetermined.	Visual monitoring at least annually, or as needed.
Woodland	2	1245.76	At least 200 feet from right-of-way, 260 x 450	Green Mountain Road Landslide; rock slide – debris flow	Initial movement occurred in 1994 following road widening and realignment. Additional movement occurred in 1995 and 1996. Site stabilized after remediation by Cowlitz County. No ongoing slope instability.	Steep road cut created as a result of the Green Mountain Road widening and realignment.	Remediation conducted by County in 1996. Surface displacement survey every 5 years.
Woodland	3	1245.92	At least 200 feet east of right-of-way, 400 x 800	Rock slide – debris flow	Recent movement in 1996. Visual monitoring indicates there is no ongoing slope instability.	Undetermined.	Visual monitoring at least annually, or as needed.
Woodland	4	1246.53	240 x 640 slide within older (5,000 to 10,000 years ago) 350-400 x 1,500 slide	Shirley Gordon Road Landslide; rock slide – debris flow	Movement identified in 1996. After mitigation, strain gauge readings have not exceeded thresholds to require further action.	Elevated groundwater levels resulting from recent heavy precipitation.	Remediation conducted in 1996. Surface and subsurface drainage measures installed and maintained. Manual strain gauges (2) installed. Surface displacement survey every 3 years, or as needed.
Woodland	5	1248.20	60 x 60	Fill failure	Fill failure in 1970s to 1980s. No recent movement after regrading and shoring installed.	Undetermined.	Regrading and shoring mitigated fill failure. Visual monitoring at least annually, or as needed.
Woodland	6	1253.20	60 x 140, 2003 landslide is about 30 percent of 1996 landslide	Kalama South Landslide	First occurred in 1996 from saturation of loose fill. Additional fill failure in 2003 from fiber-optic installation. No additional movement observed.	Saturation of the loose fill located along the outboard (west) side of the right-of-way.	Reconstruct slide area with engineered fill. Drainage measures installed in 1996 and repaired after fiber installation. Surface displacement survey every 3 years, or as needed.

Table K2-3

Active Landslide Hazards Identified from Previous Northwest Operations Experience

Loop	Landslide ID No.	Mapped Landslide Hazard Milepost	Size (feet by feet)	Landslide Hazard	Movement	Landslide Cause	Mitigation/Monitoring [a]
Woodland	7	1253.92	200 x 700 within older 480 x 700 slide	Kalama North Landslide	Landslide caused 26-inch pipe rupture in 1997. Since 2007, strain gauge readings have not exceeded thresholds to require further action.	Elevated groundwater levels resulting from unusually heavy precipitation and rapid snow melt.	Strain relief excavation in 1997, 1999, and 2007 and backfilled with engineered fill. Surface and subsurface drainage measures installed, enhanced, and maintained. Manual (6) and automated (4) strain gauges installed. Surface displacement survey annually, or as needed. Visual monitoring at least annually, or as needed.
Woodland	8	1254.27	100 x 220 recent landslide within older 1600 x 3000 landslide	Mt. Pleasant Landslide	First identified in 1986. After mitigation, strain gauge readings have not exceeded thresholds to require further action.	High groundwater levels.	Strain relief excavation in 1987 and backfilled with engineered fill. Drainage measures installed in 1987. Automated strain gauges (2) installed. Surface displacement survey annually, or as needed. Visual monitoring at least annually, or as needed.
Woodland	9	1255.56	Upslope of right-of-way, 70 x 4000	Olsen Road/Kool Road Landslide	Tension cracks identified in adjacent roadways in 1999 during a geologic hazard study. No ongoing slope instability.	Undetermined.	Manual (1) strain gauge installed in 1999. Surface displacement survey at least every 3 years, or as needed. Visual monitoring at least annually, or as needed.
Woodland	10	1259.60	Area of 86 acres, 1600 feet length along right-of-way	Active landslide downslope of right-of-way	Slope movement observed downslope of right-of-way in 1998. No ongoing slope instability.	Undetermined.	Visual monitoring at least annually, or as needed.
Woodland	11	1261.37	240 x 480	Harris Street Landslide	Initial movement identified during right-of-way inspection in 1997. Strain gauge readings have not exceeded thresholds to require further action since regrading and drainage measures installed in 2002.	Slow moving feature.	Partial strain relief excavation in 1999 and strain relief excavation in 2002 with installation of drainage measures and site regrading. Automated strain gauges (6) installed. Surface displacement survey annually, or as needed. Visual monitoring at least annually, or as needed.

Table K2-3

Active Landslide Hazards Identified from Previous Northwest Operations Experience

Loop	Landslide ID No.	Mapped Landslide Hazard Milepost	Size (feet by feet)	Landslide Hazard	Movement	Landslide Cause	Mitigation/Monitoring [a]
Woodland	12	1261.56	Area of about 2 acres	Active landslide 50 feet east of right-of-way	Geomorphic evidence of recent movement observed In 2000 during geohazard reconnaissance,	Undetermined.	Visual monitoring at least annually, or as needed.
Woodland	13	1266.38	Area less than 1 acre	Walnut acres or KB Landslide	Fill failure along west side of right-of-way. No geomorphic evidence of ongoing activity.	Undetermined.	Visual monitoring at least annually, or as needed.
Woodland	14	1270.44	200-300 x 200	Castle Rock Metering Station Landslide	Landslide that occurred before 1969 required moving the metering station to its current location. In 1999, additional movement was noted but area has been stable since.	Placement of recent fill or slow movement of the larger slide.	Manual strain gauge (2) installed in 1999. Visual monitoring at least annually, or as needed.
Woodland	15	1270.56	35 x 200	Powell Road Landslide	Landslide first observed during annual inspection in 1999. Stable since 2005 strain relief.	Uncontrolled surface water and groundwater.	Surface and subsurface drainage measures and manual strain gauges (6) installed and enhanced in 1999 and 2005. Strain relief excavation in 2005 and backfilled with engineered fill. Surface displacement survey every 2 years, or as needed. Visual monitoring at least annually, or as needed.
Woodland	16	1272.50	Recent 250-600 x 1200 landslide within an ancient landslide	Castle Rock Landslide	Landslide in 1995 caused 26-inch pipe to rupture. Strain gauge readings have not exceeded thresholds to require further action since reroute.	Placement of the State Route 504 fill upslope of pipeline and high groundwater levels.	26- and 30-inch pipelines rerouted around slide area. Manual strain gauges (2) installed. Visual monitoring at least annually, or as needed.
Chehalis	17	1295.10	350 x 350	MacMillan Landslide	Stability issues first identified in 1977. Strain gauge readings have not exceeded thresholds to require further action since 1994.	High groundwater levels in a topographic depression.	Strain relief excavation of the 30-inch pipeline and replacement of 320 feet of 26-inch pipe in 1978. Manual strain gauges (3) installed in 1994. Surface displacement survey every 3 years, or as needed. Visual monitoring at least annually, or as needed.

Table K2-3

Active Landslide Hazards Identified from Previous Northwest Operations Experience

Loop	Landslide ID No.	Mapped Landslide Hazard Milepost	Size (feet by feet)	Landslide Hazard	Movement	Landslide Cause	Mitigation/Monitoring [a]
Chehalis	18	1304.89	375 x 150	TransAlta Coal Mine Landslide	Landslide movement occurred in 2005. Strain gauge readings have not exceeded thresholds to require further action.	Direct effect of blasting and/or the loss of shear strength due to stress relaxation.	Surface and subsurface drainage measures installed. Strain relief excavation and backfilled with engineered fill. Automated strain gauges (6) installed in 2005. Visual monitoring at least annually, or as needed.
Chehalis	19	1309.13	260 x 210	Skookumchuck Landslide	Old landslide movement occurred before installation of pipeline. Stability problems were first identified in 1971 and again in 1978 and 1979. Stable since drainage measures installed in 2005.	Erosion of the landslide toe during high flows in the Skookumchuck River.	Surface displacement monitors installed in 1979. Strain relief excavation. Manual strain gauges (7) installed in 1987. Drainage measures installed and enhanced in 1987, 1994, and 2005. Surface displacement survey every 3 years, or as needed. Visual monitoring at least annually, or as needed.
Chehalis	20	1314.65	100-120 x 250	Vail Mountain Landslide	Landslide first identified in 1997 during annual inspection. Strain gauge readings have not exceeded thresholds to require further action since mitigation.	Preexisting landslide with elevated groundwater levels.	Strain relief excavation in 1997. Automated strain gauges (2) installed in 1997. Drainage measures installed in 1997. Surface displacement survey every 3 years, or as needed. Visual monitoring at least annually, or as needed.
Snohomish	21	1407.72	Undefined	Pilchuck River Landslide	Pilchuck River undercut south riverbank causing landslide prior to 1971. No additional movement observed since reroute.	Pilchuck River undercutting the southern riverbank.	26-inch pipeline was rerouted to more stable area and 30-inch pipeline was later installed parallel to it. Visual monitoring at least annually, or as needed.
Mt. Vernon North A	22	1444.87	Undefined	South Skagit Span Landslide	Shallow slope failure observed in 2002.	Near surface sloughing and soil creep.	Visual monitoring at least annually, or as needed.

[a] Annual low-level patrol in a helicopter and weekly aerial patrols of all geohazards sites.

APPENDIX K3

PRIVATE WELLS WITHIN 200 FEET OF WORKSPACE

Appendix K3

Private Wells within 200 Feet of Workspace

Well Owner	Well Name	Type-Use	Depth (ft)	Township	Range	Section	1/4, 1/4 Section		Closest Milepost	Distance from Construction Right-of-Way (ft)	Direction from Work Area	Loop Number
GREG COWELL	AFN757	Domestic	624	5N	1E	7	NW	NW	1245.0	81	E	1
PERRY MAGSTADT	AKP906	Domestic	524	5N	1E	7	NW	NW	1245.0	81	E	1
BRIAN TRAFFIE	ACB247	Domestic	265	5N	1W	1	SE	NE	1245.6	60	SW	1
HARRY LEFEBER	AHP841	Domestic	123	5N	1W	1	SE	NE	1245.6	60	SW	1
CINDY MUINIO	ACR164	Domestic	443	5N	1W	1	SE	NE	1245.6	60	SW	1
RIDGECREST III	AKA886	Domestic	404	5N	1W	1	SE	NE	1245.6	60	SW	1
RIDGECREST III	AKA888	Domestic	502	5N	1W	1	SE	NE	1245.6	60	SW	1
AMERICAN MARINE BANK	AGK073	Domestic	373	5N	1W	1	NE	NW	1246.2	51	SW	1
ROBERT REED		Domestic	142	5N	1W	1	NE	NW	1246.2	51	SW	1
LANNY CAWLEY		Domestic	202	5N	1W	1	NE	NW	1246.2	51	SW	1
THOMAS & TERA MOORE	ABC880	Domestic	510	5N	1W	1	NE	NW	1246.2	51	SW	1
MARK COOK		Domestic	343	6N	1W	36	SW	NE	1246.7	0	NA	1
DARIN HAGEN	AAH767	Domestic	225	6N	1W	36	SW	NE	1246.7	0	NA	1
JOHN COVINGTON	ACR047	Domestic	285	6N	1W	36	SW	NE	1246.7	0	NA	1
PERRY STEVE	AFB689	Domestic	203	6N	1W	36	NW	NW	1247.3	80	NE	1
PAUL AND LORETTA UNREIN	BAH600	Domestic	580	6N	1W	36	NW	NW	1247.3	80	NE	1
GEORGE & MARIANNE SELLERS	AEN971	Domestic	600	6N	1W	26	SE	NE	1247.8	73	W	1
LOREN SIEVITA	BAS561	Domestic	804	6N	1W	26	SE	NE	1247.8	73	W	1
DAN HAUSER	ACF177	Domestic	60	6N	1W	23	SW	NE	1249.0	61	NE	1
PEDER PEDERSON		Domestic	460	6N	1W	23	NW	NW	1249.6	0	NA	1
NEIL ROSEVEAR	ACR686	Domestic	142	6N	1W	15	NE	SE	1250.4	93	SW	1
CROW BUTTE DEVELOPMENT	ACD846	Domestic	181	6N	1W	10	SE	NW	1251.1	115	NE	1
CROW BUTTE DEVELOPMENT	ACD849	Domestic	323	6N	1W	10	SE	NW	1251.1	115	NE	1
WESLEY WYNN		Domestic	84	6N	1W	10	0	0	1251.3	147	NW	1
TOM GRIGGS		Domestic	343	6N	1W	10	0	0	1251.3	147	NW	1
RUSSELL VEAZIE		Domestic	141	6N	1W	10	0	0	1251.3	147	NW	1
MICHAEL HAUSE		Domestic	122	6N	1W	10	0	0	1251.3	147	NW	1
DONALD STEWART		Domestic	180	6N	1W	10	0	0	1251.3	147	NW	1
CALVIN ARN		Domestic	135	6N	1W	10	0	0	1251.3	147	NW	1
WATERMARK ESTATES INC	APQ365	Domestic	0	6N	1W	10	0	0	1251.3	147	NW	1
DARREN JOY	AHP522	Domestic	365	7N	1W	20	SE	SE	1255.4	128	W	1
D. L. BRANHAM		Domestic	67	7N	1W	20	SE	NE	1255.7	92	E	1
LARRY HORST	AAH892	Domestic	402	7N	1W	20	SE	NE	1255.7	92	E	1
MARY ROBBINS	ACR983	Domestic	425	7N	1W	20	SE	NE	1255.7	92	E	1
WALT CROWE		Domestic	242	7N	1W	20	NE	0	1256.1	34	NE	1
AUDREY RITCHIE		Domestic	321	7N	1W	17	0	0	1256.9	64	E	1
TERRY HERNDON	BBC264	Domestic	281	7N	1W	17	0	0	1256.9	64	E	1

Appendix K3

Private Wells within 200 Feet of Workspace

Well Owner	Well Name	Type-Use	Depth (ft)	Township	Range	Section	1/4, 1/4 Section		Closest Milepost	Distance from Construction Right-of-Way (ft)	Direction from Work Area	Loop Number
JULIO MENDEZ		Domestic	0	7N	1W	17	0	0	1256.9	64	E	1
JULIO MENDEZ		Domestic	240	7N	1W	17	0	0	1256.9	64	E	1
KAREN RICHARDS		Domestic	419	7N	1W	17	0	0	1256.9	64	E	1
JAMES HERNDORL		Domestic	202	7N	1W	17	0	0	1256.9	64	E	1
DONALD STEARNS		Domestic	141	7N	1W	17	0	0	1256.9	64	E	1
COLLIER MCDANIEL		Domestic	100	7N	1W	17	0	0	1256.9	64	E	1
JAMES HERNDON		Domestic	419	7N	1W	17	0	0	1256.9	64	E	1
DAVID AND KATHY MORGAN		Domestic	285	7N	1W	17	0	0	1256.9	64	E	1
MIKE MURRAY	AHP855	Domestic	0	7N	1W	17	0	0	1256.9	64	E	1
MIKE MURRAY	AHP855	Domestic	0	7N	1W	17	0	0	1256.9	64	E	1
ROBERT KELLEY		Domestic	140	7N	1W	17	NW	SE	1257.1	0	NA	1
JULIO MENDEZ		Domestic	245	7N	1W	17	NW	SE	1257.1	0	NA	1
WILBUR PARSONS		Domestic	461	7N	1W	17	NW	NE	1257.4	0	NA	1
JERRY AND PAMELA GOMES	ALJ444	Domestic	484	7N	1W	8	SW	SE	1257.6	135	NE	1
RALPH FONTANA	AAH893	Domestic	142	7N	1W	8	SW	0	1257.8	0	NA	1
ART MELTON		Domestic	245	7N	1W	6	NE	SE	1259.2	0	NA	1
RANDY KOTKA		Domestic	381	7N	1W	6	NE	SE	1259.2	0	NA	1
JACOB BLANKSMA		Domestic	90	8N	1W	31	SE	0	1259.1	73	E	1
CLAUDE MONTGOMERY		Domestic	0	8N	1W	30	NW	SW	1261.4	7	W	1
CLAUDE MONTGOMERY		Domestic	148	8N	1W	30	NW	SW	1261.4	7	W	1
RONALD CHAMBERLAIN		Domestic	242	8N	2W	12	0	0	1264.5	0	NA	1
MRS., CHANDLER		Domestic	130	8N	2W	12	0	0	1264.5	0	NA	1
L. B. HOLLINGER		Domestic	164	8N	2W	12	0	0	1264.5	0	NA	1
G E STEED		Domestic	230	8N	2W	12	0	0	1264.5	0	NA	1
CLOYD BRISTER		Domestic	125	8N	2W	12	0	0	1264.5	0	NA	1
DON & SHERI ABBOTT		Domestic	225	8N	2W	12	NE	NW	1264.9	137	SE	1
KEVIN JORGENSON		Domestic	325	8N	2W	1	0	0	1265.6	145	SW	1
THOMAS BROOKERSON	BBC296	Domestic	398	9N	2W	25	SW	NE	1267.6	101	E	1
KENNETH & PATRICIA HENSEN		Domestic	303	9N	2W	25	SW	NE	1267.6	101	E	1
Thomas Brookerson	BAS598	Domestic	462	9N	2W	25	SW	NE	1267.6	101	E	1
ARIN HARPER	AKR796	Domestic	360	9N	2W	25	NW	SE	1267.8	0	NA	1
MIKE NEUNEKER	AHG116	Domestic	245	9N	2W	25	NW	NE	1268.1	127	E	1
LARRY SCHMIDT	ABK497	Domestic	83	9N	2W	13	SW	SW	1269.3	7	E	1
DENNIS PAGE	ACB741	Domestic	140	9N	2W	13	SW	NW	1269.6	0	NA	1
DENNIS PAGE	ACB744	Domestic	140	9N	2W	13	SW	NW	1269.6	0	NA	1
DENNIS PAGE	ABK491	Domestic	141	9N	2W	13	SW	NW	1269.6	0	NA	1
BP OLYMPIC PIPELINES CO	ALH957	Domestic	420	9N	2W	13	SW	NW	1269.6	0	NA	1

Appendix K3

Private Wells within 200 Feet of Workspace

Well Owner	Well Name	Type-Use	Depth (ft)	Township	Range	Section	1/4, 1/4 Section		Closest Milepost	Distance from Construction Right-of-Way (ft)	Direction from Work Area	Loop Number
SPENCER PARTRIDGE	AEK017	Domestic	187	9N	2W	13	NW	SW	1269.9	7	E	1
SPENCER PARTRIDGE	AEK023	Domestic	157	9N	2W	13	NW	SW	1269.9	7	E	1
KAY RUPE	ACR972	Domestic	390	10N	2W	36	SW	SW	1272.5	54	E	1
BOYD GOODRICH		Domestic	246	10N	2W	36	NW	SW	1273.0	44	NW	1
CHARLES KINCAID		Domestic	106	11N	2W	25	0	0	1280.8	64	W	1
ERNIE BAYDE JR	AFC857	Domestic	220	11N	2W	13	SW	SE	1282.5	0	NE	1
RON PEDERSON	AET191	Domestic	75	11N	2W	13	NW	SE	1283.0	85	E	1
SON BOND		Domestic	72	11N	2W	12	0	0	1283.9	0	NA	1
RICHARD CATLIN		Domestic	74	11N	2W	12	0	0	1283.9	0	NA	1
BRUCE REYNOLDS		Domestic	71	11N	2W	12	0	0	1283.9	0	NA	1
SCOTT THOMPSON		Domestic	78	11N	2W	12	0	0	1283.9	0	NA	1
CHARLES RUETHER		Domestic	72	12N	2W	24	NE	NW	1288.3	91	W	1
CARL SCHWGARTH		Domestic	36	12N	2W	13	SE	NW	1288.8	48	W	1
DAVID MILLS	ALK431	Domestic	59	12N	2W	13	SE	NW	1288.8	48	W	1
ROB THOMSEN	AKS565	Domestic	56	12N	2W	13	SE	NW	1288.8	48	W	1
CHRIS COMSTOCK	BAK551	Domestic	69	12N	2W	13	SE	NW	1288.8	48	W	1
DAN REES		Domestic	80	12N	2W	13	NE	SW	1289.1	50	W	1
AL SCHARISOW		Domestic	80	12N	2W	13	NE	NW	1289.3	50	W	1
RONALD REED		Domestic	90	13N	2W	36	SE	SW	1291.4	122	W	2
TONY CRITCHER		Domestic	75	13N	2W	36	SE	NW	1291.7	108	SW	2
TONY CRITCHER		Domestic	77	13N	2W	36	SE	NW	1291.7	108	SW	2
TONY CRITCHER		Domestic	80	13N	2W	36	SE	NW	1291.7	108	SW	2
TONY CRITCHER		Domestic	75	13N	2W	36	SE	NW	1291.7	108	SW	2
JOHN MATSON	AFC563	Domestic	60	13N	2W	36	NE	SW	1291.9	91	W	2
TIM SZAMBELAN		Domestic	60	13N	2W	25	NE	NW	1293.2	155	W	2
E.C. CASE		Domestic	65	13N	2W	25	NE	NW	1293.2	155	W	2
WARREN GUERR, JR.		Domestic	110	13N	2W	13	SE	SW	1294.5	0	NA	2
MICHAEL STEDHAM		Domestic	0	13N	2W	12	SE	SE	1295.5	64	NW	2
LEEDS B. A.		Domestic	52	13N	2W	12	SE	SE	1295.5	64	NW	2
NANEY A TUCKER	AFC469	Domestic	154	13N	2W	12	SE	SE	1295.5	64	NW	2
JOE AND KELLEY BREMGARTNER	AHG731	Domestic	127	13N	2W	12	SE	SE	1295.5	64	NW	2
BOB TEITZEL		Domestic	62	14N	2W	24	NE	SE	1300.1	61	NW	2
Lorna and Geoffrey Mueller		Domestic	0	15N	1W	13	NW	NW	1309.5	0	NA	2
CONLEY ROSS	AAT380	Domestic	91	16N	1E	32	SW	SW	1312.8	50	NW	2
AMA TIMBER PRODUCTS		Domestic	57	19N	3E	36	SE	SE	1338.2	66	NW	3
DONNA WINKLE		Domestic	78	19N	3E	36	SE	SE	1338.2	66	NW	3
DONNA WINKLE		Domestic	77	19N	3E	36	SE	SE	1338.2	66	NW	3

Appendix K3

Private Wells within 200 Feet of Workspace

Well Owner	Well Name	Type-Use	Depth (ft)	Township	Range	Section	1/4, 1/4 Section		Closest Milepost	Distance from Construction Right-of-Way (ft)	Direction from Work Area	Loop Number
DONNA WINKLE		Domestic	77	19N	3E	36	SE	SE	1338.2	66	NW	3
SAM KUHUSKI		Domestic	140	19N	4E	31	NW	NE	1339.3	76	S	3
GREG PIERCE		Domestic	158	19N	4E	31	NW	NE	1339.3	76	S	3
BILL GARRETT		Domestic	66	19N	4E	29	NW	SW	1340.3	0	NA	3
CHARLES EATON		Domestic	59	19N	4E	29	NW	SW	1340.3	0	NA	3
ELWOOD LARGENT		Domestic	76	19N	4E	29	NW	SW	1340.3	0	NA	3
JERRY MORRIS		Domestic	60	19N	4E	29	NW	SW	1340.3	0	NA	3
JOANNE BRADNEY		Domestic	160	19N	4E	29	NW	SW	1340.3	0	NA	3
LESTER SCHIAGEI		Domestic	40	19N	4E	29	NW	SW	1340.3	0	NA	3
STEVE RONALD		Domestic	118	19N	4E	29	NW	SW	1340.3	0	NA	3
VIOLET YARBOROUGH		Domestic	100	19N	4E	29	NW	SW	1340.3	0	NA	3
LTZ INC.	ABE548	Domestic	57	19N	4E	29	NW	SW	1340.3	0	NA	3
JOYCE BOSARGE		Domestic	79	19N	4E	29	NW	0	1340.5	122	E	3
KOCH - VANDERSCHELDEM		Domestic	0	19N	4E	20	SW	SE	1340.9	106	E	3
CHARLES DON		Domestic	124	19N	4E	20	SW	NE	1341.1	0	NA	3
GEORGE DELGADO	BAC427	Domestic	48	20N	4E	35	SE	NW	1346.5	74	W	3
DON HAUPT	ACV718	Domestic	164	20N	4E	35	NE	NE	1347.1	89	SE	3
LEO GARRETT		Domestic	116	20N	4E	35	NE	NE	1347.1	89	SE	3
PHILLIP PAULLUS		Domestic	94	20N	4E	35	NE	NE	1347.1	89	SE	3
SIMON VAN LIEROP		Domestic	113	20N	4E	25	SW	SW	1347.5	18	S	3
GEORGE RICHARDS		Domestic	314	20N	5E	18	NE	0	1351.5	134	W	3
JOE NISHIMOTO (NISHIMOTO FARMS)		Domestic	30	21N	5E	22	SE	0	1357.1	0	NA	4
KEITH EUHUS		Domestic	160	21N	6E	6	SW	NW	1361.0	0	NA	4
JIM DOUVIER		Domestic	77	21N	6E	6	SW	NW	1361.0	0	NA	4
DAVE BECK	APR016	Domestic	81	21N	6E	6	SW	NW	1361.0	0	NA	4
COOPER JIM	ABG439	Domestic	165	23N	6E	15	SW	SE	1371.7	125	E	5
STEVEN DUNLAP		Domestic	98	23N	6E	15	SW	SE	1371.7	125	E	5
ROBERT DONALDSON		Domestic	96	23N	6E	15	SW	SE	1371.7	125	E	5
JIM COOK		Domestic	185	23N	6E	15	SW	SE	1371.7	125	E	5
MEL WALLICK		Domestic	81	23N	6E	10	SE	SW	1372.7	0	NA	5
LONNIE GUIN		Domestic	71	23N	6E	10	SE	SW	1372.7	0	NA	5
LARRY HAYES		Domestic	152	23N	6E	10	SE	SW	1372.7	0	NA	5
LARRY HAYES		Domestic	68	23N	6E	10	SE	SW	1372.7	0	NA	5
DAM PALMER		Domestic	0	23N	6E	10	SE	SW	1372.7	0	NA	5
DAM PALMER		Domestic	137	23N	6E	10	SE	SW	1372.7	0	NA	5
DAN PALMER		Domestic	119	23N	6E	10	SE	SW	1372.7	0	NA	5
DAN PALMER		Domestic	206	23N	6E	10	SE	SW	1372.7	0	NA	5

Appendix K3

Private Wells within 200 Feet of Workspace

Well Owner	Well Name	Type-Use	Depth (ft)	Township	Range	Section	1/4, 1/4 Section		Closest Milepost	Distance from Construction Right-of-Way (ft)	Direction from Work Area	Loop Number
DAN PALMER		Domestic	58	23N	6E	10	SE	SW	1372.7	0	NA	5
BILL BRADLEY		Domestic	200	23N	6E	10	SE	SW	1372.7	0	NA	5
BOB GREGG		Domestic	300	23N	6E	10	SE	SW	1372.7	0	NA	5
EDDY FOWLER LINDNER	APR480	Domestic	165	23N	6E	10	SE	SW	1372.7	0	NA	5
SUSAN BINGEISSER		Domestic	107	23N	6E	10	SE	NW	1373.0	28	W	5
KEITH ANDERSON		Domestic	76	23N	6E	10	SE	NW	1373.0	28	W	5
ANTHONY SINCLETON		Domestic	40	23N	6E	10	SE	NW	1373.0	28	W	5
SUSAN COX	ACG880	Domestic	248	23N	6E	3	SE	NE	1374.0	4	W	5
LEON HUSSY		Domestic	72	25N	6E	34	NE	NW	1381.6	63	W	5
W. S. BENNISON		Domestic	14	27N	6E	16	NW	SW	1396.8	0	NA	6
CHARLES ROBERTS		Domestic	0	27N	6E	16	NW	SW	1396.8	0	NA	6
DALE RHINER		Domestic	612	27N	6E	16	NW	SW	1396.8	0	NA	6
ENID PORTER		Domestic	0	27N	6E	16	NW	NW	1397.0	0	NA	6
JIM ELLIOTT	APR352	Domestic	235	27N	6E	16	NW	NW	1397.0	0	NA	6
JIM ELLIOT	ALS292	Domestic	14	27N	6E	16	NW	NW	1397.0	0	NA	6
MICHAEL SCHAFER		Domestic	320	27N	6E	9	SW	NE	1398.2	45	E	6
Lloyd Chew	APF349	Domestic	400	28N	6E	16	NE	NW	1403.8	109	E	6
MICHAEL TAYLOR	APR702	Domestic	225	28N	6E	4	SW	NE	1405.3	91	W	6
DUANE KUHLMAN		Domestic	59	29N	6E	33	NW	NE	1406.8	13	E	6
HANSON AND HANSON CONSTRUCTION	AFV762	Domestic	229	29N	6E	21	NW	SW	1408.7	0	NA	6
WARREN GOODWIN		Domestic	98	29N	6E	21	NW	SW	1408.7	0	NA	6
TODD THEISON		Domestic	49	29N	6E	21	NW	SW	1408.7	0	NA	6
TIM ELDER		Domestic	98	29N	6E	21	NW	SW	1408.7	0	NA	6
TIM JURAVITCH		Domestic	73	29N	6E	21	NW	SW	1408.7	0	NA	6
RAY BARBER		Domestic	94	29N	6E	21	NW	SW	1408.7	0	NA	6
RANDY ROALSON		Domestic	278	29N	6E	21	NW	SW	1408.7	0	NA	6
MARV SMITH		Domestic	206	29N	6E	21	NW	SW	1408.7	0	NA	6
JIM WEST		Domestic	266	29N	6E	21	NW	SW	1408.7	0	NA	6
HUBER CONSTRUCTION		Domestic	220	29N	6E	21	NW	SW	1408.7	0	NA	6
HARLEN MUNSON		Domestic	97	29N	6E	21	NW	SW	1408.7	0	NA	6
HAROLD EBERLE		Domestic	27	29N	6E	21	NW	SW	1408.7	0	NA	6
DON HAGAR		Domestic	98	29N	6E	21	NW	SW	1408.7	0	NA	6
DAN CRUMBLISS		Domestic	204	29N	6E	21	NW	SW	1408.7	0	NA	6
B. LYBERT		Domestic	119	29N	6E	21	NW	SW	1408.7	0	NA	6
BILL STARTZMAN		Domestic	40	29N	6E	21	NW	SW	1408.7	0	NA	6
TIM ELDER		Domestic	98	29N	6E	21	NW	NW	1408.9	0	NA	6
MEL ROSTEN		Domestic	198	29N	6E	21	NW	NW	1408.9	0	NA	6

Appendix K3

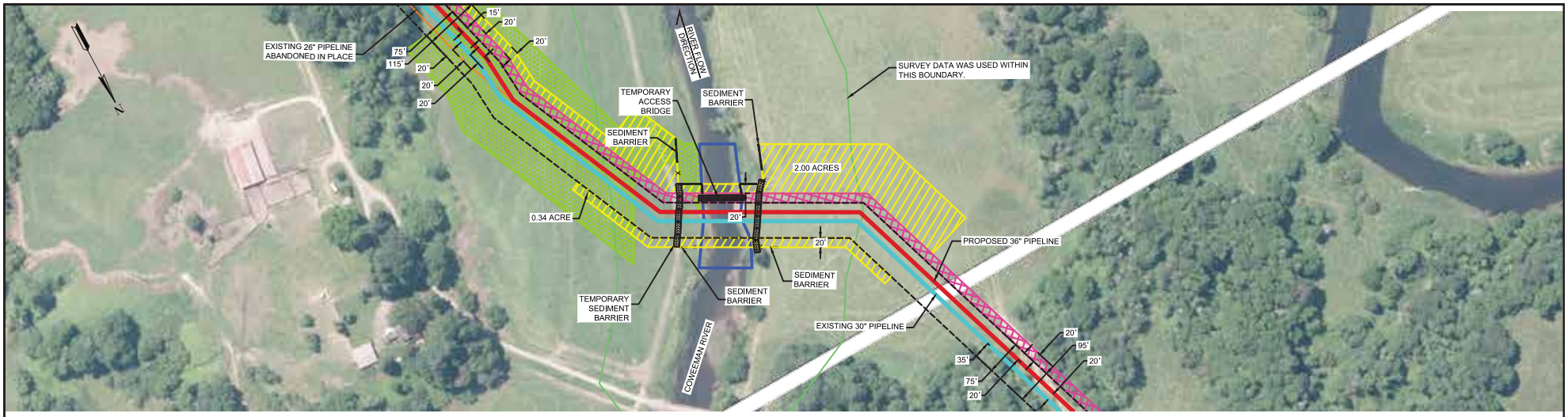
Private Wells within 200 Feet of Workspace

Well Owner	Well Name	Type-Use	Depth (ft)	Township	Range	Section	1/4, 1/4 Section		Closest Milepost	Distance from Construction Right-of-Way (ft)	Direction from Work Area	Loop Number
GARY ALEXANDER		Domestic	0	29N	6E	21	NW	NW	1408.9	0	NA	6
GARY CONARD		Domestic	225	29N	6E	21	NW	NW	1408.9	0	NA	6
DON BOXFORD		Domestic	50	29N	6E	21	NW	NW	1408.9	0	NA	6
TIM STUMPF		Domestic	210	29N	6E	16	SW	SW	1409.2	0	NA	6
ANDREA XAVER		Domestic	80	33N	5E	8	NW	NW	1436.2	91	NE	7
MICHAEL SMITH	BAT235	Domestic	18	34N	5E	18	SE	NW	1441.0	39	E	8
KEITH BROWN		Domestic	19	34N	5E	6	NE	SE	1443.3	0	NA	8
KEITH BROWN		Domestic	9	34N	5E	6	NE	SE	1443.3	0	NA	8
KEITH BROWN		Domestic	19	34N	5E	6	NE	SE	1443.3	0	NA	8
KEITH BROWN		Domestic	24	34N	5E	6	NE	SE	1443.3	0	NA	8
KEITH BROWN		Domestic	28	34N	5E	6	NE	SE	1443.3	0	NA	8
DON LARISON	ACB195	Domestic	47	36N	5E	18	NW	NE	1454.1	143	NW	9
CALFCO		Domestic	78	36N	5E	18	NW	NE	1454.1	143	NW	9
JOHN FORD	AFR120	Domestic	22	37N	5E	29	SW	SE	1457.7	111	W	9
ROY GAVIN		Domestic	29	37N	5E	29	NE	NW	1458.5	0	NA	9
ANNA HANDELAND		Domestic	0	37N	5E	20	SE	SW	1458.8	56	W	9
WILDWOOD RESORT (DIXON)		Domestic	180	37N	5E	20	SE	SW	1458.8	56	W	9
NATIONAL PARK SERVICE		Domestic	61	37N	5E	20	SE	SW	1458.8	56	W	9
ANNA HANDELAND		Domestic	131	37N	5E	20	SE	SW	1458.8	56	W	9
CLYDE SHETLER		Domestic	57	37N	5E	17	SE	NW	1460.0	74	W	9
ROYCE & JEANNA SEIDING		Domestic	27	37N	5E	17	SE	NW	1460.0	74	W	9
AARON SANDY	AHH745	Domestic	39	37N	5E	17	SE	NW	1460.0	74	W	9
KEITH MONTEITH	AHH068	Domestic	40	37N	5E	17	SE	NW	1460.0	74	W	9
H E ROTHENBUHLER		Domestic	16	37N	5E	8	NW	SE	1461.4	3	SE	9
GARY AND BARBARA PITMAN	APH156	Domestic	57	40N	4E	27	NE	SW	1478.8	0	NA	10
MIKE FULLER		Domestic	0	40N	4E	27	NE	SW	1478.8	0	NA	10
JANET CUNNIFFE		Domestic	68	40N	4E	27	NE	SW	1478.8	0	NA	10
LAWRENCE SILVIS		Domestic	31	40N	4E	1	0	0	1483.3	70	SE	10
HENRY VANDER MEULER		Domestic	31	41N	4E	36	SE	SW	1483.9	0	NA	10

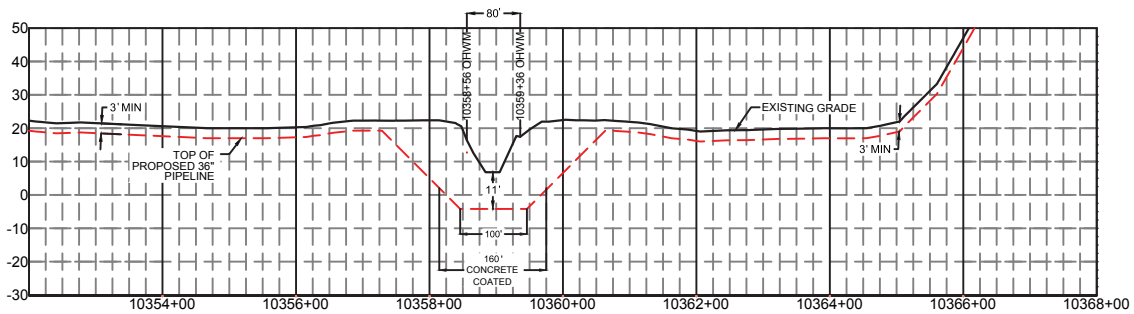
E = east
NA = not applicable
NE = northeast
NW = northwest
S = south
SE = southeast
SW = southwest
W = west

APPENDIX K4

SITE-SPECIFIC WATERBODY AND WETLAND CROSSING PLANS



PLAN VIEW



PROFILE VIEW

100 0 100 200 300 FEET

GENERAL NOTES:

1. THIS PIPELINE INSTALLED UNDER CODE: TILE 49, PART 192 CFR.
2. WATERBODY CROSSING TO COMPLY WITH THE FERC WETLAND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES, 2013.
3. THERE WILL BE LIMITED ACCESS, NO PARKING, NO REFUELING, NO VEHICLE MAINTENANCE, NO STORAGE WITHIN 100 FT. OF EACH HIGH BANK.
4. CONSTRUCTION OF THE PIPELINE AT RIVER SHALL BE PERFORMED IN SUCH A MANNER AS TO KEEP TO A MINIMUM DAMAGE TO SHORELINE, WATER CROSSED, AND FISH AND WILDLIFE HABITATS.
5. EROSION CONTROL DEVICES WILL BE INSTALLED AND INSPECTED AND MAINTAINED BY THE CONTRACTOR. SEDIMENT BARRIER SHALL BE MAINTAINED ACROSS THE PIPELINE ROW AT BOTH SIDES OF THE RIVER CROSSING. IN THE TRAVEL LANE, THESE MAY CONSIST OF REMOVABLE SEDIMENT BARRIERS OR DRIVABLE BERMS.
6. FOLLOWING CONSTRUCTION, THE RIVER BOTTOM SHALL BE RETURNED TO ITS ORIGINAL CONTOUR AND GRADIENT.
7. TOPSOIL, APPROACH SOIL AND INSTREAM SPOIL SHALL BE KEPT SEPARATE. AFTER INSTALLATION OF THE PIPE, THE SPOIL SHALL BE REPLACED TO ITS ORIGINAL LOCATION.
8. EXCEPT TO PROVIDE VEHICLE EQUIPMENT ACCESS, RIVER BANKS WILL BE GRADED JUST PRIOR TO CONSTRUCTION OF THE CROSSING. A 10-FT VEGETATED BUFFER STRIP, EXCEPT FOR VEHICLE CROSSING, ON BOTH SIDES OF THE CROSSING SHALL BE MAINTAINED AND ONLY CUT PRIOR TO CONSTRUCTION OF THE CROSSING.
9. PRIOR TO ACTUAL INSTALLATION, THE PIPE SHALL BE WELDED IN AN UPLAND AREA AND PULLED OR CARRIED FOR THE CROSSING.
10. CONTRACTOR SHALL MINIMIZE THE NUMBER OF TREES TO BE REMOVED. EXCLUSION BARRIER TO BE INSTALLED AROUND MARKED TREES TO REMAIN IN PLACE TO BE COORDINATED WITH ENVIRONMENTAL INSPECTOR.
11. STABILIZING VEGETATION REMOVAL SHALL BE KEPT TO A MINIMUM. STREAMSIDE WOODY VEGETATION IS PREFERABLE TO COMPLETE REMOVAL. ANY VEGETATION THAT IS REMOVED SHALL BE REESTABLISHED IN A REASONABLE TIME FRAME AFTER CONSTRUCTION.
12. MOST EQUIPMENT WILL ONLY REQUIRE A ONE-TIME CROSSING, MULTIPLE CROSSINGS SHALL BE KEPT TO A REASONABLE MINIMUM.
13. IMMEDIATELY AFTER THE BACKFILLING OF PIPE, SEDIMENTATION CONTROL DEVICES (HAY BALES, SILT FENCE, ETC.) SHALL BE PLACED ACROSS THE ROW TO CONTROL SEDIMENT FROM THE ROW.

SITE SPECIFIC NOTES:

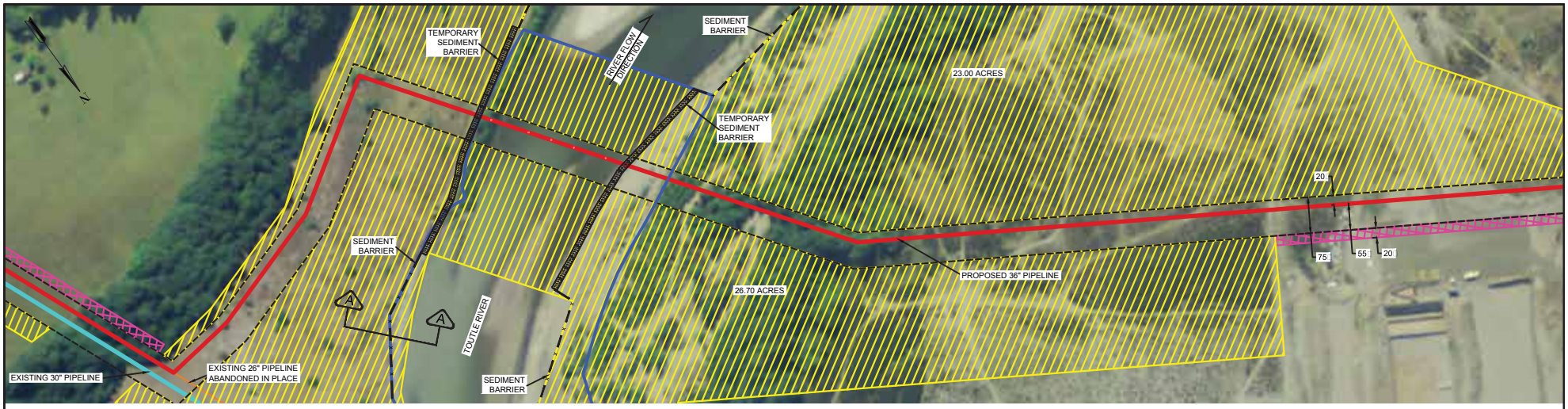
1. CROSSING TO BE INSTALLED UTILIZING THE DRY OPEN CUT CROSSING METHOD.
2. AFTER PIPE INSTALLATION, CONSTRUCTION EQUIPMENT WILL BE ALLOWED IN THE RIVER TO BACKFILL THE DITCH AS QUICKLY AS POSSIBLE.

NOTE:
1) THE INFORMATION SHOWN ON THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY TO CONVEY INTENT FOR PERFORMING THE CROSSING.
2) UTILITY LOCATES AT THIS SITE HAVE NOT BEEN PERFORMED.
3) SURFACE CONTOURS WERE CREATED USING A COMBINATION OF SURVEY DATA PROVIDED FROM WILLIAMS AND GOOGLE EARTH PRO.
4)THIS DRAWING IS NOT FOR CONSTRUCTION. THIS IS A PRELIMINARY PROFILE SHOWING THE GENERAL LOCATION AND MINIMUM DEPTH REQUIREMENTS OF THE CROSSING.
5) DEPTH OF RIVER PROVIDED FROM AS-BUILT DRAWING "COWEEMAN RIVER X-ING 30" 0.0. IGNACIO TO SUMAS LOOP LINE" DATED 1-27-71 DWG NO-1401.2-33.
6) END POINTS OF PROFILE VIEWS ARE BASED ON KNOWN POINTS FROM THE ENVIRONMENTAL ALIGNMENT SHEETS.

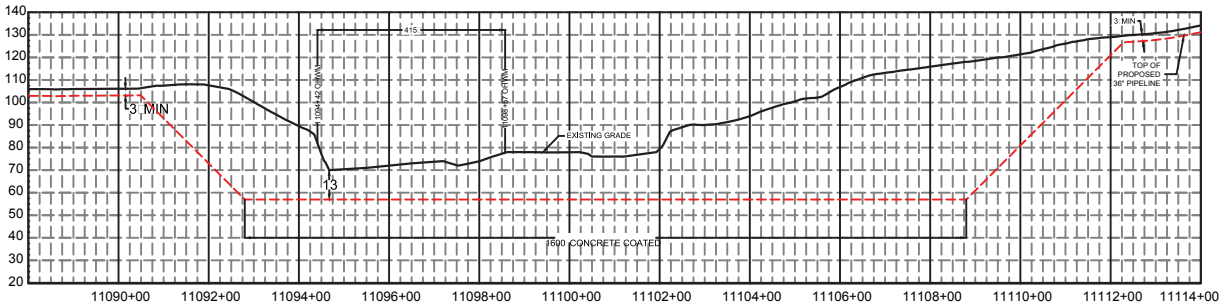
LEGEND

- Proposed 36" WEP Project
- Abandoned 26" Pipeline
- Existing 30" Pipeline
- Existing 36" Pipeline
- Road C/L
- Access Road
- Property Line
- Section Line
- Stream
- Sediment Barrier
- OHWM ORDINARY HIGH WATER MARK
- Approximate Permanent Easement
- Temporary Extra Work Area
- Temporary Construction ROW
- Perm Easement Not Used During Construction
- Wetland
- Temporary Sediment Barrier
- M 123 P Milepost

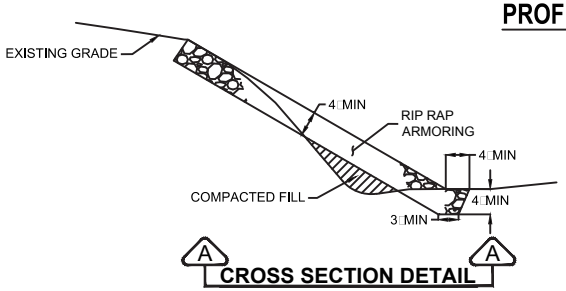
WASHINGTON EXPANSION PROJECT
LOOP 1 WOODLAND LOOP
COWEEMAN RIVER 1260.49 MP
COWLITZ COUNTY, WASHINGTON



PLAN VIEW



PROFILE VIEW



CROSS SECTION DETAIL

N.T.S.

NOTE:
1) THE INFORMATION SHOWN ON THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY TO CONVEY INTENT FOR PERFORMING THE CROSSING.
2) UTILITY LOCATES AT THIS SITE HAVE NOT BEEN PERFORMED.
3) SURFACE CONTOURS WERE CREATED USING A COMBINATION OF SURVEY DATA PROVIDED FROM WILLIAMS AND GOOGLE EARTH PRO.
4)THIS DRAWING IS NOT FOR CONSTRUCTION. THIS IS A PRELIMINARY PROFILE SHOWING THE GENERAL LOCATION AND MINIMUM DEPTH REQUIREMENTS OF THE CROSSING.
5) END POINTS OF PROFILE VIEWS ARE BASED ON KNOWN POINTS FROM THE ENVIRONMENTAL ALIGNMENT SHEETS.
6) DEPTH OF RIVER PROVIDED FROM GOLDER ASSOCIATES PLAN AND PROFILE OF THE TOUTLE RIVER CROSSING PROJECT NUMBER 140-2309 SHEET 002 DATED 2014-04-22.

LEGEND

- Proposed 36" WEP Project
- Abandoned 26" Pipeline
- Existing 30" Pipeline
- Existing 36" Pipeline
- Road C/L
- Access Road
- Property Line
- Section Line
- Stream
- Sediment Barrier
- OHWM — ORDINARY HIGH WATER MARK
- Approximate Permanent Easement
- Temporary Extra Work Area
- Temporary Construction ROW
- Perm Easement Not Used During Construction
- Wetland
- Temporary Sediment Barrier
- M 123 P — Milepost

GENERAL NOTES:

1. THIS PIPELINE INSTALLED UNDER CODE: TILE 49, PART 192 CFR.
2. WATERBODY CROSSING TO COMPLY WITH THE FERC WETLAND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES, 2013.
3. THERE WILL BE LIMITED ACCESS, NO PARKING, NO REFUELING, NO VEHICLE MAINTENANCE, NO STORAGE WITHIN 100 FT. OF EACH HIGH BANK.
4. CONSTRUCTION OF THE PIPELINE AT RIVER SHALL BE PERFORMED IN SUCH A MANNER AS TO KEEP TO A MINIMUM DAMAGE TO SHORELINE, WATER CROSSED, AND FISH AND WILDLIFE HABITATS.
5. EROSION CONTROL DEVICES WILL BE INSTALLED AND INSPECTED AND MAINTAINED BY THE CONTRACTOR. SEDIMENT BARRIER SHALL BE MAINTAINED ACROSS THE PIPELINE ROW AT BOTH SIDES OF THE RIVER CROSSING. IN THE TRAVEL LANE, THESE MAY CONSIST OF REMOVABLE SEDIMENT BARRIERS OR DRIVABLE BERMS.
6. FOLLOWING CONSTRUCTION, THE RIVER BOTTOM SHALL BE RETURNED TO ITS ORIGINAL CONTOUR AND GRADIENT.
7. TOPSOIL, APPROACH SOIL AND INSTREAM SPOIL SHALL BE KEPT SEPARATE. AFTER INSTALLATION OF THE PIPE, THE SPOIL SHALL BE REPLACED TO ITS ORIGINAL LOCATION.
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9. PRIOR TO ACTUAL INSTALLATION, THE PIPE SHALL BE WELDED IN AN UPLAND AREA AND PULLED OR CARRIED FOR THE CROSSING.
10. CONTRACTOR SHALL MINIMIZE THE NUMBER OF TREES TO BE REMOVED. EXCLUSION BARRIER TO BE INSTALLED AROUND MARKED TREES TO REMAIN IN PLACE TO BE COORDINATED WITH ENVIRONMENTAL INSPECTOR.
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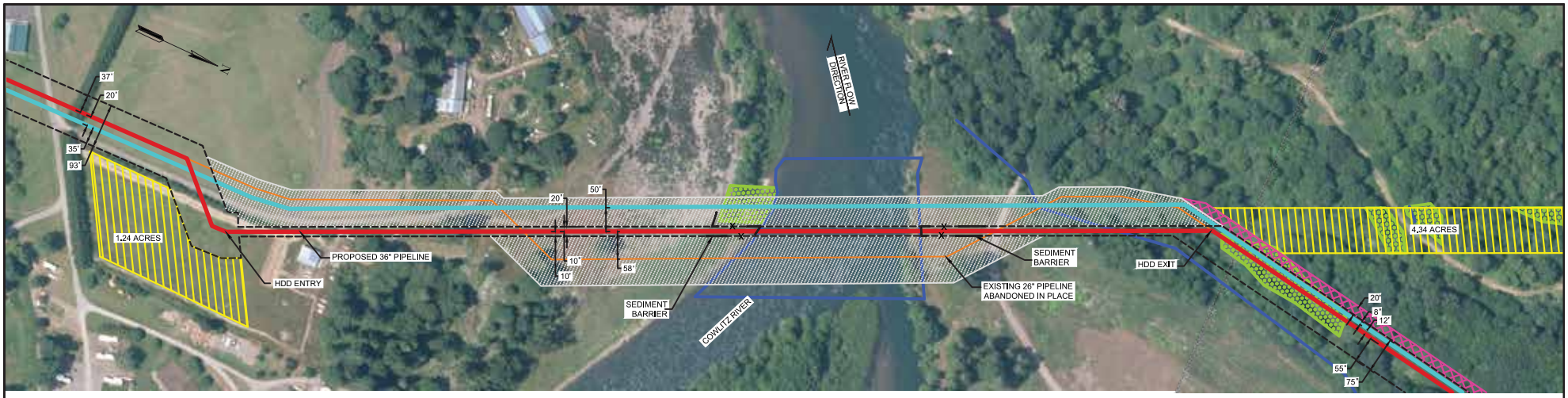
12. MOST EQUIPMENT WILL ONLY REQUIRE A ONE-TIME CROSSING, MULTIPLE CROSSINGS SHALL BE KEPT TO A REASONABLE MINIMUM.
13. IMMEDIATELY AFTER THE BACKFILLING OF PIPE, SEDIMENTATION CONTROL DEVICES (HAY BALES, SILT FENCE, ETC.) SHALL BE PLACED ACROSS THE ROW TO CONTROL SEDIMENT FROM THE ROW.

SITE SPECIFIC NOTES:

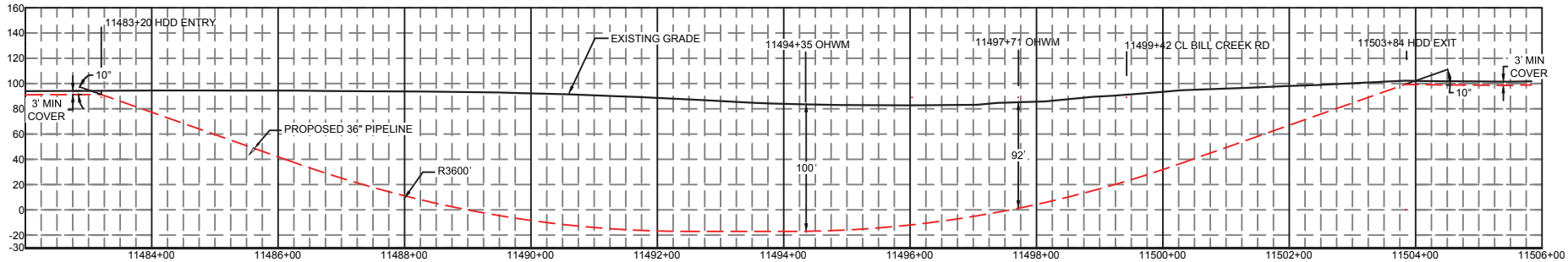
1. CROSSING TO BE INSTALLED UTILIZING THE DRY OPEN CUT CROSSING METHOD.
2. AFTER PIPE INSTALLATION, CONSTRUCTION EQUIPMENT WILL BE ALLOWED IN THE RIVER TO BACKFILL THE DITCH AS QUICKLY AS POSSIBLE.
3. WORK WITHIN THE OHWM LIMITS WILL BE COMPLETED DURING THE IN-WATER WORK WINDOW OR AS OTHERWISE APPROVED BY APPROPRIATE AGENCIES.

100 0 100 200 300 FEET

WASHINGTON EXPANSION PROJECT
LOOP 1 WOODLAND LOOP
TOUTLE RIVER 1274.42 MP
COWLITZ COUNTY, WASHINGTON



PLAN VIEW



PROFILE VIEW

GENERAL NOTES:

1. THIS PIPELINE INSTALLED UNDER CODE: TILE 49, PART 192 CFR.
2. WATERBODY CROSSING TO COMPLY WITH THE FERC WETLAND □ WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES, 2013.
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6. PRIOR TO ACTUAL INSTALLATION, THE PIPE SHALL BE WELDED TO THE BANK.
7. CONTRACTOR SHALL MINIMIZE THE NUMBER OF TREES TO BE REMOVED. EXCLUSION BARRIER TO BE INSTALLED AROUND MARKED TREES TO REMAIN IN PLACE TO BE COORDINATED WITH ENVIRONMENTAL INSPECTOR.

SITE SPECIFIC NOTES:

1. CROSSING TO BE INSTALLED UTILIZING THE DRY OPEN CUT CROSSING METHOD.

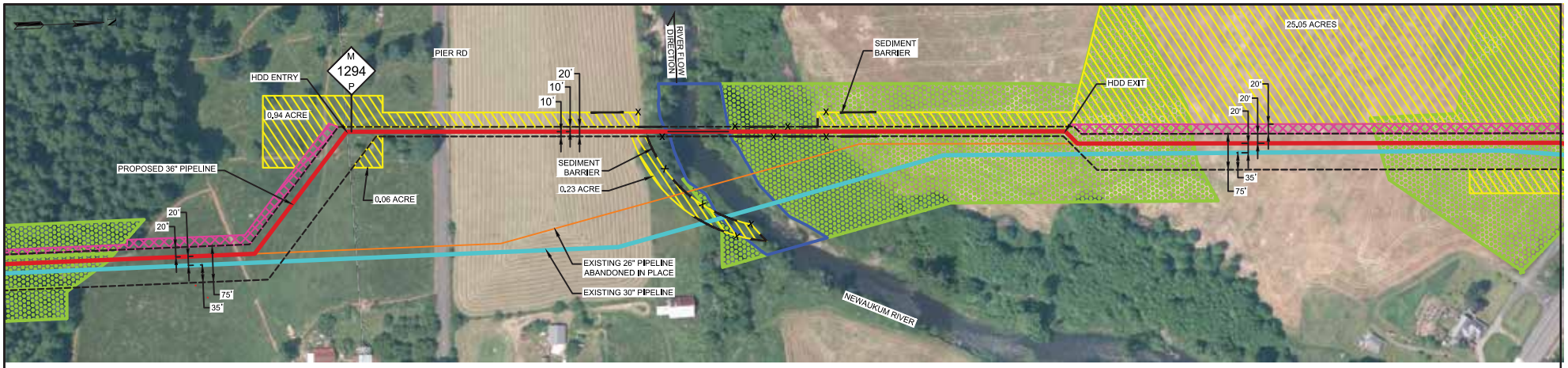
NOTE:
1) THE INFORMATION SHOWN ON THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY TO CONVEY INTENT FOR PERFORMING THE CROSSING.
2) UTILITY LOCATES AT THIS SITE HAVE NOT BEEN PERFORMED.
3) SURFACE CONTOURS WERE CREATED USING A COMBINATION OF SURVEY
4)THIS DRAWING IS NOT FOR CONSTRUCTION. THIS IS A PRELIMINARY PROFILE SHOWING THE GENERAL LOCATION AND MINIMUM DEPTH REQUIREMENTS OF THE CROSSING.

LEGEND

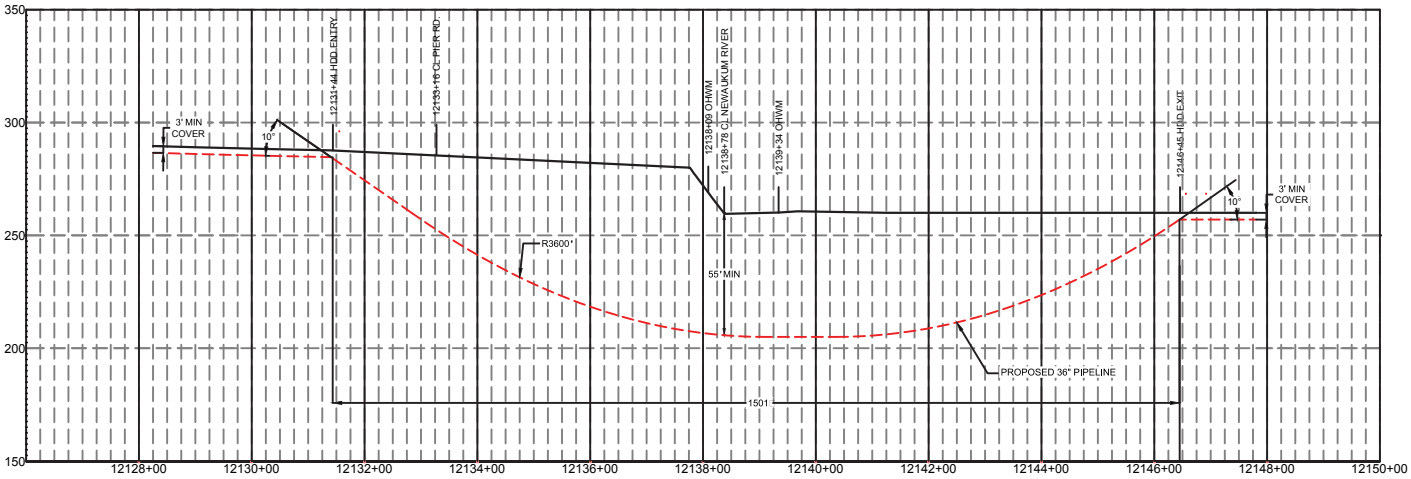
- Proposed 36" WEP Project
- Abandoned 26" Pipeline
- Existing 30" Pipeline
- Existing 36" Pipeline
- Road C/L
- Access Road
- Property Line
- Section Line
- Stream
- Sediment Barrier
- OHWM — ORDINARY HIGH WATER MARK
- Approximate Permanent Easement
- Temporary Extra Work Area
- Temporary Construction ROW
- Perm Easement Not Used During Construction
- Wetland
- Temporary Sediment Barrier
- M 123 P — Milepost

100 0 100 200 300 FEET

WASHINGTON EXPANSION PROJECT
LOOP 1 WOODLAND LOOP
COWLITZ RIVER HDD 1282.51 MP
LEWIS COUNTY, WASHINGTON



PLAN VIEW



PROFILE VIEW

SITE SPECIFIC NOTES:

1. CROSSING TO BE INSTALLED UTILIZING THE DRY OPEN CUT CROSSING METHOD.

GENERAL NOTES:

1. THIS PIPELINE INSTALLED UNDER CODE: TILE 49, PART 192 CFR.
2. WATERBODY CROSSING TO COMPLY WITH THE FERC WETLAND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES, 2013.
3. THERE WILL BE LIMITED ACCESS, NO PARKING, NO REFUELING, NO VEHICLE MAINTENANCE, NO STORAGE WITHIN 100 FT. OF EACH HIGH BANK.
4. CONSTRUCTION OF THE PIPELINE AT RIVER SHALL BE PERFORMED IN SUCH A MANNER AS TO KEEP TO A MINIMUM DAMAGE TO SHORELINE, WATER CROSSED, AND FISH AND WILDLIFE HABITATS.
5. EROSION CONTROL DEVICES WILL BE INSTALLED AND INSPECTED AND MAINTAINED BY THE CONTRACTOR. SEDIMENT BARRIER SHALL BE MAINTAINED ACROSS THE PIPELINE ROW AT BOTH SIDES OF THE RIVER CROSSING. IN THE TRAVEL LANE, THESE MAY CONSIST OF REMOVABLE SEDIMENT BARRIERS OR DRIVABLE BERMS.
6. PRIOR TO ACTUAL INSTALLATION, THE PIPE SHALL BE WELDED TO THE BANK.
7. CONTRACTOR SHALL MINIMIZE THE NUMBER OF TREES TO BE REMOVED. EXCLUSION BARRIER TO BE INSTALLED AROUND MARKED TREES TO REMAIN IN PLACE TO BE COORDINATED WITH ENVIRONMENTAL INSPECTOR.

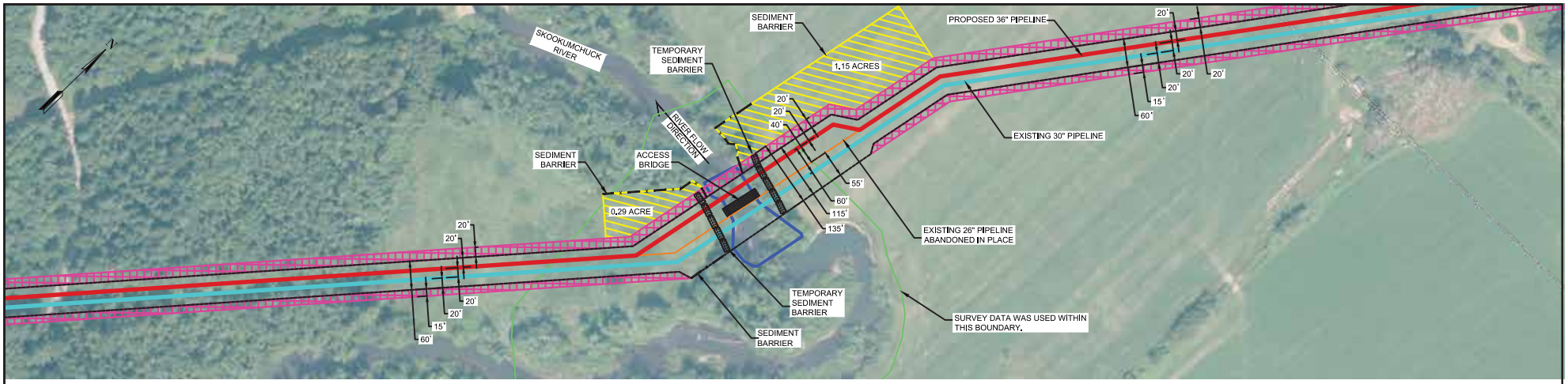
LEGEND

- Proposed 36" WEP Project
- Abandoned 26" Pipeline
- Existing 30" Pipeline
- Existing 36" Pipeline
- Road C/L
- Access Road
- Property Line
- Section Line
- Stream
- Sediment Barrier
- OHWM — ORDINARY HIGH WATER MARK
- Approximate Permanent Easement
- Temporary Extra Work Area
- Temporary Construction ROW
- Perm Easement Not Used During Construction
- Wetland
- Temporary Sediment Barrier
- M 123 P — Milepost

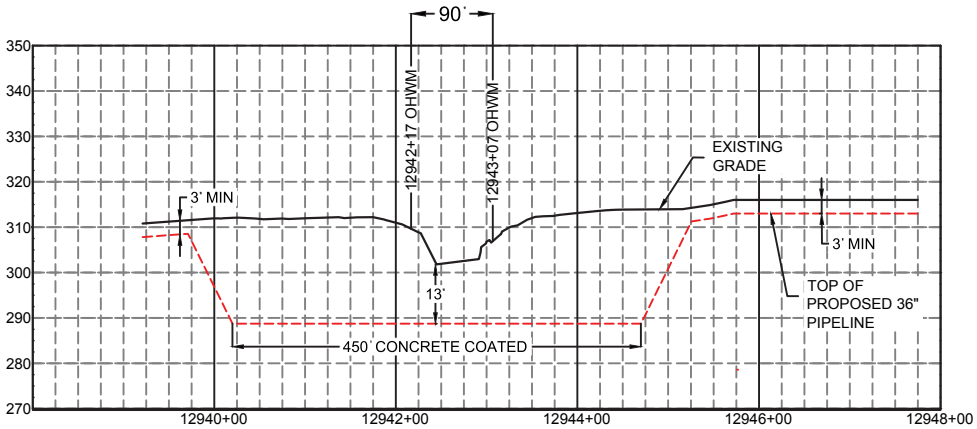
100 0 100 200 300 FEET

NOTE:
1) THE INFORMATION SHOWN ON THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY TO CONVEY INTENT FOR PERFORMING THE CROSSING.
2) UTILITY LOCATES AT THIS SITE HAVE NOT BEEN PERFORMED.
3) SURFACE CONTOURS WERE CREATED USING A COMBINATION OF SURVEY
4)THIS DRAWING IS NOT FOR CONSTRUCTION. THIS IS A PRELIMINARY PROFILE SHOWING THE GENERAL LOCATION AND MINIMUM DEPTH REQUIREMENTS OF THE CROSSING.

WASHINGTON EXPANSION PROJECT
LOOP 2 CHEHALIS
NEWAUKUM RIVER HDD 1294.13
MP LEWIS COUNTY, WASHINGTON



PLAN VIEW



PROFILE VIEW

100 0 100 200 300 FEET

GENERAL NOTES:

1. THIS PIPELINE INSTALLED UNDER CODE: TILE 49, PART 192 CFR.
2. WATERBODY CROSSING TO COMPLY WITH THE FERC WETLAND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES, 2013.
3. THERE WILL BE LIMITED ACCESS, NO PARKING, NO REFUELING, NO VEHICLE MAINTENANCE, NO STORAGE WITHIN 100 FT. OF EACH HIGH BANK.
4. CONSTRUCTION OF THE PIPELINE AT RIVER SHALL BE PERFORMED IN SUCH A MANNER AS TO KEEP TO A MINIMUM DAMAGE TO SHORELINE, WATER CROSSED, AND FISH AND WILDLIFE HABITATS.
5. EROSION CONTROL DEVICES WILL BE INSTALLED AND INSPECTED AND MAINTAINED BY THE CONTRACTOR. SEDIMENT BARRIER SHALL BE MAINTAINED ACROSS THE PIPELINE ROW AT BOTH SIDES OF THE RIVER CROSSING. IN THE TRAVEL LANE, THESE MAY CONSIST OF REMOVABLE SEDIMENT BARRIERS OR DRIVABLE BERMS.
6. FOLLOWING CONSTRUCTION, THE RIVER BOTTOM SHALL BE RETURNED TO ITS ORIGINAL CONTOUR AND GRADIENT.
7. TOPSOIL, APPROACH SOIL AND INSTREAM SPOIL SHALL BE KEPT SEPARATE. AFTER INSTALLATION OF THE PIPE, THE SPOIL SHALL BE REPLACED TO ITS ORIGINAL LOCATION.
8. EXCEPT TO PROVIDE VEHICLE EQUIPMENT ACCESS, RIVER BANKS WILL BE GRADED JUST PRIOR TO CONSTRUCTION OF THE CROSSING. A 10-FT VEGETATED BUFFER STRIP, EXCEPT FOR VEHICLE CROSSING, ON BOTH SIDES OF THE CROSSING SHALL BE MAINTAINED AND ONLY CUT PRIOR TO CONSTRUCTION OF THE CROSSING.
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11. STABILIZING VEGETATION REMOVAL SHALL BE KEPT TO A MINIMUM. STREAMSIDE WOODY VEGETATION IS PREFERABLE TO COMPLETE REMOVAL. ANY VEGETATION THAT IS REMOVED SHALL BE REESTABLISHED IN A REASONABLE TIME FRAME AFTER CONSTRUCTION.
12. MOST EQUIPMENT WILL ONLY REQUIRE A ONE-TIME CROSSING, MULTIPLE CROSSINGS SHALL BE KEPT TO A REASONABLE MINIMUM.
13. IMMEDIATELY AFTER THE BACKFILLING OF PIPE, SEDIMENTATION CONTROL DEVICES (HAY BALES, SILT FENCE, ETC.) SHALL BE PLACED ACROSS THE ROW TO CONTROL SEDIMENT FROM THE ROW.

SITE SPECIFIC NOTES:

1. CROSSING TO BE INSTALLED UTILIZING THE DRY OPEN CUT CROSSING METHOD.
2. AFTER PIPE INSTALLATION, CONSTRUCTION EQUIPMENT WILL BE ALLOWED IN THE RIVER TO BACKFILL THE DITCH AS QUICKLY AS POSSIBLE.

NOTE:
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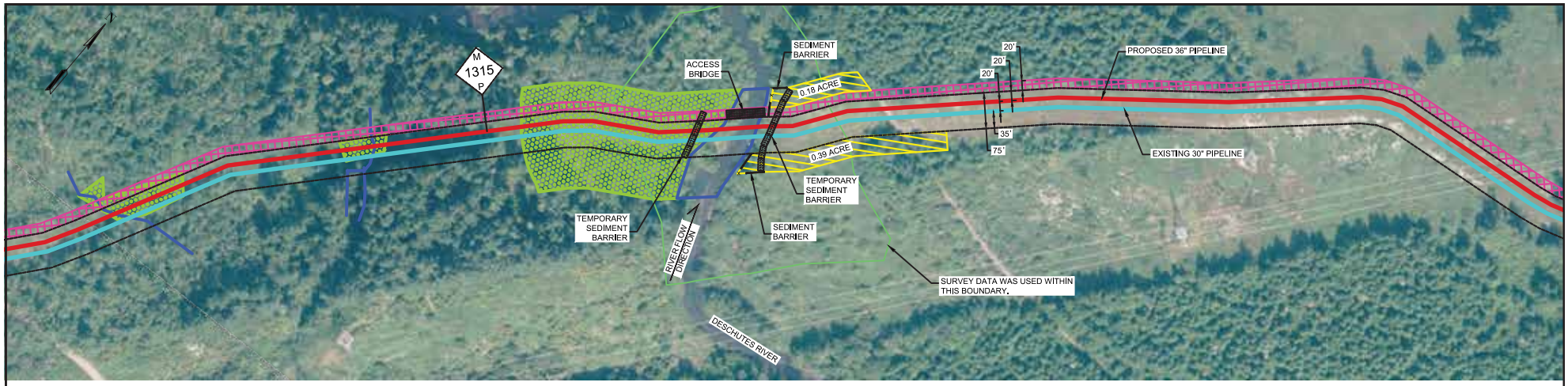
4)THIS DRAWING IS NOT FOR CONSTRUCTION. THIS IS A PRELIMINARY PROFILE SHOWING THE GENERAL LOCATION AND MINIMUM DEPTH REQUIREMENTS OF THE CROSSING.
5) DEPTH OF RIVER PROVIDED FROM AS-BUILT DRAWING "COWEEMAN RIVER X-ING 30" 0.0. IGNACIO TO SUMAS LOOP LINE" DATED 1-27-71 DWG NO-1401.2-33.
6) END POINTS OF PROFILE VIEWS ARE BASED ON KNOWN POINTS FROM THE ENVIRONMENTAL ALIGNMENT SHEETS.

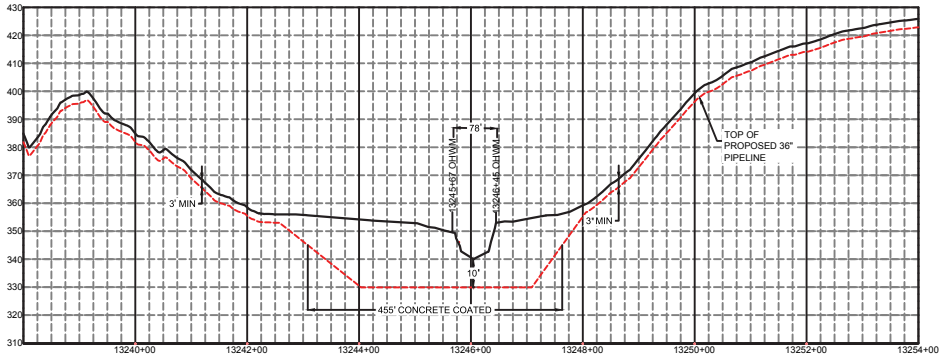
LEGEND

- Proposed 36" WEP Project
- Abandoned 26" Pipeline
- Existing 30" Pipeline
- Existing 36" Pipeline
- Road C/L
- Access Road
- Property Line
- Section Line
- Stream
- Sediment Barrier
- OHWM ORDINARY HIGH WATER MARK
- Approximate Permanent Easement
- Temporary Extra Work Area
- Temporary Construction ROW
- Perm Easement Not Used During Construction
- Wetland
- Temporary Sediment Barrier
- M 123 P Milepost

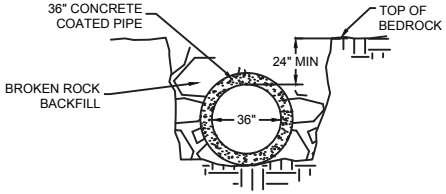
WASHINGTON EXPANSION PROJECT
LOOP 2 CHEHALIS
SKOOKUMCHUCK RIVER 1309.36 MP
THURSTON COUNTY, WASHINGTON



PLAN VIEW



PROFILE VIEW



① MIN BURIAL IN BEDROCK DETAIL

N.T.S

GENERAL NOTES:

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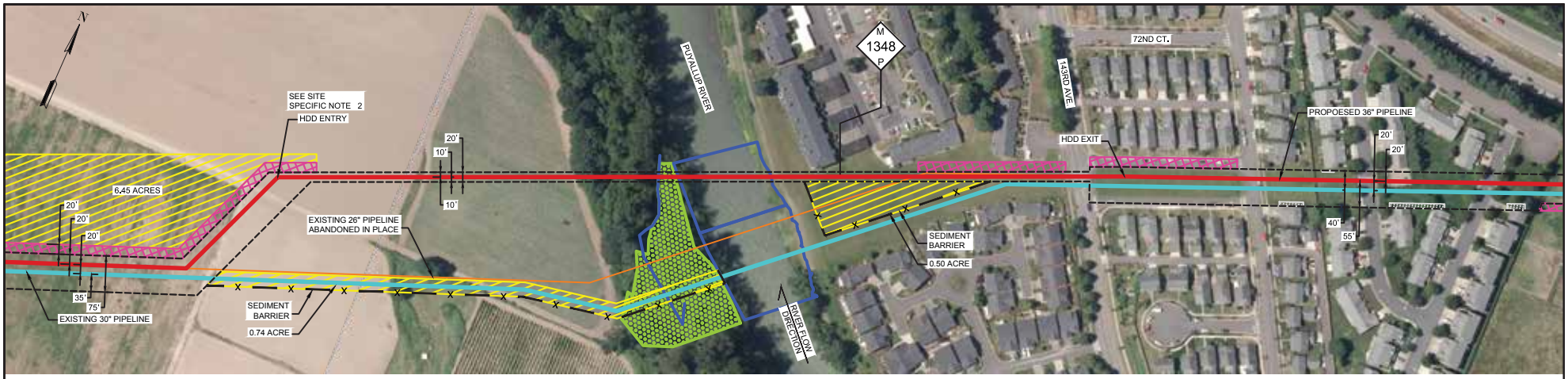
5) BURIAL DEPTH BELOW RIVER BOTTOM SHOWN IN PROFILE IS FOR ERODIBLE SEDIMENT. SEE DETAIL 1 FOR MINIMUM BURIAL IN COMPETENT BEDROCK.
6) END POINTS OF PROFILE VIEWS ARE BASED ON KNOWN POINTS FROM THE ENVIRONMENTAL ALIGNMENT SHEETS.

LEGEND

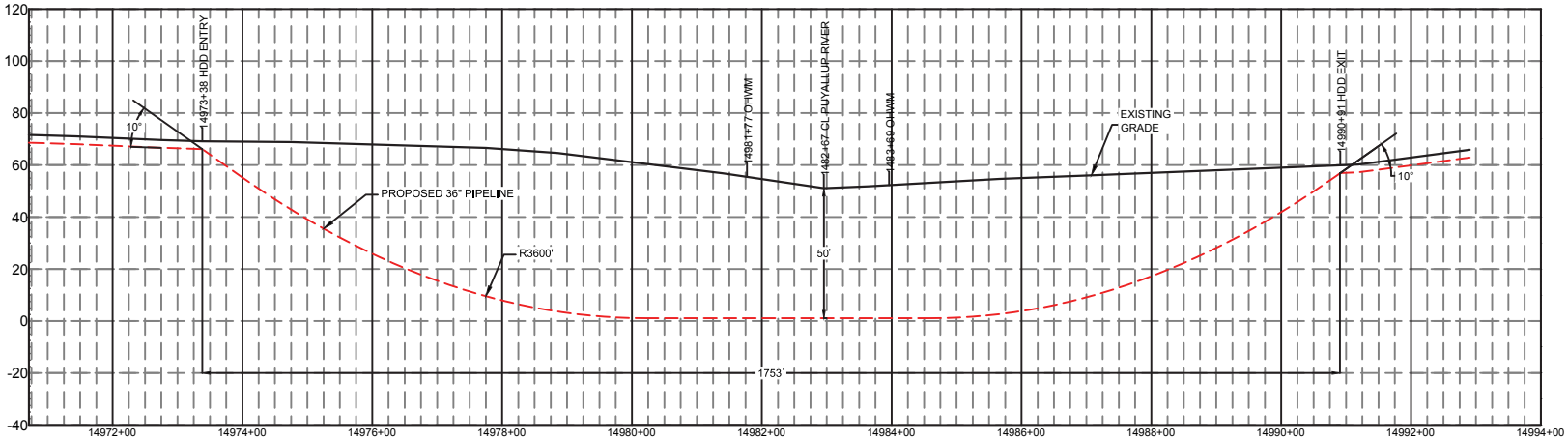
- Proposed 36" WEP Project
- Abandoned 26" Pipeline
- Existing 30" Pipeline
- Existing 36" Pipeline
- Road C/L
- Access Road
- Property Line
- Section Line
- Stream
- Sediment Barrier
- OHWM ORDINARY HIGH WATER MARK
- Approximate Permanent Easement
- Temporary Extra Work Area
- Temporary Construction ROW
- Perm Easement Not Used During Construction
- Wetland
- Temporary Sediment Barrier
- M 123 P Milepost

100 0 100 200 300 FEET

WASHINGTON EXPANSION PROJECT
LOOP 2 CHEHALIS
DESCHUTES RIVER 1315.10 MP
THURSTON COUNTY, WASHINGTON



PLAN VIEW



PROFILE VIEW

SITE SPECIFIC NOTES:

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GENERAL NOTES:

1. THIS PIPELINE INSTALLED UNDER CODE: TILE 49, PART 192 CFR.
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LEGEND

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- Abandoned 26" Pipeline
- Existing 30" Pipeline
- Existing 36" Pipeline
- Road C/L
- Access Road
- Property Line
- Section Line
- Stream
- Sediment Barrier
- OHWM ORDINARY HIGH WATER MARK
- Approximate Permanent Easement
- Temporary Extra Work Area
- Temporary Construction ROW
- Perm Easement Not Used During Construction
- Wetland
- Temporary Sediment Barrier
- M 123 P Milepost

100 0 100 200 300 FEET

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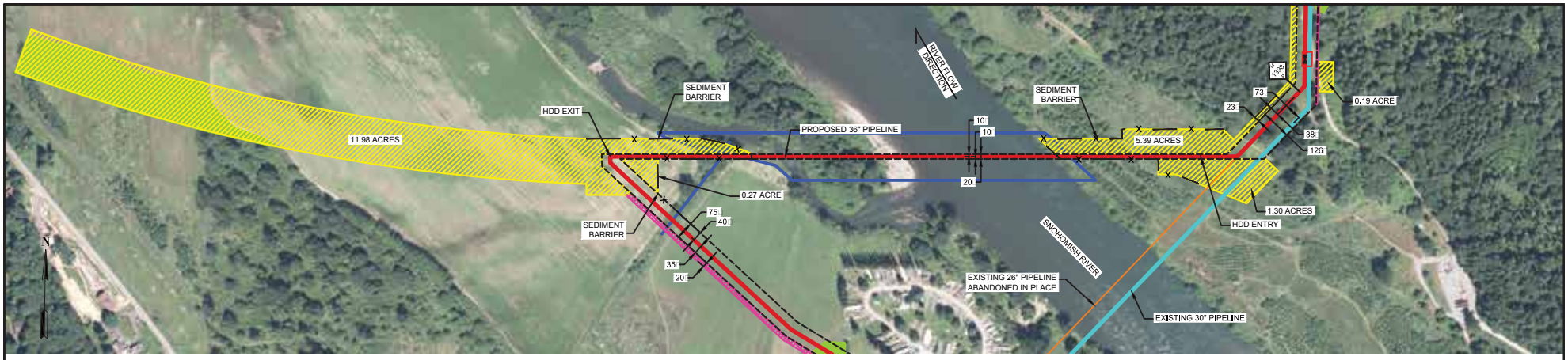
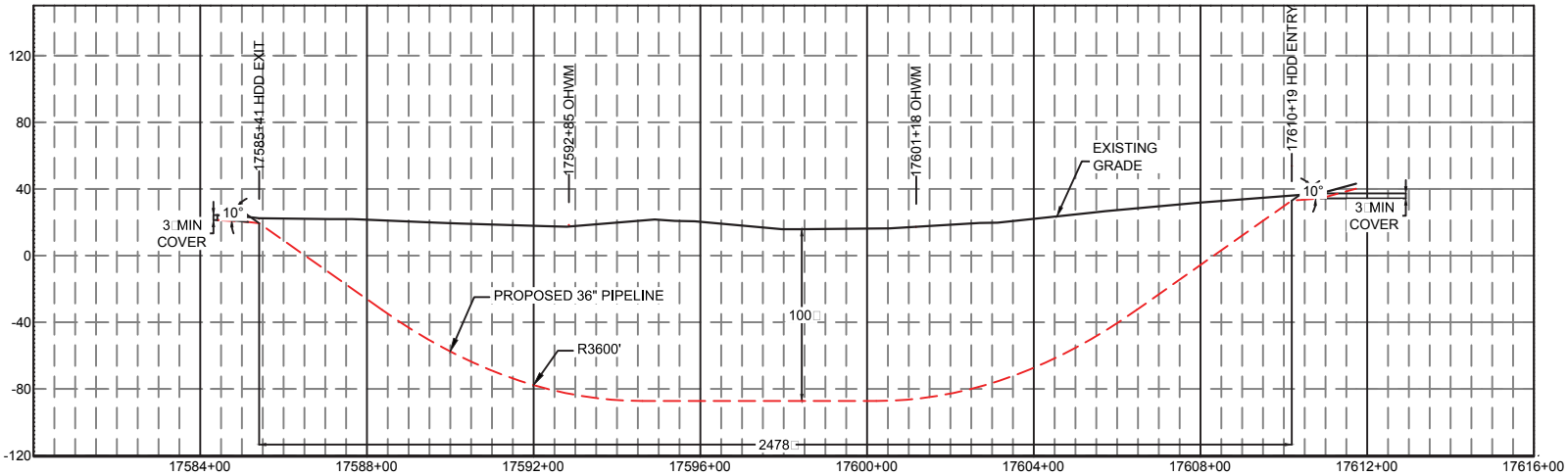
WASHINGTON EXPANSION PROJECT
LOOP 3 SUMNER SOUTH
PUYALLUP RIVER HDD 1348.98
MP LEWIS COUNTY, WASHINGTON



PLAN VIEW



PROFILE VIEW

SITE SPECIFIC NOTES:

1. CROSSING TO BE INSTALLED UTILIZING THE DRY OPEN CUT CROSSING METHOD.

GENERAL NOTES:

1. THIS PIPELINE INSTALLED UNDER CODE: TILE 49, PART 192 CFR.
2. WATERBODY CROSSING TO COMPLY WITH THE FERC WETLAND WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES, 2013.
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LEGEND

- Proposed 36" WEP Project
- Abandoned 26" Pipeline
- Existing 30" Pipeline
- Existing 36" Pipeline
- Road C/L
- Access Road
- Property Line
- Section Line
- Stream
- Sediment Barrier
- OHWM — ORDINARY HIGH WATER MARK
- Approximate Permanent Easement
- Temporary Extra Work Area
- Temporary Construction ROW
- Perm Easement Not Used During Construction
- Wetland
- Temporary Sediment Barrier
- M 123 P — Milepost

100 0 100 200 300 FEET

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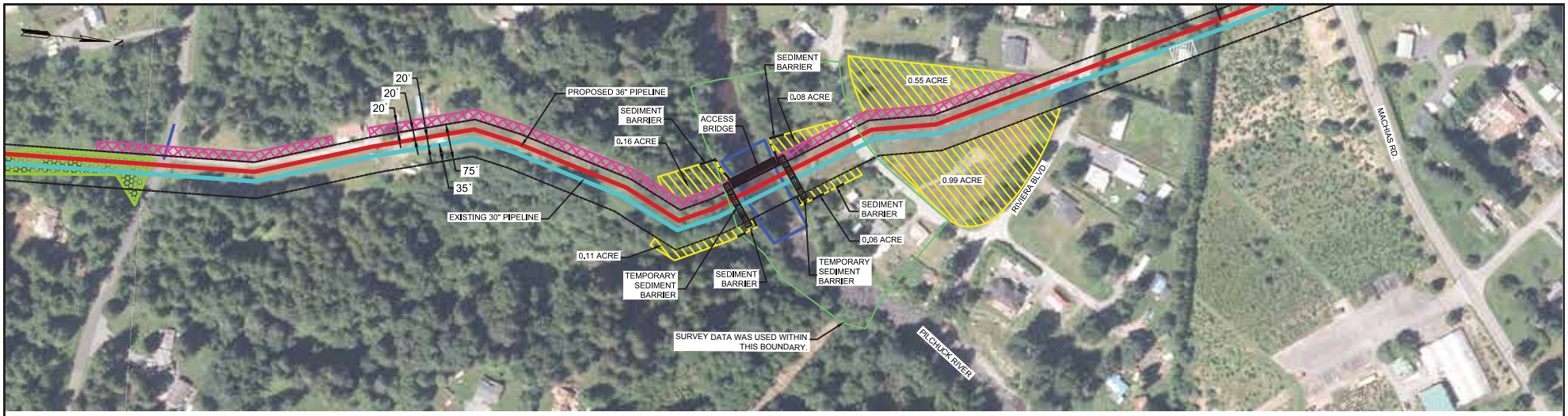
WASHINGTON EXPANSION PROJECT
LOOP 6 SNOHOMISH
SNOHOMISH RIVER HDD 1397.56 MP
SNOHOMISH COUNTY, WASHINGTON



PLAN VIEW

PROFILE VIEW

GENERAL NOTES:

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SITE SPECIFIC NOTES:

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LEGEND

- Proposed 36" WEP Project
- Abandoned 26" Pipeline
- Existing 30" Pipeline
- Existing 36" Pipeline
- Road C/L
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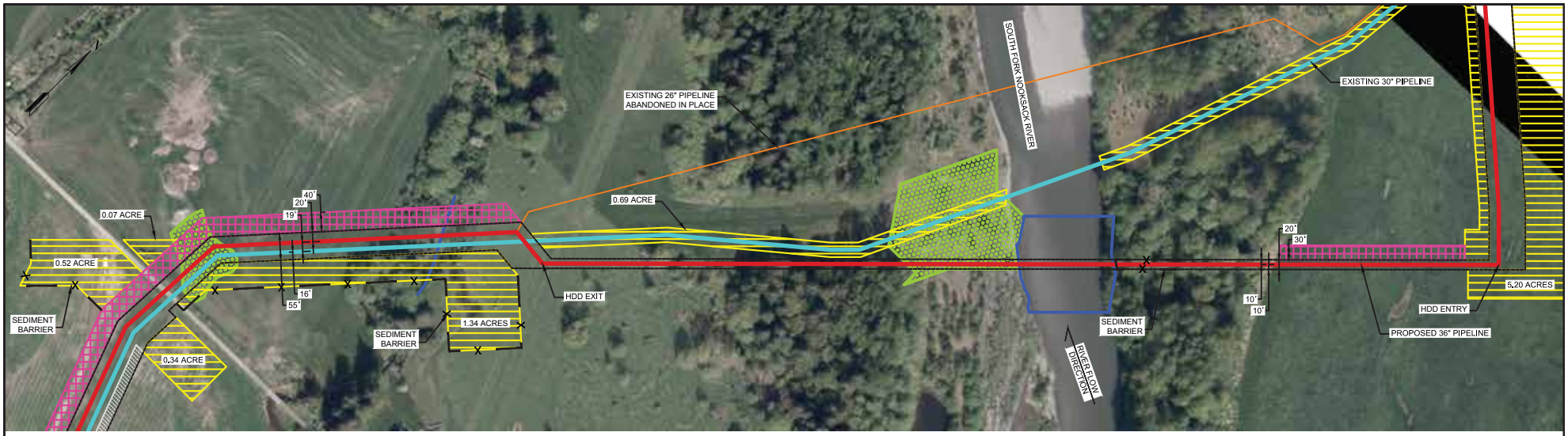
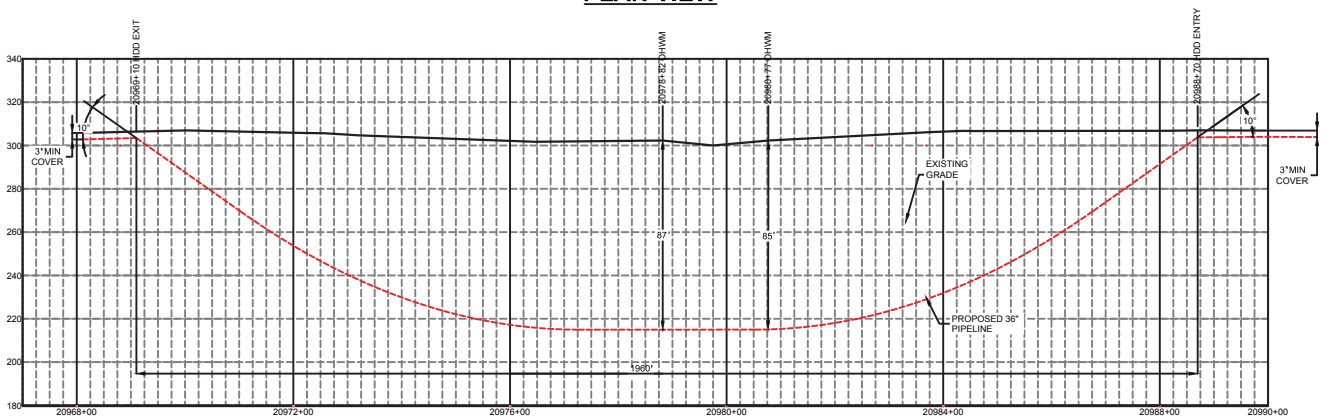
100 0 100 200 300 FEET

WASHINGTON EXPANSION PROJECT
LOOP 6 SNOHOMISH
PILCHUCK RIVER 1407.81 MP
SNOHOMISH COUNTY, WASHINGTON



PLAN VIEW



PROFILE VIEW

SITE SPECIFIC NOTES:

1. CROSSING TO BE INSTALLED UTILIZING THE HDD CROSSING METHOD (SITE SPECIFIC).
2. PULLBACK WILL NE COMPLETED IN TWO SECTIONS, WITH ONE WELD DURING THE PULLBACK

GENERAL NOTES:

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- Abandoned 26" Pipeline
- Existing 30" Pipeline
- Existing 36" Pipeline
- Road C/L
- Access Road
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- Section Line
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- OHWM — ORDINARY HIGH WATER MARK
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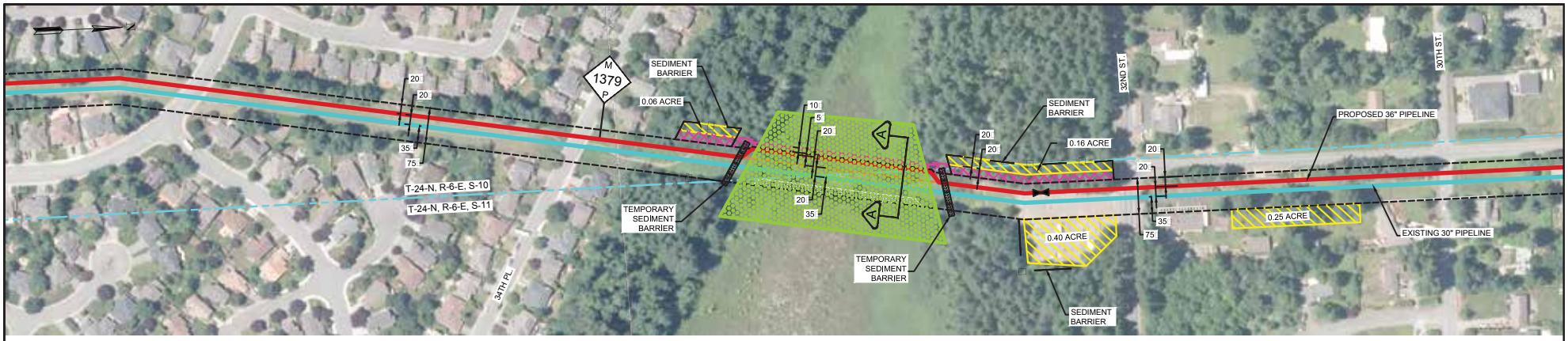
- Temporary Extra Work Area
- Temporary Construction ROW
- Perm Easement Not Used During Construction
- Wetland
- Temporary Sediment Barrier
- M 123 P — Milepost

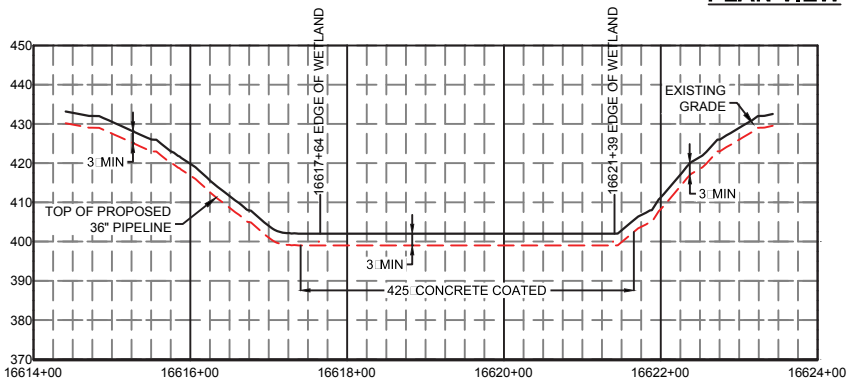
100 0 100 200 300 FEET

NOTE:
1) THE INFORMATION SHOWN ON THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY TO CONVEY INTENT FOR PERFORMING THE CROSSING.
2) UTILITY LOCATES AT THIS SITE HAVE NOT BEEN PERFORMED.
3) SURFACE CONTOURS WERE CREATED USING A COMBINATION OF SURVEY
4)THIS DRAWING IS NOT FOR CONSTRUCTION. THIS IS A PRELIMINARY PROFILE SHOWING THE GENERAL LOCATION AND MINIMUM DEPTH REQUIREMENTS OF THE CROSSING.

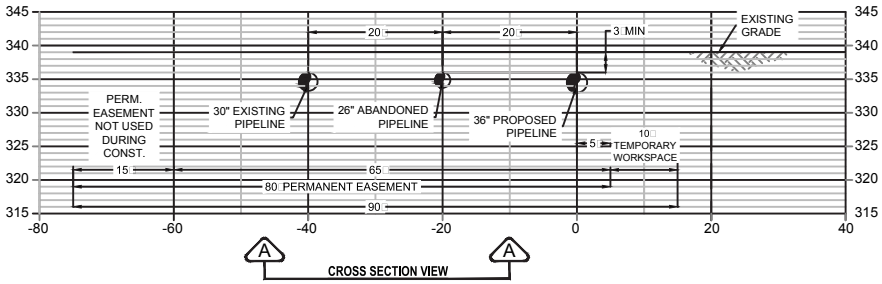
WASHINGTON EXPANSION PROJECT
LOOP 9 MT. VERNON NORTH-B
SOUTH FORK NOOKSACK RIVER HDD 1461.56 MP
WHATCOM COUNTY, WASHINGTON



PLAN VIEW



PROFILE VIEW



GENERAL NOTES:

1. THIS PIPELINE INSTALLED UNDER CODE: TILE 49, PART 192 CFR.
2. WETLAND CROSSING TO COMPLY WITH THE FERC WETLAND & WATERBODY CONSTRUCTION AND MITIGATION PROCEDURES, 2013.
3. THERE WILL BE LIMITED ACCESS, NO PARKING, NO REFUELING, NO VEHICLE MAINTENANCE, NO STORAGE WITHIN 100 FT. OF EACH WETLAND.
4. CONSTRUCTION OF THE PIPELINE AT IN THE WETLAND SHALL BE PERFORMED TO MINIMIZE ANY DAMAGE TO THE UPLAND, BOG AND ANY WILDLIFE HABITAT.
5. EROSION CONTROL DEVICES WILL BE INSTALLED, INSPECTED, AND MAINTAINED BY THE CONTRACTOR. SEDIMENT BARRIER SHALL BE MAINTAINED ACROSS THE PIPELINE ROW AT BOTH SIDES OF THE RIVER CROSSING. IN THE TRAVEL LANE, THESE MAY CONSIST OF REMOVABLE SEDIMENT BARRIERS OR DRIVABLE BERMS.
6. TOPSOIL, APPROACH SOIL AND INSTREAM SPOIL SHALL BE KEPT SEPARATE. AFTER INSTALLATION OF THE PIPE, THE SPOIL SHALL BE REPLACED TO ITS ORIGINAL LOCATION.
7. EXCEPT TO PROVIDE VEHICLE EQUIPMENT ACCESS, UPLAND AREA WILL BE GRADED JUST PRIOR TO CONSTRUCTION OF THE CROSSING. A 10-FT VEGETATED BUFFER STRIP, EXCEPT FOR VEHICLE CROSSING, ON BOTH SIDES OF THE CROSSING SHALL BE MAINTAINED AND ONLY CUT PRIOR TO CONSTRUCTION OF THE CROSSING.
8. PRIOR TO ACTUAL INSTALLATION, THE PIPE SHALL BE WELDED IN AN UPLAND AREA AND PULLED OR CARRIED FOR THE CROSSING.
9. CONTRACTOR SHALL MINIMIZE THE NUMBER OF TREES TO BE REMOVED. EXCLUSION BARRIER TO BE INSTALLED AROUND MARKED TREES TO REMAIN IN PLACE TO BE COORDINATED WITH ENVIRONMENTAL INSPECTOR.
10. STABILIZING VEGETATION REMOVAL SHALL BE KEPT TO A MINIMUM. CRUSHING OR SHEARING STREAMSIDE WOODY VEGETATION IS PREFERABLE TO COMPLETE REMOVAL. ANY VEGETATION THAT IS REMOVED SHALL BE REESTABLISHED IN A REASONABLE TIME FRAME AFTER CONSTRUCTION.
11. MOST EQUIPMENT WILL ONLY REQUIRE A ONE-TIME CROSSING, MULTIPLE CROSSINGS SHALL BE KEPT TO A REASONABLE MINIMUM.
12. IMMEDIATELY AFTER THE BACKFILLING OF PIPE, SEDIMENTATION CONTROL DEVICES (HAY BALES, SILT FENCE, ETC.) SHALL BE PLACED ACROSS THE ROW TO CONTROL SEDIMENT FROM THE ROW.

SITE SPECIFIC NOTES:

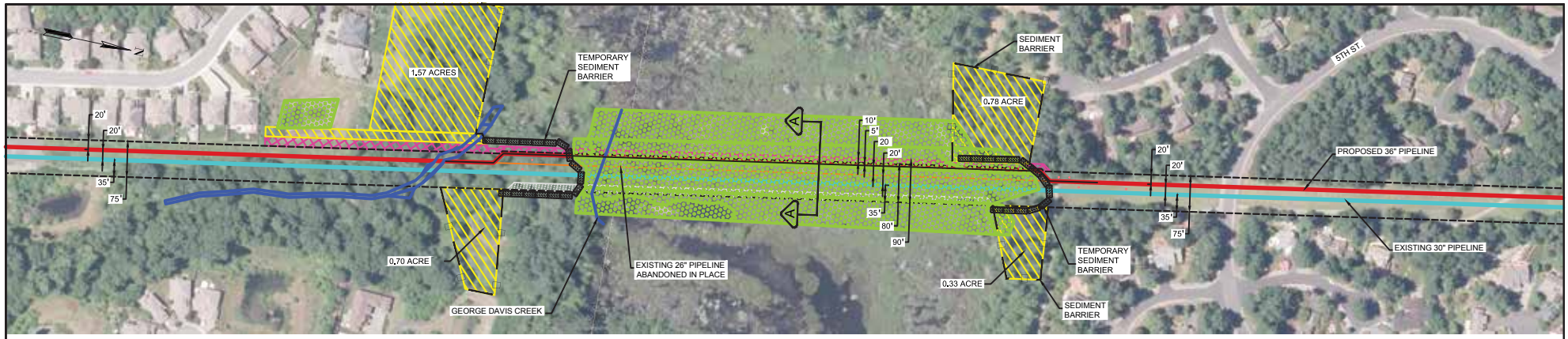
1. CROSSING TO BE INSTALLED UTILIZING A WET OPEN-CUT CROSSING METHOD.
2. LOW GROUND PRESSURE OR AMPHIBIOUS EQUIPMENT WILL BE UTILIZED WITHIN THE BOG TO MINIMIZE DISTURBANCE TO THE BOG.
3. EXCAVATED MATERIAL FROM THE BOG WILL BE STOCKPILED AS CLOSE TO THE EXCAVATED TRENCH AS PRACTICAL AND UTILIZED TO BACKFILL WITHOUT COMPACTION OVER THE INSTALLED PIPE.

NOTE:
1) THE INFORMATION SHOWN ON THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY TO CONVEY INTENT FOR PERFORMING THE CROSSING.
2) UTILITY LOCATES AT THIS SITE HAVE NOT BEEN PERFORMED.
3) SURFACE CONTOURS WERE CREATED USING A COMBINATION OF SURVEY DATA PROVIDED FROM WILLIAMS AND GOOGLE EARTH PRO.
4)THIS DRAWING IS NOT FOR CONSTRUCTION. THIS IS A PRELIMINARY PROFILE SHOWING THE GENERAL LOCATION AND MINIMUM DEPTH REQUIREMENTS OF THE CROSSING.
5) END POINTS OF PROFILE VIEWS ARE BASED ON KNOWN POINTS FROM THE ENVIRONMENTAL ALIGNMENT SHEETS.

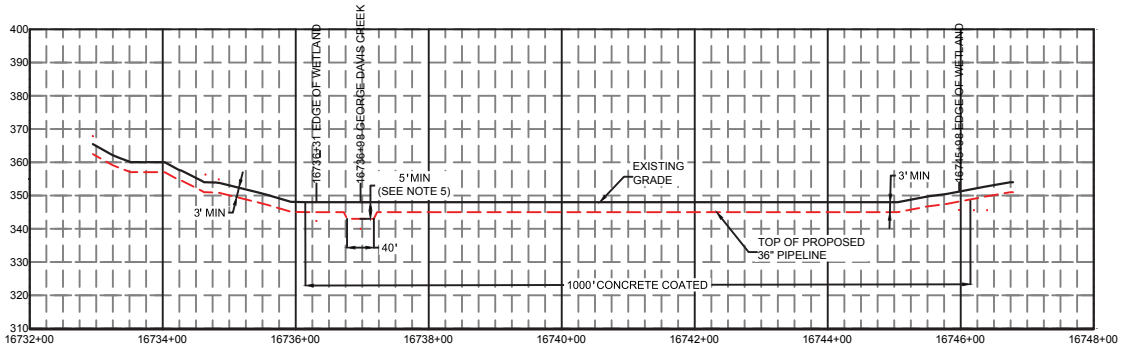
LEGEND
- Proposed 36" WEP Project
- Abandoned 26" Pipeline
- Existing 30" Pipeline
- Existing 36" Pipeline
- Road C/L
- Access Road
- Property Line
- Section Line
- Stream
- Sediment Barrier
- OHWM ORDINARY HIGH WATER MARK
- Approximate Permanent Easement
- Temporary Extra Work Area
- Temporary Construction ROW
- Perm Easement Not Used During Construction
- Wetland
- Temporary Sediment Barrier
- 123 Milepost

100 0 100 200 300 FEET

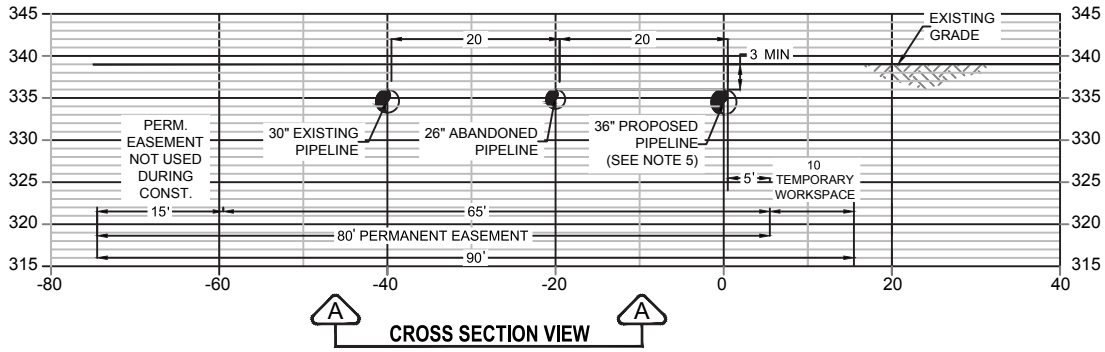
WASHINGTON EXPANSION PROJECT
LOOP 5 SUMNER NORTH B
QUEENS BOG 1379.07 MP
KING COUNTY, WASHINGTON



PLAN VIEW



PROFILE VIEW



CROSS SECTION VIEW

NOTE:
1) THE INFORMATION SHOWN ON THIS DRAWING IS FOR CONCEPTUAL PURPOSES ONLY TO CONVEY INTENT FOR PERFORMING THE CROSSING.
2) UTILITY LOCATES AT THIS SITE HAVE NOT BEEN PERFORMED.
3) SURFACE CONTOURS WERE PROVIDED BY PUBLIC LIDAR DATA.
4)THIS DRAWING IS NOT FOR CONSTRUCTION. THIS IS A PRELIMINARY PROFILE SHOWING THE GENERAL LOCATION AND MINIMUM DEPTH REQUIREMENTS OF THE CROSSING.
5) END POINTS ON PROFILE VIEWS ARE BASED ON KNOWN POINTS FROM THE ENVIRONMENTAL ALIGNMENT SHEETS.
6) MINIMUM BURIAL OF 36"PIPELINE IS 3', EXCEPT GOT 20' ON EACH SIDE OF THE GEORGE DAVIS CREEK WHERE THE MINIMUM BURIAL IS 5'.

LEGEND
- Proposed 36" WEP Project
- Abandoned 26" Pipeline
- Existing 30" Pipeline
- Existing 36" Pipeline
- Road C/L
- Access Road
- Property Line
- Section Line
- Stream
- Sediment Barrier
- OHWM ORDINARY HIGH WATER MARK
- Approximate Permanent Easement
- Temporary Extra Work Area
- Temporary Construction ROW
- Perm Easement Not Used During Construction
- Wetland
- Temporary Sediment Barrier
- 123 Milepost

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100 0 100 200 300 FEET

WASHINGTON EXPANSION PROJECT
LOOP 5 SUMNER NORTH B
BOG CROSSING 1381.30 MP
KING COUNTY, WASHINGTON

APPENDIX K5

FISH AND WATERBODY TABLES

Table K5-1

General Stream and Fish Attributes at the Waterbody Crossing Locations of the Washington Expansion Project

Waterbody Crossing Milepost	Stream ID	Stream Name	Flow Type[a]	Channel Width (feet)	WDNR Stream Type[b]	Priority Fish Use	ESA-Listed Species Use	ESA Critical Habitat	EFH at Crossing Site	In-water Work Window[c]
Woodland Loop										
1244.30	S1_LO1_054	Unnamed	E	2	F	Unknown	Unknown	Unknown	Unknown	Jul 16 - Sept 30
1245.25	S1_LO1_056	Unnamed	E	1	U	No	No	No	No	Jul 16 - Sept 30
1245.41	S3_LO1_048	Burris Creek	I	3	F	Yes	Yes	Yes	No	Aug 1 - Aug 31
1246.26	S3_LO1_049	Unnamed	I	3	N	No	No	No	No	Aug 1 - Aug 31
1246.91	S1_LO1_002	Unnamed	P	4	N	No	No	No	No	Jul 16 - Sept 30
1247.03	S1_LO1_003	Unnamed	P	4	N	No	No	No	No	Jul 16 - Sept 30
1247.22	S1_LO1_004	Canyon Creek	I	10	N	No	No	No	No	Aug 1 - Aug 31
1247.48	S1_LO1_005	Unnamed	P	4	N	No	No	No	No	Jul 16 - Sept 30
1247.69	S1_LO1_006	Unnamed	P	9	U	No	No	No	No	Jul 16 - Sept 30
1248.01	S1_LO1_007	Mill Creek	P	7	F	No	No	No	No	Jul 16 - Sept 30
1248.17	S1_LO1_008	Unnamed	P	12	N	No	No	No	No	Jul 16 - Sept 30
1248.26	S1_LO1_009	Unnamed	P	5	N	No	No	No	No	Jul 16 - Sept 30
1248.35	S1_LO1_011	Unnamed	P	3	N	No	No	No	No	Jul 16 - Sept 30
1249.52	S2_LO1_001	Unnamed	P	4	N	No	No	No	No	Jul 16 - Sept 30
1249.60	S2_LO1_002	Unnamed	I	2	N	No	No	No	No	Jul 16 - Sept 30
1249.64	S2_LO1_003	Unnamed	P	3	N	No	No	No	No	Jul 16 - Sept 30
1249.73	S2_LO1_004	Unnamed	P	3	N	No	No	No	No	Jul 16 - Sept 30
1250.10	S2_LO1_006	Unnamed	P	3	N	No	No	No	No	Jul 16 - Sept 30
1250.17	S2_LO1_007	Unnamed	P	3	N	No	No	No	No	Jul 16 - Sept 30
1250.44	S2_LO1_008	Unnamed	P	6	N	No	No	No	No	Jul 16 - Sept 30
1250.56	S2_LO1_009	Unnamed	P	3	N	No	No	No	No	Jul 16 - Sept 30
1250.82	S2_LO1_010	Unnamed	P	4	N	No	No	No	No	Jul 16 - Sept 30
1251.15	S3_LO1_007	Unnamed	P	4	N	No	No	No	No	Jul 16 - Sept 30
1251.41	S3_LO1_001	Cedar Creek	P	3	N	No	No	No	No	Aug 1- Aug 15
1251.42	S3_LO1_003	Cedar Creek	I	1	N	No	No	No	No	Aug 1- Aug 15
1251.92	S3_LO1_004	Unnamed	P	3	N	No	No	No	No	Aug 1- Aug 15
1252.73	S3_LO1_009	Unnamed	P	2	N	No	No	No	No	Aug 1- Aug 15
1253.39	S3_LO1_012	Kalama River	P	238	S	Yes	Yes	Yes	Yes	Aug 1- Aug 15
1254.08	S1_LO1_013	Unnamed	P	5	F	Unknown	Unknown	Unknown	Unknown	Aug 1- Aug 15
1254.13	S1_LO1_014	Unnamed	P	9	F	No	No	No	No	Aug 1- Aug 15
1254.28	S1_LO1_010	Unnamed	E	1	N	Unknown	Unknown	Unknown	Unknown	Aug 1- Aug 15

Table K5-1

General Stream and Fish Attributes at the Waterbody Crossing Locations of the Washington Expansion Project

Waterbody Crossing Milepost	Stream ID	Stream Name	Flow Type[a]	Channel Width (feet)	WDNR Stream Type[b]	Priority Fish Use	ESA-Listed Species Use	ESA Critical Habitat	EFH at Crossing Site	In-water Work Window[c]
1254.39	S1_LO1_015	Unnamed	P	4	N	No	No	No	No	Aug 1- Aug 15
1255.20	S2_LO1_016	Unnamed	I	2	N	No	No	No	No	Aug 1- Aug 15
1255.40	S2_LO1_015	Unnamed	P	3	N	No	No	No	No	Jul 16 - Sept 30
1255.53	S2_LO1_014	Unnamed	P	3	N	No	No	No	No	Jul 16 - Sept 30
1255.86	S2_LO1_011	Unnamed	P	2	F	No	No	No	No	Jul 16 - Sept 15
1256.24	S2_LO1_012	Unnamed	P	3	N	No	No	No	No	Jul 16 - Sept 15
1256.42	S2_LO1_013	Unnamed	P	2	N	No	No	No	No	Jul 16 - Sept 15
1257.08	S1_LO1_019	Owl Creek	P	15	F	No	No	No	No	Jul 16 - Sept 15
1257.28	S1_LO1_020	Unnamed	E	9	F	Unknown	Unknown	Unknown	Unknown	Jul 16 - Sept 15
1257.64	S1_LO1_022	Unnamed	P	8	F	No	No	No	No	Jul 16 - Sept 15
1257.66	S1_LO1_023	Unnamed	I	13	F	Unknown	Unknown	Unknown	Unknown	Jul 16 - Sept 15
1257.85	S2_LO1_018	Unnamed	E	2	F	Unknown	Unknown	Unknown	Unknown	Jul 16 - Sept 15
1257.90	S2_LO1_019	Unnamed	I	2	U	No	No	No	No	Jul 16 - Sept 15
1258.00	S2_LO1_020	Unnamed	E	2	N	No	No	No	No	Jul 16 - Sept 15
1258.59	S1_LO1_024	Unnamed	P	4	N	No	No	No	No	Jul 16 - Sept 15
1259.27	S3_LO1_016	Unnamed	P	2	N	No	No	No	No	Jul 16 - Sept 15
1259.47	S3_LO1_017	Unnamed	P	2	N	No	No	No	No	Jul 16 - Sept 15
1259.64	S3_LO1_018	Unnamed	P	1	N	No	No	No	No	Jul 16 - Sept 30
1259.92	S3_LO1_019	Unnamed	P	3	N	No	No	No	No	Jul 16 - Sept 30
1260.24	S3_LO1_020	Unnamed	I	1	N	No	No	No	No	Jul 16 - Sept 30
1260.49	S2_LO1_022	Coweeman River	P	80	S	Yes	Yes	Yes	Yes	Jul 16 - Sept 30
1260.77	S2_LO1_023	Unnamed	P	3	F	Yes	Yes	No	Yes	Aug 1 - Aug 31
1260.83	S2_LO1_024	Unnamed	P	4	F	Unknown	Unknown	Unknown	Unknown	Aug 1 - Aug 31
1261.27	S3_LO1_025	Unnamed	I	8	F	No	No	No	No	Aug 1 - Aug 31
1261.33	S3_LO1_024	Unnamed	P	2	N	No	No	No	No	Aug 1 - Aug 31
1261.71	S3_LO1_021	Unnamed	E	4	N	No	No	No	No	Aug 1 - Aug 31
1261.98	S3_LO1_023	Unnamed	P	6	N	No	No	No	No	Aug 1 - Aug 31
1262.66	S1_LO1_025	Unnamed	P	2	N	No	No	No	No	Aug 1 - Aug 31
1262.94	S1_LO1_029	Unnamed	P	7	U	No	No	No	No	Jul 16 - Sept 30
1263.17	S1_LO1_031	Unnamed	P	2	F	Unknown	Unknown	Unknown	Unknown	Jul 16 - Sept 30
1263.49	S1_LO1_038	Unnamed	P	7	F	No	No	No	No	Jul 16 - Sept 30
1263.53	S1_LO1_039	Unnamed	E	1	U	Unknown	Unknown	Unknown	Unknown	Jul 16 - Sept 30

Table K5-1

General Stream and Fish Attributes at the Waterbody Crossing Locations of the Washington Expansion Project

Waterbody Crossing Milepost	Stream ID	Stream Name	Flow Type[a]	Channel Width (feet)	WDNR Stream Type[b]	Priority Fish Use	ESA-Listed Species Use	ESA Critical Habitat	EFH at Crossing Site	In-water Work Window[c]
1263.77	S1_LO1_040	Unnamed	P	11	N	No	No	No	No	Jul 16 - Sept 30
1263.81	S1_LO1_042	Unnamed	P	4	N	No	No	No	No	Jul 16 - Sept 30
1264.13	S2_LO1_025	Unnamed	E	2	N	No	No	No	No	Jul 16 - Sept 30
1264.91	S2_LO1_021	South Fork Ostrander Creek	P	20	S	Yes	Yes	Yes	Yes	Jul 16 - Sept 30
1265.12	SP_L01_001	Unnamed	I	2	N	Unknown	Unknown	Unknown	Unknown	Jul 16 - Sept 30
1265.25	S1_LO1_057	Ostrander Creek	P	40	S	Yes	Yes	Yes	Yes	Jul 16 - Sept 30
1265.93	S1_LO1_058	Unnamed	I	6	N	No	No	No	No	Jul 16 - Sept 30
1266.50	S1_LO1_045	Unnamed	P	1	N	No	No	No	No	Jul 16 - Sept 30
1266.75	S2_LO1_048	Unnamed	I	2	N	No	No	No	No	Jul 16 - Sept 30
1267.04	S2_LO1_051	Unnamed	E	1	N	No	No	No	No	Jul 16 - Sept 30
1267.37	S2_LO1_054	Unnamed	P	4	F	No	No	No	No	Jul 16 - Sept 30
1267.63	S3_LO1_026	Unnamed	P	3	F	No	No	No	No	Jul 16 - Sept 30
1267.91	S3_LO1_027	Unnamed	I	1	N	No	No	No	No	Jul 16 - Sept 30
1267.97	S3_LO1_028	Unnamed	I	3	N	No	No	No	No	Jul 16 - Sept 30
1268.35	S3_LO1_029	Unnamed	I	3	F	No	No	No	No	Jul 16 - Sept 30
1268.56 and 1268.63	S3_LO1_030	Unnamed	P	4	F	Unknown	Unknown	Unknown	Unknown	Jul 16 - Sept 30
1269.36	S1_LO1_032	Coal Mine Creek	P	20	F	No	No	No	No	Jul 16 - Sept 30
1269.83	S1_LO1_034	Unnamed	E	1	N	No	No	No	No	Jul 16 - Sept 30
1269.89	S1_LO1_035	Unnamed	E	1	F	Unknown	Unknown	Unknown	Unknown	Jul 16 - Sept 30
1270.66	S2_LO1_027	Unnamed	I	3	N	No	No	No	No	Jul 16 - Sept 30
1270.87	S2_LO1_028	Unnamed	I	2	N	No	No	No	No	Jul 16 - Sept 30
1271.10	S2_LO1_029	Unnamed	I	3	F	Unknown	Unknown	Unknown	Unknown	Jul 16 - Sept 30
1271.41	S3_LO1_035	Unnamed	P	3	F	Unknown	Unknown	Unknown	Unknown	Jul 16 - Sept 30
1271.89	S3_LO1_036	Unnamed	P	2	F	Unknown	Unknown	Unknown	Unknown	Jul 16 - Sept 30
1272.12	S3_LO1_038	Unnamed	P	4	N	No	No	No	No	Jul 16 - Sept 30
1272.23	S3_LO1_039	Salmon Creek	P	4	F	No	No	No	No	Jul 16 - Sept 30
1272.42	S3_LO1_040	Unnamed	P	2	N	No	No	No	No	Jul 16 - Sept 30
1273.11	S2_LO1_033	Unnamed	P	3	N	No	No	No	No	Jul 16 - Sept 30
1273.13	S2_LO1_032	Unnamed	P	3	N	No	No	No	No	Jul 16 - Aug 15
1273.58	S3_L01_014	Unnamed	P	2	U	No	No	No	No	Jul 16 - Aug 15
1274.42	S3_LO1_013	Toutle River	P	275	S	Yes	Yes	Yes	No	Jul 16 - Aug 15

Table K5-1

General Stream and Fish Attributes at the Waterbody Crossing Locations of the Washington Expansion Project

Waterbody Crossing Milepost	Stream ID	Stream Name	Flow Type[a]	Channel Width (feet)	WDNR Stream Type[b]	Priority Fish Use	ESA-Listed Species Use	ESA Critical Habitat	EFH at Crossing Site	In-water Work Window[c]
1275.69	S3_LO1_041	Unnamed	I	4	F	Yes	Yes	Proposed	Yes	July 16 – Aug 15
1275.88	S4_LO1_003	Unnamed	I	3	N	No	No	No	No	Jul 16 – Aug 150
1276.08 and 1276.18	S4_LO1_002	Unnamed	E	2	N	No	No	No	No	Jul 16 - Aug 15
1277.77	S1_LO1_062	Unnamed	P	7	F	No	No	No	No	Jul 16 - Sept 30
1277.81	S1_LO1_061	Unnamed	P	15	F	No	No	No	No	Jul 16 - Sept 30
1278.12	S1_LO1_060	Unnamed	I	5	N	No	No	No	No	Jul 16 - Sept 30
1278.82	S2_LO1_055	Unnamed	P	11	F	Unknown	Unknown	Unknown	Unknown	Jul 16 - Sept 30
1279.17	S2_LO1_056	Hill Creek	P	10	F	No	No	No	No	Jul 16 - Sept 30
1279.33	S4_LO1_004	Unnamed	E	6	F	Unknown	Unknown	Unknown	Unknown	Jul 16 - Sept 30
1279.72	S4_LO1_005	Unnamed	I	2	F	No	No	No	No	Aug 1 - Aug 15
1280.07 and 1280.24	S4_LO1_006	Unnamed	I	4	N	No	No	No	No	Aug 1 - Aug 15
1280.28	S4_LO1_007	Unnamed	I	6	N	No	No	No	No	Aug 1 - Aug 15
1280.32	S4_LO1_008	Roadside Ditch	E	4	N	No	No	No	No	Aug 1 - Aug 15
1280.82	S1_LO1_046	Foster Creek	P	30	F	No	No	No	No	Aug 1 - Aug 15
1281.52	S2_LO1_034	Unnamed	P	4	F	Yes	Yes	Yes	No	Aug 1 - Aug 15
1281.69	S2_LO1_035	Unnamed	E	1	U	No	No	No	No	Aug 1 - Aug 15
1282.51	S2_LO1_036	Cowlitz River	P	280	S	Yes	Yes	Yes	No	Aug 1 - Aug 15
1282.65	S3_LO1_047	Unnamed	P	4	F	Unknown	Unknown	Unknown	Unknown	Aug 1 - Aug 15
1283.37	S3_LO1_043	Unnamed	P	2	N	No	No	No	No	Aug 1 - Aug 15
1283.74	S1_LO1_047	Unnamed	E	1	F	Yes	Yes	Yes	Yes	Aug 1 - Aug 15
1284.56	S1_LO1_048	Unnamed	P	20	F	Yes	Yes	Yes	Yes	Aug 1 - Aug 15
1284.78	S1_LO1_049	Unnamed	E	1	N	No	No	No	No	Aug 1 - Aug 15
1284.92	S1_LO1_050	Unnamed	I	12	F	Unknown	Unknown	Unknown	Unknown	Aug 1 - Aug 15
1285.35	S2_LO1_038	Lacamas Creek	P	7	S	Yes	Yes	Yes	Yes	Aug 1 - Aug 15
1285.43	S2_LO1_039	Unnamed	E	1	X	No	No	No	No	Aug 1 - Aug 15
1286.17	S2_LO1_037	Unnamed	P	3	N	No	No	No	No	Aug 1 - Aug 15
1286.77	S3_LO1_046	Unnamed	P	3	X	Unknown	Unknown	Unknown	Unknown	Aug 1 - Aug 15
1287.51	S1_LO1_051	Unnamed	I	2	N	No	No	No	No	Aug 1 - Aug 15
1287.90	S1_LO1_052	Unnamed	I	9	N	No	No	No	No	Aug 1 - Aug 15
1288.11	S2_LO1_040	Unnamed	I	6	U	No	No	No	No	Aug 1 - Aug 15
1288.14	S2_LO1_041	Unnamed	E	1	U	Unknown	Unknown	Unknown	Unknown	Aug 1 - Aug 15
1288.52	S2_LO1_044	Unnamed	P	10	N	No	No	No	No	Aug 1 - Aug 15

Table K5-1

General Stream and Fish Attributes at the Waterbody Crossing Locations of the Washington Expansion Project

Waterbody Crossing Milepost	Stream ID	Stream Name	Flow Type[a]	Channel Width (feet)	WDNR Stream Type[b]	Priority Fish Use	ESA-Listed Species Use	ESA Critical Habitat	EFH at Crossing Site	In-water Work Window[c]
1288.56	S2_LO1_043	Unnamed	P	12	F	Yes	Yes	Yes	Yes	Aug 1 - Aug 15
1288.90	S2_LO1_045	Unnamed	I	1	F	Yes	Yes	Yes	Yes	Aug 1 - Aug 15
1289.32	S2_LO1_046	Olequa Creek	P	10	F	No	No	No	No	Aug 1 - Aug 15
Chehalis Loop										
1291.42	1291.5	Unnamed	I	2	N	Unknown	Unknown	Unknown	Unknown	Aug 1 - Aug 31
1292.65	1292.4	Unnamed	I	4	N	Unknown	Unknown	Unknown	Unknown	Aug 1 - Aug 31
1293.20 and 1293.26	1293.1	Unnamed	I	4	N	Unknown	Unknown	Unknown	Unknown	Aug 1 - Aug 31
1294.13	1294.2	Newaukum River	P	126	S	Yes	No	No	Yes	Aug 1 - Aug 31
1295.08	1295.1	Unnamed	I	2	N	Unknown	Unknown	Unknown	Unknown	Aug 1 - Aug 31
1295.44	1295.4	Unnamed	P	2	N	Unknown	Unknown	Unknown	Unknown	Aug 1 - Aug 31
1296.14	1296.1	Unnamed	P	1	N	Unknown	Unknown	Unknown	Unknown	Aug 1 - Aug 31
1296.50	1296.45	Unnamed	P	2	N	Unknown	Unknown	Unknown	Unknown	Aug 1 - Aug 31
1296.66	1296.6	Unnamed	P	5	F	Unknown	Unknown	Unknown	Unknown	Aug 1 - Aug 31
1296.78	1296.9	Berwick Creek	P	6	F	Yes	No	No	Yes	Aug 1 - Aug 31
1297.41	1297.6	Dillenbaugh Creek	P	8	F	Yes	No	No	No	Aug 1 - Aug 15
1297.97	1298	Unnamed	P	4	N	Unknown	Unknown	Unknown	Unknown	Aug 1 - Aug 15
1299.03	1299	Salzer Creek	P	7	F	Yes	No	No	Yes	Aug 1 - Aug 15
1299.93	1299.95	Unnamed	P	2	N	Unknown	Unknown	Unknown	Unknown	Aug 1 - Aug 15
1300.05	1300.2	Unnamed	P	6	F	Yes	No	No	Yes	Aug 1 - Aug 15
1300.78	1300.9	Unnamed	P	4	F	No	No	No	No	Aug 1 - Aug 15
1301.68	1301.6	South Hanaford Creek	P	6	F	Yes	No	No	Yes	Aug 1 - Aug 15
1303.23	S2_LO2_002	Unnamed	I	2	F	Yes	No	No	No	Aug 1 - Aug 31
1303.50	S2_LO2_001	Unnamed	I	2	N	No	No	No	No	Aug 1 - Aug 31
1304.26	S3_LO2_001	Unnamed	I	5	F	No	No	No	No	Aug 1 - Aug 31
1305.14	S3_LO2_004	Unnamed	P	5	U	Unknown	Unknown	Unknown	Unknown	Aug 1 - Aug 31
1305.28	S3_LO2_005	Packwood Creek	P	4	F	Yes	No	No	No	Aug 1 - Aug 31
1306.25	S3_LO2_006	Hanaford Creek	P	5	F	Yes	No	No	Yes	Aug 1 - Aug 31
1306.55	S3_LO2_007	Snyder Creek	P	4	F	Yes	No	No	Yes	Aug 1 - Aug 31
1307.66	S4_LO2_002	Unnamed	E	2	N	No	No	No	No	Aug 1 - Aug 31
1307.69	S4_LO2_001	North Hanaford Creek	E	2	N	No	No	No	No	Aug 1 - Aug 31
1307.94	S1_LO2_100	Unnamed	P	12	N	No	No	No	No	Aug 1 - Aug 31
1308.33	S1_LO2_101	Unnamed	P	3	N	No	No	No	No	Aug 1 - Aug 31

Table K5-1

General Stream and Fish Attributes at the Waterbody Crossing Locations of the Washington Expansion Project

Waterbody Crossing Milepost	Stream ID	Stream Name	Flow Type[a]	Channel Width (feet)	WDNR Stream Type[b]	Priority Fish Use	ESA-Listed Species Use	ESA Critical Habitat	EFH at Crossing Site	In-water Work Window[c]
1308.97	S1_LO2_103	Thompson Creek	P	20	F	Yes	No	No	Yes	Aug 1 - Aug 31
1309.36	S2_LO2_004	Skookumchuck River	P	90	S	Yes	No	No	Yes	Aug 1 - Aug 31
1310.72	S4_LO2_003	Unnamed	I	2	N	No	No	No	No	Aug 1 - Aug 31
1310.79	S4_LO2_004	Unnamed	I	2	N	No	No	No	No	Aug 1 - Aug 31
1311.07	S4_LO2_005	Unnamed	E	2	N	No	No	No	No	Aug 1 - Aug 31
1311.19	S4_LO2_006	Unnamed	E	2	U	No	No	No	No	Aug 1 - Aug 31
1311.23	S4_LO2_007	Unnamed	E	2	N	No	No	No	No	Aug 1 - Aug 31
1311.41	S4_LO2_008	Unnamed	I	4	N	No	No	No	No	Aug 1 - Aug 31
1311.43	S4_LO2_009	Unnamed	I	2	N	No	No	No	No	Aug 1 - Aug 31
1311.65	S2_LO2_008	Unnamed	P	4	N	No	No	No	No	Aug 1 - Aug 31
1312.14	S2_LO2_007	Unnamed	P	5	N	No	No	No	No	Aug 1 - Aug 31
1312.60	S2_LO2_005	Unnamed	I	2	N	No	No	No	No	Aug 1 - Aug 31
1313.05	S1_LO2_104	Unnamed	P	8	F	Yes	No	No	Yes	Aug 1 - Aug 31
1313.35	S2_LO2_010	Unnamed	E	1	N	No	No	No	No	Aug 1 - Aug 31
1313.80	S2_LO2_009	Unnamed	E	1	U	Unknown	Unknown	Unknown	Unknown	Aug 1 - Aug 31
1314.86	S4_LO2_010	Unnamed	I	1	N	No	No	No	No	Jul 16 - Aug 31
1314.96	S4_LO2_011	Unnamed	I	2	U	Unknown	Unknown	Unknown	Unknown	Jul 16 - Aug 31
1315.10	SP_LO2_001	Deschutes River	P	78	S	Yes	Yes	Yes	Yes	Jul 16 - Aug 31
Sumner South Loop										
1339.33	S1_LO3_002	Unnamed	I	10	N	No	No	No	No	July 16 - Sept 30
1339.74 and 1339.79	FL-3	Tributary to Clover Creek	I	1	N	No	No	No	No	July 16 - Sept 30
1342.22	S1_LO3_003	Unnamed	E	1	N	No	No	No	No	July 16 - Sept 30
1342.62	S1_LO3_004	Unnamed	E	3	N	No	No	No	No	July 16 - Sept 30
1346.10	S2_LO3_002	Unnamed	I	2	N	No	No	No	No	Jul 16 - Aug 31
1346.82	S3_LO3_004	Unnamed	P	2	U	Unknown	Unknown	Unknown	Unknown	Jul 16 - Aug 31
1346.97	S3_LO3_003	Unnamed	P	2	N	No	No	No	No	Jul 16 - Aug 31
1347.92	S3_LO3_002	Unnamed	P	3	F	Unknown	Unknown	Unknown	Unknown	Jul 16 - Aug 31
1347.98	S3_LO3_001	Puyallup River	P	191	S	Yes	Yes	Yes	Yes	Jul 16 - Aug 31
1349.23 and 1349.27	S4_LO3_101	Unnamed Agricultural Ditch	I	19	N	Unknown	Unknown	Unknown	Unknown	Jul 16 - Aug 31
1349.31	S4_LO3_102	Roadside Ditch	I	2	N	Unknown	Unknown	Unknown	Unknown	Jul 16 - Aug 31

Table K5-1

General Stream and Fish Attributes at the Waterbody Crossing Locations of the Washington Expansion Project

Waterbody Crossing Milepost	Stream ID	Stream Name	Flow Type[a]	Channel Width (feet)	WDNR Stream Type[b]	Priority Fish Use	ESA-Listed Species Use	ESA Critical Habitat	EFH at Crossing Site	In-water Work Window[c]
1349.99	S1_LO3_005	Salmon Creek	P	12	F	Yes	No	No	Yes	Jul 16 - Aug 15
1350.05	S1_LO3_006	Unnamed	P	3	F	Unknown	Unknown	Unknown	Unknown	Jul 16 - Aug 15
Sumner North A Loop										
1357.14	S1_LO4_001	Unnamed	P	20	F	Yes	No	No	Yes	Jul 16 - Sept 30
1357.17	S1_LO4_002	Unnamed	P	6	F	Unknown	Unknown	Unknown	Unknown	Jul 16 - Sept 30
1357.31	S1_LO4_003	Unnamed	P	8	F	Unknown	Unknown	Unknown	Unknown	Jul 16 - Sept 30
1359.62	S3_LO4_001	Covington Creek	P	25	S	Yes	Yes	Yes	Yes	Jul 16 - Sept 30
1360.98	S4_LO4_001	Unnamed	P	14	F	Unknown	Unknown	Unknown	Unknown	Jul 16 - Sept 30
1361.48	S4_LO4_002	Unnamed	I	4	F	Yes	No	No	Yes	Jul 16 - Sept 30
1362.66	S1_LO4_004	Cranmar Creek	P	14	F	Yes	No	No	Yes	Jul 16 - Sept 30
Sumner North A Loop										
1371.05	S1_LO5_001	Issaquah Creek	P	30	S	Yes	Yes	Yes	Yes	Aug 1 - Aug 31
1371.51	S3_LO5_003	Unnamed	P	3	F	Yes	No	No	No	Aug 1 - Aug 31
1371.73	S1_LO5_005	Unnamed	P	12	N	Yes	No	No	Yes	Aug 1 - Aug 31
1371.96	S2_LO5_006	Fifteenmile Creek	P	21	F	Yes	Yes	Yes	Yes	Aug 1 - Aug 31
1372.35	S2_LO5_005	Unnamed	P	5	F	Unknown	Unknown	Unknown	Unknown	Aug 1 - Aug 31
1372.60	S2_LO5_002	Unnamed	P	6	F	No	No	No	No	Aug 1 - Aug 31
1372.69	S2_LO5_001	Unnamed	P	4	U	Unknown	Unknown	Unknown	Unknown	Aug 1 - Aug 31
1373.66	S4_LO5_002	Unnamed	P	10	F	Yes	No	No	Yes	Aug 1 - Aug 31
1374.25	S2_LO5_010	Unnamed	P	5	F	Yes	No	No	Yes	Aug 1 - Aug 31
1374.57	S2_LO5_009	Unnamed	E	1	N	No	No	No	No	Aug 1 - Aug 31
1374.92	S2_LO5_007	Unnamed	E	1	N	No	No	No	No	Aug 1 - Aug 31
1375.88	S3_LO5_007	Unnamed	P	3	N	No	No	No	No	Aug 1 - Aug 31
1376.12	S2_LO5_004	East Fork Issaquah Creek	P	16	F	Yes	Yes	Yes	Yes	Aug 1 - Aug 31
1376.21	S2_LO5_003	Unnamed	I	6	N	No	No	No	No	Aug 1 - Aug 31
1377.34	S3_LO5_004	North Fork Issaquah Creek	P	4	F	Yes	No	No	No	Aug 1 - Aug 31
1378.08	S3_LO5_005	Unnamed	P	3	N	No	No	No	No	Jul 16 - Sept 30
1379.62	S1_LO5_002	Unnamed	I	20	F	Yes	No	No	No	Jul 16 - Sept 30
1381.25	SN-45	Tributary to Lake Sammamish	I	2	N	No	No	No	No	Jul 16 - Sept 30
1381.31	SP_LO5_001	George Davis Creek	P	3	F	No	No	No	No	Jul 16 - Sept 30

Table K5-1

General Stream and Fish Attributes at the Waterbody Crossing Locations of the Washington Expansion Project

Waterbody Crossing Milepost	Stream ID	Stream Name	Flow Type[a]	Channel Width (feet)	WDNR Stream Type[b]	Priority Fish Use	ESA-Listed Species Use	ESA Critical Habitat	EFH at Crossing Site	In-water Work Window[c]
Snohomish Loop										
1395.98	S4_LO6_002	Unnamed	E	2	N	No	No	No	No	Aug 1 - Aug 15
1396.59	S4_LO6_005	Unnamed	E	1	N	No	No	No	No	Aug 1 - Aug 15
1396.71	S4_LO6_003	Elliott Creek	P	10	F	No	No	No	No	Aug 1 - Aug 15
1397.36 and 1397.52	S4_LO6_101	Unnamed	P	5	F	Unknown	Unknown	Unknown	Unknown	Aug 1 - Aug 15
1397.56	S4_LO6_004	Snohomish River	P	900	S	Yes	Yes	Yes	Yes	Aug 1 - Aug 15
1398.19	S1_LO6_002	Unnamed	I	4	N	No	No	No	No	Aug 1 - Aug 15
1398.62	S1_LO6_003	Unnamed	P	8	N	No	No	No	No	Aug 1 - Aug 15
1399.44	S1_LO6_004	Unnamed	P	3	N	No	No	No	No	Aug 1 - Aug 15
1399.67	S1_LO6_005	Unnamed	P	12	F	No	No	No	No	Aug 1 - Aug 15
1400.46	S2_LO6_001	Unnamed	P	11	N	Yes	No	No	Yes	Aug 1 - Aug 15
1401.53	S2_LO6_002	Unnamed	P	8	F	Yes	No	No	Yes	Aug 1 - Aug 15
1402.42	S3_LO6_001	French Creek	P	10	F	Yes	Yes	Yes	Yes	Aug 1 - Aug 15
1404.64	S1_LO6_008	Unnamed	I	4	F	Yes	No	No	Yes	Aug 1 - Aug 31
1405.39	S1_LO6_007	Unnamed	P	6	F	Unknown	Unknown	Unknown	Unknown	Aug 1 - Aug 31
1407.81	S3_LO6_002	Pilchuck River	P	82	S	Yes	Yes	Yes	Yes	Aug 1 - Aug 31
Mt. Vernon South Loop										
1439.07	MV-25	Tributary to Walker Creek	P	6	F	Yes	No	No	Yes	Project specific
Mt. Vernon North A Loop										
1440.25 and 1440.27	S4_LO8_008	Unnamed	I	4	S	Unknown	Unknown	Unknown	Unknown	Project specific
1440.42	S4_LO8_007	East Fork Nookachamps Creek	P	50	S	Yes	Yes	Yes	Yes	Project specific
1441.21	S4_LO8_005	Unnamed	I	4	F	Unknown	Unknown	Unknown	Unknown	Project specific
1441.28	S4_LO8_004	Unnamed	I	4	F	Unknown	Unknown	Unknown	Unknown	Project specific
1441.44	S4_LO8_003	Turner Creek	P	9	F	Yes	No	No	Yes	Project specific
1442.10	S2_LO8_004	Unnamed	I	3	N	No	No	No	No	Project specific
1442.68	S2_LO8_003	Unnamed	P	10	F	Yes	No	No	No	Project specific
1444.26	S4_LO8_002	Unnamed	I	5	F	No	No	No	No	Project specific
Mt. Vernon North B Loop										
1453.67	S1_LO9_001	Unnamed	P	4	F	Unknown	Unknown	Unknown	Unknown	Aug 1 - Sept 15
1453.76	S1_LO9_002	Unnamed	P	12	F	No	No	No	No	Aug 1 - Sept 15

Table K5-1

General Stream and Fish Attributes at the Waterbody Crossing Locations of the Washington Expansion Project

Waterbody Crossing Milepost	Stream ID	Stream Name	Flow Type[a]	Channel Width (feet)	WDNR Stream Type[b]	Priority Fish Use	ESA-Listed Species Use	ESA Critical Habitat	EFH at Crossing Site	In-water Work Window[c]
1454.18	S1_LO9_003	Mills Creek	P	20	F	Yes	No	No	Yes	Aug 1 - Sept 15
1454.40	S1_LO9_004	Unnamed	P	15	N	No	No	No	No	Aug 1 - Sept 15
1454.51	S1_LO9_006	Unnamed	P	3	N	No	No	No	No	Aug 1 - Sept 15
1454.57	S1_LO9_007	Unnamed	I	5	F	Unknown	Unknown	Unknown	Unknown	Aug 1 - Sept 15
1454.61	S1_LO9_008	Unnamed	P	3	F	Unknown	Unknown	Unknown	Unknown	Aug 1 - Sept 15
1454.81	S2_LO9_010	Unnamed	E	2	N	No	No	No	No	Aug 1 - Sept 15
1454.90	S2_LO9_009	Unnamed	I	4	F	Unknown	Unknown	Unknown	Unknown	Aug 1 - Sept 15
1454.91	S2_LO9_008	Unnamed	I	12	F	Unknown	Unknown	Unknown	Unknown	Aug 1 - Sept 15
1455.22	S2_LO9_007	Unnamed	I	2	N	No	No	No	No	Aug 1 - Sept 15
1455.42	S2_LO9_006	Unnamed	I	2	F	Yes	No	No	Yes	Aug 1 - Sept 15
1455.54	S2_LO9_005	Unnamed	I	3	N	No	No	No	No	Aug 1 - Sept 15
1455.63	S2_LO9_004	Unnamed	I	6	N	No	No	No	No	Aug 1 - Sept 15
1455.71	S2_LO9_003	Unnamed	I	3	N	Yes	No	No	No	Aug 1 - Sept 15
1455.87	S2_LO9_002	Unnamed	I	8	F	No	No	No	No	Aug 1 - Sept 15
1456.03	S2_LO9_001	Unnamed	I	11	N	No	No	No	No	Aug 1 - Sept 15
1456.62	S3_LO9_002	Unnamed	I	2	F	Yes	No	No	Yes	Aug 1 - Sept 15
1457.40	S3_LO9_003	Little Innis Creek	P	10	F	Yes	Yes	No	Yes	Aug 1 - Sept 15
1457.70	S4_LO9_002	Unnamed	E	1	N	No	No	No	No	Aug 1 - Sept 15
1457.88	S4_LO9_001	Unnamed	E	4	N	No	No	No	No	Aug 1 - Sept 15
1458.87	S4_LO9_003	Unnamed	E	6	N	No	No	No	No	Aug 1 - Sept 15
1460.01	S2_LO9_011	Samish River	P	10	F	Yes	No	No	Yes	Jul 16 - Aug 15
1460.42	S2_LO9_012	Unnamed	I	4	F	Unknown	Unknown	Unknown	Unknown	Jul 16 - Aug 15
1461.32	SP_LO9_001	Landing Strip Creek	P	6	F	Yes	Yes	No	Yes	Jul 16 - Aug 15
1461.56	S4_LO9_101	South Fork Nooksack River	P	170	S	Yes	Yes	Yes	Yes	Jul 16 - Aug 15
Sumas Loop										
1478.87	S-22	Breckenridge Creek	P	30	S	Yes	Yes	Yes	Yes	Jul 16 - Aug 15
1479.05	S-21	Kinney Creek	P	8	F	Yes	Yes	Proposed	Yes	Jul 16 - Aug 15
1479.99	S-16	Unnamed	I	2	N	No	No	No	No	Jul 16 - Aug 15
1481.02	S-9	Unnamed	P	3	N	No	No	No	No	Jul 16 - Aug 15
1481.40	S-7	Unnamed	P	4	N	Unknown	Unknown	Unknown	Unknown	Jul 16 - Aug 15
1482.80	S-4B	Saar Creek	P	12	S	Yes	Yes	Yes	Yes	Aug 1 - Sept 30

Table K5-1

General Stream and Fish Attributes at the Waterbody Crossing Locations of the Washington Expansion Project

Waterbody Crossing Milepost	Stream ID	Stream Name	Flow Type[a]	Channel Width (feet)	WDNR Stream Type[b]	Priority Fish Use	ESA-Listed Species Use	ESA Critical Habitat	EFH at Crossing Site	In-water Work Window[c]
1483.08	S-4A	Saar Creek	P	12	S	Yes	Yes	Yes	Yes	Aug 1 - Sept 30

Data Sources:

Stream type definitions can be accessed at: http://www.dnr.wa.gov/businesspermits/topics/forestpracticesapplications/pages/fp_watertyping.aspx.

[a] Flow type: P = Perennial, I = Intermittent, E = Ephemeral.

[b] WDNR Stream Type (Forest Practices Water Typing)

Type "F" = Fish. Streams and waterbodies that are known to be used by fish, or that meet the physical criteria to be potentially used by fish. Fish streams may or may not have flowing water all year; they may be perennial or seasonal.

Type "N" includes either of the following two types of streams, which could not be determined definitively in the field:

Type "NP" = Non-fish perennial. Streams that have flow year round and may have spatially intermittent dry reaches downstream of perennial flow. Type NP streams do not meet the physical criteria of a Type F stream. This also includes streams that have been proven not to contain fish using methods described in Forest Practices Board Manual.

Type "NS" = Non-fish seasonal. Streams that do not have surface flow during at least some portion of the year and do not meet the physical criteria of a Type F stream.

Type "S" = Shoreline. Streams and waterbodies that are designated “shorelines of the state” as defined in *Revised Code of Washington* 90.58.030.

Type "U" is a symbol used on WDNR maps to identify untyped water features that need to be verified and identified on proposed forest practices activity maps.

Type "X" is a symbol used on WDNR maps to identify water features (e.g., irrigation ditches, sanitation ponds, pipelines) that are not part of the above classifications.

[c] WDFW. 2009. Allowable Freshwater Work Times. March. Stream list can be accessed at: http://www.wsdot.wa.gov/NR/rdonlyres/EFF0EF14-31B0-45EC-BC12-DE9BB353F66E/0/AllowableFreshwaterWorkWindows.pdf.

EFH = Essential Fish Habitat; ESA = Endangered Species Act; ID = identification; WDNR = Washington State Department of Natural Resources

Table K5-2

Known Priority Fish Species and Life Stages at Waterbody Crossing Locations for Washington Expansion Project

Waterbody Crossing Milepost	Stream ID	Stream Name at Pipeline Crossing	Species[a] (Run[b])	Life Stage at Crossing[c]	Evolutionary Significant Unit/ Distinct Population Segment	Federal Status	Designated Critical Habitat at Crossing	Essential Fish Habitat at Crossing Site	State Status
Woodland Loop									
1253.39	S3_LO1_012	Kalama River	CHK (Sp)	Spw, Rr	Lower Columbia River	Threatened	Yes	Yes	Candidate
			BLT	Mig	Columbia River	Threatened	No	No	Candidate
			CHM	Mig	Columbia River	Threatened	Yes	No	Candidate
			STL (Su)	Spw, Rr	Lower Columbia River	Threatened	Yes	No	Candidate
			COH	Spw, Rr	Lower Columbia River	Threatened	Proposed	Yes	---
			STL (W)	Spw, Rr	Lower Columbia River	Threatened	Yes	No	Candidate
			CHK (F)	Spw, Rr	Lower Columbia River	Threatened	Yes	Yes	Candidate
			PE	Spw, Mig	Southern	Threatened	Yes	Yes	Candidate
			CUT	Present	---	---	---	---	---
1260.49	S2_LO1_022	Coweeman River	COH	Mig	Lower Columbia River	Threatened	Proposed	Yes	---
			STL (W)	Rr, Mig	Lower Columbia River	Threatened	Yes	No	Candidate
			CHK (F)	Mig	Lower Columbia River	Threatened	Yes	Yes	Candidate
			CHM	Mig	Columbia River	Threatened	Yes	No	Candidate
			CUT	Present	---	---	---	---	---
1260.77	S2_LO1_023	Unnamed	COH	Mig	Lower Columbia River	Threatened	Proposed	Yes	---
1264.91	S2_LO1_021	South Fork Ostrander Creek	COH	Spw, Rr	Lower Columbia River	Threatened	Proposed	Yes	---
			STL (W)	Mig	Lower Columbia River	Threatened	Yes	No	Candidate
			CHK (F)	Mig	Lower Columbia River	Threatened	Yes	Yes	Candidate
			CUT	Present	---	---	No	No	---
1265.25	S1_LO1_057	Ostrander Creek	COH	Spw, Rr	Lower Columbia River	Threatened	Proposed	Yes	---
			STL (W)	Mig	Lower Columbia River	Threatened	Yes	No	Candidate
			CHK (F)	Mig	Lower Columbia River	Threatened	Yes	Yes	Candidate
			CUT	Present	---	---	No	No	---
1274.42	S3_LO1_013	Toutle River	STL (W)	Spw, Rr	Lower Columbia River	Threatened	Yes	No	Candidate
			CHM	Mig	Columbia River	Threatened	Yes	No	Candidate
			COH	Rr, Mig	Lower Columbia River	Threatened	Proposed	Yes	---
			STL (Su)	Mig	Lower Columbia River	Threatened	Yes	No	Candidate
			CHK (Sp)	Mig	Lower Columbia River	Threatened	Yes	Yes	Candidate
			CHK (F)	Mig	Lower Columbia River	Threatened	Yes	Yes	Candidate
			PE	Spw, Mig	Southern	Threatened	Yes	Yes	Candidate
			RBT	Present	---	---	No	No	---
			CUT	Present	---	---	No	No	---

Table K5-2

Known Priority Fish Species and Life Stages at Waterbody Crossing Locations for Washington Expansion Project

Waterbody Crossing Milepost	Stream ID	Stream Name at Pipeline Crossing	Species[a] (Run[b])	Life Stage at Crossing[c]	Evolutionary Significant Unit/ Distinct Population Segment	Federal Status	Designated Critical Habitat at Crossing	Essential Fish Habitat at Crossing Site	State Status
1275.69	S3_LO1_41	Unnamed	COH	Mig	Lower Columbia River	Threatened	Proposed	Yes	---
1281.52	S2_LO1_034	Unnamed	CHM	Mig	Columbia River	Threatened	Yes	No	Candidate
1282.51	S2_LO1_036	Cowlitz River	CHM	Mig	Columbia River	Threatened	Yes	No	Candidate
			CHK (Sp)	Spw, Rr	Lower Columbia River	Threatened	Yes	Yes	Candidate
			CHK (F)	Spw, Rr	Lower Columbia River	Threatened	Yes	Yes	Candidate
			STL (Su)	Mig	Lower Columbia River	Threatened	Yes	No	Candidate
			STL (W)	Spw, Rr	Lower Columbia River	Threatened	Yes	No	Candidate
			COH	Mig	Lower Columbia River	Threatened	Proposed	Yes	---
			PE	Spw, Mig	Southern	Threatened	Yes	Yes	Candidate
			RBT	Present	---	---	No	No	---
			CUT	Present	---	---	No	No	---
1283.74	S1_LO1_047	Unnamed	COH	Mig	Lower Columbia River	Threatened	Proposed	Yes	---
			STL (W)	Mig	Lower Columbia River	Threatened	Yes	No	Candidate
1284.56	S1_LO1_048	Unnamed	CHM	Mig	Columbia River	Threatened	Yes	No	Candidate
			STL (W)	Mig	Lower Columbia River	Threatened	Yes	No	Candidate
			COH	Spw, Rr	Lower Columbia River	Threatened	Proposed	Yes	---
			CHK (F)	Mig	Lower Columbia River	Threatened	Yes	Yes	Candidate
1285.35	S2_LO1_038	Lacamas Creek	CHM	Mig	Columbia River	Threatened	Yes	No	Candidate
			STL (W)	Mig	Lower Columbia River	Threatened	Yes	No	Candidate
			COH	Spw, Rr	Lower Columbia River	Threatened	Proposed	Yes	---
			CHK (F)	Mig	Lower Columbia River	Threatened	Yes	Yes	Candidate
			CUT	Present	---	---	No	No	---
1288.56	S2_LO1_043	Unnamed	STL (W)	Mig	Lower Columbia River	Threatened	Yes	No	Candidate
			COH	Mig	Lower Columbia River	Threatened	Proposed	Yes	---
1288.90	S2_LO1_045	Unnamed	COH	Mig	Lower Columbia River	Threatened	Proposed	Yes	---
			STL (W)	Mig	Lower Columbia River	Threatened	Yes	No	Candidate
Chehalis Loop									
1294.13	1294.2	Newaukum River	STL (W)	Spw, Rr	Southwest Washington	Not Warranted	No	No	---
			CHK (Sp)	Spw, Rr	Washington Coast	Not Warranted	No	Yes	---
			CHK (F)	Spw, Rr	Washington Coast	Not Warranted	No	Yes	---
			COH	Rr, Mig	Southwest Washington	Undetermined	No	Yes	---
			CUT	Present	---	---	No	No	---

Table K5-2

Known Priority Fish Species and Life Stages at Waterbody Crossing Locations for Washington Expansion Project

Waterbody Crossing Milepost	Stream ID	Stream Name at Pipeline Crossing	Species[a] (Run[b])	Life Stage at Crossing[c]	Evolutionary Significant Unit/ Distinct Population Segment	Federal Status	Designated Critical Habitat at Crossing	Essential Fish Habitat at Crossing Site	State Status
1296.78	1296.9	Berwick Creek	COH	Mig	Southwest Washington	Undetermined	No	Yes	---
			CUT	Present	---	---	No	No	---
1297.41	1297.6	Dillenbaugh Creek	CUT	Present	---	---	No	No	---
1299.03	1299	Salzer Creek	COH	Mig	Southwest Washington	Undetermined	No	Yes	---
1300.05	1300.2	Unnamed	COH	Mig	Southwest Washington	Undetermined	No	Yes	---
1301.68	1301.6	South Hanaford Creek	COH	Mig	Southwest Washington	Undetermined	No	Yes	---
1303.23	S2_L02_002	Unnamed	COH	Mig	Southwest Washington	Undetermined	No	Yes	---
1305.28	S3_LO2_005	Packwood Creek	CUT	Present	---	---	No	No	---
1306.25	S3_LO2_006	Hanaford Creek	STL (W)	Mig	Southwest Washington	Not Warranted	No	No	---
			COH	Mig	Southwest Washington	Undetermined	No	Yes	---
			CUT	Present	---	---	---	---	---
1306.55	S3_LO2_007	Snyder Creek	COH	Mig	Southwest Washington	Undetermined	No	Yes	---
			CUT	Present	---	---	No	No	---
1308.97	S1_LO2_103	Thompson Creek	STL (W)	Spw, Rr	Southwest Washington	Not Warranted	No	No	---
			COH	Spw, Rr	Southwest Washington	Undetermined	No	Yes	---
1309.36	S2_LO2_004	Skookumchuck River	STL (W)	Spw, Rr	Southwest Washington	Not Warranted	No	No	---
			CHK (Sp)	Spw, Rr	Washington Coast	Not Warranted	No	Yes	---
			CHK (F)	Spw, Rr	Washington Coast	Not Warranted	No	Yes	---
			COH	Spw, Rr	Southwest Washington	Undetermined	No	Yes	---
			CUT	Present	---	---	No	No	---
1313.05	S1_LO2_104	Unnamed	COH	Mig	Southwest Washington	Undetermined	No	Yes	---
1315.10	SP_LO2_001	Deschutes River	COH	Spw, Rr	Puget Sound/Strait of Georgia	Species of Concern	No	No	Candidate
			CHK (Sp)	Mig	Puget Sound	Threatened	Yes	Yes	Candidate
			STL (W)	Spw, Rr	Puget Sound	Threatened	Proposed	No	Candidate
			CHK (F)	Spw, Rr	Puget Sound	Threatened	Yes	Yes	Candidate
Sumner South Loop									
1347.98	S3_LO3_001	Puyallup River	BLT	Mig	Coastal-Puget Sound	Threatened	Yes	No	Candidate
			PNK	Spw, Rr	Odd-Year	Not Warranted	No	Yes	---
			CHM	Mig	Puget Sound/Strait of Georgia	Not Warranted	No	No	Candidate
			STL (W)	Mig	Puget Sound	Threatened	Proposed	No	Candidate

Table K5-2

Known Priority Fish Species and Life Stages at Waterbody Crossing Locations for Washington Expansion Project

Waterbody Crossing Milepost	Stream ID	Stream Name at Pipeline Crossing	Species[a] (Run[b])	Life Stage at Crossing[c]	Evolutionary Significant Unit/ Distinct Population Segment	Federal Status	Designated Critical Habitat at Crossing	Essential Fish Habitat at Crossing Site	State Status
			CHK (F)	Rr, Mig	Puget Sound	Threatened	Yes	Yes	Candidate
			COH	Rr, Mig	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			CUT	Present	---	---	No	No	---
1349.99	S1_LO3_005	Salmon Creek	COH	Mig	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
Sumner North A Loop									
1357.14	S1_LO4_001	Unnamed	COH	Rr, Mig	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			CHM	Mig	Puget Sound/Strait of Georgia	Not Warranted	No	No	Candidate
			CUT	Present	---	---	No	No	---
1359.62	S3_LO4_001	Covington Creek	STL (W)	Spw, Rr	Puget Sound	Threatened	Proposed	No	Candidate
			COH	Spw, Rr	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			CHK (F)	Mig	Puget Sound	Threatened	Yes	Yes	Candidate
			CUT	Present	---	---	No	No	---
1361.48	S4_LO4_002	Unnamed	COH	Spw, Rr	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			CUT	Present	---	---	No	No	---
1362.66	S1_LO4_004	Cranmar Creek	COH	Mig	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
Sumner North B Loop									
1371.05	S1_LO5_001	Issaquah Creek	SOC	Spw, Rr	Not Determined	Not Determined	No	No	---
			STL (W)	Spw, Rr	Puget Sound	Threatened	Proposed	No	Candidate
			CHK (F)	Spw, Rr	Puget Sound	Threatened	Yes	No	Candidate
			COH	Spw, Rr	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			CUT	Present	---	---	No	No	---
1371.51	S3_LO5_003	Unnamed	CUT	Present	---	---	No	No	---
1371.73	S1_LO5_005	Unnamed	COH	Mig	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
1371.96	S2_LO5_006	Fifteenmile Creek	STL (W)	Rr, Mig	Puget Sound	Threatened	Proposed	No	Candidate
			CHK (F)	Mig	Puget Sound	Threatened	Yes	Yes	Candidate
			COH	Spw, Rr	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			CUT	Present	---	---	No	No	---
1373.66	S4_LO5_002	Unnamed	COH	Spw, Rr	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			STL (W)	Rr, Mig	Puget Sound	Threatened	Proposed	No	Candidate
			CUT	Present	---	---	No	No	---
1374.25	S2_LO5_010	Unnamed	COH	Rr, Mig	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	Candidate

Table K5-2

Known Priority Fish Species and Life Stages at Waterbody Crossing Locations for Washington Expansion Project

Waterbody Crossing Milepost	Stream ID	Stream Name at Pipeline Crossing	Species[a] (Run[b])	Life Stage at Crossing[c]	Evolutionary Significant Unit/ Distinct Population Segment	Federal Status	Designated Critical Habitat at Crossing	Essential Fish Habitat at Crossing Site	State Status
1376.12	S2_LO5_004	East Fork Issaquah Creek	SOC	Spw, Rr	---	---	No	No	---
			KOK	Spw, Rr	---	---	No	No	---
			STL (W)	Mig	Puget Sound	Threatened	Proposed	No	Candidate
			COH	Spw, Rr	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			CHK (F)	Spw, Rr	Puget Sound	Threatened	Yes	Yes	Candidate
			CUT	Present	---	---	No	No	---
1377.34	S3_LO5_004	North Fork Issaquah Creek	CUT	Present	---	---	No	No	---
1379.62	S1_LO5_002	Unnamed	CUT	Present	---	---	No	No	---
Snohomish Loop									
1397.56	S4_LO6_004	Snohomish River	CHM	Mig	Puget Sound/Strait of Georgia	Not Warranted	No	No	Candidate
			CHK (F)	Mig	Puget Sound	Threatened	Yes	Yes	Candidate
			CHK (Su)	Spw, Rr	Puget Sound	Threatened	Yes	Yes	Candidate
			STL (Su)	Mig	Puget Sound	Threatened	No	No	Candidate
			SOC	Rr, Mig	Not Determined	Not Determined	No	No	---
			COH	Rr, Mig	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			BLT	Rr, Mig	Coastal-Puget Sound	Threatened	Yes	No	Candidate
			STL (W)	Mig	Puget Sound	Threatened	Proposed	No	Candidate
			PNK	Mig	Even-Year	Not Warranted	No	Yes	---
			CUT	Present	---	---	No	No	---
1400.46	S2_LO6_001	Unnamed	COH	Mig	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
1401.53	S2_LO6_002	Unnamed	COH	Mig	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
1402.42	S3_LO6_001	French Creek	BLT	Mig	Coastal-Puget Sound	Threatened	Yes	No	Candidate
			STL (Su)	Mig	Puget Sound	Threatened	No	No	Candidate
			STL (W)	Mig	Puget Sound	Threatened	Proposed	No	Candidate
			COH	Rr, Mig	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			CUT	Present	---	---	No	No	---
1404.64	S1_LO6_008	Unnamed	COH	Spw, Rr	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
1407.81	S3_LO6_002	Pilchuck River	BLT	Rr, Mig	Coastal-Puget Sound	Threatened	Yes	No	Candidate
			STL (Su)	Mig	Puget Sound	Threatened	No	No	Candidate
			CHK (F)	Spw, Rr	Puget Sound	Threatened	Yes	Yes	Candidate

Table K5-2

Known Priority Fish Species and Life Stages at Waterbody Crossing Locations for Washington Expansion Project

Waterbody Crossing Milepost	Stream ID	Stream Name at Pipeline Crossing	Species[a] (Run[b])	Life Stage at Crossing[c]	Evolutionary Significant Unit/ Distinct Population Segment	Federal Status	Designated Critical Habitat at Crossing	Essential Fish Habitat at Crossing Site	State Status
			CHK (Su)	Mig	Puget Sound	Threatened	Yes	Yes	Candidate
			COH	Rr, Mig	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			SOC	Mig	Not Determined	Not Determined	No	No	---
			CHM	Mig	Puget Sound/Strait of Georgia	Not Warranted	No	No	Candidate
			PNK	Spw, Rr	Even-Year	Not Warranted	No	Yes	---
			STL (W)	Spw, Rr	Puget Sound	Threatened	Proposed	No	Candidate
			CUT	Present	---	---	No	No	---
Mt. Vernon South Loop									
1439.07	MV-25	Tributary to Walker Creek	COH	Mig	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			CUT	Present	---	---	No	No	---
Mt. Vernon North A Loop									
1440.42	S4_LO8_007	East Fork Nookachamps Creek	PNK	Mig	Odd-Year	Not Warranted	No	Yes	---
			CHM	Mig	Puget Sound/Strait of Georgia	Not Warranted	No	No	Candidate
			STL (W)	Spw, Rr	Puget Sound	Threatened	Proposed	No	Candidate
			CHK	Rr, Mig	Puget Sound	Threatened	Yes	Yes	Candidate
			STL (Su)	Mig	Puget Sound	Threatened	No	No	Candidate
			COH	Spw, Rr	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			CUT	Present	---	---	No	No	---
1441.44	S4_LO8_003	Turner Creek	COH	Spw, Rr	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			CUT	Present	---	---	No	No	---
			CHM	Spw, Rr	Puget Sound/Strait of Georgia	Not Warranted	No	No	Candidate
			STL (W)	Mig	Puget Sound	Threatened	Proposed	No	Candidate
1442.68	S2_LO8_003	Unnamed	CUT	Present	---	---	No	No	---
Mt. Vernon North B Loop									
1454.18	S1_LO9_003	Mills Creek	COH	Spw, Rr	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			CUT	Present	---	---	No	No	---
1455.42	S2_LO9_006	Unnamed	COH	Mig	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			CUT	Present	---	---	No	No	---
1455.71	S2_LO9_003	Unnamed	CUT	Present	---	---	No	No	---
1456.62	S2_L09_002	Unnamed	COH	Spw, Rr	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	
			CUT	Present					

Table K5-2

Known Priority Fish Species and Life Stages at Waterbody Crossing Locations for Washington Expansion Project

Waterbody Crossing Milepost	Stream ID	Stream Name at Pipeline Crossing	Species[a] (Run[b])	Life Stage at Crossing[c]	Evolutionary Significant Unit/ Distinct Population Segment	Federal Status	Designated Critical Habitat at Crossing	Essential Fish Habitat at Crossing Site	State Status
1457.40	S3_LO9_003	Little Innis Creek	CHM	Mig	Puget Sound/Strait of Georgia	Not Warranted	No	No	Candidate
			STL (W)	Mig	Puget Sound	Threatened	Proposed	No	Candidate
			COH	Spw, Rr	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	Candidate
			CUT	Present	---	---	No	No	---
1460.01	S2_LO9_011	Samish River	COH	Mig	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			CUT	Present	---	---	No	No	---
1461.32	SP_LO9_001	Landing Strip Creek	STL (W)	Mig	Puget Sound	Threatened	Proposed	No	Candidate
			COH	Spw, Rr	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			CUT	Present	---	---	No	No	---
1461.56	S4_LO9_101	South Fork Nooksack River	STL (Su)	Mig	Puget Sound	Threatened	No	No	Candidate
			STL (W)	Spw, Rr	Puget Sound	Threatened	Proposed	No	Candidate
			PNK	Spw, Rr	Odd-Year	Not Warranted	No	Yes	---
			SOC	Spw, Rr	Not Determined	Not Determined	No	No	---
			CHM	Spw, Rr	Puget Sound/Strait of Georgia	Not Warranted	No	No	Candidate
			BLT	Rr, Mig	Coastal-Puget Sound	Threatened	Yes	No	Candidate
			COH	Rr, Mig	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			CHK (F)	Spw, Rr	Puget Sound	Threatened	Yes	Yes	Candidate
			CHK (Sp)	Spw, Rr	Puget Sound	Threatened	Yes	Yes	Candidate
			CUT	Present	---	---	No	No	---
Sumas Loop									
1478.87	S-22	Breckenridge Creek	STL (W)	Mig	Puget Sound	Threatened	Proposed	No	Candidate
			CHK (F)	Mig	Puget Sound	Threatened	Yes	Yes	Candidate
			COH	Spw, Rr	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			CUT	Present	---	---	No	No	---
1479.05	S-21	Kinney Creek	COH	Mig	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			STL (W)	Mig	Puget Sound	Threatened	Proposed	No	Candidate
			CUT	Present	---	---	No	No	---
1482.80	S-4B	Saar Creek	STL (W)	Mig	Puget Sound	Threatened	Proposed	No	Candidate
			CHM	Mig	Puget Sound/Strait of Georgia	Not Warranted	No	No	Candidate
			SOC	Mig	Not Determined	Not Determined	No	Yes	Candidate
			CHK (F)	Mig	Puget Sound	Threatened	Yes	No	Candidate
			COH	Rr, Mig	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---

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Known Priority Fish Species and Life Stages at Waterbody Crossing Locations for Washington Expansion Project

Waterbody Crossing Milepost	Stream ID	Stream Name at Pipeline Crossing	Species[a] (Run[b])	Life Stage at Crossing[c]	Evolutionary Significant Unit/ Distinct Population Segment	Federal Status	Designated Critical Habitat at Crossing	Essential Fish Habitat at Crossing Site	State Status
			CUT	Present	---	---	No	No	---
1483.08	S-4A	Saar Creek	STL (W)	Mig	Puget Sound	Threatened	Proposed	No	Candidate
			CHM	Mig	Puget Sound/Strait of Georgia	Not Warranted	No	No	Candidate
			SOC	Mig	Not Determined	Not Determined	No	Yes	Candidate
			CHK (F)	Mig	Puget Sound	Threatened	Yes	No	Candidate
			COH	Rr, Mig	Puget Sound/Strait of Georgia	Species of Concern	No	Yes	---
			CUT	Present	---	---	No	No	---

Data source:

StreamNet: Fish Data for the Northwest. Multi-agency database. Funded by the Northwest Power and Conservation Council's Fish and Wildlife Program and by the Bonneville Power Administration and administered by the Pacific States Marine Fisheries Commission. Available at http://www.streamnet.org/.

[a] Species abbreviations:
BLT = Bull trout
CHK = Chinook salmon
CHM = Chum salmon
COH = Coho salmon
CUT = Cutthroat trout
KOK = Kokanee
PE = Pacific eulachon
RBT = Rainbow trout
PNK = Pink salmon
SOC = Sockeye salmon
STL = Steelhead trout

[b] Run definitions:
Sp = spring, Su = summer, F = fall, W = winter.

[c] Life stage definitions:
Spw = spawning, Rr = rearing, Mig = migrating only, Present = known to occur but life stage unknown.

Table K5-3

Approximate Timing of the Life Phases of the Anadromous Salmonids within the Water Resources Inventory Areas and Subbasins Crossed by the Washington Expansion Project

Species (Run [a])	Upstream Migration	Subbasin(s)	Spawning	In-gravel Development	Juvenile Rearing	Juvenile Out-migration
WRIA 27: Lewis Major Watershed: Columbia River						
Bull trout	N/A	Kalama River	Sept – Nov	Sept - Apr	Year-round	N/A
Chinook (F)	Sept - Nov	Kalama River	Sept – Nov	Sept - Apr	Jan - Jun	Apr - Jun
Chinook (Sp)	Apr - June	Kalama River	Aug- Sept	Aug - Jan	Year-round	Apr - May
Chum	Oct 15 - Nov 30	Kalama River	Nov – Dec	Nov - Apr	Feb - Apr	Mar - May
Coho	Aug -Jan	Kalama River	Oct – Jan	Oct - Apr	Year-round	Apr - May
Steelhead (Su)	Apr - Sept	Kalama River	Jan – Jun	Jan - July	Year-round	Apr 1 - May 31
Steelhead (W)	Dec 1 - Mar 31	Columbia and Kalama Rivers	Jan 1 - May 15	Jan 1 - Jun 15	Year-round	April 1 - May 31
WRIA 26: Cowlitz Major Watershed: Cowlitz River						
Chinook (F)	Sept - Nov	Coweeman, Cowlitz, Toutle Rivers	Sept – Nov	Sept - Apr	Jan - Jun	Apr - Jun
Chinook (Sp)	Apr - Jun	Cowlitz and Toutle Rivers	Aug – Sept	Aug - Jan	Year-round	Apr - May
Chum	Oct 15 - Nov 30	Coweeman, Cowlitz, Toutle Rivers	Nov – Dec	Nov - Apr	Feb - Apr	Mar - May
Coho	Aug - Jan	Coweeman, Cowlitz, Toutle Rivers	Oct – Jan	Oct - Apr	Year-round	Apr - May
Steelhead (Su)	Apr - Sept	Cowlitz and Toutle Rivers	Jan – Jun	Jan - July	Year-round	Apr 1 - May 31
Steelhead (W)	Dec 1 - Mar 31	Coweeman, Cowlitz, Toutle Rivers	Jan 1 - May 15	Jan 1 - Jun 15	Year-round	April 1 - May 31
WRIA 23: Upper Chehalis Major Watershed: Chehalis River						
Chinook (Su)	Aug 15 - Nov 30	Newaukum and Skookumchuck Rivers	Sept 15 - Dec 15	Sept 15 - Mar 31	Feb 1 - Aug 15	Mar 15 - Aug 15
Chinook (Sp)	Mar 1 - Apr 15	Newaukum and Skookumchuck Rivers	Aug 15 - Oct 10	Aug 15 - Jan 20	Year-round	Mar 5 - Jun 20
Coho	Sept 15 - Jan 15	Newaukum and Skookumchuck Rivers	Oct 15 - Jan 31	Oct 15 - Apr 30	Feb 1 - Aug 15	Mar 10 - Aug 15
Steelhead (W)	Dec 1 - Mar 31	Newaukum and Skookumchuck Rivers	Jan 1 - May 15	Jan 1 - Jun 15	Year-round	April 1 - May 31
WRIA 13: Deschutes Major Watershed: Deschutes River						
Chinook (F)	Jul 15 - Oct 31	Deschutes River	Sept 15 - Nov 15	Sept 15 - Jan 31	Jan 1 - Sept 15	Feb 15 - Sept 15
Coho	Sept 10 - Dec 31	Deschutes River	Oct 15 - Jan 15	Oct 15 - Mar 31	Year-round	Feb 20 - Apr 10
Steelhead (W)	Dec 1 - Mar 31	Deschutes River	Jan 1 - May 15	Jan 1 - Jun 15	Year-round	April 1 - May 31
WRIA 12: Chambers-Clover Major Watershed: Steilacoom Lake/Puget Sound						
Coho	Sept 15 - Jan 20	Clover Creek	Oct 15 - Jan 20	Oct 15 - Apr 20	Feb 15 - May 15	Feb 15 -0 May 15
WRIA 10: Puyallup-White Major Watershed: Puyallup River						
Bull trout	N/A	Puyallup River	Sept – Nov	Sept - Apr	Year-round	N/A
Chinook (F)	Jul 20 - Oct 31	Puyallup River	Sept 15 - Nov 10	Sept 15 - Feb 15	Dec 15 - Aug 10	Mar 1 - Aug 10
Chum	Sept 20 - Dec 31	Puyallup River	Nov 15 - Jan 20	Nov 15 - Apr 30	Feb 20 - Jul 31	Feb 20 - Jul 31
Coho	Jul 25 - Jan 15	Puyallup River	Oct 15 - Jan 31	Oct 15 - Apr 30	Year-round	Mar 10 - Aug 10
Pink (Odd)	Aug 10 - Oct 20	Puyallup River	Sept 20 - Nov 10	Sept 20 - Apr 15	Feb 15 - Mar 31	Feb 15 - Mar 31

Table K5-3

Approximate Timing of the Life Phases of the Anadromous Salmonids within the Water Resources Inventory Areas and Subbasins Crossed by the Washington Expansion Project

Species (Run [a])	Upstream Migration	Subbasin(s)	Spawning	In-gravel Development	Juvenile Rearing	Juvenile Out-migration
Steelhead (W)	Dec 1 - Mar 31	White River	Jan 1 - May 15	Jan 1 - Jun 15	Year-round	Apr 1 - May 31
WRIA 9: Duwamish-Green Major Watershed: Green River						
Chinook (F)	Jun 5 - Nov 10	Green River/Big Soos Creek	Sept 15 - Nov 25	Sept 15 - Feb 25	Jan 20 - Jul 15	Apr 5 - Jul 15
Chum	Nov 1 - Jan 15	Green River	Nov 5 - Jan 31	Nov 5 - Apr 30	Feb 10 - Jul 15	Feb 10 - Jul 15
Coho	Aug 1 - Jan 25	Green River/Big Soos Creek	Oct 15 - Feb 28	Oct 15 - Apr 15	Year-round	Apr 20 - Jun 10
Steelhead (W)	Dec 1 - Mar 31	Green River	Jan 1 - May 15	Jan 1 - Jun 15	Year-round	Apr 1 - May 31
WRIA 8: Cedar-Sammamish Major Watershed: Lake Sammamish						
Chinook (F)	Jul 1 - Nov 30	Issaquah Creek	Sept 10 - Dec 20	Sept 10 - Mar 31	Dec 15 - Jul 10	Mar 1 - Jul 15
Coho	Aug 10 - Feb 5	Issaquah Creek	Oct 15 - Feb 28	Oct 15 - May 15	Year-round	Mar 1 - Jul 10
Sockeye	Apr 15 - Dec 15	Issaquah Creek	Aug 1 - Dec 31	Aug 1 - May 15	Year-round	Mar 1 - Jul 5
Steelhead (W)	Dec 1 - Mar 31	Issaquah Creek	Jan 1 - May 15	Jan 1 - Jun 15	Year-round	Apr 1 - May 31
WRIA 7: Snohomish Major Watershed Snohomish River						
Bull trout	N/A	Snohomish and Pilchuck Rivers	Sept – Nov	Sept - Apr	Year-round	N/A
Chinook (F)	May 20 - Aug 25	Snohomish and Pilchuck Rivers	Aug 10 - Sept 25	Aug 10 - Jan 15	Year-round	Apr 29 - Jul 25
Chinook (Su)	Jul 1 - Oct 20	Snohomish and Pilchuck Rivers	Sept 15 - Nov 15	Sept 15 - Feb 15	Jan 20 - Jul 15	Apr 20 - Jul 15
Chum	Oct 15 - Jan 5	Snohomish and Pilchuck Rivers	Nov 15 - Jan 20	Nov 15 - Apr 30	Mar 10 - Jun 15	Mar 10 - Jun 15
Coho	Jul 15 - Dec 20	Snohomish and Pilchuck Rivers	Oct 25 - Jan 1	Oct 25 - Apr 30	Year-round	Apr 15 - Jul 15
Pink (even)	Jul 15 - Oct 15	Snohomish and Pilchuck Rivers	Sept 15 - Oct 31	Sept 15 - Apr 30	Mar 20 - May 31	Mar 20 - May 31
Sockeye	Jul 15 - Apr 15	Snohomish and Pilchuck Rivers	Sept 20 - Dec 15	Sept 20 - Mar 15	Year-round	Mar 15 - Jul 15
Steelhead (Su)	N/A	Snohomish and Pilchuck Rivers	Feb – Apr	Feb - Jun	Year-round	Apr 1 - May 31
Steelhead (W)	Dec 1 - Mar 31	Snohomish and Pilchuck Rivers	Jan 1 - May 15	Jan 1 - Jun 15	Year-round	Apr 1 - May 31
WRIA 3: Lower Skagit – Samish Major Watershed: Skagit River						
Bull trout	N/A	Skagit River	Sept – Nov	Sept - Apr	Year-round	N/A
Chinook (Su/F)	Jun 10 - Sept 20	Skagit River	Sept 15 - Oct 15	Sept 15 - Feb 10	Dec 10 - Jun 15	Mar 15 - Jun15
Chinook (Sp)	Apr 5 - Aug 5	Skagit River	Jul 15 - Sept 15	Jul 15 - Jan 20	Year-round	Mar 15 - Jul 15
Chum	Oct 15 - Dec 15	Skagit and Samish Rivers	Nov 1 - Jan 15	Nov 1 - Apr 20	Mar 1 - Jun 10	Mar 1 - Jun 10
Coho	Jul 15 - Dec 31	Skagit and Samish Rivers	Oct 15 - Jan 15	Oct 15 - Apr 15	Year-round	Mar 15 - Jun 15
Pink	Jul 15 - Sept 30	Skagit River	Aug 20 - Oct 25	Aug 20 - Apr 15	Mar 1 - May 25	Mar 1 - May 25
Sockeye	Apr 15 - Jul 30	Skagit River	July 15 - Sept 15	July 15 - June 15	Year-round	Mar 15 - July 15
Steelhead (Su)	N/A	Skagit River	Feb – Apr	Feb - Jun	Year-round	Apr 1 - May 31
Steelhead (W)	Dec 1 - Mar 31	Skagit and Samish Rivers	Jan 1 - May 15	Jan 1 - Jun 15	Year-round	Apr 1 - May 31

Table K5-3

Approximate Timing of the Life Phases of the Anadromous Salmonids within the Water Resources Inventory Areas and Subbasins Crossed by the Washington Expansion Project

Species (Run [a])	Upstream Migration	Subbasin(s)	Spawning	In-gravel Development	Juvenile Rearing	Juvenile Out-migration
WRIA 1: Nooksack Major Watershed: Nooksack and Sumas Rivers						
Bull trout	N/A	Nooksack River	Sept-Nov	Sept-Apr	Year-round	N/A
Chinook (F)	Jul 5 - Sept 30	Nooksack and Sumas Rivers	Sept 5 - Nov 15	Sept 5 - Feb 15	Jan 15 - Jun 5	Apr 15 - Jul 15
Chinook (Sp)	Mar 20 - Aug 5	Nooksack River	Aug 5 - Oct 15	Aug 5 - Jan 15	Year-round	Mar 5 - Jun 20
Chum	Oct 10 - Dec 31	Nooksack and Sumas Rivers	Oct 15 - Jan 20	Oct 15 - Apr 15	Mar 1 - May 15	Mar 1 - May 15
Coho	Jul 10 - Nov 15	Nooksack and Sumas Rivers	Nov 15 - Jan 15	Nov 15 - Apr 15	Year-round	Apr 15 - Aug 20
Pink	Jul 5 - Aug 25	Nooksack River	Aug 25 - Oct 15	Aug 25 - Apr 15	Feb 15 - May 10	Feb 15 - May 10
Sockeye	Jul 10 - Sept 10	Nooksack and Sumas Rivers	Sept 10 - Oct 15	Sept 10 - Mar 15	Year-round	Apr 10 Jul 15
Steelhead (Su)	N/A	Nooksack River	Feb – Apr	Feb - Jun	Year-round	Apr 1 - May 31
Steelhead (W)	Dec 1 - Mar 31	Nooksack and Sumas Rivers	Jan 1 - May 15	Jan 1 - Jun 15	Year-round	Apr 1 - May 31

Data sources:

Lower Columbia Fish Recovery Board. 2010. *Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan.*

National Marine Fisheries Service (NMFS). 2012. Salmon population information –status reviews for various species. Available at http://www.nwr.noaa.gov/ESA-Salmon-Listings/Salmon-Populations/.

StreamNet. 2007. Fish Data for the Northwest. Multi-agency database. Funded by the Northwest Power and Conservation Council's Fish and Wildlife Program and by the Bonneville Power Administration. Administered by the Pacific States Marine Fisheries Commission. Available at http://www.streamnet.org/.

Washington Department of Fish and Wildlife (WDFW). 1975. *A Catalog of Washington Streams and Salmon Utilization*. Seattle, Washington. 4 vols.

Washington Department of Fish and Wildlife (WDFW). 1993. Salmon and Steelhead Stock Inventory.

Lower Columbia Fish Recovery Board. 2010. *Lower Columbia Salmon Recovery and Fish and Wildlife Subbasin Plan*.

[a] Run definitions:
Sp = spring, Su = summer, F = fall, W = winter, Odd = odd year runs.
N/A = not applicable
WRIA = Water Resources Inventory Area

APPENDIX L

OTHER SPECIAL STATUS SPECIES FOR THE WEP

TABLE L-1

Other Special Status Species for the WEP

Species	Status [a]	Habitat/Presence	Impacts	Mitigation Measures
Terrestrial Invertebrates				
Beller's ground beetle *Agonum belleri*	PHS SC SOC	Acidic sphagnum bogs in forested regions.	If beetles are present at time of construction, individuals could be killed or displaced. Habitat could be affected if construction alters water quality.	Northwest would coordinate with WDFW to determine if mitigation measures are needed.
Hatch's click beetle *Eanus hatchi*	PHS SC SOC	Sphagnum bogs; known only from King County.	If beetles are present at time of construction, individuals could be killed or displaced. Habitat could be affected if construction alters water quality.	Northwest would coordinate with WDFW to determine if mitigation measures are needed.
Birds				
Northern goshawk *Accipiter gentilis*	PHS SC SOC	None observed in project area and buffer zone during 2013 aerial survey.	Construction activity within 0.25 mile of active nest could affect nesting success.	Northwest would conduct preconstruction raptor nesting surveys if any clearing would occur during breeding season.
Golden eagle *Aquila chrysaetos*	PHS SC	None observed in project area and buffer zone during 2013 aerial survey.	Construction activity within 0.25 mile of active nest could affect nesting success.	Northwest would conduct preconstruction raptor nesting surveys if any clearing would occur during breeding season.
Great blue heron *Ardea herodias*	PHS	Nests in colonies in trees along or near streams/rivers. Forages in aquatic habitats.	Construction activity within 0.25 mile of active nest could affect nesting success.	Northwest would coordinate with WDFW to determine if mitigation measures needed.
Vaux's swift *Chaetura vauxi*	PHS SC	Late stages of coniferous and mixed deciduous/coniferous forest.	Construction noise could disturb nesting birds up to 500 feet from right-of-way centerline.	Northwest would coordinate with WDFW to determine if mitigation measures needed.
Snow goose *Chen caerulescens*	PHS	Migrant/winter resident. Roosts in lakes and large ponds, feeds in sileage fields and meadows.	Construction activity could temporarily displace birds.	Northwest would coordinate with WDFW to determine if mitigation measures needed.
Band-tailed pigeon *Columba fasciata*	PHS	Montane and mixed-species forests.	Construction noise could disturb nesting birds up to 500 feet from right-of-way centerline.	Northwest would coordinate with WDFW to determine if mitigation measures needed.
Sooty grouse *Dendragapus fuliginosus*	PHS	Conifer forest edges and openings.	Construction noise could disturb nesting birds up to 500 feet from right-of-way centerline.	Northwest would coordinate with WDFW to determine if mitigation measures needed.
Pileated woodpecker *Dryocopus pileatus*	PHS SC	Late successional deciduous or coniferous forest; younger forest with large trees.	Construction noise could disturb nesting birds up to 500 feet from right-of-way centerline.	Northwest would coordinate with WDFW to determine if mitigation measures needed.
Bald eagle *Haliaeetus leucocephalus*	PHS ST SOC	Riparian and lacustrine habitats; nests in large trees. Four nests identified and individuals incidentally observed within project area and buffer zone in 2013 survey.	If active nests present, could be directly impacted by clearing activities. Construction during nesting season could affect nest success.	Northwest would conduct preconstruction raptor nesting surveys if any clearing would occur during breeding season.
Harlequin duck *Histrionicus histrionicus*	PHS	Nests along fast moving, low gradient, clear mountain streams. In winter found along marine shorelines	Construction noise could disturb nesting birds up to 500 feet from right-of-way centerline.	Northwest would coordinate with WDFW to determine if mitigation measures needed.

TABLE L-1

Other Special Status Species for the WEP

Species	Status [a]	Habitat/Presence	Impacts	Mitigation Measures
Wild turkey (nonnative game species) *Meleagris gallopava*	PHS	Variety of wooded, shrubby and agricultural habitats.	Tolerant of human activity. If active nests present, could be directly affected by construction activity.	Northwest would coordinate with WDFW to determine if mitigation measures needed.
Mountain quail *Oreortyx pictus*	PHS	Shrubby habitats. Limited range in WA may not overlap with project. Suitable blocks of brushy habitat unlikely on mowed right-of-way.	None anticipated due to lack of suitable habitat on project.	Northwest would coordinate with WDFW to determine if mitigation measures needed.
Black-backed woodpecker *Picoides arcticus*	PHS SC	Early successional burned coniferous forest.	None anticipated due to lack of suitable habitat on project.	Northwest would coordinate with WDFW to determine if mitigation measures needed.
Cavity-nesting ducks Multiple species	PHS	Breeding habitat (trees/snags) not present on previously cleared and maintained right-of-way.	Clearing in forested areas could remove nest trees and/or destroy nests.	Preconstruction nest surveys as needed immediately prior to clearing. Avoid nesting season as possible.
Waterfowl concentrations Multiple species	PHS	Some open fields and large lakes/wetlands near right-of-way (e.g. Tradition and Round Lakes near Sumner North B Loop) can be migratory stop-over habitat during fall and winter.	Migrant or resident birds could be temporarily displaced during construction.	Preconstruction surveys as needed. Avoid nesting season as possible.
Reptiles and Amphibians				
Northwestern pond turtle *Actinemys marmorata marmorata*	SE SOC	Ponds and lakes with logs and other basking structures at surface. Some potential habitat from south end of project to Snohomish Loop.	If present, direct mortality and/or nest loss from construction and maintenance activities.	Northwest would coordinate with WDFW to determine if mitigation measures needed.
Western toad *Bufo boreas*	PHS SC SOC	Variety of terrestrial habitats (prairies, forests, woodlands, canyon grasslands). Breeding habitat includes permanent waters (wetlands, ponds, lakes, etc.). Some potential habitat present through length of project.	If present, direct mortality and/or egg loss from construction and maintenance activities.	Northwest would coordinate with WDFW to determine if mitigation measures needed.
Sharptail snake *Contia tenuis*	PHS SC SOC	Habitats that are moist in spring may be dry in summer (rocky slopes, open pine-oak woodland, deciduous floodplains, woody debris). Some potential habitat in Sumner South Loop, but species very rare in WA.	If present, could be directly affected or displaced by construction or maintenance activities.	Northwest would coordinate with WDFW to determine if mitigation measures needed.
Larch Mountain salamander *Plethodon larselli*	PHS SS SOC	Habitat includes talus, scree, and gravelly soils on steep slopes in a variety of forested and nonforested habitats with woody debris and leaf litter. In nonforested areas, occupied sites are usually north-facing rocky slopes dominated by mosses. Patchy distribution that could include some of southern portion of project.	If present, direct mortality and/or egg loss from construction and maintenance activities.	Northwest would coordinate with WDFW to determine if mitigation measures needed.
Van Dyke's salamander *Plethodon vandykei*	PHS SC SOC	Cool, moist habitats in forest. Some potential habitat in Woodland, Chehalis, and Sumner South Loops.	If present, direct mortality and/or egg loss from construction and maintenance activities.	Northwest would coordinate with WDFW to determine if mitigation measures needed.

TABLE L-1

Other Special Status Species for the WEP

Species	Status [a]	Habitat/Presence	Impacts	Mitigation Measures
Cascades frog *Rana cascadae*	SOC	Primarily above 2,000-foot elevation, typically but not always near water. Breeds in standing water (wetlands, ponds, lakes, flooded meadows, etc.). Widespread throughout its range in WA, which includes coastal and Cascade regions.	If present, direct mortality and/or egg loss from construction and maintenance activities.	Northwest would coordinate with WDFW to determine if mitigation measures needed.
Columbia spotted frog *Rana luteiventris*	PHS SC	Wetlands in forested and nonforested habitats.	If present, adults, egg masses, and metamorphs could be crushed during construction and maintenance of right-of-way; adults could be displaced from right-of-way by disturbance.	Northwest would coordinate with WDFW to determine if mitigation measures needed.
Cascade torrent salamander *Rhyacotriton cascadae*	PHS SC	Along streams in southern WA; not widely present. Could potentially be present in vicinity of Woodland and Chehalis Loops.	If present, direct mortality and/or egg loss from construction and maintenance activities.	Northwest would coordinate with WDFW to determine if mitigation measures needed.
Mammals				
Elk *Cervus elaphus*	PHS	Occur primarily in the mountain ranges and shrublands east of the Cascades crest (east of project area). Small herds have been established, or reestablished, throughout other parts of western Washington.	If present, individuals could be temporarily displaced by construction or maintenance noise and activities.	Northwest would coordinate with WDFW to determine if mitigation measures needed.
Marten *Martes americana*	PHS	Mature conifer or mixed forests, usually subalpine, with greater than 35 percent canopy cover.	If present, could be temporarily displaced by construction activity.	None proposed, per consultation with FWS. Northwest would work with WDFW as needed.
Fisher (West Coast DPS) *Martes pennanti*	PHS SE FC	Dense montane forests with abundant large woody debris, snags, cavity trees. No potential habitat on project.	None anticipated due to lack of suitable habitat on project.	None proposed, per consultation with FWS. Northwest would work with WDFW as needed.
Columbian black-tailed deer *Odocoileus hemionus columbianus*	PHS	Common species west of Cascade crest in brushy, logged lands and coniferous forests.	Individuals could be temporarily displaced by construction and maintenance noise and activities.	Northwest would coordinate with WDFW to determine if mitigation measures needed.
Western gray squirrel *Sciurus griseus*	PHS ST SOC	Oak woodlands. One small potential habitat patch in Sumner South Loop.	Presence unlikely. If present, could be directly (mortality, habitat loss) or indirectly (displacement) affected by construction.	None proposed, per consultation with FWS. Northwest would work with WDFW as needed.
Mazama pocket gopher *Thomomys mazama* ssp. *glacialis, pugetensis, tumuli, yelmensis*	PHS ST FC	Prairies, pastures, open meadows with light-textured, well-drained soils. Some potentially suitable habitat in north portion of Chehalis Loop. No record of presence within construction footprint.	If present, could be temporarily displaced by ground disturbance within construction footprint. Pipeline could impede burrowing.	Preconstruction surveys. Minimize/avoid construction activities where species present.

[a] PHS = Priority Habitat Species; SE = State Endangered; ST = State Threatened; SC = State Candidate; SS = State Sensitive; SOC= Species of Concern; DPS = Distinct Population Segment; FC = Federal Candidate

APPENDIX M

DEMOGRAPHICS AND INCOME DISTRIBUTION OF CENSUS TRACTS ADJACENT TO THE WEP

Demographics and Income Distribution of Census Tracts Adjacent to the WEP

	Demographics (2010)							Income (2008-2012)	
Area	**Percent Caucasian**	**Percent African American**	**Percent Asian**	**Percent American Indian and Alaska Native**	**Percent Native Hawaiian and Other Pacific Islander**	**Percent Two or More Races**	**Percent Hispanic or Latino**	**Median Income**	**Percent Persons Below Poverty Level**
Washington	71.6	3.9	7.7	1.8	0.7	4.3	11.7	$59,374	12.9
Clark County	81.8	1.9	4.1	0.7	0.6	3.3	7.6	$58,764	12.0
Census Tract 402.01	90.2	0.6	1.4	0.9	0.1	2.5	4.4	$70,618	8.0
Census Tract 403.01	90.8	0.3	1.8	0.7	0.1	2.3	3.9	$64,375	12.9
Census Tract 403.02	89.8	0.7	1.9	0.6	0.2	2.3	4.5	$88,221	5.3
Cowlitz County	85.8	0.6	1.4	1.3	0.2	2.9	7.8	$46,568	17.9
Census Tract 3	71.3	0.8	3.7	1.8	0.0	2.9	19.4	$12,944	49.5
Census Tract 8	90.2	0.4	2.4	0.9	0.2	2.3	3.5	$68,496	7.6
Census Tract 9	87.7	0.4	1.0	0.8	0.2	3.0	6.8	$54,370	12.2
Census Tract 11	78.9	0.8	1.8	1.9	0.1	4.0	12.6	$31,642	0.3
Census Tract 15.01	92.1	0.2	0.7	1.0	0.1	2.1	3.7	$62,917	8.5
Census Tract 18	90.8	0.3	0.7	1.5	0.0	2.7	4.1	$49,489	17.5
Census Tract 20.01	92.4	0.2	0.9	1.3	0.2	2.3	2.7	$51,618	10.7
Lewis County	86.0	0.5	0.9	1.3	0.1	2.5	8.7	$43,490	13.9
Census Tract 9701	91.7	0.1	0.9	1.1	0.2	2.2	3.6	$48,339	18.5
Census Tract 9702	87.3	0.4	1.4	0.6	0.1	2.1	8.1	$40,298	18.2
Census Tract 9704	76.0	0.3	0.9	1.2	0.1	2.6	18.8	$40,631	14.8
Census Tract 9707	74.8	0.6	0.9	1.6	0.4	2.5	19.2	$37,404	27.4
Census Tract 9709	78.9	0.7	1.6	0.6	0.0	2.2	16.0	$33,255	7.4
Census Tract 9710	81.8	2.7	1.2	1.4	0.3	1.7	10.9	$44,231	12.6
Census Tract 9712	90.0	0.2	0.6	1.6	0.1	2.6	4.8	$43,093	8.7
Census Tract 9715	88.8	0.3	0.5	1.6	0.1	2.6	6.1	$53,600	12.1
Census Tract 9718	91.3	0.5	0.4	2.0	0.1	2.1	3.4	$34,699	17.5
Census Tract 9719	93.0	0.4	0.4	1.3	0.0	1.8	3.0	$43,000	14.1
Thurston County	78.9	2.5	5.1	1.2	0.7	4.3	7.1	$63,224	11.1
Census Tract 124.11	79.2	2.3	2.1	1.7	0.6	5.4	8.6	$51,529	19.8
Census Tract 124.12	79.8	2.1	2.2	1.6	0.8	5.2	8.2	$61,250	14.8
Census Tract 124.20	85.0	1.1	1.9	1.7	0.5	4.6	4.8	$76,165	8.1
Census Tract 125.10	83.4	1.3	1.6	1.1	0.5	4.9	6.9	$61,375	11.1
Census Tract 126.10	89.8	0.5	1.4	0.8	0.1	2.8	4.5	$70,213	4.4
Census Tract 127.10	84.2	1.0	1.9	0.9	0.5	3.5	8.0	$55,789	10.9
Pierce County	70.3	6.5	5.8	1.1	1.3	5.6	9.2	$59,105	11.9
Census Tract 702.03	87.0	0.7	1.5	0.6	0.1	4.2	5.7	$93,102	5.9
Census Tract 703.07	90.3	0.3	2.2	0.5	0.1	2.2	4.3	$108,237	6.2
Census Tract 703.08	86.8	0.8	1.9	0.9	0.3	3.9	5.3	$78,590	9.5
Census Tract 703.09	88.8	0.7	1.2	1.0	0.1	3.1	4.9	$79,117	7.1
Census Tract 703.12	82.0	2.0	3.8	0.6	0.2	4.0	7.3	$88,259	2.2
Census Tract 703.14	88.0	0.7	3.0	0.5	0.3	3.2	4.3	$81,319	6.4
Census Tract 703.16	67.0	3.8	16.1	0.7	0.5	5.0	6.8	$72,786	1.7
Census Tract 704.04	83.8	1.7	1.9	1.0	0.4	4.3	6.5	$87,667	5.8
Census Tract 712.06	76.9	3.4	4.5	1.3	1.0	5.8	6.9	$59,974	6.7
Census Tract 713.05	74.7	4.1	5.0	1.1	1.2	5.5	8.3	$54,811	11.9
Census Tract 713.06	72.8	6.6	5.8	1.1	1.6	6.3	5.7	$71,696	5.6
Census Tract 713.07	78.7	4.1	3.9	0.7	1.4	4.6	6.5	$60,938	8.7
Census Tract 714.07	69.5	6.9	4.8	0.7	2.0	7.8	8.0	$65,257	6.3
Census Tract 714.08	59.4	10.0	5.4	1.1	4.0	8.4	11.5	$50,081	16.3
Census Tract 714.09	61.5	10.3	5.1	1.0	3.7	7.5	10.8	$53,947	12.5
Census Tract 714.10	58.6	10.2	7.5	0.8	3.9	7.5	11.1	$64,438	15.2
Census Tract 714.11	54.1	13.6	7.2	0.7	4.0	7.6	12.7	$64,517	8.3
Census Tract 715.06	64.0	9.7	6.3	1.0	4.1	7.2	7.7	$71,837	12.0
Census Tract 729.06	70.3	11.4	3.1	0.6	1.0	2.2	11.4	$55,833	0.0
Census Tract 730.01	84.1	1.2	1.6	1.8	1.1	4.3	5.7	$58,968	11.6
Census Tract 730.06	87.6	0.9	1.2	1.4	0.3	4.6	3.9	$70,516	8.2
Census Tract 731.10	84.0	2.4	3.2	0.9	0.5	4.1	4.8	$90,354	3.8
Census Tract 731.11	80.3	2.4	2.4	1.0	0.9	4.5	8.4	$69,294	4.1
Census Tract 731.14	76.4	3.7	2.7	1.4	2.6	6.0	7.1	$63,384	12.0
Census Tract 731.20	70.3	6.6	5.2	0.7	2.1	6.1	8.9	$64,821	13.8
Census Tract 731.21	71.0	4.8	7.3	0.8	1.2	5.6	9.2	$81,736	3.4
Census Tract 731.25	70.6	6.5	5.5	0.8	1.5	6.1	8.8	$66,538	9.5
Census Tract 734.04	86.2	1.1	1.6	1.3	0.3	4.4	5.1	$63,550	9.9
Census Tract 734.05	76.9	3.3	4.8	1.2	0.7	4.0	8.9	$49,694	8.4

Demographics and Income Distribution of Census Tracts Adjacent to the WEP

	Demographics (2010)							Income (2008-2012)	
Area	**Percent Caucasian**	**Percent African American**	**Percent Asian**	**Percent American Indian and Alaska Native**	**Percent Native Hawaiian and Other Pacific Islander**	**Percent Two or More Races**	**Percent Hispanic or Latino**	**Median Income**	**Percent Persons Below Poverty Level**
Census Tract 734.07	82.0	1.4	1.7	2.3	0.5	3.7	8.4	$50,665	18.6
Census Tract 735	88.4	0.9	2.5	0.8	0.3	3.1	3.9	$73,066	5.0
Census Tract 9400.10	81.7	1.9	2.4	2.2	0.5	3.8	7.4	$46,183	15.8
King County	64.8	6.0	14.5	0.7	0.7	4.1	8.9	$71,175	10.9
Census Tract 304.04	78.7	1.9	8.6	1.0	1.2	3.4	5.2	$74,331	6.7
Census Tract 306	71.1	4.3	4.2	1.5	3.1	4.0	11.8	$40,923	17.0
Census Tract 309.02	63.2	3.1	9.6	1.6	1.9	4.7	15.8	$43,775	22.0
Census Tract 310	76.1	3.9	8.6	0.5	0.7	5.2	4.9	$84,375	4.2
Census Tract 311	62.9	4.8	4.8	8.7	1.6	4.6	12.4	$49,444	15.8
Census Tract 312.02	70.3	1.1	2.1	15.7	0.5	3.0	7.2	$85,547	12.1
Census Tract 312.05	65.0	6.9	13.8	0.8	0.8	3.6	9.0	$71,368	12.1
Census Tract 312.06	65.7	3.8	10.4	1.2	0.7	3.5	14.4	$60,577	11.0
Census Tract 316.03	84.9	1.8	3.9	1.0	0.2	3.5	4.7	$88,750	6.7
Census Tract 316.04	78.5	2.2	5.1	0.7	0.8	5.1	7.5	$99,833	2.9
Census Tract 316.05	91.1	0.8	1.3	0.6	0.2	3.0	3.0	$95,337	4.7
Census Tract 317.04	61.9	6.8	13.2	0.5	0.9	5.2	11.4	$79,875	9.4
Census Tract 317.05	74.1	4.3	9.9	0.4	0.5	4.0	6.7	$101,979	0.9
Census Tract 317.06	68.4	4.9	12.4	0.7	0.6	5.1	7.7	$83,224	6.9
Census Tract 318	72.9	2.6	14.5	0.5	0.6	4.1	4.5	$92,813	7.5
Census Tract 319.03	77.9	1.4	6.4	0.7	0.3	3.6	9.6	$86,288	3.4
Census Tract 319.06	73.8	2.4	14.3	0.6	0.2	3.3	5.3	$112,292	5.2
Census Tract 320.02	86.8	1.5	2.3	0.7	0.2	3.5	4.7	$89,900	3.7
Census Tract 320.03	90.4	1.0	2.0	0.6	0.0	2.2	3.7	$90,230	5.2
Census Tract 320.08	85.1	1.4	2.2	0.5	0.3	4.2	6.0	$99,750	0.0
Census Tract 320.10	84.2	1.9	4.4	0.3	0.3	3.9	4.7	$89,924	4.1
Census Tract 320.11	83.8	2.1	4.6	0.3	0.1	3.6	5.4	$104,018	0.6
Census Tract 321.03	79.6	0.9	6.7	0.4	0.1	3.8	8.4	$60,232	7.8
Census Tract 321.04	81.4	1.5	6.0	0.4	0.3	3.2	7.1	$85,906	3.6
Census Tract 322.03	74.9	1.3	16.7	0.2	0.2	2.9	3.7	$123,393	3.9
Census Tract 322.07	79.1	0.8	12.4	0.3	0.0	2.8	4.5	$132,604	1.2
Census Tract 322.08	77.1	0.9	14.9	0.4	0.1	2.5	4.0	$73,889	3.0
Census Tract 322.15	66.2	0.8	25.2	0.0	0.1	3.5	3.8	$169,236	0.7
Census Tract 323.07	87.0	0.8	3.9	0.4	0.2	3.3	4.3	$114,943	1.8
Census Tract 323.11	87.9	0.7	3.9	0.4	0.2	2.8	3.8	$138,421	1.0
Census Tract 323.15	87.2	0.4	4.3	0.2	0.2	3.5	4.0	$128,341	3.1
Census Tract 323.16	73.8	0.7	17.9	0.2	0.0	3.6	3.6	$161,829	1.4
Census Tract 323.17	79.6	0.8	11.1	0.2	0.0	3.6	4.5	$136,917	5.9
Census Tract 323.28	85.2	0.8	5.9	0.2	0.1	3.1	4.3	$128,155	1.0
Census Tract 324.01	87.5	0.4	2.2	0.6	0.0	2.8	6.3	$90,476	5.8
Census Tract 325	85.6	0.8	3.0	0.7	0.1	2.5	7.2	$86,396	6.1
Census Tract 326.01	90.2	0.1	0.9	0.8	0.1	2.7	5.1	$72,447	6.9
Census Tract 326.02	80.8	0.9	9.1	0.6	0.1	3.7	4.6	$121,828	5.1
Census Tract 327.02	91.0	0.3	1.5	0.7	0.2	2.6	3.5	$96,146	5.8
Snohomish County	74.3	2.4	8.8	1.2	0.4	3.7	9.0	$68,338	9.8
Census Tract 415	84.4	2.7	2.5	1.4	0.1	3.7	5.0	$56,467	15.1
Census Tract 416.01	72.3	3.1	12.0	0.6	0.3	3.9	7.5	$78,214	6.3
Census Tract 416.07	78.6	1.2	10.0	0.4	0.1	3.8	5.6	$109,952	5.6
Census Tract 416.08	78.1	1.5	10.2	0.5	0.2	3.4	6.0	$89,612	6.9
Census Tract 519.12	88.8	0.3	3.9	0.5	0.2	2.2	3.5	$91,765	2.5
Census Tract 519.26	72.2	1.2	19.9	0.3	0.0	2.9	3.5	$110,156	1.6
Census Tract 521.04	76.7	1.5	7.7	1.0	0.5	5.0	7.4	$80,313	0.8
Census Tract 521.07	74.2	0.4	15.2	0.6	0.4	3.7	5.4	$106,955	7.1
Census Tract 521.18	77.6	1.4	10.4	0.4	0.2	4.0	5.9	$110,291	4.4
Census Tract 522.03	85.0	0.9	3.0	0.6	0.1	2.8	7.4	$92,250	3.1
Census Tract 522.06	92.3	0.3	1.1	0.4	0.1	2.1	3.4	$86,216	5.6
Census Tract 522.08	67.3	0.5	1.7	0.8	0.1	3.1	26.4	$50,332	15.0
Census Tract 522.09	65.7	10.0	1.4	2.5	1.0	1.9	17.4	$47,865	15.1
Census Tract 524.01	87.3	0.4	1.4	1.1	0.2	2.8	6.5	$68,167	7.8
Census Tract 524.02	84.7	0.5	1.7	0.8	0.1	2.7	9.2	$43,411	18.2
Census Tract 525.02	88.6	0.4	2.6	0.5	0.2	2.3	5.2	$66,006	6.4
Census Tract 525.04	90.9	0.9	0.8	0.8	0.0	2.8	3.7	$66,250	9.1

Demographics and Income Distribution of Census Tracts Adjacent to the WEP

	Demographics (2010)							Income (2008-2012)	
Area	**Percent Caucasian**	**Percent African American**	**Percent Asian**	**Percent American Indian and Alaska Native**	**Percent Native Hawaiian and Other Pacific Islander**	**Percent Two or More Races**	**Percent Hispanic or Latino**	**Median Income**	**Percent Persons Below Poverty Level**
Census Tract 526.03	86.9	0.6	1.6	1.0	0.2	3.6	5.9	$75,817	7.5
Census Tract 526.04	83.1	1.3	1.8	0.8	0.4	3.6	8.9	$53,450	20.2
Census Tract 526.05	87.4	0.7	2.1	0.5	0.2	3.6	5.4	$78,374	5.5
Census Tract 533.01	85.8	0.7	1.6	0.7	0.3	3.0	7.7	$60,357	11.9
Census Tract 533.02	91.4	0.6	1.2	0.8	0.1	2.5	3.2	$81,715	2.7
Census Tract 534	92.1	0.5	1.1	1.4	0.1	2.3	2.4	$84,015	4.5
Census Tract 535.06	91.6	0.3	1.1	1.0	0.1	2.3	3.5	$69,888	4.7
Census Tract 536.02	91.8	0.5	0.8	0.6	0.1	2.6	3.5	$69,153	6.5
Census Tract 536.03	91.6	0.3	1.3	0.8	0.1	2.5	3.5	$79,464	5.1
Census Tract 537	90.4	0.2	0.4	2.3	0.0	3.5	3.0	$43,147	16.3
Census Tract 538.01	90.2	0.5	1.1	1.1	0.2	2.3	4.5	$62,768	14.0
Skagit County	76.7	0.5	1.7	1.7	0.2	2.1	16.9	$56,457	12.6
Census Tract 9508	88.2	0.2	1.2	0.9	0.2	2.2	6.8	$77,101	3.2
Census Tract 9510	92.2	0.1	0.4	1.1	0.1	2.3	3.6	$55,078	11.9
Census Tract 9511	89.2	0.2	0.6	3.1	0.0	2.8	3.6	$42,244	16.3
Census Tract 9514	84.8	0.4	0.9	1.1	0.0	1.9	10.8	$50,959	6.1
Census Tract 9515	80.6	0.4	1.4	1.6	0.0	2.2	13.7	$51,615	14.3
Census Tract 9516	67.9	0.3	2.0	0.6	0.1	1.6	27.3	$56,983	11.2
Census Tract 9521	81.1	0.4	0.8	1.8	0.2	1.1	14.4	$56,955	10.9
Census Tract 9523.02	60.9	0.9	3.3	0.9	0.2	2.1	31.5	$61,107	9.7
Census Tract 9524.02	67.4	0.5	2.3	0.7	0.3	1.9	26.7	$59,559	13.5
Census Tract 9526	78.3	0.4	0.9	1.4	0.2	2.0	16.7	$54,535	6.7
Census Tract 9901	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-
Whatcom County	81.9	0.9	3.5	2.5	0.2	3.0	7.8	$51,639	15.8
Census Tract 8.06	88.2	0.7	1.5	0.9	0.2	3.3	5.0	$69,234	10.3
Census Tract 103.03	83.8	0.5	2.9	0.6	0.2	1.5	10.3	$62,897	6.0
Census Tract 107.01	83.4	0.4	2.4	0.5	0.1	1.7	11.5	$69,068	3.6
Census Tract 107.02	70.0	0.2	0.9	7.7	0.0	4.5	16.5	$59,741	11.6
Okanogan County	68.3	0.3	0.5	10.7	0.1	2.4	17.6	$40,924	20.6
Census Tract 9709	95.0	0.1	0.6	0.9	0.0	0.8	2.5	$44,612	9.3

Source: U.S. Census Bureau, 2010; 2008-2012.

APPENDIX N—REFERENCES

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APPENDIX O

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APPENDIX O – LIST OF PREPARERS

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APPENDIX P

KEYWORD INDEX

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