

## **Water**

Lake Ballinger, Halls Creek, Lyons Creek, and other surface waters are valuable environmental and scenic areas. The quality of water is important. Reduction in water quality will not only reduce the environmental, scenic, and recreational value of the lakes and creeks, but it may threaten the ground water that is connected to the surface water system.

In Mountlake Terrace, the surface water quality and the quality of the river habitats are generally fair. Both the Halls Creek/Ballinger Lake and the Terrace/Lyon Creek watersheds have partially recovered from past degradations from septic tank runoffs in the late 1950s, from rapid urban development in the watersheds, and resultant surface water runoffs in the 1980s. However, future development must consider pollutants and soil erosion, as well as development that strips the habitat or changes the flow of the streams in ways that damage the viability of the ecological system.

The City participates in watershed planning under the Watershed Planning Act, RCW 90.82. The City is within the Water Resource Inventory Area (WRIA) 8.

## **Ground Water**

Ground water is derived from precipitation and surface water filtering through the ground to aquifers. The ground where this filtering process takes place is called an aquifer recharge area. The quality of recharge areas and surface waters needs to be protected to ensure the quality of the ground water used in the immediate area, as well as the quality of water for users down gradient from the recharge zone. Ground water pollution is very difficult, often impossible, to reverse.

The City does not rely on ground water aquifers within the City's boundaries for a public water supply. The potable water supply is transported from the Sultan basin. The Mountlake Terrace Planning Area includes two major drainage basins that contribute to local ground water aquifers: the Halls Creek runoff system starting at Halls Lake and emptying into Lake Ballinger; and the Lyons Creek drainage system consisting of an east and west drainage channel. Both of these systems are part of the larger Lake Washington drainage basin.

## **Surface Water and Stormwater**

The quantity of surface water in the area varies with the seasonal fluctuations in precipitation. Surface water quantity also affects water quality in receiving waters such as lakes and streams.

Quality of surface water in the area fluctuates seasonally. At times, standards for temperature, dissolved oxygen, turbidity, nitrates and phosphates, and coliform organisms are violated. Residential runoff is a primary pollutant source in the spring and fall due to chemical applications to lawns and gardens.

Rapid stormwater runoff from nearby urban development is another cause of seasonal water quality change. For example, stormwater runoff from large parking lots in the

industrial district of the City is the major problem for the Halls Creek / Lake Ballinger drainage system. In the Lyons Creek basin low summer base flow results in the upper reaches of the stream going dry between rain episodes.

In 1977, Mountlake Terrace initiated a long-range program to monitor and improve water quality in the Lake Ballinger basin. An ordinance to regulate clearing and grading and set standards for urban drainage facilities is in place, safeguarding against potential erosion from urban development. A regional detention facility was constructed on the lower reach of the Mountlake Terrace portion of the Lyon Creek basin in 1985. This facility provides for peak flow attenuation and for improved water quality.

In the Halls Creek basin, the Lake Ballinger Restoration Program provided for measures to slow the process leading to deteriorating water quality of the lake. Completed in Phase One of the two phase project were (1) the construction of two sedimentation basins in Halls Creek to settle out sediments and nutrients, (2) stream bank reshaping to reduce sloughing and scouring, and (3) revegetation of selected riparian areas with groundcover and trees, to reduce soil erosion and provide shade for the creek as a means to reduce water temperature.

Phase Two of the program addressed nutrient pollution sources within the lake. With a system of weirs and submerged pipelines, oxygen-saturated water from Halls Creek was diverted to the bottom sediments to replace nutrient-rich water syphoned off and discharged into McAleer Creek.