Volume I | Goals & Policies

Environmental Quality & Shorelines

Introduction

The Environmental Quality Element Goals and Policies support the City's commitment to preserving and enhancing the natural environment. The Element includes policies that provide guidance on balancing environmental protection with development potential and recognizing environmental resources as an essential living infrastructure.

This Element also ties the City's environmental policy guidance to ~~a number of~~several strategic or issue-specific plans that have been developed since the last Comprehensive Plan update. Those plans include the Shoreline Master Program, the Community Forest Management Plan, the Wildlife Management Plan, and the Legacy 100-Year Vision, links for which can be found in the sidebars of this Element and Background Analysis. The Environmental Quality & Shorelines Element Background Analysis (Volume II) provides narrative and details that support the Environmental Quality Element Goals and Policies, including the following sections:

- Planning Context
- ~~Citizen~~ Resident Volunteers
- Recycling

Goals & Policies

Goal EQ-1 Land Use Pattern. **Protect the natural environment through zoning and land use decisions.**

Policy EQ-1.1 ~~Protect~~ Conserve designated sensitive areas, including ravines, steep slopes, wetlands, riparian zones, and other features.

***Designated sensitive areas** include erosion hazard areas, landslide hazard areas, seismic hazard areas, steep slope hazard areas, streams, wetlands, fish-bearing waters, areas with a critical recharging effect on aquifers used for potable water, flood hazard areas and the adjoining protective buffers necessary to protect the public health, safety and welfare. (Lake Forest Park Municipal Code 16.24.020)*

***Transit-oriented development (TOD)** describes a mix of housing, office, retail, and amenities integrated into a walkable neighborhood and anchored by high quality public transit.*

Policy EQ-1.2 Encourage mixed-use commercial development and ~~transit-oriented~~pedestrian-prioritized development, including housing, in any major redevelopment of the Town Center.

Policy EQ-1.3 ~~Preserve~~ Promote the health and expansion of existing native and compatible vegetation in all elements of land use considerations, including infrastructure~~whenever appropriate~~.

Policy EQ-1.4 Use the best scientific information available in an adaptive management approach to preserve or enhance the functions and values of sensitive areas through regulations, programs, and incentives. Implement integrated and interdisciplinary approaches to environmental planning strategies.

***Leadership in Energy and Environmental Design (LEED)** is a set of rating systems for the design, construction, operation, and maintenance of green buildings, homes, and neighborhoods.*

Policy EQ-1.5 ~~Maintain~~ Sustain and enhance the integrity of ecosystems.

Policy EQ-1.6 Incentivize LEED building standards, low impact development stormwater infrastructure, or other sustainable development standards,

Goal

Commented [CH1]: Supports CAP NE 3.1

Commented [CH2]: Supports CAP BE 2.1

especially for development adjacent to sensitive areas~~.~~, and consider adopting sustainable development standards for public facilities.

Policy EQ-1.7 Ensure ~~equitable~~all residents have safe and viable access to a clean and healthy environment.

Policy EQ-1.8 Identify and mitigate unavoidable negative impacts of public actions with disproportionate impacts on vulnerable populations.

Goal EQ-2 Shoreline Development and Access. **Protect the city's shoreline while accommodating reasonable and appropriate uses near shorelines.**

The Shoreline Master Program is an appendix to the Comprehensive Plan and is available online at: www.cityoflfp.com/DocumentCenter/View/1098.

Policy EQ-2.1 Protect and enhance public access to the Lake Washington shoreline in adherence with the goals and policies of the Lake Forest Park Shoreline Master Program (SMP).

Policy EQ-2.2 Facilitate community and neighborhood agreement on any proposal to improve shoreline access where the proposal has the potential to negatively impact private property owners.

Policy EQ-2.3 Promote education efforts that demonstrate the connection between drainage activities and the city's shoreline.

Policy EQ-2.4 Ensure safe pedestrian and nonmotorized access to the Lake Washington shoreline for all residents and promote a safe passageway through and across the adjacent SR 522.

Goal EQ-3 Water Quality Protection. **Improve water quality by protecting and monitoring water from natural sources and through effective storm and surface water management.**

Policy EQ-3.1 ~~Be a model~~Promote the community as a model for stream restoration and enhancement.

Policy EQ-3.2 Protect critical aquifer recharge areas (CARAs) and the quality of groundwater used for public water supplies to ensure adequate and healthy future potable water.

Policy EQ-3.3 Coordinate with regional efforts to monitor water quality and identify sources of water pollution ~~in order to develop a long-range program to reduce and minimize pollutants~~ in the city's streams and Lake Washington to develop a long-range program to reduce and minimize pollutants.

Commented [CL3]: This is an implementation action.

Commented [CH4R3]: This is an implementation action that would relocate to the implementation section of the Plan.

Policy EQ-3.4 Increase public awareness and enforcement of regulations ~~prohibiting~~ that prohibit illegal dumping.

Policy EQ-3.5 Ensure that new developments ~~is~~ are connected to the sanitary sewer system. Support a long-term strategy to convert existing developments from septic systems to the sanitary sewer system, and undertake all means reasonable to ensure the quality of water discharged from existing ~~on-site~~onsite sewage treatment systems. Support planning efforts to ensure no sewage overflow happens in Lake Forest Park's waterways.

Policy EQ-3.6 Maintain and enhance natural drainage systems to protect water quality, reduce public costs, protect property, and prevent environmental degradation, including supporting riparian restoration with or without partnership from community organizations.

Low-impact development (LID) *is a stormwater and land use strategy that strives to mimic pre-disturbance hydrologic processes. LID measures emphasize conservation, use of on-site natural features, site planning and integration of stormwater management practices into project design. Rain gardens and permeable hardscapes are examples of LID measures.*

Commented [CH5]: Supports CAP NE 3.1

Commented [CH6]: Supports CAP NE 3.5, 3.6, 3.7

Policy EQ-3.7 ~~Minimize the direct discharge of urban runoff from impervious surfaces into streams by encouraging~~ Encourage low-impact development alternatives and appropriate enhancements of the street maintenance program to minimize urban runoff.

Policy EQ-3.8 ~~Reduce the impact of new development on water quality~~ Require appropriate mitigation measures through the City's development review process ~~by requiring appropriate mitigation measures~~to reduce negative impacts to water quality from new developments.

Watershed action plans *are multi-jurisdictional plans that coordinate efforts to address water quality and storm water runoff problems that can contribute to flooding and property damage within a watershed that crosses the boundaries of two or more jurisdictions. The cities of Lake Forest Park, Edmonds, Lynnwood, Mountlake Terrace, Shoreline, and Snohomish County have formed a watershed forum to guide the development of a watershed action plan for the Lake Ballinger/McAleer Creek watershed.*

Policy EQ-3.9 Coordinate with the regional agencies and neighboring jurisdictions to improve regional surface water management, resolve interjurisdictional concerns, and implement watershed action plans.

Policy EQ-3.10 ~~Enhance~~ Support the removal or retrofit of existing culverts and encourage daylighting of creeks wherever possible to restore natural waterways.

Policy EQ-3.11 ~~Educate the~~Support public education programs about ~~the need to reduce contamination of~~ urban stream~~s~~ contamination ~~and steps that they can take to be part of the solution~~.

Goal EQ-4 ~~Hazard Mitigation~~Development in Geologically Hazardous Areas. **Encourage planning efforts to prepare for and recover from environmental disasters.**

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Policy EQ-4.1 Minimize risk posed by geological and flood hazard areas to people, property, and the environment ~~posed by geological and flood hazard areas~~.

Policy EQ-4.~~1~~ 2 Regulate development in hazard areas to ensure that it does not cause safety risks and that appropriate building standards and mitigation measures are used to address site conditions.

Policy EQ-4.~~2~~ 3 Promote retention of vegetation and limit land disturbance in identified steep slope and landslide hazard areas.

Policy EQ-4.~~3~~ 4 Protect existing natural areas that provide stormwater storage during flood events.

Policy EQ-4.4 ~~5~~ Promote educational efforts to inform landowners and residents about hazard areas, ~~and steps they can take to mitigate risks and~~how to prepare for emergencies, and resources available to mitigate risks.

Goal EQ-5 Alternative Energy. ~~**Be a role model in addressing climate change and promoting**~~**Promote ~~alternative energy use by encouraging~~ clean, renewable energy production and use throughout the city.**

Policy EQ-5.1 Promote public and private clean energy pilot projects, such as a comprehensive network of electric vehicle charging stations or community solar projects, with the active participation of residents and businesses.

Policy EQ-5.2 Reduce energy demand, support energy management technology, and encourage greater reliance on sustainable energy sources compared to conventional sources. ~~Encourage sustainable building practices that lower heating requirements, reduce the need for air conditioning, and encourage passive energy saving measures.~~

Policy EQ-5.3 Educate ~~citizens~~ residents about incentives for emerging alternative energy technology, such as tax exemptions for solar installations, and increase ~~citizen~~ resident awareness of existing solar arrays and water heating systems in the city.

Commented [CH7]: Supports CAP NE 3.2.

IMPLEMENTATION ACTION: Host a summit (or similar forum) for water districts to discuss and plan for safeguarding the city's water supply, encouraging conservation, etc.

Commented [CH8]: Supports CAP NE 3.4

Commented [CH9]: This supports CAP BE 1.3

Policy EQ-5.4 Participate in regional efforts to create a state-wide alternative energy policy and decrease local greenhouse gas emissions.

Policy EQ-5.5 Encourage businesses, residents, and new developments to utilize electric or solar energy.

~~**Policy EQ-5.5** Consider adopting green building standards for public facilities and encouraging it for private development.~~

Policy EQ-5.6 Facilitate ~~Lake Forest Park's achievement of~~ the city's ~~goal of a~~ 70 percent recycling rate goal (as adopted by King County) and expand current recycling efforts, such as the battery recycling program at City Hall.

Goal EQ-6 Air Quality, Noise Abatement, and Light Pollution. **Support actions to improve air quality, reduce noise and light pollution, and minimize associated negative health effects.**

Policy EQ-6.1 Promote clean burning wood stoves within the city.

Policy EQ-6.2 Encourage ~~the use of~~transportation infrastructure for buses, carpooling, ~~bicycles~~nonmotorized transportation, and electric vehicles, and the planting of trees along arterials.

Dark skies standards *seek to reduce light pollution by addressing urban sky glow, glare, light trespass, and light clutter.*

Policy EQ-6.3 Promote dark skies through measures ~~to~~ that encourage reduced light trespass and use of lighting appropriate to the task. For properties along Lake Washington, encourage application of best practices regarding Artificial Light at Night to help reduce negative impacts on threatened salmon populations.

Policy EQ-6.4 Coordinate with other agencies and local governments in monitoring aircraft noise levels and flight patterns and in finding ways to minimize air traffic noise.

Policy EQ-6.5 Educate ~~citizens~~ residents about noise and air pollution from gas-powered leaf blowers and other such machinery.

Policy EQ-6.6 Identify areas in the city with populations that are at higher risk of negative health effects, noise and light pollution, and lower air quality, and coordinate with the communities to explore focused solutions.

Policy EQ-6.7 Support litter pickup programs within the city to reduce the amount of waste that accumulates in roads, public spaces, neighborhoods, and natural habitats.

Goal EQ-7 Coexistence with Wildlife. **Promote, support, and facilitate human coexistence with urban wildlife.**

Policy EQ-7.1 ~~Educate~~ Promote educational programs that help residents ~~to~~ create an understanding of ~~normal~~ typical wildlife behavior, develop empathy for wildlife, and emphasize human behavior modification as the primary means to minimize conflicts ~~between people and~~with wildlife.

Policy EQ-7.2 Consider updating relevant regulations ~~in order to~~to promote responsible pet and livestock guardianship.

Commented [CH10]: This supports CAP BE 1.1, 1.2, 1.6, 2.2. The CAP should be viewed as an implementation plan for this goal.

BE 1.4 should be a future implementation action. Current State building codes require solar readiness.

BE 1.5 will be addressed when planning for climate resilience - reliability is a key component of utility resilience.

Policy EQ-7.3 Promote preventative measures ~~in order to~~to dissuade ~~wild animals from being comfortable when in close proximity to~~ humans from interacting with wild animals.

*The **Wildlife Management Plan** is available online at: www.cityoflfp.com/DocumentCenter/Home/View/487.*

Policy EQ-7.4 Develop a wildlife incident response plan that incorporates the core values of the City's *Wildlife Management Plan*.

Commented [CH11]: This is an implementation action.

~~Goal EQ-8 Wildlife Habitat.~~ ~~**Maintain and improve wildlife habitat in Lake Forest Park.**~~

Policy EQ-~~8.1~~7.4 Encourage the maintenance of native plantings in sensitive area buffers for wildlife when development occurs and encourage improvement to contiguous wildlife corridors whenever possible.

~~**Policy EQ-8.2** Encourage improvement to contiguous natural wildlife corridors whenever possible.~~

Policy EQ-~~8.3~~7.5 ~~Encourage~~ Discourage the use of ~~alternatives to~~ pesticides, herbicides, and inorganic fertilizers.

Policy EQ-~~8.4~~7.6 ~~Promote~~ Increase fish habitat restoration efforts in riparian areas.

Goal EQ-~~9~~ 8 Forest Canopy. ~~**Preserve, restore, and enhance**~~**Recognize the forest canopy as a key city resource and promote ~~the~~tree canopy conservation for a healthy and diverse community forest, ~~consisting~~ which consists of both native and compatible non-native plant species.**

*The **Community Forest Management Plan** is available online at: www.cityoflfp.com/DocumentCenter/Home/View/369.*

Policy EQ-~~9~~8.1 Maintain or exceed the minimum citywide canopy cover goals established by the *Community Forest Management Plan* through regular evaluation and refinement of the City's land use and environmental regulations and policies.

Commented [CH12]: Implementation Action: Amend the *Community Forest Management Plan* to support the Tree Board's policy and strategies to protect large-stature species with dense wood etc.

Supports CAP NE 1.1.

Implementation Action: Code amendments for long-term maintenance of new plantings.

Policy EQ-~~9~~8.2 Develop a tree planting, inventory, and maintenance program for publicly-owned property that ~~takes into consideration~~considers the species of trees that will be most successful in environments such as public rights-of-way. Pay special attention in the planting program to areas with vulnerable populations.

Policy EQ-~~9~~8.3 Ensure zoning and subdivision regulations are consistent with the *Community Forest Management Plan* and review them regularly to ensure they do not disproportionately affect vulnerable communities.

Commented [CH13]: IMPLEMENTATION ACTION: address CAP NE 1.2 to provide better outcomes for tree planting.

Policy EQ-~~9~~8.4 Maintain a community forest management plan advisory committee to monitor the implementation and effectiveness of the *Community Forest Management Plan* and ensure participation from a wide variety of residents.

Policy EQ-~~9~~8.5 Encourage the study of the potential effects of climate change to native trees and develop strategies to adapt to and/or mitigate the likely effects of climate change to the community forest.

Policy EQ-~~9~~8.6 ~~Ensure that~~ Require all new private and public site developments ~~includes~~ include ~~an approved~~ tree-replacement plan that achieves or enhances canopy coverage goals.

Policy EQ-~~98~~.7 Develop a vigorous program to control invasive plant species, such as English ivy, laurel, and holly on public property and encourage their control on private properties.

Policy EQ-~~98~~.8 Continue to balance tree ~~preservation~~ conservation efforts with recognition of private property rights.

Policy EQ-8.9 Support community education about the value of trees for human health and mitigating the impacts of climate change.

Commented [CH14]: Supports CAP NE 1.5

Goal EQ-9 Climate Commitment. **Protect environmental quality and community resilience in a changing climate.**

Commented [CH15]: Placeholder for EQ climate policies

Policy EQ-9.1 Identify areas with vulnerable populations and coordinate mitigation and recovery planning efforts with those communities.

Policy EQ-9.2 Support community waste reduction programs and promote education on the lifecycle of goods and materials.

Policy EQ-9.3 Encourage policies to increase tree canopy cover in socially and economically disadvantaged neighborhoods.

Policy EQ-9.4 Support nonprofit organizations that provide education and participation in forest conservation strategies.

Goal EQ-10. Promote education on sustainable food production and waste prevention.

Policy EQ-10.1 Support a sustainable food economy.

Commented [CH16]: Supports CAP CW 2.1, 2.2

Policy EQ-10.2 Promote educational programs on waste prevention.

Policy EQ-10.3 Coordinate efforts to reduce waste by making recycling and composting more accessible and efficient.

Goal EQ-11. Promote waste reduction and diversion to reduce the amount of material in the landfill.

Commented [CH17]: Supports CAP CW 3.1, 3.2

Policy EQ-11.1 Coordinate efforts to reduce waste by making recycling and composting more accessible and efficient.

Policy EQ-11.2 Encourage zero waste educational programs.

Volume II | Background Analysis

Environmental Quality & Shorelines

Introduction

The natural environment of Lake Forest Park is an important part of the daily lives of its citizens. From the very beginning, our ~~City's~~city's natural environment has been its defining characteristic. An early land prospectus for the ~~new~~ City of Lake Forest Park stated, "The strict fiat has gone forth that all the natural beauty must be preserved." Our city was named for its ~~close~~ proximity to Lake Washington, its abundance of streams, ravines, and wetlands, and its robust tree canopy. The need ~~not only~~ to protect

~~but also to~~and enhance the natural environment and wildlife inhabitants of Lake Forest Park extends far beyond its aesthetic beauty~~, however~~. The ecosystem and green infrastructure ~~that~~ provided by the natural environment ~~provides~~ create economic and health benefits for the ~~citizens~~ residents and workers of our community.

The benefits of preserving our environmentally sensitive areas are recognized, though these areas are increasingly challenged by growth, both in Lake Forest Park and the surrounding region. Effective environmental protection and climate resilience require~~s~~ a vision that acknowledges the critical interdependence of the various contributing ecosystems as well as their relationships to the built environment. The city's tree canopy can be a resource not only for Lake Forest Park residents, but for the entire region. What we build—where and how—has~~, where we build, and how we build it has~~ a lasting effect on our ecosystems, as well as on the health of our ~~community~~communities, region, and planet. Lake Forest Park can be an experimental, urban community for the development of best practices.

This background analysis contains information that was used ~~in developing~~to develop the updated ~~of the~~ goals and policies in the Environmental Quality & Shorelines Element:

- Planning Context
- Environmental Features
- ~~Citizen~~ Resident Volunteers
- Recycling

Planning Context

~~A number of~~Several strategic and specific-issue plans have been developed to address environmental needs throughout the city, and these have contributed to the development of the Environmental Quality and Shorelines goals and policies. These plans, and their relations to this element, are described below. They include:

- *City of Lake Forest Park Legacy 100-Year Vision*
- *City of Lake Forest Park Community Forest Management Plan*
- *City of Lake Forest Park Wildlife Management Plan*
- *City of Lake Forest Park Shoreline Master Program*
- *Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan 10-Year Update*

Lake Forest Park Legacy 100-Year Vision (2008)

*The **Legacy 100-Year Vision** is available online at: www.cityoflfp.com/DocumentCenter/View/784.*

Lake Forest Park's *Legacy Vision* is a long-term strategic guiding document for enhancing the City's green infrastructure—its forests, wetlands, wildlife habitats, and more. The Vision, which was the subject of extensive involvement from the community, identifies existing green infrastructure, sets goals for how this green infrastructure will be enhanced in the next century, and identifies ~~a number of~~ projects that can be undertaken in the near-term to set the city on a path toward achieving these goals. This visionary document influences several elements of the Comprehensive Plan, including Environmental Quality & Shorelines and Parks, Trails, & Open Space.

Lake Forest Park Community Forest Management Plan (2010)

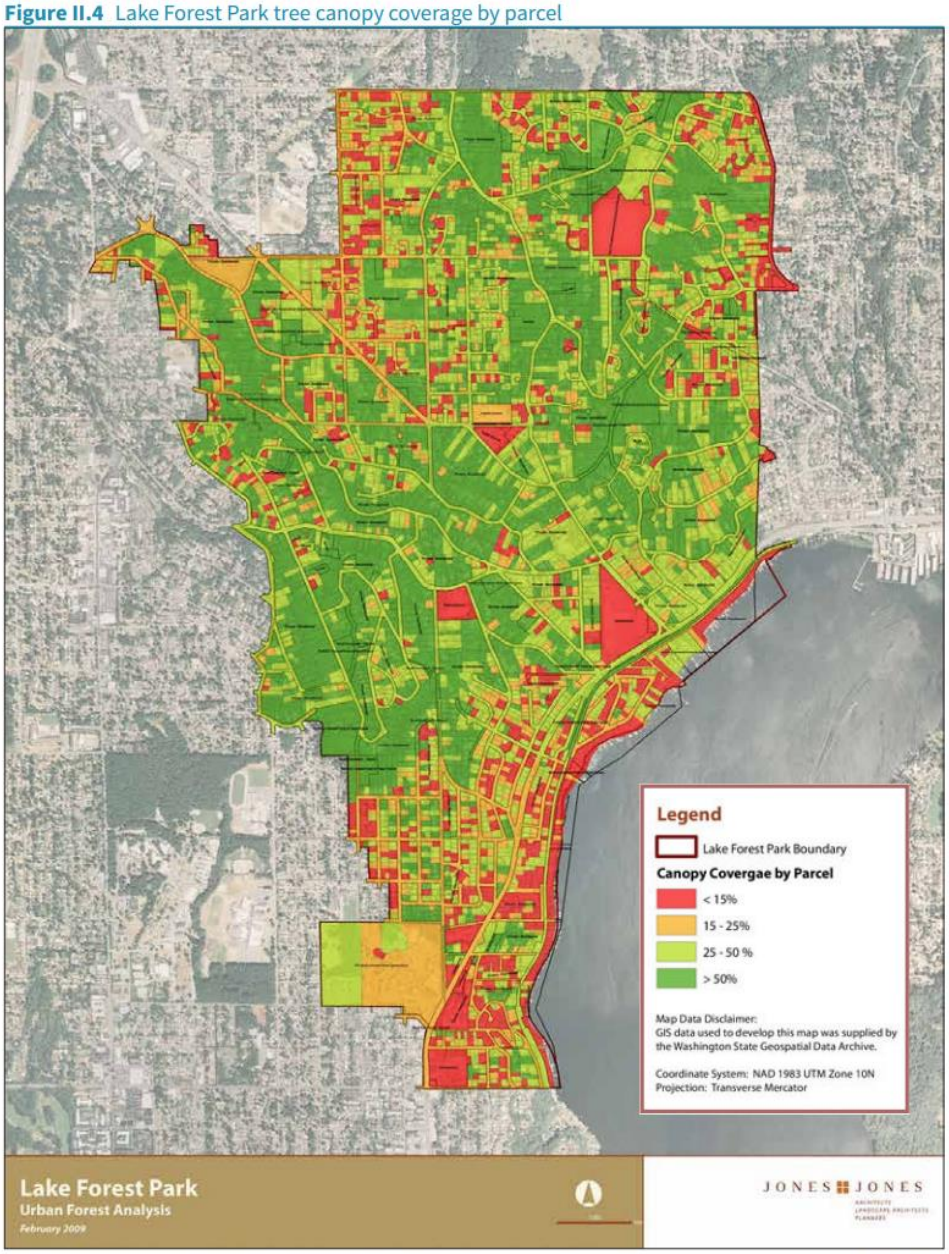
*The **Community Forest Management Plan** is available online at: www.cityoflfp.com/DocumentCenter/Home/View/369.*

The *Community Forest Management Plan* was drafted by the Urban Forest Task Force and adopted by reference by Ordinance 1015: Tree Canopy Preservation and Enhancement. The Plan's purpose is to guide enhancement to Lake Forest Park's tree canopy by identifying tree canopy goals, asset management strategies, and policies for promoting education on forestry issues. The plan was used to inform an update of the City's tree regulations, and acts as a supporting document for all future updates to LFPMC 16.14—Tree Preservation and Enhancement.

~~Lake Forest Park's~~The city's forest canopy is one of its defining ~~characteristics, and~~characteristics and is ~~also~~ a vital community resource. The amount of tree canopy coverage in a ~~community~~ neighborhood is one of the most useful benchmarks of urban environmental quality. In 2009, Lake Forest Park undertook a survey of tree canopy coverage, the results of which are shown in Figure II.4.

Commented [CL18]: If an updated survey was conducted, both this and the tree canopy coverage by parcel map will need to be updated.

Figure II.4 Lake Forest Park tree canopy coverage by parcel



Source: City of Lake Forest Park, Community Forest Management Plan, 2010.

The *Community Forest Management Plan* states that the benefits of trees include:

- Reducing surface water runoff (keeping pollution out of the rivers and ponds)
- Reducing soil erosion (decreasing sedimentation of water bodies and preventing landslides)
- Absorbing air pollutants and sequestering carbon dioxide (countering the greenhouse effect)
- Reducing noise pollution
- Cooling the city by absorbing sunlight and releasing water through evapotranspiration
- Creating wildlife habitat
- Conserving energy by providing temperature moderation
- Improving water quality

Wildlife Management Plan (2011)

*The **Wildlife Management Plan** is available online at: www.cityoflfp.com/DocumentCenter/Home/View/487.*

The purpose of the *Wildlife Management Plan* is "to support human coexistence with urban wildlife using education, behavior modification, and the development of a policy to address human-wildlife conflicts." Development of this plan led to ~~in~~ changes ~~to~~ in the City's regulations, which established animal guardianship criteria and strengthened wildlife protection.

Shoreline Master Program (~~2013~~2019)

Lake Forest Park contains 10,560 feet (2 miles) of Lake Washington shoreline. The Washington State Shoreline Management Act requires that all cities containing or bordering "shorelines of the state" have a Shoreline Master Program. Lake Forest Park's *Shoreline Master Program* was approved locally by ~~with~~ the adoption of Ordinance No. 1042 in 2013 after review and approval by the state's Department of Ecology and updated in 2019. Implementing regulations contain ~~it contains~~ policies and regulations that focus on three main areas: Shoreline Use, Environmental Protection, and Public Access.

*The **Shoreline Master program** is available online at: www.cityoflfp.com/DocumentCenter/View/1098.*

Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan 10-Year Update (2017)

The WRIA 8 Salmon Recovery Council (Council) is composed of elected representatives from 29 local government partners (27 cities, King County, and Snohomish County), and representatives from community organizations, businesses, environmental interests, and state and federal agencies. The City of Lake Forest Park has been an active member of the Council since its inception in 2001. The Council oversees implementation of the science-based Chinook Salmon Conservation Plan for the Lake Washington/Cedar/Sammamish Watershed. The watershed, also known as Water Resource Inventory Area (WRIA) 8, runs from the Puget Sound nearshore and inland from the north end of Elliott Bay to south Everett, and east to the Bear Creek basin, the Issaquah Creek basin, and the upper Cedar River basin.

The city's creeks and lakeshore environment are home to several species of salmon through multiple life stages. The WRIA 8 Chinook Salmon Conservation Plan provides strategies for protecting, restoring, and supporting healthy salmon habitat through voluntary actions by municipalities and by property owners. The city should implement the recommendations in the Conservation Plan and provide incentives and technical support for residents take part in actions such as planting native vegetation along creeks,

reducing the use of pesticides and fertilizers, and implementing best practices related to Artificial Light at Night along the lakeshore.

Environmental Features of Lake Forest Park

The ~~City~~city contains the environmental features listed below. Figure II.1 in Volume II of the Land Use Element shows the general location of streams, wetlands, and steep slopes.

- Larger streams containing a variety of fish species that flow into the city from other jurisdictions
- Intermittent creeks that flow only during heavy precipitation events
- Large and complex wetland systems
- Small, pocket wetlands
- Floodplains associated with streams and wetlands
- Stable steep slopes as well as those prone to landslides
- Tree canopy

Streams and Surface Water Drainage

The two largest streams within Lake Forest Park are Lyon Creek and McAleer Creek. Both streams begin in neighboring jurisdictions to the north of the city and flow through local sub-basins to empty into Lake Washington. The city also contains ~~a number of~~several streams that originate within its boundaries, such as Brookside Creek, Schoolhouse Creek, McKinnon Creek, and others. Many of these are tributaries of Lyon Creek and McAleer Creek. Streams in the city are home to various species of fish, including endangered salmon and trout species.

The City owns and operates a stormwater system in order to ~~help~~ manage surface water drainage (see Volume II of the Utilities Element for a description of the stormwater utility). Ongoing management of the ~~C~~city's stormwater system is largely governed by ~~S~~state and federal agencies, such as the Department of Ecology and the National Pollutant Discharge Elimination System (NPDES) permit program. The City follows these standards where applicable. The City has adopted by reference the 2009 King County Surface Water Design Manual. More detailed information about the City's stormwater infrastructure can be found in the 2014 Surface Water Management Plan.

Flooding

In Lake Forest Park, flooding problems occur below NE Bothell Way on the alluvial fan deltas for Lyon Creek and McAleer Creek. Stream-transported sediments deposit in the low gradient reaches and reduce the channel capacity. Urbanization restricts channel location and continual channel maintenance is necessary to mitigate the natural flood hazard. In other areas, localized flooding occurs as result of channel obstructions, such as undersized culverts, low bridges, or reduced channel capacity.

Wetlands

Based on available information, there are approximately 50 acres of mapped wetlands in Lake Forest Park (Figure II.1). However, there are more unmapped wetland areas known to be present. Many of the wetlands ~~present~~ in the ~~City~~city are located at the bases of steep slopes, within natural depressions, or within riparian corridors along streams. As with many urban environments, the wetland conditions in Lake Forest Park have often been altered, modified, and encroached upon by urban development.

Groundwater

Groundwater is the primary water supply for portions of the city served by the Lake Forest Park Water District (see Figure II.31 in Volume II of the Utilities Element). The Lake Forest Park Water District operates wells within a wellhead protection area located in the city. Other areas of the city receive water from utilities that acquire water from sources outside of Lake Forest Park. Since a portion of the city's residents rely on groundwater as their source of potable water, protection of groundwater quality is particularly important.

Steep Slope and Landslide Hazard Areas

Sloped topographical conditions are prevalent throughout Lake Forest Park, and possible landslide and steep slope hazard areas are the most widely designated environmentally sensitive areas in the ~~C~~city (Figure II.1). Protection from the possible detrimental effects of landslides and slope related hazards are high priorities. Landslide activity in Lake Forest Park has occurred within recent years.

Erosion Hazard Areas

Erosion is a natural process whereby soil coverage is loosened and reduced by wind, rain, and running water. In the Puget Sound region, rain and running water are the main contributors to erosion. The potential for erosion depends upon the physical and chemical composition of the soil, vegetation coverage, slope length and gradient, intensity of rainfall, and velocity of surface water runoff. Erosion hazard areas are located throughout the ~~City~~city, however, they are generally found in the riparian areas of stream corridors and in steep slope and landslide hazard areas.

Seismic Hazard Areas

King County is an earthquake-prone region subject to ground shaking, seismically induced landslides, and liquefaction of soil. Seismic hazard areas in Lake Forest Park are generally located near stream corridors, large wetland areas, floodplains, the Lake Washington shoreline, and in previously filled areas.

~~Citizen~~ Resident Volunteers

The natural environment of Lake Forest Park benefits from the many residents who are deeply passionate about protecting and enhancing it. These volunteer commissioners, tree board members, and non-profit members collaborate with the City regularly on projects and plans that embrace the city's shoreline, streams, forests, and wildlife habitat.

The Lake Forest Park Stewardship Foundation, a community-run non-profit, was formed in 1998 and has worked tirelessly since that point to increase education and awareness of Lake Forest Park's natural resources. Members of the Foundation have contributed to many community plans in the past~~,~~ and have been an integral part in developing the Environmental Quality and Shorelines goals and policies.

Recycling

King County has set a goal of ~~diverting 70% of all waste from the landfill by 2030~~minimizing waste by keeping valuable materials in use and out of the county's only active landfill.[1] Lake Forest Park's recycling rate (which includes composting) has already reached 65%, far above the state average of 50%.[2] ~~Still,~~

[1] King County, "Re+ (z~~Z~~ero w~~W~~aste)," last updated January ~~2015~~2024. https://kingcounty.gov/en/dept/dnrp/waste-services/garbage-recycling-compost/solid-waste-programs/re-plus ~~http://your.kingcounty.gov/solidwaste/ garbage-recycling/zero-waste.asp~~.

[2] City of Lake Forest Park, "Summer 2014," City News, 2014: 1 http://www.cityoflfp.com/Archive/ ViewFile/Item/884.

~~t~~The Cedar Hills landfill, ~~to~~ which receives Lake Forest Park's garbage ~~goes~~, finds that ~~75%~~nearly 70% of the waste ~~it receives~~that is sent there each year could have been recycled, composted, or re-used.[3]

Recycling and composting are important components of environmental protection, providing benefits such as:

- Reducing emissions of methane, a greenhouse gas more than twenty times as potent as carbon dioxide, from landfills
- Reducing the need for new material, such as trees, oil, and metals, and the fuel use involved with obtaining and transporting them
- Reducing the possibility of hazardous substances leaching into the water table
- Reducing the amount of plastics and other materials that end up in our water and land

Because our waste is landfilled outside of the ~~community~~city's boundaries, the positive impact of recycling efforts on Lake Forest Park is not as directly visible as other environmental efforts. However, it is important to recognize our responsibility in the larger context. Pollution in other parts of our region finds its way into our air and water, and the methane emissions from landfills have a negative impact on the forests, streams, wildlife, and citizens of our community no matter how far away they are released.

[3] King County, "Re+ (~~Z~~zero ~~W~~waste)," last updated January ~~2015~~2024. https://kingcounty.gov/en/dept/dnrp/waste-services/garbage-recycling-compost/solid-waste-programs/re-plus~~http://your.kingcounty.gov/solidwaste/garbage-recycling/zero-waste.asp.~~