

# 9 ENVIRONMENT

## 2 INTRODUCTION

3 Lynnwood is located on terrain characterized by gently rolling hills and valleys. Lund's Gulch is a  
 4 prominent natural feature at the northwestern corner of the city and connects to the marine shoreline of  
 5 Puget Sound.

6 The city is extensively developed and has few remaining "natural" or forested areas. Approximately 49%  
 7 of the city's land area is covered with impervious surfaces. Because of the large amount of commercial  
 8 and multiple-family development, Lynnwood's proportion of impervious surface is higher than would be  
 9 found in a community having less commercial development and mostly single-family homes.

10 Lynnwood is located within at least five watersheds: Swamp Creek, Lund's Gulch, Hall/McAleeer Creek,  
 11 Perrinville Creek, and Puget Sound. Much of the environmentally sensitive land in Lynnwood is located  
 12 along Scriber Creek, which is the largest tributary in the Swamp Creek Watershed. Protecting our  
 13 remaining natural environment is an increasing concern as our community continues to grow and develop.

14 The quality of the environment that surrounds us is essential to maintaining a high quality of life for the  
 15 citizens of Lynnwood. It is important to find new and innovative ways to preserve as much of the  
 16 remaining natural environment as possible as new development occurs. Creative design with sensitivity  
 17 to the natural environment will help reduce flooding, pollution and erosion; create habitat for plants and  
 18 animals; and preserve the natural aesthetic values that often get lost in the urban landscape.

## 19 GOAL

20 The goal for the Environment Element of the Comprehensive Plan is:

21 **To protect the public health, safety and welfare by effectively protecting and managing the**  
 22 **natural environment, by mitigating unavoidable impacts, and integrating the nonhuman**  
 23 **natural environment with the urban environment.**

## 24 PLANNING CONTEXT

### 25 Growth Management Act (GMA)

26 RCW 36.70A.070 requires at least the following mandatory elements:

27 Land Use  
 28 Housing  
 29 Capital Facilities  
 30 Utilities  
 31 Transportation

32  
 33 The GMA does not require that cities prepare an Environment Element. However, state planning goals do  
 34 require the protection of the environment and the enhancement of the state's high quality of life, including  
 35 air and water quality. In addition, the GMA requires that we protect sensitive areas, which include  
 36 wetlands, aquifer recharge areas, fish and wildlife habitat areas, frequently flooded areas and geologically  
 37 hazardous areas.

1 Each of the thirteen GMA planning goals was considered in the development of the City's  
 2 Comprehensive Plan and this element of the Plan. Of those, the following goals were found to have the  
 3 greatest and/or most direct influence on environmental matters and on the Environment Element:

4 **GMA Goal 2. Reduce Sprawl:** Reduce the inappropriate conversion of undeveloped land into  
 5 sprawling, low-density development.

6 **GMA Goal 6. Property Rights:** Private property shall not be taken for public use without just  
 7 compensation having been made. The property rights of landowners shall be protected from arbitrary and  
 8 discriminatory actions.

9 **GMA Goal 7. Permits:** Applications for both state and local government permits should be processed in  
 10 a timely and fair manner to ensure predictability.

11 **GMA Goal 9. Open space and recreation:** Retain open space, enhance recreational opportunities,  
 12 conserve fish and wildlife habitat, increase access to natural resource lands and water, and develop parks  
 13 and recreation facilities.

14 **GMA Goal 10. Environment:** Protect the environment and enhance the state's high quality of life,  
 15 including air and water quality, and the availability of water.

16 **GMA Goal 11. Citizen participation and coordination:** Encourage the involvement of citizens in the  
 17 planning process and ensure coordination between communities and jurisdictions to reconcile conflicts.

## 18 **Regional Planning Policies**

19 The Puget Sound Regional Council (PSRC) established a multi-county planning policy framework, *Vision*  
 20 *2040*, as the regional growth strategy. Implementation of these policies will create a regional system of  
 21 central places served by transit.

22 Environmentally healthy communities adjacent to open space represent the environmental piece of the  
 23 vision. Important objectives of *Vision 2040* are to conserve farmlands, forests and other natural resources  
 24 when possible. Other policies are intended to conserve and enhance natural resources, to retain open  
 25 space, to conserve fish and wildlife habitat, to increase access to natural resource lands and water, and to  
 26 provide recreational opportunities. The *Comprehensive Plan* of the City of Lynnwood is consistent with  
 27 and furthers the regional plan.

## 28 **SUMMARY OF ISSUES**

29 The environmental concerns, hazards, and resource-related issues in Lynnwood fall into the following  
 30 categories: environmental protection and enhancement, conservation and recycling, natural landscape  
 31 and vegetation, geologic hazard areas, water resources, tree preservation, fish and wildlife, and air quality.

32 Each aspect of the Environment Element is interconnected with various aspects of other Comprehensive  
 33 Plan elements. For example, trees cannot survive without the proper care of the soil. Fish cannot survive  
 34 without proper care of water and stream habitat. Surface water and ground water are closely  
 35 interconnected. Certain types of wildlife cannot survive without a network of open spaces and connecting  
 36 corridors.

## 37 **ENVIRONMENTAL PROTECTION AND ENHANCEMENT**

38 Since the actions of local governments can have a direct effect on wellbeing of their residents, they must  
 39 consider the totality of the circumstances affecting the community. The City provides public facilities  
 40 and services and encourages development in appropriate locations consistent with the Growth  
 41 Management Act, Lynnwood's Comprehensive Plan and local development regulations.

1 Part of our responsibility is the protection and enhancement of the natural environment. We know that  
 2 trees help filter and improve air quality. Accordingly, the City has implemented a comprehensive tree  
 3 preservation and protection program beginning in 2004, and has been an active Tree City USA for over  
 4 10 years.

5 The city plays many different roles in preserving, protecting and enhancing the environment. It is  
 6 responsible for complying with certain state and federal regulations that apply within the community,  
 7 such as the Clean Water Act. These regulations may require Lynnwood to undertake certain activities and  
 8 manage its operations in ways that protect the environment.

9 The City is a regulator, effectively implementing and enforcing appropriate requirements through land use  
 10 and building codes. The City is also an educator that can teach by example. We show through our  
 11 decisions, capital project and daily operations how to protect the environment. The City can promote  
 12 educated personal choices and decisions that positively impact the environment.

13 Finally, the City can provide technical assistance and incentives to businesses and individuals to promote  
 14 effective environmental stewardship furthering our environmental goals.

### 15 **Best Available Science**

16 The Growth Management Act, RCW 36.70A.172, requires the City to consider best available science in  
 17 developing policies and development regulations to protect the functions and values of critical areas. The  
 18 best available science requirement will help ensure that reliable scientific information is considered when  
 19 cities and counties adopt policies and regulations related to the protection of critical areas. Science can  
 20 play a central role in:

- 21     ▪ Understanding the functions of critical areas and determining their value,
- 22     ▪ Recommending strategies to protect their functions and values, and
- 23     ▪ Identifying the risks associated with alternative approaches to their protection.

24 To be considered “best available science”, valid scientific processes must be consistent with criteria set  
 25 out in WAC 365-195-900 through WAC 365-195-925. Characteristics of a valid scientific process  
 26 include *peer review*, *documented methodology* that is clearly stated and able to be replicated, *logical*  
 27 *conclusions and reasonable inferences*, *quantitative analysis*, information that is placed in proper *context*,  
 28 and *references*.

## 29 **CONSERVATION AND RECYCLING**

30 As an employer and as a provider of services, the City of Lynnwood has many opportunities to conduct  
 31 its operations in a manner reflecting resource conservation and minimization. The City can make effective  
 32 choices that reduce consumption of disposable goods, reuse materials when appropriate, install high-  
 33 efficiency fixtures, and conserve resources.

34 One of the best ways to meet these goals is to implement conservation policies into the City’s daily  
 35 routines and purchasing guidelines. For example, allowing for electronic plan review, encouraging  
 36 double-sided copying of reports, agenda, minutes, etc., will help to reduce paper consumption. The City  
 37 also purchases recycled products, and actively recycles materials.

38 Lynnwood cooperates regionally in actively encouraging residents and businesses to reduce waste,  
 39 separate recyclables, and properly handle yard waste by engaging the services of a part time Recycle  
 40 Coordinator.

41 As the population of the City and region grows, we will face increasing demands on water, energy and  
 42 other resources. The City should continue water conservation measures, encourage energy audits, and

1 support more efficient use of resources. Benefits from these efforts include reductions in greenhouse gas  
2 emissions, additional water in rivers for wildlife and other uses, and reduction in other types of pollution.

3 The Sustainability section of the Community Character Element will focus on conservation measures as  
4 well how the City can implement sustainability measures to guide future operational and purchasing  
5 decisions, as well as how residents and other agencies doing business in Lynnwood can live and operate  
6 in a sustainable manner.

## 7 **NATURAL LANDSCAPE AND VEGETATION**

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8 Existing ordinances administered by the Community Development and Public Works departments  
9 provide standards for safe development with respect to slope stability and the suitability of soil-bearing  
10 capacity for placement of structures. Development may comply with engineering standards yet fail to  
11 minimize the disturbance of existing vegetation, soils and natural landscape, thereby affecting the use and  
12 amenities of nearby properties and the community in general (for example, by use of retaining structures,  
13 a project may be “safe” even though the natural landscape and vegetation are greatly disturbed).

14 Retention of the natural landscape, vegetation, and topsoil is a key element of Low Impact Development  
15 (LID). The benefits of LIDs include: reducing total impervious surface coverage, providing infiltration  
16 areas for overland flows, and maintaining or more closely mimicking the natural hydrologic function of a  
17 site. The City should encourage the use of LID techniques where feasible, and adopt regulations that do  
18 not preclude its implementation.

19 The geology of the Lynnwood area consists mostly of glacial material derived from repeated glacial  
20 advances and retreats over the past two million years. Each advance erased and remodeled the deposits  
21 produced since the last advance, resulting in layers of discontinuous lenses of gravel, sand, silty sand, and  
22 silt. The Frasier Glaciation was the most recent glacial advance and occurred approximately 12,000 to  
23 16,000 years ago.

## 24 **GEOLOGIC HAZARD AREAS**

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25 The City regulates development on geologically hazardous areas through its Critical Areas Regulations.  
26 These are identified as naturally occurring slopes of 40 percent or more, or other areas which the City  
27 believes to be unstable due to factors such as landslide, erosion, or seismic hazards.

### 28 **Landslide Hazard Areas**

29 Landslides occur as a result of slope conditions, instability of the soil, and loading. Lynnwood is located  
30 in the Puget Sound Lowlands, which generally are characterized by glacial soils on steep slopes. Glacial  
31 soils are prone to debris flows and shallow landslides. Lynnwood, however, contains few landslide  
32 hazard areas. Most areas of concern are located adjacent to Lund’s Gulch.

### 33 **Erosion Hazard Areas**

34 Erosion involves the transport of soil by wind, water and other natural agents. Erosion hazard areas are  
35 generally identified as particular soil types that are likely to experience severe to very severe erosion  
36 hazards. These areas are generally associated with susceptible soil types, exposure to wind and water or  
37 steep slopes.

38 Erosion and sedimentation can result in clogging streams, flooding nearby properties, smothering salmon  
39 eggs and other aquatic plants and animals. Sediment in streams also promotes the growth of algae that  
40 reduces water clarity and available oxygen.

41 The City of Lynnwood ensures the minimization of erosion primarily through plan review and the  
42 development of erosion control plans, as well as follow-up inspection of construction sites ensuring  
43 proper installation and maintenance of control measures.

## 1 Seismic Hazard Areas

2 Earthquakes occur with great frequency within the Puget Sound lowlands. Since 1840, over two hundred  
3 earthquakes have been strong enough to be felt in the Puget Sound Region. Most are small enough that  
4 we cannot feel them, but each is strong enough to weaken unstable and “fill” soils.

5 The United States is divided into seismic hazard zones based upon historic documents. These zones  
6 range from 1 to 4, with 4 representing the highest risk. Until 1994, the Puget Sound area fell into  
7 category 3. Since 1994, the United States Geologic Survey has done extensive research on the lowland  
8 area and found that the risks are greater than they had first expected. This moved us into category 4,  
9 which means that the Lynnwood building code must have the highest standards.

10 Considering earthquake hazards in land-use decisions can often reduce future earthquake damage. The  
11 use of appropriate engineering and construction design reduces the hazard, as well as involving  
12 communities in earthquake preparedness programs. The consequences of building in areas exposed to  
13 earthquake hazards should be a consideration in land use decision-making. Developers must meet all  
14 building codes related to seismic events.

## 15 WATER RESOURCES

16 Lynnwood’s water resources include all lakes, streams, wetlands, and marine shorelines within the City.  
17 All of the City’s water resources are impacted by urbanization. The City should actively protect, preserve  
18 and restore, where feasible, these areas in order to have them function in the most beneficial manner  
19 possible in an urban environment.

20 Human activity in the City of Lynnwood affects the quality of its water. Non-point source pollution is  
21 defined as pollution that enters a waterbody from diffuse origins and does not result from discernible,  
22 confined, or discrete conveyances. Sources of non-point source water pollution include: automobile  
23 emissions; animal waste; rooftops; parking lots, streets, chemicals and sediment from landscaping and  
24 lawns; construction and industrial site run-off; and smaller discharges into storm drains, including their  
25 use for improper disposal of used oil and chemicals.

26 Historically, the modification and use of our water resources has contributed to flooding, erosion,  
27 degradation of water quality, loss of fish and wildlife habitat and a loss of aesthetic beauty. We can avoid  
28 repeating past mistakes through good responsible planning and implementation of effective regulations.

29 In 1972, Congress enacted the first comprehensive national clean water legislation in response to growing  
30 public concern for serious and widespread water pollution. The Clean Water Act’s primary objective is to  
31 restore and maintain the integrity of the nation’s waters.

32 The City is regulated under the Clean Water Act as a National Pollutant Discharge Elimination System  
33 (NPDES) Phase II municipality. Generally speaking, updated NPDES regulations are issued every five  
34 years, and include a phased-in implementation timeline for the new  
35 standards. In meeting its compliance obligations, the City has developed a  
36 comprehensive stormwater program which includes public education,  
37 public involvement and participation, illicit discharge detection and  
38 elimination, construction site stormwater runoff control, post-construction  
39 stormwater management, and pollution prevention for municipal  
40 operations.

41 Lynnwood covers nearly 20 percent of the Swamp Creek Watershed,  
42 making it the largest City within the watershed. The waters of Swamp Creek have been found to have  
43 high levels of bacteria, and in 2006 a water quality improvement plan (Swamp Creek TMDL) was  
44 developed. Compliance with this plan is mandatory under the NPDES program.



1 The City also has adopted a “Surface Water Management Comprehensive Plan (September 2009) that  
2 describes the City’s water resources, proposes recommendations to identified problems, and establishes  
3 maintenance and operations needs and frequencies.

#### 4 **CRITICAL AQUIFER RECHARGE AREA**

5 There is one known Critical Aquifer Recharge Area (CARA) within the City of Lynnwood, which lies in  
6 the City’s northern-eastern portion. The well-head itself is just outside of the City along 164th Street  
7 Southwest within the city’s Municipal Urban Growth Area (MUGA).

8 This well, known alternatively as Well No.5 or the 164th Street Artesian Well (the well) is in excess of  
9 400 feet in depth and is cased to approximately 120 feet. The well flows at a rate of about 10 gallons per  
10 minute. The source of water at the well is an underground aquifer (water-bearing layer of permeable rock,  
11 sand or gravel). The well taps the Intercity Aquifer at approximately 200 feet.

12 As a courtesy to residents, Alderwood Water & Wastewater District maintains this flowing artesian well  
13 as a community source of water for those who prefer untreated water.

#### 14 **WATERSHEDS/STREAMS**

15 Lynnwood has 18 identified drainage areas, which feed several small creeks and lakes within the city.  
16 The tributaries of Swamp Creek (Scriber, Poplar and Golde Creeks) cover the largest portion of the city.  
17 Other large drainage areas include Hall Creek, Perrinville Creek, Lund’s Gulch Creek, and Meadowdale  
18 Glen Basin.

19 Lynnwood regulates development near creek through its Critical Areas Regulations (LMC 17.10). In the  
20 Lynnwood stream rating system, Scriber Creek, Swamp Creek, Hall Creek and Lund’s Creek are all  
21 Category I streams. Category II streams are smaller watercourses which flow year-round and / or are  
22 used by salmonids. Category III streams are ephemeral and not used by salmonids. All streams are  
23 required to have protective buffers, and were developed using best available science at the time of  
24 adoption.

25 Additional information on the watersheds within the City of Lynnwood can be found in the *Surface Water*  
26 *Management Comprehensive Plan (2009)* on the City’s website.

#### 27 Impaired and Threatened Water Bodies

28 The state is required to identify its polluted water bodies and submit the list to the Environmental  
29 Protection Agency (EPA). These water bodies are those that do not meet state surface water quality  
30 standards. These standards were established so water in our state can be used for fishing, swimming,  
31 boating, drinking, fish habitat and agricultural uses. Lynnwood has two water bodies identified by the  
32 Washington Department of Ecology as impaired: Scriber Lake and Swamp Creek.

33 Scriber Lake was listed in the Department of Ecology’s 2008 Washington State Water Quality  
34 Assessment, the 303(d) list for failing to meet water quality standards in regard to total phosphorous. The  
35 City studied Scriber Lake in 2012, and developed a 5-year strategy to improve water quality in the lake.  
36 Implementation will begin when approvals are received from the various oversight agencies.

37 Lynnwood covers nearly 20 percent of the Swamp Creek Watershed, making it the largest City within the  
38 watershed. The waters of Swamp Creek have been found to have high levels of bacteria, and in 2006 a  
39 water quality improvement plan (Swamp Creek TMDL) was developed. Compliance with this plan is  
40 mandatory under the NPDES program. The City is currently implementing the required and  
41 recommended actions included in this report.

#### 42 **Wetlands**

43 Wetlands perform a number of functions of value to society. They help clean and improve the water  
44 quality of surface water. They allow for flood attenuation and stream-bank overflow, keeping the

1 developed land from costly flooding. And they provide habitat for many animal and plant species, and  
2 recreational (and educational) opportunities for humans.

3 In 1989 there were approximately 107 acres of wetlands in Lynnwood. Approximately 15 percent was  
4 open water, 3 percent palustrine emergent, 40 percent palustrine scrub/shrub, and 42 percent forested.  
5 Much of the wetland areas in Lynnwood are showing signs of degradation.

6 Urbanization has affected both water quality and the functionality of our water resources. Preserving  
7 more wetlands could reduce flooding problems in and around Lynnwood while improving water quality  
8 and wildlife habitat areas.

9 Lynnwood’s Critical Areas Regulations requires that existing wetlands be identified and protected during  
10 the planning and development process. These regulations were developed using the best available science.

11 The City should continue to educate the public on the importance of wetlands, and encourage stewardship  
12 and understanding of the role wetlands play in the community.

### 13 Wetland Retention

14 The City shall ensure that no net-loss of wetlands occurs within the City. If impacts are unavoidable,  
15 those impacts are the least amount practicable, and that an area equal to or larger be provided as  
16 compensation for the loss.

### 17 Buffers

18 The Critical Areas Regulations establishes protective buffer widths adjacent to wetlands. These buffer  
19 widths were developed using best available science.

## 20 **Ground Water**

21 Ground water is the water present underground in the tiny spaces in rocks and soil. Underground areas  
22 where ground water accumulates in large amounts are called aquifers. Aquifers can store and supply  
23 water to wells and springs.

24 Most ground water moves slowly — usually no more than a few feet a day. Ground water in aquifers will  
25 eventually discharge to or be replenished by springs, rivers, wells, precipitation, lakes, wetlands, and the  
26 oceans as part of the Earth’s water cycle.

27 Ground water accounts for over 95 percent of the nation’s available fresh water resources, and is the  
28 drinking water source for half the people in this country. Many households, towns, cities, farms, and  
29 industries use ground water every day, or depend on lakes and rivers that receive part of their water  
30 supplies from ground water. In Lynnwood, though, groundwater is not the source of our public water  
31 supply.

## 32 **Stormwater**

33 Stormwater is defined as “that portion of precipitation that does not naturally percolate into the ground or  
34 evaporate, but flows via overland flow, interflow, pipes and other features of a stormwater drainage  
35 system into a defined surface waterbody, or a constructed infiltration facility.”

36 Lynnwood is relatively rich in commercial and business development. Alderwood Mall, strip commercial  
37 areas and other business areas consist of large buildings served by expansive areas of paved parking. The  
38 result is a high percentage of impervious surface and excessive stormwater runoff in some areas of  
39 Lynnwood. Flooding, water quality degradation, and erosion of streambanks from increased flows are all  
40 attributed to unregulated stormwater flows.

41 Engineered stormwater conveyance, treatment, and detention systems required of new and redevelopment  
42 projects can reduce impacts to water quality and hydrology. But they cannot replicate the natural  
43 hydrologic functions of the natural watershed that existed before development, nor can they remove

1 sufficient pollutants to replicate the water quality of pre-development conditions. Adopting regulations  
 2 allowing for the use of Low Impact Development techniques will help in retaining the benefits of the pre-  
 3 developed conditions.

4 The City will continue to comply with the ever changing requirements of the NPDES Phase II program,  
 5 and as required, will adopt regulations requiring new and re-development to  
 6 meet the applicable stormwater requirements.

7 **Frequently Flooded Areas**

8 Flooding is a naturally occurring activity, the severity of which depends on  
 9 the amount of rain received, elapsed time of the event, and the capacity of  
 10 the drainage system. Flooding can damage buildings and other  
 11 infrastructure, and also destroy aquatic and riparian habitat. Persons living  
 12 or working within a floodplain are at risk of injury from floods and from the  
 13 diseases spread by floodwaters.

14 Construction within a floodplain also may harm neighboring properties.  
 15 Buildings and embankments can backup water behind them, flooding  
 16 neighboring properties. If floodwaters destroy a building or wash away  
 17 materials stored on site, these materials can strike against other buildings or  
 18 bridges within the flood plain and damage them.

19 Lynnwood has identified the 100-year flood plain located around Scriber  
 20 Creek. The City participates in the National Flood Insurance Program which  
 21 includes adoption and enforcement of an ordinance which regulates  
 22 development within the 100-year floodplain.

23 **FISH AND WILDLIFE**

24 Wildlife diversity is often an indicator of the environmental health of the area. Protecting wildlife  
 25 requires the protection of habitat and the creation and protection of wildlife corridors between habitat  
 26 areas.

27 Through urbanization we have lost certain types of habitat that are critical for some species. This type of  
 28 habitat is referred to as critical wildlife habitat, which the state and federal government has designated as  
 29 endangered, threatened, sensitive, candidate or other priority species.

30 Wildlife habitat is judged to be fair to poor in Lynnwood, which is  
 31 typically in urban areas. Extensive wildlife corridors no longer exist.  
 32 This creates a loss of biodiversity by generating areas too small for  
 33 many species, which leads to interbreeding and disappearance of plants  
 34 and animals. The Lynnwood Parks and Recreation Department has  
 35 been working on a project to acquire lands surrounding Lund’s Gulch  
 36 Creek to create a habitat corridor. The City also has a Critical Areas  
 37 Ordinance which requires fish and wildlife priority habitat to be  
 38 protected and preserved when adjacent development occurs.

39 Use of Lynnwood’s streams by anadromous fish species was studied by  
 40 Jones and Stokes Biologists in the Stream Habitat Analysis dated  
 41 October 2000. The analysis concluded that Lynnwood’s streams do not contain anadromous fish, but  
 42 resident salmonids and other fish species are present. There are no known endangered fish species present  
 43 in Lynnwood.



1 **Priority Habitat and Species of Concern**

2 The Washington State Department of Fish and Wildlife (WDFW) publishes lists of priority habitat  
 3 species (PHS) and species of concern (SOC). The PHS list includes habitats and species that need special  
 4 consideration for conservation. Priority Species include all State Endangered, Threatened, Sensitive and  
 5 Candidate species that are listed in the Washington Administrative Codes (WAC). Additionally, the PHS  
 6 list includes vulnerable species that are susceptible to decline and those species that are of recreational,  
 7 commercial or tribal importance. Priority Habitat includes habitats that harbor diverse or unique animal  
 8 species or unique vegetation.

9 Lynnwood provides (or likely provides) habitat for the following species listed by the WDFW: *Great*  
 10 *Blue Heron, Wood Duck, Columbian Black-tailed Deer, and Bald Eagle*. Additional information about  
 11 these species is available in the Comprehensive Plan’s *Background Report*. Other species that may occur  
 12 in the Lynnwood area that are listed as Candidate or Threatened species include the following: *Little*  
 13 *Willow Flycatcher, Northern Red-legged Frog and Spotted Frog*.

14 Other species of animals that have been seen by residents and biologists include raccoon, opossum,  
 15 coyote, rabbit, squirrel, geese, muskrats, red winged blackbird, red tailed hawk, woodpeckers, numerous  
 16 rodent species and passerine birds. Passerines include such bird species as finches, warblers, tanagers,  
 17 wrens, swallows, nightingales, crows, vireos and flycatchers.

18 Only species that can tolerate an extensive amount of human disturbance and considerable noise will be  
 19 unaffected by further loss of forests, wetlands and riparian areas. Wildlife habitat has been found to be  
 20 poor to fair within the study area (Lynnwood) (RW Beck, 1998) (Salmonid Habitat Assessment, Jones  
 21 and Stokes, 2000). Extensive development has eliminated most of the suitable habitat. Extensive wildlife  
 22 corridors no longer exist. Habitat is isolated and available to a very small number of wildlife.

23 **TREE PRESERVATION**

24 **Preservation and Enhancement of Trees & Soils**

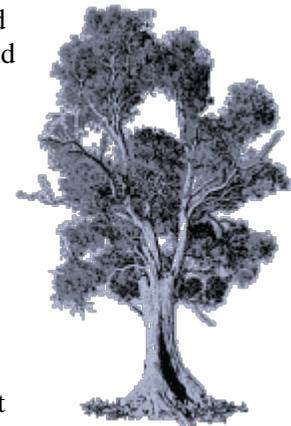
25 Trees play a valuable role in the urban environment. They help moderate  
 26 temperature, wind speed and reduce air pollution. They help to stabilize soil and  
 27 prevent erosion and provide habitat for birds and animals. Trees clean the air and  
 28 water, slow global warming, and increase aesthetics.

29 Numerous studies have also linked higher home prices with the presence of  
 30 trees on the site (Planning Advisory Service report 489-90).

31 Trees that live next to streams, lakes and wetlands provide important habitat.  
 32 The trees shade the water and reduce temperatures. Trees also help slow  
 33 stormwater and flooding during storms, therefore reducing erosion. Tree roots  
 34 stabilize stream bank soils, and the leaves and insects falling off trees into the  
 35 waterways provide food for fish and other creatures.

36 Preservation of a stand of trees instead of a few lone trees on a new development  
 37 site significantly improves the trees’ chances of survival. It has been proven that  
 38 leaving lone trees where there once were many can cause more harm than good. When the trees are  
 39 suddenly subjected to higher winds and root damage from the removal of surrounding trees they will be  
 40 more likely to blow down in windstorms.

41 The City has adopted tree regulations, and tree preservation and protection guidelines that incorporate  
 42 many of the ideas outlined above. The ordinance emphasizes that trees saved during development should  
 43 be appropriate trees for long-term survival in an urban setting. The ordinance also requires replanting of  
 44 appropriate tree species at a minimum ratio of 1:1, to provide no net loss of trees and protection of  
 45 significant trees during and after construction.



1 Replacement of trees removed from a site is another common form of urban forestry conservation.  
 2 Additionally, the City created a “tree voucher” program for its residents. This program encourages tree  
 3 planting by paying for trees to be planted on private property. The trees are paid for by development fees  
 4 associated with tree removal.

## 5 **AIR QUALITY**

6 Lynnwood’s air quality is monitored and regulated by the Puget Sound Clean Air Agency (PSCAA),  
 7 Puget Sound Regional Council, and the Washington State Department of Commerce. Good air quality  
 8 refers to clean, clear and unpolluted air. The quality of the air depends on the amount of  
 9 pollutants, the rate at which they are released from various sources, and how quickly pollutants  
 10 disperse.

11 The amounts of ozone, particulate matter and carbon monoxide (CO) are increasing in our environment.  
 12 Population growth leads to higher traffic volumes which impact Lynnwood’s air quality more than any  
 13 other factor. To measure existing air quality, PSCAA maintains a network of monitoring stations  
 14 throughout the Puget Sound region. Based on monitoring information, regions are designated as  
 15 “attainment” or “non-attainment” areas for air pollutants. Once an area has been designated as a non-  
 16 attainment area it is considered as an air quality “maintenance area” until attainment has been reached for  
 17 10 consecutive years. The City of Lynnwood is within a carbon monoxide and ozone “maintenance”  
 18 area, both established in 1996 by PSCAA.

19 Considering Lynnwood's high volumes of traffic, congestion and close proximity to major freeways, air  
 20 quality is a concern, particularly at congestion points. Gasoline and diesel-powered vehicles and  
 21 equipment are a large source of air pollution in Lynnwood. Air pollution also contributes to water  
 22 pollution when rainwater picks up air pollutants and runs off into water bodies.

23 The City will take a lead role in encouraging other modes of transportation by using more efficient  
 24 vehicles, electricity and biofuel vehicles in its own fleet and by promoting transit use among its  
 25 employees with transit subsidies and restrictive parking policies. While the City is not the regulator of  
 26 automobile emissions, the City can encourage alternatives to gasoline powered automobile transportation  
 27 by promoting improvements to the public transit system, increasing incentives for car-pooling, bicycling  
 28 and walking, and by limiting the amount of parking that may be included in some new developments. The  
 29 City can advocate with Community Transit and Sound Transit in designing public transportation systems  
 30 and stations that help maximize the use of such systems.

### 31 **Ozone**

32 Ozone is a highly reactive form of oxygen that is created by sunlight activated chemical transformations  
 33 of hydrocarbons and nitrogen oxides in the air. Lynnwood is included in the PSCAA ozone “maintenance  
 34 area.”

### 35 **Particulate Matter**

36 Particulate matter is made up of a number of components, including acids (such as nitrates and sulfates),  
 37 organic chemicals, metals, and dust particles. There are two categories for measuring the amount of  
 38 particulate matter in the air: particulate matter less than or equal to 10 micrometers in diameter (PM10)  
 39 and fine particulate matter less than or equal to 2.5 micrometers in diameter (PM 2.5). Industrial  
 40 activities, motor vehicles and wood burning most commonly produce particulate matter. Lynnwood is  
 41 included in a PM10 “maintenance area.”

1 **Carbon Monoxide**

2 Carbon monoxide (CO) is a by-product of incomplete combustion, largely generated by motor vehicles  
 3 and wood burning. CO is the pollutant of greatest concern because it is being emitted in the largest  
 4 measurable quantity.

5 There are two air quality standards for CO, a 1-hour average of 35 parts per million (ppm) and an 8-hour  
 6 average of 9 ppm. If these levels are exceeded more than once a year the attainment standard will be  
 7 violated. This requires PSCAA to develop a work plan to comply with the standards.

8 **Greenhouse Gas Emissions**

9 The Environmental Protection Agency is now required to consider carbon dioxide (CO<sub>2</sub>) to be an air  
 10 pollutant under the Clean Air Act, putting control of this most prevalent greenhouse gas on an equal  
 11 footing with the traditional criteria pollutants. In accordance with this finding, the City will evaluate the  
 12 greenhouse gas emissions of proposed public and private actions as part of the State Environmental  
 13 Policy Act (SEPA) review.

14 **GOALS, POLICIES & STRATEGIES**

**GOAL**

To protect the public health, safety and welfare by effectively managing the natural environment, by mitigating unavoidable impacts, and integrating the nonhuman natural environment with the urban environment.

15  
 16 **Goal ER-1: Environmental Protection and Enhancement: Be a city government that strives to improve, protect, or when unavoidable, reduce impact to the natural environment, consider impacts of policies on the natural environment, and lead educational programs about the natural environment.**

20 **Policy ER-1.1** Meet all state and federal mandates regarding stormwater and critical areas.



22 **Strategy ER-1.1** Ensure City government operations comply with applicable regulations.

23 **Strategy ER-1.2** Evaluate the environmental impacts of proposed regulations.

24 **Strategy ER-1.3** Consider and integrate best available science in development regulations that are  
 25 concerned with critical areas.

26 **Strategy ER-1.4** Promote and coordinate educational programs to raise public awareness of  
 27 environmental issues, encourage respect for the environment and show how individual actions and the  
 28 cumulative effects of a community’s actions can have significant effects on the environment.

29 **Strategy ER-1.5** Cooperate with other local governments, state, and federal agencies tribal entities, and  
 30 nonprofit organizations to protect and enhance the environment.

31 **Goal ER-2: Conservation of Resources and Recycling: Be a city government that strives to reduce consumption of resources, minimizes waste, reduces pollution, and promotes conservation.**

33 **Policy ER-2.1** Recycle and conserve resources.



35 **Strategy ER-2.1** Design, construct, and operate City facilities to maximize efficiency and conservation  
 36 opportunities, limit waste, and prevent unnecessary pollution.

1 **Strategy ER-2.2** Minimize the materials used and waste generated from City facilities .

2 **Strategy ER-2.3** Use, where feasible, new technologies that demonstrate ways to reduce environmental  
3 impacts.

4 **Strategy ER-2.4** Promote energy and water conservation.

5 **Goal ER-3: Natural Landscape and Vegetation: Retain existing vegetation, soils and natural**  
6 **landscape to the maximum extent feasible.**

7 **Policy ER-3.1** Preserve trees, topsoil, and native vegetation.

8 ○ ○ ○

9 **Strategy ER-3.1** Encourage land development practices that minimize disturbance to vegetation, retains  
10 native soils, and the natural landscape. Avoid disturbance of steep slopes where the erosion potential and  
11 opportunity for landslides meets protection guidelines.

12 **Strategy ER-3.2** Ensure prompt stabilization of soil after grading and vegetation removal.

13 **Strategy ER-3.3** Retain trees through application and enforcement of the City’s Tree Regulations.

14 **Strategy ER-3.4** Avoid clearing of native vegetation that contributes to slope stability, reduces erosion,  
15 shades shorelines, buffers wetlands and stream corridors, and provides aquatic habitat.

16 **Strategy ER-3.5** Encourage the incorporation of open space into development through setbacks, view  
17 corridors and recreation areas. Preserve areas with natural or scenic value within development sites to  
18 achieve open space amenities.

19 **Strategy ER-3.6** Encourage the use of Low Impact Development Techniques where feasible.

20 **Goal ER-4: Geologic Hazard Areas: Protect geologic hazard areas including steep slopes with**  
21 **significant landslide or erosion potential, soils unsuited to development, and areas of significant**  
22 **seismic hazard.**

23 **Policy ER-4.1** Enforce the Geologically Hazardous Areas provisions of the Critical Areas Regulations.

24 ○ ○ ○

25 **Strategy ER-4.1** Manage development in geologic hazard areas to minimize erosion and landslide  
26 probabilities during both construction and use.

27 **Goal ER-5: Water Resources: Improve water quality and protect wetlands, natural streams and**  
28 **lakes, riparian vegetation, and buffers, reduce point and non-point source pollution.**

29 **Policy ER-5.1** Review and update, as necessary and as required by state and federal mandate, the City's  
30 Critical Areas Ordinance to ensure protection of known critical areas using the best available science.

31 ○ ○ ○

32 **Strategy ER-5.1.1** Enforce and apply the City’s Critical Areas Regulations.

33 **Strategy ER-5.1.2** Seek to preserve wetlands and stream corridors as open space.

34 **Strategy ER-5.1.3** Ensure that no net-loss of wetlands occurs within the City. If impacts are  
35 unavoidable, those impacts are the least amount practicable, and that an area equal to or larger be  
36 provided as compensation for the loss.

37 **Strategy ER-5.1.4** Enhance and / or encourage restoration of degraded wetlands where possible.

38 **Strategy ER-5.1.5** Adopt and enforce regulations to protect identified Critical Aquifer Recharge Areas.

39 **Strategy ER-5.2** Implement provisions of the NPDES Phase II Municipal Permit

- 1 **Strategy ER-5.2.1** Implement practices to minimize stormwater impacts associated with the use of
- 2 pesticides on City-owned property, and provide education for other landowners to do the same.
- 3 **Strategy ER-5.2.2** Protect and enhance surface water quality through development regulations, education
- 4 and outreach, and effective maintenance and operations.
- 5 **Strategy ER-5.2.3** Encourage Low Impact Development stormwater treatment technologies in the
- 6 development of roadways, parking lots, public plazas, sidewalks, and pathways where practicable.
- 7 **Strategy ER-5.2.4** Support and promote public education to protect and improve surface and ground
- 8 water resources by: Increasing the public’s awareness of potential impacts on water bodies and water
- 9 quality; Encouraging proper use of fertilizers and chemicals on landscaping and gardens; Encouraging
- 10 proper disposal of materials; Educating businesses on surface and ground water protection best
- 11 management practices in cooperation with other government agencies and other organizations; Educating
- 12 the public and businesses on how to substitute materials and practices with a low risk of surface and
- 13 ground water contamination for materials and practices with a high risk of contamination.
- 14 **Strategy ER-5.2.5** Encourage development practices that integrate and preserve the city’s watercourses
- 15 and wetlands.

**Goal ER-6: Fish and Wildlife: Protect urban forests and wildlife habitats, including salmon habitat as feasible, and in balance with the requirements of an urban area.**

- 18 **Policy ER-6.1** Maximize, as feasible, fish and wildlife habitat.
- 19 □ □ □
- 20 **Strategy ER-6.1** Where suitable habitat potential exists, work to maintain and enhance that habitat.
- 21 **Strategy ER-6.2** Comply with the Endangered Species Act.
- 22 **Strategy ER-6.3** On city property, both on-land and in-water, cultivate native ecosystems that
- 23 encourage native wildlife and encourage removal of invasive, non-native vegetation.
- 24 **Strategy ER-6.4** Assist private property owners in maintaining the health of natural habitats on their
- 25 property through a combination of education, incentives and development review practices.
- 26 **Strategy ER-6.5** Encourage environmental protection and enhancement practices among Lynnwood’s
- 27 residents and City personnel through education, training, and continued volunteer participation in the care
- 28 of Lynnwood’s plant and wildlife habitats. Involve citizens, community groups, and nonprofit
- 29 organizations in the care and enhancement of the urban forests and wildlife habitat.
- 30 **Strategy ER-6.6** Consider best available science in making decisions regarding habitat preservation and
- 31 restoration efforts.

**Goal ER-7: Urban Forestry: Support a robust and healthy, appropriate tree canopy including sizable tree clusters, as well as native trees.**

- 34 **Policy ER-7.1** Implement the City’s tree protection and preservation regulations and monitor and update
- 35 these regulations as necessary.
- 36 □ □ □
- 37 **Strategy ER-7.1** Strive to achieve a net increase of healthy, diverse tree cover throughout the city by
- 38 requiring developers to save trees worthy of retention and to replant appropriate species for the urban
- 39 environment at a ratio of at least one tree planted for every tree removed.
- 40 **Strategy ER-7.2** To help preserve the natural environment and Lynnwood’s remaining forested lands,
- 41 Lynnwood shall promote the retention of sizable tree clusters, forested slopes, treed gullies and specimen

1 trees that are of species that are long-lived, not dangerous, well-shaped to shed wind and located so that  
 2 they can survive within a development without other nearby trees.

3 **Strategy ER-7.3** Street trees within street right-of-way shall be encouraged along appropriate arterial  
 4 streets and local streets.

5 **Strategy ER-7.4** Street trees shall be allowed to be planted in planter strips or tree wells located  
 6 between the curb and sidewalk, where feasible. Tree species and planting techniques shall be appropriate  
 7 for the street.

8 **Strategy ER-7.5** On City property, protect selected trees, utilize proper pruning and tree care, and  
 9 improve conditions in order to achieve long-term benefits from the urban forest – and encourage private  
 10 landowners to do the same.

11 **Strategy ER-7.6** Lynnwood should provide information to community residents and property owners to  
 12 encourage them to plant appropriate trees on their properties and to care for the trees properly.

13 **Strategy ER-7.7** Continue to encourage planting trees through the distribution of the Tree Voucher  
 14 program.

15 **Goal ER-8: Air Quality: Raise Lynnwood’s level of livability by supporting efforts to reduce**  
 16 **urban environmental air pollution. Increase usage of electricity and biofuel in City fleet vehicles**  
 17 **and construction equipment to reduce associated air pollution.**

18 **Policy ER-8.1** Support the reduction of urban environmental air pollution.



19  
 20 **Strategy ER-8.1.1** Ensure regulations allow for necessary infrastructure to support charging of electric  
 21 vehicles, at both public and private facilities.

22 **Strategy ER-8.1.2** Cooperate with regional transit authorities (Sound Transit, Community Transit, etc...) to encourage the use of various transit options, including carpools, busses, and light rail.

23  
 24 **Strategy ER-8.1.3** Implement provision of the City’s Non-Motorized Plan to encourage reduction in  
 25 vehicle trips and associated air pollution.

26 **Strategy ER-8.1.4** Comply with federal and state air pollution control laws in cooperation with the Puget  
 27 Sound Clean Air Agency, the Puget Sound Regional Council, and Washington State Department of  
 28 Commerce.

29 **Strategy ER-8.1.5** Investigate and work to mitigate the emissions of any odors which are not otherwise  
 30 prohibited by law, but which are detrimental or disturbing to surrounding property or individuals.

31 **Strategy ER-8.1.6** The City shall evaluate the greenhouse gas emissions of proposed public and private  
 32 actions as part of the State Environmental Policy Act (SEPA) review. The City may exercise its  
 33 substantive authority under SEPA to condition or deny proposed actions in order to mitigate associated  
 34 individual or cumulative impacts to global warming.

35 **Policy ER-8.2** Develop a plan supporting electricity and biofuel usages for City fleet vehicles and  
 36 construction equipment.



37  
 38 **Strategy ER-8.2.1** Target forty percent electricity or biofuel usage for operating City fleet vehicles and  
 39 construction equipment by 2018.

40 **Strategy ER-8.2.2** Install outlets capable of charging electric vehicles in all City fleet parking and  
 41 maintenance facilities.



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