SUMMARY

Study Approach

WSDOT is proposing to construct the I-405, Tukwila to Renton Improvement Project (I-5 to SR 169 – Phase 2), referred to as the Tukwila to Renton Project. To evaluate the project's effects on water resources during construction and operation, the I-405 Team used the methods described in WSDOT's Environmental Procedures Manual. The manual provides guidance that WSDOT follows to ensure that its projects comply with local, state, and federal laws and regulations pertaining to water resources. For this project, water resources are considered to consist of surface water flow, surface water quality, floodplains, and groundwater.

Baseline Conditions

The study area includes water resources in the Green River and Cedar River watersheds. Surface waterbodies in the study area include Cottage Creek, Gilliam Creek, an unnamed tributary to Gilliam Creek, the Green River, Springbrook Creek, Panther Creek, Rolling Hills Creek, unnamed tributary to Rolling Hills Creek, Thunder Hills Creek, unnamed tributary to Thunder Hills Creek, and the Cedar River.

In the study area, the Green River is 303(d) listed for fecal coliform bacteria, dissolved oxygen, and temperature. Springbrook Creek is also listed for not complying with standards for dissolved oxygen and fecal coliform bacteria. The Cedar River is listed for fecal coliform bacteria and temperature downstream of the study area.

The floodplains identified in the study area are associated with the Green River, Springbrook Creek, Panther Creek, Rolling Hills Creek, and the Cedar River.

The most important aquifer in the study area exists along the Cedar River, and is known as the Cedar Valley Aquifer. This aquifer is an EPA-designated sole-source aquifer. Another regional aquifer in the study area is the Green-Duwamish Alluvial Aquifer.

Project Effects

The Tukwila to Renton Project is expected to benefit water resources. Peak and base flow rates to streams and rivers will

not be altered negatively during project construction. This project will provide flow control and water quality treatment for the impervious areas added by the project and will also retrofit some of the currently existing untreated impervious surface area.

During construction, work crews will clear, grade, and prepare the construction areas for new pavement. Constructing this new pavement will expose bare soil, which is then easily eroded by rainfall and surface water runoff. This soil erosion can create short-term effects to surface water quality. However, because the project will follow standard best management practices (BMPs) for erosion control, these effects are expected to be minimal if they occur.

The project is expected to add temporary and/or permanent fill within the floodplains of the Green River, Springbrook Creek, Panther Creek, Rolling Hills Creek, and Cedar River, decreasing floodplain storage. However, planned mitigation for this fill, both temporary and permanent, will ensure that the floodplain level does not rise.

Potential groundwater effects to aquifers during construction include contamination from spills and reduced well capacity. However, WSDOT will implement several measures (listed below) that will avoid or minimize negative effects to the aquifers.

Measures to Avoid or Minimize Effects

Construction effects to water quality will be minimized by using required sediment and erosion control BMPs. Standard construction BMPs are used to minimize erosion and soil movement so that erosion from construction sites does not contribute solids and pollutants to nearby receiving waters. BMPs are required on all WSDOT roadway construction projects, including the Tukwila to Renton Project, and will be described in more detail in the Temporary Erosion and Sediment Control Plan that WSDOT will write prior to beginning construction.

Potential groundwater effects, including contamination and reduced well capacity, will be avoided during construction by implementing the mitigation measures described in Section 6.

The Green-Duwamish Alluvial Aquifer near the study area is not used for domestic water supply or irrigation purposes and

will be protected during construction by WSDOT following standard pollution control practices.

WSDOT, in consultation with the City of Renton, has identified mitigation measures related to protecting the Cedar Valley Aquifer:

- Controlling erosion and spills.
- Specifying the location and maintenance procedures for construction equipment staging areas to prevent pollution of aquifers.
- Adding special protection measures related to construction practices, placement of fill, and roadway and stormwater facility design within Renton's Aquifer Protection Zones 1 and 2 that will comply with State and City of Renton requirements (State of Washington Wellhead Protection Requirements, WAC 246-290-135(4) and the City of Renton Municipal Code, RMC 4-9)
- Identifying the location, type, and installation techniques for highway structures and new embankments relative to production wells. After further geotechnical study, spread footing foundations may be used for the reconstructed bridges over the Cedar River that do not substantially penetrate the Cedar Valley Aquifer.
- Using ponds for highway spill containment to protect the sole-source aquifer.

Operational effects within the study area will be avoided or minimized by:

- Providing detention facilities within the Green River and Springbrook Creek basins. Since the flow/duration relationships are maintained throughout the critical range of storms, from 50 percent of the 2-year through the 50-year recurrent events, with detention design, no negative effects on peaks or flow durations are expected.
- Using stormwater treatment facilities to decrease total suspended solids, total zinc, and total copper pollutant loading.
- Performing additional excavation within the same floodplains and at the same one-foot elevation to offset floodplain fill.

Unavoidable Adverse Effects

Adding fill to the floodplains of the Green and Cedar Rivers and Springbrook, Panther, and Rolling Hills Creeks is an unavoidable negative effect. As mitigation for this fill, additional excavation to provide compensatory floodplain storage will occur within the same floodplains and at the same elevation as the proposed fill for the Tukwila to Renton Project.