



## **QUALITY ASSURANCE PROJECT PLAN**

### **Decatur Street Low Impact Demonstration Project Performance Monitoring**

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Envirovision

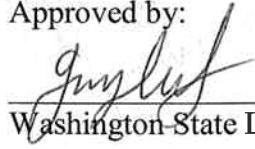
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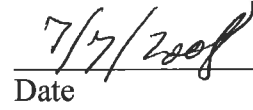
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# APPROVALS

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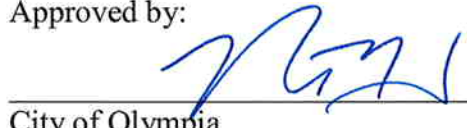


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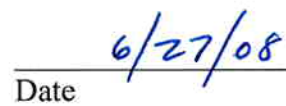


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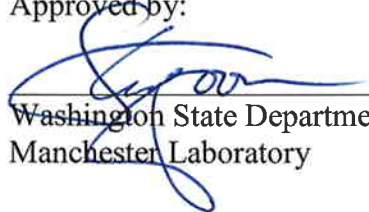


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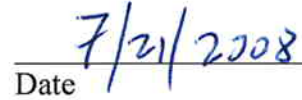


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# 1. BACKGROUND

Schneider Creek Watershed is one of Olympia's oldest developed basins, consisting of single-family dwellings and commercial development. Most of the watershed has no stormwater treatment because the basin was built out from the early to mid-1900s. With the exception of the Giles Street stormwater treatment facility (as mentioned above), the upper watershed has no other significant treatment.

Conventional stormwater treatment retrofit is limited in this watershed because land for regional storm ponds is simply not available. This basin must rely on new engineered solutions in order to restore natural hydrology and mitigate stormwater impacts. Site-scale treatment within the right-of-way can produce incremental results in this basin. If coupled with a regular road maintenance program, such a solution may provide the City with a viable long-term approach to hydrologic restoration.

The Decatur Street Low Impact Development (LID) demonstration project will be located in the Schneider Creek watershed, an urban watershed in West Olympia with an area of 680 acres. The effective impervious area for this watershed is estimated at 27% (TRPC, 2003). Schneider Creek is 1.25 miles long (anadromous length: 0.5 mi) and discharges directly to Budd Inlet. The watershed is one of Olympia's oldest developed basins, consisting of single-family dwellings and commercial development. As the watershed is nearly built out, there is little opportunity for regional stormwater treatment facilities.

## **2. PROJECT DESCRIPTION**

### **Low Impact Development Demonstration Project Design**

The City of Olympia (City) proposes to construct and quantitatively compare three innovative Low Impact Development (LID) street designs on Decatur Street in Schneider Creek watershed. Each design will provide stormwater flow control and treatment within the existing right-of-way using different types of pavement sections:

- 1) Regular asphalt pavement overlying an under-drain infiltration system with catch basin stormwater filtration units.
- 2) Regular asphalt pavement overlying an under-drain infiltration system with a planter strip rain garden for stormwater treatment.
- 3) Porous asphalt pavement, overlying an under-drain infiltration system.

The City proposes to retrofit the three pavement sections roughly equivalent in length and area (approximately 200 linear feet; approximately 6,000 square feet) on the existing street that currently has no stormwater treatment or flow control. The project will install concrete curbs and rebuild the roadway between the curbs. The three sites are adjacent to one another on a 2-block length of Decatur Street (600 linear feet). The adjacency will allow good comparison between designs through monitoring.

A three-year monitoring plan will be implemented to measure the performance of the Decatur Street LID demonstration project. Monitoring for stormwater pollutants (Total Suspended Solids [TSS], dissolved metals, and nutrients) and infiltration will be conducted from sampling ports integrated into the street section design. The study will include stormwater samples before and after each treatment method, and changes in water levels in the under-drain pore space. A comparison between the performance of each street design to the cost of construction, maintenance requirements, and pavement wear (porous asphalt) will ultimately guide the integration of these new street designs into the City's street standards.

### **Project Goal**

The goal of the project is for each of these street designs to meet the water quality treatment and flow control requirements of Washington State Department of Ecology's 2005 Stormwater Manual for Western Washington (Ecology's 2005 Stormwater Manual) within the existing roadway right-of-way.

Monitoring for the water quality treatment and flow control will continue for 2 consecutive years; 2 wet seasons split by a period of summer storm monitoring. At the end of each wet season, the data will be analyzed and compared to the project objectives.