**Washington State Department of Transportation**
**Paula J. Hammond, P.E.**
Secretary of Transportation

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December 18, 2012

Misha Vakoc
United States Environmental Protection Agency
Region 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

**RE: WSDOT Stormwater NPDES Permit Application for Discharges to the Portions of the Puyallup River Subject to Federal and Tribal Jurisdiction**

Dear Ms. Vakoc:

Please find enclosed the Washington State Department of Transportation (WDSOT) permit application for the Environmental Protection Agency (EPA) National Pollution Discharge Elimination System (NPDES) for those portions of the Puyallup River subject to Federal and Tribal Jurisdiction.

The NPDES permit application materials were received by WSDOT on June 21, 2012. WSDOT requested clarification on portions of the application in a letter to the EPA dated July 26, 2012. On August 8, 2012 the WSDOT received clarification from the EPA as requested.

An alternate monitoring approach was submitted to the EPA on October 9, 2012. Upon approval of the monitoring approach from EPA, WSDOT will conduct monitoring per the plan and provide quantitative data and annual pollutant load estimates in a subsequent submittal.

If you should you have any questions please contact myself at (360) 709-8156 (garmanm@wsdot.wa.gov) or Larry Schaffner, WSDOT's Municipal Stormwater Permit Coordinator at (360) 570- 6657 (schaffl@wsdot.wa.gov).

Sincerely,

Marty D. Garman

Marty D. Garman
HOV Design Manager
WSDOT Tacoma/Pierce County HOV Program

Enclosure

cc: Bill Sullivan, Puyallup Tribe of Indians, w/enclosure
Char Naylor, Puyallup Tribe of Indians, w/enclosure
Carrie Berry, WSDOT Tacoma/Pierce County HOV, w/o enclosure
Ken Stone, WSDOT Environmental Services Office (ESO), w/o enclosure
Larry Schaffner, WSDOT ESO, w/o enclosure

**Washington State Department of Transportation's National Pollutant Discharge Elimination System (NPDES) Permit Application for Municipal Separate Storm Sewer Systems Discharging to Puyallup Tribal Waters**

December 17, 2012

This application submittal constitutes the Washington State Department of Transportation's (WSDOT) response to the Region 10 Environmental Protection Agency's (EPA) letter dated June 19, 2012, titled *Request of Permit Application under NPDES Program for Storm Water Discharges to the Portion of the Puyallup River Subject to Federal and Tribal Jurisdiction*.

This submittal contains the following eight sections which correspond to the organization of the permit's application request:

1) General Information
2) Legal Authority
3) Source Identification
4) Discharge Characterization
5) Management Programs
6) Fiscal Resources
7) Assessment of Controls
8) Signature

## 1) General Information

Washington State Department of Transportation
310 Maple Park Avenue S.E.
P.O. Box 47300
Olympia, WA 98504-7300

Contact:
Marty Garman
HOV Design Manager
360-709-8156
GarmanM@wsdot.wa.gov

The Washington State Department of Transportation (WSDOT) is a state agency under the laws of the State of Washington. WSDOT tracks, reports, and manages its programs and projects according to the six transportation policy goals adopted by the Legislature in the Revised Code of Washington (RCW) 47.01.012. The six policy goals are safety, preservation, mobility (congestion relief), environment, stewardship, and economic vitality. WSDOT owns and operates a municipal separate storm sewer system (MS4) subject to the conditions set forth in a municipal stormwater permit issued by the Washington State Department of Ecology (Ecology).

## 2) Legal Authority

WSDOT's existing legal authority to control discharges to existing and planned/future municipal separate storm sewer systems is described as follows:

Title 47 of the Revised Code of Washington, Public Highways and Transportation, provides the Department with legal authority adequate to meet the requirements of 40 CFR § 122.26(d)(1)(ii) to control discharges to municipal separate storm sewer systems WSDOT owns or operates. RCW 47.01.260 provides that:

> *The department of transportation shall exercise all powers and perform all duties necessary, convenient, or incidental to the planning, locating, designing, constructing, improving, repairing, operating, and maintaining state highways, including bridges and other structures, culverts, and drainage facilities and channel changes necessary for the protection of state highways….*

RCW 47.04.040 vests in the State of Washington all right, title, and interest to the rights-of-way of state highways, including the roadway and ditches and existing drainage facilities, together with all appurtenances thereto.

WSDOT possesses the legal authority adequate to prohibit illicit discharges to its storm sewer system. Chapter 47.32 RCW empowers the WSDOT to operate state highways free from all obstructions, encroachments, occupancy, and public nuisances. RCW 47.32.010 authorizes WSDOT, upon due notice, to order obstructions, encroachments, structures, buildings, improvements, or other means of occupancy of any right-of-way to the state highway to be removed within ten days. Failure to so remove the offending property results in the property becoming unlawful property, which WSDOT may confiscate, remove, sell, or destroy.

RCW 47.32.130(1) provides:

> *Whenever there exists upon the right-of-way of any state highway or off the right–of-way thereof in sufficiently close proximity thereto, any structure, device, or natural or artificial thing that threatens or endangers the state highway or portion thereof, or that tends to endanger persons traveling thereon, or obstructs or tends to obstruct or constitutes a hazard to vehicles or persons traveling thereon, the structure, device, or natural or artificial thing is declared to be a public nuisance, and the department is empowered to take such action as may be necessary to effect its abatement. Any such structure, device, or natural or artificial thing considered by the department to be immediately or eminently dangerous to travel upon a state highway may be forthwith removed, and the removal in no event constitutes a breach of the peace or trespass.*

Thus, illicit discharges to WSDOT's storm sewers would constitute encroachments that WSDOT can remove. Discharge of pollutants into the WSDOT's storm sewer system, even if emanating off the right-of-way if in sufficiently close proximity to jeopardize

WSDOT's system, would constitute a public nuisance that WSDOT is empowered to abate.

The Washington State Patrol (WSP) has general authority for the administration and enforcement of traffic and other laws on state highways. RCW 46.48.170 authorizes the WSP to adopt and enforce regulations concerning the transportation of hazardous materials. Chapter 446-50 WAC contains these regulations, consistent with those promulgated by the United States Department of Transportation, Title 49 CFR parts 100 through 199, designed to protect persons and property from unreasonable risk of harm or danger. WSDOT can solicit WSP's authority to address spills, dumping, or disposal of materials other than stormwater on state highways.

WSDOT controls construction work on state highways through contract provisions. Standard provisions and specifications require that contractors comply with all applicable federal, state, and local law and regulations, including obtaining required permits and licenses. WSDOT requires contractors to submit and implement erosion and sediment control plans and spill prevention, control, and countermeasures plans.

WSDOT does not have legal authority to regulate activities occurring outside its right-of-way. However, where a proposed development requires a utility permit or franchise from WSDOT or an access connection permit to the state highway, WSDOT may add conditions to the permit regarding stormwater flow and quality. WSDOT can also request the help of local and state agencies, which have legal enforcement authority to conduct inspections and investigations outside of the right-of-way, if necessary, to detect and eliminate illicit discharges.

Furthermore, WSDOT requires a utility permit and/or franchise for all stormwater drainage or utility connections from private and public property onto state highway right-of-way. WSDOT's *Utilities Manual* outlines procedures for obtaining such permits. Utilities or jurisdictions which have pipes, culverts, or ditches conveying sources other than stormwater or natural base flow will not be granted a utility permit or franchise for conveyances using WSDOT storm sewer systems, including roadside ditches. Those utilities or jurisdictions discharging to WSDOT storm sewer systems or natural base flow originating off the right-of-way must provide WSDOT water quantity and quality controls, including conveyances which conform with requirements and specifications in the *Highway Runoff Manual;* Ecology requirements; or local rules, regulations, ordinances, and resolutions, whichever is more stringent.

This legal authority is also addressed in *Section 2.6* of our *Stormwater Management Program Plan* (SWMPP). WSDOT implements and enforces this Ecology-approved SWMPP as a condition of our Ecology-issued municipal stormwater permit.

**3) Source Identification**

See *Attachment A* for the series of maps depicting the information requested for this application item.

## 4) Discharge Characterization

### (A) Monthly Mean Rain and Snow Fall Estimates and Monthly Average Number of Storm Events

**Table 1: Average monthly rain and snowfall for Tacoma, Washington between 3/1/1982 and 9/25/2012**

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Total Precipitation (inches) | 6.08 | 3.63 | 4.33 | 3.06 | 2.09 | 1.64 | 0.74 | 0.83 | 1.27 | 3.56 | 6.82 | 5.72 |
| Average Total Snowfall (inches) | 0.3 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.1 |

Source: Western Regional Climate Center (http://www.wrcc.dri.edu/cgi-bin/cliMAIN.pl?wa8278)

**Table 2: Average Number of Rainfall Events: Water Years 2002-2009 (Oct. 1 – Sept. 30)**

| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Average Number of Rainfall Events | 13 | 10 | 15 | 11 | 8 | 5 | 2 | 4 | 5 | 10 | 14 | 15 |

Reference: City of Tacoma, Tacoma Central Treatment Plant ISCO Rain Gauge

### (B) Existing Quantitative MS4 Discharge Volume and Quality Data to Tribal Waters

No quantitative data exists describing the volume and quality of discharges from existing municipal storm sewer to Tribal waters.

Existing flows from the service area discharging to the Puyallup River were derived using MGSFlood modeling software for the purpose of assessing runoff treatment compliance. Modeling included a survey of existing terrain and local precipitation data to generate a continuous storm analysis. Flow analysis results show a flow rate of 13.78 cubic feet per second in the 2-year mean recurrence interval storm.

Completion of WSDOT's Northbound, Southbound, and High Occupancy Vehicle (HOV) improvement projects will result in the provision of runoff treatment via a treatment train prior to discharging from the proposed new outfall to the Puyallup River. The treatment train consists of a constructed stormwater treatment wetland (CSTW) followed by a modified media filter drain (MMFD). This design will provide maximum treatment through the 2-year storm event. The CSTW provides the primary treatment and the MMFD provides further polishing. For storms exceeding the 2-year storm event, the additional runoff will receive treatment solely through the CSTW prior to discharge. This design provides a 95% probability that all storm events will receive full treatment through the entire CSTW-MMFD treatment train prior to discharge. *Table 3* summarizes the projected pollutant concentrations after receiving treatment. *Table 4* provides annual pollutant loading estimates for this treatment system.

**Table 3: Projected Pollutant Concentration Following Treatment**

| Pollutant | CSTW Treatment (micrograms/liter) | CSTW + MMFD Treatment (micrograms/liter) |
|---|---|---|
| Dissolved Copper | 14 µg/L | 12.4 µg/L |
| Dissolved Zinc | 80 µg/L | 25 µg/L |
| Bis-2-ethylhexyl-phthalate (BEHP) | 2.34 µg/L | 1.64 µg/L |

Source: WSDOT Tacoma/Pierce County HOV Program. *Analysis of Water Quality Effects of I-5 Stormwater Runoff Discharges on the Puyallup River* (March 2012)

**Table 4: Projected Annual Pollutant Loading Estimates following Treatment**

| Pollutants | Estimated Annual Pollutant Loading (grams) |
|---|---|
| Dissolved Copper | 199 g |
| Dissolved Zinc | 442 g |
| Bis-2-ethylhexyl-phthalate (BEHP) | 27 g |

Source: WSDOT Tacoma/Pierce County HOV Program. *Analysis of Water Quality Effects of I-5 Stormwater Runoff Discharges on the Puyallup River* (March 2012)

## (C) MS4 Discharges to Tribal Water Bodies

Tribal waters into which WSDOT's existing outfalls discharge to include the Puyallup River, Swan Creek, and Clark's Creek as detailed in *Table 5* and depicted on *Map1* in *Attachment A*.

**Table 5: Discharge Locations and Drainage Area from WSDOT Highway to Puyallup Tribe of Indian Waters**

| Discharge Point | Milepost | Estimated Drainage Area Impervious/Pervious (acres) | Site Notes | Discharges To |
|---|---|---|---|---|
| SR 167 – 0.010 | 0.80 | 0.21/0.00 | No offsite incoming discharges evident. | Wet area tributary to Swan Creek (*Figure 1*) |
| SR 167 – 1.102 | 1.70 | 0.30/0.00 | Drainage area includes 0.11 acre contribution from local automotive repair business. | Bank of Puyallup River (*Figure 2*) |
| SR 167 – 2.103 | 2.87 | 0.50/0.00 | No offsite incoming discharges evident. | Bank of Puyallup River (*Figure 3*) |
| SR 167 – 3.230 | 3.7 | 0.55/0.13 | No offsite incoming discharges evident. | Broad vegetated ditch to Clark's Creek (*Figure 4*) |
| SR 167 – 4.101 | 4.36 | 1.54/0.00 | No offsite incoming discharges evident. Bioswale bypass evident. | Bioswale on Bank of Puyallup River (*Figure 5*) |
| SR 167 – 4.122 | 4.66 | 1.64/0.05 | Drainage area includes weight station drainage (0.14 ac.) and some pervious area. | Bank of Puyallup River (*Figure 6*) |
| I-5 – HOV service area | 134.0 to 135.5 | 40.6/46.32 | Drainage area includes I-5 and ramps from McKinley Way to crest of the Puyallup River bridges. No offsite incoming discharges evident. | City of Tacoma MS4, entering the Puyallup River via the city's of Cleveland Way Pump Station |

Figure 1: SR 167 – 0.010 discharge pipe end from top of slope

Figure 2: SR 167 – 1.102 discharge location from top of slope

Figure 3: SR 167 – 2.103 discharge location from top of slope

Figure 4: SR167 – 3.230 looking from discharge location toward ditch line

Figure 5: SR167 – 4.101 discharge location from top of slope with bioswale bypass evident

Figure 6: SR167 – 4.122 discharge location from top of slope

As a result of further field investigations, WSDOT no longer considers five discharge locations along State Route 167 previously submitted to EPA as potential discharges to the Puyallup River or its tributaries. *Table 6* provides information about each discharge point and the reason WSDOT no longer considered a surface water discharge.

**Table 6: Points WSDOT No Longer Considers Discharging to the Puyallup River or its Tributaries[†]**

| Discharge Point | Mile Post | Drainage Area (acres) | Discharges To |
|---|---|---|---|
| **0.101** | 0.80 | 0.04 impervious | Underground; Buried pipe likely located under the access road built to the revamped the Clear Creek tide gate |
| **2.01** | 2.58 | 0.236 impervious | A field/pasture |
| **3.02** | 3.65 | 0.008 impervious | Pierce County's curb conveyance (flowing from WSDOT's curb conveyance) |
| **3.04** | 3.78 | 0.007 impervious | Adjacent private property (from curb cut) |
| **3.22** | 3.66 | 0.084 impervious | Pierce County's curb conveyance (flowing from WSDOT's curb conveyance) |

[†]Field investigation confirmed that these systems do not discharge to the Puyallup River or its tributaries.

(1) Ecology no longer generates 305[b] reports as EPA developed guidance for states suggesting the combining of 305[b] and 303[d] requirements. The Department of Ecology's more comprehensive water quality assessment is available at: http://www.ecy.wa.gov/programs/wq/303d/index.html.

*Table 7* provides the 303[d] listed (Category 5) water bodies within the service area appearing on Ecology's *2008 Integrated Water Quality Assessment*. *Attachment B* includes the full query results for the service area.

**Table 7: Waterway and 2008 Category 5 303(d) listing**

| Water body | Category 5 Parameter | Listing ID |
|---|---|---|
| Clear Creek | Fecal coliform | 7501 |
| Clark's Creek | pH | 7499 |
| Puyallup River | Fecal coliform | 7498 |
| Puyallup River | Mercury | 35421 |
| Swan Creek | Fecal coliform | 7514 |

(2) Not applicable.

(3) WSDOT has not conducted any sediment pollutant testing in the waters referenced in this application. See response to 4.C(1) above regarding Ecology assessment query.

(D) Field Screening

Taking advantage of a long dry weather period, WSDOT conducted the field screening analysis of all its existing outfalls with potential discharges to Tribal waters on August 28, 2012. *Table 8* provides the results of the field screening analysis.

**Table 8: Results of Field Screening Analysis**

| Point Name | Milepost | Discharges To | Field Observations |
|---|---|---|---|
| 0.010 | 0.80 | Wet area tributary to Swam Creek | No dry season flows. No illegal dumping in the vicinity. No illicit connections. |
| 1.102 | 1.70 | Bank of Puyallup River | No dry season flows. No illegal dumping in the vicinity. No illicit connections. Surface staining on the pavement surface of the nearby local auto shop parking area suggests potential illicit discharge to the outfall structure through the grated lid. This staining consisted of a white residue and a black oily residue. A thick brown surface scum existed on the top of the water in the sump of the outfall structure. A strong organic decay odor emanated from the basin. |
| 2.103 | 2.87 | Bank of Puyallup River | No dry season flows. No illegal dumping in the vicinity. No illicit connections. |
| 3.230 | 3.70 | Vegetated ditch to Clarks Creek | No dry season flows. No illegal dumping in the vicinity. No illicit connections. |
| 4.101 | 4.36 | Bioswale on Bank of Puyallup River | No dry season flows. No illegal dumping in the vicinity. No illicit connections. |
| 4.122 | 4.66 | Bank of Puyallup River | No dry season flows. No illegal dumping in the vicinity. No illicit connections. |

(E) Characterization Data

WSDOT will provide quantitative data and annual pollutant load estimates in a subsequent submittal per finalization of an agreed upon approach.

See *Attachment C* for a copy of the alternate monitoring approach proposal submitted to EPA for consideration on October 9, 2012 and discussed with EPA at a meeting on December 11, 2012. The 2007 report referenced in the proposal can be downloaded at: http://www.wsdot.wa.gov/NR/rdonlyres/B947A199-6784-4BDF-99A7-DD2A113DAB74/0/BA_UntreatedHwyRunoffWestWA.pdf. This report, *Untreated Highway Runoff in Western Washington* (2007), represents one of the products generated as part of a collaborative effort between WSDOT, Federal Highway Administration, U.S. Fish and Wildlife Service, and U.S. NOAA Fisheries to develop an analytical approach for assessing the potential effects of highway runoff on Endanger Species Act-listed aquatic species.

## 5) Management Programs

(A) Description of Stormwater Management Programs

WSDOT implements and enforces its Ecology-approved SWMPP as a condition of our Ecology-issued NPDES municipal stormwater permit. The SWMPP is incorporated as *Appendix 7* of this permit and several responses below reference various sections of the SWMPP. The full permit containing the SWMPP can be downloaded at: http://www.ecy.wa.gov/programs/wq/stormwater/municipal/wsdot.html.

WSDOT designed its SWMPP to:

a. Reduce the discharge of pollutants from all municipal separate storm sewers and other conveyances owned or operated by WSDOT to the maximum extent practicable (MEP);
b. Protect water quality and beneficial uses of waters of the state from impacts which cause or contribute to loss or impairment; and
c. Satisfy appropriate requirements of the Clean Water Act.

WSDOT's *Stormwater Management Program Plan* is organized as follows:

*Section 1: Background and Overview* provides an introduction/overview of WSDOT's stormwater management program, the area and facilities that are affected, and the regulations that govern WSDOT operations. The remainder of this document describes the essential program elements.

*Section 2: Stormwater Program Management Framework* describes WSDOT's organizational framework and management responsibilities for overall permit compliance and program implementation. *Section 2* also describes interagency coordination, key WSDOT stormwater-related guidance and procedures, WSDOT's

legal authority to control discharges into its storm drainage systems, program planning, and the SWMPP revision process.

*Section 3: Illicit Discharge Detection and Elimination* describes procedures to identify and eliminate illicit discharges and illegal connections to WSDOT's MS4.

*Section 4: Construction Stormwater Pollution Prevention* describes construction-related stormwater pollution prevention. These elements include WSDOT's erosion control program and its spill prevention, control and countermeasures.

*Section 5: Stormwater Management for New Facilities* describes post-construction stormwater management controls as prescribed by the *Highway Runoff Manual*.

*Section 6: Stormwater Management for Existing Facilities* describes stormwater best management practices (BMP) retrofit program to address existing impervious surfaces that do not have treatment or flow control, or for which treatment or flow control is substandard.

*Section 7: Maintenance* describes maintenance-related stormwater controls.

*Section 8: Research/Monitoring* addresses WSDOT's stormwater-related research and monitoring programs to assist in refining the Department's stormwater management program over time.

*Section 9: Education/Training/Public Involvement Programs* describes education programs for WSDOT employees and contractors, and the WSDOT permit's and SWMPP's public involvement process.

*Section 10: Program Assessment and Reporting* describes how WSDOT will assess and report on the effectiveness of the SWMPP as well as its implementation progress of the SWMPP.

While WSDOT implements pollution prevention activities statewide (e.g., WSDOT's *Highway Runoff Manual*), the SWMPP strategically targets resources to address priority stormwater management and water resource issues. A description of WSDOT's structural and source controls, including operation and maintenance measures for structural controls, are contained in our SWMPP and the WSDOT *Highway Runoff Manual* (HRM). WSDOT applies the technical standards in the HRM for the planning, design, and operation and maintenance of stormwater facilities statewide. *Appendix 1* of WSDOT's municipal stormwater permit incorporates the HRM by reference. The HRM can be downloaded at: http://www.wsdot.wa.gov/publications/manuals/fulltext/M31-16/HighwayRunoff.pdf.

*Section 5* in the SWMPP provides an overview of WSDOT's stormwater program for new facilities. *Section 5*.4 of the HRM provides the design guidelines for most of the commonly used permanent structural best management practices (BMPs) for highway applications. *Tables 5.5.1* through *5.5.13* provide the facility-specific maintenance standards used for determining when maintenance actions are required for conditions identified through inspection.

*Section 6* of the SWMPP describes WSDOT's retrofit program to address existing impervious surfaces that do not have treatment or flow control, or for which treatment or flow control is substandard. The HRM's *Section 3-4* provides guidelines to assess stormwater retrofit obligations for WSDOT projects and identify stormwater retrofit opportunities.

*Section 4* in the SWMPP provides an overview of WSDOT's construction stormwater pollution prevention program. *Appendix 6A* in the HRM provides the guidelines for the design of temporary BMPs used during construction. *Section 6-3* of the HRM provides the guidelines and criteria on the design and application of temporary spill prevention and containment BMPs during construction.

The HRM refers to *Volume IV* of Ecology's *Stormwater Management Manual for Western Washington* and *Chapter 8* of the *Stormwater Management Manual for Eastern Washington* for guidelines and criteria on the design of source control BMPs. *Section 7* of the SWMPP describes WSDOT's stormwater maintenance program and related stormwater controls.

WSDOT submits annual reports to Ecology documenting WSDOT's progress in meeting its municipal stormwater permit requirements. This includes those areas discharging to Tribal waters in Pierce County. The annual report also serves as a self-audit for WSDOT to evaluate and assess the appropriateness and effectiveness of various programs and activities described in the SWMPP. As such, the annual report also serves as the vehicle for describing and justifying any WSDOT-proposed stormwater management program modifications.

A review of WSDOT's existing SWMPP is underway by WSDOT and Ecology in preparation of the reissuance of WSDOT's NPDES municipal permit in 2014. We expect this review to result in adjustments and refinements to the SWMPP to reflect lessons learned, changes in regulations, and advances in stormwater management.

The response to *7)*, provide below, includes a description of future/planned structural and source controls, including operation and maintenance measures for those structural controls.

(B) Illicit Discharge Detection & Elimination

*Section 3* of WSDOT's SWMPP describes procedures to identify and eliminate illicit discharges and illegal connections to WSDOT's MS4. The revised SWMPP for the 2014 Ecology permit reissuance will clarify and separate out the spill response procedures from the illicit discharge detection and elimination procedures (IDDE). As part of that effort, WSDOT has been working with an interagency working group develop a common set of spill response procedures and protocols.

(1) See *2 Legal Authority*, for the explanation of WSDOT's means to prevent illicit discharges to its MS4.

(2) As explained in our SWMPP, substantial differences exist between WSDOT's illicit discharge detection and elimination (IDDE) programs for state transportation departments and those for municipalities since:

- Fewer opportunities exist for cross connections between stormwater systems and sanitary sewer systems;
- Access to the right of way is generally controlled; and
- Department field crews and contractors provide on-going presence in the field to identify and report illicit discharges and illegal connections.

While public reporting plays a role, the identification of illicit discharges and illicit connections (ID/IC) relies primarily on field observations reported from maintenance, construction, and design staff as well as environmental field staff inventorying and documenting stormwater facilities and connection points. During the course of all these field activities, discovered ID/IC gets reported to the appropriate WSDOT Region IDDE Contact for remediation.

(3) WSDOT staff use the following indicators in the field to identify potential illicit discharges:

- Visible signs of staining, residues, or oily substances in the water or detained within ditches, channels, catch basins, or surrounding pavement and soils
- Pungent odors coming from the drainage system (e.g., discharge smells like sewage, sulfide, petroleum/gas, rancid, etc.)
- Discoloration or oily substances in the water
- Abnormal water flow during the dry weather season
- Excessive sediment deposits or turbid waters, particularly near active off-site construction sites
- Floatables (e.g., discharge includes sewage, an oil sheen, suds, etc.)
- Broken concrete or other disturbances at or near junction structures

For reporting purposes, observations get documented along with the date, time, location of discharge, and estimated quantity of the discharge along with any additional information describing the discharge.

No later than 24 hours after obtaining knowledge, WSDOT will report illicit discharges in instances that present a threat to human health, welfare, or the environment to the appropriate Ecology regional office for entering into the *Environmental Report Tracking System* (ERTS). If WSDOT suspects the discharge to be from a site with an NPDES permit, WSDOT will provide that information to Ecology during the communication triggering an ERTS record.

As appropriate, WSDOT notifies other emergency response authorities. WSDOT immediately reports discharges which might cause bacterial contamination of

shellfish to the appropriate Ecology regional office and the Department of Health's Shellfish Program.
For non-hazardous illicit discharges, WSDOT still notifies Ecology. WSDOT may also notify the local jurisdictions of the discovery that a discharge originating from their jurisdiction and solicit their help to resolve the issue.

WSDOT seeks remediation and cleanup of ID/ICs by the responsible party, if known. If the responsible party is unknown or unresponsive to WSDOT's remediation requests, WSDOT solicits enforcement action by contacting the local governmental jurisdiction in the area where the ID/IC originates. If the discharger or local jurisdiction fails to correct the discharge in a timely manner, WSDOT contacts Ecology to solicit enforcement action.

(4) WSDOT maintenance crews sometimes encounter emergencies associated with transportation accidents and less frequently with natural disasters (e.g., landslides, floods, fires, and washouts). Traffic accidents on highways occasionally result in the release of hazardous materials. If those responsible for the hazardous materials release cannot be identified or made to contain and clean up the release, WSDOT coordinates cleanup with Ecology.

WSDOT staff are instructed to take only the emergency actions required to protect human life and property until the Washington State Patrol (WSP) gains control of the situation. The WSP has the responsibility for safety measures and coordination of the clean-up of spilled substances. The role of WSDOT maintenance personnel is to manage traffic at incidents on state highways to support the overall incident management effort. WSDOT personnel can also provide technical information (i.e., information on drainage system characteristics) in support of the incident response. However, maintenance personnel who are trained to do so will take control actions when necessary and feasible to prevent a release of small quantities of petroleum products into surface waters.

Ecology maintains a database for tracking spills reported by the public or other agencies. This database is utilized by WSDOT to assist in identifying high-risk spill sites along state routes. Ecology forwards database information related to highway accidents to WSDOT's Transit Research and Intermodal Planning Section (TRIPS) for their comprehensive database on accidents. In addition, safety improvements can be made at sites where frequent accidents occur.
Efforts to track hazardous material spills are conducted in conjunction with the Washington State Patrol and/or the local law enforcement agency responding to the accident scene. The accident form records whether a hazardous material was involved, and if so, if a release occurred. It does not document the material involved, the quantity released, or the clean-up status.

WSDOT reports oil and hazardous spills into receiving waters, oil and hazardous spills onto land with a potential for entry into receiving waters, or other significant water quality impacts such as distressed or dead fish noticed in the project vicinity immediately to the appropriate Ecology regional office.

WSDOT has fully developed individual stormwater pollution prevention plans (SWPPPs) in areas covered by the WSDOT municipal stormwater permit for 1) Maintenance facilities that store equipment, fuel vehicles, and conduct heavy equipment and vehicle repair; and 2) Rest areas. WSDOT also has a fully developed programmatic stormwater pollution prevention plan that covers the park and ride lots that WSDOT operates in areas covered by the WSDOT municipal stormwater permit. These SWPPPs:

- Identify measures to prevent and control the contamination of discharges of stormwater to surface and groundwater.
- Include a site map showing significant features, stormwater drainage, sources of possible stormwater pollutant, and locations of stormwater off site discharge.
- Apply applicable source control BMPs listed in Ecology's stormwater management manuals, or equivalent manual.
- Identify necessary capital structural control and treatment BMPs for each facility. These capital improvements and treatment BMPs are ranked and constructed on a priority basis.

WSDOT keeps each SWPPP on site or within reasonable access to the site. WSDOT performs site inspections twice a year by facility staff to ensure implementation, which can include visual inspection of facility discharges to evaluate effectiveness of the program. The Headquarters Maintenance Office will periodically conduct site inspections to verify implementation of the plan.

Washington State Ferries (WSF), a division of WSDOT, implements a programmatic SWPPP at ferry terminals covered under the WSDOT municipal stormwater permit. Each terminal keeps a copy of the SWPPP on site and maintains a formal weekly inspection log. WSF uses most of the programmatic best management practices in the SWPPPs at all of its ferry terminals because the procedures have been integrated into the WSF Safety Management System (SMS). WSF bases its SMS on international standards for safety, security, and pollution prevention. The Environmental Management System (EMS), a subsection of the SMS, addresses illicit discharges and potential discharges of hazardous materials.

In accordance with Ecology's hazardous waste storage and transfer regulations, WSF stores small quantities of potentially hazardous fluids temporarily in *hazardous materials lockers* or *flammable liquid storage cabinets* at the terminals. These temporary storage facilities are inspected regularly by facilities staff and audited annually by environmental and safely management staff.

In addition, WSF conducts regular inspections of the terminal hydraulic system and has constructed secondary containment where feasible to minimize risk of pollution generating spills.

In the event of a spill, the terminals are equipped with spill kits and the staff is trained to take initial spill containment and clean up actions. WSF maintenance crews also

have spill cleanup supplies in the event a spill occurs during maintenance activities. At terminals where WSF received bulk mobile transfers of fuel to vessels, WSF has pre-staged containment boom. WSF staff are trained to call 911 for help and notify the 24-hour operations center for help in the event of a large spill at a terminal. WSF has contracts in place with spill response contractors who are equipped to respond to spills. In addition, WSF is an active member of the Washington State Maritime Cooperative (WSMC), with a member on the Board of Directors. WSMC has an Ecology-approved contingency plan with associated oil spill response contract in place in case of a spill from a WSF ferry vessel.

WSDOT requires contractors to prepare a Spill Prevention Control and Countermeasures (SPCC) plan for all construction projects. SPCC plans must meet the requirements prescribed in *WSDOT Standard Specifications 1-07.15(1)*. SPCC plans are reviewed and accepted by the WSDOT project engineer prior to beginning construction. The specifications also require the contractor to maintain a copy of the plan on site and when encountering hazardous materials, do everything possible to control and contain the material until appropriate measures can be taken.

*Chapter 6* of WSDOT's *Highway Runoff Manual* provides internal guidelines for reviewing and accepting SPCC plans. Additional guidelines and resources are available on the WSDOT Hazardous Materials Program webpage: http://www.wsdot.wa.gov/Environment/HazMat/SpillPrevention.htm.

(5) WSDOT's web page includes information on WSDOT's IDDE program contact numbers to report illicit discharges, connections, and spills to facilitate public reporting of pollution sources they witness along the roadside or at rest areas. The web page also provides examples of illicit discharges that could enter our MS4. The web address pertaining to this is: http://www.wsdot.wa.gov/Environment/WaterQuality/default.htm#IllicitDischarge.

(6) Due to the nature of WSDOT's IDDE program, as described in B(2) above, WSDOT focuses its IDDE education and training efforts on WSDOT staff that might, as part of their normal job responsibilities, come into contact with or otherwise observe an ID/IC to WSDOT's MS4 or property. This training includes the identification of an ID/IC as well as the proper procedures for reporting and responding. WSDOT provides refresher training as needed to address changes in procedures, techniques, requirements, or staffing. WSDOT offers refresher training to all applicable WSDOT staff on a two year cycle. This training cycle also allows WSDOT to evaluate and refine its training to enhance its effectiveness. WSDOT also trains maintenance crews for each facility on the SWPPP.

WSDOT's Construction Site Erosion and Sediment Control course includes information about spill prevention and countermeasures. WSDOT also provides on-line educational programs for employees that review and enforce SPCC plans. Information about training can be found on the Hazardous Materials Program webpage: http://www.wsdot.wa.gov/Environment/HazMat/SpillPrevention.htm.

Washington State Ferries (WSF) utilizes multiple venues to inform, train, and educate WSF employees. New staff go through extensive training on all WSF procedures. This training covers spill containment and cleanup as well as stormwater control procedures.

(7) WSDOT's IDDE program, described in *5B(3)* above, includes procedures that would identify and seek remediation of infiltration seepage from municipal sanitary sewers to our MS4 system.

(C) Source and Structural Control Measures

Beyond the jurisdiction of state right of way, WSDOT does not have the authority to control runoff from commercial and residential areas discharging to Tribal waters. However, WSDOT does implement measures to reduce pollutants from residential and commercial areas that are discharging pollutants to our right of way or MS4.

WSDOT's *Utilities Manual* (i.e., Chapter 1, Section 18 – *Storm Drainage*) includes procedures regarding discharges into WSDOT's municipal stormwater systems. The manual specifies that surface runoff from property outside of the state right-of-way can only be discharged into WSDOT's highway drainage system if it meets certain conditions. One of these conditions include the obligations that discharges meet the requirements in the Ecology-approved *WSDOT Highway Runoff Manual* as well as that the utility agrees to comply with existing and future state and local requirements and assume all costs and liabilities associated with the design, construction, maintenance and operation of stormwater management facilities. WSDOT regional offices review utility permit applications to ensure they meet these requirements are met.

As described in our response to *5(B)*, WSDOT coordinates directly with local jurisdictions and Ecology in the identification and elimination of illicit discharges and connections.

(D) Program Description to Monitor and Control Pollutants from Municipal Landfills, Hazardous Waste Treatment, Disposal and Recovery Facilities, and Industrial Facilities.

No contributions from these types of facilities occur to WSDOT's MS4 discharging to Puyallup Tribal waters.

(E) Construction Stormwater Pollution Prevention

*Section 4* of WSDOT's SWMPP describes WSDOT's construction stormwater pollution prevention program. The program addresses construction construction-relation stormwater pollution prevention primarily through *Chapter 6* of the *WSDOT Highway Runoff Manual* (HRM) which can be downloaded at: http://www.wsdot.wa.gov/publications/manuals/fulltext/M31-16/chapter6.pdf.

WSDOT's construction stormwater pollution prevention planning components consist of Spill Prevention, Control, and Countermeasures plans and Temporary Erosion and

Sediment Control (TESC) plans. *Chapter 6* of the HRM directs the preparation of these plans and in the selection of appropriate erosion and sediment control BMPs.

To assist in developing TESC plans, WSDOT created a template to assist in developing TESC plans which can be downloaded from WSDOT's website at: http://www.wsdot.wa.gov/NR/rdonlyres/0A5E9533-5BAE-4A07-A18D-E67E9C8AAB73/0/TESCPlanTemplate.docx. The erosion control-related elements in the Standard Plans appear in Section I: Site Preservation and Erosion Control, which can be view directly at: http://www.wsdot.wa.gov/Design/Standards/Plans.htm#SectionI. *Appendix 6A* of the HRM includes BMP descriptions, applicable contract specifications and standards plans, design criteria and other pertinent information.

WSDOT requires contractors to prepare a Spill Prevention Control and Countermeasures (SPCC) plan for all construction projects. SPCC plans must meet the requirements prescribed in *WSDOT Standard Specifications 1-07.15(1). Specifications* include the language used to enforce contractual obligations to prepare and implement the SPCC plans. The specifications also require the contractor to submit the plan to the Engineer prior to the commencement of any on-site construction activities; maintain a copy of the plan on site; and when encountering hazardous materials, do everything possible to control and contain the material until appropriate measures can be taken. Guidelines and templates to assist contractors in developing a site-specific SPCC Plan are available at: http://www.wsdot.wa.gov/Environment/HazMat/SpillPrevention.htm.

WSDOT requires that contractors perform site inspections in accordance with the *NPDES Construction Stormwater General Permit* CSWGP. *Section 8-01.3(1)B* of the *Standard Specifications* outlines these inspection requirements. WSDOT's *Standard Specifications* can be downloaded at: http://www.wsdot.wa.gov/Publications/Manuals/M41-10.htm. WSDOT uses a standardized Erosion and Sediment Control Inspection Form to ensure compliance with the CSWGP requirements. Contractor CESCLs (ESC Leads, as defined by *Standard Specification 8-01.3(1)B*, must complete this form and provide it to the Project Engineer. Projects keep a copy of each inspection report on-site in the site log book or have them available on-site electronically.

Each fall season WSDOT performs a *Statewide Erosion Control Plan Implementation and Effectiveness Assessment* (Fall Assessments) for all active construction projects with moderate to high-risk of erosion, as defined in *Chapter 6* of the HRM (e.g., slope length and gradient, soil type, proximity to receiving surface water bodies, and wet-season earthwork). Performance measures evaluated include: thoroughness of original erosion control plans, implementation of the erosion control plan elements, responsiveness to changing field conditions, and BMP effectiveness. The Fall Assessments consist of a site documentation and field assessment. WSDOT combines Fall Assessment findings into a project summary report which project management teams use to better prepare for the wet season work. Each project management team must address the concerns identified in the project summary report and submit a written response within 10 days of the assessment. The Erosion Control Program assessor analyzes statewide findings and identifies trends or policy gaps requiring attention at the headquarters' level. The Fall

Assessment process provides an internal mechanism to help continually improve and enhance the effectiveness of the Erosion Control Program and TESC Planning at the project management level.

WSDOT contractor staff responsible for performing CESCL activities, such as site inspections, must receive training from an Ecology-approved training provider prior to performing these duties. WSDOT also requires personnel responsible for designing or inspecting a TESC plan and consultant personnel designing these plans to take WSDOT's Construction Site Erosion and Sediment Control course. This course also includes information on spill prevention and countermeasures. WSDOT's Erosion Control Program webpage contains more information on these and other training programs at: http://www.wsdot.wa.gov/Environment/WaterQuality/ErosionControl.htm#training. WSDOT also provides on-line educational programs for employees that review and enforce SPCC plans. Information about this training can be found at: http://www.wsdot.wa.gov/Environment/HazMat/SpillPrevention.htm.

## 6) Fiscal Resources

*Table 9* shows an estimate of how much WSDOT spent implementing its municipal stormwater permit and SWMPP requirements during the last fiscal year.

**Table 9: Estimated Expenditures for Municipal Stormwater Permit Implementation**
**July 1, 2011 - June 30, 2012**

| Implementation Tasks | Estimated Stormwater Program Expenditures in Dollars |
|---|---|
| Permit Coordination | 92,500 |
| Stormwater Program Management and Oversight | 137,400 |
| Total Maximum Daily Load | 113,600 |
| Construction Site Pollution Prevention Management | 132,100 |
| Stormwater Features Inventory | 517,800 |
| Illicit Discharge Detection and Elimination | 119,100 |
| Stormwater Retrofit Prioritization | 0 |
| Monitoring and Research | 1,056,200 |
| Annual Reporting | 78,100 |
| Washington State Ferries | 103,800 |
| Highway and Facility Maintenance* | 15,356,400 |
| Standalone Stormwater Retrofit | 902,800 |
| Highway Runoff Program | 201,100 |
| **Total** | $18,810,900 |

*Includes implementation costs for permit-required highway and facility maintenance activities plus costs for three new vactor trucks used to help implement permit requirements.

WSDOT mitigates adverse stormwater runoff effects by building stormwater treatment and flow control BMPs as a part of highway construction projects. During this period, WSDOT

spent about $2.13 billion on our Highway Construction Program statewide, a portion of which covered stormwater-related expenditures. These expenditures are not included in *Table 9* because our accounting systems do not track individual stormwater-related expenditures in overall project costs. This makes generating stormwater mitigation costs very difficult. Based on WSDOT's *2009 Project Environmental Mitigation Costs Case Studies* report, stormwater mitigation can account for between about 2 to 18 percent of an overall project's costs. A specific project's stormwater mitigation costs can depend on the location of the project related to urban areas, whether it is in eastern or western Washington, the size of the project, and its proximity to receiving water bodies, among other factors. The full report is available at: http://www.wsdot.wa.gov/projects/mitigation.

The *2013-15 WSDOT Biennial Budget Request Executive Summary* provides an overview of WSDOT's fiscal resources and budget: http://www.wsdot.wa.gov/NR/rdonlyres/76EA6C26-F318-4637-BB5E-3E031B230761/0/201315WSDOTBudgetReqExecSumm.pdf.

**7) Assessment of Controls**

As explained in response 4(B), no quantitative data exists describing the volume and quality of discharges from existing municipal storm sewer to Tribal waters. However, a white paper prepared for WSDOT in 2007 characterizes pollutants in untreated highway runoff in western Washington. This white paper, *Untreated Highway Runoff in Western Washington* (2007), can be downloaded at: http://www.wsdot.wa.gov/NR/rdonlyres/B947A199-6784-4BDF-99A7-DD2A113DAB74/0/BA_UntreatedHwyRunoffWestWA.pdf (This refers to the report previously mentioned in the response for 4(E) above.).

The white paper identifies pollutants present in untreated highway runoff as measured at edge of pavement and prior to any treatment via natural process and/or engineered systems. Where possible, the white paper also describes typical and worst case concentrations of these pollutants and the key factors that may influence these concentrations based on data compiled from studies in western Washington. Where applicable, the white paper characterizes the central tendency, variance, and range for each pollutant using tabular and graphical representations of the data. The tabular representations (see *Table 5* and *Appendix B* in the white paper) present basic summary statistics for each pollutant.

Runoff discharging from the SR 167 portion falling within this service area flows through vegetation providing treatment opportunities via natural processes (e.g., filtration, absorption, infiltration). Furthermore, considering the small sizes of the drainage areas contributing to these outfalls, along with ample opportunity for infiltration, it is unknown to what extent the amount of runoff, if any, actually makes its way to the receiving waters.

While the I-5 runoff currently receives no treatment prior to discharging into City of Tacoma's MS4, this will no longer be the case as WSDOT's Northbound, Southbound, and High Occupancy Vehicle (HOV) improvement projects slated for this area include constructing stormwater runoff treatment systems. The stormwater facilities are designed to meet the requirements of the Puyallup Tribe of Indians, including the mitigation of polycyclic aromatic hydrocarbons and other vehicle-generated pollutants through

bioremediation. The capacity of the facilities include treatment for new impervious surface constructed by the projects as well as stormwater retrofitting as much of existing impervious surfaces as feasible. The main proposed facilities consist of two constructed stormwater wetlands (CSTW) located at I-5 and East Bay Street and will receive water from 39 acres of the proposed HOV service area. Discharge from the largest CSTW receives further treatment via a modified media filter drain. A compost-amended biofiltration swale will treat I-5 runoff just east of the McKinley Way Bridge. A Filterra cartridge system will treat a portion of northbound SR 167 too low to convey runoff to the nearest CSTW.

These new treatment facilities will discharge to a new pump station on WSDOT right of way. The pump station will discharge to the Puyallup River upstream of the new I-5 Puyallup River bridges. The emergency backup generator for the new pump station will be located in a pump house with a concrete slab designed to contain any spills from generator operation. The pump house will store oil containment booms and absorbent spill pads ready to be deployed if needed. The project's operations and maintenance manual will include details for proper operation of this facility.

WSDOT will equip the proposed stormwater ponds with absorbent booms to prevent or minimize spilled material getting into the effluent. The pond outlets will have mechanical gates that can be closed in the event of a spill to prevent the spilled substance from reaching the pump station and outfall. WSDOT will develop protocol and procedures for gate operation the event that a spill occurs. Procedures will also be developed for removing the spilled substance.

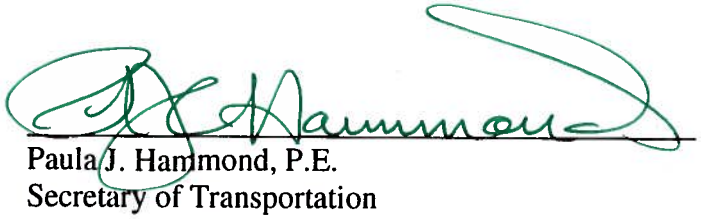
Media filter drains will treat runoff from approximately 5 acres I-5 between McKinley Way and Portland Avenue. This area will discharge to the Puyallup River through existing City of Tacoma storm sewers and the Cleveland Way Pump Station. An area of 5.4 acres will bypass treatment and outfall to the Puyallup River, via the City of Tacoma system, at the Cleveland Way Pump Station.

Maintenance and operations procedures affecting discharges from the proposed Tacoma/Pierce County HOV storm sewer outfall to the Puyallup River meet or exceed the procedures and standards described in WSDOT's SWMPP. The outfall pumps will receive inspection and maintained in accordance with manufacturer's instructions and will include an automated pump failure warning system. Inspection of the outfall structure will occur after heavy storm events along with removal of any debris caught on the structure.

In addition, WSDOT's stormwater program under the Ecology-issued MS4 permit includes both qualitative assessments of our program's effectiveness as well as quantitative monitoring methods. Section S8 of permit contains our annual reporting obligations. WSDOT's monitoring obligations are contained in section S7. Our most recent annual NPDES stormwater progress report can be downloaded at: http://www.wsdot.wa.gov/NR/rdonlyres/36FF0A0E-D7EC-486E-86BC-34606EE452CC/0/2012StormwaterAnnualRpt.pdf.

**8) Signature**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



12/17/12

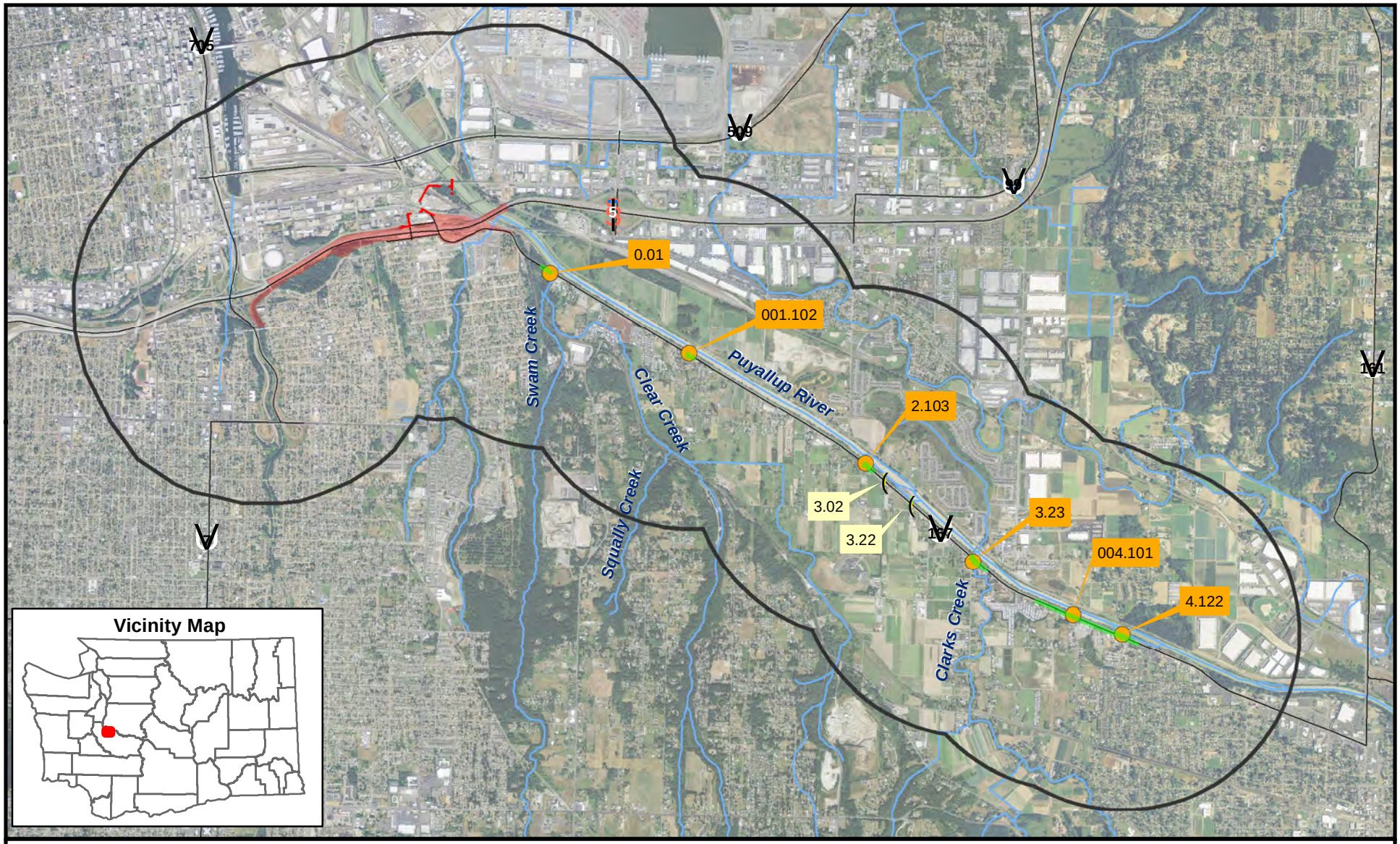
Paula J. Hammond, P.E.
Secretary of Transportation
Washington State Department of Transportation

Date

Attachment A

# Source Identification Maps

Map: 1




Data Source: Service Areas, Discarge Points, State Routes, and Railroads from WSDOT.

0 0.5 1
Miles

Washington State Department of Transportation

1 Mile Beyond Service Boundary

**Existing HOV Service Area**

Ultimately Drains to Cleveland Way Pump Station Outfall

Drainage Area to 167 Discharge Point

! Existing Cleveland Way Pump Station Outfall

( WSDOT Discharge Point Along SR 167

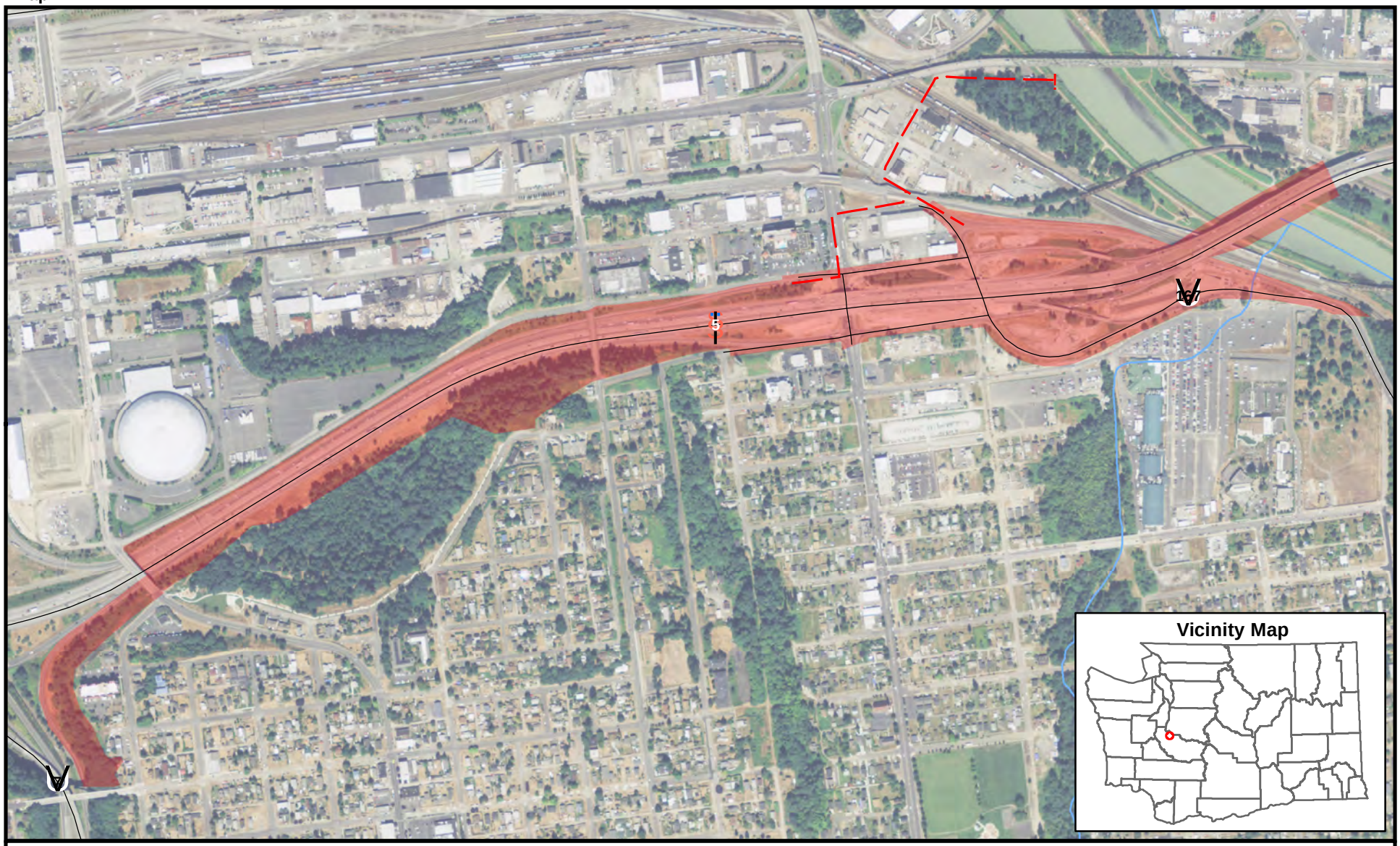
( Discharge to Pierce County Municipal system – ultimate fate of water is unknown

Conveyance to Cleveland Way Outfall

# Existing Service Area for HOV and SR 167

tsj:\2012projects\TacomaHOV_Victoria\ExistingServicesArea_v3.mxd

Map: 2




*Data Source: Service Area, Discarge Points, State Routes, and Railroads from WSDOT.*

0 0.1 0.2
Miles

Washington State Department of Transportation

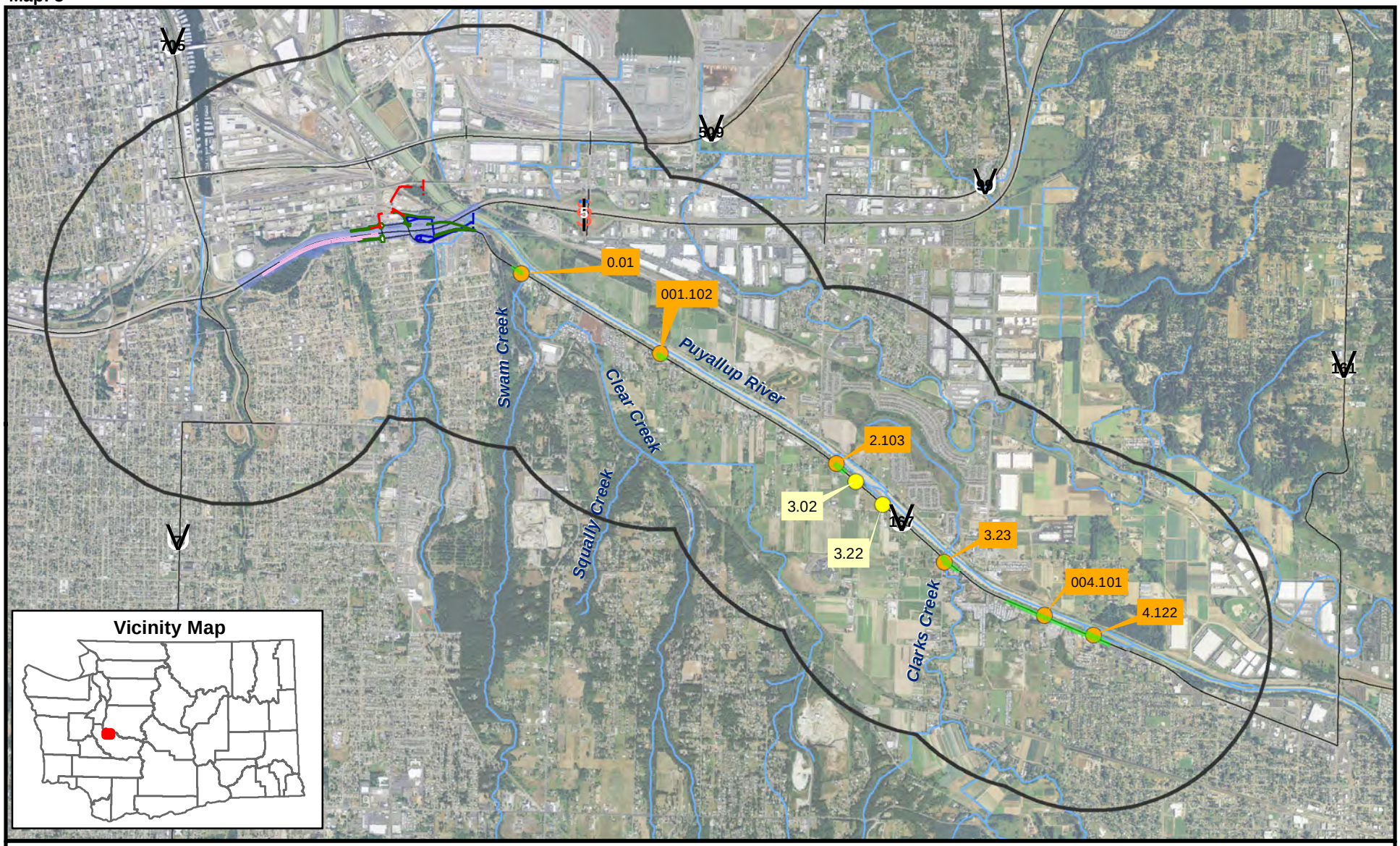
# Existing HOV Service Area

**Existing HOV Service Area**

- Ultimately Drains to Cleveland Way Pump Station Outfall
- ! Existing Cleveland Way Pump Station Outfall
- Conveyance to Cleveland Way Outfall

*tsj:\2012projects\TacomaHOV_Victoria\ExistingServicesArea_v3.mxd*

Map: 3




Data Source: Discarge Points, State Routes, and Railroads from WSDOT.

0 0.5 1

Washington State Department of Transportation

1 Mile Beyond Service Boundary

**Proposed HOV Service Area**

Drains to New Outfall

New Outfall

Conveyance to Outfall

MFD Treated to Cleveland Way Pump Station Outfall

By-pass Area to Cleveland Way Pump Station Outfall

Existing Cleveland Way Pump Station Outfall

Conveyance to Cleveland Way Outfall

WSDOT Discharge Point Along SR 167

Discharge to Pierce County Municipal system – ultimate fate of water is unknown

Drainage Area to 167 Discharge Point

# Proposed Service Area for HOV and SR 167

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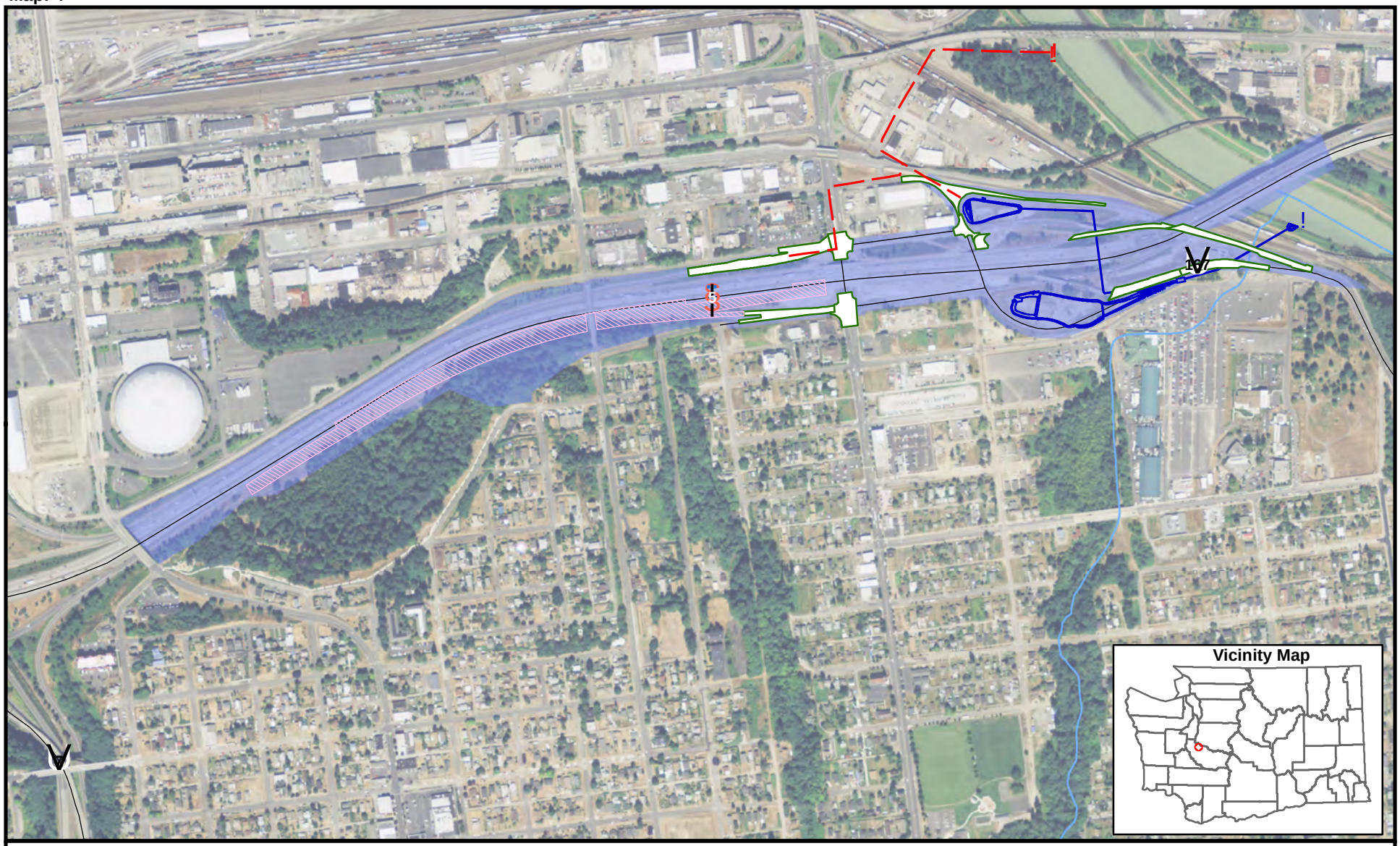
Map: 4




*Data Source: Discarge Points, State Routes, and Railroads from WSDOT.*

# Proposed HOV Service Area

0 0.1 0.2

Washington State Department of Transportation

**Proposed HOV Service Area**

- Drains to New Outfall
- ! New Outfall
- Conveyance to Outfall
- MFD Treated to Cleveland Way Pump Station Outfall
- By-pass Area to Cleveland Way Pump Station Outfall
- ! Existing Cleveland Way Pump Station Outfall
- Conveyance to Cleveland Way Pump Station Outfall

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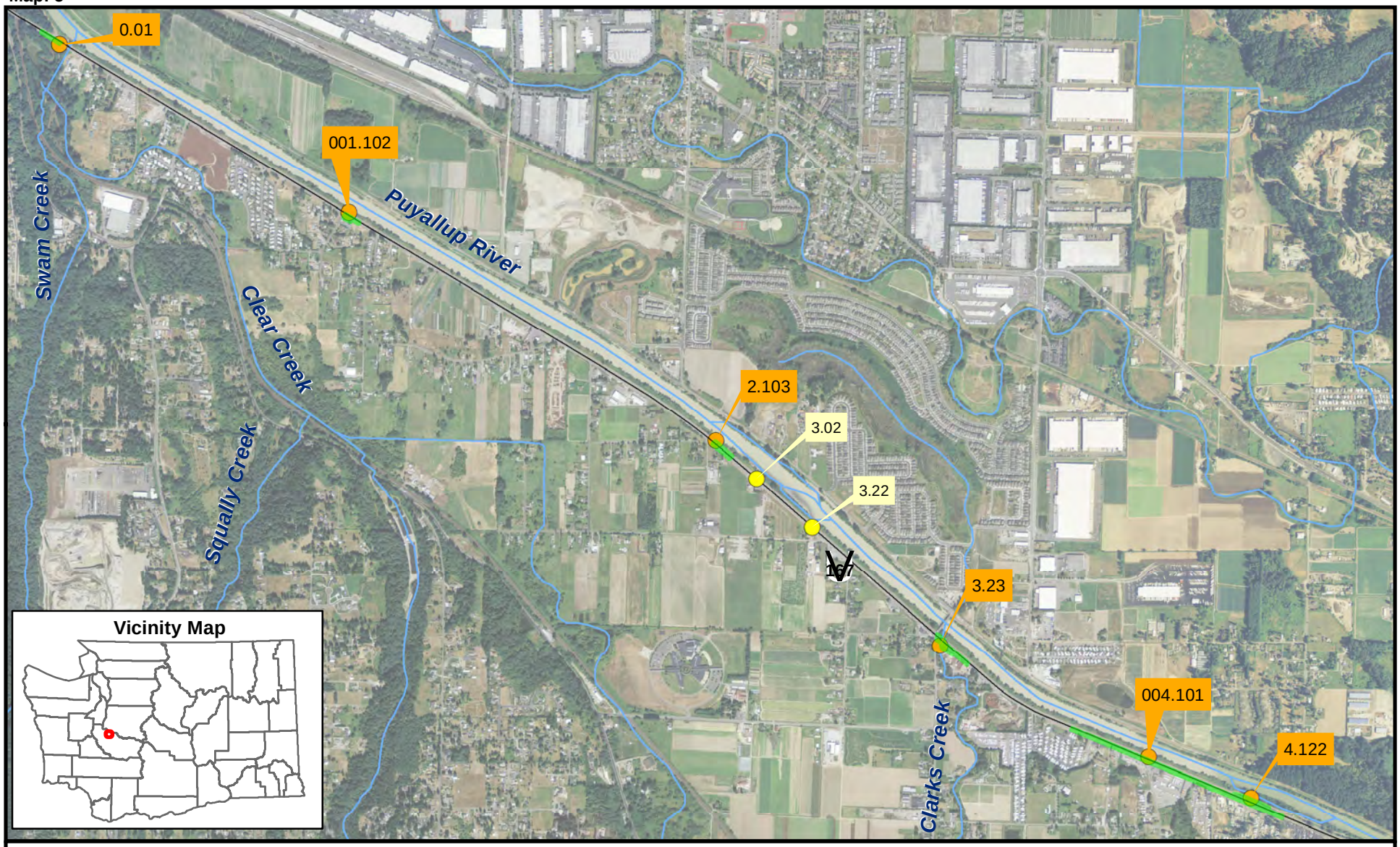
Map: 5




Data Source: Discarge Points, State Routes, and Railroads from WSDOT; Image from NAIP 2011

# Service Area for SR 167

Drainage Area to 167 Discharge Point

WSDOT Discharge Point Along SR 167

Discharge to Pierce County Municipal system – ultimate fate of water is unknown

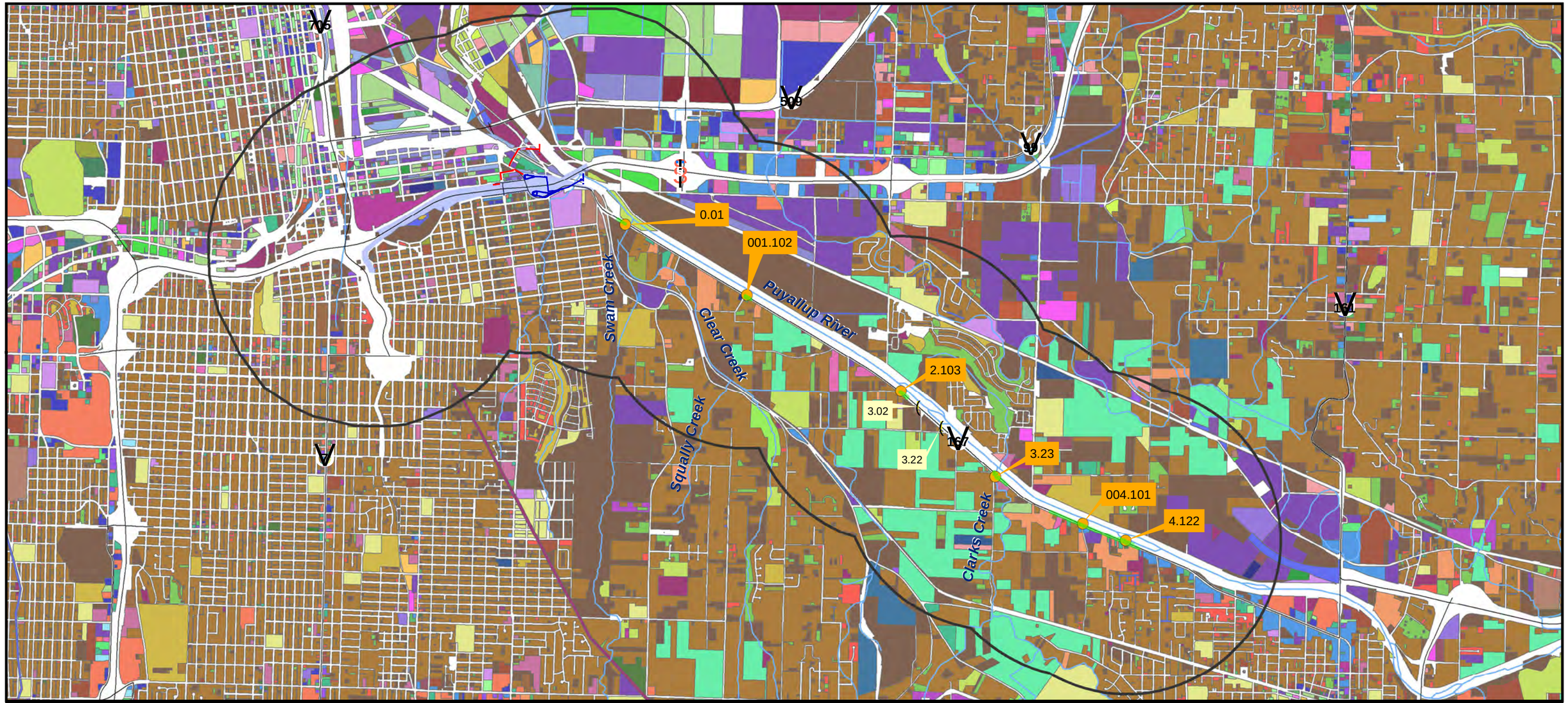
0 0.2 0.4

Washington State Department of Transportation

ts|:\2012projects\TacomaHOV_Victoria\SR167.mxd

MAP 6

# Land Use




- Agriculture (not classified under current use law)
- Agriculture classified under current use chapter 84.34 RCW
- Agriculture related activities
- Aircraft transportation
- All other residential not elsewhere coded
- Amusements
- Apparel and other finished products
- Automobile parking
- Business services
- Chemicals
- Communication
- Contract construction services
- Cultural activities and nature exhibitions
- Designated forest land - chapter 84.33 RCW (20 arcres or >)
- Educational services
- Fabricated metal products
- Finance, insurance, and real estate services
- Fishing activities and related services
- Food and kindred products
- Furniture and fixtures
- Governmental services
- Highway and street right of way
- Hotels/motels
- Household, 2-4 units
- Household, multiunits (5 or more)
- Household, single family units
- Institutional lodging
- Leather and leather products
- Lumber and wood products (except furniture)
- Marine craft transportation
- Mining activities and related services
- Miscellaneous manufacturing
- Miscellaneous services
- Mobile home parks or courts
- Motor vehicle transportation
- Noncommercial forest
- Open space land classified - chapter 84.34 RCW/Public OS
- Other Government
- Other cultural, entertainment, recreational / church, cemetery
- Other resource production
- Other retail trade
- Other transportation, communication, and utilities
- Other undeveloped land
- Paper and allied products
- Parks / Wilderness, Refuges, Perserves
- Personal services
- Petroleum refining and related industries
- Primary metal industries
- Printing and publishing
- Professional scientific, control instruments, photographic
- Professional services
- Public assembly
- Public timberland/non-designated forest
- Railroad/transit transportation
- Recreational activities
- Repair services
- Residential condominiums
- Resorts and group camps
- Retail trade - apparel and accessories
- Retail trade - automotive, marine craft, aircraft, accessories
- Retail trade - building materials, hardware, farm equipment
- Retail trade - eating and drinking
- Retail trade - food
- Retail trade - furniture, home furnishing, equipment
- Retail trade - general merchandise
- Rubber and miscellaneous plastic products
- Stone, clay and glass products
- Textile mill products
- Timberland classified - chapter 84.34 RCW (< 20 acres)
- Undeveloped land
- Utilities
- Vacation cabin
- Water areas
- Wholesale trade

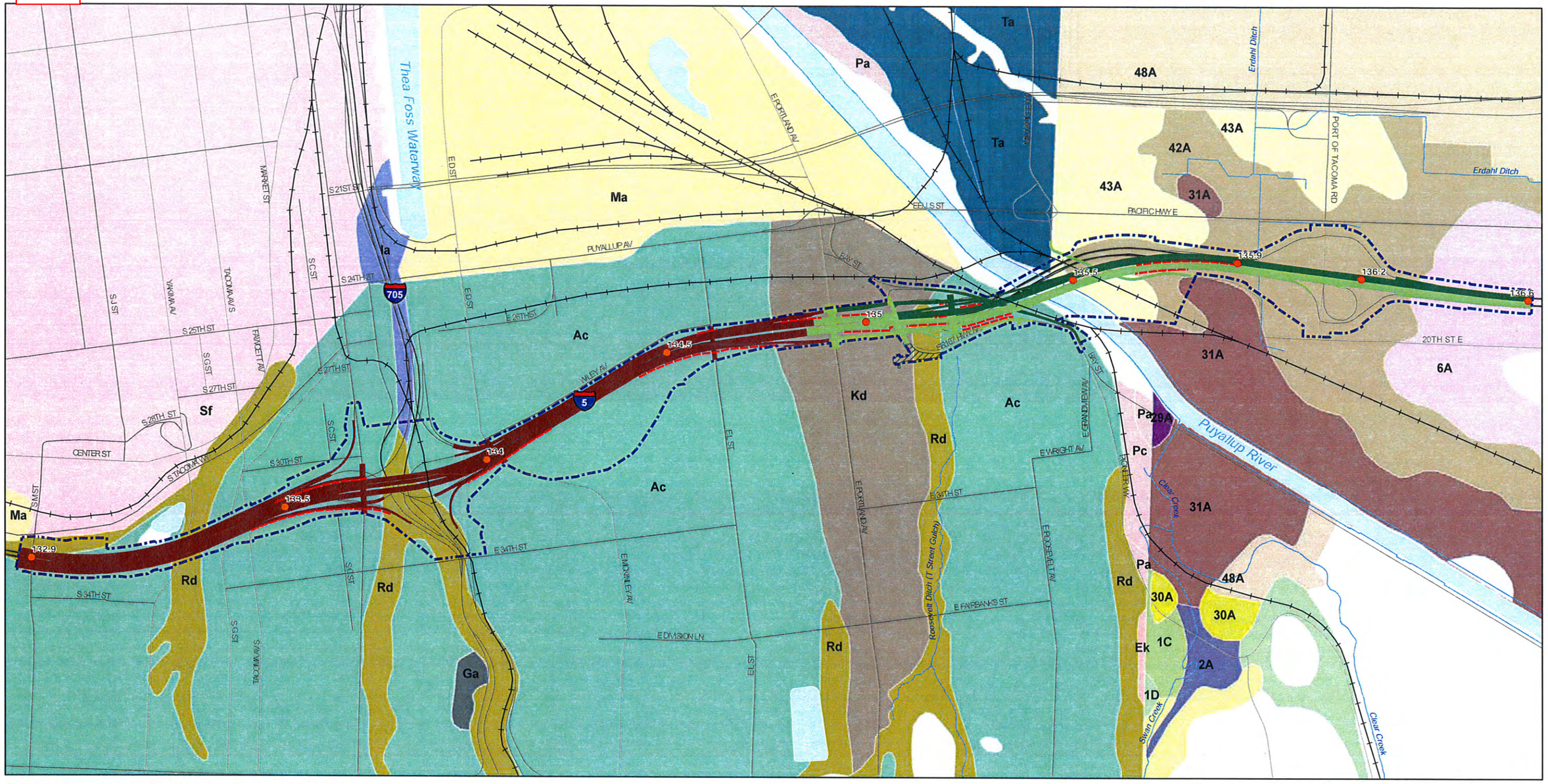
0 0.4 0.8
Miles

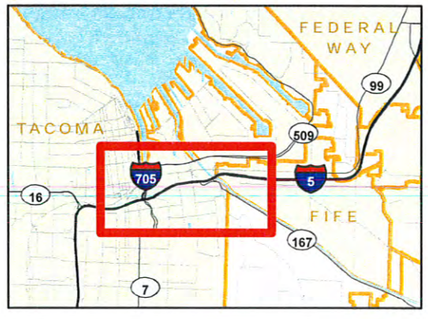
*Landuse - Statewide - Derived from Statewide Parcels Database from Washington State Department of Ecology 2010*

Washington State Department of Transportation

*tsj:\2012projects\TacomaHOV_Victoria\landuse.mxd*

MAP 7




- No Mapped Soil Type
- 1D Alderwood Gravelly Sandy Loam, 15-30 % Slopes
- 1C Alderwood Gravelly Sandy Loam, 6-15 % Slopes
- Ac Alderwood Gravelly Sandy Loam, Rolling, 6-15 % Slopes
- Aquic Xerofluvents, Level
- 6A Briscot Loam
- Ek Everett Gravelly Sandy Loam, Rolling, 6-15 % Slopes
- Gr Gravel Pits
- Ia Indianola Loamy Sand, 6-12 % Slopes
- Kd Kapowsin Gravelly Loam, Undulating, 2-8 % Slopes
- Ma Made Land, 0-25 % Slopes
- Pilchuck Fine Sand
- Pa Pilchuck Gravelly Sand
- 30a Puget Silty Clay Loam
- 31a Puyallup Fine Sandy Loam
- Ph Puyallup Fine Sandy Loam, 0-3% Slopes
- Rd Rough Broken Land 25-60 % Slopes
- Sf Sinclair Gravelly Fine Sandy Loam, Rolling, 0-15 % Slopes
- 42a Sultan Silt Loam
- Ta Tacoma Muck, 0-3 % Slopes
- 43a Tacoma Silt Loam
- 47f Xerochrepts, 45-70 % Slopes
- 48a Xerorthents, Fill Areas

- Milepost
- Proposed Retaining Wall
- Surface Water
- Study Area
- I-5: M Street to Portland Avenue - HOV
- I-5: Portland Avenue to Port of Tacoma Road – Northbound HOV
- I-5: Portland Avenue to Port of Tacoma Road – Southbound HOV
- Potential Local Improvements by WSDOT or other Local Jurisdiction

Source: Pierce County (2005, 2007) GIS Data (Soils, Streets, County Boundary, Water Bodies). USDA NRCS (1939) GIS Data (Soils).

N

0 500 1,000 2,000 Feet

MAP 7

Project Soils Map

*Tacoma/Pierce County HOV Program*

**Washington State Department of Transportation**

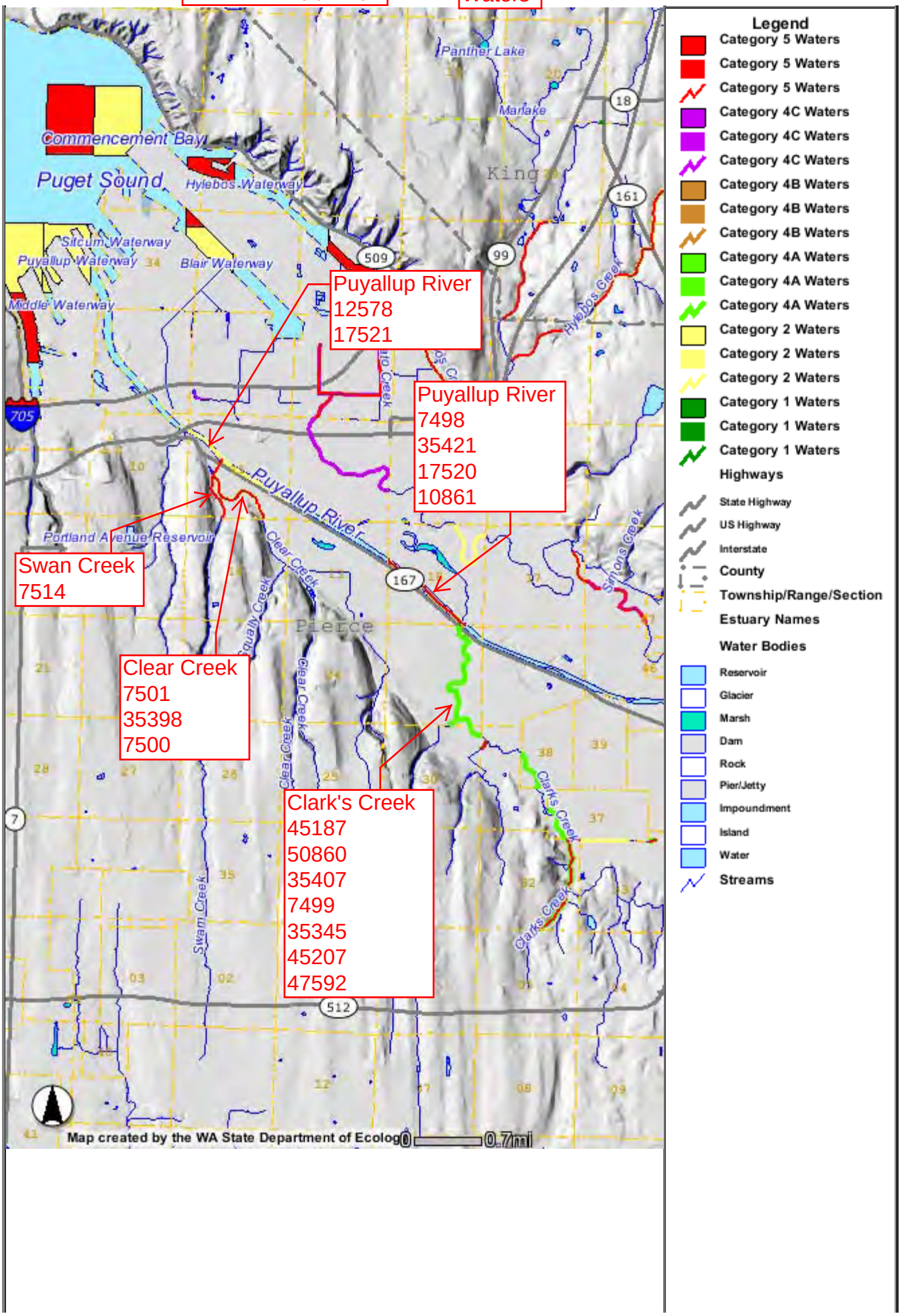
File Path: \\Simba\proj\WSDOT\341541\GIS\MapDocuments\Environmental\Wetlands\TAC\TAC_ExB-3_SoilSurvey.mxd, Date: October 30, 2008

Attachment B

# 2008 Integrated Water Quality Assessment
# Full Query Results for the Service Area

Section 303(d) Map

Waters




Puyallup River
12578
17521

Puyallup River
7498
35421
17520
10861

Swan Creek
7514

Clear Creek
7501
35398
7500

Clark's Creek
45187
50860
35407
7499
35345
45207
47592

| | | | |
|---|---|---|---|
| **Listing ID:** | 7501 | | |
| **Water Body Name:** | CLEAR CREEK | | |
| **Water Body Type:** | River/Stream | | |
| **Parameter:** | Fecal Coliform | **2008 CATEGORY:** | 5 |
| **Sample Medium:** | Water | **2004 Category:** | 5 |
| **WRIA:** | 10 - Puyallup-White | **1998 303(d) List?:** | Y |
| | | **1996 303(d) List?:** | Y |
| **County:** | Pierce | | |
| **Puget Sound Action Area:** | South Central Puget Sound | | |
| **Township Range Section:** | 20.0N - 03.0E - 11 | | |
| **LLID:** | 1223927472341 | | |
| **Lower Rte:** | 0.000 | **Upper Rte:** | 1.413 |
| **WASWIS:** | UP04FV | | |
| **Lower Rte:** | 0.000 | **Upper Rte:** | 1.413 |
| **WBID:** | WA-10-1021 | | |

**EIM**

| User Study ID | User Location ID |
|---|---|
| LSUL0001 | 10-CLR-0.4 |

**2008 Basis**

Location ID [10-CLR-0.4] -- 0 of 5 (0.0%) of samples collected in 2007 exceed the percent criterion (200 col/100mL)
Location ID [10-CLR-0.4] -- A geometric mean of 25.00 col/100mL calculated from 5 samples collected in 2007 does not exceed the geometric mean criterion (100 col/100mL)

Location ID [10-CLR-0.4] -- 0 of 5 (0.0%) of samples collected in 2006 exceed the percent criterion (200 col/100mL)
Location ID [10-CLR-0.4] -- A geometric mean of 34.01 col/100mL calculated from 5 samples collected in 2006 does not exceed the geometric mean criterion (100 col/100mL)

*** 2004 Basis Statement Below ***

Ebbert, et al. 1987. , 2 excursions beyond the criterion (at 31st Avenue) on 11/83 and 2/84.

**Remarks**

Available data does not meet minimum data requirements of Ecology WQP Policy 1-11 to make a category determination

Fecal coliform data were previously submitted only in hardcopy form. The water segment is listed as Category 5 based on the 1998 assessment.

| | | | |
|---|---|---|---|
| **Listing ID:** | 35398 | | |
| **Water Body Name:** | CLEAR CREEK | | |
| **Water Body Type:** | River/Stream | | |
| **Parameter:** | Bioassessment | **2008 CATEGORY:** | 2 |
| **Sample Medium:** | Other | **2004 Category:** | 2 |
| **WRIA:** | 10 - Puyallup-White | **1998 303(d) List?:** | N |
| | | **1996 303(d) List?:** | N |
| **County:** | Pierce | | |
| **Puget Sound Action Area:** | South Central Puget Sound | | |
| **Township Range Section:** | 20.0N - 03.0E - 11 | | |
| **LLID:** | 1223927472341 | | |
| **Lower Rte:** | 0.000 | **Upper Rte:** | 1.413 |
| **WASWIS:** | UP04FV | | |
| **Lower Rte:** | 0.000 | **Upper Rte:** | 1.413 |

**2008 Basis**

*** 2008 Basis Statement (carried forward from 2004) ***

Puyallup Tribe of Indians unpublished data (submitted by Char Naylor on 3 March 2003) show biological degredation of aquatic life based an Benthic Index of Biological Integrity (B-IBI) score of 18.

**Remarks**

This listing was previously placed on Category 4C for biological data in accordance with Policy 1-11. The listing has been moved to Category 2 based on recommendations from EPA, since the data is insufficient to determine if the biological impairment is from a pollutant or pollution. Additional monitoring needs to occur before the sources of impairment can be identified. -kk

| | | | |
|---|---|---|---|
| **Listing ID:** | 7500 | | |
| **Water Body Name:** | CLEAR CREEK | | |
| **Water Body Type:** | River/Stream | | |
| **Parameter:** | Dissolved Oxygen | **2008 CATEGORY:** | 2 |
| **Sample Medium:** | Water | **2004 Category:** | 2 |
| **WRIA:** | 10 - Puyallup-White | **1998 303(d) List?:** | N |
| | | **1996 303(d) List?:** | N |
| **County:** | Pierce | | |
| **Puget Sound Action Area:** | South Central Puget Sound | | |
| **Township Range Section:** | 20.0N - 03.0E - 11 | | |
| **LLID:** | 1223927472341 | | |
| **Lower Rte:** | 0.000 | **Upper Rte:** | 1.413 |
| **WASWIS:** | UP04FV | | |
| **Lower Rte:** | 0.000 | **Upper Rte:** | 1.413 |
| **WBID:** | WA-10-1021 | | |

**2008 Basis**

*** 2008 Basis Statement (carried forward from 2004) ***

Ebbert, et al. 1987. , 1 excursion beyond the criterion (at 31st Avenue) on 11/3/84.

Puyallup Tribe of Indians unpublished data at station CLR-3 (submitted by Char Naylor on 3 March 2003) show 5 excursions beyond the criterion from 18 measurements collected in 2002.

| | | | |
|---|---|---|---|
| **Listing ID:** | 35345 | | |
| **Water Body Name:** | CLARKS CREEK | | |
| **Water Body Type:** | River/Stream | | |
| **Parameter:** | Temperature | **2008 CATEGORY:** | 1 |
| **Sample Medium:** | Water | **2004 Category:** | 1 |
| **WRIA:** | 10 - Puyallup-White | **1998 303(d) List?:** | N |
| | | **1996 303(d) List?:** | N |
| **County:** | Pierce | | |
| **Puget Sound Action Area:** | South Central Puget Sound | | |
| **Township Range Section:** | 20.0N - 04.0E - 32 | | |
| **LLID:** | 1223400472140 | | |
| **Lower Rte:** | 5.396 | **Upper Rte:** | 7.112 |
| **WASWIS:** | AD37IU | | |
| **Lower Rte:** | 5.396 | **Upper Rte:** | 6.584 |

**2008 Basis**

*** 2008 Basis Statement (carried forward from 2004) ***

Puyallup Tribe of Indians unpublished data at DeCoursey Park (submitted by Char Naylor on 3 March 2003) show a 7-day mean of maximum daily temperature of 11.77 degrees C for the week ending 26 June 2002, with a maximum daily maximum temperature of 11.97 degrees C collected on 10 July 2002.

**Remarks**

The data for this listing was reviewed and found to meet Category 1 requirements in accordance with Policy 1-11 (Sept. 2006)

| | | | |
|---|---|---|---|
| **Listing ID:** | 35407 | | |
| **Water Body Name:** | CLARKS CREEK | | |
| **Water Body Type:** | River/Stream | | |
| **Parameter:** | Dissolved Oxygen | **2008 CATEGORY:** | 2 |
| **Sample Medium:** | Water | **2004 Category:** | 2 |
| **WRIA:** | 10 - Puyallup-White | **1998 303(d) List?:** | N |
| | | **1996 303(d) List?:** | N |
| **County:** | Pierce | | |
| **Puget Sound Action Area:** | South Central Puget Sound | | |
| **Township Range Section:** | 20.0N - 04.0E - 19 | | |
| **LLID:** | 1223400472140 | | |
| **Lower Rte:** | 0.069 | **Upper Rte:** | 2.429 |
| **WASWIS:** | AD37IU | | |
| **Lower Rte:** | 0.069 | **Upper Rte:** | 2.428 |

**EIM**

| User Study ID | User Location ID |
|---|---|
| G0100116 | CURS-1 |

**2008 Basis**

Location ID [CURS-1] -- In 2002, 4 samples showed no excursions of the criteria for this waterbody, (criterion = 8.0 mg/L).

Location ID [CURS-1] -- In 2003, 2 of 8 samples (25%) showed an excursion of the criteria for this waterbody, (criterion = 8.0 mg/L).

*** 2004 Basis Statement Below ***

Puyallup Tribe of Indians unpublished data at station CLK-4 (submitted by Char Naylor on 3 March 2003) show excursions beyond the criterion from measurements collected in 1999 and 2001.

**Remarks**

Ten percent or more of the samples collected in a single year were an excursion of the criterion.

| | | | |
|---|---|---|---|
| **Listing ID:** | 45187 | | |
| **Water Body Name:** | CLARKS CREEK | | |
| **Water Body Type:** | River/Stream | | |
| **Parameter:** | Fecal Coliform | **2008 CATEGORY:** | 4A |
| **Sample Medium:** | Water | **2004 Category:** | |
| **WRIA:** | 10 - Puyallup-White | **1998 303(d) List?:** | N |
| | | **1996 303(d) List?:** | N |
| **County:** | Pierce | | |
| **Puget Sound Action Area:** | South Central Puget Sound | | |
| **Township Range Section:** | 20.0N - 04.0E - 19 | | |
| **LLID:** | 1223400472140 | | |
| **Lower Rte:** | 0.069 | **Upper Rte:** | 2.429 |

**EIM**

| User Study ID | User Location ID |
|---|---|
| LSUL0001 | 10-CLK-0.01 |
| G0100116 | CURS-1 |

**2008 Basis**

Location ID [10-CLK-0.01] -- 1 of 5 (20.0%) of samples collected in 2007 exceed the percent criterion (200 col/100mL)
Location ID [10-CLK-0.01] -- A geometric mean of 108.14 col/100mL calculated from 5 samples collected in 2007 exceeds the geometric mean criterion (100 col/100mL)

Location ID [10-CLK-0.01] -- 0 of 5 (0.0%) of samples collected in 2006 exceed the percent criterion (200 col/100mL)
Location ID [10-CLK-0.01] -- A geometric mean of 72.63 col/100mL calculated from 5 samples collected in 2006 does not exceed the geometric mean criterion (100 col/100mL)

---

Location ID [CURS-1] -- 5 of 8 (62.5%) of samples collected in 2003 exceed the percent criterion (200 col/100mL)
Location ID [CURS-1] -- A geometric mean of 354.69 col/100mL calculated from 8 samples collected in 2003 exceeds the geometric mean criterion (100 col/100mL)

Location ID [CURS-1] -- 2 of 4 (50.0%) of samples collected in 2002 exceed the percent criterion (200 col/100mL)
Location ID [CURS-1] -- Fewer than five samples were available in 2002, therefore a geometric mean was not calculated for this period

**Remarks**

Part of the Clarks Creek Watershed Fecal Coliform TMDL, approved by EPA 6/4/08. -kk

Category was determined by an exceedance of the fecal coliform geometric mean criteria. [Data collection period(s) -- 2007: Location ID -- 10-CLK-0.01]

| | | | |
|---|---|---|---|
| **Listing ID:** | 45207 | | |
| **Water Body Name:** | CLARKS CREEK | | |
| **Water Body Type:** | River/Stream | | |
| **Parameter:** | Fecal Coliform | **2008 CATEGORY:** | 4A |
| **Sample Medium:** | Water | **2004 Category:** | |
| **WRIA:** | 10 - Puyallup-White | **1998 303(d) List?:** | N |
| | | **1996 303(d) List?:** | N |
| **County:** | Pierce | | |
| **Puget Sound Action Area:** | South Central Puget Sound | | |
| **Township Range Section:** | 20.0N - 04.0E - 32 | | |
| **LLID:** | 1223400472140 | | |
| **Lower Rte:** | 5.396 | **Upper Rte:** | 7.112 |

**EIM**

| User Study ID | User Location ID |
|---|---|
| G0100116 | CURS-5 |
| G0100116 | CURS-4 |

**2008 Basis**

Location ID [CURS-5] -- 2 of 8 (25.0%) of samples collected in 2003 exceed the percent criterion (200 col/100mL)
Location ID [CURS-5] -- A geometric mean of 29.10 col/100mL calculated from 8 samples collected in 2003 does not exceed the geometric mean criterion (100 col/100mL)

Location ID [CURS-5] -- 0 of 4 (0.0%) of samples collected in 2002 exceed the percent criterion (200 col/100mL)
Location ID [CURS-5] -- Fewer than five samples were available in 2002, therefore a geometric mean was not calculated for this period

---

Location ID [CURS-4] -- 1 of 6 (16.7%) of samples collected in 2003 exceed the percent criterion (200 col/100mL)
Location ID [CURS-4] -- A geometric mean of 34.16 col/100mL calculated from 6 samples collected in 2003 does not exceed the geometric mean criterion (100 col/100mL)

Location ID [CURS-4] -- 0 of 4 (0.0%) of samples collected in 2002 exceed the percent criterion (200 col/100mL)
Location ID [CURS-4] -- Fewer than five samples were available in 2002, therefore a geometric mean was not calculated for this period

**Remarks**

Part of the Clarks Creek Watershed Fecal Coliform TMDL, approved by EPA 6/4/08. -kk

Category was determined by exceedances of the fecal coliform percent criteria. [Data collection period(s) -- 2003: Location ID -- CURS-5].

| | | | |
|---|---|---|---|
| **Listing ID:** | 47592 | | |
| **Water Body Name:** | CLARKS CREEK | | |
| **Water Body Type:** | River/Stream | | |
| **Parameter:** | Dissolved Oxygen | **2008 CATEGORY:** | 2 |
| **Sample Medium:** | Water | **2004 Category:** | |
| **WRIA:** | 10 - Puyallup-White | **1998 303(d) List?:** | N |
| | | **1996 303(d) List?:** | N |
| **County:** | Pierce | | |
| **Puget Sound Action Area:** | South Central Puget Sound | | |
| **Township Range Section:** | 20.0N - 04.0E - 32 | | |
| **LLID:** | 1223400472140 | | |
| **Lower Rte:** | 5.396 | **Upper Rte:** | 7.112 |

**EIM**

| User Study ID | User Location ID |
|---|---|
| G0100116 | CURS-4 |

**2008 Basis**

Location ID [CURS-4] -- In 2003, 1 of 8 sample values (12.5%) showed an excursion of the criteria for this waterbody, (criterion = 9.5 mg/L).

Location ID [CURS-4] -- In 2002, 0 of 4 sample values showed an excursion of the criteria for this waterbody, (criterion = 9.5 mg/L).

Location ID [CURS-5] -- In 2003, 0 of 8 sample values showed an excursion of the criteria for this waterbody, (criterion = 9.5 mg/L).

Location ID [CURS-5] -- In 2002, 0 of 4 sample values showed an excursion of the criteria for this waterbody, (criterion = 9.5 mg/L).

| | | | |
|---|---|---|---|
| **Listing ID:** | 50860 | | |
| **Water Body Name:** | CLARKS CREEK | | |
| **Water Body Type:** | River/Stream | | |
| **Parameter:** | pH | **2008 CATEGORY:** | 2 |
| **Sample Medium:** | Water | **2004 Category:** | |
| **WRIA:** | 10 - Puyallup-White | **1998 303(d) List?:** | N |
| | | **1996 303(d) List?:** | N |
| **County:** | Pierce | | |
| **Puget Sound Action Area:** | South Central Puget Sound | | |
| **Township Range Section:** | 20.0N - 04.0E - 19 | | |
| **LLID:** | 1223400472140 | | |
| **Lower Rte:** | 0.069 | **Upper Rte:** | 2.429 |

**EIM**

| User Study ID | User Location ID |
|---|---|
| G0100116 | CURS-1 |

**2008 Basis**

Location ID [CURS-1] -- In 2002, 0 of 4 samples (0.0%) showed an excursion of the criteria for this waterbody.

Location ID [CURS-1] -- In 2003, 2 of 8 samples (25.0%) showed an excursion of the criteria for this waterbody: 2 low pH excursions.

**Remarks**

At Least 10 percent of samples were excursion of the criteria in at least one year, however fewer than 3 excursions exist from all data considered.

| | | | |
|---|---|---|---|
| **Listing ID:** | 7499 | | |
| **Water Body Name:** | CLARKS CREEK | | |
| **Water Body Type:** | River/Stream | | |
| **Parameter:** | pH | **2008 CATEGORY:** | 5 |
| **Sample Medium:** | Water | **2004 Category:** | 5 |
| **WRIA:** | 10 - Puyallup-White | **1998 303(d) List?:** | Y |
| | | **1996 303(d) List?:** | N |
| **County:** | Pierce | | |
| **Puget Sound Action Area:** | South Central Puget Sound | | |
| **Township Range Section:** | 20.0N - 04.0E - 32 | | |
| **LLID:** | 1223400472140 | | |
| **Lower Rte:** | 5.396 | **Upper Rte:** | 7.112 |
| **WASWIS:** | AD37IU | | |
| **Lower Rte:** | 5.396 | **Upper Rte:** | 6.584 |
| **WBID:** | WA-10-1025 | | |

**EIM**

| User Study ID | User Location ID |
|---|---|
| G0100116 | CURS-4 |

**2008 Basis**

Location ID [Data from multiple locations] -- In 2002, 0 of 6 samples (0.0%) showed an excursion of the criteria for this waterbody.

Location ID [Data from multiple locations] -- In 2003, 0 of 14 samples (0.0%) showed an excursion of the criteria for this waterbody.

*** 2004 Basis Statement Below ***

Pierce County Conservation District data (submitted by Timothy Barbee on 6/26/97) show 2 excursions beyond the criterion out of 3 samples at station CC1 in 1996.

**Remarks**

Less than 5 percent of samples exceeded of the criteria and at least 10 samples were collected in at least one year.

Low pH

| | | | |
|---|---|---|---|
| **Listing ID:** | 12578 | | |
| **Water Body Name:** | PUYALLUP RIVER | | |
| **Water Body Type:** | River/Stream | | |
| **Parameter:** | Temperature | **2008 CATEGORY:** | 1 |
| **Sample Medium:** | Water | **2004 Category:** | 1 |
| **WRIA:** | 10 - Puyallup-White | **1998 303(d) List?:** | N |
| | | **1996 303(d) List?:** | N |
| **County:** | Pierce | | |
| **Puget Sound Action Area:** | South Central Puget Sound | | |
| **Township Range Section:** | 20.0N - 03.0E - 11 | | |
| **LLID:** | 1224252472685 | | |
| **Lower Rte:** | 0.036 | **Upper Rte:** | 2.023 |
| **WASWIS:** | PX29AG | | |
| **Lower Rte:** | 3.908 | **Upper Rte:** | 5.894 |
| **WBID:** | WA-10-1020 | | |

**2008 Basis**

*** 2008 Basis Statement (carried forward from 2004) ***

Ebbert, 2002. Shows no excursions beyond the criterion from measurements collected in 2000 and 2001.

Puyallup Tribe of Indians unpublished data at RM 2.9 (submitted by Char Naylor on 3 March 2003) show a 7-day mean of maximum daily temperature of 17.16 degrees C for the week ending 15 August 2002, with a maximum daily maximum temperature of 17.52 degrees C collected on 9 August 2002.

**Remarks**

The data for this listing was reviewed and found to meet Category 1 requirements in accordance with Policy 1-11 (Sept. 2006)

| | | | |
|---|---|---|---|
| **Listing ID:** | 17521 | | |
| **Water Body Name:** | PUYALLUP RIVER | | |
| **Water Body Type:** | River/Stream | | |
| **Parameter:** | Dissolved Oxygen | **2008 CATEGORY:** | 2 |
| **Sample Medium:** | Water | **2004 Category:** | 2 |
| **WRIA:** | 10 - Puyallup-White | **1998 303(d) List?:** | N |
| | | **1996 303(d) List?:** | N |
| **County:** | Pierce | | |
| **Puget Sound Action Area:** | South Central Puget Sound | | |
| **Township Range Section:** | 20.0N - 03.0E - 11 | | |
| **LLID:** | 1224252472685 | | |
| **Lower Rte:** | 0.036 | **Upper Rte:** | 2.023 |
| **WASWIS:** | PX29AG | | |
| **Lower Rte:** | 3.908 | **Upper Rte:** | 5.894 |

**2008 Basis**

*** 2008 Basis Statement (carried forward from 2004) ***

Ebbert, 2002. Shows excursions beyond the criterion from measurements collected in 2000. Ebbert, 2002. Shows no excursions beyond the criterion from measurements collected in 2001.

| | | | |
|---|---|---|---|
| **Listing ID:** | 10861 | | |
| **Water Body Name:** | PUYALLUP RIVER | | |
| **Water Body Type:** | River/Stream | | |
| **Parameter:** | Ammonia-N | **2008 CATEGORY:** | 1 |
| **Sample Medium:** | Water | **2004 Category:** | 1 |
| **WRIA:** | 10 - Puyallup-White | **1998 303(d) List?:** | N |
| | | **1996 303(d) List?:** | N |
| **County:** | Pierce | | |
| **Puget Sound Action Area:** | South Central Puget Sound | | |
| **Township Range Section:** | 20.0N - 04.0E - 18 | | |
| **LLID:** | 1224252472685 | | |
| **Lower Rte:** | 3.863 | **Upper Rte:** | 5.497 |
| **WASWIS:** | PX29AG | | |
| **Lower Rte:** | 7.735 | **Upper Rte:** | 9.368 |

**2008 Basis**

*** 2008 Basis Statement (carried forward from 2004) ***

Hallock (2001) Dept. of Ecology Ambient Monitoring Station 10A050 (Puyallup R @ Puyallup (USGS)) shows 0 excursions beyond the criterion out of 10 samples collected between 1993 - 2001

**Remarks**

The data for this listing was reviewed and found to meet Category 1 requirements in accordance with Policy 1-11 (Sept. 2006)

Return to Listing Print

| | | | |
|---|---|---|---|
| **Listing ID:** | 17520 | | |
| **Water Body Name:** | PUYALLUP RIVER | | |
| **Water Body Type:** | River/Stream | | |
| **Parameter:** | Dissolved Oxygen | **2008 CATEGORY:** | 2 |
| **Sample Medium:** | Water | **2004 Category:** | 2 |
| **WRIA:** | 10 - Puyallup-White | **1998 303(d) List?:** | N |
| | | **1996 303(d) List?:** | N |
| **County:** | Pierce | | |
| **Puget Sound Action Area:** | South Central Puget Sound | | |
| **Township Range Section:** | 20.0N - 04.0E - 18 | | |
| **LLID:** | 1224252472685 | | |
| **Lower Rte:** | 3.863 | **Upper Rte:** | 5.497 |
| **WASWIS:** | PX29AG | | |
| **Lower Rte:** | 7.735 | **Upper Rte:** | 9.368 |

**2008 Basis**

*** 2008 Basis Statement (carried forward from 2004) ***

Ebbert, 2002. Shows excursions beyond the criterion from measurements collected in 2000. Ebbert, 2002. Shows no excursions beyond the criterion from measurements collected in 2001.

Hallock (2001) Dept. of Ecology Ambient Monitoring Station 10A050 (Puyallup R @ Puyallup (USGS)) shows 0 excursions beyond the criterion out of 6 samples collected between 1993 - 2001

Hallock (2001) Dept. of Ecology Ambient Monitoring Station 10A050 (Puyallup R @ Puyallup (USGS)) shows 0 excursions beyond the criterion out of 6 samples collected between 1993 - 2001

Ebbert, 2002. Shows excursions beyond the criterion from measurements collected in 2000. Ebbert, 2002. Shows no excursions beyond the criterion from measurements collected in 2001.

Return to Listing Print

| | | | |
|---|---|---|---|
| **Listing ID:** | 35421 | | |
| **Water Body Name:** | PUYALLUP RIVER | | |
| **Water Body Type:** | River/Stream | | |
| **Parameter:** | Mercury | **2008 CATEGORY:** | 5 |
| **Sample Medium:** | Water | **2004 Category:** | 5 |
| **WRIA:** | 10 - Puyallup-White | **1998 303(d) List?:** | N |
| | | **1996 303(d) List?:** | N |
| **County:** | Pierce | | |
| **Puget Sound Action Area:** | South Central Puget Sound | | |
| **Township Range Section:** | 20.0N - 04.0E - 18 | | |
| **LLID:** | 1224252472685 | | |
| **Lower Rte:** | 3.863 | **Upper Rte:** | 5.497 |
| **WASWIS:** | PX29AG | | |
| **Lower Rte:** | 7.735 | **Upper Rte:** | 9.368 |

**2008 Basis**

*** 2008 Basis Statement (carried forward from 2004) ***

Hallock (2004), Dept. of Ecology ambient station 10A050 shows 1 sample in year 2003 exceeded the chronic criterion.

Puyallup Tribe of Indians unpublished data (submitted by Char Naylor on 3 March 2003) show 1 excursion beyond the chronic criterion from 3 samples collected in 2002 at RM 5.8.

**Remarks**

Changed from Category 2 to Category 5 on 01/24/05 due to consolidation with Listing ID 42777 (cat 2). -kk

Return to Listing Print

| | | | |
|---|---|---|---|
| **Listing ID:** | 7498 | | |
| **Water Body Name:** | PUYALLUP RIVER | | |
| **Water Body Type:** | River/Stream | | |
| **Parameter:** | Fecal Coliform | **2008 CATEGORY:** | 5 |
| **Sample Medium:** | Water | **2004 Category:** | 5 |
| **WRIA:** | 10 - Puyallup-White | **1998 303(d) List?:** | Y |
| | | **1996 303(d) List?:** | Y |
| **County:** | Pierce | | |
| **Puget Sound Action Area:** | South Central Puget Sound | | |
| **Township Range Section:** | 20.0N - 04.0E - 18 | | |
| **LLID:** | 1224252472685 | | |
| **Lower Rte:** | 3.863 | **Upper Rte:** | 5.497 |
| **WASWIS:** | PX29AG | | |
| **Lower Rte:** | 7.735 | **Upper Rte:** | 9.368 |
| **WBID:** | WA-10-1025 | | |

**EIM**

| User Study ID | User Location ID |
|---|---|
| LSUL0001 | 10-PUY-5.7 |

**2008 Basis**

Location ID [10-PUY-5.7] -- 0 of 5 (0.0%) of samples collected in 2007 exceed the percent criterion (200 col/100mL)
Location ID [10-PUY-5.7] -- A geometric mean of 23.45 col/100mL calculated from 5 samples collected in 2007 does not exceed the geometric mean criterion (100 col/100mL)

Location ID [10-PUY-5.7] -- 0 of 5 (0.0%) of samples collected in 2006 exceed the percent criterion (200 col/100mL)
Location ID [10-PUY-5.7] -- A geometric mean of 14.84 col/100mL calculated from 5 samples collected in 2006 does not exceed the geometric mean criterion (100 col/100mL)

*** 2004 Basis Statement Below ***

Hallock (2004), Dept. of Ecology ambient station 10A050 shows 1 of 4 samples (25%) in year 2001 exceeded the percentile criterion.

Hallock (2001) Dept. of Ecology Ambient Monitoring Station 10A050 (Puyallup R @ Puyallup (USGS))

shows a geometric mean of 42 does not exceed the criterion and that 10% of the samples does not exceed the percentile criterion from 10 samples collected during 2001.

Hallock (2001) Dept. of Ecology Ambient Monitoring Station 10A050 (Puyallup R @ Puyallup (USGS)) shows a geometric mean of 115 exceeds the criterion and that 0% of the samples does not exceed the percentile criterion from 3 samples collected during 2000.

Ebbert, et al. 1987., 3 excursions beyond the criterion at station 12102100 (At River Road) in 8/83, 11/83, and 2/84;

**Remarks**

Available data does not meet minimum data requirements of Ecology WQP Policy 1-11 to make a category determination

Fecal coliform data were previously submitted only in hardcopy form. The water segment is listed as Category 5 based on the 1998 assessment.

| | | | |
|---|---|---|---|
| **Listing ID:** | 7514 | | |
| **Water Body Name:** | SWAN CREEK | | |
| **Water Body Type:** | River/Stream | | |
| **Parameter:** | Fecal Coliform | **2008 CATEGORY:** | 5 |
| **Sample Medium:** | Water | **2004 Category:** | 5 |
| **WRIA:** | 10 - Puyallup-White | **1998 303(d) List?:** | Y |
| | | **1996 303(d) List?:** | Y |
| **County:** | Pierce | | |
| **Puget Sound Action Area:** | South Central Puget Sound | | |
| **Township Range Section:** | 20.0N - 03.0E - 11 | | |
| **LLID:** | 1223911472365 | | |
| **Lower Rte:** | 0.000 | **Upper Rte:** | 1.081 |
| **WASWIS:** | YA22IG | | |
| **Lower Rte:** | 0.000 | **Upper Rte:** | 1.072 |
| **WBID:** | WA-10-1022 | | |

**EIM**

| User Study ID | User Location ID |
|---|---|
| LSUL0001 | 10-SWN-0.6 |
| LSUL0001 | 10-SWN-0.01 |

**2008 Basis**

Location ID [10-SWN-0.01] -- 0 of 5 (0.0%) of samples collected in 2007 exceed the percent criterion (200 col/100mL)
Location ID [10-SWN-0.01] -- A geometric mean of 27.13 col/100mL calculated from 5 samples collected in 2007 does not exceed the geometric mean criterion (100 col/100mL)

Location ID [10-SWN-0.01] -- 0 of 3 (0.0%) of samples collected in 2006 exceed the percent criterion (200 col/100mL)
Location ID [10-SWN-0.01] -- Fewer than five samples were available in 2006, therefore a geometric mean was not calculated for this period

_____

Location ID [10-SWN-0.6] -- 0 of 5 (0.0%) of samples collected in 2007 exceed the percent criterion (200 col/100mL)
Location ID [10-SWN-0.6] -- A geometric mean of 8.62 col/100mL calculated from 5 samples collected in 2007 does not exceed the geometric mean criterion (100 col/100mL)

Location ID [10-SWN-0.6] -- 0 of 4 (0.0%) of samples collected in 2006 exceed the percent criterion (200 col/100mL)
Location ID [10-SWN-0.6] -- Fewer than five samples were available in 2006, therefore a geometric mean was not calculated for this period

*** 2004 Basis Statement Below ***

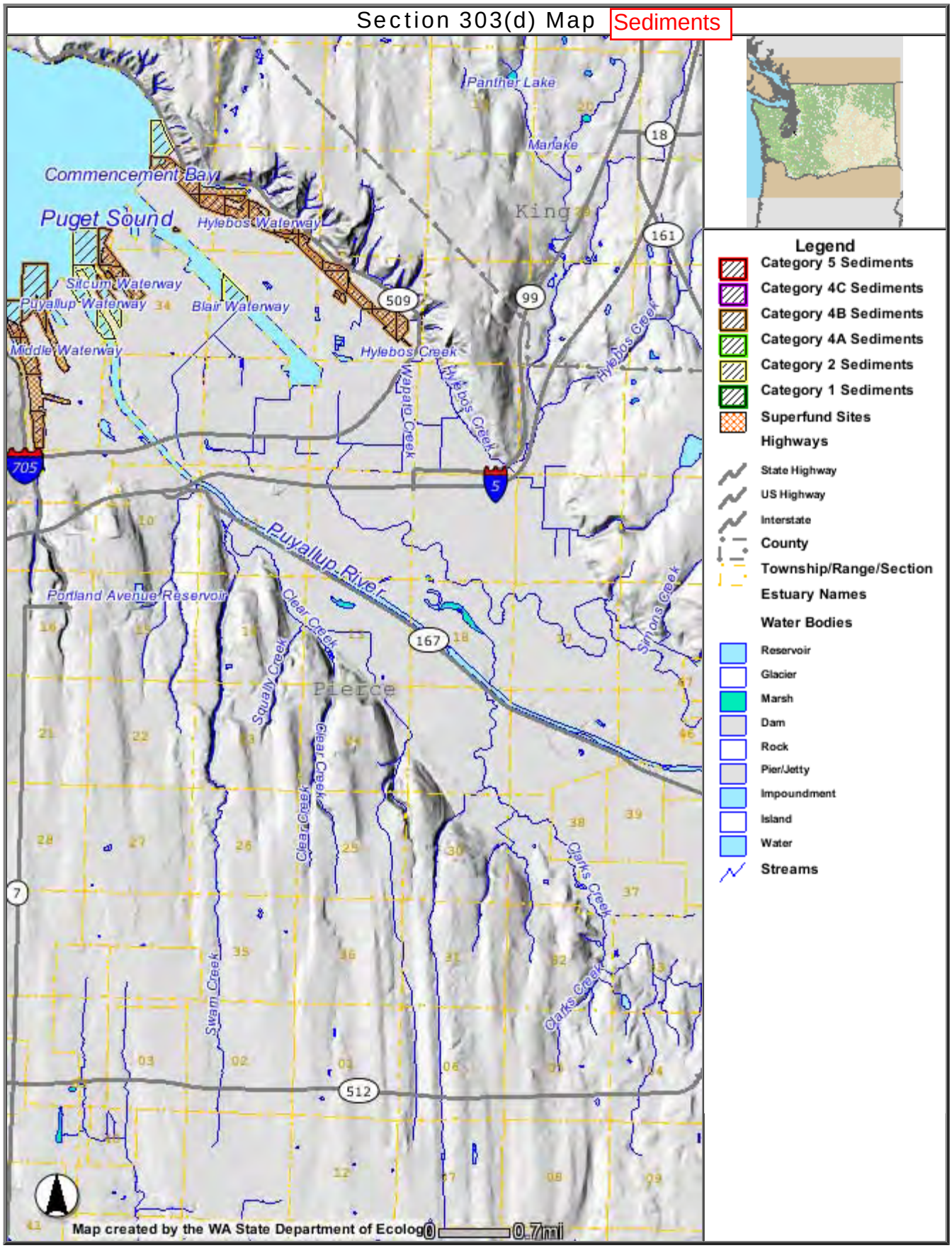
Ebbert, et al. 1987. , 2 excursions beyond the criterion at station12102212 (at Pioneer Way) on 11/83 and 2/84, .

Ebbert, et al. 1987. , 3 excursions beyond the criterion at station 12102202 (at Pioneer Way) on 11/83, 2/84 and 4/84.

**Remarks**

Available data does not meet minimum data requirements of Ecology WQP Policy 1-11 to make a category determination

Fecal coliform data were previously submitted only in hardcopy form. The water segment is listed as Category 5 based on the 1998 assessment.


Section 303(d) Map
Sediments
Commencement Bay
Puget Sound
Hylebos Waterway
Sitcum Waterway
Puyallup Waterway
Blair Waterway
Middle Waterway
Hylebos Creek
Wapato Creek
Panther Lake
Manlake
King
Pierce
Puyallup River
Portland Avenue Reservoir
Clear Creek
Squally Creek
Swam Creek
Simons Creek
Clarks Creek
18
161
99
509
705
5
167
7
512
Legend
Category 5 Sediments
Category 4C Sediments
Category 4B Sediments
Category 4A Sediments
Category 2 Sediments
Category 1 Sediments
Superfund Sites
Highways
State Highway
US Highway
Interstate
County
Township/Range/Section
Estuary Names
Water Bodies
Reservoir
Glacier
Marsh
Dam
Rock
Pier/Jetty
Impoundment
Island
Water
Streams
Map created by the WA State Department of Ecolog
0
0.7mi

Attachment C

# Alternate Monitoring Approach Proposal

Submitted To EPA for Consideration on October 9, 2012

# WSDOT's MS4 Discharges to the Portion of the Puyallup River Subject to Federal and Tribal Jurisdiction

### Alternate Monitoring Approach Proposal –10/9/12

The attached report, prepared for WSDOT in 2007, characterizes pollutants in untreated highway runoff in western Washington (Herrera, 2007). The study bases its findings on data compiled from 11 studies and 35 different monitoring locations within western Washington. WSDOT believes that these findings would be representative of the stormwater quality of state highway discharges to the Puyallup River within tribal lands. WSDOT proposes the following monitoring strategy to validate this hypothesis. *Table 1* describes this proposal.

**Table 1: Monitoring Strategy**

| Criteria | Description | Rationale |
|---|---|---|
| Number of discharge points to monitor | 2 | Two sample locations provide adequate coverage given the lack of expected characteristic variation over this ~4 mile stretch of highway. |
| Parameters Evaluated | Total Suspended Solids (TSS) and Copper, Zinc, Lead, & Cadmium (total and dissolved) | TSS is commonly measured because of their association with other pollutants including metals, organic compounds, nutrients, and bacteria. These metals, identical to those requiring sampling in the 2009 issued WSDOT municipal stormwater permit, tend to be bioavialable as well as mobile in first flush events. |
| Number of storms | 3 during the wet season | Field visits noted no discharge during dry period. |
| Type of Sampling | Grab sample | Provides a snapshot of the types of pollutants and concentrations present in stormwater discharge necessary for comparison. |
| Storm criteria | 1) Rainfall depth: No fixed minimum or maximum<br>2) Rainfall duration: No fixed minimum or maximum<br>3) Antecedent dry period: <0.02-inch rain or no surface runoff in the previous 24 hours | Identical storm criteria in WSDOT's existing municipal stormwater permit with the exception of the no fixed minimum rainfall depth. Since the approach aims to collect grab samples as early in the storm as practical, the storm depth/duration is not important (i.e., as long as sufficient runoff occurs at the start of the storm to collect a sample, the extent of the storm's duration is not relevant to the monitoring strategy). |
| Sample timing | As early in the storm as practical | The approach assumes that mobilization of contaminants occurs early in the storm event. |

As a result of further field investigations, WSDOT no longer considers five discharge locations along State Route 167 previously submitted to EPA as potential discharges to the Puyallup River or its tributaries. *Table 2* provides information about each discharge point and the reason it is no longer considered a surface water discharge.

**Table 2: Points WSDOT No Longer Considers Discharging to the Puyallup River or its Tributaries†**

| Discharge Point | Mile Post | Drainage Area (acres) | Discharges To |
|---|---|---|---|
| **0.101** | 0.80 | 0.04 impervious | Underground; Buried pipe likely located under the access road built to the revamped the Clear Creek tide gate |
| **2.01** | 2.58 | 0.236 impervious | A field/pasture |
| **3.02** | 3.65 | 0.008 impervious | Pierce County's curb conveyance (flowing from WSDOT's curb conveyance) |
| **3.04** | 3.78 | 0.007 impervious | Adjacent private property (from curb cut) |
| **3.22** | 3.66 | 0.084 impervious | Pierce County's curb conveyance (flowing from WSDOT's curb conveyance) |

†Field investigation confirmed that these systems do not discharge to the Puyallup River or its tributaries.

*Table 3* summarizes existing systems within the WSDOT right of way along State Route 167 that *potentially discharge* to the Puyallup River or its tributaries (i.e., none of the drainages discharge directly to these surface waters). WSDOT considers these *potential discharges* in that none of them discharge directly into receiving waters and have the opportunity to infiltrate and/or disperse along the vegetated roadside embankment, ditch, or bioswale.

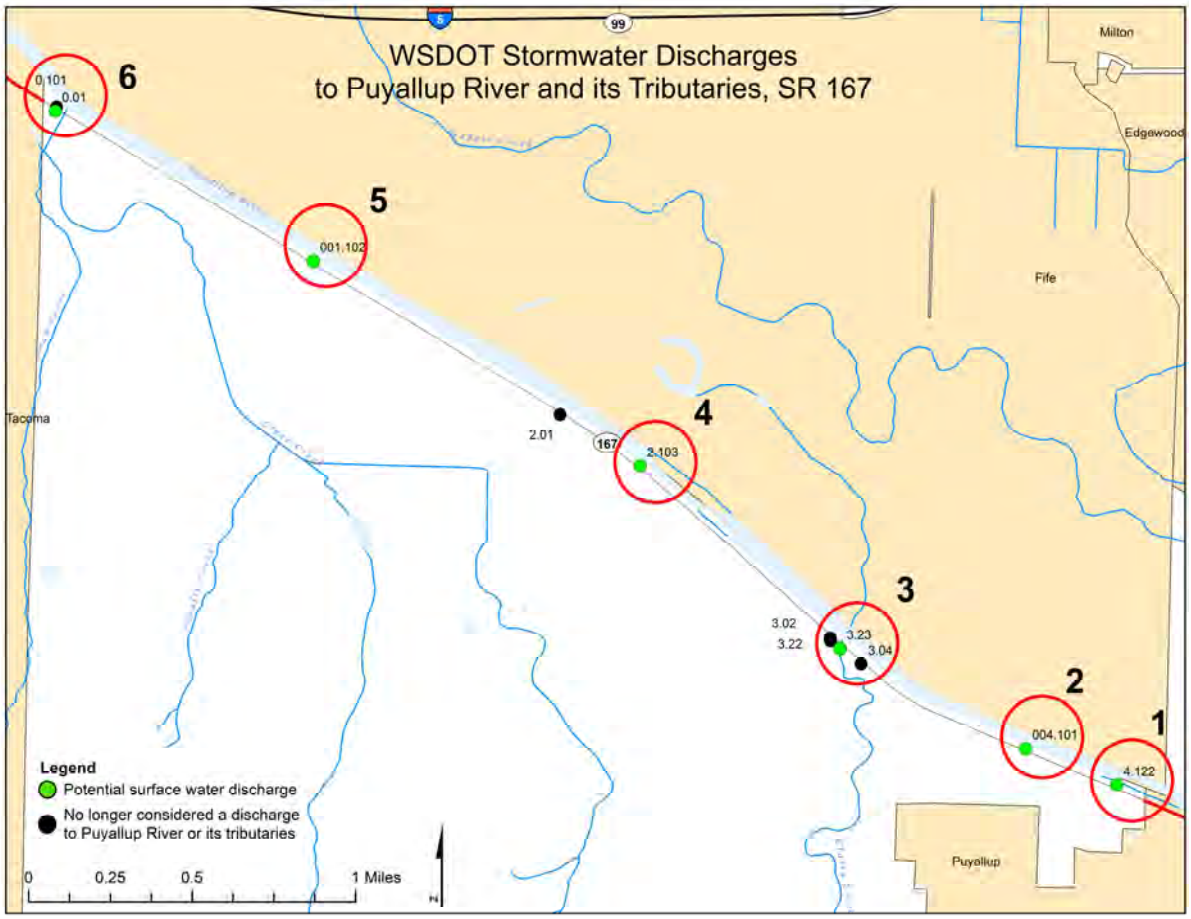
**Table 3: State Route 167 Stormwater Discharges to Tribal Waters**

| Location Number | Point Name | Milepost | Drainage Area (acres) | Discharges To | Site Notes |
|---|---|---|---|---|---|
| **1*** | 4.122 | 4.66 | 1.64 impervious 0.05 pervious | Bank of Puyallup River | Highest contributing area, easy to access. Drainage area includes weigh station drainage (0.14 acres) and some pervious area. Catch-basin has oil separator. |
| **2** | 4.101 | 4.36 | 1.54 impervious | Bioswale on Bank of Puyallup River | Potential for additional treatment beyond the pipe prior to discharge to the Puyallup River via an unmaintained bioswale. Once bioswale is restored, monitoring from the pipe may be difficult during rain events. High contributing area, catch-basin has oil separator. |
| **3** | 3.230 | 3.70 | 0.55 impervious 0.13 pervious | Vegetated ditch to Clarks Creek | Two piped systems discharge to a ditch that conveys the water to Clarks Creek. The ditch is not monitorable. One of the piped systems collects water from the bridge over Clarks Creek. There is also a stoplight on the bridge causing traffic to stop in the drainage area. The drainage area is <0.20 acres for the bridge portion of the system. |
| **4** | 2.103 | 2.87 | 0.50 impervious | Bank of Puyallup River | Moderate drainage area. |
| **5*** | 1.102 | 1.70 | 0.30 impervious | Bank of Puyallup River | Drainage area includes 0.11 acre contribution from local automotive repair business. |
| **6** | 0.010 | 0.80 | 0.21 impervious | Wet area tributary to Swam Creek | Additional treatment may be provided by the wet area prior to entering the creek. |

*Recommended monitoring location

We propose to conduct the monitoring at locations *1* and *5* as part of the comparison effort (see location map on page 3). At 1.60 acres, *Location 1* offers the largest drainage area among the locations. This area includes ~0.1+ acres from a weigh station not owned by WSDOT. *Location 5* lies approximately three miles northwest of *Location 1*. *Location 5* has a smaller drainage area (0.3 acres) and includes a ~0.1+ acre offsite contribution from a local automotive repair business. Due to the nature of the offsite contribution, this site was selected because it has the most potential for contamination.

**Map 1: Discharge Locations**





Reference

Herrera, 2007. Untreated highway runoff in western Washington. Prepared for Washington State Department of Transportation by Herrera Environmental Consultants, Inc. Seattle, Washington.