US Army Corps of Engineers
Seattle District

Joint Public Notice

Application for a Department of the Army Permit and a Washington Department of Ecology Water Quality Certification and/or Coastal Zone Management Consistency Concurrence

US Army Corps of Engineers
Regulatory Branch
Post Office Box 3755
Seattle, WA 98124-3755
Telephone: (206) 764-6960
ATTN: Olivia Romano,
Project Manager

WA Department of Ecology
SEA Program
Post Office Box 47600
Olympia, WA 98504-7600
Telephone: (360) 407-6068
ATTN: SEA Program,
Federal Permit Coordinator

Public Notice Date: February 9, 2015
Expiration Date: March 11, 2015

Reference No.: NWS-2014-00959-WRD
Name: Pierce County Public Works and Utilities, Surface Water Management

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Interested parties are hereby notified that the U.S. Army Corps of Engineers (Corps) and the Washington Department of Ecology (Ecology) have received an application to perform work in waters of the United States as described below and shown on the enclosed drawings dated November 24, 2014.

The Corps will review the work in accordance with Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act. Ecology will review the work pursuant to Section 401 of the CWA, with applicable provisions of State water pollution control laws and the Coastal Zone Management Act.

APPLICANT: Pierce County, Public Works & Utilities
Surface Water Management
Attention: Ms. Annette Pearson
2702 South 42nd Street, Suite 201
Tacoma, Washington 98409-7322
Telephone: (253) 798-2725

LOCATION: In the Puyallup River System, including the Carbon River from river mile 0.0 to 8.4, the White River, from river mile 0.0 to 5.5, and in the Puyallup River from river mile 2.9 to 28.6, in Pierce County, Washington.

WORK: Conduct culvert and outfall maintenance and repairs in the Puyallup River system for a period of ten years. Visual inspection of the existing pipes that convey water (natural drainage or stormwater runoff) from one side of the existing levee or revetment structure to one of the three rivers would be done to assess the degree in which the pipes are clogged or constricted at the inlet or outlet. Up to 87 culverts/discharge pipes have been identified in the upper, middle, and lower Puyallup River. Up to eight culverts/discharge pipes have been identified in the Carbon River and up to 27 culverts/pipes have been identified in lower White River. Maintenance and repair work includes the removal of vegetation, accumulated sediments, and debris from within the existing pipes, replacement of existing armoring (riprap) adjacent to the existing culvert or pipe, realignment of dislodged pipe segments, and repair or replacement of slide gates, tide gates, flap gates, flex valves, and debris barriers.

Removal of sediments and debris: Up to 50 cubic yards of sediments would be removed pre pipe location. Excavation would be limited to 25 feet from the end of the pipe and would not extend beyond baseline conditions

into native ground. Removal of sediment would be done by one of three methods: hand tools, jet rod, or excavator bucket. Sediments removed from pipe inlet/outlets would be hauled to a Pierce County approved disposal location. Bypass of existing flows would be used when necessary to minimize release of sediment into waters that cannot otherwise be contained while the work is performed. Bypass work would be performed using pumps, gravity flow through the pipe, or gravity flow around the pipe. Bypass pumps in fish bearing waters would be installed with Washington Department of Fish and Wildlife approved screens and appropriate level of fish exclusion. A cofferdam or similar device would be installed at the downstream end of a bypass to prevent the backwater from entering the work area. The bypass would be large enough to pass all anticipated flows and debris for the duration of the project without water backing up beyond the banks of the natural channel. Woody debris would be removed from end of the ends of the pipes and would be repositioned in the natural stream or receiving waters within 25 feet of the pipe inlet/outlet. Large wood material embedded in the bank or streambed would be left undisturbed and intact to the extent feasible. Other woody material would be lifted out of the channel and placed above Ordinary High Water (OHW) line or floated downstream, or repositioned at another location below the OHW line. Small woody debris would be floated downstream, placed in the riparian area, or hauled off site.

Localized pipe, riprap, and embankment repairs: Dislodged concrete pipe segment(s) would be resituated and realigned to pre-damaged conditions. Stormwater outfalls (closed systems) may be slip lined, patched, or grouted. Flap gates or fish exclusion devices may be repaired or installed for closed stormwater control systems and for other stormwater outfalls not conveying natural drainages. The replacement of existing armoring would be limited to no more than 25 linear feet per location. Any riprap dislodged from the existing bank protection not used for the repair would be removed from the watercourse and disposed of at an approved site. Repair of embankment erosion may include placement of soil or riprap of up to 25 cubic yards annually. The areas above rock riprap may be filled with soil and include bio-engineering plantings or waddles with compost, or grass seeding to provide erosion control and reestablishment of native vegetation. Rock or logs may be used as stabilization along each stream bank (upland side of levee) for up to 10 linear feet from inlet/outlet. Log toes maybe placed below potential scour depth in areas where no riprap currently existing.

PURPOSE: To maintain conveyance and capacity of existing pipes that provide drainage of natural streams and stormwater runoff through the existing levees and revetments into the Puyallup River System.

ADDITIONAL INFORMATION: Copies of this public notice which have been mailed or otherwise physically distributed feature project drawings in black and white. The electronic version features those drawings in color, which we think more accurately communicates the scope of project impacts. To access the electronic version of this public notice, go to the Seattle District's web page at http://www.nws.usace.army.mil/ and under the heading Open Public Comment Periods select Regulatory Public Notices. Recently-issued public notices are listed in chronological order of the date of issuance. Select and view the listing for this project.

ENDANGERED SPECIES: The Endangered Species Act (ESA) requires federal agencies to consult with the National Marine Fisheries Service (NMFS) and/or U.S. Fish and Wildlife Service pursuant to Section 7 of the ESA on all actions that may affect a species listed (or proposed for listing) under the ESA as threatened or endangered or any designated critical habitat. After receipt of comments from this public notice, the U.S. Army Corps of Engineers will evaluate the potential impacts to proposed and/or listed species and their designated critical habitat.

CULTURAL RESOURCES: The Corps has reviewed the latest published version of the National Register of Historic Places, lists of properties determined eligible and other sources of information. The Corps invites responses to this public notice from Native American Tribes or tribal governments; Federal, State, and local agencies; historical and archeological societies; and other parties likely to have knowledge of or concerns regarding historic properties and sites of religious and cultural significance at or near the project area. After receipt of comments from this public notice, the Corps will evaluate potential impacts and consult with the State Historic

Preservation Officer and Native American Tribes in accordance with Section 106 of the National Historic Preservation Act, as appropriate.

PUBLIC HEARING: Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing.

EVALUATION – CORPS: The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefits, which reasonably may be expected to accrue from the proposal, must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

The Corps is soliciting comments from the public; Native American Nations or tribal governments; Federal, State, and local agencies and officials; and other interested parties in order to consider and evaluate the impacts of this activity. Any comments received will be considered by the Corps to determine whether to issue, modify, condition or deny a permit for the work. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the activity.

The described discharge will be evaluated for compliance with guidelines promulgated by the Environmental Protection Agency under authority of Section 404(b)(1) of the CWA. These guidelines require an alternatives analysis for any proposed discharge of dredged or fill material into waters of the United States.

SOURCE OF FILL MATERIAL: The applicant has not yet identified the source of the fill material. Should a permit be issued, the Corps will evaluate the fill material source prior to the start of construction.

EVALUATION – ECOLOGY: Ecology is soliciting comments from the public; Federal, Native American Nations or tribal governments, State, and local agencies and officials; and other interested parties in order to consider and evaluate the impacts of this activity. Ecology will be considering all comments to determine whether to certify or deny certification for the proposed project.

ADDITIONAL EVALUATION: Pierce County has issued an exemption from the requirement of obtaining a Shorelines Substantial Development permit for this project.

COMMENT AND REVIEW PERIOD: Conventional mail or e-mail comments on this public notice will be accepted and made part of the record and will be considered in determining whether it would be in the public interest to authorize this proposal. In order to be accepted, e-mail comments must originate from the author's e-mail account and must include on the subject line of the e-mail message the permit applicant's name and reference number as shown below. Either conventional mail or e-mail comments must include the permit applicant's name and reference number, as shown below, and the commentator's name, address, and phone number. All comments whether conventional mail or e-mail must reach this office, no later than the expiration date of this public notice to ensure consideration.

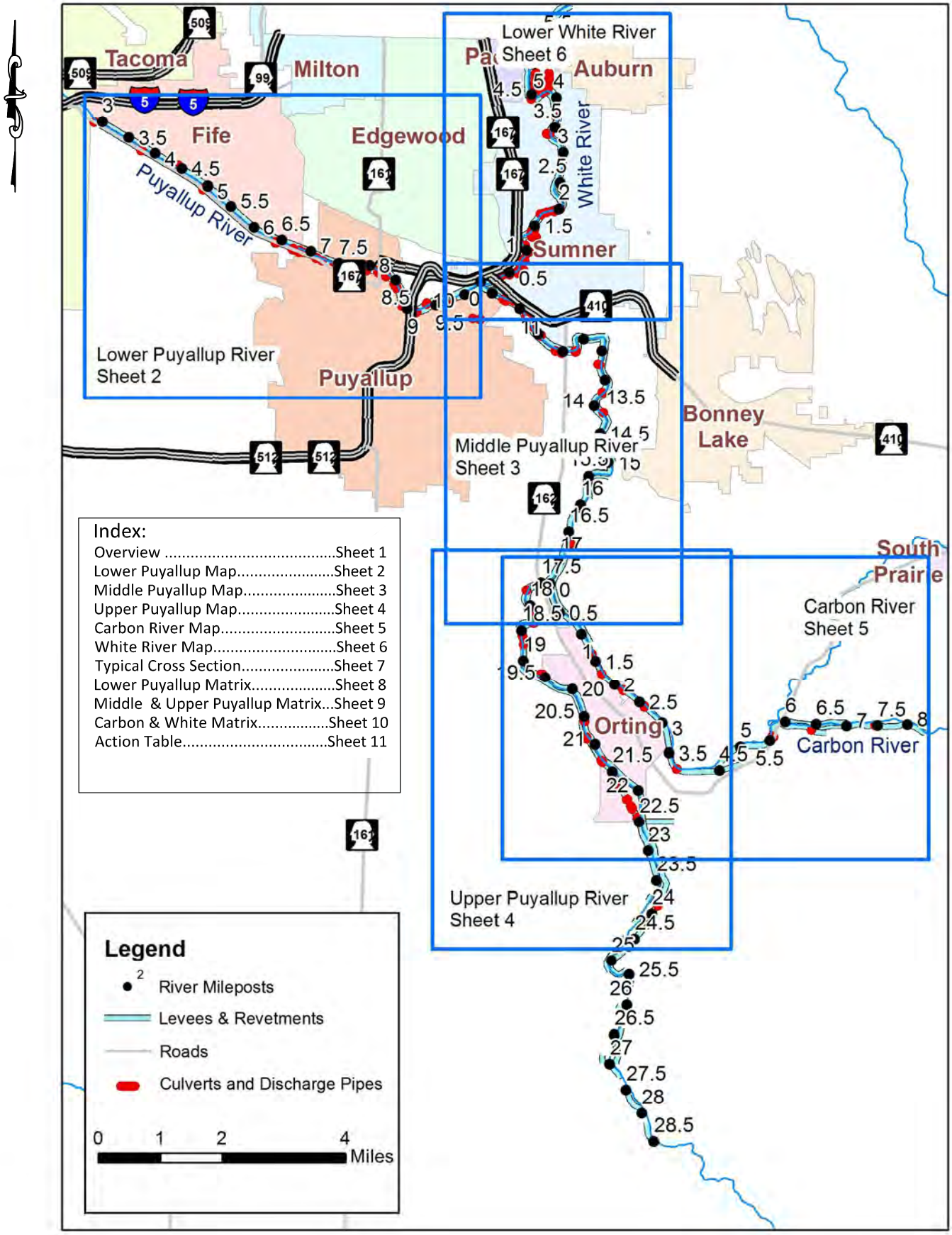
NWS-2014-00959-WRD, Pierce County Public Works and Utilities

CORPS COMMENTS: All e-mail comments should be sent to olivia.h.romano@usace.army.mil. Conventional mail comments should be sent to: U.S. Army Corps of Engineers, Regulatory Branch, Attention: Olivia Romano, P.O. Box 3755, Seattle, Washington 98124-3755. All comments received will become part of the administrative record and are subject to public release under the Freedom of Information Act including any personally identifiable information such as names, phone numbers, and addresses.

ECOLOGY COMMENTS: Any person desiring to present views on the project pertaining to a request for water quality certification under Section 401 of the CWA and/or Coastal Zone Management consistency concurrence, may do so by submitting written comments to the following address: Washington State Department of Ecology, Attention: Federal Permit Coordinator, P.O. Box 47600, Olympia, Washington 98504-7600, or e-mail to ecyrefedpermits@ecy.wa.gov.

To ensure proper consideration of all comments, responders must include the following name and reference number in the text of their comments: Pierce County Public Works and Utilities; NWS-2014-00959-WRD

Encl: Figures (11)



PURPOSE: River System Culvert & Discharge Pipe Maintenance Program
LOCATION: Puyallup River System
LAT./LONG. Varies; See Sheets 8–10
TWN: 18N, 19N, & 20N RNG: 3E, 4E, & 5E
DATUM: NAVD 1988/ (NAD 83/91)

REFERENCE: NWS–2014–959–WRD
APPLICANT: Pierce County Public Works & Utilities, SWM
COUNTY: Pierce STATE: WA.
WATER BODY: Puyallup River, White River, & Carbon River
DATE: November 2014

Pierce County
DEPARTMENT OF PUBLIC WORKS AND UTILITIES
SURFACE WATER MANAGEMENT
2702 SOUTH 42ND STREET, SUITE 201
TACOMA, WA 98409–7322

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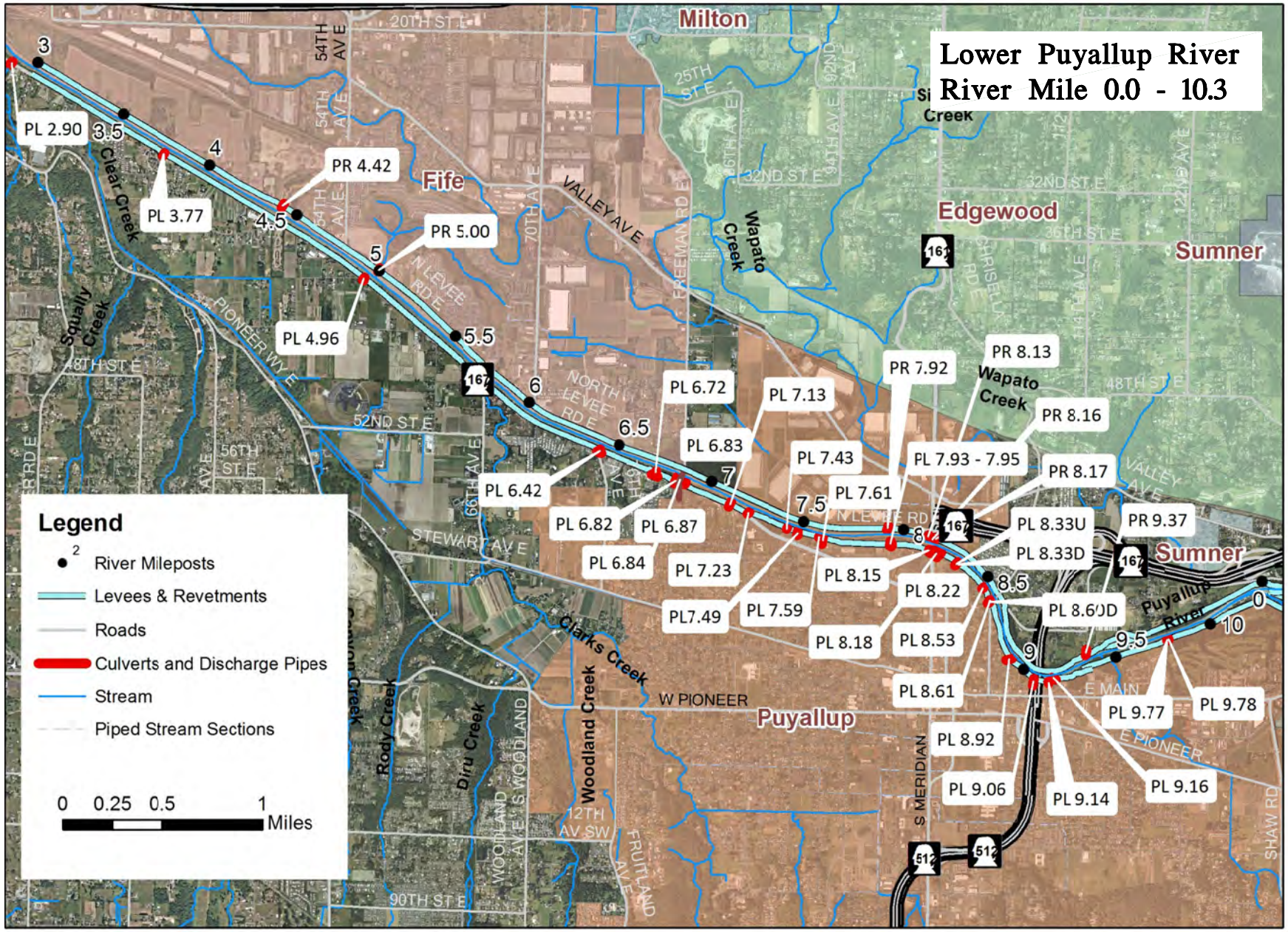

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APPROVED: ACF
DRAWN: TE/SM

PURPOSE: River System Culvert & Discharge Pipe Maintenance Program
LOCATION: Puyallup River System
LAT./LONG. Varies, See Sheets 8–10
TWN: 18N, 19N & 20N RNG: 3E, 4E, & 5E
DATUM: Vert. NGVD 1929/Horiz. Pierce County (NAD 83/91)

REFERENCE: NWS–2014–959–WRD
APPLICANT: Pierce County Public Works & Utilities, SWM
COUNTY: Pierce STATE: WA.
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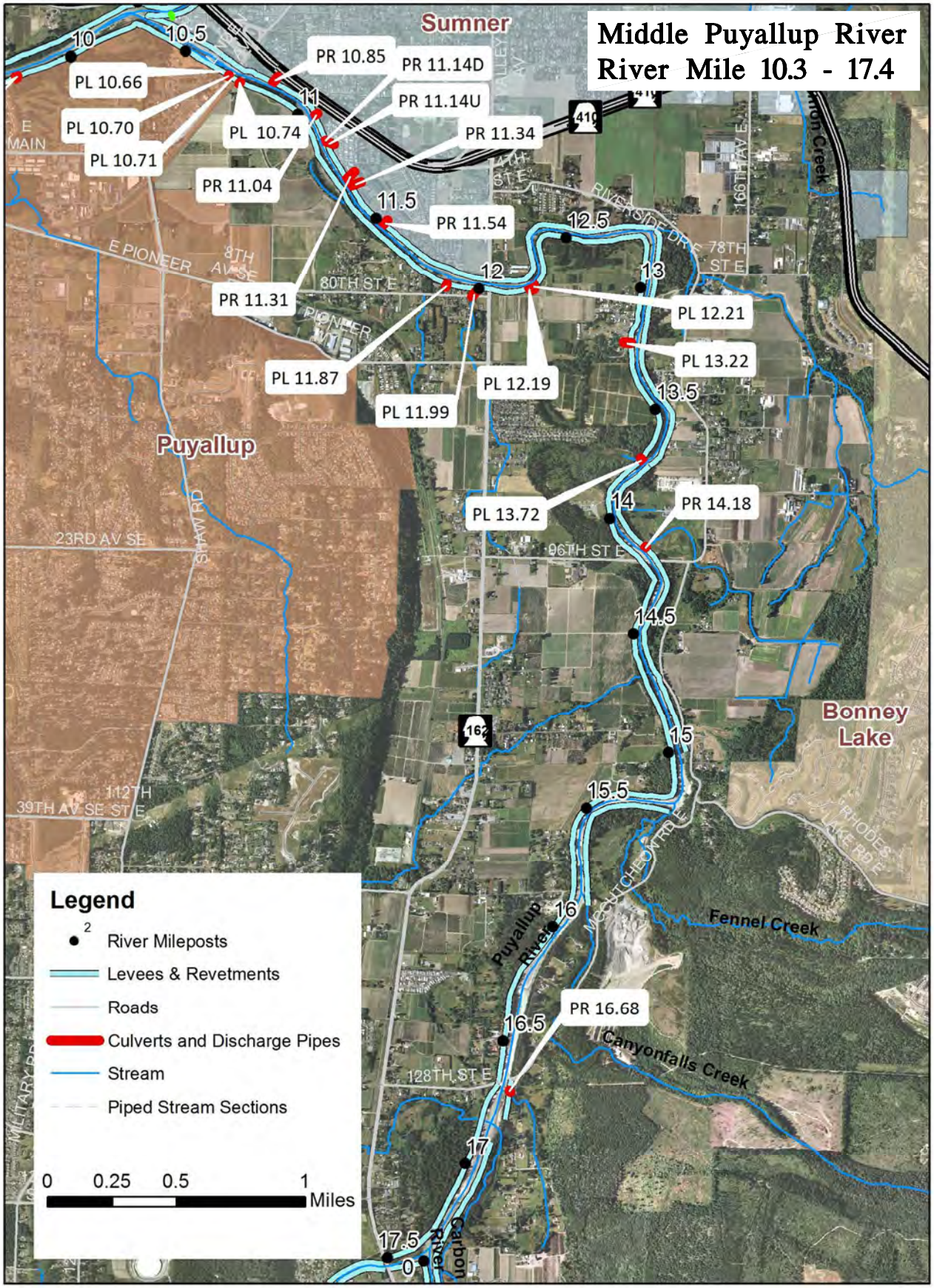

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LAT./LONG. Varies; See Sheets 8–10
TWN: 18N, 19N, & 20N RNG: 3E, 4E, & 5E
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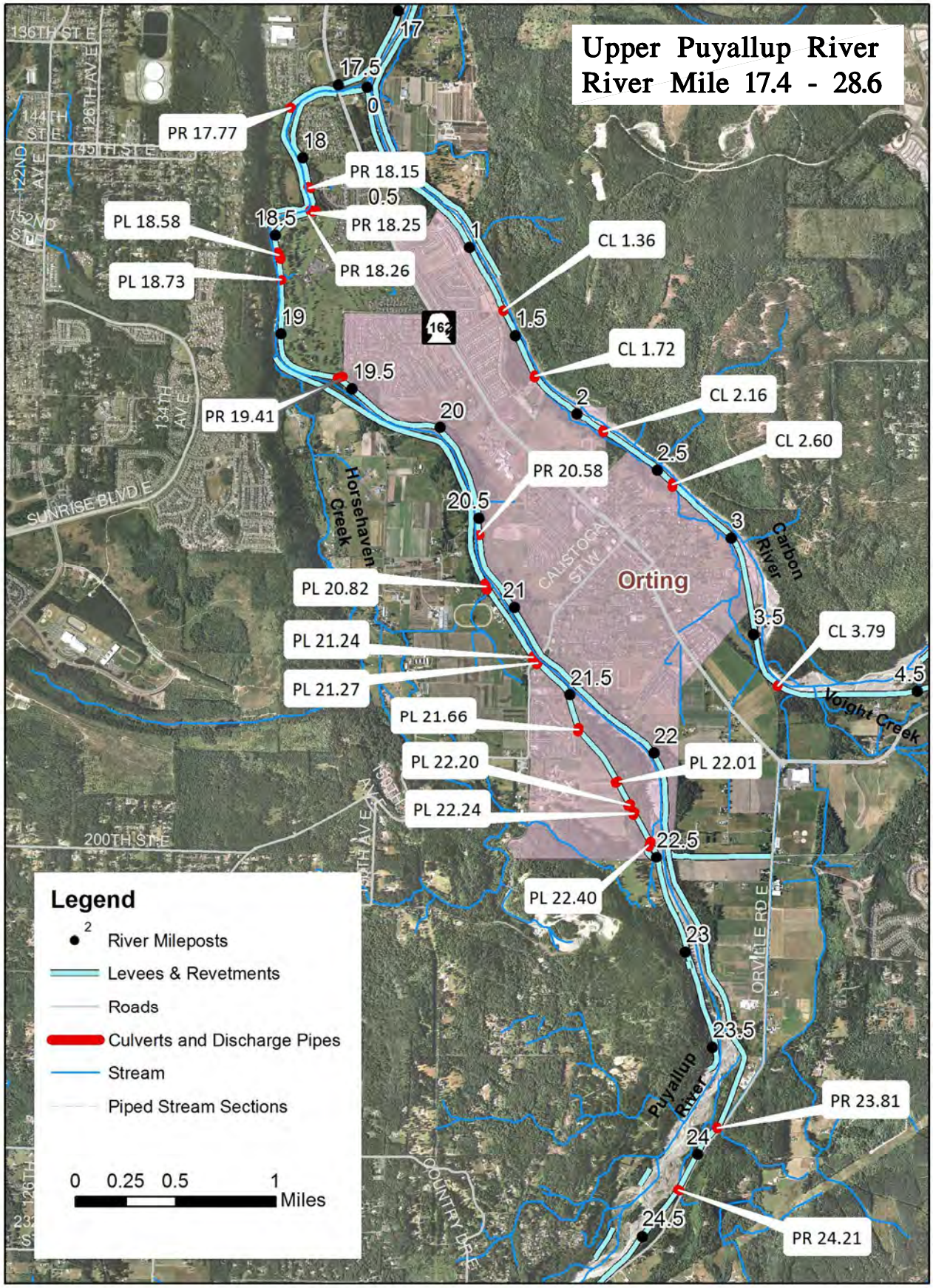

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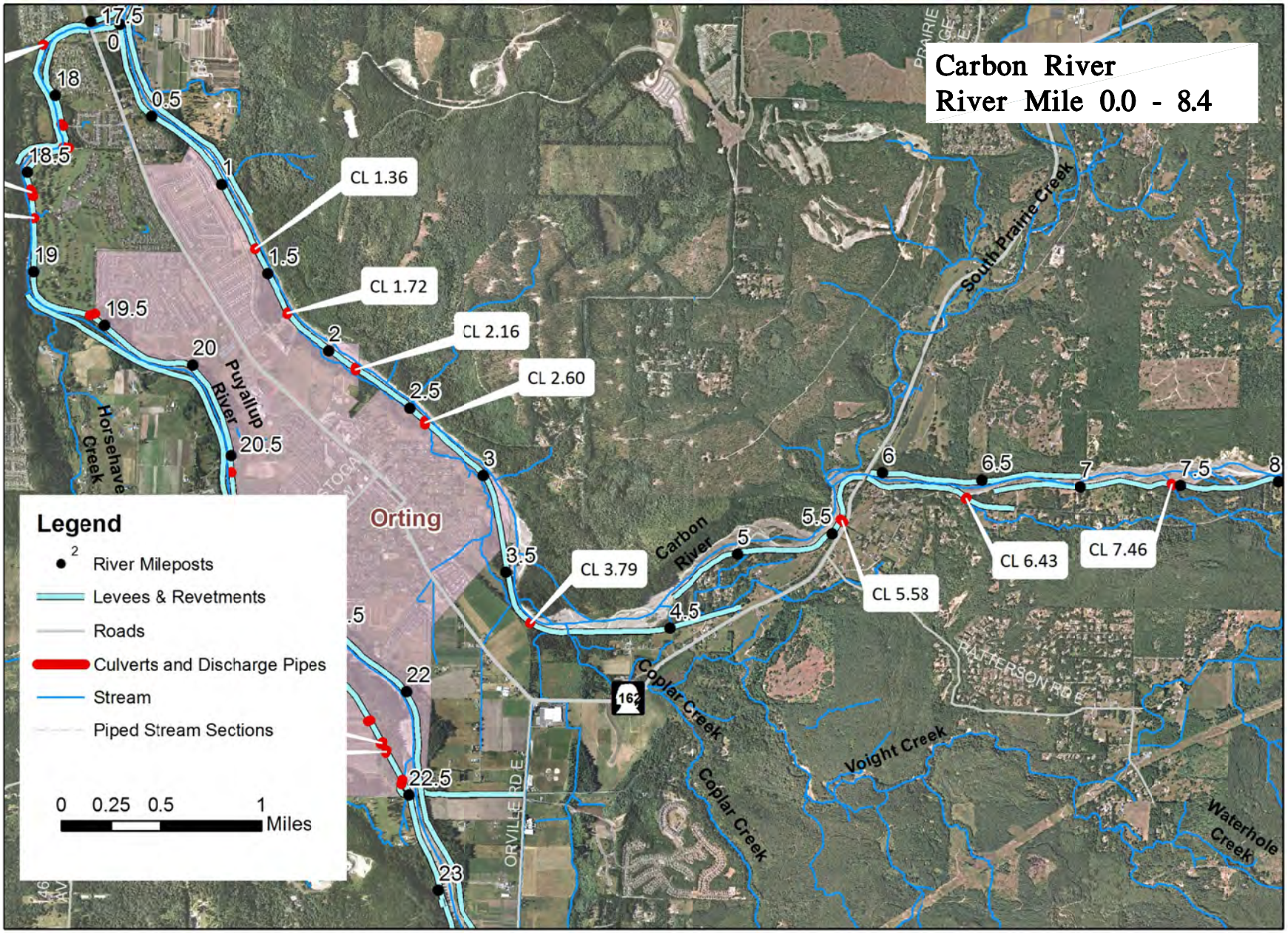

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APPROVED: ACF
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PURPOSE: River System Culvert & Discharge Pipe Maintenance Program
LOCATION: Puyallup River System
LAT./LONG. Varies; See Sheets 8–10
TWN: 18N, 19N & 20N RNG: 3E, 4E, & 5E
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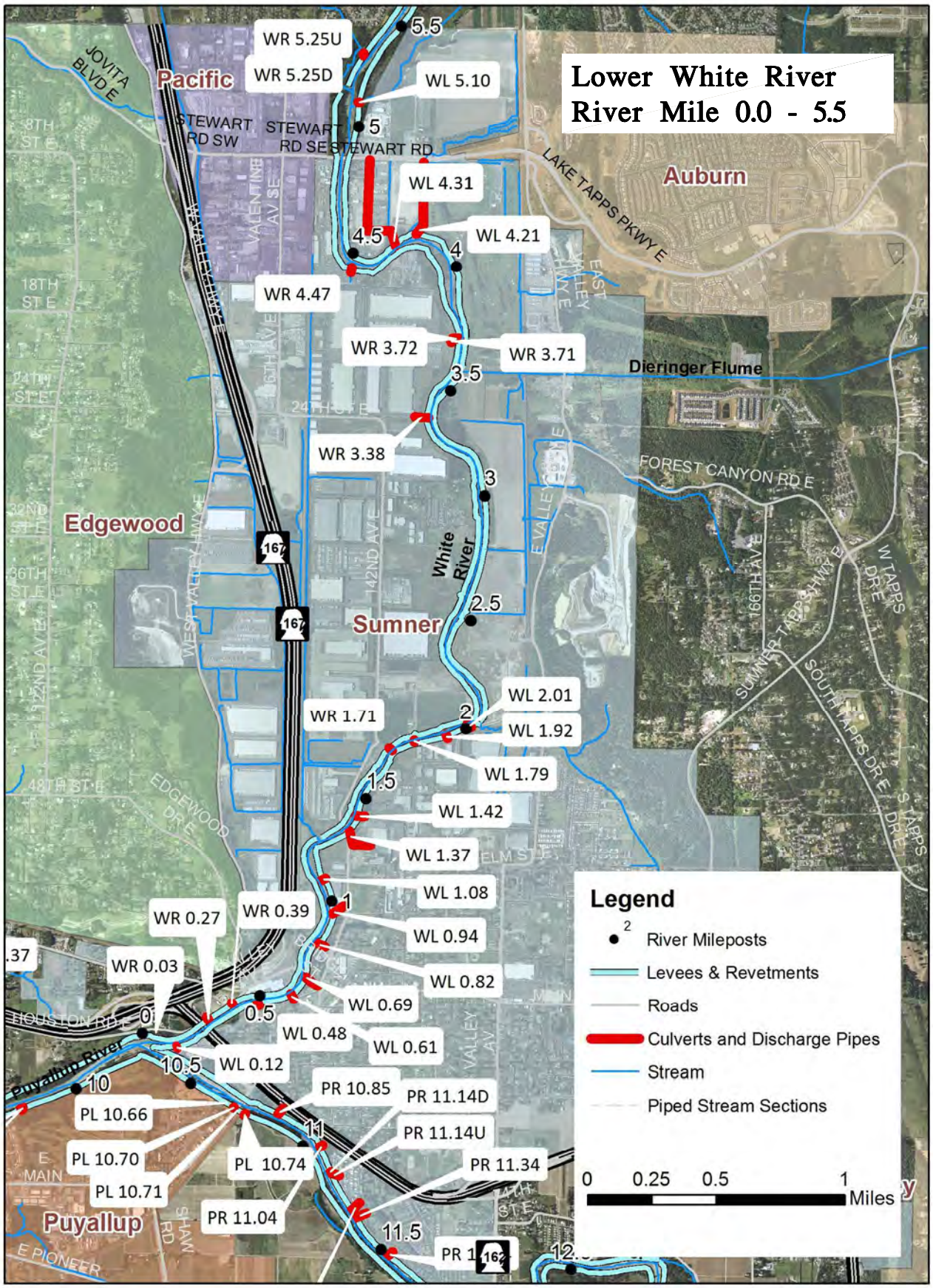

PURPOSE: River System Culvert & Discharge Pipe Maintenance Program
LOCATION: Puyallup River System
LAT./LONG. Varies; See Sheets 8–10
TWN: 18N, 19N, & 20N RNG: 3E, 4E, & 5E
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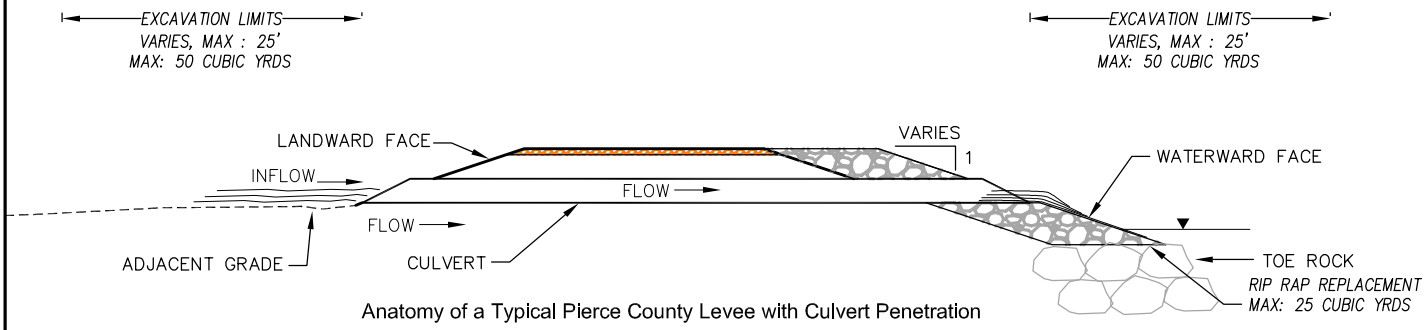
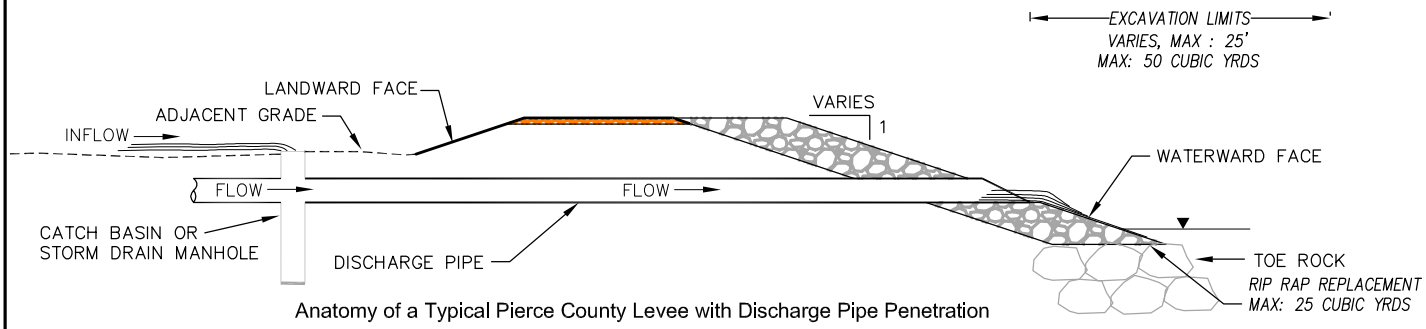
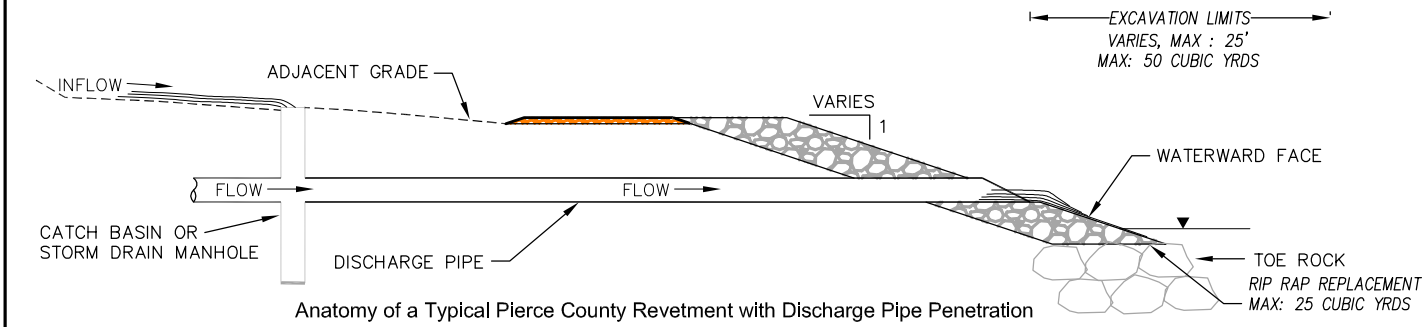


Anatomy of a Typical Pierce County Levee with Culvert Penetration



Anatomy of a Typical Pierce County Levee with Discharge Pipe Penetration



Anatomy of a Typical Pierce County Revetment with Discharge Pipe Penetration

NOTE: THIS DETAIL REPRESENTS A TYPICAL CROSS SECTION AND IS NOT MEANT TO REPRESENT ALL POSSIBLE SITUATIONS. EACH LOCATION WILL DIFFER IN SIZE AND SCOPE.

PURPOSE: River System Culvert & Discharge Pipe Maintenance Program
LOCATION: Puyallup River System
LAT./LONG. Varies; See Sheets 8–12
TWN: 18N, 19N, & 20N RNG: 3E, 4E, & 5E
DATUM: NAVD 1988/ (NAD 83/91)

REFERENCE: NWS–2014–959–WRD
APPLICANT: Pierce County Public Works & Utilities, SWM
COUNTY: Pierce State: WA
WATER BODY: Puyallup River, White River, & Carbon River
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TACOMA, WA 98409–7322

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Lower Puyallup River Culverts and Discharge Pipes

Location			Characteristics					Condition Assessment
ID	Latitude	Longitude	Size	Material	Drainage Type	Origin	Pipe System	Antcipated Action[1]
PL 2.90	47.23593	-122.3930	72 x 72	Concrete	Stream	Clear Crk	Open	OA, Visual
PL 2.90	47.23595	-122.3930	72 x 84	Concrete	Stream	Clear Crk	Open	OA, Visual
PL 3.77	47.22959	-122.3766	12	CPSSP	Storm Water	Road Runoff	Closed	VT, Camera
PR 4.42	47.22607	-122.3639	118	Steel	Wetland	Sha Dudx	Open	OA,, V, Camera
PL 4.96	47.22092	-122.3551	8	Concrete	Storm Water	Road Runoff	Closed	OA, VT, Camera
PR 5.00	47.22158	-122.3535	48	Concrete	Wetland	Radiance	Open	OA, VT, Camera
PL 6.42	47.20885	-122.3295	24	Ductile Iron	Storm Water	Road Runoff	Closed	VT, Camera
PL 6.72	47.20743	-122.3235	24	Ductile Iron	Storm Water	Road Runoff	Closed	VT, Camera
PL 6.82	47.20686	-122.3214	12	Ductile Iron	Storm Water	Road Runoff	Closed	VT, Camera
PL 6.83	47.20693	-122.3211	36	CPSSP	Storm Water	Trail Runoff	Open	VT, Camera
PL 6.84	47.20691	-122.3209	42	Concrete	WWTP	Sanitary Sewer	Closed	Camera
PL 6.87	47.20663	-122.3204	18	PVC	Storm Water	Road Runoff	Closed	VT, Camera
PL 7.13	47.20522	-122.3155	14	PVC	Storm Water	Road Runoff	Closed	VT, Camera
PL 7.23	47.20463	-122.3136	72	Concrete	Storm Water	Road Runoff	Closed	VT, Camera
PL 7.43	47.20356	-122.3094	8	Ductile Iron	Storm Water	Trail Runoff	Open	VT, Camera
PL 7.49D	47.20326	-122.3083	8	Ductile Iron	Storm Water	Trail Runoff	Open	VT, Camera
PL 7.49U	47.20324	-122.3083	18	PVC	Storm Water	Road Runoff	Closed	VT, Camera
PL 7.59	47.20300	-122.3060	8	Ductile Iron	Storm Water	Trail Runoff	Open	VT, Camera
PL 7.61	47.20272	-122.3056	36	Concrete	Storm Water	Road Runoff	Closed	OA, D, VT, Camera
PR 7.92	47.20375	-122.2988	84	CMP	Storm Water	Road Runoff	Closed	D, VT, Camera
PL 7.93	47.20263	-122.2985	54	Concrete	Storm Water	Road Runoff	Closed	VT, Camera
PL 7.94	47.20261	-122.2984	18	CMP	Storm Water	Road Runoff	Closed	S, D, VT, Camera
PL 7.95	47.20254	-122.2983	8	Ductile Iron	Storm Water	Road Runoff	Closed	VT, Camera
PR 8.13	47.20323	-122.2943	24	PVC	Storm Water	Road Runoff	Closed	VT, Camera
PL 8.15	47.20219	-122.2942	18	Concrete	Storm Water	Road Runoff	Closed	VT, Camera
PL 8.16	47.20213	-122.2941	18	Concrete	Storm Water	Road Runoff	Closed	VT, Camera
PR 8.16	47.20302	-122.2939	20	Steel	Storm Water	Road Runoff		VT, Camera
PR 8.17	47.20305	-122.2936	24	CMP	Storm Water	Road Runoff	Closed	VT, Camera
PL 8.18	47.20199	-122.2934	12	Concrete	Storm Water	Road Runoff	Closed	VT, Camera
PL 8.22	47.20200	-122.2930	8	Ductile Iron	Storm Water	Trail Runoff	Open	VT, Camera
PL 8.33D	47.20129	-122.2913	12	Concrete	Storm Water			VT, Camera
PL 8.33U	47.20123	-122.2911	15	Concrete	Storm Water	Parking Lot	Closed	EP, VT, Camera
PL 8.53	47.19958	-122.2885	8	Ductile Iron	Storm Water	Trail Runoff	Open	VT, Camera
PL 8.60	47.19863	-122.2877	18	Concrete	Storm Water	Road Runoff	Closed	VT, Camera
PL 8.61	47.19863	-122.2877	8	PVC	Storm Water	Parking Lot	Closed	VT, Camera
PL 8.92	47.19446	-122.2855	21	CMP	Storm Water	Road Runoff	Closed	VT, Camera
PL 9.06	47.19285	-122.2829	36	Concrete	Storm Water	Road Runoff	Closed	OA, VT, Camera
PL 9.08	47.19285	-122.2829	72	Concrete	Storm Water			OA, D, VT, Camera
PL 9.14	47.19313	-122.2807	12	Ductile Iron	Storm Water	Parking Lot	Closed	VT, Camera
PL 9.16	47.19284	-122.2813	12	PVC	Storm Water	Parking Lot	Closed	VT, Camera
PR 9.37	47.19509	-122.2773	12	Concrete	Storm Water	Road Runoff	Closed	VT, Camera
PL 9.77	47.19613	-122.2687	24	Concrete	Stream		Closed	EP, VT, Camera
PL 9.78	47.19617	-122.2686	24	Concrete	Stream		Open	EP, VT, Camera

[1]**Action Key:** S: Sediment Removal; VT: Sediment Removal w/ Vactor Truck; D: Debris Removal; V: Vegetation Removal; OA: Repair Outfall Appurtenance; RS: Reset damaged pipe segments; EP: Restore Erosion Protection; Camera: Video /Sonar Inpsection; Visual: Visual Inpsection

PURPOSE: River System Culvert & Discharge Pipe Maintenance Program
LOCATION: Puyallup River System
LAT./LONG. Varies; See Sheets 8–10
TWN: 18N, 19N, & 20N RNG: 3E, 4E, & 5E
DATUM: NAVD 1988/ (NAD 83/91)

REFERENCE: NWS–2014–959–WRD
APPLICANT: Pierce County Public Works & Utilities, SWM
COUNTY: Pierce STATE: WA.
WATER BODY: Puyallup River, White River, & Carbon River
DATE: November 2014

Pierce County
DEPARTMENT OF PUBLIC WORKS AND UTILITIES
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2702 SOUTH 42ND STREET, SUITE 201
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Middle Puyallup River Culverts and Discharge Pipes

Location			Characteristics					Condition Assessment
ID	Latitude	Longitude	Size	Material	Drainage Type	Origin	Pipe System	Antcipated Action[1]
PL 10.66	47.19676	-122.2517	24	Concrete	Storm Water	Parking Lot	Closed	VT, Camera
PL 10.70	47.19649	-122.2512	12	PVC	Storm Water	Trail Runoff	Closed	EP, VT, Camera
PL 10.71	47.19633	-122.2508	18	CMP	Storm Water	Road Runoff	Open	VT, Camera
PL 10.74	47.19611	-122.2502	18	Concrete	Storm Water	Agriculture	Open	EP, V, VT, Camera
PR 10.85	47.19630	-122.2473	42	Concrete	Storm Water	Road Runoff	Closed	VT, Camera
PR 11.04	47.19442	-122.2439	42	Concrete	Storm Water			VT, Camera
PR 11.14D	47.19293	-122.2430	8	Ductile Iron	Storm Water			VT, Camera
PR 11.14U	47.19293	-122.2430	12	Concrete	Storm Water			VT, Camera
PR 11.31	47.19100	-122.2409	12	CMP	Storm Water	Parking Lot	Closed	OA, VT, Camera
PR 11.34	47.19052	-122.2404	12	CMP	Storm Water	Parking Lot	Closed	VT, Camera
PR 11.53	47.18843	-122.2380	24	CPSSP	Storm Water	Road Runoff	Closed	VT, Camera
PL 11.87	47.18493	-122.2328	24	CMP	Storm Water	Road Runoff	Closed	EP, VT, Camera
PL 11.99	47.18449	-122.2305	24	Concrete	Stream	Road Runoff/Ag	Open	EP, VT, Camera
PL 12.19	47.18484	-122.2260	12	CPSSP	Storm Water	Agriculture	Open	Camera
PL 12.21	47.18495	-122.2256	12	CPSSP	Storm Water	Agriculture	Open	Camera
PL 13.22	47.18194	-122.2178	18	Concrete	Storm Water	Road Runoff	Closed	OA, VT, Camera
PL 13.72	47.17538	-122.2164	64	Concrete	Wetland	Oxbow	Open	S, V, Visual
PR 14.18	47.17048	-122.2160	60	CMP	Wetland	Oxbow	Open	S, V, Visual
PR 16.68	47.13969	-122.2262	60	Concrete	Stream	Agriculture	Open	OA, S, V, Visual

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Upper Puyallup River Culverts and Discharge Pipes

Location			Characteristics					Condition Assessment
ID	Latitude	Longitude	Size	Material	Drainage Type	Origin	Pipe System	Antcipated Action[1]
PR 18.15	47.12266	-122.2388	24	Concrete	Storm Water	Road Runoff	Closed	OA, S, V, VT, Camera
PR 18.25	47.12104	-122.2383	24	CPSSP	Storm Water	Road Runoff	Open	VT, Camera
PR 18.26	47.12099	-122.2385	24	Ductile Iron	Storm Water	Golf Course		OA, VT, Camera
PR 18.58D	47.11773	-122.2418	12	CPSSP	Wetland	Golf Course	Open	V, Camera
PR 18.58U	47.11771	-122.2418	12	CPSSP	Wetland	Golf Course	Open	V, Camera
PR 18.73	47.11590	-122.2415	12	HDPE	Storm Water	Golf Course	Open	Camera
PR 19.41	47.10904	-122.2351	18	CPSSP	Wetland	Oxbow	Closed	OA, D, VT, Camera
PR 19.83	47.10571	-122.2277	36	HDPE				Visual
PR 19.83	47.10571	-122.2277	36	HDPE				Visual
PR 20.48	47.09939	-122.2202	42	HDPE				Visual
PR 20.58	47.09784	-122.2200	42	Ductile Iron	Wetland	wetland	Closed	Confirm removal
PR 20.63	47.09873	-122.2195	36	HDPE				Visual
PL 20.82	47.09404	-122.2192	24	Ductile Iron	Wetland	wetland	Closed	S, V, Camera
PR 21.24	47.08966	-122.2131	12'x6'	Concrete				Visual
PL 21.24	47.08907	-122.2141	18	Concrete	Storm Water	Road Runoff	Closed	Camera
PL 21.27	47.08865	-122.2135	12	Concrete	Storm Water	Surface Water	Closed	OA, VT, Camera
PR 21.28	47.08944	-122.2131	72	Concrete				Visual
PL 21.66	47.08380	-122.2090	18	Concrete	Storm Water	Surface Water	Closed	OA, VT, Camera
PL 22.01	47.08008	-122.2049	18	Concrete	Storm Water	Agriculture	Closed	OA, VT, Camera
PL 22.20	47.07850	-122.2035	18	Concrete	Storm Water	Agriculture	Closed	OA, VT, Camera
PL 22.24	47.07788	-122.2030	18	Concrete	Storm Water	Agriculture	Closed	OA, VT, Camera
PL 22.40	47.07571	-122.2012	48	Concrete	Stream	Agriculture	Open	OA, S, V, Visual
PR 23.81	47.05529	-122.1934	48 x 96	CMP	Stream	Surface Water	Open	V, Camera
PR 24.21	47.05069	-122.1974	24	CMP	Stream	Surface Water	Open	V, Camera

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PURPOSE: River System Culvert & Discharge Pipe Maintenance Program
LOCATION: Puyallup River System
LAT./LONG. Varies; See Sheets 8–10
TWN: 18N, 19N, & 20N RNG: 3E, 4E, & 5E
DATUM: NAVD 1988/ (NAD 83/91)

REFERENCE: NWS–2014–959–WRD
APPLICANT: Pierce County Public Works & Utilities, SWM
COUNTY: Pierce STATE: WA.
WATER BODY: Puyallup River, White River, & Carbon River
DATE: November 2014

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TACOMA, WA 98409–7322

Carbon River Culverts and Discharge Pipes

Location			Characteristics					Condition Assessment
ID	Latitude	Longitude	Size	Material	Drainage Type	Origin	Pipe System	Antcipated Action[1]
CL 1.36	47.11404	-122.2180	18	Concrete	Storm Water	Surface Water	Closed	camera
CL 1.72	47.10941	-122.2145	18	Ductile Iron	WWTP	Sanitary Sewer	Closed	Camera
CL 2.16	47.10548	-122.2071	24	Concrete	Stream	Surface Water	Open	OA, D, VT, Camera
CL 2.60	47.10172	-122.1996	24	Concrete	Stream	Surface Water		OA, D, VT, Camera
CL 3.79	47.08741	-122.1880	36	Concrete	Stream	Kopler Ck?		Locate
CL 5.58	47.09527	-122.1552	24	Concrete	Storm Water	Parking Lot	Open	S, D, VT, Camera
CL 6.43	47.09709	-122.1421	36	Concrete	Stream	Fish Ladder	Open	OA, S, D, VT, Visual
CL 7.46	47.09839	-122.1202	24	CMP	Stream	Surface Water	Open	OA, VT, Visual

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Lower White River Culverts and Discharge Pipes

Location			Characteristics					Condition Assessment
ID	Latitude	Longitude	Size	Material	Drainage Type	Origin	Pipe System	Antcipated Action[1]
WR 0.03	47.20034	-122.2581	18	Concrete	Storm Water	Road Runoff	Open	S, D, VT, Camera
WR 0.05	47.20075	-122.2576	36	CMP	Storm Water			VT, Camera
WL 0.12	47.19976	-122.2559			WWTP	Sanitary Sewer	Closed	VT, Camera
WL 0.23	47.20075	-122.2532			Storm Water	Road Runoff	Closed	VT, Camera
WR 0.27	47.20141	-122.2535	12	Concrete	Storm Water	Parking Lot	Closed	VT, Camera
WR 0.39	47.20231	-122.2515	12	Concrete	Storm Water	Road Runoff	Closed	VT, Camera
WL 0.48	47.20232	-122.2493	12		Storm Water	Road Runoff	Closed	VT, Camera
WL 0.61	47.20280	-122.2465			Storm Water	Road Runoff	Closed	VT, Camera
WL 0.69	47.20362	-122.2449	12	Concrete	Storm Water	Road Runoff	Closed	VT, Camera
WL 0.82	47.20574	-122.2442	15	CMP	Storm Water	Parking Lot	Closed	VT, Camera
WL 0.94	47.20768	-122.2429			Storm Water	Road Runoff	Closed	VT, Camera
WL 1.08	47.20940	-122.2441			Storm Water	Parking Lot	Closed	VT, Camera
WL 1.37	47.21143	-122.2415	18		Storm Water	Industrial	Closed	VT, Camera
WL 1.42	47.21305	-122.2412	24		Storm Water	Road Runoff	Closed	VT, Camera
WR 1.71	47.21680	-122.2388	54		Storm Water	Road Runoff	Closed	VT, Camera
WL 1.79	47.21731	-122.2369	36	Concrete	Storm Water	Road Runoff	Closed	VT, Camera
WL 1.92	47.21759	-122.2342			Storm Water	Trail Runoff		VT, Camera
WL 2.01	47.21827	-122.2324	42	CPSSP	Storm Water	Parking Lot	Closed	VT, Camera
WR 3.38	47.23558	-122.2369	48	Ductile Iron	Storm Water	Road Runoff	Closed	VT, Camera
WR 3.71	47.23988	-122.2346	12	Ductile Iron	Storm Water	Trail Runoff	Open	EP, VT, Camera
WR 3.72	47.24004	-122.2342	36	CMP	Storm Water	Parking Lot	Closed	VT, Camera
WL 4.21	47.24779	-122.2371						Visual
WL 4.31	47.24657	-122.2417						S, Camera
WR 4.47	47.24378	-122.2430	24	CPSSP	Storm Water	Parking Lot	Closed	VT, Camera
WL 5.10	47.25325	-122.2426	18	Concrete	Wetland	Wetland	Open	S, VT, Camera
WR 5.25U	47.25595	-122.2423	48	Concrete	Stream	Industrial	Open	S, V, Visual
WR 5.25D	47.25593	-122.2424	48	Concrete	Stream	Industrial	Open	S,V, Visual

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PURPOSE: River System Culvert & Discharge Pipe Maintenance Program
LOCATION: Puyallup River System
LAT./LONG. Varies; See Sheets 8–10
TWN: 18N, 19N, & 20N RNG: 3E, 4E, & 5E
DATUM: NAVD 1988/ (NAD 83/91)

REFERENCE: NWS–2014–959–WRD
APPLICANT: Pierce County Public Works & Utilities, SWM
COUNTY: Pierce STATE: WA.
WATER BODY: Puyallup River, White River, & Carbon River
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Activities with Potential	Descriptions of Applications	Location	Repair Size	Methods & Materials	Timing	Potential Environmental Impacts	Potential Actions Taken to Offset Impacts
Category / Code							
Culvert and/or Discharge Pipe Maintenance	General Description: Removal of gravel, sediment, debris and vegetation from existing culverts. Minor repair of outfall and appurtenance (i.e. flap gate)	Locations where water needs to be conveyed from one side of the levee to the other. These locaitons generally occur at roads crossings, creek crossings and drainage outfalls. Other locations may serve as drainage oulets for flood waters that overtop the levee and require an outlet path back to the river.	length and diameter varies. Impacts to the waterward side would be limited to the immediate area around the outfall area.	Work may vary between using heavy equipment such as an excavator, a vactor truck to flush the culvert or hand tools to clear the end(s) of the culvert.	Maintenance of a culvert would likely occur below the OHWM. Therefore, work would likely be limited to the permtted fish window. For situations where the work area is in the dry or located above OHW, timing may be negotatated with the rsource agencies.	General: Dewaterng and/or bypass may be necessary to isolate the work site to mininmize or eliminate the chance of sediment release. Loss of vegetation may occur due to removal to provide access to an inlet or outlet. Minor localized disturbance to the channel bottom. Heavy equipment use around the aquatic environment.	General: Conduct work within regulatory work window, implement appropriate BMPs to prevent or minimize sediment release. Implement fish exclusion protocols. Have a qualifiec biologist monitor the work site. Flow isolation using flow diversion. Use of biodegradible hydraulic fluid, spill kits on site, implement fish exclusion techniques.
S	**Sediment Removal (exterior)**	Inlet and/or outlet of culvert or discharge pipe	Maximum length of 25' from inlet or outlet of pipe and a width equivalent to the size of upstream channel or pipe.	Work methods will vary per site. Sites requiring small amounts of sediment may be accomplished with hand tools. Larger sites will require the use of an excavator.	Work below OHW will occur during fish window or no flow conditions. Consultation with the regulatory agencies will occur whenever a deviation from permitted work is foreseen.	In addition to the General above: Minor Sediment Release	In addition to the General above: dispose of sediment at an approved upland location.
VT	**Sediment Removal (interior) with Vactor Truck**	Within culvert, discharge pipe or structure (catch basin, manhole, etc.)	length and diameter varies.	Removal of excess sediment and vegetative matter using a vactor truck and by jet rodding (use of high presurred water) pipes.	Year around	In addition to the General above: Minor Sediment Release	In addition to the General above: Sediment removed by use of a vactor. Outlet of pipe will be plugged to prevent release of sediment laden flows. Disposal of sediment at an approved upland location.
D	**Debris Removal**	Inlet and/or outlet of culvert or discharge pipe.	Size of debris and debris barriers varies	Most debris will be removed with hand tools. Exceptions include large debris such as trees (LWD), branches and mattresses. Note: LWD will typically be relocated within the channel to enhance exhisting habitat features.	Work below OHW will genrally occur during the regulatory fish window or no flow conditions. Minor removals will occur year around.	In addition to the General above: Minor Sediment Release. Garbage in the river.	In addition to the General above: Prevented release of garbage and other undesirable debris into the river.
V	**Vegetation Removal**	Within the immediate vicinity of a culvert or discharge pipe to provide access for maintenance equipment and personnel.	Typically not to exceed a 20 foot width along along the levee/revetment face generally centered on the pipe alignment.	Work may vary between using heavy equipment such as an excavator to relocate trees to using hand tools to trim or remove vegetation	Vegetation removal will occur in conjeciton with other maintenance activity and the timing associated with those activities.	Loss of habitat cover, possible incidental temporal temperature increase.	In addition to the General above: Replant vegetation, relocate larger woody pieces within active channel to provide habitat.
OA	**Repair Outfall Appurtenance (ie. debris barriers, flap gates, check valves)**	Inlet and outlet of culvert or discharge pipe	length and diameter varies.	Repair or replace damaged parts.	Work below OHW will occur during fish window or no flow conditions.	In addition to the General above: Minor Sediment Release	See General above:
RS	**Reset damaged pipe segments**	Typically occurs at the discharge end of a concrete pipe system.	length and diameter varies.	Work will occur using heavy equipment.	Work below OHW will occur during fish window or no flow conditions.	In addition to the General above: Minor Sediment Release	See General above:
EP	**Restore Erosion Protection**	Inlet or outlet of a culvert or outlet of a discharge pipe	25 linear feet along the bank at the pipe inlet or outlet.	Work will occur using heavy equipment and installing up to 25 cubic yards of material.	Work below OHW will occur during fish window or no flow conditions.	In addition to the General above: Minor Sediment Release	See General above:
Culvert Inspection	General Description: Regular inspections of the culverts and discharge pipes are necessary to ensure they are functioning as designed.	Locations where water needs to be conveyed from one side of the levee to the other. These locations generally occur at at road xings , creek xings and drainage outfalls. Other locations may serve at drainage outlets for flood waters that overtop the levee and require and outlet path back to the river.	length and diameter varies. Impacts to the waterward side would be limited to the immediate area around the outfall area.	Clear vegeation to obtain visual of culvert inlet & outlet using hand tools if requried. A 360 degree scanning camera mounted on a robotic, remote-controlled wheeled tractor will enter the culvert/pipe for video inpsection.	Inspections will require visual inspection of the culvert on an annual basis and after high water events. Video Inspections will occur every five years or as deemed necessary by engineer.	Generally none anticpated. Minor impacts may occur when vegetation removal is necessary to access inlet and/or outlet of culverts or discharge pipes.	Re-plant to minimize erosion potential of bank and to mitigate for potentially lost habitat.
Visual	**Visual Inspection**	Exterior of culverts and discharge pipes.	length and diameter varies.	Visual Inspection	Anytime	None Anticipated	None Proposed
Camera	**Video Inpsection**	Within culvert, pipe or strucuture (catch basin, manhole, etc.)	length and diameter varies.	A 360 degree scanning camera mounted on a robotic, remote-controlled wheeled tractor will enter the culvert/pipe for video inpsection.	May occur year-round with implementation of appropriate level BMPs.	None Anticipated	None Proposed
Camera	**Sonar Inpsection**	Within culvert, pipe or strucuture (catch basin, manhole, etc.)	length and diameter varies.	Sonar equipment on a robotic, remote-controlled equipment.	May occur year-round with implementation of appropriate level BMPs.	None Anticipated	None Proposed
V	**Vegetation Removal**	In the vcinity of culvert/discharge pipe and to allow access for inspection equipment.	Typically not to exceed 20 LF along levee/revetment face	Trim or remove vegeation to obtain visual of culvert inlet & outlet using hand tools. Clear vegation for access of inspection equipment	May occur year-round with implementation of appropriate level BMPs.	Minor impacts to habitat cover may occur when vegetation removal is necessary to access inlet and/or outlet of culverts or discharge pipes.	Re-plant to minimize erosion potential of bank and to mitigate for potentially lost habitat.

Maintenance activities may entail one or several of the above described activities.

Culvert A pipe structure that conveys surface water through an embankment and open on each end.

Discharge Pipes The outlet point of a pipe system that conveys surface water through an embankment. The distinction between culverts and discharge pipes is that discharge pipes are typically associated with a closed network of other pipes connected by catch basins, manholes and/or yard drains. An exception to this is discharge from waste water treatment plants where the inlet originates from the plant.

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APPROVED: ACF
DRAWN: TE/SM

PURPOSE: River System Culvert & Discharge Pipe Maintenance Program
LOCATION: Puyallup River System
LAT./LONG. Varies, See Sheets 8-10
TWN: 18N, 19N & 20N RNG: 3E, 4E, & 5E
DATUM: Vert. NGVD 1929/Horiz. Pierce County (NAD 83/91)

REFERENCE: NWS-2014-959-WRD
APPLICANT: Pierce County Public Works & Utilities, SWM
COUNTY: Pierce STATE: WA.
WATER BODY: Puyallup River, White River, & Carbon River
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