

ENVIRONMENT ELEMENT

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INTRODUCTION

The environmental information in this section is designed to present an overview of the environmental conditions and features within the City and the Puget Sound region.

The Growth Management Act, which guides the development of local comprehensive plans and regulations, requires local governments to plan for a healthy environment. A relevant goal in the Act is as follows:

- Protect the environment and enhance the state’s high quality of life, including air and water quality, and the availability of water.

As residents of the Puget Sound basin, we are becoming increasingly aware of the extent to which urbanization of Puget Sound has disrupted a very rich, biologically diverse and interconnected ecosystem. Impacts to air and water quality have been an issue for many years. More recently, wildlife habitat and specifically, the listing of Puget Sound chinook salmon as “Threatened” under the Endangered Species Act (ESA) has become an issue of concern, for communities with a marine shoreline, and also communities with freshwater shorelines. Local communities and the State now must address restoration, as well as protection, of our important natural features.

BACKGROUND

Air Quality Overview

Air quality within the Puget Sound airshed is regulated at both the national level and the regional level through the Clean Air Act. Air quality is generally assessed in terms of whether concentrations of air pollutants are higher or lower than ambient air quality standards set to protect human health and welfare. Air pollution has a disproportionate effect on sensitive groups such as children, the elderly, and people with heart and lung diseases. Air pollution is also a quality of life issue.

The main sources of air pollution in the Puget Sound region are vehicular and marine traffic, industrial emissions, wood stoves and fireplaces, outdoor burning, and other sources such as lawnmowers, aircraft, trains, and other recreational vehicles. Motor vehicles contribute approximately 57% of the air pollution in the state of Washington. The primary pollutants are PM10/PM2.5 (particulate matter), carbon monoxide, nitrogen dioxide, ozone, sulfur dioxide, and lead.

The United States Environmental Protection Agency (EPA) has established a system to categorize and report air quality based on pollutant concentrations. This system is called the Air Quality Index (AQI) and utilizes a numerical scale divided into six health categories. The scale is as follows:

- | | | | |
|-----------|--------------------------------|-------------|----------------|
| • 0-50 | Good | • 151-200 | Unhealthy |
| • 51-100 | Moderate | • 201-300 | Very unhealthy |
| • 101-150 | Unhealthy for sensitive groups | • 301-above | Hazardous |

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An AQI value of 100 generally corresponds to the national air quality standard for the pollutant, which is the level EPA has set to protect public health. AQI values below 100 are generally thought of as satisfactory. When AQI values are above 100, air quality is considered to be unhealthy—at first for certain sensitive groups of people, then for the broader population as AQI values get higher.

Within the Puget Sound region, the Washington State Department of Ecology (DOE) and Puget Sound Clean Air Agency (PSCAA) jointly regulate and monitor air quality. When necessary, the agency calls an air pollution watch to reduce particulate matter pollution by voluntary curtailment of wood burning. Burn bans are issued when real-time monitoring data shows “impaired air quality” as defined by state law. An ozone “smog watch” is called to target mobile combustion sources for voluntary reductions to prevent ozone standard exceedances. In 1999 and 2000, there was one day in each of the years where the AQI value exceeded 100.

A geographical area is designated as a “nonattainment area” if any one of the federal air quality standards is violated. A “nonattainment” area must develop and follow a plan to meet and maintain the federal standards. Once the standards are met, the area is redesignated as a “maintenance area”. There are currently no nonattainment areas within the Puget Sound region, but there are maintenance areas. Puget Sound (King, Pierce, and Snohomish Counties) and Vancouver (Clark County) are maintenance areas for ozone. Thurston County, Tacoma Tideflats, Kent Valley, and Seattle Duwamish are maintenance areas for particulate matters. Puget Sound (King, Pierce, and Snohomish Counties) and Vancouver (Clark County) are maintenance areas for carbon monoxide. The number of good air quality days continues to dominate regionally.

Water Quality – Freshwater: Overview

Water temperature, turbidity, and the level of pollutants determine the quality of freshwater. Water temperature can vary naturally from year to year depending on weather conditions, the amount of snow pack and the seasonal pattern of snowmelt. Clearing trees and other cover along the bank can cause water temperatures to exceed standards. Urban stormwater runoff is a major source of temperature variations in urban streams within the Puget Sound basin. Dams and the extraction of water for drinking, industrial, and other uses can also affect stream temperature. Turbidity is affected by natural variations in weather, snow pack and snowmelt. It is also affected by human disturbances such as stream diversions, bank protections, construction activities, and other disturbances. Pollutants to freshwater arrive via surface runoff. Developments adjacent to freshwater sources without proper stormwater management controls contribute to pollutant loading of freshwater bodies through stormwater discharge to the freshwater bodies.

The Department of Ecology regularly monitors water quality at a number of rivers and streams in the Puget Sound basin as part of the Puget Sound Ambient Monitoring Program (PSAMP). The Department of Ecology recently started reporting freshwater conditions using a Water Quality Index (WQI) for eight parameters in addition to a single overall WQI for each sampling station.

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Water Quality - Marine Water: Overview

The monitoring of marine waters in Puget Sound Ambient Monitoring Program is focused on assessing temperature, salinity, density, dissolved oxygen, nutrients, chlorophyll, and fecal coliform bacteria. These variables can be used to help assess eutrophication, sewage waste, food available to secondary producers, and pelagic habitat quality, as well as to determine compliance with federal and Washington State water quality standards. Based on data from 1994 – 2000, the areas of greatest marine water quality concern are Budd Inlet, southern Hood Canal, and Penn Cove on Whidbey Island.

Stormwater: Overview

Stormwater is precipitation that runs off surfaces such as rooftops, paved streets, highways, and parking lots. It can also come from hard, grassy surfaces like lawns, play fields, and from graveled roads and parking lots. This water drains to storm drains, streams, and eventually to Puget Sound.

Stormwater, if not properly managed, can pose both water quality and water quantity problems. Stormwater typically contains heavy metals, oil and grease, organic toxins, bacteria, nutrients, and sediments. The sources of these pollutants include motor vehicles, industrial activities, construction activities, fertilizers, and erosion. These pollutants degrade water quality, harm or kill fish and other aquatic life, contaminate sediments, and can threaten drinking water supplies. Large volumes of stormwater can degrade stream channels, alter or destroy fish and wildlife habitat, and cause flooding.

The EPA regulates discharge of stormwater through the National Pollutant Discharge Elimination System (NPDES). The Washington State Department of Ecology (DOE) is given the responsibility to administer this system. NPDES permits are issued for both construction and operation. Cities with stormwater outfalls for discharge of stormwater to surface waters, operate their stormwater management program under this permit. DOE publishes a guidance document, Stormwater Management Manual for Western Washington (August 2001) to guide local governments to better management of stormwater. The Puget Sound Water Quality Management Plan requires local governments to adopt the DOE stormwater manual or an equivalent manual. The City of Mountlake Terrace uses the current DOE manual, but may adapt specific items to fit requirements and needs of Mountlake Terrace. The DOE manual and any revisions could be adopted in the City's development regulations. [Note: The Puget Sound Water Quality Action Team evaluates stormwater management programs in the region by tracking programmatic and environmental measures.]

Vegetation and Wildlife: Overview

Disturbance of ecological communities and division into isolated habitats are the major cause for the decline in animal and plant species. Conserving viable ecological habitats in an interconnected system is the most effective way of conserving vegetation and wildlife. Many habitats that are conserved for environmental or scenic reason cannot survive division into small

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isolated land parcels.

Urban development and other human activity have resulted in a reduction of forested areas and an associated decline in animal and plant populations. Federal, state, and local governments are continually developing and renewing regulations based on best available science to protect remaining animal and plant species. The question of how best to retain wildlife habitat in urban areas is now an issue under discussion in many communities.

Functions and Values of Trees and Vegetation: Overview

Trees and vegetation perform many important functions, including the ability to:

- **Reduce Energy Costs** - Trees have been called the “low tech” solution to energy conservation. Shade from trees reduces the need for air conditioning in summer. In winter, trees break the force of winter winds, lowering heating costs.
- **Clean the Air** - Trees produce oxygen that we breathe. In addition, trees remove air pollution by lowering air temperature, by releasing water into the atmosphere, and by retaining particulates. By reducing the need for heating and cooling systems, trees also reduce emissions that contribute to atmospheric carbon dioxide and the greenhouse effect.
- **Produce Economic Benefits** - Trees add value to retail areas by making them more attractive places for shopping. Trees along streets and on private property increase property values.
- **Screen Noise and Undesirable Views** - Strips of densely planted trees and shrubs will not completely remove the annoyance of city noise, but they can significantly reduce it. Urban forestry researchers have shown that even narrow belts of trees can reduce noise by three to five decibels. Also, trees can provide privacy or screen out undesirable views.
- **Attract Wildlife** - Trees can provide habitat for songbirds and other desirable wildlife, adding natural sounds and beauty in the urban environment.
- **Slow Runoff and Prevent Erosion** - The leaves of trees break the force of rain, reducing flooding by helping water percolate into the soil instead of quickly running off. Tree roots also help hold the soil in place on steeper hillsides, preventing erosion and improving water quality.

Proper management of trees in the community will help to maintain or improve the economic, social, built, and natural environments.

Functions and Values of Critical Areas: Overview

Environmentally critical areas perform a variety of valuable and beneficial biological and physical functions. Some types of critical areas may also pose a threat to human safety or to public and private property if improperly developed. Designation and protection of critical areas is required by the Growth Management Act. Critical areas include: wetlands, fish and wildlife habitat, frequently flooded areas, aquifer recharge areas, and geologically hazardous areas. A discussion of geologically hazardous areas is included separately in this element. The functions and values of other environmentally critical areas are listed as follows.

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Wetlands

- Help maintain water quality.
- Store and convey stormwater.
- Recharge ground water.
- Provide habitat for fish and wildlife.
- Provide areas for recreation, education, scientific study, and aesthetic appreciation.

Fish and Wildlife Habitat

- Help maintain water quality.
- Store and convey stormwater.
- Recharge ground water.
- Provide habitat for fish and wildlife.
- Provide areas for recreation, education, scientific study, and aesthetic appreciation.
- Provide food, cover, nesting, breeding, and movement for fish and wildlife.
- Maintain and promote diversity of species and habitat.
- Control erosion.

Frequently Flooded Areas

- Store and convey stormwater.
- Recharge ground water.
- Provide riparian habitat.
- Provide areas for recreation, education, scientific study, and aesthetic appreciation.

Aquifer Recharge Areas

- Provide source of potable water.
- Contribute to stream discharge during periods of low flow.

Protection, enhancement, and management of these critical areas will help maintain or improve quality of life for the future.

Current Environmental Conditions

The City of Mountlake Terrace occupies the highest elevation in southwest Snohomish County. A broad hill rises from a low point of 263 feet at the extreme southeast corner of the city to 528 feet at the site of the City's water towers. The hillsides are broad terraces and slope to the north, east, west, and south. The Halls Creek depression and Lake Ballinger form the western boundary. Toward the City of Brier, the ravine and steep slope of Lyons Creek East constitutes the eastern boundary. To the northeast, the Swamp Creek area, also known as Scriber Creek, and 212th Street are the major delineating features of the City. 244th Street SW serves as the City and Snohomish County's southern boundary. Because the City is now substantially developed, much of the original natural environment has been altered, and certain features, such as large blocks of wildlife habitat, have been lost.

In 2002, the City inventoried sites that have either previously contained underground petroleum tanks or that currently contain underground petroleum tanks (see Figure EN-3). When

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underground tanks are no longer used, they should be removed and the site cleaned up. The removal of underground tanks requires a special process to prevent environmental damage.

Environmental quality within the City of Mountlake Terrace is similar to elsewhere in the Puget Sound region. Also, although the City has no marine shoreline, the recent listing of the Puget Sound chinook salmon as a “Threatened” species under ESA, means the City must address the issue of how its streams, wetlands, and drainage systems function as part of the larger, interconnected freshwater/marine system. As in many other communities, the concern regarding environmental quality has moved beyond preservation of natural functions to restoration – how can we restore and manage important natural functions that have been lost while still acknowledging our urban setting? The City also recognizes that the quality of the natural environment is an important factor in determining the overall quality of life for Mountlake Terrace residents and businesses.

Together with the federal and state governments, local government is a trustee of its natural environment. As such, the City develops plans, adopts and enforces specific environmental regulations, and educates residents with respect to protecting and restoring sensitive environmental processes. Examples of the City’s actions include:

- Participation in state-mandated Watershed Planning (Mountlake Terrace lies within WRIA 8/Cedar-Sammamish Water Resource Inventory Area);
- Updating of the City’s Shoreline Master Program;
- Updating state-mandated Critical Area Regulations;
- Updating storm drainage regulations for consistency with the State Department of Ecology Storm Drainage Manual;
- Updating road maintenance practices; and
- Compliance with NPDES II Requirements.

Environmental conditions and environmentally critical areas within the City are summarized below:

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.

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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.

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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.

Air

Air quality in the City is similar to that of the surrounding Puget Sound region. However, since the City is within an urban setting near I-5, air quality may not be as good as in remote areas of the region.

There are no significant industrial sources of air pollution in the community. Automobile emissions from I-5 contribute to the decline of air quality in the City.

Climate

Climate should be considered in land use planning. For example, the condition of roadways, public transit, and pedestrian/bicycle pathways is affected by climate. Temperature variations are significant factors in the level of energy usage, and annual precipitation provides a source of water. The climate also influences economic activity. The climate in Mountlake Terrace and southwest Snohomish County is determined largely by the geographic relationship of Puget Sound, the Olympic Peninsula, and the Cascade Mountain range. Marine air from the Pacific Ocean is a moderating influence on temperatures in the area and is responsible for the high moisture content and generally mild winters and summers. While rain is quite common in the area, seasonal changes do occur. The dry season occurs from May through September and the rainy season from October to April. About 75 percent of average annual precipitation occurs during the latter season. The prevailing winds are from the south and southwest during the winter and from the north and northwest in late spring and summer. Mountlake Terrace is in a convergence zone and may receive more precipitation than areas to the north and south.

A summary of climatic conditions in the Mountlake Terrace area is given in the table below:

**Table EN-1
Mountlake Terrace Climatic Conditions**

Period	Mean Temperature		Mean Precipitation
	Minimum	Maximum	
January	32.9	44.8	4.56
April	40.4	57.8	2.69
July	53.5	72.8	1.22
October	42.6	59.7	3.44
Annual	42.6	58.9	36.95

Source: Western Regional Climate Center, Desert Research Institute, 2002

Shorelines

Within the City of Mountlake Terrace, Lake Ballinger is the only body of water regulated under the State of Washington Shoreline Management Act. As part of the City’s Shoreline Master

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Program (see Appendix A), the City has designated Lake Ballinger/Edmount Island and the shoreline north of the public pier as a “Suburban” environment and the shoreline south of the pier as a “Conservancy” environment. The area is primarily developed as parks and a golf course. There are no residential, commercial, or industrial uses along the shoreline of Lake Ballinger within the City.

Geologically Hazardous Areas

Geologically hazardous areas within Mountlake Terrace are related to steep slopes, landslide hazards, erosion hazards, and the City’s location within Seismic Zone 3.

Topography influences the suitability of land for development. For example, steep slopes (in excess of 15 percent) are typically low in strength and unstable in nature, are costly to develop, and in certain areas, are not suitable for development. Steep slopes may also have landslide and erosion potential and need to be regulated.

Seismic hazard areas have not been identified in the City. The City, however, lies within Seismic Zone 3, a relatively high hazard area. The geology determines the relative stability of a region, and whether or not the area is prone to shifts or sinkholes.

A map, Figure EN-1, shows the geologically hazardous areas that have been previously identified in Mountlake Terrace.

Mountlake Terrace contains many areas with slopes within the range of 15-25 percent and greater than 25 percent. Development on slopes exceeding 25 percent is usually restricted and strongly regulated to avoid potential erosion and slippage.

The ravine associated with the west branch of Lyons Creek serves as the major natural drainage channel for the area east of I-5. The ravine continues to be a major barrier for improving east-west travel. This natural feature, although a major open space asset for residents, has significantly affected access to downtown business.

The steep slopes on the east and west flanks of the City are problematic for development because of their instability. In addition, soil suitability for structural support and stability are important factors in determining the potential for development. The survey conducted by the U.S. Soil Conservation Service provides data specific enough to identify potential site development constraints for particular parcels.

The load-bearing capacity of soil, the hydric properties, erosion potential, and characteristics with respect to shrink-swell all play a significant role in development of land. In particular, the hydric properties indicate the existence of wetlands, and signal the potential for other environmental concerns.

The soil survey conducted by the U.S. Soil Conservation Service includes detailed soil maps that can be used for general site selection and planning. This information has been included in the Geologic Features Map, Figure EN-1. The survey explains in great detail each soil’s suitability

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for agricultural, residential, sanitary facility, recreational, woodland wildlife habitat, and other land uses.

Frequently Flooded Areas

The Federal Emergency Management Agency has defined areas (see map, Figure EN-2) showing the extent of the 100-year flood boundary in order to establish actuarial flood insurance rates and assist communities in efforts to promote sound flood plain management. Development on flood plains retards their ability to absorb water, restricts the flow of water from land areas, and causes hazards downstream. The City limits development in these areas.

Wetlands

Several wetlands exist within the City. (Those that have been identified and mapped are shown in Figure EN-2.) The shores of Lake Ballinger contain significant wetlands, which were developed as parks and a golf course as early as 1971. Changes occurred over the succeeding years. For example, the Nile Shrine Golf Course was substantially modified in 1994-95. The City's first Shoreline Master Program was adopted in 1974. The Shoreline Master Program provides land use controls pertaining to the edge of the lake. It has been noted that these areas can continue to function as a wetland as long as degradation is avoided. The correct fertilizer, seed, maintenance, and any redesign of the golf course(s) should protect wetland functions. The Shoreline Master Program was revised and received final approval on July 16, 1993 (see Appendix A).

The City has a Critical Areas Ordinance requiring conservation of wetlands. By identifying wetland categories in terms of function and providing for suitable buffers, which may be averaged, better-designed developments, as well as better protection, can be achieved. The Critical Areas Ordinance will be updated to require buffers appropriate to the type of wetland being affected.

Vegetation, Fish, Wildlife, and Open Space

Wildlife habitat areas in Mountlake Terrace that have been identified and mapped are shown in Figure EN-2.

Two upland wildlife habitats of state-recognized significance remain within Mountlake Terrace. One is the acreage including and surrounding Veteran's Park near I-5 and north of 236th Street SW. The character there is wooded, with second growth forest and steep topography.

The area associated with Lyons Creek, both the East Terrace tributary and the west tributary are classified as Priority Habitat by the Washington State Department of Wildlife. One of the largest open space tracts in the region is the property at the southeast corner of the city, owned by the shareholders of Abbey View Cemetery. The property is outside the city limits of Mountlake Terrace and is identified by the City of Brier as a source of community trails and natural resources. Within the approximately 40 acres is a 10-acre natural pond that is used to provide water to irrigate the cemetery. This property, together with adjacent greenbelt spaces along Lyons Creek, contributes positively to salmon habitat in Lyons Creek. State-listed bird species

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within Mountlake Terrace include pileated woodpeckers, bald eagles at Lake Ballinger, and at Veteran's Memorial Park.

Fish species in Lyons Creek and Halls/McAleer Creeks include Coho salmon as well as cutthroat, sculpin, chinook, and sockeye salmon. Lake Ballinger is stocked with rainbow trout and is also known for cutthroat, catfish, yellow perch, and largemouth bass.

North of the city in unincorporated Snohomish County is Scriber Creek, with a significant wetland area, bird and animal habitat. It is presently unknown whether or not Lynnwood or Mountlake Terrace will annex this property. Scriber Creek also supports coho salmon, a species listed by the State Department of Wildlife as "endangered." Drainage enters this area from Mountlake Terrace and Brier.

The City has approximately 265 acres of land for use as parks and open space. These areas can provide important habitat for animal and plant species. The canyon and ravine that is a large portion of Terrace Creek Park is an example of habitat conservation efforts. Open space in the City includes a network of parks, undeveloped portions of environmentally critical areas, some unimproved right-of-ways, and set-aside areas of planned unit developments.

In its natural state, Mountlake Terrace was covered with mature coniferous forests. Most of this tree cover was commercially harvested after the turn of the century. Some dense regrowth stands of evergreens and native deciduous trees are found on steep slopes and ravines. Most of the remaining vacant land and right-of-way for utilities are covered with native grass and shrubs. Most of the remaining tree cover is on private property and in Terrace Creek Park. The total effect of this existing tree cover contributes greatly to the atmosphere of the community.

Much of the existing vegetation has been preserved only because it was on land that is difficult and expensive to develop. However, the City now protects certain habitat for animal and plant species by regulating development activities in the vicinity of these habitats.

Lake Ballinger and streams running through the City provide fish habitat. Under the federal Endangered Species Act, chinook salmon, coho salmon, and bull trout are listed as "threatened or endangered" in Snohomish County. Improving habitat for fish is an important component of recovery for endangered species. The City protects fish habitat in part, by implementation of state laws, such as the State Environmental Policy Act, the Shoreline Management Act, and the Growth Management Act.

Open space has always been a critical issue in Mountlake Terrace, and the Comprehensive Plan includes goals and policies directed at monitoring and protecting sensitive areas, such as steep slopes, marshes, streams, utility right-of-ways, and unique areas of environmental significance. The desired effect of the policies is the preservation of areas identified as "natural open space" including restricting intensive recreational development.

The remaining areas of forest, ground cover, and vegetation on private property play an important role in the community. These areas include reserves of planned unit developments of past years, particularly along the Lyons Creek and Terrace Creek areas. Vegetation reduces

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erosion, strengthens slope stability, and regulates the quality, quantity, and rate of stream flow. It provides shade to streams to help maintain water temperatures in lakes and ponds and offers food and shelter for a variety of wildlife. It also has the benefit of providing an aesthetically pleasing backdrop to our community.

As further growth and development occurs in Mountlake Terrace, vegetation will serve in softening visual and physical impacts. Its role will be to knit contrasting land uses and architectural styles together, conceal unsightly areas, provide limited relief from environmental pollutants, absorb stormwater, prevent erosion, and offer habitat for small forms of wildlife.

Aquifer Recharge Areas

Not much is known about aquifer recharge areas in Mountlake Terrace because the City does not obtain its potable water from any aquifer within the City's boundaries. However, the City's practices and regulations provide aquifer protection. Examples include: dependence on a water district rather than individual wells for water supply; stormwater management; and regulations that buffer wetlands from development impacts.

Underground Petrol Tanks

Underground storage tanks for oil and gasoline are scattered in several locations of the City (see Figure EN-3). Leakage from these tanks can cause contamination of the soil or water resources. Clean-up of these sites is to be done under strict supervision.

ENVIRONMENTAL GOALS AND POLICIES

This element includes a section on goals and policies. The City must implement and be consistent with all goals and policies of the adopted Comprehensive Plan.

Goals

The Environment Element is guided by three key goals, as follows. These goals are stated at a very broad level to indicate the desired end-result for key topics.

- GOAL EN-1.** Clean air, clean water, and healthy natural environment
- GOAL EN-2.** Maximum Protection of critical areas
- GOAL EN-3.** Community involvement and coordination

Policies

Below are the Comprehensive Plan policies that correspond with each environmental goal. The City of Mountlake Terrace shall implement the following policies.

GOAL EN-1. Clean air, clean water, and healthy natural environment

- Policy EN-1.1 Preserve significant environmental features for park, trail, and open space use.

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- Policy EN-1.2 Promote the use of environmentally-friendly building materials and techniques.
- Policy EN-1.3 Enforce local regulations to protect the environment.
- Policy EN-1.4 Promote clean air and energy conservation by selecting and operating City vehicles and equipment to maximize fuel efficiency.
- Policy EN-1.5 Ensure that City facilities are designed and operated to conserve energy and other natural resources.
- Policy EN-1.6 Encourage convenient alternatives to automobile travel within the City and region.

Discussion: Alternatives include walkways, bike routes, transit, and ride-sharing.

- Policy EN-1.7 Ensure that development is designed to:
 - a. Minimize or mitigate the amount of land that would be covered by pavement, roofs, and other impervious surfaces;
 - b. Use soil and vegetation to disperse stormwater, as appropriate;
 - c. Retain natural slopes, to the greatest extent possible.

Policy EN-1.8 Provide open space where natural habitat can be protected or enhanced.

Policy EN-1.9 Increase natural area and open space preservation within the developed area, particularly along the Terrace, Lyons, McAleer and Hall Creek corridors, about Ballinger and Hall Lakes, and along the steep hillsides and right-of-way of I-5.

Policy EN-1.10 Seek opportunities to connect open spaces that will maximize environmental or recreational values.

Policy EN-1.11 Prevent drainage problems and soil erosion by regulating: (a) the design and maintenance of stormwater management systems; and (b) clearing and grading practices.

Policy EN-1.12 Encourage “low-impact stormwater techniques” to be used where suitable.

Policy EN-1.13 Encourage the conservation of significant trees and their understory vegetation.

Discussion: “Significant trees” are defined in the glossary as “Trees designated by the City to be important or unique, based on such factors as age,

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- size, rarity, critical area function, or status as a landmark or species specimen.”
- Policy EN-1.14 Promote the planting of trees and other vegetation for beautification, air quality, noise control, and stormwater management.
- Policy EN-1.15 Encourage the planting or protection of trees, as appropriate, along public rights of way and in strategic locations where property is being developed.
- Policy EN-1.16 When significant trees must be removed, require their replacement by other trees that are appropriate for the site.
- Policy EN-1.17 Encourage the City’s acquisition of open space.

GOAL EN-2. Maximum protection of critical areas

- Policy EN-2.1 Update regulations and programs, as needed, to incorporate environmental guidance from state agencies or other reliable sources.

Discussion: Most city governments, by themselves, do not have the capacity to fully develop and maintain the most up-to-date expertise on all environmental subjects. By using relevant information from state agencies or other reliable sources, Mountlake Terrace will take a positive role in protecting the natural environment. Examples of state documents that Mountlake Terrace considers include: the Model Critical Areas Code from the state Department of Commerce and the Western Washington Stormwater Manual from the State Department of Ecology.

- Policy EN-2.2 Protect the functions and values of environmentally critical areas, especially as follows:
- a. Wetlands: Protect ability of wetlands to absorb, cleanse, and slowly release stormwater and to provide ecological balance;
 - b. Fish and wildlife habitat areas: Protect and enhance habitat for fish and wildlife, especially within and near streams, wetlands, Lake Ballinger, recreational lands, and designated open space. Provide for connected habitat where possible;
 - c. Aquifer recharge areas: Protect the water quality and hydrologic continuity of any underground aquifers;
 - d. Frequently flooded areas: Ensure that drainage systems and ground cover materials work properly to reduce flooding and prevent soil erosion and damage to property;
 - e. Geologically hazardous areas: Protect life and property from geologic hazards, especially by: (a) mitigating earthquake risks and (b) requiring development practices that maintain the stability of slopes.

- Policy EN-2.3 Include best available science in the protection of critical areas.

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Discussion: The Growth Management Act and other laws have referred to the need for best available science. To help identify such science, Mountlake Terrace considers the state’s rule on best available science, Chapter 365-195 WAC, as well as sources listed in a publication from the State Office of Community Development called “Citations of Recommended Sources of Best Available Science for Designating and Protecting Critical Areas.” Critical area regulations will be updated to incorporate best available science. As appropriate, the City will coordinate with other jurisdictions on the use of best available science.

Policy EN-2.4 Protect and enhance shorelines to ensure their environmental sustainability, while providing opportunities for viewing and low-impact recreation.

Policy EN-2.5 Recognize that policies of the City’s Shoreline Master Program are policies of the City’s Comprehensive Plan.

Policy EN-2.6 Ensure that land uses near Lake Ballinger and other surface waters maintain or enhance water quality.

Policy EN-2.7 Provide special consideration for protecting the habitat of anadromous fisheries.

Policy EN-2.8 Require clearing and grading practices to avoid or mitigate any harm to streams, lakes, steep slopes, and other critical areas.

Policy EN-2.9 Require new development to provide minimum environmental buffers and building setbacks to protect the functions and values of critical areas.

Discussion: The recommended environmental buffers will be based on: a) the State’s latest draft Model Ordinance for Designating and Protecting Critical Areas; b) State Recommendations for Shoreline Management; c) other relevant scientific information; and d) consideration of existing urbanized conditions and stream types within Mountlake Terrace.

Policy EN-2.10 Provide for some flexibility in applying critical area protection and development regulations to allow an economic use of property or a creative approach that provides equivalent protection.

GOAL EN-3. Community involvement and coordination

Policy EN-3.1 Promote programs and information to help people learn about and participate in protecting the natural environment.

Policy EN-3.2 Support all reasonable means to ensure water purity for treated sewage in accordance with state and federal standards.

ENVIRONMENT ELEMENT

Discussion: Mountlake Terrace is a partial owner of the Edmonds wastewater treatment plant, the plant that treats sewage for Edmonds and Mountlake Terrace.

Policy EN-3.3 Promote and support the use of environmentally friendly and “least toxic” approaches to landscape management.

Discussion: City government can be a model for its citizens by demonstrating, identifying, and encouraging environmentally friendly practices to control vegetation and pests.

Policy EN-3.4 Provide information and incentives for owners to clean up contamination from any chemical spills, underground gasoline tanks, or other pollution sources.

Policy EN-3.5 Cooperate with nearby communities, regional organizations, and agencies to protect the environment.

PERFORMANCE MEASURES

Measuring performance or progress is an important way to see whether expectations are being met. In this Comprehensive Plan, one performance measure has been selected for each major topic. Annually, the City will make a good faith effort to meet or exceed its performance measures, check the data, with respect to each of the performance measures, and report the results.

Measures for major topics have been selected with the following criteria in mind:

- Relevance to goals
- Meaningfulness to the public
- Availability of data.

Performance Measure

For the Environment Element, the City of Mountlake Terrace has a performance measure and will annually report on its progress. The measure is as follows:

- Air quality within the region meets or exceeds federal standards.

ACTIONS TO TAKE

To help carry out this chapter, certain actions steps are needed. During the 2004-2011 period, this includes the following actions:

- Decide by the end of 2004, whether to start a “stream team” program to involve citizens in enhancing or restoring streams and their habitat.
- Clarify, strengthen, and update ordinances, by the end of 2004, to protect environmentally critical areas.

ENVIRONMENT ELEMENT

- Develop by the end of 2006, a water quality performance measurement for Lake Ballinger and/or key streams that may be considered for subsequent adoption in the Comprehensive Plan and to otherwise monitor the health of the lake and streams within the City.
- Complete in 2008 a conservation/sustainability strategy for acquiring open space and taking other proactive steps to encourage natural resource conservation and environmental protection.
- Develop and consider an update to the City's tree protection policies, consistent with the adopted Sustainability Strategy, by the end of 2011.