

LAKE WASHINGTON BASIN ECOSYSTEM RESTORATION GENERAL INVESTIGATION

Programmatic Environmental Impact Statement

Background Information

Over the last century, the natural ecosystem of the Lake Washington Basin (Basin) has been altered by the effects of forest practices and urbanization. The Basin, which includes Lake Sammamish, Lake Washington, the Cedar River, the Sammamish River, and smaller streams in the Seattle metropolitan area, has undergone vast changes. For example, a water supply diversion dam on the Cedar River was built in 1913; the Cedar River was rerouted from the Black River to Lake Washington in 1913; Lake Washington was lowered when the Lake Washington Ship Canal was built by the Corps of Engineers (Corps) in 1915; the lower watershed has become urbanized; a new estuary was created and urbanized; and an extensive system of levees and revetments have been built over the years.

Accompanying these changes in the Basin has been a decline in numbers of salmon species, accented by the recent listing in 1999 of the Puget Sound Chinook as a threatened species under the Endangered Species Act (ESA). To study the problem and identify and implement practical solutions, the Lake Washington Basin Ecosystem Restoration General Investigation (GI) Study was initiated by the District in 1999, at the request of the City of Seattle Public Utilities and King County, who are the study co-sponsors. The study was authorized by Congress under a Section 216 Authority (Reauthorization of Existing Project) of the Rivers and Harbors Act of 1970.

The overall *Goal* of the Lake Washington Ecosystem Restoration GI Study is to "Restore riparian and aquatic habitat that supports natural salmon and steelhead populations within the greater Lake Washington Basin". The major *Objectives* of the study are as follows:

- *Restore Spawning, Rearing, and Migration Habitat for Salmonids.*
- *Restore Natural Habitat Complexity.*
- *Eliminate Barriers to Fish Access and Passage.*

- *Restore Stream Channel Floodplain.*
- *Reduce Sedimentation.*

To facilitate work on the GI Study, the Corps divided the Study into two phases, roughly based on the geographic regions of East and West. PHASE I emphasizes the eastern portion of the basin, including portions of the Salmon Bay Estuary, Lake Washington, the Cedar and Sammamish Rivers, Lake Sammamish, Issaquah Creek and tributaries to each. PHASE 2 encompasses the western portion of the study area, including portions of Lake Washington Lake Union, the Ship Canal, the Locks and the Salmon Bay estuary. In PHASE I, many of the restoration solutions are generally well known, whereas in PHASE 2 of the Study, further research and analysis is necessary to adequately establish the area's needs and to develop possible solutions. This phased approach allows for progress through feasibility and detailed, project-specific design in the "East" while further investigations and analysis take place in the "West." By splitting the study, the Corps was able to design projects where solutions are known while continuing research into the more complex issues related to the Locks.

The Lake Washington Ecosystem Restoration GI Study is closely linked with local salmon recovery and habitat conservation planning efforts in the Basin. In the Lake Washington/Cedar/Sammamish Watershed, King and Snohomish County and 25 local city governments are jointly funding the development of a long-range plan to conserve salmon habitat in their watershed. Two important links between the Lake Washington GI Study and these planning efforts are the following:

- Most of the projects submitted by local sponsors that are being evaluated by the Corps for implementation in the GI Study came from the *Near-Term Action Agenda*, prepared through the collaboration of these governments.
- The Criteria being used by the Corps to evaluate the projects submitted by local sponsors have been adapted from the *Action Agenda*, and the *Salmon and Steelhead Habitat Limiting Factors Report for the Cedar-Sammamish Basin*, also prepared through this collaboration.

In close coordination with the local sponsors (King County and Seattle Public Utilities) the Corps has completed 3 years of fisheries field studies identifying the "limiting factors" that adversely affect the natural production of salmon species

throughout the Basin. These studies have focused on topics such as juvenile and adult survival in migration through the system of rivers and lakes, juvenile mortality due to predators, and adult mortality related to high temperature on the Sammamish River. The Locks and Ship Canal have been a specific area of focus, especially shoreline habitat usage and survival through the Locks. These studies encompass all life stages of the salmon, including rearing, migration and spawning.

The Corps has requested all municipalities within the Basin to identify one or more restoration project sites within their jurisdiction that the Corps could evaluate for further study and implementation. Ten municipalities have responded by submitting 92 project sites for Corps consideration. A Technical Review Team has been assembled to evaluate the projects, with representation from King County, the City of Seattle, the Corps, and recognized experts in the Basin. The 92 projects generally fall into the following categories:

- Shoreline Restoration
- Riparian Plantings
- Wetlands Enhancement and Development
- In-channel Restoration
- Floodplain Connections
- Fish Passage
- Cooling Towers

At the present time the Review Team is evaluating the 92 submitted projects.

There are three main actions yet to be completed in the PHASE I portion of the GI Study before implementation can begin. These actions include: (1) Completing the evaluation process for the 92 projects; (2) Completing a Feasibility Report evaluating the projects' benefits, costs, and readiness for construction (3) Completing a Programmatic Environmental Impact Statement (PEIS) and Biological Assessment for the Feasibility Report that will evaluate potential impacts associated with implementing the range of project types and locations.

In the completed PHASE 1 Feasibility Report, the project list may include up to 20 project sites recommended for construction under the GI authority, utilizing Congressional and local sponsor funding. In addition, up to 70 projects may be recommended for construction under other Corps authorities. PHASE 1 of the project could be completed and authorized by Congress as early as 2005, if full

project funding is available in 2004. PHASE 2 will continue studies to define the factors affecting fish passage at the Locks and develop water management alternatives for evaluation with a report of recommendations to be completed in 2006 or 2008, depending on future project funding.

Purpose and Need for this Programmatic Environmental Impact Statement (PEIS) for PHASE 1

This PEIS will fulfill requirements of the National Environmental Policy Act (NEPA); whereby federal agencies must consider the environmental effects of proposed projects, programs, and decisions that involve federal funds, property, or agencies. The Lake Washington Ecosystem Restoration General Investigation (GI) is such a project.

The purpose of this PEIS is to address, at a programmatic level, impacts associated with the range of fish and wildlife habitat improvements being considered in PHASE 1 of the Lake Washington Ecosystem Restoration GI Study at various locations within the "East" region of the Lake Washington Basin. It will provide a comprehensive and efficient framework for addressing potential impacts associated with projects that may be implemented. This PEIS will also identify those "Best Management Practices" that would be available to minimize potential adverse environmental impacts during construction of anticipated projects. It is intended that subsequent specific projects in specific locations throughout the Lake Washington Basin would be able to incorporate the evaluation of impacts and identification of management practices provided in this PEIS into their environmental evaluations, thus expediting their implementation and the subsequent recovery of salmon species in the Basin.

Alternatives Presently Under Consideration in the PEIS

This PEIS is initially considering five alternative approaches to implementing PHASE 1 of the Lake Washington Ecosystem Restoration GI in the Basin, along with a No-Action Alternative. These are briefly described below.

With the **No-Action Alternative**, a variety of salmon recovery and habitat conservation planning efforts within the Lake Washington Basin would proceed

through tribal, agency, and non-governmental organization programs within existing regulations, policies, and plans. The array of these individual projects would reflect the WRIA8 planning emphasis on habitat preservation through acquisition and land use controls, and on public education, with lesser emphasis on habitat restoration. Also, with this alternative, the level of implementation (i.e., number of projects and schedule) would be influenced by the existing limited funding opportunities available for the region.

The **Specific Geographical Area Alternative** involves choosing one or more specific Sub-basin within the Basin in which to implement the majority of restoration projects, such as the Cedar River, Sammamish River, Issaquah Creek, Salmon Bay Estuary, etc.

The **Specific Project Type Alternative** involves placing arbitrary (or science-based) emphasis on one or more specific types of restoration projects (e.g., In-channel restoration, Removal of passage barriers, Shoreline restoration, Floodplain connection, etc), and relegating other types of restoration projects to a lower priority.

The **Specific Salmonid Life Stage Alternative** involves the selection of those restoration projects that would benefit a specific life stage of salmonids in the Basin, such as enhancing adult salmon spawning habitat, near-shore juvenile salmon migration/survival habitat, adult salmon passage channels, etc.

The **Single ESA Species Alternative** involves emphasizing those restoration projects within the Basin that would be of greatest benefit to a single listed species, such as the threatened Chinook salmon or bull trout.

The **Multi-Species-Multi-Location Alternative** involves a coordinated approach to implement as many of the restoration project types as practicable in as many Sub-basins as possible, in an effort to benefit a variety of fish species, habitats areas, and related wildlife species that may not likely otherwise occur under the No-Action Alternative.

**ALTERNATIVES
BEING INITIALLY CONSIDERED
IN THE PEIS**

No-Action Alternative

Specific Geographical Area Alternative

Specific Project Type Alternative

Specific Salmonid Life Stage Alternative

Single ESA Species Alternative

Multi-Species-Multi-Location Alternative

TENTATIVE PEIS SCHEDULE

DEVELOP ALTERNATIVES /

SCOPING PHASE



**SCOPING MEETING /
SUBMIT SCOPING COMMENTS**

FALL &

WINTER '03

PREPARE DRAFT

PEIS

WINTER '03

SPRING '04

DISTRIBUTE DRAFT

PEIS FOR REVIEW



**PUBLIC MEETING
SUBMIT DRAFT PEIS COMMENTS**

SUMMER &

FALL '04

PREPARE FINAL

PEIS

FALL &

WINTER '04

PEIS PUBLISH FINAL

LATE

WINTER '04