SECTION 1 INTRODUCTION

What are the primary features of the Tukwila to Renton Project?

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 relieve congestion. The Tukwila to Renton Project extends approximately four and one half miles along Interstate 405 (I-405), from I-5 to State Route 169 (SR 169), and approximately two miles along SR 167, from I-405 to SW 43rd Street. The project will:

- Add capacity to both I-405 and SR 167.
- Replace bridges over the Green River and Cedar River and add one new bridge over the Green River.
- Improve the SR 181 and SR 169 interchanges.
- Reconstruct the SR 167 interchange consisting of new general-purpose direct-connector ramp from southbound I-405 to southbound SR 167, HOV direct-connector ramps from northbound SR 167 to northbound I-405 and from southbound I-405 to southbound SR 167, and a split-diamond interchange at Lind Avenue and Talbot Road with connecting frontage roads.
- Replace the two local street accesses to Renton Hill.

These improvements represent the second phase of the I-405 Corridor Program for this portion of I-405. The first phase consists of improvements in the Renton Nickel Improvement Project

What is the purpose of this report?

The purpose of the Tukwila to Renton Project Ecosystems Discipline Report is to define and detail the ecosystem elements in the study area. The report also quantifies and qualifies the effects that constructing or not constructing the project would have on these ecosystem elements, including those beneficial effects that would result from any proposed mitigating measures.

What is an ecosystem?

An ecosystem is a community of organisms interacting with each other, and the environment in which they live.

What elements are included in the Ecosystems Discipline Report?

The ecosystem elements that are included in this report include wetlands, aquatic resources, and wildlife habitat. This Ecosystems Discipline Report details the nature and features of these elements. It also details the temporary and permanent effects to wetlands, aquatic resources, and wildlife habitat as a result of the project; measures taken to avoid effects; and mitigation activities to offset negative effects to wetlands, aquatic resources, and wildlife habitat from the project.

Wetlands

What features does a wetland have?

For an area to be defined as a wetland, it must contain the following three features: presence of water, waterlogged (hydric) soils, and vegetation dominated by water tolerant plants.

Wetlands are areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, vegetation adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. The study area contains 22 wetlands that were identified through wetland delineations conducted for the project.

Aquatic Resources

Aquatic resources are defined as aquatic environments, such as streams, rivers, and lakes, and the aquatic-dependant organisms that inhabit those environments. Aquatic resources provide valuable habitat and food sources for various aquatic and terrestrial species.

There are 12 rivers and streams that cross or flow in the vicinity of the project footprint:

- Gilliam Creek
- An unnamed tributary to Gilliam Creek
- Cottage Creek
- The Green River
- Springbrook Creek
- Panther Creek
- Rolling Hills Creek
- An unnamed tributary to Rolling Hills Creek
- Thunder Hills Creek

- An unnamed tributary to Thunder Hills Creek
- The Cedar River
- An unnamed tributary to the Cedar River

Wildlife Habitat

Wildlife habitat is defined as areas of an animal's habitat that may be important for feeding, watering, resting, and/or breeding. Wildlife habitat in the study area consists of areas dominated by forests, shrubs, grasses, or maintained vegetation such as ornamental landscapes or roadside vegetation maintained for highway safety.

Why are ecosystem elements important to consider?

Wetlands, aquatic resources, and wildlife habitat are important elements of the ecosystem in which we live and the significance of these resources for food, livelihood, employment, income, and cultural value is widely recognized. Understanding how the Tukwila to Renton Project affects ecosystem elements is an integral part of the environmental review process. Various federal, state, and local regulations exist to ensure protection and long-term preservation of these resources, and the regulations help to guide development of various project elements.

This report quantifies the beneficial and negative effects to wetlands, aquatic resources, and wildlife habitat that result from the Tukwila to Renton Project. Potential effects to wetlands include loss of hydrologic function, water quality, and habitat function and change in the amount of available wetland habitat. Potential effects to aquatic resources from the project include modification of water quality and quantity conditions, aquatic and riparian habitat, and the amount of habitat accessible by fish and other aquatic species. Potential effects to wildlife habitat include loss or fragmentation of baseline habitat areas.

What studies were completed?

Biologists gathered existing information for the study area through literature and internet research; interviews with local, state, and federal agency personnel; and previously prepared WSDOT reports. Additional information on the ecosystem

elements in the study area was collected by conducting wetland delineations and stream surveys and field verifying wildlife habitat data.

The collected information was then compared to the project footprint, including all roadway and drainage improvements, to assess potential effects resulting from the project.

What are the key messages from this report?

The Tukwila to Renton Project study area contains a variety of important wetlands, aquatic resources, and wildlife habitats that are integral to the long-term viability and sustainability of the study area's ecosystem. The project directly affects the ecosystem both temporarily and permanently. Some of these effects are beneficial (e.g., providing stormwater treatment facilities and providing mitigation for affected areas) and some are negative (e.g., encroachment into riparian and wetland buffers and filling of certain wetlands and streams).

Key effects to wetlands include the complete or partial filling of 12 of the 22 wetlands in the study area, of which six will be entirely filled upon project completion. In addition, nine of the 22 wetlands incur temporary and permanent buffer effects. If a wetland is wholly filled, it is not considered to incur buffer effects. Filling of wetlands and clearing of wetland buffers could affect the water quality, hydrologic, and habitat functions of the wetlands.

Key effects to aquatic resources from the project include overwater or in-stream construction and buffer encroachment in Gilliam Creek, the Green River, Panther Creek, Rolling Hills Creek, an unnamed tributary to Rolling Hills Creek, Thunder Hills Creek, an unnamed tributary to Thunder Hills Creek, and the Cedar River.

Key effects to wildlife habitat include adding impervious surfaces within the study area, changing existing types of wildlife habitat, and reducing or fragmenting the available wildlife habitat.

The project also involves construction activities that could temporarily affect ecosystem elements in the study area. Effects to ecosystem elements from construction activities include disturbances to upland, wetland, and riparian vegetation; stream diversions; in-water work; temporary filling of wetlands and streams; and sedimentation.

What is in-water work?

In-water work is any construction activity that occurs below the water line of a given waterbody. Examples of in-water work include driving of piling within the water and placement of coffer dams to exclude water from a work area.

Project effects to ecosystem elements will be mitigated in accordance with applicable local, state, and federal laws.

What measures are proposed to avoid or reduce effects?

The Tukwila to Renton Project was designed to avoid effects to ecosystem elements to the greatest extent practicable. Approaches such as locating project features away from ecosystem elements, installing retaining walls, and free spanning rivers were incorporated throughout the design of the project. During construction, WSDOT will require that appropriate best management practices (BMPs) and conservation measures are implemented to reduce potential effects to ecosystem elements from construction. Mitigation activities to offset project effects are performed in accordance with applicable local, state, and federal regulations that govern the ecosystem elements detailed in this discipline report.

Appropriate and available construction BMPs, such as restricting in-stream construction to times when fish are unlikely to be present, are employed to minimize effects from construction.

In all cases where direct temporary or permanent effects on ecosystem elements are unavoidable, mitigation actions are implemented to compensate for affected resources. Mitigation also helps to offset any construction-related negative effects on these elements. A portion of the stream and river mitigation for the Tukwila to Renton Project is expected to be implemented through the Panther Creek Watershed Rehabilitation Plan (PCWRP). The PCWRP is an I-405 Water Resource Initiative that will provide stream mitigation for the portion of the project within the Panther Creek and lower Springbrook Creek subbasins. In addition to the PCWRP, additional mitigation activities are anticipated for project effects that will occur in the Green and Cedar Rivers. Due to a lack of dedicated funding for the future phases of the project that would affect the Green and Cedar Rivers, specific mitigation activities for effects to these rivers have not been identified. Wildlife habitat mitigation will occur in the immediate vicinity of the project. All mitigation sites will be approved by appropriate regulatory agencies during the project permitting process.

What would happen if we adopt the No Build Alternative?

The No Build Alternative would have few direct effects on the ecosystems in the study area because no wetlands, aquatic resources, or wildlife habitats would be removed, filled, shaded, or otherwise directly disturbed. Riparian and wetland buffers would be minimally disturbed through routine maintenance such as mowing or brushing. Baseline roadway-related stormwater runoff patterns could result in continued negative effects to wetlands and aquatic resources from poor water quality due to untreated stormwater and large quantities of water that result from a lack of stormwater volume controls (e.g., stormwater retention ponds). Water quality and quantity impairment can lead to the harm or mortality (death) of a variety of aquatic organisms and can reduce the overall health of an ecosystem over time.