

**PLANNING COMMISSION AGENDA ITEM**  
CITY OF SHORELINE, WASHINGTON

**AGENDA TITLE:** Comprehensive Plan Update: Natural Environment, Capital Facilities, and Utilities Elements  
**DEPARTMENT:** Planning & Community Development  
**PRESENTED BY:** Miranda Redinger, Associate Planner  
Steve Szafran, AICP, Associate Planner  
Rachael Markle, AICP, Director P&CD

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|---|---|--|
| <input type="checkbox"/> Public Hearing | <input checked="" type="checkbox"/> Study Session | <input type="checkbox"/> Recommendation Only |
| <input type="checkbox"/> Discussion     | <input type="checkbox"/> Update                   | <input type="checkbox"/> Other               |

**INTRODUCTION & BACKGROUND**

On January 5, 2012, staff and Commissioners discussed the proposed process for the Comprehensive Plan Update and public involvement. To date, Commissioners have held preliminary discussions about all 10 elements that make up the main body of the Comprehensive Plan. Natural Environment was discussed on April 4, and Capital Facilities and Utilities were discussed on April 19. Tonight's meeting is an opportunity to discuss proposed revisions since original comments were incorporated, with a focus on new policies to include.

**DISCUSSION**

***Revisions:***

Changes that were discussed during the above-mentioned meetings have been accepted, so the comments in tonight's packet represent new feedback based on Commissioner, staff, and other stakeholder comment. The Natural Environment Element was reviewed by the Emergency Management Coordinator and the Surface Water Manager. The Capital Facilities and Utilities Elements were edited by the Permit Services Manager, and reviewed by staff in Public Works (Transportation Planners, Capital Projects Managers, and others), Community Services, and Parks, with additional feedback from Police and Fire. This packet will be sent to water, wastewater, and utility providers, and the School Board so they will have an opportunity to submit written or oral comment for the meeting.

***Big Picture Questions:***

Staff reviewed the list prepared for the joint Planning Commission/City Council dinner meeting on July 9. The only question for Natural Environment dealt with Transfer of Development Rights, and those policies have been reinserted. The only question

Approved By: Project Manager MR Planning Director Rm

identified for Capital Facilities and Utilities related to whether Council had specific direction regarding potential acquisitions. There was not time to discuss this at the dinner meeting.

**Next Steps:**

At the conclusion of tonight's meeting, the Commission will have reviewed 7 of the 10 Comprehensive Plan Elements twice. The 3 that were only reviewed once are Transportation, Parks, and Shoreline Master Program, and the language in these elements is based on plans adopted by Council. In September, Commissioners will review a complete draft document, possibly in the InDesign format that will be used for the final version. Once Commissioners are comfortable with content, staff will schedule and notice a public hearing, tentatively on October 4. Following Commission recommendation, the draft document will be forwarded to Council, with the goal of adoption on December 10.

If you have questions or comments prior to the meeting, please contact Miranda Redinger at (206) 801-2513 or by email at [mredinger@shorelinewa.gov](mailto:mredinger@shorelinewa.gov).

**ATTACHMENTS**

- Attachment A- Natural Environment Element, Goals & Policies, track change version
- Attachment B- Natural Environment Element, Goals & Policies, clean version
- Attachment C- Natural Environment Element, Analysis, track change version
- Attachment D- Natural Environment Element, Analysis, clean version
- Attachment E- Capital Facilities Element, Goals & Policies, track change version
- Attachment F- Capital Facilities Element, Goals & Policies, clean version
- Attachment G- Capital Facilities Element, Analysis, track change version
- Attachment H- Capital Facilities Element, Analysis, clean version
- Attachment I- Utilities Element, Goals & Policies, track change version
- Attachment J- Utilities Element, Goals & Policies, clean version
- Attachment K- Utilities Element, Analysis, track change version
- Attachment L- Utilities Element, Analysis, clean version

# Natural Environment Element Goals & Policies

## Introduction

This Element contains the goals and policies necessary to support the City's responsibility for protection of the natural environment. Previously, these policies were housed in the Land Use Element, but were separated into their own element in the 2012 update to support the City's emphasis on sustainability, with major impetus provided by the 2007 Council goal to "Create an Environmentally Sustainable Community."

To demonstrate this commitment to sustainability, the City has also signed on to the U.S. Conference of Mayor's Climate Protection Agreement, the Cascade Agenda, the Green City Partnership Program, and the King County- Cities Climate Collaboration. In 2008, the City adopted an Environmental Sustainability Strategy and created a Green Team tasked with its implementation. In 2012, with funding from the federal Energy Efficiency and Conservation Block Grant, the City launched a webpage to track indicators of environmental sustainability over time. Information displayed on this webpage ([www.shorelinewa.gov/forevergreen](http://www.shorelinewa.gov/forevergreen)) will inform citizens and decision-makers about progress of goals and policies contained in this element.

## Relevant Framework Goals from Vision 2029

FG7: Conserve and protect our environment and natural resources, and encourage restoration, environmental education and stewardship.

FG8: Apply innovative and environmentally sensitive development practices.

## Natural Environment Goals

- Goal NE I:** Minimize adverse impacts on the natural environment through leadership, policy, and regulation, and address impacts of past practices where possible/feasible.
- Goal NE II:** Lead and support efforts to protect and improve the natural environment, protect and preserve environmentally critical areas, and minimize pollution and the waste of energy and materials.
- Goal NE III:** Conserve soil resources and protect people, property and the environment from geologic hazards, including steep slope areas, landslide hazard areas, seismic hazard areas, and erosion hazard areas by regulating disturbance and development.
- Goal NE IV:** Protect, enhance and restore habitat of sufficient diversity and abundance to sustain existing indigenous fish and wildlife populations.

**Comment [m1]:** Here is an example of where the analysis section should document what we are doing to ensure this happens – examples of VMP's, LID projects, Green Streets, etc.

**Goal NE V:** Protect clean air and the climate for present and future generations through the reduction of greenhouse gas emissions and the promotion of efficient and effective solutions for transportation, clean industries, and development.

**Goal NE VI:** Manage the storm and surface water system through the preservation of natural systems and structural solutions in order to:

- ~~Protect water quality;~~
- ~~Provide for public safety and services;~~
- Preserve and enhance fish and wildlife habitat, and critical areas;
- Maintain a hydrologic balance; and
- Prevent property damage; and
- ~~Provide for public safety and services.~~

**Goal NE VII:** ~~Continue to mandate natural and on-site solutions, such as infiltration, rain gardens, etc. be proven infeasible before considering engineered solutions, such as detention.~~

**Comment [b2]:** This is accomplished through regulation; I don't think it should be a goal

**Goal NE VIII:** Preserve, protect, and, where feasible, restore wetlands, shorelines, and streams for wildlife, appropriate human use, and the maintenance of hydrological and ecological processes.

**Goal NE ~~VIII~~IX:** Use education and outreach to increase understanding, stewardship and protection of the natural environment.

## Land Use Policies

### General

**NE 1:** Preserve suburban fringe, rural areas, open spaces, and agricultural lands in the region through infill development in existing communities.

**NE 2:** Preserve environmental quality by taking into account the land's suitability for development, and directing intense development away from critical areas.

**NE 3:** Balance the conditional right of private property owners to develop and alter their land with ~~the~~ protection of native vegetation and critical areas.

**NE 4:** Conduct all City operations ~~in a manner that~~ minimizes adverse environmental impacts, by reducing consumption and waste of energy and materials; minimizing use of toxic and polluting substances; reusing, reducing, and recycling; and disposing of all waste in a safe and responsible manner.

**NE 5:** Support, promote, and lead public education and involvement programs to raise awareness about environmental issues, motivate individuals and community organizations to protect the environment, and provide opportunities for the community and visitors to practice stewardship and enjoy Shoreline's unique environmental features.

**NE 6:** Provide incentives for site development that minimizes environmental impacts. Incentives may include density bonuses for cluster development and a transfer of development rights (TDR) program

**Comment [DM3]:** On 7/19/12 the PC unanimously agreed to retain language related to TDR. This rewrites the former policy.

**NE 7:** Coordinate with other governmental agencies, and non-profit organizations to protect and enhance the environment.

**NE 87:** Continue to identify and map the location of all critical areas and buffers located within Shoreline. If there is a conflict between the mapped location and field information collected during project review, field information that is verified by the City shall govern.

**NE 89:** Environmentally critical areas may be designated as open space and should be conserved and protected from loss or degradation wherever feasible.

**NE 109:** Encourage the use of “green” building methods and materials (such as those specified under certification systems like LEED, Built Green, Living Building, etc.) that may reduce impacts on the built and natural environment,

**Geological and Flood Hazard Areas**

**NE 101:** Mitigate drainage, erosion, siltation, and landslide impacts while encouraging native vegetation.

**NE 124:** In seismic hazards areas, seek to minimize risks to people and property.

**NE 132:** Research information available on tsunami hazards and map the tsunami hazard areas located in Shoreline. Consider the creation of development standards and emergency response plans for tsunami hazard areas to ~~avoid~~minimize tsunami-related impacts.

**NE 134:** Promote educational efforts to inform landowners about site development, drainage, and yard maintenance practices that ~~impact~~affect slope stability and water quality.

**NE 145:** Resolve long standing flooding impacts and prevent new flooding impacts.

**Comment [m4]:** DoMo: What does this goal mean?

**NE 165:** Prioritize the resolution of flooding problems based on ~~property damage~~, public safety risk, property damage, and flooding frequency.

**NE 167:** Promote public education in ~~Neighborhoods and Business district~~ areas that are susceptible to geological and flood hazards to encourage preparation that could mitigate the impacts of a potential event ~~these hazards to them~~.

**Vegetation Protection**

**NE 168:** Develop educational materials, incentives, policies, and regulations to conserve native vegetation on public and private land for wildlife habitat, erosion control and human enjoyment. The city should establish regulations to protect mature trees and other native vegetation from the negative impacts of residential and commercial development, including short-plat development.

- | **NE 197:** Minimize removal of healthy trees.
- | **NE 1820:** ~~Minimize If development is allowed in an environmentally critical area or critical area buffer, clearing and grading should be minimized if development is allowed in an environmentally critical area or critical area buffer.~~
- | **NE 219:** Identify and protect wildlife corridors prior to, during, and after land development through public education, incentives, regulation, and code enforcement.
- | **NE 220:** Encourage the use of native and low maintenance vegetation to provide additional secondary habitat, reduce water consumption, and reduce the use of pesticides, herbicides, and fertilizer.

### **Wetlands and Habitat Protection**

- | **NE 213:** Participate in regional species protection efforts, including salmon habitat protection, enhancement, and restoration.
- | **NE 224:** ~~Preserve~~ Preserve Critical wildlife habitat, including habitats or species that have been identified as priority species or priority habitats by the Washington Department of Fish and Wildlife, ~~will be preserved~~ through regulation, acquisition, incentives and other techniques. Habitats and species of local importance will also be protected in this manner.
- | **NE 235:** ~~Pre~~Conserve wetlands, and aquatic and riparian habitats in a natural state to protect native vegetation, water quality, habitat for fish and wildlife, and hydrologic function.
- | **NE 246:** Strive to achieve a level of no net loss of wetlands function, area, and value within each drainage basin.
- | **NE 257:** Restore ~~Existing~~ degraded wetlands ~~should be restored~~ where feasible.
- | **NE 268:** Focus on Wwetland and habitat restoration efforts ~~should focus on those areas that will result in the greatest benefit to the resource, and that have been identified by the City as priority for restoration.~~

### **Streams and Water Resources**

- | **NE 279:** Support and promote basin stewardship programs to prevent adverse surface water impacts and to identify opportunities for ~~restoration~~watershed improvements.
- | **NE 2308:** Stream alterations, other than habitat improvements, should only occur when it is the only means feasible and should be the minimum necessary.
- | **NE 2931:** ~~Engage community to identify~~Identify and prioritize potential stream ~~restoration~~enhancement projects through surface water basin planning and its public participation process. ~~Restoration-Enhancement~~ efforts may include the

daylighting of streams ~~which~~that have been diverted into underground pipes or culverts, ~~removal of anadromous fish barriers, etc~~or other options to restore aquatic environments to a natural state.

~~NE 30: Work with citizen volunteers, state and federal agencies, and Indian tribes to identify, prioritize, and eliminate physical barriers and other impediments to anadromous fish spawning and rearing habitat.~~

**Comment [m5]:** DoMo: Why is this goal slated for deletion?

**NE 342:** Preserve and protect natural surface water storage sites, such as wetlands, aquifers, streams, and water bodies that help regulate surface flows and recharge groundwater.

**NE 323:** Conserve and protect groundwater resources.

**NE 343:** Provide additional public access to Shoreline’s natural features, including the Puget Sound shoreline. The City will attempt to reach community and neighborhood consensus on any proposal to improve access to natural features where the proposal has the potential to negatively impact private property owners.

**Clean Air and Climate Protection**

**NE 345:** Support federal, state, and regional policies intended to protect clean air in Shoreline and the Puget Sound Basin.

**NE 356:** Support the expansion of public mass transit and encourage cycling and walking in the City to reduce greenhouse gas emissions, and as an alternative to dependence on individual vehicles.

**NE 367:** Reduce the amount of air-borne particulates through continuation and possible expansion of the street-sweeping program, dust abatement on construction sites, education to reduce burning of solid and yard waste, and other methods that address particulate sources.

**Comment [m6]:** DoMo: I liked Juniper’s comment about regulating wood burning stoves or requiring EPA certified wood stoves. It wouldn’t be a goal perhaps, but a regulation to consider that supports this goal.

**NE 378:** Support and implement the Mayor’s Climate Protection Agreement, other climate pledges and commitments undertaken by the City, and other multi-jurisdictional efforts to reduce greenhouse gasses and address climate change, sea-level rise, and other impacts of global warming.

**Sustainability**

**NE 389:** Establish policy decisions and priorities considering ~~their~~long-term impacts on ~~the~~ natural and human environments.

~~NE 3940: Lead by example and encourage other community stakeholders to commit to sustainability. Learn from other’s success and~~Design our programs, policies, facilities, and practices as models to be emulated ~~by other organizations and individuals.~~

**NE 401:** Recognize that a sustainable community requires and supports economic development, human health, and social benefit. Make decisions using the “triple bottom line” approach to sustainability (environment, economy, and equity).

**NE 412:** Promote community awareness, responsibility, and participation in sustainability efforts through public outreach programs and other opportunities for change. Serve as catalyst and facilitator for partnerships to leverage change in the broader community.

**NE 423:** Apply adaptive management to efforts and clearly communicate findings to the Shoreline community- individuals, businesses, non-profits, utilities, and City decision-makers. Use analytical and monitoring tools and with performance targets to evaluate investments.

**Comment [m7]:** DoMo: Do we need a definition for this in the definition appendix? I didn't know what it meant until I Googled it, which helped me comprehend the goal as a whole. A definition would educate people who don't know much about sustainability principles, and let anyone know by reading the definitions that this is something the City is committed to doing.

**NE 44:** Remove regulatory barriers and create incentives to encourage green building practices.

**NE 45:** Strive to utilize green infrastructure whenever feasible to mimic natural processes.

**NE 46:** Create incentives to encourage enhancement and restoration of wildlife habitat on both public and private property through existing programs, such as the backyard wildlife habitat stewardship certification program.

**Comment [m8]:** These are an attempt to capture points below without being redundant to other policies. Please let me know if you think something is missing or could be stated more strongly.

**Natural Environment Policy Recommendations from SE Neighborhoods Subarea**

**Plan:**

NE: Remove regulatory barriers and create incentives to encourage the use of innovative methods of protecting natural resources (solar power for lighting outside space, green storm water conveyance systems, new recycling options).

NE: Create incentives to encourage innovative strategies to enhance the natural environment on and around developed sites (green roof and green wall techniques, hedgerow buffers, contiguous green corridors through neighborhoods, natural storm water conveyance systems).

NE: When redeveloping a site, encourage incorporation of measures that improve or complement the community's natural assets such as its tree canopy, surface water elements, wildlife habitat, and open space.

NE: Create incentives to encourage enhancement and restoration of wildlife habitat on both public and private property through existing programs such as the backyard wildlife habitat stewardship certification program.

NE: Develop technical resources for better understanding of overall hydrology, including the locations of covered streams in the subarea, and recommend actions and measures to address existing stormwater drainage problems.

NE: Create incentives to plan all remodel and new development around substantial trees and groves of trees to preserve tree canopy.

NE: Retain and establish new trees, open spaces, and green belts.

NE: Use green buffers of specific buffer area to building height ratio between different land uses, especially where transition zoning is not possible.

**What other additions should we make?**

- **Green building?**



- **Green infrastructure?**
- **Greenhouse gas emissions?**
- **Other Climate recommendations?**
- **Recommendations from Surface Water Master Plan?**
- **Recommendations from Emergency Preparedness Plan?**

**Comment [m9]:** See policy NE

**Comment [m10]:** Staff will continue to think about appropriate policy language in conjunction with development of Climate Action Plan

**Comment [m11]:** These have been incorporated

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**Goal NE V:** Protect clean air and the climate for present and future generations through reduction of greenhouse gas emissions and promotion of efficient and effective solutions for transportation, clean industries, and development.

**Goal NE VI:** Manage the stormwater system through the preservation of natural systems and structural solutions in order to:

- Protect water quality;
- Provide for public safety and services;
- Preserve and enhance fish and wildlife habitat, and critical areas;
- Maintain a hydrologic balance; and
- Prevent property damage.

**Goal NE VII:** Preserve, protect, and, where feasible, restore wetlands, shorelines, and streams for wildlife, appropriate human use, and the maintenance of hydrological and ecological processes.

**Goal NE VIII:** Use education and outreach to increase understanding, stewardship and protection of the natural environment.

## ***Land Use Policies***

### **General**

**NE 1:** Preserve suburban fringe, rural areas, open spaces, and agricultural lands in the region through infill development in existing communities.

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**NE 5:** Support, promote, and lead public education and involvement programs to raise awareness about environmental issues, motivate individuals and community organizations to protect the environment, and provide opportunities for the community and visitors to practice stewardship and enjoy Shoreline's unique environmental features.

**NE 6:** Provide incentives for site development that minimizes environmental impacts. Incentives may include density bonuses for cluster development and a transfer of development rights (TDR) program

**NE 7:** Coordinate with other governmental agencies, and non-profit organizations to protect and enhance the environment.

- NE 8:** Continue to identify and map the location of all critical areas and buffers located within Shoreline. If there is a conflict between the mapped location and field information collected during project review, field information that is verified by the City shall govern.
- NE 9:** Environmentally critical areas may be designated as open space and should be conserved and protected from loss or degradation wherever feasible.
- NE 10:** Encourage the use of “green” building methods and materials (such as those specified under certification systems like LEED, Built Green, Living Building, etc.) that may reduce impacts on the built and natural environment,

### **Geological and Flood Hazard Areas**

- NE 11:** Mitigate drainage, erosion, siltation, and landslide impacts while encouraging native vegetation.
- NE 12:** In seismic hazard areas, seek to minimize risks to people and property.
- NE 13:** Research information available on tsunami hazards and map the tsunami hazard areas located in Shoreline. Consider the creation of development standards and emergency response plans for tsunami hazard areas to minimize tsunami-related impacts.
- NE 14:** Promote educational efforts to inform landowners about site development, drainage, and yard maintenance practices that affect slope stability and water quality.
- NE 15:** Resolve long standing flooding impacts and prevent new flooding impacts.
- NE 16:** Prioritize the resolution of flooding problems based on public safety risk, property damage, and flooding frequency.
- NE 17:** Promote public education in areas that are susceptible to geological and flood hazards to encourage preparation that could mitigate impacts of a potential event.

### **Vegetation Protection**

- NE 18:** Develop educational materials, incentives, policies, and regulations to conserve native vegetation on public and private land for wildlife habitat, erosion control and human enjoyment. The city should establish regulations to protect mature trees and other native vegetation from the negative impacts of residential and commercial development, including short-plat development.
- NE 19:** Minimize removal of healthy trees.
- NE 20:** Minimize clearing and grading if development is allowed in an environmentally critical area or critical area buffer.

- NE 21:** Identify and protect wildlife corridors prior to, during, and after land development through public education, incentives, regulation, and code enforcement.
- NE 22:** Encourage the use of native and low maintenance vegetation to provide additional secondary habitat, reduce water consumption, and reduce the use of pesticides, herbicides, and fertilizer.

### **Wetlands and Habitat Protection**

- NE 23:** Participate in regional species protection efforts, including salmon habitat protection, enhancement, and restoration.
- NE 24:** Preserve critical wildlife habitat, including habitats or species that have been identified as priority species or priority habitats by the Washington Department of Fish and Wildlife, through regulation, acquisition, incentives and other techniques. Habitats and species of local importance will also be protected in this manner.
- NE 25:** Conserve wetlands, and aquatic and riparian habitats in a natural state to protect native vegetation, water quality, habitat for fish and wildlife, and hydrologic function.
- NE 26:** Strive to achieve a level of no net loss of wetlands function, area, and value within each drainage basin.
- NE 27:** Restore existing degraded wetlands where feasible.
- NE 28:** Focus on wetland and habitat restoration efforts that will result in the greatest benefit to the resource, and have been identified by the City as priority for restoration.

### **Streams and Water Resources**

- NE 29:** Support and promote basin stewardship programs to prevent adverse surface water impacts and to identify opportunities for watershed improvements.
- NE 30:** Stream alterations, other than habitat improvements, should only occur when it is the only means feasible and should be the minimum necessary.
- NE 31:** Identify and prioritize potential stream enhancement projects through surface water basin planning and its public participation process. Enhancement efforts may include daylighting of streams that have been diverted into underground pipes or culverts, removal of anadromous fish barriers, or other options to restore aquatic environments to a natural state.
- NE 32:** Preserve and protect natural surface water storage sites, such as wetlands, aquifers, streams, and water bodies that help regulate surface flows and recharge groundwater.
- NE 33:** Conserve and protect groundwater resources.

- NE 34:** Provide additional public access to Shoreline's natural features, including the Puget Sound shoreline. The City will attempt to reach community and neighborhood consensus on any proposal to improve access to natural features where the proposal has the potential to negatively impact private property owners.

### **Clean Air and Climate Protection**

- NE 35:** Support federal, state, and regional policies intended to protect clean air in Shoreline and the Puget Sound Basin.
- NE 36:** Support the expansion of mass transit and encourage cycling and walking in the City to reduce greenhouse gas emissions, and as an alternative to dependence on individual vehicles.
- NE 37:** Reduce the amount of air-borne particulates through continuation and possible expansion of the street-sweeping program, dust abatement on construction sites, education to reduce burning of solid and yard waste, and other methods that address particulate sources.
- NE 38:** Support and implement the Mayor's Climate Protection Agreement, other climate pledges and commitments undertaken by the City, and other multi-jurisdictional efforts to reduce greenhouse gasses and address climate change, sea-level rise, and other impacts of global warming.

### **Sustainability**

- NE 39:** Establish policy decisions and priorities considering long-term impacts on natural and human environments.
- NE 40:** Lead by example and encourage other community stakeholders to commit to sustainability. Design our programs, policies, facilities, and practices as models to be emulated.
- NE 41:** Recognize that a sustainable community requires and supports economic development, human health, and social benefit. Make decisions using the "triple bottom line" approach to sustainability (environment, economy, and equity).
- NE 42:** Promote community awareness, responsibility, and participation in sustainability efforts through public outreach programs and other opportunities for change. Serve as catalyst and facilitator for partnerships to leverage change in the broader community.
- NE 43:** Apply adaptive management to efforts and clearly communicate findings to the Shoreline community: individuals, businesses, non-profits, utilities, and City decision-makers. Use analytical and monitoring tools with performance targets to evaluate investments.
- NE 44:** Remove regulatory barriers and create incentives to encourage green building practices.
- NE 45:** Strive to utilize green infrastructure whenever feasible to mimic natural processes.

**NE 46:** Create incentives to encourage enhancement and restoration of wildlife habitat on both public and private property through existing programs, such as the backyard wildlife habitat stewardship certification program.



# Natural Environment Element Supporting Analysis

## Background and Context

Shoreline's environment is comprised of both natural and built features. Puget Sound vistas, mature trees, natural vegetation, streams, wetlands, lakes, and tidelands are just some of the aspects of the natural environment that Shoreline citizens value. The relationships between these features, development, and natural processes, and the quality condition of the resulting environment, have profound impacts on the quality of life in Shoreline. Shoreline is not a pristine landscape, but the very name of the City reflects the importance of the natural environment to the community identity. Preserving the quality of the environment depends on government, business, and individual decisions, and coordinated actions to minimize the adverse environmental impacts that can occur during development or redevelopment, as a result of previous practices, and cumulative social habits daily life.

## Environmental Conditions

Shoreline is a community that developed mostly primarily as a suburban residential area with an associated mix of commercial centers, parks, schools, and natural areas. Natural areas are comprised of the Puget Sound shoreline, bluffs, steep slopes, ravines, natural reserves, wetlands, streams, lakes, native growth easements, and stands of mature trees. These areas are found on both private property and public property, including such as larger single family residential lots and City parks.

Portions of Shoreline contain the following environmentally critical areas: geological hazard areas, flood hazard areas, streams, wetlands, and fish and wildlife habitat conservation areas. The City does not contain any known critical aquifer recharge areas that supply potable water. Drinking water comes from surface systems that originate in the Cascade Mountains, flow predominantly through the Tolt River, and are operated distributed by the Shoreline Water District and the City of Seattle, predominantly from the Tolt River.

Shoreline has adopted regulations to protect environmentally critical areas in the City. These regulations are referred to as the Critical Areas Regulations and are located in Chapter 20.80 of the Shoreline Municipal Code. These regulations are periodically reviewed and updated in accordance with state mandates.

~~The Federal Disaster Mitigation Act (DMA) of 2000 (Public Law 106-390) commonly known as the 2000 Stafford Act amendments were approved by Congress on October 10, 2000. This Act requires state and local governments to develop hazard mitigation plans as a condition of federal grant assistance and to update these plans every five years. The DMA improves upon the planning process to emphasize the importance of mitigation, encouraging communities to plan for disasters before they occur.~~

**Comment [m1]:** Should the potential acquisition be noted?

**Comment [m2]:** DoMo: Doesn't the acquisition go on the ballot for voter approval in November 2012? If it is approved, then we should reference it for sure.

**Comment [m3]:** DoMo: Is this the place to mention the Emergency Preparedness Plan?

The City has a current Hazard Mitigation Plan as required by in conformance with the Federal Administration Management Agency (FEMA) Disaster Mitigation Act (DMA), which ~~-~~ This Act requires state and local governments to develop hazard mitigation such plans as a condition of federal grant assistance and mandates to updateing these plans every five years. The DMA improves upon the planning process to emphasize the importance of mitigation; encouraging communities to plan for disasters before they occur. An analysis of the environmental hazards that may impact the City of Shoreline and the mitigation strategies that have been identified for the City to work on are addressed in detail in the Hazard Mitigation at pPlan- (Located on the City's WEB site at: <http://shorelinewa.gov/index.aspx?page=52> ). Excerpts from Some of that analysis is referred to are included in the appropriate hazard areas below.

**Identified Hazards and their Ranking**

In the City's 2004 and 2009 Hazard Mitigation Plan (HMP), the City was required to identify the hazards that may impact them and rank them in order of importance. This process was done with community input as identified in the plan.

The table below provides a list of the hazards included in the 2004 HMP and the hazards in the 2009 update- in order of importance as ranked by the community. Climate Change was not included within the 2004 Plan. The Shoreline Emergency Management Council agreed to include climate change as an element of the severe weather hazard discussion.

2004 and 2009 Hazard Ranking

<u>Rank No.</u>	<u>2004 Hazards</u>	<u>2009 Updated Hazards</u>
1	<u>Earthquakes</u>	<u>Earthquakes</u>
2	<u>Hazardous Materials</u>	<u>Severe Weather and Climate Change</u>
3	<u>Severe Weather</u>	<u>Flooding</u>
4	<u>Landslides/Sinkholes</u>	<u>Landslides &amp; Sinkholes</u>
5	<u>Flooding</u>	<u>Wildland Fire</u>
6	<u>Wildland Fire</u>	<u>Volcano</u>
7	<u>Volcano</u>	<u>Hazardous Materials</u>
8	<u>Tsunami/Seiche</u>	<u>Tsunami/Seiche</u>

**Comment [m4]:** DoMo: I am surprised hazardous materials moved so far down the list. With trucks on I-5 and Aurora carrying hazardous materials as well as trains on BNSF railway along the sound, it seems like this should rank above wildland fire and volcano at a minimum. However, this may be set in stone because it notes the table is based on community ranking/input.

The City of Shoreline HMP defines each hazard, assesses the risk the hazard poses to Shoreline, and provides long-term mitigation actions and with implementation strategies that the city should consider to reduce loss in the event of a hazard event.

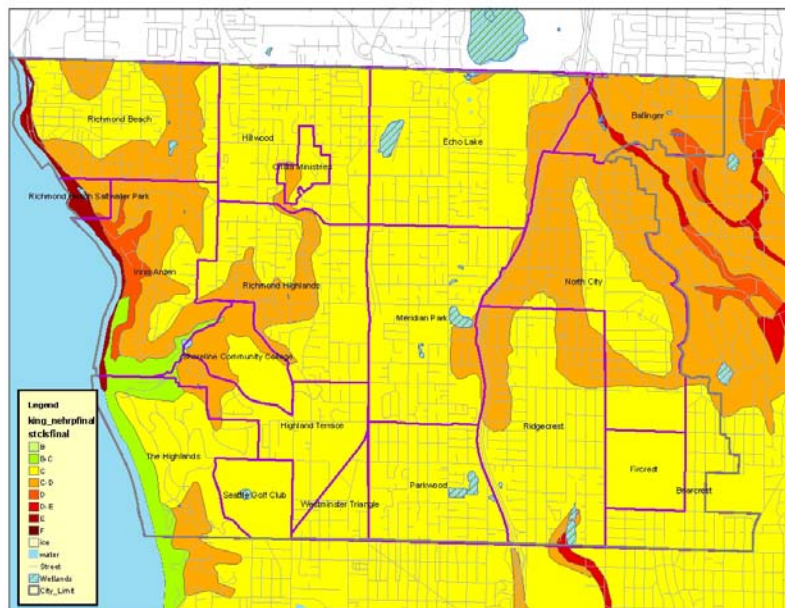
**Earthquake:**

In an earthquake, all of the City of Shoreline will experience potentially damaging ground shaking. It has the potential to that may cause major structural and/or non-structural damage to any non-retrofitted facility and hamper its functionality. The City can be impacted by the following three source zones:

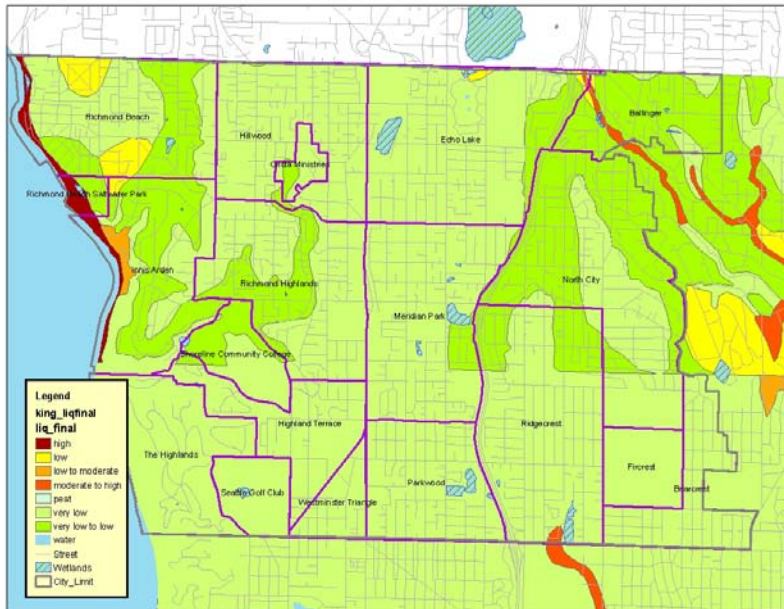
- Shallow earthquakes start within the crust of the overlying North America plate. Of concern to the City of Shoreline are the South Whidbey Island Faults within the City and to the North, and the Seattle Faults to the South.
- Deep earthquakes start below the interface between the subducting Juan de Fuca and Gorda plates and the overlying North America plate. The 2001 Nisqually Earthquake is the most recent example of this type of earthquake.
- The Cascadia Subduction Zone is the third zone and is on the interface between the subducting plates and the North America plate. Because of its great extent, it can break over an enormous area, causing chaos across all of Cascadia.

As can be seen by the maps below, areas of special concern from earthquake ground shaking and liquefaction include the following neighborhoods: Richmond Beach, Innis Arden, Ballinger and Ridgecrest. The data shows that these neighborhoods have areas of NEHRP D, E and F soils and are classified as being at moderate to high or high risk from liquefaction.

Shoreline NEHRP Soils Map



Shoreline Liquefaction Map



**Comment [m5]:** DoMo: The legend lists the types in an odd order.....shouldn't it be listed as High, moderate to high, low to moderate, low, very low to low, very low? (Not sure where peat and water belong, but not in the midst of these categories).

Secondary hazards from an earthquake event may be numerous, including fire, landslides, tsunamis from landslides, and possible hazardous material releases. Landslides do not always occur in the first few minutes following an earthquake but can happen days later. There were numerous landslides during and after the 1949 and 1965 earthquakes, which closed many roads were closed and swept sections of the railroad track were swept into Puget Sound as a result of these. Fires can be caused by downed power lines or ruptured gas lines that occur as a result of an earthquake. There may be leaks or breaks in natural gas. Hazardous materials can be spilled from ruptured containers, accidents can occur during ground shaking, and possible train derailment can occur from buckling tracks or landslides caused by an earthquake.

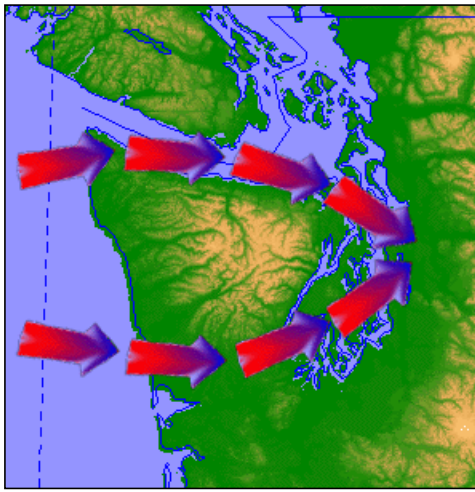
### Severe Weather

Severe weather is one of the most damaging natural hazards. Severe weather can bring heavy rain, high winds, snow and ice, and lead to storm surges that flood low lying and coastal areas. Severe weather can lead to secondary effects such as landslides; flooding from streams and poor drainage; fires, caused by either ruptured gas lines or down electrical lines; and even wildfires, caused by lightening and high winds. King County and the City of Shoreline are subject to various local storms that affect the Pacific Northwest throughout the year, such as wind, snow, ice, hail and potentially tornadoes. Although rare, tornadoes are the most violent weather phenomena known to man. Their funnel shaped clouds rotate at velocities of up to 300 mile per hour and generally affect areas up to a mile wide, and but seldom more than 16 miles long. Four tornadoes have been sighted in King County since 1950.

The entire city is susceptible to severe weather. The City of Shoreline is located in what is commonly referred to as the "Puget Sound Convergence Zone". This generally means that the city tends to receive higher than normal, i.e. Seattle, precipitation and stronger winds compared to other cities in the region. Strong wind mainly comes from the west and southwest. The wind flows from high to low sea-level pressure through the Chehalis Gap to the south and the Strait of Juan De Fuca to the north. The convergence of these two wind flows is known as the Puget Sound Convergence Zone. The convergence usually forms in an east-west line across southern Snohomish County but can go as far north as Anacortes or as far south as Federal Way, depending on where the winds collide shows the air flow of the Puget Sound Convergence Zone<sup>1</sup>. Ice will more likely affect those areas at a higher elevation, such as the Highlands or parts of Innis Arden.

Comment [m6]: Unnecessarily detailed

Convergence Zone



All of Shoreline is vulnerable to severe weather. Neighborhoods located on slopes near the coast including the Highlands, Richmond Beach, Innis Arden, Hillwood, Richmond Highlands are more vulnerable because of their location and limited ingress and egress points creating a possibility of isolation during a severe weather event. The Highlands and Highland Terrace, and the Ballinger and North City; and neighborhoods located on the slopes formed by McAleer Creek are similarly vulnerable and have been isolated during extreme weather events.

Comment [m7]: DoMo: Added Highland here instead of including it below in a separate sentence that discusses topography and limited access.

Ice will more likely affect those areas at a higher elevation, such as the Highlands or parts of Innis Arden. Richmond Beach lies near sea level below the bluffs of the city and may be isolated during a snow or ice storm. It can also be affected by a strong storm surge. Properties located along 27<sup>th</sup> Ave NW would be most affected by a storm surge. The Highlands neighborhood is also vulnerable to isolation due to the topography and limited access points.

Critical infrastructure is more likely to be impacted or damaged as a result of severe weather. Trees that are overgrown or have blown down can create problems for overhead power lines. Power systems may experience resulting in downed lines cutting power to residents. Power is lost due to severe storms about four times a year for approximately four to six hours. Trees that are overgrown or have been blown down can create problems for the overhead power lines. The A survey by the Public Works Department has done a survey and estimates that there are approximately 35,000 trees in Shoreline rights-of-ways. Power outages could also result in a disruption to the water systems. Sanitation and water systems could experience contamination or overflow problems. Given that electrical utilities and roads are most often affected by severe weather, all critical infrastructure managers and operators should plan for possible power outages and how to access areas with difficult ingress and egress. Some critical infrastructure, such as power lines, is actually more likely to be impacted or damaged as a result of severe weather.

### **Climate Change**

Governor Gregoire and the State of Washington, in recognition that our the planet's climate is changing and the impacts of the expected changes could be profound, have instructed us cities to significantly reduce the State's contributions to climate change. - Washington Climate Change Challenge (Executive Order 07-02).

In the report "The Preparation and Adaptation Working Groups" (PAWG) our Governor the State is asking us the City to incorporate climate change and its impacts into planning and decision-making processes. Accordingly, this Plan will address the impacts of climate change. As a result of extensive research done by the International Panel on Climate Change and University of Washington Climate Impact Group, we know confirmed that Washington's climate is changing, and the impacts of these projected changes will be far reaching. Although our Washington state is working to significantly reduce its contributions to climate change, some changes cannot (or will not) be prevented. For Shoreline, expected changes include:

- Hotter, drier summers
- Wetter winters with increasing rainfall and rain intensity
- Increases in weather extremes

Secondary hazards include increased chance of wildland/urban interface fires, heat waves, insect infestation, drought, potable water shortages, flooding, erosion and landslides. Issues that The City and Emergency Services should be planning for education of the aging city population who live, for the most part, develop plans to educate people who live in non-air-conditioned homes about and the potential health risks associated with extreme heat risks, and - In addition, encouraging more homeowners, apartment complexes, and critical facilities to invest in alternative power, i.e. such as generators.

### **Flooding**

Due to its geographical location, Shoreline does not have any of the major rivers in the region that are subject to severe flooding pass through it. Shoreline is drained by one minor stream on the west, Boeing Creek, which flows through the steep bluffs and into Puget Sound and two other minor streams, McAleer Creek and Thornton Creek, which flow in Lake Washington. Boeing Creek and McAleer Creek flow through steep ravines and do not pose much of a hazard to the development above them. Thornton Creek flows through a swampy area parallel to I-5 on the west that has drainage issues and is subject to flooding.

The Richmond Beach area is also subject to coastal flooding. Flooding in Shoreline is largely a result of surface water collecting in depressions low lying areas and natural depressions with impermeable soils. The City has prepared a Shoreline Surface Water Master Plan and has adopted the Department of Ecology Stormwater Manual for Western Washington Low Impact Development manual to address surface water concerns.

FEMA floodplains have been mapped in Boeing Creek and along the Puget Sound shoreline. Properties along the coast may experience coastal flooding during a strong storm surge. Most vulnerable are the properties along 27th Avenue NW and the BNSF railroad tracks. A flood study was conducted in 2009 along Thornton Creek between Ronald Bog and I-5 near Twin Ponds. This study has been submitted to FEMA in 2012 to update the Flood Insurance Rate Maps for the City of Shoreline. Two main flooding problem areas that the City has identified and already begun working to solve are the Ronald Bog subbasin in the Thornton Creek Basin and the 3rd Avenue NW subbasin in the Boeing Creek Basin. Residents of the Ronald Bog subbasin have experienced frequent flooding of arterials, streets, yards, and homes. Over 20 residents between 3rd and 6th Avenues NW have also experienced frequent flooding during moderate storms.

#### Landslide/Sinkholes

The term landslide refers to the down slope movement of masses of rock and soil. Landslides are caused by one or a combination of the following factors: change in slope gradient, increasing the load the land must withstand, shocks and vibrations, change in water content, ground water movement, frost action, weathering of rocks, and removal or changing the type of vegetation covering slopes. Four types of landslides can potentially affect Shoreline. They are deep-seated, shallow, bench and large slides. Puget Sound's shoreline contains many large, deep-seated dormant landslides. Shallow slides are the most common type and the most probable for Shoreline. Occasionally, large catastrophic slides occur along Puget Sound. The figure below is a map of the landslide hazard areas for Shoreline and the structures located in the landslide hazard area. Landslides are often triggered by other natural hazards, such as earthquakes, heavy rain, floods, or wildfires. The frequency of a landslide is related to the frequency of earthquakes, heavy rain, floods, and wildfires.

Landslide Hazard Area



The Holiday Blast Storm of December 1996 and January 1996-1997 caused a large washout/landslide or "Sinkhole" within Shoreline along NW 175th Street near 6th Avenue NW that was a federally declared disaster (see picture below). The 100 foot long sinkhole cost 2 million dollars to repair. However, the sinkhole provided opportunities to implement a series of Low Impact Development concepts ultimately reducing flooding and water quality problems, while increasing fish habitat and providing recreation opportunities.

Holiday Blast Storm Sinkhole - Shoreline



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### **Wildland Fire**

~~There is any number of vulnerabilities to fires in Shoreline. These Wildland fires can be caused by lightning strike or human error and spread to homes and businesses, block roads and lifelines, and create significant economic and environmental damage if fuel loads and vegetation are not properly maintained. Specific areas that, such as Richmond Beach Park and the Highlands neighborhood are especially vulnerable. In addition, the Highlands neighborhood is because they are highly vegetated areas with potential high fuel loads and limited ingress and egress for emergency vehicles. Vegetated areas in Innis Arden and south of Richmond Beach may also be an area of concern. A steep slopes and land cover map may help to determine general wildland and brush fire hazard locations in Shoreline.~~

~~A disastrous fire could be caused by a lightning strike or more likely by human error. It would be an extremely dry hot summer and someone would discard a cigarette out the window of a car on Interstate 5 or along the bike path. It is also possible that fires can be set at Richmond Beach Park or the Highlands. Because of the dry conditions and steep slopes, the fire would spread very rapidly, especially if it is a windy day. It spreads before response teams can contain it and then moves in to neighborhoods, sparking a wave of fires that destroys or damages numerous homes.~~

### **Volcanic Eruption**

~~Shoreline has low vulnerability to volcanic hazards. Solid matter ejected into the air by an erupting volcano, otherwise known as tephra, can potentially cause the most damage. Ash only ½ inch thick can impede the movement of most vehicles and disrupt transportation, communication, and utility systems. Tephra may cause eye and respiratory problems, particularly for those with existing medical conditions. Ash may also clog ventilation systems and other machinery. It is easily carried by winds and air currents remaining a hazard to machinery and transportation long after the eruption.~~

~~When tephra are mixed with rain it becomes a much greater nuisance because wet ash is much heavier, more difficult to remove, and can even cause structures or utility lines to collapse. Heavy ashfall can drift into roadways, railways, and runways where it becomes slippery and dangerous. Wet ash may also cause electrical shorts. Power lines can be destroyed and roofs may collapse from the ashfall loads. Ash fall also decreases visibility and may cause psychological stress and panic. An ash fall may cause secondary hazards such as fire or flooding. The weight of ash may cause structural collapse.~~

~~Vulnerable populations are the elderly, children, and those with weakened immune and respiratory systems. Gases from volcanic eruptions are usually too diluted to constitute danger to a person in normal health, the combination of acidic gas and ash may cause lung problems. Extremely heavy ash can clog breathing passages and cause death.~~

### **Hazardous Material**

~~Three major rights-of-ways traverse Shoreline and are used to transport hazardous material. These are the BNSF railroad, which is located along the western shore of the city, State Highway 99/ Aurora Avenue, which runs through the middle of the city, and Interstate 5, which is just east of Aurora Avenue. Although the identity and quantity of it is not known how~~

**Comment [m8]:** If we think this would be valuable, we should make it a policy, if not, we should remove from analysis.

**Comment [m9]:** DoMo: This section rambles on and doesn't add much value as a whole. We should note the challenges of fighting a fire in areas with steep slopes and that the risk of sparking multiple fires increases during hot weather and windy conditions. I think that is the point being made, but it needs a serious rewrite!

**Comment [m10]:** DoMo: This paragraph should be heavily edited so key points remain, but is way too long as written. I gave it a try....

**Comment [m11]:** DoMo: Do we need any of this?

~~much or exactly what is being transported through the area is unknown. Shoreline has a similar vulnerability for spillage as the rest of King County, which has one of the highest probabilities in the state due to the large amounts of industry and port facilities in the area. Recently there has not been any significant railroad accident in King County; however, Pierce County has recently had a railroad derailment, which spilled boric acid and diesel fuel into the Puget Sound.~~

~~Hazardous material releases can be divided into three categories. These categories are based on the severity of the incident and the emergency response that is warranted by each<sup>2</sup>. A minor incident can be safely cleaned up and managed by one or two people. An isolated incident is one that only affects a single area but has to be handled by more than two people. An unmanageable incident affects large areas and requires immediate response regardless of the quantity involved in the incident. Hazardous material releases can affect both human and ecological health. The severity depends on the type and amount of chemical released and the effects range from minor to catastrophic.~~

~~Hazardous material releases can occur at any time without warning. Once the release has occurred the potentially affected areas will have little or no warning time depending on what chemical was released and the method by which the chemical will travel.~~

### **Tsunami/Seiche**

~~Tsunamis affecting Washington State may be induced by an earthquake of local origin, or they may be caused by earthquakes at a considerable distance, such as from Alaska or Japan. Shoreline does not have any major lakes within its area, but a severe quake could create seiches in the small ponds such as Ronald Bog and Echo Lake that could potentially cause damage.~~

~~The frequency of a tsunami or seiche is related to the frequency of earthquakes and landslides that can produce a tsunami or seiche. There is a low probability of a tsunami or seiche occurring in Shoreline. It is unlikely that a tsunami or seiche generated by a distant or Cascadia Subduction earthquake would result in much damage in Shoreline. One computer model suggests that a tsunami generated by such an earthquake with a magnitude of 8.5 would only be 0.2 to 0.4 meters in height when it reached the Seattle/Shoreline area. This results from the shielding of the Olympic Peninsula and the Puget Sound islands. However, Puget Sound is vulnerable to tsunamis generated by local crustal earthquakes (such as along the Seattle fault or South Whidbey Island fault) or by submarine landslides triggered by earthquake shaking. This type of tsunami could impact Shoreline. The low-lying areas along the Puget Sound coastline could suffer damage. Warning vulnerable areas would be nearly impossible due to the close proximity to the origin of the tsunami. The first wave would probably hit coastline areas within minutes.~~

~~Properties located along Puget Sound may be vulnerable to tsunamis. There are 32 parcels that could be affected and are located on 27<sup>th</sup> Avenue NW. Properties directly adjacent to ponds or the small lakes in Shoreline may be potentially affected by a seiche caused by a local or distant quake. Echo Lake has development surrounding it, as does Ronald Bog on its south side. Since actual buildings are located a several feet above the lake, the most affected structures would be the piers on Echo Lake and any boats moored to them.~~

### **Geologic Hazards and Frequently Flooded Areas**

Continental glaciers extended many times into central Puget Sound over the past two million years depositing layers of silt, clay, gravel and till in a rolling plateau known as the Seattle drift plain. The City is located on this plateau which drops irregularly to Puget Sound and Lake Washington through a series of basins formed by small streams that flow through the area. A number of steep bluffs are located along the shores of Puget Sound within The Highlands and Innis Arden neighborhoods. The size of these bluffs diminishes in the Richmond Beach neighborhood. Hazards, including landslides and mudslides, have occurred along these steep bluffs. Steep bluffs are also found along the eastern edges of the City. The majority of the remaining areas of the City are located on a rolling plateau with a north/south topographical orientation. Development on or adjacent to severe slopes and highly erodable soils can have a negative impact on slope stability.

Soil type, vegetative cover, presence of ground water, and degree of slope affect the suitability of a site for development. The City is predominately covered with the Alderwood series of soils (U.S. Geological Survey Maps). Alderwood soils have drainage problems during periods of heavy seasonal rainfall. Erosion can be severe and accelerated if vegetation (including trees) and forest litter, which protects the soils from rain, are removed for development. The City of Shoreline contains geologic hazard areas prone to landslide, seismic, and erosion hazards. Most of these hazard areas are located on the bluffs along Puget Sound or adjacent to streams.

#### **Landslide Hazards**

Many of the bluffs along Puget Sound consist of severe slopes and isolated glacial deposits that are susceptible to landslides. These unstable slopes are a major hazard to people, structures, and other land uses and improvements (such as railroad tracks). The identification of areas susceptible to landslides is necessary to effectively regulate grading, building, foundation design, housing density, drainage and to implement other regulations to reduce or eliminate the risk of property damage and personal injury.

The City contains areas that are susceptible to landslides. Within the City these areas include the bluffs and stream ravines along Puget Sound, the Boeing Creek ravine and the hillsides along McAleer Creek.

#### **Seismic Hazards**

Seismic hazard areas are those areas subject to severe risk of earthquake damage as a result of settlement or soil liquefaction. These conditions occur in areas underlain by soils with low cohesion and density, usually in association with a shallow groundwater table. When shaken by an earthquake, certain soils lose their ability to support a load. Some soils will actually flow like a fluid; this process is called liquefaction. Loss of soil strength can also result in failure of the ground surface and damage to structures supported in or on the soil. Loose, water-saturated materials are the most susceptible to ground failure due to earthquakes.

One area of identified seismic hazard is located along Puget Sound in Richmond Beach Saltwater Park. In this area, park structures and the Burlington Northern railroad tracks may be at risk. The other seismic hazard area is located along McAleer Creek between NE 196<sup>th</sup> Street and NE 205<sup>th</sup> Street. Roads, single-family residences, and other public and private

improvements may be affected in this area. A small area near 24<sup>th</sup> Avenue NE is susceptible to both landslides and seismic hazards.

An additional area of identified seismic hazard is located in a potential annexation area at Point Wells. In this area, which is rated at the highest risk for liquefaction, Burlington Northern railroad tracks, petroleum storage facilities, and the Brightwater sewer outfall facilities may be at risk as well as future residential and commercial structures and other public and private improvements. Access to the western portion of the area is via a bridge over the Burlington Northern railroad tracks and a major seismic event could affect the bridge and thus limit emergency response to the area.

### ***Erosion Hazards/Sedimentation***

Erosion is a natural process where rain, running water, and wind loosen and eliminate or reduce soil coverage and deposit it elsewhere. Of these natural forces, erosion by rain and running water is by far the most common within the Puget Sound region. The susceptibility of any soil type to erosion depends upon the physical and chemical characteristics of the soil, its protective vegetative cover, slope length and gradient, intensity of rainfall, and the velocity of water runoff. During storms, water runoff saturates the upper layers of till and sand-gravel. When the water migrates to the less permeable layer of silt-clay below the layer of sand-gravel it begins to flow laterally toward Puget Sound or Lake Washington. Erosion and slides occur as the sand-gravel layer washes away or slides on top of the slippery silt-clay layer. Runoff also erodes topsoil, which contributes to the erosion and landslide hazards.

The City contains areas that are prone to erosion activity. These areas include the bluffs along Puget Sound, the Boeing Creek ravine, and the hillsides along McAleer Creek, near the eastern boundary of the City. Erosion hazards also include hillsides in the Richmond Beach neighborhood, the vicinity of Paramount Park, east of Holyrood Cemetery, and the vicinity of Hamlin Park and Shorecrest High School. A large portion of the Boeing Creek Basin, which includes Shoreview Park, is both an erosion hazard area and a landslide area. Other small erosion hazard areas are variously located within the City.

Potential geologic hazard areas are shown on Figure LU-2 at the end of this section.

### **Flood Hazard Areas**

Flood hazard areas are those areas within the regulatory floodplain which include the floodway, channel migration zones, riparian habitat zones, and special flood hazard areas. Floodplains have been mapped on Flood Insurance Rate Maps (FIRM) prepared by FEMA. Within Shoreline, only limited areas adjacent to Thornton and Boeing creeks, Ronald Bog and the Puget Sound Shoreline have been designated as potential floodplains. In addition to floodplains, unmapped spot flooding occurs during storm events in various areas in the City that lack adequate drainage.

### **Vegetation Protection**

Residents characterize the City of Shoreline as a wooded community; this is often cited as a key reason for locating in the area. Large evergreen trees can be seen rising above residential neighborhoods, on hilltops, and even on the periphery of Aurora Avenue. As the City becomes more urbanized, it is a priority to maintain and enhance the tree canopy.

**Comment [m12]:** DoMo: Much of the verbiage used in these struck out paragraphs sounds better than what G Harris proposes above.

**Comment [m13]:** DoMo: Juniper asked about the tree canopy study and the park vegetation plans on an earlier draft. While tree canopy has been the subject of debate, we might want to include the tree board and updated tree code regulations as well as our desire to become a Tree City. The park vegetation plan is a good example to call out.

~~the City has become more urbanized, the area covered by native ground cover and/or shaded by native trees has been vastly reduced.~~

**Comment [m14]:** According to the canopy study, this isn't true.

Forested open space, wetlands, and native vegetation found on steep slopes and larger residential lots are important resources that should be preserved. Trees help stabilize soils on steep slopes, and act as barriers to wind and sound. Plants replenish the soil with nutrients, and generate oxygen, and clean pollutants from the air. Native vegetation provides habitat for wildlife; ~~the native vegetation found near creeks, lakes, and saltwater areas offer habitats for many migrating and resident birds and other wildlife. Less developed wooded areas and City parks also provide habitats for many birds and mammals.~~ Wetlands and riparian vegetation provide surface water storage and help clean surface water of pollutants and sediment.

Aerial photos show that the community is a mosaic of various types of vegetation. The largest, most contiguous areas of native vegetation in Shoreline are primarily found in City parks, publicly owned open space, privately owned open space (such as the Boeing Creek area of The Highlands and the reserves in Innis Arden) and designated critical areas (such as steep slopes along the Puget Sound shoreline). These areas include the highest quality wildlife habitat found in the City. However, areas of less intensive residential development also contain mature trees and other native vegetation which provide secondary wildlife habitat and substantially contribute to the quality of life in ~~our City~~ Shoreline. Native vegetation in residential areas that may be subdivided or otherwise more intensely developed is at the greatest risk of being lost.

### Habitat Protection

The process of urbanization can result in the conversion of wildlife habitat to other uses. The loss of certain types of habitat can have significant, adverse effects on the health of certain species. Fish and wildlife habitat conservation areas are those that are necessary for maintaining species within their natural geographic distribution so that isolated subpopulations are not created. Designated habitats include those areas associated with species that state or federal agencies have designated as endangered, threatened, sensitive, or candidate species, anadromous fish habitat, waterfowl and raptor nests, heron rookeries, and designated habitats of local importance.

Currently in the Puget Sound, the bald eagle and Chinook salmon are listed as threatened species by the federal government under the Endangered Species Act. The Washington Department of Fish and Wildlife (WDFW) indicates bald eagle territory in the Richmond Beach and Point Wells areas. WDFW maps and the City's stream inventory indicate the presence of Chinook salmon in portions (including sections outside of the City) of McAleer Creek, Thornton Creek and Boeing Creek. Other sources have indicated the presence of fish in other streams within the City, although the full extent of fish habitat has not been confirmed. To help restore healthy salmon runs, local governments and the State government must work proactively to address salmon habitat protection and restoration.

The Washington Department of Fish and Wildlife (WDFW) has developed the Priority Habitats and Species (PHS) Program to help preserve the best and most important habitats and provide for the life requirements of fish and wildlife. Priority species are fish and wildlife species that require protective measures and/or management guidelines to ensure their perpetuation. Priority habitats are habitat types with unique or significant value to many species. The WDFW has documented the locations of priority habitats and species within

the City. These PHS areas include wetlands, anadromous fish habitat, riparian areas, bald eagle territory, urban natural open space, habitat for a priority bird species, and the point location of a priority bird species siting. These areas combined comprise less than 5% of the total land area of the City and are often found within existing City parks, public open space, and designated private open space

The City has developed a geographic information system (GIS) that includes detailed maps of PHS areas based on data provided by the WDFW and other mapping resources. WDFW provides management recommendations for priority species and habitats that are intended to assist landowners, users, and managers in conducting land-use activities in a manner that incorporates the needs of fish and wildlife. Management recommendations are developed through a comprehensive review and synthesis of the best scientific information available. The City has reviewed the PHS management recommendations developed by WDFW for species identified in Shoreline and used them to guide the development of critical areas regulations that fit the existing conditions and limitations of our relatively urbanized environment.

**Comment [m15]:** DoMo: Should this be "used"?  
Last draft Juniper noted that the system was not fully launched for use by the planners.

## Streams and Water Resources

### Wetlands

Wetlands perform valuable functions that include surface and flood water storage, water quality improvement, groundwater exchange, stream base flow augmentation, and biological habitat support. A review of background information, including aerial photos from 1992, identified 17 individual wetlands within the City. These wetlands range from the large estuarine system (a mixture of salt and fresh waters) adjacent to Puget Sound, to lakes and small excavated ponds. With the exception of the Puget Sound estuarine system, all wetlands in the City are palustrine systems (freshwater). The largest palustrine system is Echo Lake located in the north-central portion of the City. Other large wetlands include ponds within Ronald Bog Park, Twin Ponds Park, Paramount Open Space Park, and the Seattle Country Club, as well as numerous undocumented wetlands of .5 acres or less. Most wetlands in the City are relatively isolated systems and are surrounded by development.

Under the Shoreline Municipal Code, wetlands are designated using a tiered classification system (from Type I to Type IV) based on size, vegetative complexity, and the presence of threatened or endangered species. No wetlands in the City have received a Class I rating. All wetlands, regardless of size, are regulated under the Shoreline Municipal Code. When a development is proposed on a site with known or suspected wetlands, a wetland evaluation is required to verify and classify wetlands and delineate boundaries and buffer areas. The Department of Ecology mandates minimum wetland buffer areas based on typology and other factors.

All of the documented wetlands within the City have experienced some level of disturbance as a result of development and human activity. Disturbances have included major alterations such as wetland excavation, fill, or water impoundment. Some wetland areas occur within parks that receive constant use by people, threatening the wetlands with impacts efrom human activity, such as trash and trampling of vegetation.

## Lakes

There are four lakes in the City of Shoreline: Echo Lake, Ronald Bog, Hidden Lake and Twin Ponds. Like most small urban lakes, Shoreline's lakes contain pollutants and contaminated runoff, including fertilizers and pesticides from lawns and gardens; oils, greases, and heavy metals from vehicles; and fecal coliform bacteria. The quality of the water in the lakes is a concern to many residents and City staff. Ronald Bog and Twin Ponds were historically bogs that were dredged. As urban development in the City has occurred, the process by which the nutrient level and vegetation in these lakes increases has accelerated. Ronald Bog and Twin Ponds will eventually revert to bogs.

Hidden Lake is currently used as a sediment storage facility and has been significantly altered to accommodate this function. King County completely reconstructed this feature by removing the sediment eroded from sites further upstream in the basin. Hidden Lake has served as a sink for this sediment and ~~has was designed to protect the water quality and potential fish habitat in the lower reaches of Boeing Creek, permanently reestablish the lake in a way that increases habitat for fish and wildlife and prevents the passage of fine sediments downstream habitat reaches of Boeing Creek. Sedimentation will continue to impact Hidden Lake unless action is taken to stabilize the upper reaches of Boeing Creek and/or reduce run-off rates in the upper reaches of the basin. If future stabilization of Boeing Creek includes changes to the channel, the habitat values associated with the upper reaches of the Creek could be reduced. Some community members would like to see Hidden Lake restored to a more natural condition. However, this could limit the ability of the City to continue to use this feature for and could increase sedimentation and habitat degradation in the lower reaches of Boeing Creek.~~

~~The City anticipates preparing a master plan for Shoreview Park. This plan will guide the City as it acts to close and rehabilitate user created trails and access points to Hidden Lake and establish public access in a suitable location(s). This will reduce erosion and sedimentation in and around this location. The City is also working with King County in an effort to remove barriers to fish passage along the lower reaches of Boeing Creek. The restoration of viable fish habitat may make the protection of the lower reaches of the Creek from sedimentation (a role played by Hidden Lake) a higher priority.~~

## Streams and Creeks

Numerous small stream and creeks are found within or adjacent to the City of Shoreline. Many of these streams have been placed in culverts, channels, or otherwise altered and degraded. Boeing Creek flows to the Puget Sound and drains an area which includes Boeing Creek Park and Shoreview Park. ~~The headwater of the Thornton Creek originates in Ronald Bog north of Cromwell Park, near the geographic center of the City, flows to Twin Ponds through a series of open stream channel segments and pipes, crosses the City limits, and emerges as an open channel in the City of Seattle's Jackson Park Golf Course.~~ McAleer Creek flows in the southeasterly direction and passes through the northeast corner of the City and into Lake Forest Park. Lyon Creek flows in a similar direction just outside of the City. Other features include small and unnamed creeks which flow into the Puget Sound in the Richmond Beach, Innis Arden, and Highlands neighborhoods.

Large portions of the watersheds drained by creeks in the City have been paved or otherwise developed. This development dramatically increases the volume of water in the creeks during storm surges, and reduces in-stream flows during drier periods of the year. This combination of more intense storm surges and overall lower flows causes numerous

**Comment [m16]:** Shoreview Park never received a complete Master Plan; however, a Vegetation Management Plan exists for Shoreview Park, Boeing Creek Park and Boeing Creek Open Space. In addition, there is a Master Site Plan for Boeing Creek Park and Boeing Creek Open Space. Shoreview Park is due for a Master Plan and it is identified as a Mid-Term Priority Project in the Parks, Recreation and Open Space (PROS) Plan. Vegetation Management Plans also exist for Hamlin, South Woods and Richmond Beach Saltwater Park. These documents can help guide restoration efforts.

**Comment [m17]:** The Cromwell Park Master Plan documents that the head water is north of Ronald Bog – ie Cromwell Park.

environmental problems, including: increased bank erosion; scouring and deepening of the stream channel; reduced water quality; sedimentation of gravels; damage to stream-side vegetation; and reduction or elimination of habitat for wildlife, fish, and the insects that fish feed on.

~~McAleer Creek and Thornton Creek and an area of Puget Sound adjacent to Richmond Beach are currently on the Washington State list of water features that do not meet water quality standards due to high levels of fecal coliform, and in some locations for dissolved oxygen and temperature. It is believed that Boeing Creek does not meet State standards for sediment. Creeks continue to be damaged as a result of large quantities of stormwater as well as by pollutants it may contain.~~

**Comment [m18]:** Richmond Beach the neighborhood or Richmond Beach Saltwater Park?  
If it refers to Richmond Beach Saltwater Park – I question if this is true as Jessica Williams and KC has done water quality testing off the north and south end of the park that do not even come close to high counts of FC.

### Groundwater

Groundwater aquifers are used for supplying water to lakes, wetlands, and streams during the dry season and for a few private wells that supply water for irrigation and possibly drinking water in a few isolated instances. Wetlands and lakes are thought to be the main groundwater recharge areas in the City.

### Water Quality and Drainage

Drainage in the City consists of nine separate drainage basins: Lyons Creek, McAleer Creek, Thornton Creek, Boeing Creek, West Lake Washington, Bitter Lake, Seattle Golf Club and two separate areas of the Middle Puget Sound Basin (north and south). Along the west half of the City, the Boeing Creek Basin ~~empties-drains~~ directly into Puget Sound. The Middle Puget Sound basins drain into Puget Sound via small creeks and surface water systems. The McAleer Creek Basin in the northeastern portion of the City drains into Echo Lake and Lake Ballinger, and eventually into Lake Washington. The approximate eastern half of the City from Interstate 5 drains to Lake Washington via Thornton Creek. The Ballinger area drains to Lake Washington via Lyon Creek. Small portions of the City at the north and northeastern edges drain into Lake Washington through small creeks and surface water systems.

Drainage facilities in the City consist of a combination of conveyance pipes, ditches, and stream channels. Much of the development in the City took place in the 1940s and 1950s, prior to the implementation of stormwater mitigation regulations in the 1970s. Many water quality facilities have been constructed in the City, including Boeing Park Stormwater Pond, Cromwell Park stormwater wetland, dozens of raingardens and bioretention facilities, and proprietary water quality treatments systems on the

Many natural creek systems have been stabilized or reconstructed to repair and prevent slope erosion or bank failures. However, water quality mitigation measures have not been adequate to protect natural waterways. Consequently, the water quality of ~~the~~ lakes and streams in the City has been ~~negatively adversely~~ impacted by the urbanization of the watersheds and the associated stormwater runoff. large volumes of polluted runoff that they regularly receive. Although open vegetated drainage ways are generally the preferred option from a water quality standpoint, the construction of curbs, gutters, and sidewalks may be appropriate in areas with urban densities, high vehicular traffic, schools, parks, bus stops, shopping, or employment concentrations.

Surface water and wetland areas are shown on Figure LU-3 at the end of this section.



## Air Quality

One of the basic characteristics of a livable city is clean air. Numerous federal, state, regional, and local agencies enact and enforce legislation to protect air quality. Good air quality in Shoreline, and in the region, requires controlling emissions from all sources, including: internal combustion engines, industrial operations, indoor and outdoor burning, and wind-borne particles from land clearing and development. In the Puget Sound region, vehicle emissions are the primary source of air pollution. Local and regional components must be integrated in a comprehensive strategy designed to improve air quality through transportation system improvements, vehicle emissions reductions, and demand management strategies.

Air quality is measured by the concentration of chemical compounds and particulate matter in the air outside of buildings. Air that contains carbon monoxide, ozone, and particulate matter can degrade the health of humans, animals, and plants. Human health risks from poor air quality range in severity from headaches and dizziness to cancer, respiratory disease, and other serious illnesses, ~~to~~ and even premature death. Potential ecological impacts include damage to trees and other types of vegetation. Quality of life concerns include degradation of visibility and deposition of soot and other particulate matter on homes and other property.

The City seeks long-term strategies to address air quality problems, not only on the local level, but in the context of the entire Puget Sound Basin with coordination and major direction from the Puget Sound Clean Air Agency.

## Sustainability

What other information should we include for sustainability? We probably don't want to overload with background information, but it is appropriate to discuss our recent and upcoming efforts, such as:

- Cleanscapes programs
- Indicator Tracking website
- City Hall
- Backyard Habitat certification
- Uses of funds from EECBG
- Tree canopy study

**Comment [m19]:** Should you include work or studies that have been done that study and improve the natural environment since the last update to the Comp Plan? If this answer is yes, then I think it is important to talk about projects like: Boeing Creek Park Drainage Improvement project, Pantera Pond, Cromwell Park, Restoration at Richmond Beach (steep slopes), Vegetation Studies at Hamlin Park, Ivy, Holly and Laurel Invasive Removal Study, Surface Water Basin Studies, Improvements to the trails at Boeing Creek/Shoreview Park, Hamlin Park, infrastructure improvements at Richmond Beach Saltwater Park that reduced runoff and erosion to the steep slope critical areas.

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# Natural Environment Element Supporting Analysis

## ***Background and Context***

Shoreline's environment is comprised of both natural and built features. Puget Sound vistas, mature trees, vegetation, streams, wetlands, lakes, and tidelands are just some aspects of the natural environment that Shoreline citizens value. The relationships between these features, development, natural processes, and the condition of the resulting environment, have profound impacts on the quality of life in Shoreline. Shoreline is not a pristine landscape, but the very name of the City reflects the importance of the natural environment to community identity. Preserving the quality of the environment depends on government, business, and individual decisions, and coordinated actions to minimize the adverse environmental impacts that can occur during development/redevelopment, as a result of previous practices, and cumulative social habits.

## **Environmental Conditions**

Shoreline is a community that developed primarily as a suburban residential area with an associated mix of commercial centers, parks, schools, and natural areas. Natural areas are comprised of the Puget Sound shoreline, bluffs, steep slopes, ravines, natural reserves, wetlands, streams, lakes, native growth easements, and stands of mature trees. These areas are found on both private and public property, including single family residential lots and City parks.

Portions of Shoreline contain the following environmentally critical areas: geological hazard areas, flood hazard areas, streams, wetlands, and fish and wildlife habitat conservation areas. The City does not contain any known critical aquifer recharge areas that supply potable water. Drinking water comes from surface systems that originate in the Cascade Mountains, flow predominantly through the Tolt River, and are distributed by the Shoreline Water District and the City of Seattle.

Shoreline has adopted regulations to protect environmentally critical areas in the City. These regulations are referred to as the Critical Areas Regulations and are located in Chapter 20.80 of the Shoreline Municipal Code. These regulations are periodically reviewed and updated in accordance with state mandates.

The City has a current Hazard Mitigation Plan in conformance with the Federal Disaster Mitigation Act (DMA), which requires state and local governments to develop such plans as a condition of federal grant assistance and mandates updating these plans every five years. The DMA improves upon the planning process to emphasize the importance of mitigation; encouraging communities to plan for disasters before they occur. An analysis of the environmental hazards that may impact the City of Shoreline and the mitigation strategies that have been identified for the City to work on are addressed in detail in the Hazard

Mitigation Plan (<http://shorelinewa.gov/index.aspx?page=52> ). Excerpts from that analysis are included in the appropriate hazard areas below.

### Identified Hazards and their Ranking

In the City's 2004 and 2009 Hazard Mitigation Plan (HMP), the City was required to identify the hazards that may impact them and rank them in order of importance. This process was done with community input as identified in the plan.

The table below provides a list of the hazards included in the 2004 HMP and the hazards in the 2009 update, in order of importance as ranked by the community. Climate Change was not included in the 2004 Plan. The Shoreline Emergency Management Council agreed to include climate change as an element of the severe weather hazard discussion.

Rank No.	2004 Hazards	2009 Updated Hazards
1	Earthquakes	Earthquakes
2	Hazardous Materials	Severe Weather and Climate Change
3	Severe Weather	Flooding
4	Landslides/Sinkholes	Landslides & Sinkholes
5	Flooding	Wildland Fire
6	Wildland Fire	Volcano
7	Volcano	Hazardous Materials
8	Tsunami/Seiche	Tsunami/Seiche

The City of Shoreline HMP defines each hazard, assesses the risk the hazard poses to Shoreline, and provides long-term mitigation actions with implementation strategies that the city should consider to reduce loss in the event of a hazard event.

#### **Earthquake:**

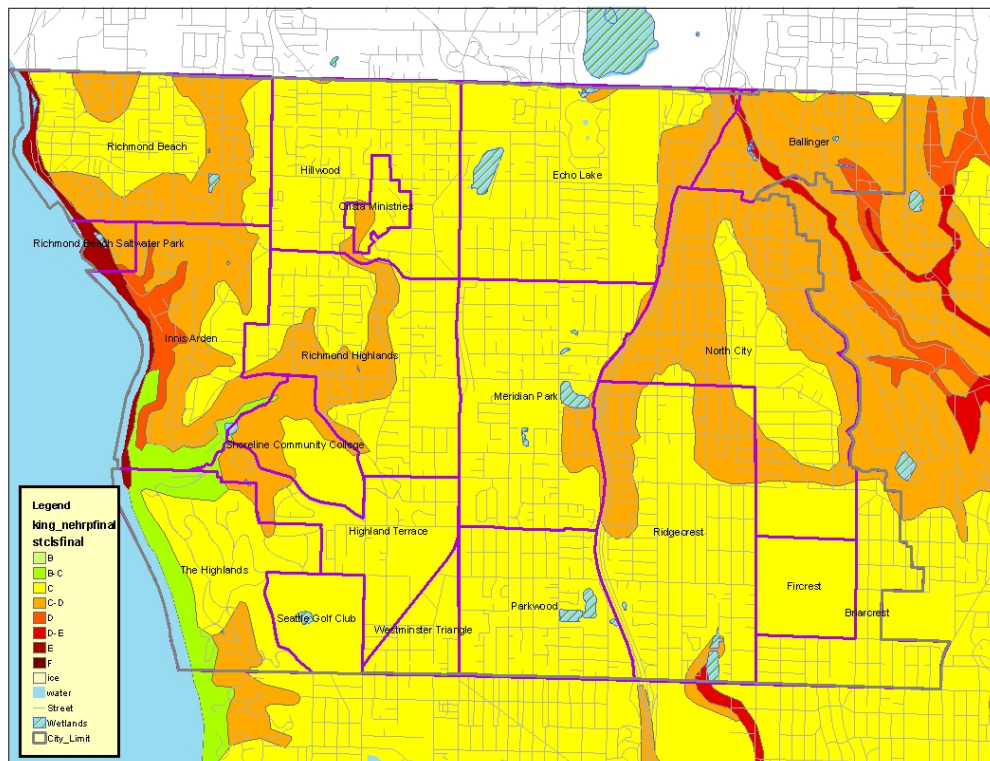
In an earthquake, all of the City of Shoreline will experience potentially damaging ground shaking that may cause major structural and/or non-structural damage to any non-retrofitted facility and hamper its functionality. The City can be impacted by the following three source zones:

- *Shallow* earthquakes start within the crust of the overlying North America plate. Of concern to the City of Shoreline are the South Whidbey Island Faults within the City and to the north, and the Seattle Faults to the south.
- *Deep* earthquakes start below the interface between the subducting Juan de Fuca and Gorda plates and the overlying North America plate. The 2001 Nisqually Earthquake is the most recent example of this type of earthquake.

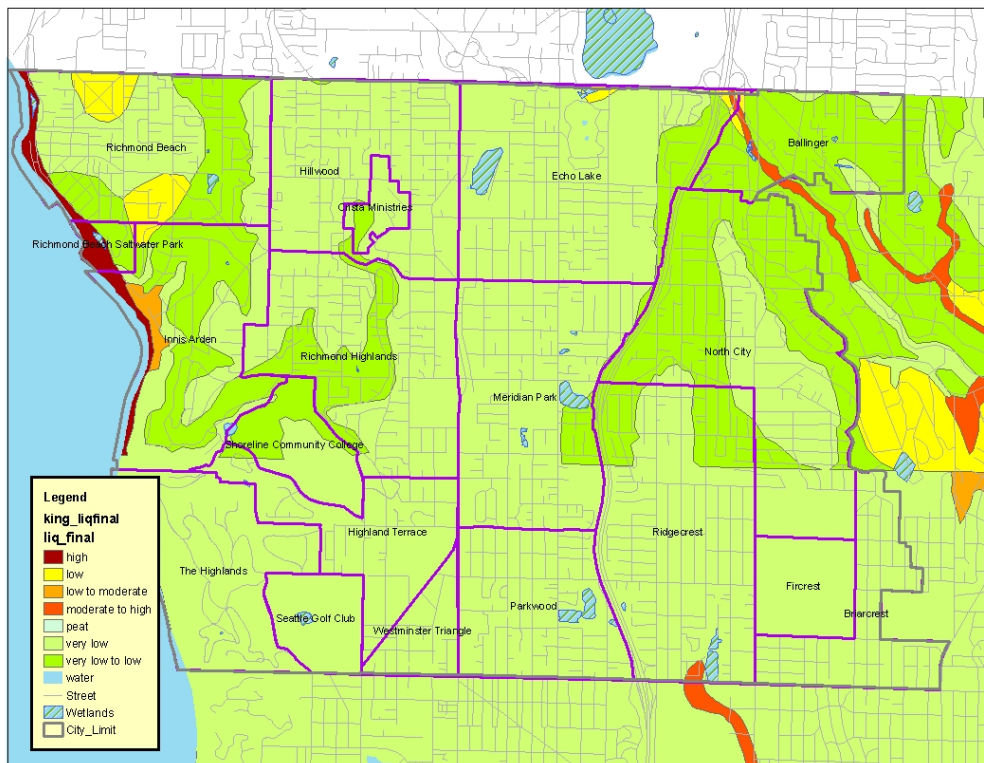
- The *Cascadia Subduction Zone* is the third zone and is on the interface between the subducting plates and the North America plate. Because of its great extent, it could break over an enormous area, causing chaos across all of Cascadia.

As can be seen by the maps below, areas of special concern from earthquake ground shaking and liquefaction include the following neighborhoods: Richmond Beach, Innis Arden, Ballinger and Ridgecrest. The data shows that these neighborhoods have areas of NEHRP D, E and F soils and are classified as moderate to high or high risk from liquefaction.

Shoreline NEHRP Soils Map



## Shoreline Liquefaction Map



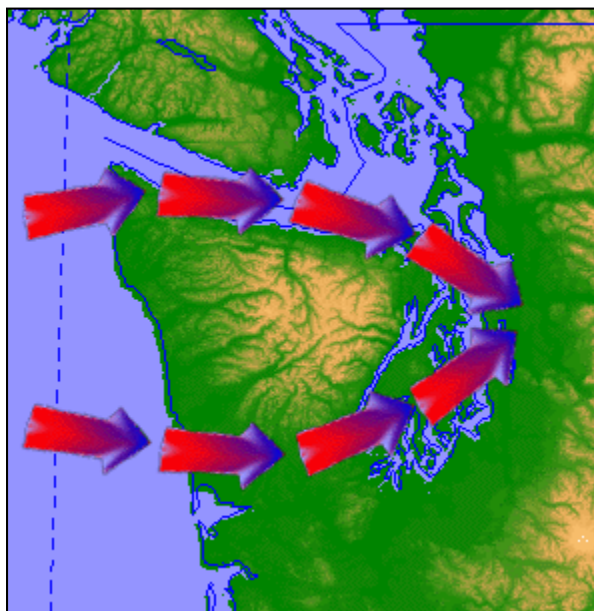
Secondary hazards from an earthquake event may be numerous, including fire, landslides, tsunamis, and possible hazardous material releases. Landslides do not always occur in the first few minutes following an earthquake but can happen days later. There were numerous landslides during and after the 1949 and 1965 earthquakes, which closed many roads and swept sections of the railroad track into Puget Sound. Fires can be caused by downed power lines or ruptured gas lines that occur as a result of an earthquake. There may be leaks or breaks in natural gas. Hazardous materials can be spilled from ruptured containers, accidents can occur during ground shaking, and possible train derailment can occur from buckling tracks or landslides caused by an earthquake.

### **Severe Weather**

Severe weather is one of the most damaging natural hazards. Severe weather can bring heavy rain, high winds, snow and ice, and lead to storm surges that flood low lying and coastal areas. Severe weather can lead to secondary effects such as landslides; flooding from streams and poor drainage; fires, caused by either ruptured gas lines or down electrical lines; and wildfires, caused by lightning and high winds. King County and the City of Shoreline are subject to various local storms that affect the Pacific Northwest throughout the year, such as wind, snow, ice, hail and tornadoes. Although rare, tornadoes are the most violent weather phenomena known to man. Their funnel shaped clouds rotate at velocities of up to 300 mile per hour and generally affect areas up to a mile wide, but seldom more than 16 miles long. Four tornadoes have been sighted in King County since 1950.

The entire city is susceptible to severe weather. The City of Shoreline is located in what is commonly referred to as the “Puget Sound Convergence Zone”. This generally means that the city tends to receive higher than normal precipitation and stronger winds compared to other cities in the region.

Convergence Zone



Neighborhoods located on slopes near the coast including the Highlands, Richmond Beach, Innis Arden, Hillwood, Richmond Highlands are more vulnerable because of their location and limited ingress and egress points creating a possibility of isolation during a severe weather event. The Highlands and Highland Terrace; Ballinger and North City; and neighborhoods located on the slopes formed by McAleer Creek are similarly vulnerable and have been isolated during extreme weather events..

Ice will more likely affect those areas at a higher elevation, such as the Highlands or parts of Innis Arden. Richmond Beach lies near sea level below the bluffs of the city and may be isolated during a snow or ice storm. It can also be affected by a strong storm surge. Properties located along 27<sup>th</sup> Ave NW would be most affected by a storm surge. Critical infrastructure is more likely to be impacted or damaged as a result of severe weather. Trees that are overgrown or have blown down can create problems for overhead power lines, resulting in downed lines cutting power to residents. Power is lost due to severe storms about four times a year for approximately four to six hours. A survey by the Public Works Department estimates that there are approximately 35,000 trees in Shoreline rights-of-way. Power outages could also result in disruption to the water systems. Sanitation and water systems could experience contamination or overflow problems. Given that electrical utilities and roads are most often affected by severe weather, all critical infrastructure managers and operators should plan for possible power outages and how to access areas with difficult ingress and egress.

## **Climate Change**

Governor Gregoire and the State of Washington, in recognition that the planet's climate is changing and that impacts of expected changes could be profound, have instructed cities to significantly reduce the State's contribution to climate change. - *Washington Climate Change Challenge (Executive Order 07- 02)*.

In the report "The Preparation and Adaptation Working Groups" (PAWG) the State is asking the City to incorporate climate change and its impacts into planning and decision-making processes. Extensive research done by the International Panel on Climate Change and University of Washington Climate Impact Group confirmed that Washington's climate is changing, and the impacts of these projected changes will be far reaching. Although Washington state is working to significantly reduce its contributions to climate change, some changes cannot (or will not) be prevented. For Shoreline, expected changes include:

- Hotter, drier summers
- Wetter winters with increasing rainfall and rain intensity
- Increases in weather extremes

Secondary hazards include increased chance of wildland/urban interface fires, heat waves, insect infestation, drought, potable water shortages, flooding, erosion and landslides. The City and Emergency Services should develop plans to educate people who live in non-air-conditioned homes about the potential health risks associated with extreme heat, and encourage more homeowners, apartment complexes, and critical facilities to invest in alternative power, such as generators.

## **Flooding**

Due to its geographical location, Shoreline does not have any major rivers that are subject to severe flooding. Shoreline is drained by one minor stream on the west, Boeing Creek, which flows through the steep bluffs and into Puget Sound and two minor streams, McAleer Creek and Thornton Creek, which flow in Lake Washington. Boeing Creek and McAleer Creek flow through steep ravines and do not pose much of a hazard to the development above them. Thornton Creek flows through a swampy area parallel to I-5 on the west that has drainage issues and is subject to flooding.

Flooding in Shoreline is largely a result of surface water collecting in low lying areas and natural depressions with impermeable soils. The City has prepared a Shoreline Surface Water Master Plan and has adopted the Department of Ecology Stormwater Manual for Western Washington to address surface water concerns.

FEMA floodplains have been mapped in Boeing Creek and along the Puget Sound shoreline. Properties along the coast may experience coastal flooding during a strong storm surge; most vulnerable are the properties along 27th Avenue NW and the BNSF railroad tracks. A flood study was conducted in 2009 along Thornton Creek between Ronald Bog and I-5 near Twin Ponds. This study was submitted to FEMA in 2012 to update the Flood Insurance Rate Maps for the City of Shoreline.

## **Landslide/Sinkholes**

The term landslide refers to the down slope movement of masses of rock and soil.

Landslides are caused by one or a combination of the following factors: change in slope gradient, increasing the load the land must withstand, shocks and vibrations, change in



water content, ground water movement, frost action, weathering of rocks, and removal or changing the type of vegetation covering slopes.

Four types of landslides can potentially affect Shoreline. They are deep-seated, shallow, bench and large slides. Puget Sound's shoreline contains many large, deep-seated dormant landslides. Shallow slides are the most common type and the most probable for Shoreline. Occasionally, large catastrophic slides occur along Puget Sound. The figure below is a map of the landslide hazard areas for Shoreline and the structures located in the landslide hazard area. Landslides are often triggered by other natural hazards, such as earthquakes, heavy rain, floods, or wildfires.

Landslide Hazard Area



The Holiday Blast Storm of December 1996 and January 1997 caused a large washout/landslide or “Sinkhole” within Shoreline along NW 175th Street near 6th Avenue NW that was a federally declared disaster (see picture below). The 100 foot long sinkhole cost 2 million dollars to repair. However, the sinkhole provided opportunities to implement a series of Low Impact Development concepts ultimately reducing flooding and water quality issues, while increasing fish habitat and providing recreation opportunities.

Holiday Blast Storm Sinkhole - Shoreline



### **Wildland Fire**

Wildland fires can be caused by lightning strike or human error and spread to homes and businesses, block roads, and create significant economic and environmental damage if fuel loads and vegetation are not properly maintained. Specific areas, such as Richmond Beach Park and the Highlands neighborhood are especially vulnerable because they are highly vegetated areas with limited ingress and egress for emergency vehicles. Vegetated areas in Innis Arden and south of Richmond Beach may also be an area of concern. A steep slopes and land cover map may help to determine general wildland and brush fire hazard locations in Shoreline.

### **Volcanic Eruption**

Shoreline has low vulnerability to volcanic hazards. Solid matter ejected into the air by an erupting volcano, otherwise known as tephra, can potentially cause the most damage. Ash only ½ inch thick can impede the movement of most vehicles and disrupt transportation, communication, and utility systems. Tephra may cause eye and respiratory problems, particularly for those with existing medical conditions. Ash may also clog ventilation systems and other machinery. It is easily carried by winds and air currents remaining a hazard to machinery and transportation long after the eruption.

When tephra mixes with rain it becomes a much greater nuisance because wet ash is much heavier, more difficult to remove, and can cause structures or utility lines to collapse. Wet ash may also cause electrical shorts. An ash fall may cause secondary hazards such as fire or flooding.

### **Hazardous Material**

Three major rights-of-way traverse Shoreline and are used to transport hazardous material. These are the BNSF railroad, which is located along the western shore of the city, State Highway 99/ Aurora Avenue, which runs through the middle of the city, and Interstate 5, which is east of Aurora Avenue. Although the identity and quantity of what is being transported is unknown, Shoreline has a similar vulnerability for spillage as the rest of King

County, which has one of the highest probabilities in the state due to the large amounts of industry and port facilities in the area.

Hazardous material releases can affect both human and ecological health. The severity depends on the type and amount of chemical released and the effects range from minor to catastrophic.

### **Tsunami/Seiche**

Tsunamis affecting Washington State may be induced by an earthquake of local origin, or they may be caused by earthquakes at a considerable distance, such as from Alaska or Japan. Shoreline does not have any major lakes within its area, but a severe quake could create seiches in the small ponds such as Ronald Bog and Echo Lake that could potentially cause damage.

There is a low probability of a tsunami or seiche occurring in Shoreline. It is unlikely that a tsunami or seiche generated by a distant or Cascadia Subduction earthquake would result in much damage in Shoreline. One computer model suggests that a tsunami generated by such an earthquake with a magnitude of 8.5 would only be 0.2 to 0.4 meters in height when it reached the Seattle/Shoreline area. This results from the shielding of the Olympic Peninsula and the Puget Sound islands. However, Puget Sound is vulnerable to tsunamis generated by local crustal earthquakes (such as along the Seattle fault or South Whidbey Island fault) or by submarine landslides triggered by earthquake shaking. This type of tsunami could impact Shoreline. The low-lying areas along the Puget Sound coastline could suffer damage. Warning vulnerable areas would be nearly impossible due to the close proximity to the origin of the tsunami.

Properties located along Puget Sound may be vulnerable to tsunamis. There are 32 parcels that could be affected and are located on 27<sup>th</sup> Avenue NW. Properties directly adjacent to ponds or the small lakes in Shoreline may be potentially affected by a seiche caused by a local or distant quake. Echo Lake has development surrounding it, as does Ronald Bog on its south side.

### **Vegetation Protection**

Residents characterize the City of Shoreline as a wooded community; this is often cited as a key reason for locating in the area. Large evergreen trees can be seen rising above residential neighborhoods, on hilltops, and even on the periphery of Aurora Avenue. As the City becomes more urbanized, it is a priority to maintain and enhance the tree canopy. Forested open space, wetlands, and native vegetation found on steep slopes and larger residential lots are important resources that should be preserved. Trees help stabilize soils on steep slopes, and act as barriers to wind and sound. Plants replenish the soil with nutrients, generate oxygen, and clean pollutants from the air. Native vegetation provides habitat for wildlife. Wetlands and riparian vegetation provide surface water storage and help clean surface water of pollutants and sediment.

Aerial photos show that the community is a mosaic of various types of vegetation. The largest, most contiguous areas of native vegetation in Shoreline are primarily found in City parks, publicly owned open space, privately owned open space (such as the Boeing Creek area of The Highlands and the reserves in Innis Arden) and designated critical areas (such as steep slopes along the Puget Sound shoreline). These areas include the highest quality

wildlife habitat found in the City. However, areas of less intensive residential development also contain mature trees and other native vegetation which provide secondary wildlife habitat and substantially contribute to the quality of life in Shoreline. Native vegetation in residential areas that may be subdivided or otherwise more intensely developed is at the greatest risk of being lost.

### **Habitat Protection**

The process of urbanization can result in the conversion of wildlife habitat to other uses. The loss of certain types of habitat can have significant, adverse effects on the health of certain species. Fish and wildlife habitat conservation areas are those that are necessary for maintaining species within their natural geographic distribution so that isolated subpopulations are not created. Designated habitats include those areas associated with species that state or federal agencies have designated as endangered, threatened, sensitive, or candidate species, anadromous fish habitat, waterfowl and raptor nests, heron rookeries, and designated habitats of local importance.

Currently in the Puget Sound, the bald eagle and Chinook salmon are listed as threatened species by the federal government under the Endangered Species Act. The Washington Department of Fish and Wildlife (WDFW) indicates bald eagle territory in the Richmond Beach and Point Wells areas. WDFW maps and the City's stream inventory indicate the presence of Chinook salmon in portions (including sections outside of the City) of McAleer Creek, Thornton Creek and Boeing Creek. Other sources have indicated the presence of fish in other streams within the City, although the full extent of fish habitat has not been confirmed. To help restore healthy salmon runs, local governments and the State government must work proactively to address salmon habitat protection and restoration.

The Washington Department of Fish and Wildlife has developed the Priority Habitats and Species (PHS) Program to help preserve the best and most important habitats and provide for the life requirements of fish and wildlife. Priority species are fish and wildlife species that require protective measures and/or management guidelines to ensure their perpetuation. Priority habitats are habitat types with unique or significant value to many species. The WDFW has documented the locations of priority habitats and species within the City. These PHS areas include wetlands, anadromous fish habitat, riparian areas, bald eagle territory, urban natural open space, habitat for a priority bird species, and the point location of a priority bird species siting. These areas combined comprise less than 5% of the total land area of the City and are often found within existing City parks, public open space, and designated private open space

The City has developed a geographic information system (GIS) that includes detailed maps of PHS areas based on data provided by the WDFW and other mapping resources. WDFW provides management recommendations for priority species and habitats that are intended to assist landowners, users, and managers in conducting land-use activities in a manner that incorporates the needs of fish and wildlife. Management recommendations are developed through a comprehensive review and synthesis of the best scientific information available. The City has reviewed the PHS management recommendations developed by WDFW for species identified in Shoreline and used them to guide the development of critical areas regulations that fit the existing conditions and limitations of our relatively urbanized environment.

## **Streams and Water Resources**

### **Wetlands**

Wetlands perform valuable functions that include surface and flood water storage, water quality improvement, groundwater exchange, stream base flow augmentation, and biological habitat support. A review of background information, including aerial photos from 1992, identified 17 individual wetlands within the City. These wetlands range from the large estuarine system (a mixture of salt and fresh waters) adjacent to Puget Sound, to lakes and small excavated ponds. With the exception of the Puget Sound estuarine system, all wetlands in the City are palustrine systems (freshwater). The largest palustrine system is Echo Lake located in the north-central portion of the City. Other large wetlands include ponds within Ronald Bog Park, Twin Ponds Park, Paramount Open Space Park, and the Seattle Country Club, as well as numerous undocumented wetlands of .5 acres or less. Most wetlands in the City are relatively isolated systems and are surrounded by development.

Under the Shoreline Municipal Code, wetlands are designated using a tiered classification system (from Type I to Type IV) based on size, vegetative complexity, and the presence of threatened or endangered species. No wetlands in the City have received a Class I rating. All wetlands, regardless of size, are regulated under the Shoreline Municipal Code. When a development is proposed on a site with known or suspected wetlands, a wetland evaluation is required to verify and classify wetlands and delineate boundaries and buffer areas. The Department of Ecology mandates minimum wetland buffer areas based on typology and other factors.

All of the documented wetlands within the City have experienced some level of disturbance as a result of development and human activity. Disturbances have included major alterations such as wetland excavation, fill, or water impoundment. Some wetland areas occur within parks that receive constant use by people, threatening the wetlands with impacts from human activity, such as trash and trampling of vegetation.

### **Lakes**

There are four lakes in the City of Shoreline: Echo Lake, Ronald Bog, Hidden Lake and Twin Ponds. Like most small urban lakes, Shoreline's lakes contain pollutants and contaminated runoff, including fertilizers and pesticides from lawns and gardens; oils, greases, and heavy metals from vehicles; and fecal coliform bacteria. The quality of the water in the lakes is a concern to many residents and City staff. Ronald Bog and Twin Ponds were historically dredged. As urban development in the City has occurred, the process by which the nutrient level and vegetation in these lakes increases has accelerated. Ronald Bog and Twin Ponds will eventually revert to bogs.

Hidden Lake is currently used as a sediment storage facility and has been significantly altered to accommodate this function. King County completely reconstructed this feature by removing the sediment eroded from sites further upstream in the basin. Hidden Lake has served as a sink for this sediment and was designed to permanently reestablish the lake in a way that increases habitat for fish and wildlife and prevents the passage of fine sediments downstream.

### **Streams and Creeks**

Numerous small stream and creeks are found within or adjacent to the City of Shoreline. Many of these streams have been placed in culverts, channels, or otherwise altered and degraded. Boeing Creek flows to the Puget Sound and drains an area which includes Boeing Creek Park and Shoreview Park. The headwater of the Thornton Creek originates north of Cromwell Park, near the geographic center of the City, flows to Twin Ponds through a series of open stream channel segments and pipes, crosses the City limits, and emerges as an open channel in the City of Seattle's Jackson Park Golf Course. McAleer Creek flows in the southeasterly direction and passes through the northeast corner of the City and into Lake Forest Park. Lyon Creek flows in a similar direction just outside of the City. Other features include small and unnamed creeks which flow into the Puget Sound in the Richmond Beach, Innis Arden, and Highlands neighborhoods.

Large portions of the watersheds drained by creeks in the City have been paved or otherwise developed. This development dramatically increases the volume of water in the creeks during storm surges, and reduces in-stream flows during drier periods of the year. This combination of more intense storm surges and overall lower flows causes numerous environmental problems, including: increased bank erosion; scouring and deepening of the stream channel; reduced water quality; sedimentation of gravels; damage to stream-side vegetation; and reduction or elimination of habitat for wildlife, fish, and the insects that fish feed on.

### **Groundwater**

Groundwater aquifers are used for supplying water to lakes, wetlands, and streams during the dry season and for a few private wells that supply water for irrigation and possibly drinking water in a few isolated instances. Wetlands and lakes are thought to be the main groundwater recharge areas in the City.

### **Water Quality and Drainage**

Drainage in the City consists of nine separate drainage basins: Lyons Creek, McAleer Creek, Thornton Creek, Boeing Creek, West Lake Washington, Bitter Lake, Seattle Golf Club and two separate areas of the Middle Puget Sound Basin (north and south). Along the west half of the City, the Boeing Creek Basin drains directly into Puget Sound. The Middle Puget Sound basins drain into Puget Sound via small creeks and surface water systems. The McAleer Creek Basin in the northeastern portion of the City drains into Echo Lake and Lake Ballinger, and eventually into Lake Washington. The approximate eastern half of the City from Interstate 5 drains to Lake Washington via Thornton Creek. The Ballinger area drains to Lake Washington via Lyon Creek. Small portions of the City at the north and northeastern edges drain into Lake Washington through small creeks and surface water systems.

Drainage facilities in the City consist of a combination of conveyance pipes, ditches, and stream channels. Much of the development in the City took place in the 1940s and 1950s, prior to the implementation of stormwater mitigation regulations in the 1970s. Many water quality facilities have been constructed in the City, including Boeing Park Stormwater Pond, Cromwell Park stormwater wetland, dozens of raingardens and bioretention facilities. Innovative stormwater treatment was also incorporated into the design of the Aurora Corridor Improvement Project and the Green Street demonstration project on 17<sup>th</sup> Ave. NE.

Many natural creek systems have been stabilized or reconstructed to repair and prevent slope erosion or bank failures. However, water quality mitigation measures have not been adequate to protect natural waterways. Consequently, the water quality of lakes and streams in the City has been adversely impacted by the urbanization of the watersheds and the associated stormwater runoff. Although open vegetated drainage ways are generally the preferred option from a water quality standpoint, the construction of curbs, gutters, and sidewalks may be appropriate in areas with urban densities, high vehicular traffic, schools, parks, bus stops, shopping, or employment concentrations.

### **Air Quality**

One of the basic characteristics of a livable city is clean air. Numerous federal, state, regional, and local agencies enact and enforce legislation to protect air quality. Good air quality in Shoreline, and in the region, requires controlling emissions from all sources, including: internal combustion engines, industrial operations, indoor and outdoor burning, and wind-borne particles from land clearing and development. In the Puget Sound region, vehicle emissions are the primary source of air pollution. Local and regional components must be integrated in a comprehensive strategy designed to improve air quality through transportation system improvements, vehicle emissions reductions, and demand management strategies.

Air quality is measured by the concentration of chemical compounds and particulate matter in the air outside of buildings. Air that contains carbon monoxide, ozone, and particulate matter can degrade the health of humans, animals, and plants. Human health risks from poor air quality range in severity from headaches and dizziness to cancer, respiratory disease, other serious illnesses, and even premature death. Potential ecological impacts include damage to trees and other types of vegetation. Quality of life concerns include degradation of visibility and deposition of soot and other particulate matter on homes and other property.

The City seeks long-term strategies to address air quality problems, not only on the local level, but in the context of the entire Puget Sound Basin with coordination and major direction from the Puget Sound Clean Air Agency.

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# Capital Facilities Element Goals & Policies

## Introduction

The Washington State Growth Management Act (GMA), RCW 36.70A.070 requires cities to prepare a capital facilities plan element consisting of:

- 1) An inventory of current capital facilities owned by public entities showing the location and capacities of those public facilities, and identifying any current deficiencies;
- 2) A forecast of the future needs for such capital facilities;
- 3) The proposed capacities of expanded or new capital facilities;
- 4) At least a six-year plan that will finance capital facilities within the projected funding capacities and clearly identify sources of public money for such purposes; and
- 5) A requirement to reassess the land use element if probable funding falls short of meeting existing needs, and to ensure that the land use element, capital facilities element, and finance plan within the capital facilities plan element are coordinated and consistent.

Capital facilities investments include major rehabilitation or maintenance projects on capital assets; construction of new buildings, streets, and other facilities; and land for parks and other public purposes.

Under the GMA, a capital facilities element is required to address all public facilities except transportation facilities, which are to be addressed separately under the Transportation Element of the Plan. Accordingly, this Comprehensive Plan contains separate Transportation and Capital Facilities elements. A Park, Recreation, and Open Space Element is also contained in this Plan. However, the discussion of finance for capital facilities, transportation, and park resources has been combined in one location under this Capital Facilities Element.

The City of Shoreline is responsible for providing facilities and services that are needed by the residents and businesses of the City for a safe, secure, and efficient environment. These facilities and services include, but are not limited to, police and fire protection, parks, streets, water and sanitary sewer service, storm drainage service, and schools.

The City of Shoreline directly provides services for parks, streets, and stormwater management. The City has established interlocal agreements or contracts for those services that it does not provide. The Capital Facilities Element describes those services ~~and the services the City provides directly and through external organizations.~~ To be consistent with GMA the City maintains a six- year capital improvement program (CIP). ~~The costs of facilities associated with interlocal or franchise agreements or contracts are not included in the CIP.~~ Only city-owned or managed facilities are considered for capital expenditures (have capital expenditure costs). ~~The d~~Data regarding the projected needs of indirect services such as water, sewer, and schools were provided by the local service providers. The capital facility plans of the following providers are recognized by the City of Shoreline as supporting the land use objectives of the Comprehensive Plan.

**Comment [m1]:** DoMo: Isn't franchise agreement the correct term, not interlocal? Interlocal is used a couple times, so need to do a word search if franchise is the correct term. Sometimes "franchise" is correct, sometimes "interlocal" is, staff will make sure that the correct terminology is used.

- Ronald Wastewater District #64, Comprehensive Sewer Plan, January 2010
- Shoreline Water District #117, 2011 Water System Plan Update,
- Seattle Public Utilities Comprehensive 2013 Water System Plan Update

This Element contains the goals and policies that address the City's infrastructure – both those capital facilities that are owned and largely operated by the City, and those that are provided by other public entities. Other services, such as electricity, natural gas, cable and telephone are discussed in the Utilities Element. The *Capital Facilities – Supporting Analysis* section of this Plan contains the background data that provides the foundation for the following goals and policies. The Supporting Analysis section also includes the list of potential capital projects to implement the goals of the Comprehensive Plan.

### **Capital Facilities Goals**

**Goal CF I:** Provide adequate public facilities that address past deficiencies and anticipate the needs of growth through acceptable levels of service, prudent use of fiscal resources, and realistic timelines.

To support Goal CFI:

- Acquire Seattle Public Utilities water system in Shoreline;
- ~~Implement plan to assume the Ronald Wastewater District~~ As outlined in the 2002 Interlocal Operating Agreement complete the assumption of the Ronald Wastewater District; and
- Prepare for the expiration of the Shoreline Water District franchise (scheduled for 2027) by evaluating assumption and consolidation with the City's water system acquired from the City of Seattle (SPU).

**Goal CF II:** Ensure that capital facilities and public services necessary to support existing and new development are available, concurrent with locally adopted levels of service and in accordance with Washington State Law.

**Goal CF III:** Provide continuous, reliable, and cost-effective capital facilities and public services in the City and its Urban Growth Area in a phased, efficient manner, reflecting the sequence of development as described in other elements of the Comprehensive Plan.

**Goal CF IV:** Enhance the quality of life in Shoreline through the planned provision of capital facilities and public services that are provided either directly by the City or through coordination with other public and private entities.

**Goal CF V:** ~~Facilitate and support~~ Promote city-wide utility services that are:

- consistent,
- high quality,
- equitable,
- responsive,
- ~~forward looking,~~ technologically innovative,
- environmentally sensitive and energy efficient,
- locationally and aesthetically sensitive, and
- functionally and financially efficient.

~~Goal CF VI: Facilitate the provision of appropriate, reliable utility services.~~

Comment [m2]: Merged w/ above

Goal CF VII: Maintain and enhance capital facilities that will create a positive economic climate and ensure adequate capacity to move people, goods, and information.

**Capital Facilities Policies**

**General**

CF1: The City’s six-year Capital Improvement Program (CIP) shall serve as the short term budgetary process for implementing the long term Capital Facility Plan. Project priorities and funding allocations incorporated in the CIP shall be consistent with the long term CIP

CF2: Obtain and maintain an inventory that includes locations and capacities of existing City-managed and non-City-managed capital facilities. ~~This inventory should be updated every two years.~~

Comment [m3]: Is this feasible?

CF3: Review capital facility inventory findings and ~~project~~ identify future needs regarding needed capital facilities improvements and space. ~~This is based on adopted levels of service standards and forecasted growth in accordance with this plan and its established land uses. Update this projection every two years.~~

Comment [d4]: I don't think every two years is manageable – do we do this now? Do we need to state how often it is updated?? – Can we just delete the sentence – leaving it that we maintain an inventory and don't box ourselves into a mandatory update schedule? – same with CF3

I talked with Mark and agreed we should strike this language

CF4: Coordinate with public entities that provide services within the City’s planning area in ~~the~~ development of consistent service standards.

Comment [m5]: Feasible?

CF5: Identify, construct, and maintain infrastructure systems and capital facilities needed to promote the full use of the zoning potential in areas zoned for commercial and mixed use areas.

~~CF6: Maintain and enhance capital facilities that will create a positive economic climate and ensure adequate capacity to move people, goods, and information.~~

Comment [m6]: Same as Goal CF VII? Should this be deleted?

~~CF7: Identify future locations or land reserves for needed capital facilities.~~

Comment [m7]: Redundant to CF3

CF8: Ensure appropriate mitigation for both the community and adjacent areas if Shoreline is selected as a site for a regional capital facility, or is otherwise impacted by a regional facility’s expansion, development, or operation.

Comment [m8]: Combined this section with another with the same heading below.

**Level of Service**

~~CF9: Evaluate designated levels of service to ensure they are adequate to meet the needs of existing and anticipated development.~~

~~CF10: Ensure that capital facility improvements that are needed to meet established level of service standards can be provided by the City or the responsible service providers.~~

CF11: Identify deficiencies in capital facilities based on adopted levels of service, facility life cycles, and identify the means and timing for correcting these deficiencies.

Comment [m9]: Suggestion: something we are dealing with at the Shoreline Pool and RBSWP Ped Bridge for instance.

~~CF12: Minimize conflicts between level of service standards, capital improvement plans and service strategies for inter-related service providers.~~

~~CF13: Maintain a planning goal that adequate fire and police services are available for new structures at the time of development.~~

Comment [m9]: Superseded

~~CF14: Promote the adequate provision of the full range of services e.g. parks, schools, municipal facilities, solid waste, telecommunications, etc. for new development at service levels that are consistent throughout the City.~~

~~CF15: Work with all outside service providers to determine their ability to continue to meet service standards over the 20-year time frame of the Comprehensive Plan.~~

**Financing and Funding Priorities**

~~CF7: Work with service providers to ensure that their individual plans have funding policies that are compatible with this element.~~

~~Give highest funding priority to capital facility improvements that protect public health and safety.~~

~~CF478: Capital Facility improvements that are needed to correct existing deficiencies or maintain existing levels of service should have funding priority over those that would significantly enhance service levels above those designated in the Comprehensive Plan, or that are intended to substantially improve the community's quality of life.~~

~~CF489: Improvements that are needed to provide critical City services such as police, surface water, and transportation at designated service levels concurrent with growth shall have funding priority for City funds over improvements that are needed to provide general services or facilities to development at designated service levels.~~

Comment [m10]: Still waiting for feedback from Capital Projects Manager regarding "funding priorities" and if the language here accurately represents current practice.

~~CF190: Consider all available funding and financing mechanisms, (such as rates, bonds, impacts fees, grants, local improvement districts, etc.) for funding capital facilities.~~

~~CF2011: Evaluate proposed public capital facility projects to identify net costs and benefits, including impacts on transportation, stormwater, parks, and other public services. Assign greater funding priority to those projects that provide a higher net benefit and provide multiple functions to the community over projects that provide single or fewer functions.~~

~~CF2412: Utilize financing options that best facilitate implementation of the CIP in a financially prudent manner.~~

~~CF22: Encourage and assist neighborhoods to form Local Improvement Districts to finance local infrastructure development (e.g. sidewalks).~~

Comment [a11]: We are scheduled to have this conversation with Council in early October and may receive direction that this is good or bad policy. I recommend deleting this policy and including LIDs as a financing mechanism for consideration under CF 19. This idea is discussed in detail in the background of the CIP. shouldkeep

### Mitigation and Efficiency

- CF2313:** Maximize on-site mitigation of development impacts to minimize the need for additional capital facility improvements in the community.
- CF214:** Promote the co-location of capital facilities, ~~when feasible, (if viable)~~ to enhance the efficient use of land, reduce public costs, and minimize disruption to the community.
- CF2515:** Through site selection and design, seek opportunities to minimize the impact of capital facilities on the environment, and ~~if~~when possible, include enhancements to the natural environment.
- CF2616:** Promote water reuse and water conservation opportunities that:
- diminish impacts on water, wastewater, and surface water systems,
  - promote ~~the~~ conservation or improvement of natural systems.
- CF2717:** Encourage the use of ecologically sound site design ~~in ways that enhance the~~ provision of utility services through measures such as:
- using drought tolerant vegetation in landscaping to reduce water consumption;
  - using native vegetation in ~~places such as~~ natural or buffer areas to reduce the impacts of surface water runoff or impacts to wetlands;
  - promoting solar orientation on site to reduce nonrenewable energy consumption;
  - reducing impervious surfaces or excessive run-off to maintain natural drainage systems; and
  - encouraging tree retention to prevent erosion and provide wildlife habitat, etc.

**CF2818:** Support local efforts to minimize inflow and infiltration and reduce excessive discharge of surface water into wastewater systems, ~~in order to~~ reduce impacts on the wastewater system, and enhance wastewater system capacity.

**Comment [m12]:** I like the recommendations in this policy, but it contains a level of detail that borders on regulation and has been cause to strike other policies. Also, it is unclear how the bullets necessarily enhance provision of utility services. Should we delete or rewrite?

### Coordination and Public Involvement

- CF2919:** Provide opportunities for public participation in the development or improvement of capital facilities.
- CF3020:** Solicit and encourage citizen input in evaluating whether the City should seek to fund large community-wide capital facility improvements through voter-approved bonds.
- CF3421:** Work with non-City service providers to make capital facility improvements where deficiencies in infrastructure and services have been identified.
- CF3222:** Actively work with providers, to address deficiencies that pose a threat to public safety or health, or ~~deficiencies in~~impediments to meeting identified service levels.

- CF3323:** Critically review updated capital facility plans prepared by special districts or other external non-City Capital facilities and service providers for consistency with the Land Use and Capital Facilities Elements and identify opportunities for:
- co-location of facilities;
  - service enhancements and coordination with Ccity facilities and services;
  - development of public and environmental enhancements; and
  - reductions to overall public costs for capital improvements.

**Levels of Service**

**Comment [m13]:** Moved policies from same heading earlier in chapter.

**CF24:** Evaluate and establish designated levels of service to meet the needs of existing and anticipated development.

**CF25:** Plan accordingly so that capital facility improvements needed to meet established level of service standards can be provided by the City or the responsible service providers.

**CF26:** Identify deficiencies in capital facilities based on adopted levels of service and facility life cycles, and determine the means and timing for correcting these deficiencies.

**Comment [m14]:** Suggestion: something we are dealing with at the Shoreline Pool and RBSWP Ped Bridge for instance.

**CF27:** Resolve conflicts between level of service standards, capital improvement plans, and service strategies for inter-related service providers.

**CF28:** Promote the adequate provision of the full range of services e.g. parks, schools, municipal facilities, solid waste, telecommunications, etc. for new development at service levels that are consistent throughout the City.

**Comment [m15]:** Superseded

**CF29:** Work with all outside service providers to determine their ability to continue to meet service standards over the 20-year time frame of the Comprehensive Plan.

**City-Managed Capital Facilities and Services**

**CF340:** The City of Shoreline establishes the following levels of service as the minimum thresholds necessary to adequately serve development, as well as the minimum thresholds to which the City will strive to provide for existing development:

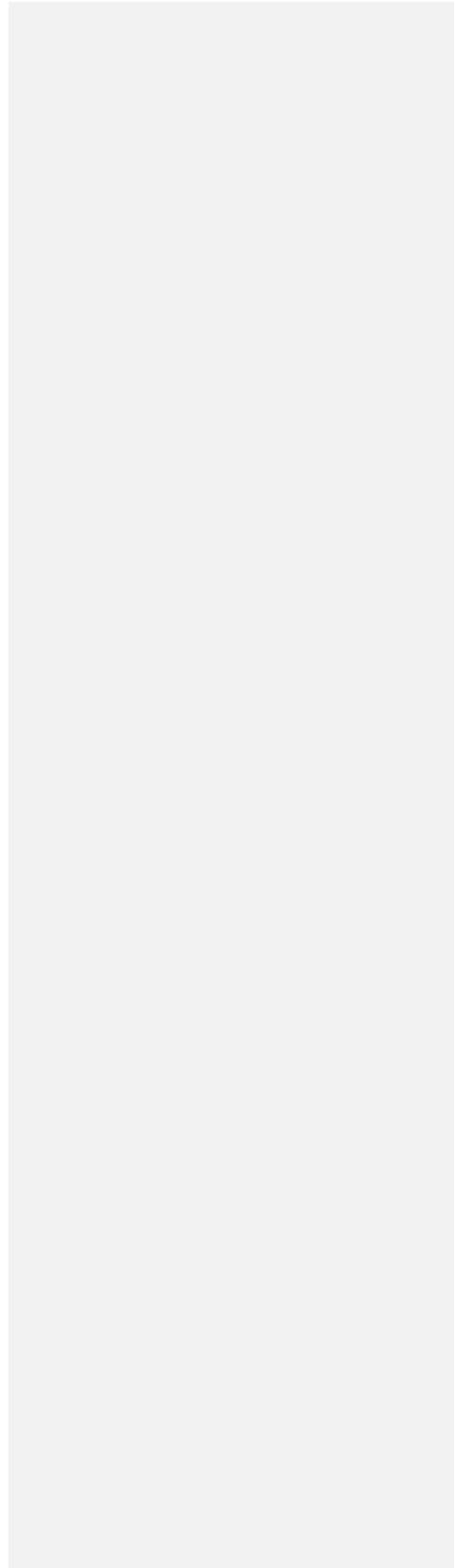
Service/Facility	Established Levels of Service
Transportation	As established by the Transportation Element, <del>A</del> adopted Transportation Master Plan, and as provided in the Capital Facilities Supporting Analysis section.
Surface Water	Consistent with the level of service recommended in the <del>2011</del> <u>most recently</u> adopted Surface Water Master Plan.
Parks and Recreation	As established by the Parks, Recreation, and Open Space Element; <del>the</del> <u>A</u> adopted Parks, Recreation and Open Space (PROS) -Plan and as provided in the Capital Facilities Supporting Analysis section.
Police	0.85 officers per 1,000 residents; and a response time of 5 minutes or less to all high priority calls, and within 30 minutes to all calls.

Non-City managed Capital Facilities and Services

**CF361:** The City of Shoreline establishes the following targets to guide the future delivery of community services and facilities, and to provide a measure to evaluate the adequacy of actual services:

Service/Facility	Target Level of Service
Water	Consistent with fire flow rates stated in the International Fire Code. Potable water as determined by the Washington State Department of Health.
Wastewater	Collection of peak wastewater discharge, <u>including</u> <del>plus</del> -infiltration and inflow, resulting in zero overflow events per year due to capacity and maintenance inadequacies (or consistent with current health standards).
Schools	The City of Shoreline is wholly within the boundaries of the Shoreline School District. The City neither sets nor controls the level of service standards for area schools. The Shoreline School District is charged with

ensuring there is adequate facility space and equipment to accommodate existing and projected student populations. The City coordinates land use planning with the school district to ensure there is adequate capacity in place or planned.





# Capital Facilities Element Goals & Policies

## *Introduction*

The Washington State Growth Management Act (GMA), RCW 36.70A.070 requires cities to prepare a capital facilities plan element consisting of:

- 1) An inventory of current capital facilities owned by public entities showing the location and capacities of those public facilities, and identifying any current deficiencies;
- 2) A forecast of the future needs for such capital facilities;
- 3) The proposed capacities of expanded or new capital facilities;
- 4) At least a six-year plan that will finance capital facilities within the projected funding capacities and clearly identify sources of public money for such purposes; and
- 5) A requirement to reassess the land use element if probable funding falls short of meeting existing needs, and to ensure that the land use element, capital facilities element, and finance plan within the capital facilities plan element are coordinated and consistent.

Capital facilities investments include major rehabilitation or maintenance projects on capital assets; construction of new buildings, streets, and other facilities; and land for parks and other public purposes.

Under the GMA, a capital facilities element is required to address all public facilities except transportation facilities, which are to be addressed separately under the Transportation Element of the Plan. Accordingly, this Comprehensive Plan contains separate Transportation and Capital Facilities elements. A Park, Recreation, and Open Space Element is also contained in this Plan. However, the discussion of finance for capital facilities, transportation, and park resources has been combined in one location under this Capital Facilities Element.

The City of Shoreline is responsible for providing facilities and services that are needed by the residents and businesses of the City for a safe, secure, and efficient environment. These facilities and services include, but are not limited to, police and fire protection, parks, streets, water and sanitary sewer service, storm drainage service, and schools.

The City of Shoreline directly provides services for parks, streets, and stormwater management. The City has established interlocal agreements or contracts for those services that it does not provide. The Capital Facilities Element describes those services the City provides directly and through external organizations. To be consistent with GMA the City maintains a six-year capital improvement program (CIP). The costs of facilities associated with interlocal or franchise agreements are not included in the CIP. Only city-owned or managed facilities are considered for capital expenditures (have capital expenditure costs). Data regarding the projected needs of indirect services such as water, sewer, and schools were provided by the local service providers. The capital facility plans of the following providers are recognized by the City of Shoreline as supporting the land use objectives of the Comprehensive Plan.

- Ronald Wastewater District #64, Comprehensive Sewer Plan, January 2010
- Shoreline Water District #117, 2011 Water System Plan Update,
- Seattle Public Utilities Comprehensive 2013 Water System Plan Update

This Element contains the goals and policies that address the City's infrastructure – both those capital facilities that are owned and largely operated by the City, and those that are provided by other public entities. Other services, such as electricity, natural gas, cable and telephone are discussed in the Utilities Element. The *Capital Facilities – Supporting Analysis* section of this Plan contains the background data that provides the foundation for the following goals and policies. The Supporting Analysis section also includes the list of potential capital projects to implement the goals of the Comprehensive Plan.

## ***Capital Facilities Goals***

**Goal CF I:** Provide adequate public facilities that address past deficiencies and anticipate the needs of growth through acceptable levels of service, prudent use of fiscal resources, and realistic timelines.

To support Goal CFI:

- Acquire Seattle Public Utilities water system in Shoreline;
- Implement plan to assume the Ronald Wastewater District as outlined in the 2002 Interlocal Operating Agreement; and
- Prepare for the expiration of the Shoreline Water District franchise (scheduled for 2027) by evaluating assumption and consolidation with the City's water system acquired from the City of Seattle (SPU).

**Goal CF II:** Ensure that capital facilities and public services necessary to support existing and new development are available, concurrent with locally adopted levels of service and in accordance with Washington State Law.

**Goal CF III:** Provide continuous, reliable, and cost-effective capital facilities and public services in the City and its Urban Growth Area in a phased, efficient manner, reflecting the sequence of development as described in other elements of the Comprehensive Plan.

**Goal CF IV:** Enhance the quality of life in Shoreline through the planned provision of capital facilities and public services that are provided either directly by the City or through coordination with other public and private entities.

**Goal CF V:** Facilitate and support city-wide utility services that are:

- consistent,
- high quality,
- equitable,
- responsive,
- technologically innovative, environmentally sensitive and energy efficient,
- locationally and aesthetically sensitive, and
- functionally and financially efficient.

**Goal CF VI:** Maintain and enhance capital facilities that will create a positive economic climate and ensure adequate capacity to move people, goods, and information.

## ***Capital Facilities Policies***

### **General**

- CF1:** The City's six-year Capital Improvement Program (CIP) shall serve as the short term budgetary process for implementing the long term Capital Facility Plan. Project priorities and funding allocations incorporated in the CIP shall be consistent with the long term CIP
- CF2:** Obtain and maintain an inventory that includes locations and capacities of existing City-managed and non-City-managed capital facilities. This inventory should be updated every two years.
- CF3:** Review capital facility inventory findings and identify future needs regarding improvements and space based on adopted levels of service standards and forecasted growth in accordance with this plan and its established land uses. Update this projection every two years.
- CF4:** Coordinate with public entities that provide services within the City's planning area in development of consistent service standards.
- CF5:** Identify, construct, and maintain infrastructure systems and capital facilities needed to promote the full use of the zoning potential in areas zoned for commercial and mixed use.
- CF6:** Ensure appropriate mitigation for both the community and adjacent areas if Shoreline is selected as a site for a regional capital facility, or is otherwise impacted by a regional facility's expansion, development, or operation.

### **Financing and Funding Priorities**

- CF7:** Work with service providers to ensure that their individual plans have funding policies that are compatible with this element.
- CF8:** Capital Facility improvements that are needed to correct existing deficiencies or maintain existing levels of service should have funding priority over those that would significantly enhance service levels above those designated in the Comprehensive Plan, or that are intended to substantially improve the community's quality of life.
- CF9:** Improvements that are needed to provide critical City services such as police, surface water, and transportation at designated service levels concurrent with growth shall have funding priority for City funds over improvements that are needed to provide general services or facilities to development at designated service levels.
- CF10:** Consider all available funding and financing mechanisms, (such as rates, bonds, impacts fees, grants, local improvement districts, etc.) for funding capital facilities.
- CF11:** Evaluate proposed public capital facility projects to identify net costs and benefits, including impacts on transportation, stormwater, parks, and other public services. Assign greater funding priority to those projects that provide a higher net benefit and

provide multiple functions to the community over projects that provide single or fewer functions.

- CF12:** Utilize financing options that best facilitate implementation of the CIP in a financially prudent manner.

### **Mitigation and Efficiency**

- CF13:** Maximize on-site mitigation of development impacts to minimize the need for additional capital facility improvements in the community.
- CF14:** Promote the co-location of capital facilities, when feasible, to enhance efficient use of land, reduce public costs, and minimize disruption to the community.
- CF15:** Through site selection and design, seek opportunities to minimize the impact of capital facilities on the environment, and when possible, include enhancements to the natural environment.
- CF16:** Promote water reuse and water conservation opportunities that:
- diminish impacts on water, wastewater, and surface water systems,
  - promote conservation or improvement of natural systems.
- CF17:** Encourage the use of ecologically sound site design-in ways that enhance provision of utility services through measures such as:
- using drought tolerant vegetation in landscaping to reduce water consumption;
  - using native vegetation in natural or buffer areas to reduce the impacts of surface water runoff or impacts to wetlands;
  - promoting solar orientation on site to reduce nonrenewable energy consumption;
  - reducing impervious surfaces or excessive run-off to maintain natural drainage systems; and
  - encouraging tree retention to prevent erosion and provide wildlife habitat.
- CF18:** Support local efforts to minimize inflow and infiltration and reduce excessive discharge of surface water into wastewater systems.

### **Coordination and Public Involvement**

- CF19:** Provide opportunities for public participation in the development or improvement of capital facilities.
- CF20:** Solicit and encourage citizen input in evaluating whether the City should seek to fund large community-wide capital facility improvements through voter-approved bonds.
- CF21:** Work with non-City service providers to make capital facility improvements where deficiencies in infrastructure and services have been identified.
- CF22:** Actively work with providers to address deficiencies that pose a threat to public safety or health, or impediments to meeting identified service levels.

- CF23:** Critically review updated capital facility plans prepared by special districts or other external service providers for consistency with the Land Use and Capital Facilities Elements and identify opportunities for:
- co-location of facilities;
  - service enhancements and coordination with City facilities and services;
  - development of public and environmental enhancements; and
  - reductions to overall public costs for capital improvements.

### **Levels of Service**

- CF24:** Evaluate and establish designated levels of service to meet the needs of existing and anticipated development.
- CF25:** Plan accordingly so that capital facility improvements needed to meet established level of service standards can be provided by the City or the responsible service providers.
- CF26:** Identify deficiencies in capital facilities based on adopted levels of service and facility life cycles, and determine the means and timing for correcting these deficiencies.
- CF27:** Resolve conflicts between level of service standards, capital improvement plans, and service strategies for inter-related service providers.
- CF28:** Promote the adequate provision of the full range of services e.g. parks, schools, municipal facilities, solid waste, telecommunications, etc. for new development at service levels that are consistent throughout the City.
- CF29:** Work with all outside service providers to determine their ability to continue to meet service standards over the 20-year time frame of the Comprehensive Plan.

### **City-Managed Capital Facilities and Services**

- CF30:** The City of Shoreline establishes the following levels of service as the minimum thresholds necessary to adequately serve development, as well as the minimum thresholds to which the City will strive to provide for existing development:

<b>Service/Facility</b>	<b>Established Levels of Service</b>
Transportation	As established by the Transportation Element, adopted Transportation Master Plan, and as provided in the Capital Facilities Supporting Analysis section.
Surface Water	Consistent with the level of service recommended in the most recently adopted Surface Water Master Plan.
Parks and Recreation	As established by the Parks, Recreation, and Open Space Element; the adopted Parks, Recreation and Open Space (PROS) Plan and as provided in the Capital Facilities Supporting Analysis section.
Police	0.85 officers per 1,000 residents; and a response time of 5 minutes or less to all high priority calls, and within 30 minutes to all calls.

*Non-City managed Capital Facilities and Services*

**CF31:** The City of Shoreline establishes the following targets to guide the future delivery of community services and facilities, and to provide a measure to evaluate the adequacy of actual services:

<b>Service/Facility</b>	<b>Target Level of Service</b>
Water	Consistent with fire flow rates stated in the International Fire Code. Potable water as determined by the Washington State Department of Health.
Wastewater	Collection of peak wastewater discharge, including infiltration and inflow, resulting in zero overflow events per year due to capacity and maintenance inadequacies (or consistent with current health standards).
Schools	The City of Shoreline is wholly within the boundaries of the Shoreline School District. The City neither sets nor controls the level of service standards for area schools. The Shoreline School District is charged with ensuring there is adequate facility space and equipment to accommodate existing and projected student populations. The City coordinates land use planning with the school

district to ensure there is adequate capacity in place or planned.

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# Capital Facilities Element Supporting Analysis

## Background and Context

Capital facilities in Shoreline that are addressed in this section are placed in two categories: city-managed facilities and non-city managed facilities. City-managed facilities are defined as those that are owned and operated or managed by the City. Non-city managed facilities are defined as those public capital facilities that are not owned and operated by the City, or are facilities and services for which the City has an interlocal or franchise agreement, or services and facilities that are provided to City residents through independent districts. This distinction is relevant because, although the City has contractual relationships with some of these non-city managed service providers, the level of authority it can exert to ensure that a district's capital facility plan and implementation strategies are consistent with the City's vision<sub>1</sub> and the goals and policies contained in the Comprehensive Plan<sub>1</sub> as well as the adopted development regulations<sub>1</sub> is not as significant as it could be if the service was owned and operated by the City.

This element provides an inventory of both City-managed and non-city-managed public facilities and services. This includes surface water<sub>1</sub>, transportation<sub>1</sub>, park, recreation and cultural resources<sub>1</sub>, police<sub>1</sub>, fire<sub>1</sub>, emergency operations center<sub>1</sub>, public schools<sub>1</sub>, water<sub>1</sub>, wastewater<sub>1</sub>, and solid waste. Transportation facilities and park, recreation, and open space facilities are addressed in their respective elements of this Comprehensive Plan. Other utility facilities such as electrical, natural gas, and telecommunication services are discussed in the "Utilities Element - Supporting Analysis" section of the Plan.

The Growth Management Act (GMA) requires that the Capital Facilities Element provide an inventory of public facilities, including their locations and capacities. The GMA also requires a forecast of future needs for capital facilities, and identification of the proposed capacities of new or expanded capital facilities, as well as facility locations if listed in the six-year plan.

For facilities funded by the City, the GMA requires the preparation of a six-year plan for financing new or expanded capital facilities. The six-year plan must consider financing within project funding capacities, clearly identify the sources of public moneys for these improvements, and ensure that these improvements are consistent with the Land Use Element. Finally, the GMA requires the City to reassess the Land Use Element or revise the adopted level of service if funding falls short of meeting future capital facility needs. The King County Countywide Planning Policies further state that capital facility investment decisions place a high priority on public health and safety.

This Element will address the requirements of the Growth Management Act as well as help answer important questions<sub>1</sub> such as:

- What kind of services and facilities does the community want and need to serve existing and future residents, and which services and facilities are most important?
- When should these services and facilities be provided<sub>1</sub> and how should they be funded?
- If needed in the near-term, where should such facilities be located?

**Comment [m1]:** DoMo: I don't recall seeing Emergency Operations Center called out in the element goals and policies.

- How can the need for new facilities be limited, and their impacts on the community be addressed?
- What is the City's role in ensuring and providing services and facilities, and how should the City work with other providers to facilitate good service?

Shoreline is served by an extensive system of publicly funded and operated capital facilities, from schools and parks to utility systems and transportation facilities. Many of these facilities, such as water towers and roads, help meet the basic needs of residents. Some, such as fire stations and flood detention ponds, make the community safer. Community resources ~~such as~~ like schools and libraries foster learning and educational development, ~~and which~~ help make the City a better place. Others, such as parks and museums, enhance the quality of life.

The community benefits from these investments on a daily basis. In order to sustain and improve on the benefits that the community currently enjoys, the City must identify how it and other public service providers can best maintain existing facilities, and create new facilities to serve the needs and desires of local residents and future development.

When Shoreline residents incorporated the City in 1995, it was in large part to receive better, more efficient services for their tax dollars. One way for the City to provide more efficient services includes unifying some of the water and sewer utilities with City operations, creating one-stop shopping for City residents and businesses. Early City Councils realized that consolidating utility services in Shoreline would reduce inefficiencies associated with multiple governmental entities operating in the same city.

Over the coming years, many public facilities will need to be replaced, refurbished, or expanded, and new facilities created in order to serve existing and new residents. Some of these facilities are provided directly by the City. In other cases, separate providers deliver services and plan for and fund capital improvements to meet the mission of their district or service area. A few of these facilities serve not only the needs of Shoreline, but also the larger region.

All of these projects will be competing for limited public resources. For projects that the City controls, citizens must prioritize to decide which projects will proceed and, how to fund them, ~~and then prioritize them~~. At the development stage, the community ~~must clarify~~ may be able to influence where these facilities (~~whether provided by the City or not~~) will be located and how to address the impacts of new or expanded facilities on adjacent areas and the community.

~~This Capital Facilities Element identifies how the community will respond to these capital needs over the next twenty years.~~

## **Existing Conditions**

This chapter identifies the primary capital facilities that exist within the City. These facilities are listed as **City-Managed Facilities**, and **Non-City-Managed Facilities**. The facility, provider, and an inventory including the name, size, and location of each facility are provided, if the information is available. Some service providers must prepare a comprehensive service plan that includes a capital facility element. These plans are incorporated into this capital facility element by reference. Each plan has been reviewed for

**Comment [m2]:** DoMo: How do we know what the community response will be?  
Good point. Deleted.

consistency with the general policies and Land Use Element. A brief description of services provided at the facility is also presented to explain the use of the structure(s).

In addition, if available, currently identified plans for expansion are provided as a part of the existing conditions information, including the type of facility, the proposed size of the facility, and the location and timing of expansion. In some cases, this information ~~is may be~~ currently unknown at this time or proprietary.

The City maintains a number of franchise agreements with utility providers allowing for the existence of support facilities (e.g., sewer mains) within the City's rights-of-way (streets). Many of the services referred to in this Element are evaluated by the City through franchise and interlocal agreements.

### **City-Managed Facilities and Services**

This section addresses existing public capital facilities owned or largely operated and managed by the City of Shoreline:

- City-Managed Buildings and Facilities
- Surface Water Facilities
- Transportation Facilities
- Park and Recreation Facilities

### ***City-Managed Buildings and Facilities***

#### **Current City-Managed Facilities**

~~The City of Shoreline offices provide a wide variety of services and functions including: parks and recreation, development services (permitting), planning and community development, economic development, budgeting code enforcement, surface water planning, Community Services Division (Human Service, Emergency Management, Neighborhoods, and Customer Response), and transportation planning. In addition, the City maintains a number of administrative functions including finance and human resources as well as the offices of the City Clerk and City Attorney.~~

The City of Shoreline Civic Center, ~~which includes~~ the City Hall building at 17500 Midvale Avenue North, which provides approximately 66,400 square feet of office space, where governmental services are available. The campus also includes a 21,000 square foot auditorium, a 75 car elevated parking structure, and a one acre public park and plaza located at 17500 Midvale Avenue North.

In addition, the City owns and maintains approximately 28,765 square feet of facilities to support the park system, including the Spartan Recreation Center, the Shoreline Pool, the Richmond Highlands Recreation Center, Kruckeberg Botanic Garden, the Richmond Beach Saltwater Park Pedestrian Bridge, numerous park shelters, and outdoor rest rooms.

The City operates a maintenance facility at Hamlin Park, located at 16006 15<sup>th</sup> NE. This location serves as a storage yard for various City vehicles, including a street sweeper and road maintenance equipment, as well as offices for street and park maintenance crews. The City is evaluating the relocation and expansion of this facility as part of possible utility acquisitions.

**Comment [m3]:** It seems like we should make a comprehensive list of services or just drop this intro. Suggestions?

### **Storm Water Facilities**

The Surface Water Master Plan, adopted in 2011, provides a detailed discussion of the storm water facilities in Shoreline. The plan responds to both state and federal requirements for managing surface water in the City. The Plan reviews current and anticipated regulatory requirements, discusses current storm water management programs/initiatives, identifies flooding and water quality programs, and discusses the resources needed for the City to fully implement the plan. Management of surface waters in the City is funded through the City's Surface Water Utility. The plan also provides a detailed inventory of the existing storm water facilities and necessary capital facility upgrades.

### **Transportation Facilities**

The Transportation Master Plan, adopted in 2011, and Transportation Element of this Plan provide a detailed discussion of the transportation facilities in Shoreline. The City annually prepares and adopts a six-year Transportation Improvement Plan (TIP) each year. This plan lists street and non-motorized projects, and can include both funded and unfunded projects. This plan is prepared for transportation project scheduling, prioritization, and grant eligibility purposes.

### **Parks and Recreation Facilities**

There are a number of public parks and recreation facilities within the community. These facilities are discussed in more detail in the 2011-2017 Parks, Recreation, and Open Space Plan and Parks, Recreation, and Open Space Element of this Plan.

### **Police Facilities**

#### **Current Police Facilities**

The main Police Station was built in 1956. The building is 5,481 square feet and is constructed of unreinforced masonry and that has not been retrofitted to earthquake standards. There is a process underway to identify a location and funding for a new facility. This need was identified during the City's of Shoreline 2009 Hazard Mitigation Planning effort.

There are three police facilities located throughout the City of Shoreline, a main police station and two neighborhood centers:

<b>Police Station</b>	<b>Neighborhood Center</b>	<b>Neighborhood Center</b>
<i>Building owned by the City</i>	Eastside Storefront	Westside Storefront
1206 N 185 <sup>th</sup> Street	<i>Space leased by the City</i>	<i>Space leased by the City</i>
	521 NE 165 <sup>th</sup> Street	630 NW Richmond Beach Road

Police services are provided to the City through a year-to-year contract with King County. Services are provided to the City of Shoreline under the "City Model" police contract in two major areas:

City Services: staff is assigned to and works within the City. In 2012, there were 52 FTE's dedicated to the City.

Support Services: staff is assigned within the King County Sheriff's Office and is deployed to the City on an as-needed basis (e.g., criminal investigations and special response teams).

Two Community Policing Specialists (i.e., Storefront Officers) are assigned to the two Neighborhood Centers (West and East “storefront centers”). Storefront Officers are assigned to these locations on a full-time basis, working with the local residential and commercial neighborhoods, businesses, and schools to resolve issues and problems affecting them. Storefront Officers generally do not answer 911 calls (except when available). Emergency calls for service to Shoreline are managed through the King County “911” Communications Center.

**Comment [m4]:** DoMo: What does this mean? Is it necessary to include? I suggest deleting/

There are no city-managed jail cells located within the City. The Shoreline Police maintain two holding cells at the Police Station on N 185th to detain suspects until they can be transferred to the King or Snohomish County jail facilities.

## Non-City-Managed Facilities and Services

There are additional public capital facilities and services available to the City of Shoreline. These include facilities and services that are provided to the City through contracts between the City of Shoreline and private or public utility districts and entities, or between individual residents and utilities or district service providers. These include fire and police, wastewater, water, public schools, and solid waste facilities and services. Facilities and services, such as electrical, natural gas, and telecommunications, which are specifically characterized as “utilities” by the Growth Management Act, are addressed in the Utilities element.

### Shoreline District Court

Supportive of Police services is the Shoreline District Court (located at 18050 Meridian Ave N.) is supportive of police services, which is provided to the City through an interlocal agreement with King County. The District Court provides city-managed court services for the prosecution of criminal offenses committed within the incorporated City limits. The District Court serves several other jurisdictions as well. No known changes are planned for the Shoreline District Court facility or services.

### Current Fire Facilities

The Shoreline Fire Department serves an area slightly larger than the incorporated boundaries of the City of Shoreline. The Shoreline Fire Department estimates that the population served by the Department is 53,000. In addition to the Shoreline Area, the Fire Department provides fire suppression services to (Point Wells) in Snohomish County on a contractual basis.

The Shoreline Fire Department maintains five stations located at 17525 Aurora Ave., N, 719 North 185<sup>th</sup> St., 1841 NW 195<sup>th</sup> St., 145 NE 155<sup>th</sup> St., and 1410 NE 180<sup>th</sup> Street. The department also maintains five pumpers, three advanced life support units, three basic life support units, and one ladder truck.

### City of Shoreline Emergency Operations Center (EOC)

RCW 38.52.070 authorizes and directs the City of Shoreline to assume the responsibility of emergency management for their jurisdiction. The City of Shoreline has established its Emergency Operations Center at the Shoreline Fire Headquarters through an Memorandum of Understanding (MOU) signed by the City Manager and Fire Chief. The City supports the equipment needed to operate from the Fire Department’s community room. The City’s

| ~~“back-up” EOC is currently identified as a meeting room in the Shoreline Police Department.~~  
 | The need for a more permanent EOC was also discussed in the Hazard Mitigation Planning  
 | process. This could potentially be included in the planning for a new police facility, and it is  
 | considered a “critical facility” during emergencies.

#### **Planned Fire Facilities**

The Shoreline Fire Department recently completed construction of two new neighborhood fire stations and a training/support services/administrative facility. With these project constructed, there are no additional major upgrades projected for the next 15 to 20 years.

#### **Public School Facilities**

| Public school services are provided by Shoreline Public School District #412. Within the  
 | District (which includes the cities of Shoreline and Lake Forest Park) there are ~~16~~sixteen  
 | public schools, a bus barn, and a District Office and Conference Center facility.

#### **Current Public School District Facilities**

School District #412 encompasses a sixteen square mile area, bounded by Puget Sound on the west, Lake Washington to the east, the Seattle City limits to the south, and the King/Snohomish County line to the north. The Shoreline School District boundaries include the cities of Shoreline and Lake Forest Park. Residents of Shoreline are served by all District schools except Brookside Elementary School and Lake Forest Park Elementary School.

| The School District operates one preschool/daycare center, eight elementary schools, two  
 | middle schools, two high schools, ~~1~~the Shoreline Center (described in detail below) and ~~two~~  
 | additional surplus properties located within the City of Shoreline. In addition to these  
 | facilities, the School District maintains a Transportation Center located adjacent to the  
 | Ridgecrest Elementary School site, and a warehouse with a central kitchen located adjacent  
 | to Hamlin Park. These facilities are listed in the table below.

Table CF-1: Shoreline School District Facilities

Name of Facility	Location
Preschool/Daycare Centers:	
Shoreline Children's Center	1900 N 170th Street
Elementary Schools:	
Briarcrest Elementary	2715 NE 158th Street
Echo Lake Elementary	19345 Wallingford Avenue N
Highland Terrace Elementary	100 N 160th Street
Meridian Park Elementary	17077 Meridian Avenue N
North City Elementary	816 NE 190th Street
Parkwood Elementary	1815 N 155th Street.
Ridgecrest Elementary	16516 10th Avenue NE
Syre Elementary	19545 12th Avenue NW
Middle Schools:	
Einstein Middle School	19343 3rd Avenue NW
Kellogg Middle School	16045 25th Avenue NE
High Schools:	
Shorecrest High School	15343 25th Avenue NE
Shorewood High School	17300 Fremont Avenue N
Other Facilities:	
The Shoreline Center	18560 1st Avenue NE
Transportation Center	
Warehouse and Central Kitchen	
Cedarbrook (closed)	2000 NE Perkins Way
Sunset Elementary(closed)	17800 10th Avenue NW

Comment [m5]: Need address(es)

### Shoreline Center

The Shoreline Center is located at 18560 1st Avenue NE, in the former Shoreline High School campus. The facility is owned by the Shoreline School District. It comprises approximately 209,000 square feet of enclosed space located on 35 acres of land. The City maintains and operates portions of the facility under an interlocal agreement.—

The Shoreline Center accommodates several organizations and services, including the Shoreline School District offices, the Shoreline Conference Center, the Shoreline – Lake Forest Park Arts Council, the Shoreline PTA Council, the Shoreline Public Schools Foundation, the Shoreline Senior Center, as well as the Shoreline Chamber of Commerce. A football field, gymnasium, and soccer fields are also located on the campus.

The Shoreline School District does not have any specific plans for substantial changes to the Shoreline Center building.

### Planned School District Facilities

Generally, the School District can take the following steps to expand capacity at individual sites:

- Site a portable at an affected school. The District owns several portables for this purpose; if all are being utilized, the District could purchase or lease more.
- Alter/shift special program assignments to available space to free up space for core programs: e.g. gifted programs, special education, arts, activities, etc.
- Boundary adjustments: the areas from which individual schools draw may be adjusted; in more extreme cases, the district boundary could be modified.
- Expansion of affected schools (if feasible without eliminating required playfields or parking).

### Water Service

The City of Shoreline is served by two public water utilities and maintains franchise agreements with each entity:

- Seattle Public Utilities (SPU), which serves the portion of the City located generally west of I-5.
- Shoreline Water District (SWD), which serves the portion of the City generally east of I-5.

### Existing Water System

The water system provides water conveyance and fire flow service to hydrants, individual and multi-family residences, commercial customers, and fire suppression systems. This water is supplied by Seattle Public Utilities via the 60+-inch transmission main located along 8<sup>th</sup> Avenue NE. The Seattle Public Utilities' primary sources of water are the Cedar and Tolt Rivers.

SPU is a direct provider of water to the geographic area generally west of the I-5 corridor, servicing about 58 percent of the City's population. The other 42 percent of the city is serviced by the SWD, which purchases water wholesale from SPU.

### Seattle Public Utilities (Water)

#### **Existing Seattle Public Utilities Water Services and Facilities**

SPU facilities in the City of Shoreline constructed through 1994 include approximately 606,000 feet of 1-inch diameter to 66-inch diameter pipe, 879 fire hydrants from 2 to 8-inches in diameter (785 hydrants are 6 inches in diameter), and the following four major facilities:

1. Richmond Highlands Tanks at the Southwest corner of N 195th Street & Fremont Avenue N
2. Foy Standpipe at the northeast corner of Dayton Avenue N and N 145th Street
3. Foy Pump Station at the northeast corner of 5th Avenue NE and NE 145th Street
4. North Pump Station located east of 8th Avenue NE on NE 185th Street

The earliest portion of the water distribution system included 27,882 feet of waterline, which was built in 1933. The water system is now distributed throughout the SPU service area in Shoreline. In 1995, an estimated 2,640 feet of new pipe was built, generally to replace existing water mains. The water system has approximately 17,000 feet of 3-inch and less diameter pipe in addition to 2,907 feet of 4-inch pipe.



### **Planned Seattle Public Utilities Water Service and Facilities**

The capital expenditures that SPU has identified are included in their plan update. The actual capital facility upgrades for Shoreline will be re-evaluated by the City as part of the potential acquisition process.

### **Shoreline Water District**

#### **Existing Shoreline Water District Services and Facilities**

The Shoreline Water District's (SWD) administrative offices are located at 15<sup>th</sup> Avenue NE and NE 177<sup>th</sup> Street. The maintenance facility is located south of the administrative offices, at 15<sup>th</sup> Avenue NE and NE 169<sup>th</sup> Street. The District was formed in 1931, and has operated as Shoreline Water District since 1991. The majority of the system was constructed between 1948 and 1975. In 1982, 27 cities, water districts, and associations signed 30-year contracts to buy some or all of their water from SPU on a wholesale basis, ~~and~~ SWD was one of these districts. The contract signed by SWD in 1982 was effective until January 1, 2012. In November 2001, SWD was one of nine associations that signed a new 60-year water service agreement with SPU, ~~and their~~ new contract ~~now~~ extends to January 1, 2062. This contract allows SWD to acquire all of its water from metered connections from SPU's Tolt Transmission Pipeline.

The Shoreline Water District system contains more than 92 miles of water main, ranging in size from 2 to 20 inches. Transmission capability for the system is primarily provided by 12-inch diameter pipelines from the supply stations to various points within the service area. The transmission pipelines are located primarily along the major city transportation corridors. Some transmission capability is also provided by looped, 8-inch diameter pipelines in the heavily developed residential areas of the system. Over 50 percent of the mains were installed between 1966 and 1968.

The Shoreline Water District storage capacity is composed of a 3.7 million gallon reservoir and a 2.0 million gallon reservoir. A detailed inventory of the system's existing facilities is included in the District's 2011 Water System Update.

#### **Planned Shoreline Water District Services and Facilities**

A comprehensive Water System Plan update was completed by the Shoreline Water District in 2012. This Plan identifies numerous projects including: equipment replacement and maintenance, pressure zone improvements, main replacements, new booster pump station to increase fire flows, and continued monitoring of water quality. The District has current plans to upgrade their aAdministrative offices and maintenance facility.

#### **Future Water Service**

The City has a tentative agreement with the City of Seattle regarding the sale of the Seattle Public Utilities (SPU) water system located in Shoreline. The Shoreline City Council has established ~~the~~ SPU water system acquisition as a specific goal to allow ~~our~~ citizens a direct say in how rates for services are set and how the utility is managed. Currently, rate and management decisions are made solely by the City of Seattle.

The City is interested in reinvesting back into the water system in Shoreline at a rate higher than what either SWD or SPU ~~utility~~ has projected it will spend. By controlling reinvestment in the system, the City will be able to improve its fire protection, facilitate future economic development, and manage ~~encourage~~ growth ~~where it wants growth to occur~~ by making

utility infrastructure available. The latter is important if the City is to diversify its economic base by growing the commercial and retail segments. Economic development provides the opportunity to improve access to goods and the services available to residents, improve the quality of life, and reduces the City's financial dependency on residential property tax. Controlling the water utilities will help streamline the permitting process for investors.

### **Wastewater**

Ronald Wastewater District was formed in 1951. It is the primary wastewater service provider for the City of Shoreline, and in October 2002 the City executed a franchise agreement with the District to construct, maintain, operate, replace, and repair the sanitary sewer within the City. The Highlands Sewer District, serves a small part of the City in the Highlands neighborhood.

There are three unsewered areas located within the city limits (1) along 23<sup>rd</sup> Avenue NE between N. 145<sup>th</sup> and N. 150<sup>th</sup> Streets – 12 lots, (2) along 23<sup>rd</sup> Avenue NE near Ballinger Way – 36 lots, and (3) along Corliss Avenue N – 9 lots. These 57 lots, in addition to approximately 12 known lots scattered individually throughout the District with on-site sewage disposal systems, are the total unsewered lots within the District service area. There are approximately 10 lots on septic systems located along 23<sup>rd</sup> Avenue NE, just south of N. 150<sup>th</sup> Street. The Ronald Wastewater District is aware of two septic systems located in the Richmond Beach Neighborhood. Additionally, approximately four square blocks located between N 186<sup>th</sup> and N 190<sup>th</sup> along Corliss Avenue N, just west of the City of Shoreline Senior Center are also on septic systems.

Wastewater treatment services are provided by the City of Edmonds and the King County Department of Natural Resources Wastewater Division (formerly Metro). King County DNR also provides gravity and pumped interceptor service.

### **Ronald Wastewater District (RWD)**

#### **Existing Ronald Wastewater District Services and Facilities**

Ronald Wastewater District's service area includes the entire City of Shoreline, with the exception of the Highlands neighborhood. In October 2001, RWD purchased the portion of sewer system owned by Seattle Public Utilities known as the Lake City Sewer District. This area covers most of the I-5 corridor, along with the southeastern portion of the City. The District presently owns, operates, and maintains a domestic wastewater collector and interceptor system consisting of 16 lift stations, 21 individual grinder pumps, and approximately 190 miles of 6" to 30" diameter sanitary sewer mains, not including private sewers. Sewer service is generally provided to customers by gravity flow through the District system, or by gravity flow to District owned and operated lift stations.

The wastewater collected from within the District is treated at two facilities, King County Wastewater Division's West Point Treatment Plant and the City of Edmonds Treatment Plant, under contract arrangements. The Highlands Sewer District discharges wastewater flow into the Ronald Wastewater District system. The existing collection system is detailed in the District's 2010 Comprehensive Water Plan.

#### **Planned Ronald Wastewater District Services and Facilities**

To further the goal of consolidating services, the City and District entered into an Interlocal Operating Agreement in 2002, which facilitates assumption of the District in October 2017.

This assumption, as with the future assumption of the Shoreline Water District, will allow coordination and resource sharing with other City utility and street operations. The Agreement outlines the unification process between the City and the District. The City will use the assumption process authorized in Chapter 38.13A, which means all assets, reserve funds, employees, equipment and any District debt will be assumed by the City, and the Ronald Wastewater District will cease to exist as a separate government entity.

Currently the District maintains a 10-year capital improvement program for its original sewer system and the old Lake City Sewer District system. The Capital Improvement Program includes an ongoing infiltration and inflow monitoring and reduction program. The City will re-evaluate the capital improvement plans as part of the unification process.

#### **Highlands Sewer District (HSD)**

##### ***Existing and Planned Highlands Sewer District Services and Facilities***

The Highlands Sewer District maintains a sanitary sewer collection system that conveys wastewater from approximately 100 households in the Highlands Neighborhood to the Ronald Wastewater District. There are no known changes to future provision of service within the Highlands Sewer District.

#### ***Treatment Facilities***

##### **Existing King County Department of Natural Resources Wastewater Division (KCDNRWD) and the City of Edmonds Services and Facilities**

King County maintains a system of interceptor sewers and three (3) pumping stations within the City of Shoreline. King County transfers the majority of the flows from within the City of Shoreline via gravity and pumping to the West Point Treatment Plant. The West Point Treatment Plant currently has the capacity to treat up to 133 million gallons of wastewater per day.

**Comment [m6]:** DoMo: What about Brightwater? Isn't that used by Shoreline as well as West Point?

The majority of the wastewater flows in the District's sewer pipes are generated by the citizens of Shoreline. Flows are also transferred from areas in Lake Forest Park, Highlands Sewer District, and from Woodway, Mountlake Terrace, and Olympic View in Snohomish County through the District's sewer mains into either King County or City of Edmonds interceptors.

A small area within the City of Shoreline (approximately 2,200 households) is served via gravity and pumping into Snohomish County and to the City of Edmonds Wastewater Treatment Plant. The Edmonds Wastewater Treatment Plant currently has capacity to treat approximately 12 million gallons per day.

##### **Planned King County Department of Natural Resources Wastewater Division and City of Edmonds Services and Facilities**

In response to increased growth in our region, King County ~~has constructed~~ a regional wastewater treatment plant, called Brightwater. Construction started in 2006. Treatment plant start-up and operations began in September 2011.

Brightwater serves portions of King and Snohomish. The facilities include a treatment plant, conveyance (pipes and pumps taking wastewater to and from the plant), and a marine outfall (at Point Wells).

The capacity needed to treat future wastewater flows from Shoreline will be accommodated by this facility.

### **Solid Waste**

#### **Existing Solid Waste Collection Services and Facilities**

The City of Shoreline currently has a solid waste collection contract with Cleanscapes, LLC, that expires in 2015 for residential curbside solid waste and recycling collection and commercial solid waste collection. Shoreline maintains an interlocal agreement with King County for use of the First Northwest Transfer Station. In addition to solid waste collection, the City also operates a household battery recycling program and a composting facility for recycling city-managed and school district green waste. The City also sponsors two recycling events during the year for residents to recycle household items.

#### **Planned Solid Waste Services and Facilities**

The City plans to continue solid waste collection through contract services, and to continue its agreement with King County for the use of the First Northwest Transfer Station, which was renovated in 2008. The facility no longer accepts ~~for recycling~~: plastic, glass, cardboard, ~~and~~ or mixed paper ~~for recycling~~. Curbside recycling for these materials is provided by Cleanscapes. The City continues to encourage recycling throughout the city by modeling it in all City-owned facilities, and through environmental education and stewardship.

### **Capital Facility Issues**

#### **General Growth Projections**

According to growth projections, which provide the foundation for the Land Use element of the Comprehensive Plan, the City of Shoreline could experience an increase of up to approximately 2,5000 additional households over the next twenty years. This figure is based on the housing target allocated to the City by King County (see the Land Use Element for additional discussion of the City's housing target).

For capital facilities planning purposes, the projected growth expected over the ~~20~~twenty-year period was allocated on an average basis over the ~~20~~twenty-year period rather than allocated based on a year-by-year prediction that tries to factor in anticipated economic cycles. Growth will undoubtedly not occur precisely as projected over the next six-year or even the ~~20~~twenty-year period. For this reason, the GMA requires that the Capital Facilities Plan be updated at least every six years. This provides local governments with the opportunity to re-evaluate their forecast in light of the actual growth experienced, revise their forecast if necessary, and adjust the number or timing of capital facilities that are needed.

The Capital Facilities Plan is updated annually as part of the City's budget process, thereby ensuring that the Plan reflects the most current actual statistics related to growth in Shoreline, and that City-managed capital facilities are slated for upgrade in accordance with both the level of service standards and the City's concurrency policies.

#### **Levels of Service**

Level of service is a term that describes the amount, type, or quality of facilities that are needed in order to serve the community at a desired and measurable standard. This standard varies, ~~depending based~~ not only ~~by on~~ the type of service that is being provided, but also by the quality of service that is desired by the community. A community can decide to lower, raise, or maintain the existing levels of service for each type of capital facility and service. This decision will affect both the quality of service provided, as well as the amount

of new investment or facilities that are, or will be, needed in the future to serve the community.

Level of service standards state the quality of service that the community desires and for which service providers should plan. The adoption of level of service standards indicates that a community will ensure that those standards are met, or can be met at the time development occurs. If such standards cannot be met, the community may decide to decrease the standard, determine how the needed improvements will be paid for, or deny the development. The Growth Management Act only requires communities to adopt level of service standards for transportation facilities; however, some communities may elect to establish service standards for City-managed capital facilities.

For many of the capital facilities in Shoreline, the City is not the direct provider of service. In the instances where the City does not provide the service, the City contracts with either districts or other governmental entities to provide services for the City. As noted in the inventory, the only capital facilities that the City has direct financial and managerial authority for are City-managed buildings, transportation facilities (streets), and parks and recreation facilities. Because the City Public Works Department has planning, operational, and managerial responsibility for the City’s storm water management system, this utility has been categorized as a City-managed capital facility.

Capital facilities such as water or wastewater service, wastewater service, etc., are provided through a public or private utility or district, or through a contract for services with another agency. The City may recommend levels of service or “service goals” for these capital facilities and services, but it does not have ultimate authority to affect these services directly, except in its agreements to pay for services. The City may establish minimum levels of service that it wishes to use as a guide to inform service providers of the level of service desired by the community, and then it may coordinate with the service provider to reasonably provide that level of service.

**Levels of Service– City-Managed Facilities**

The City of Shoreline has identified the desired level of service for the city-managed facilities and services listed in Table CF-2. These standards should be met, and with facilities in place at these minimum thresholds, in order to serve new development adequately.

**Table CF-2: Level of Service Standards for City-Managed Facilities and Services**

Type of Capital Facility or Service	Level of Service
<p><b>Park Facilities</b></p>	<p>Park Facility Classification and Service Areas:</p> <ul style="list-style-type: none"> <li>• Regional Parks - Citywide</li> <li>• Large Urban Parks - Citywide</li> <li>• Community Parks - 1 ½ miles</li> <li>• Neighborhood Parks - ½ miles</li> <li>• Natural Areas - ½ miles</li> <li>• Special Use Facilities - Citywide</li> <li>• Street Beautification Areas - None</li> </ul> <p>The adopted 2011-2017 Parks, Recreation and Open Space (PROS) Plan provides an inventory of park facilities by classification and service area. The PROS Plan creates</p>

	an “Amenity Driven Approach” establishing an interconnected relationship between park facilities within the overall park system. Chapter 4 of the PROS Plan analyzes the target level of service for each classification.
<b>Transportation</b>	As recommended in the Transportation Element of the Comprehensive Plan and adopted Transportation Master Plan
<b>Surface Water</b>	To ensure proper management of storm water runoff, to protect and enhance the natural environment, and to meet regulatory requirements, surface water capital improvement projects will provide the following services: <b>Flood Protection:</b> Prevent or minimize structural damage and flooding of principal, major, minor, and collector arterials; enhance public safety; and reduce property damage. <b>Water Quality:</b> Meet NPDES regulatory requirements to protect water quality. <b>Stream Habitat:</b> Prioritize to protect and preserve existing habitat in accordance with applicable regulations, especially those related to anadromous fish species, and enhance habitat where feasible.

**Level of Service Standards – Non-City-Managed Facilities**

In addition, the following planning goals are established to provide a *target* to guide the future delivery of important community services and facilities, and to provide a measure to evaluate the adequacy of actual service.

**Table CF-3: Targets for Delivery of Non-City-Managed Facilities and Services**

Type of Capital Facility or Service	Target Level of Service Standard
<b>Wastewater:</b>	Collection of peak wastewater discharge, plus infiltration and inflow, resulting in zero overflow events per year due to capacity and maintenance inadequacies (or consistent with current health standards).
<b>Water:</b>	Consistent with fire flow rates stated in the adopted Fire Code (based upon land use type for system planning and actual use at the project level).

**Adequacy and Concurrency**

According to the GMA, public facilities and services shall be adequate to serve the development at the time the development is first occupied without decreasing the level of service described in the Comprehensive Plan. Adequate public facilities and services, such as water, sewer, and surface water management, are required to serve development. Additionally, the GMA mandates concurrency for transportation services to ensure that transportation improvements or strategies are in place at the time of development, or that a financial commitment is made to complete the improvement within six years.

Water and sewer service providers have demonstrated the ability to meet current demand at the service levels established in the Comprehensive Plan. The City uses the most current Department of Ecology stormwater manual to assure that new development meets the established service standards for surface water management and requirements of the current NPDES permit. The City continues to work with all non-City-managed service providers to determine their ability to continue to meet these service standards over the next 20 years under the Land Use Designation Plan identified in *Figure LU-1*. If the City determines that water and sewer providers or the City (for transportation and surface water management) will not be able to meet these service standards, the City could choose to: 1) modify the Land Use Designation Plan identified in *Figure LU- 1* through an amendment to the Plan, 2) modify the level of service standards through an amendment to the Plan, 3) or restrict development until service can be provided at the established levels of service standards.

Other services are extremely important (like police, fire, and schools) and may be generally available at the time of occupancy; however, upgrades may be needed to provide services to new development at the same level or rate as other parts of the community. In these situations, it may take a few years for these full improvements to come on-line.

Finally, there are other services that may be needed but are not critical or extremely important, and barriers to the availability of service may take time to overcome. This situation can happen with services such as cable television or natural gas service. In addition, there may be situations (e.g., parks and libraries) where, for several years, the level of service may not be available for new development at the same rate as it is available for the existing community.

The City of Shoreline believes that water, sewer, and surface water management should be included in concurrency requirements even though the Growth Management Act does not specifically list them. The concurrency policies establish minimum standards for service availability for new development.

### **Capital Facility Concerns**

#### **Coordinating Among Competing Projects**

The community will face a number of issues over the coming years ~~which that~~ will determine if facilities need to be refurbished, expanded, or developed, and then when, where, and how this will occur.

Many capital projects will be competing for development because not all facilities can be funded and built at the same time. Analysis of the end life cycle and long-term major maintenance for facilities will need to be completed to prioritize projects, establish schedules and develop capital fundraising strategies. Not only will funding need to be prioritized, but also construction resources and land will need to be carefully allocated.

The competition between projects can be mitigated in some cases by greater coordination and co-location. ~~For example,~~ Enhanced efficiency can also reduce the need for additional construction projects or facilities.

#### **Prioritization**

The community must balance a wide range of capital facility needs and desires with available funding. Many of these facilities are provided by public entities other than the City. For capital facility projects that are developed by the City, ~~there City will not have be~~

adequate resources to complete all capital improvement projects at the same time, and, therefore, decisions must be made to prioritize projects. ~~In order to prioritize future City projects, the~~ community must clearly identify which projects are most important to meeting their complex needs of the community. The policies on prioritization provide City officials with guidance when evaluating competing capital projects ~~funded by the City.~~

### **Coordination and Public Involvement**

The construction of new or renovated facilities within the community requires the involvement of many parties, including the public, local service providers, and other public entities. Coordination and public involvement policies identify ways the City can bring all parties within the community together in the process of making these decisions on capital projects.

### **Mitigation and Efficiency**

New facilities will have an impact on the community. There are a variety of ways in which the community can address and mitigate the impacts of these facilities. In addition, the community can evaluate the impact of new development ~~on in the context of the~~ need for new facilities ~~and reduce the need for future improvements by addressing these impacts on site for new development.~~ The policies on mitigation and efficiency provide guidance on how and when mitigation should be used to address capital facilities planning.

### **Inadequate Infrastructure**

There are indications that sewer, water, and storm water facilities will need to be upgraded or replaced in parts of the community. In some cases, these improvements will be necessary because of the advanced age or condition of the pipes/facilities. In other situations, existing systems may be insufficient to meet desired service levels. Addressing these deficiencies may require installation of new infrastructure, including water mains and hydrants, sewer lines, and storm drainage pipe and/or facilities. The City has determined that attracting development is a priority, and so identifying options for funding such infrastructure upgrades should also be a priority, since the cost of these improvements could be prohibitively large for developers to assume.

The City is currently dependent upon the service providers to inventory and address deficiencies.

For utilities that the City does not directly operate, acquisition, assumption, service contracts, or interlocal agreements can be used to guarantee the future provision of adequate infrastructure and corresponding service. The City has contracts or interlocal agreements with most providers, although some service continues to be provided based upon historical service obligations (such as Seattle Public Utilities services). Without a service contract, the City has limited ability to address inadequate infrastructure if the provider does not intend to do so. In these situations, the City may have problems ensuring adequate infrastructure and the City may need to look to assume direct provision of service in order to ensure adequate infrastructure.

### **Equitable Funding**

Most utility services are financed by rates, which the customers pay directly to the providers. In some cases, taxes are used to support services provided by public entities. Seattle Public Utilities provides water service to portions of Shoreline. Utility taxes are collected by the City of Seattle for these services; however, Seattle's utility tax revenues go into Seattle's general fund, and do not directly support the operation of the utility. The utility taxes



Shoreline residents pay to Seattle Public Utilities do not directly help maintain infrastructure and provide service within Shoreline.

In several situations, such as water, sewer and cable service, utility rates paid by customers to different providers for similar service is significantly different. These rate differentials may be the result of different capital improvement programs or administrative systems.

#### **Environmental Impacts from Utility Improvements**

When capital facilities and utilities are renovated, expanded, or created, they have an impact on the community. These projects raise questions about how the community addresses and mitigates utility facilities. The City relies upon SEPA and adopted development regulations to identify and address most impacts; however, the community may consider additional approaches to mitigate the impact of utility facilities and infrastructure through enhanced development regulations.

#### **Opportunities for Cooperation**

The utilization of multiple providers to serve the utility needs of the community raises a number of issues about coordination within the City and among service providers. Activities can often be consolidated through coordination, reducing the cost and adverse impacts of these activities. In some cases, cooperative use of utility facilities can benefit the community. The use of utility corridors like the Seattle City Light right-of-way for a trail facility (Interurban Trail) or transit facilities (alloys, etc.) are examples of potential beneficial, cooperative arrangements.

#### **Adequacy of Service**

The community has expressed a desire to maintain current levels of service. However, in several areas, concern has been expressed about the quality of current services, and the means to improve the way that these utilities provide service to the community. These concerns range from equitable service rates to the quantity of available water for fire suppression for existing buildings and future development. In response to these concerns, the City is pursuing purchase of Seattle Public Utilities facilities in the City of Shoreline, Acquisition of Ronald Wastewater, and evaluating acquisition of Shoreline Water District.

The City may face difficulties in assuring adequate services and facilities from providers the City does not directly control. This significant issue in the provision of essential services can be addressed through contracts or interlocal agreements with individual agencies for services, or through direct provision of service (such as water, sewer, or surface water management). Lack of needed infrastructure from these services may result in permitting delays or moratoriums if services are required for concurrency.

~~There are a number of ways that the community can promote improved levels of service in the future. The City may evaluate current providers to determine if direct provision may be appropriate measures to achieve service standards desired by local residents. Service contracts, interlocal agreements, assumption of service or other measures may be needed in order to assure that services will be available to serve planned growth and meet concurrency requirements.~~

Comment [m7]: Redundant to above.

#### **Siting and Mitigating Environmental Impacts**

Large capital projects, whether for city-managed or non-city managed public facilities, can have a significant impact upon the community and neighborhoods where facilities are sited. Such projects can result in impacts to adjacent areas and the community. The community

must identify how to best respond to the siting and impacts of new facilities. The impacts of new facilities can be considered through SEPA, but the community may wish to explore additional ways to identify and mitigate the impacts of existing facilities, such as through master planning. In addition, siting criteria can help clarify where certain facilities are inappropriate or beneficial.

These issues will apply to all public facilities, including essential public facilities. Under the Growth Management Act, the community cannot restrict the siting of essential public facilities within the City, and has limited control over decisions regarding these projects. The community can, however, establish guidelines that will direct how and where these facilities can be established. (See the Land Use Element for discussion of Essential Public Facilities).

### **Maintaining and/or Improving Services**

The community will face challenges in maintaining current services over the coming years. Aging facilities will need to be replaced or refurbished, and additional or expanded facilities will be needed to serve new development. →

In addition, community input must be solicited during the preparation of the annual update to the Capital Facilities Plan to identify areas where there is a desire for increased or higher levels of service, and to identify potential projects to include in the six-year planning period.

### **Limited Funding Sources**

The cost of desired capital facilities will ~~certainly always~~ exceed current revenue sources, which necessitates conversations about trade-offs, and pros and cons of topics like development and density. Private redevelopment or publicly-funded improvement projects are mechanisms to provide desired amenities, but in lieu of these, the community members will be faced with considering deciding if desired facilities should be financed through alternate funding sources, such as user fees, bonds, local improvement districts, or impact fees.

Impacts fees are one method that could be used to pay for capital improvements, such as parks or roads. For development, impact fees can create public benefits, but also raise home sale prices, and thus property taxes for existing homes. A potential trade-off is reduced demand on the general fund for capital improvements that support growth. However, in a built-out community the amount of revenue derived from new and redevelopment will be limited. The community will need to decide if impact fees are an acceptable way to help fund new capital facilities. Likewise, they may have to consider creation of local improvement districts to fund sidewalk construction, because the demand exceeds City resources to develop them.

# Capital Facilities Element Supporting Analysis

## *Background and Context*

Capital facilities in Shoreline that are addressed in this section are placed in two categories: city-managed facilities and non-city managed facilities. City-managed facilities are defined as those that are owned and operated or managed by the City. Non-city managed facilities are defined as those public capital facilities that are not owned and operated by the City, are facilities and services for which the City has an interlocal or franchise agreement, or services and facilities that are provided to City residents through independent districts. This distinction is relevant because, although the City has contractual relationships with some of these non-city managed service providers, the level of authority it can exert to ensure that a district's capital facility plan and implementation strategies are consistent with the City's vision, and the goals and policies contained in the Comprehensive Plan, as well as the adopted development regulations, is not as significant as it could be if the service was owned and operated by the City.

This element provides an inventory of both City-managed and non-city-managed public facilities and services. This includes surface water; transportation; park, recreation and cultural resources; police; fire; emergency operations center; public schools; water; wastewater; and solid waste. Transportation, park, recreation, and open space facilities are addressed in their respective elements of this Comprehensive Plan. Other utility facilities such as electrical, natural gas, and telecommunication services are discussed in the "Utilities Element - Supporting Analysis" section of the Plan.

The Growth Management Act (GMA) requires that the Capital Facilities Element provide an inventory of public facilities, including their locations and capacities. The GMA also requires a forecast of future needs for capital facilities, and identification of the proposed capacities of new or expanded capital facilities, as well as facility locations if listed in the six-year plan.

For facilities funded by the City, the GMA requires the preparation of a six-year plan for financing new or expanded capital facilities. The six-year plan must consider financing within project funding capacities, clearly identify the sources of public moneys for these improvements, and ensure that these improvements are consistent with the Land Use Element. Finally, the GMA requires the City to reassess the Land Use Element or revise the adopted level of service if funding falls short of meeting future capital facility needs. The King County Countywide Planning Policies further state that capital facility investment decisions place a high priority on public health and safety.

This Element will address the requirements of the Growth Management Act as well as help answer important questions, such as:

- What kind of services and facilities does the community want and need to serve existing and future residents, and which services and facilities are most important?
- When should these services and facilities be provided, and how should they be funded?
- If needed in the near-term, where should such facilities be located?

- How can the need for new facilities be limited, and their impacts on the community be addressed?
- What is the City's role in ensuring and providing services and facilities, and how should the City work with other providers to facilitate good service?

Shoreline is served by an extensive system of publicly funded and operated capital facilities, from schools and parks to utility systems and transportation facilities. Many of these facilities, such as water towers and roads, help meet the basic needs of residents. Some, such as fire stations and flood detention ponds, make the community safer. Community resources like schools and libraries foster learning and educational development, which help make the City a better place. Others, such as parks and museums, enhance the quality of life.

The community benefits from these investments on a daily basis. In order to sustain and improve on the benefits that the community currently enjoys, the City must identify how it and other public service providers can best maintain existing facilities, and create new facilities to serve the needs and desires of local residents and future development.

When Shoreline residents incorporated the City in 1995, it was in large part to receive better, more efficient services for their tax dollars. One way for the City to provide more efficient services includes unifying some of the water and sewer utilities with City operations, creating one-stop shopping for City residents and businesses. Early City Councils realized that consolidating utility services in Shoreline would reduce inefficiencies associated with multiple governmental entities operating in the same city.

Over the coming years, many public facilities will need to be replaced, refurbished, or expanded, and new facilities created in order to serve existing and new residents. Some of these facilities are provided directly by the City. In other cases, separate providers deliver services and plan for and fund capital improvements to meet the mission of their district or service area. A few of these facilities serve not only the needs of Shoreline, but also the larger region.

All of these projects will be competing for limited public resources. For projects that the City controls, citizens must prioritize to decide which projects will proceed and how to fund them. At the development stage, the community may be able to influence where these facilities will be located and how to address the impacts of new or expanded facilities on adjacent areas and the community.

## ***Existing Conditions***

This chapter identifies the primary capital facilities that exist within the City. These facilities are listed as **City-Managed Facilities**, and **Non-City-Managed Facilities**. The facility, provider, and an inventory including the name, size, and location of each facility are provided, if the information is available. Some service providers must prepare a comprehensive service plan that includes a capital facility element. These plans are incorporated into this capital facility element by reference. Each plan has been reviewed for consistency with the general policies and Land Use Element. A brief description of services provided at the facility is also presented to explain the use of the structure(s).

In addition, if available, currently identified plans for expansion are provided as a part of the existing conditions information, including the type of facility, the proposed size of the facility, and the location and timing of expansion. In some cases, this information is currently unknown or proprietary.

The City maintains a number of franchise agreements with utility providers allowing for the existence of support facilities (e.g., sewer mains) within the City's rights-of-way (streets). Many of the services referred to in this Element are evaluated by the City through franchise and interlocal agreements.

### **City-Managed Facilities and Services**

This section addresses existing public capital facilities owned or largely operated and managed by the City of Shoreline:

- City-Managed Buildings and Facilities
- Surface Water Facilities
- Transportation Facilities
- Park and Recreation Facilities

### ***City-Managed Buildings and Facilities***

#### **Current City-Managed Facilities**

The City of Shoreline Civic Center, which includes the City Hall building at 17500 Midvale Avenue North, provides approximately 66,400 square feet of office space where governmental services are available. The campus also includes a 21,000 square foot auditorium, a 75 car elevated parking structure, and a one acre public park and plaza.

In addition, the City owns and maintains approximately 28,765 square feet of facilities to support the park system, including the Spartan Recreation Center, the Shoreline Pool, the Richmond Highlands Recreation Center, Kruckeberg Botanic Garden, the Richmond Beach Saltwater Park Pedestrian Bridge, numerous park shelters, and outdoor rest rooms.

The City operates a maintenance facility at Hamlin Park, located at 16006 15<sup>th</sup> NE. This location serves as a storage yard for various City vehicles, including a street sweeper and road maintenance equipment, as well as offices for street and park maintenance crews. The City is evaluating the relocation and expansion of this facility as part of possible utility acquisitions.

#### ***Storm Water Facilities***

The Surface Water Master Plan, adopted in 2011, provides a detailed discussion of the storm water facilities in Shoreline. The plan responds to both state and federal requirements for managing surface water in the city. The Plan reviews current and anticipated regulatory requirements, discusses current storm water management initiatives, identifies flooding and water quality programs, and discusses the resources needed for the City to fully implement the plan. Management of surface waters in the city is funded through the City's Surface Water Utility. The plan also provides a detailed inventory of the existing storm water facilities and necessary capital facility upgrades.

#### ***Transportation Facilities***

The Transportation Master Plan, adopted in 2011, and Transportation Element of this Plan provide a detailed discussion of the transportation facilities in Shoreline. The City prepares

and adopts a six-year Transportation Improvement Plan (TIP) each year. This plan lists street and non-motorized projects, and can include both funded and unfunded projects. This plan is prepared for transportation project scheduling, prioritization, and grant eligibility purposes.

### ***Parks and Recreation Facilities***

There are a number of public parks and recreation facilities within the community. These facilities are discussed in more detail in the 2011-2017 Parks, Recreation, and Open Space Plan and Parks, Recreation, and Open Space Element of this Plan.

### ***Police Facilities***

#### **Current Police Facilities**

The main Police Station was built in 1956. The building is 5,481 square feet and is constructed of unreinforced masonry that has not been retrofitted to earthquake standards. There is a process underway to identify a location and funding for a new facility. This need was identified during the City's 2009 Hazard Mitigation Planning effort.

There are three police facilities located throughout the City of Shoreline, a main police station and two neighborhood centers:

#### **Police Station**

*Building owned by the City*  
1206 N 185<sup>th</sup> Street

#### **Neighborhood Center**

Eastside Storefront  
*Space leased by the City*  
521 NE 165<sup>th</sup> Street

#### **Neighborhood Center**

Westside Storefront  
*Space leased by the City*  
630 NW Richmond Beach Road

Police services are provided to the City through a year-to-year contract with King County. Services are provided to the City of Shoreline under the "City Model" police contract in two major areas:

**City Services:** staff is assigned to and works within the City. In 2012, there were 52 FTE's dedicated to the City.

**Support Services:** staff is assigned within the King County Sheriff's Office and is deployed to the City on an as-needed basis (e.g., criminal investigations and special response teams).

Two Community Policing Specialists (Storefront Officers) are assigned to the two Neighborhood Centers (West and East "storefronts"). Storefront Officers are assigned to these locations on a full-time basis, working with the local neighborhoods, businesses, and schools to resolve issues and problems affecting them. Storefront Officers generally do not answer 911 calls). Emergency calls for service to Shoreline are managed through the King County "911" Communications Center.

There are no city-managed jail cells located within the City. The Shoreline Police maintain two holding cells at the Police Station on N 185th to detain suspects until they can be transferred to the King or Snohomish County jail facilities.

## **Non-City-Managed Facilities and Services**

There are additional public capital facilities and services available to the City of Shoreline. These include facilities and services that are provided through contracts between the City and private or public utility districts and entities, or between individual residents and utilities or district service providers. These include fire and police, wastewater, water, public schools, and solid waste facilities and services. Facilities and services, such as electrical, natural gas, and telecommunications, which are specifically characterized as “utilities” by the Growth Management Act, are addressed in the Utilities element.

### **Shoreline District Court**

The Shoreline District Court (located at 18050 Meridian Ave N.) is supportive of police services provided to the City through an interlocal agreement with King County. The District Court provides city-managed court services for the prosecution of criminal offenses committed within the incorporated City limits. The District Court serves several other jurisdictions as well. No known changes are planned for the Shoreline District Court facility or services.

### **Current Fire Facilities**

The Shoreline Fire Department serves an area slightly larger than the incorporated boundaries of the City of Shoreline. The Shoreline Fire Department estimates that the population served by the Department is 53,000. In addition to the Shoreline Area, the Fire Department provides fire suppression services to Point Wells in Snohomish County on a contractual basis.

The Shoreline Fire Department maintains five stations located at 17525 Aurora Ave. N, 719 North 185<sup>th</sup> St., 1841 NW 195<sup>th</sup> St., 145 NE 155<sup>th</sup> St., and 1410 NE 180<sup>th</sup> St. The department also maintains five pumpers, three advanced life support units, three basic life support units, and one ladder truck.

### **City of Shoreline Emergency Operations Center (EOC)**

RCW 38.52.070 authorizes and directs the City to assume responsibility of emergency management for their jurisdiction. The City has established its Emergency Operations Center at the Shoreline Fire Headquarters through an Memorandum of Understanding (MOU) signed by the City Manager and Fire Chief. The City supports the equipment needed to operate from the Fire Department’s community room. The need for a more permanent EOC was also discussed in the Hazard Mitigation Planning process. This could potentially be included in the planning for a new police facility, and is considered a “critical facility” during emergencies.

### **Planned Fire Facilities**

The Shoreline Fire Department recently completed construction of two new neighborhood fire stations and a training/support services/administrative facility. With these project constructed, there are no additional major upgrades projected for the next 15 to 20 years.

**Public School Facilities**

Public school services are provided by Shoreline Public School District #412. Within the District (which includes the cities of Shoreline and Lake Forest Park) there are sixteen public schools, a bus barn, and a District Office and Conference Center facility.

**Current Public School District Facilities**

School District #412 encompasses a sixteen square mile area, bounded by Puget Sound on the west, Lake Washington to the east, the Seattle City limits to the south, and the King/Snohomish County line to the north. The Shoreline School District boundaries include the cities of Shoreline and Lake Forest Park. Residents of Shoreline are served by all District schools except Brookside Elementary School and Lake Forest Park Elementary School.

The School District operates one preschool/daycare center, eight elementary schools, two middle schools, two high schools, the Shoreline Center (described in detail below) and two additional surplus properties located within the City of Shoreline. In addition to these facilities, the School District maintains a Transportation Center located adjacent to the Ridgecrest Elementary School site, and a warehouse with a central kitchen located adjacent to Hamlin Park. These facilities are listed in the table below.



**Table CF-1: Shoreline School District Facilities**

<b>Name of Facility</b>	<b>Location</b>
<b>Preschool/Daycare Centers:</b>	
Shoreline Children's Center	1900 N 170th Street
<b>Elementary Schools:</b>	
Briarcrest Elementary	2715 NE 158th Street
Echo Lake Elementary	19345 Wallingford Avenue N
Highland Terrace Elementary	100 N 160th Street
Meridian Park Elementary	17077 Meridian Avenue N
North City Elementary	816 NE 190th Street
Parkwood Elementary	1815 N 155th Street.
Ridgecrest Elementary	16516 10th Avenue NE
Syre Elementary	19545 12th Avenue NW
<b>Middle Schools:</b>	
Einstein Middle School	19343 3rd Avenue NW
Kellogg Middle School	16045 25th Avenue NE
<b>High Schools:</b>	
Shorecrest High School	15343 25th Avenue NE
Shorewood High School	17300 Fremont Avenue N
<b>Other Facilities:</b>	
The Shoreline Center	18560 1st Avenue NE
Transportation Center Warehouse and Central Kitchen	
Cedarbrook (closed)	2000 NE Perkins Way
Sunset Elementary(closed)	17800 10th Avenue NW

**Shoreline Center**

The Shoreline Center is located at 18560 1st Avenue NE, in the former Shoreline High School campus. The facility is owned by the Shoreline School District. It comprises approximately 209,000 square feet of enclosed space located on 35 acres of land. The City maintains and operates portions of the facility under an interlocal agreement.

The Shoreline Center accommodates several organizations and services, including the Shoreline School District offices, the Shoreline Conference Center, the Shoreline – Lake Forest Park Arts Council, the Shoreline PTA Council, the Shoreline Public Schools Foundation, the Shoreline Senior Center, as well as the Shoreline Chamber of Commerce. A football field, gymnasium, and soccer fields are also located on the campus.

The Shoreline School District does not have any specific plans for substantial changes to the Shoreline Center building.

### **Planned School District Facilities**

Generally, the School District can take the following steps to expand capacity at individual sites:

- Site a portable at an affected school. The District owns several portables for this purpose; if all are being utilized, the District could purchase or lease more.
- Alter/shift special program assignments to available space to free up space for core programs: e.g. gifted programs, special education, arts, activities, etc.
- Boundary adjustments: the areas from which individual schools draw may be adjusted; in more extreme cases, the district boundary could be modified.
- Expansion of affected schools (if feasible without eliminating required playfields or parking).

### **Water Service**

The City of Shoreline is served by two public water utilities and maintains franchise agreements with each entity:

- Seattle Public Utilities (SPU), which serves the portion of the City located generally west of I-5.
- Shoreline Water District (SWD), which serves the portion of the City generally east of I-5.

### **Existing Water System**

The water system provides water conveyance and fire flow service to hydrants, individual and multi-family residences, commercial customers, and fire suppression systems. This water is supplied by Seattle Public Utilities via the 60+-inch transmission main located along 8<sup>th</sup> Avenue NE. The Seattle Public Utilities' primary sources of water are the Cedar and Tolt Rivers.

SPU is a direct provider of water to the geographic area generally west of the I-5 corridor, servicing about 58 percent of the City's population. The other 42 percent of the city is serviced by the SWD, which purchases water wholesale from SPU.

### **Seattle Public Utilities (Water)**

#### ***Existing Seattle Public Utilities Water Services and Facilities***

SPU facilities in the City of Shoreline constructed through 1994 include approximately 606,000 feet of 1-inch diameter to 66-inch diameter pipe, 879 fire hydrants from 2 to 8-inches in diameter (785 hydrants are 6 inches in diameter), and the following four major facilities:

1. Richmond Highlands Tanks at the Southwest corner of N 195th Street & Fremont Avenue N
2. Foy Standpipe at the northeast corner of Dayton Avenue N and N 145th Street
3. Foy Pump Station at the northeast corner of 5th Avenue NE and NE 145th Street
4. North Pump Station located east of 8th Avenue NE on NE 185th Street

The earliest portion of the water distribution system included 27,882 feet of waterline, which was built in 1933. The water system is now distributed throughout the SPU service area in Shoreline. In 1995, an estimated 2,640 feet of new pipe was built, generally to replace existing water mains. The water system has approximately 17,000 feet of 3-inch and less diameter pipe in addition to 2,907 feet of 4-inch pipe.

### **Planned Seattle Public Utilities Water Service and Facilities**

The capital expenditures that SPU has identified are included in their plan update. The actual capital facility upgrades for Shoreline will be re-evaluated by the City as part of the potential acquisition process.

## ***Shoreline Water District***

### **Existing Shoreline Water District Services and Facilities**

The Shoreline Water District's (SWD) administrative offices are located at 15<sup>th</sup> Avenue NE and NE 177<sup>th</sup> Street. The maintenance facility is located south of the administrative offices, at 15<sup>th</sup> Avenue NE and NE 169<sup>th</sup> Street. The District was formed in 1931, and has operated as Shoreline Water District since 1991. The majority of the system was constructed between 1948 and 1975. In 1982, 27 cities, water districts, and associations signed 30-year contracts to buy some or all of their water from SPU on a wholesale basis; SWD was one of these districts. The contract signed by SWD in 1982 was effective until January 1, 2012. In November 2001, SWD was one of nine associations that signed a new 60-year water service agreement with SPU; this new contract extends to January 1, 2062. This contract allows SWD to acquire all of its water from metered connections from SPU's Tolt Transmission Pipeline.

The Shoreline Water District system contains more than 92 miles of water main, ranging in size from 2 to 20 inches. Transmission capability for the system is primarily provided by 12-inch diameter pipelines from the supply stations to various points within the service area. The transmission pipelines are located primarily along the major city transportation corridors. Some transmission capability is also provided by looped, 8-inch diameter pipelines in the heavily developed residential areas of the system. Over 50 percent of the mains were installed between 1966 and 1968.

The Shoreline Water District storage capacity is composed of a 3.7 million gallon reservoir and a 2.0 million gallon reservoir. A detailed inventory of the system's existing facilities is included in the District's 2011 Water System Update.

### **Planned Shoreline Water District Services and Facilities**

A comprehensive Water System Plan update was completed by the Shoreline Water District in 2012. This Plan identifies numerous projects including: equipment replacement and maintenance, pressure zone improvements, main replacements, new booster pump station to increase fire flows, and continued monitoring of water quality. The District has current plans to upgrade their administrative offices and maintenance facility.

### **Future Water Service**

The City has a tentative agreement with the City of Seattle regarding the sale of the Seattle Public Utilities (SPU) water system located in Shoreline. The Shoreline City Council has established SPU water system acquisition as a specific goal to allow citizens a direct say in how rates for services are set and how the utility is managed. Currently, rate and management decisions are made solely by the City of Seattle.

The City is interested in reinvesting back into the water system in Shoreline at a rate higher than what either SWD or SPU has projected it will spend. By controlling reinvestment in the system, the City will be able to improve its fire protection, facilitate future economic development, and manage growth by making utility infrastructure available. The latter is

important if the City is to diversify its economic base by growing commercial and retail segments. Economic development provides the opportunity to improve access to goods and services, and reduces the City's financial dependency on residential property tax. Controlling the water utilities will help streamline the permitting process for investors.

### ***Wastewater***

Ronald Wastewater District was formed in 1951. It is the primary wastewater service provider for the City of Shoreline, and in October 2002 the City executed a franchise agreement with the District to construct, maintain, operate, replace, and repair the sanitary sewer within the City. The Highlands Sewer District serves a small part of the City in the Highlands neighborhood.

There are three unsewered areas located within the city limits (1) along 23<sup>rd</sup> Avenue NE between N. 145<sup>th</sup> and N. 150<sup>th</sup> Streets – 12 lots, (2) along 23<sup>rd</sup> Avenue NE near Ballinger Way – 36 lots, and (3) along Corliss Avenue N – 9 lots. These 57 lots, in addition to approximately 12 known lots scattered individually throughout the District with on-site sewage disposal systems, are the total unsewered lots within the District service area. There are approximately 10 lots on septic systems located along 23<sup>rd</sup> Avenue NE, just south of N 150<sup>th</sup> Street. The Ronald Wastewater District is aware of two septic systems located in the Richmond Beach Neighborhood. Additionally, approximately four square blocks located between N 186<sup>th</sup> and N 190<sup>th</sup> along Corliss Avenue N, just west of the Shoreline Senior Center are also on septic systems.

Wastewater treatment services are provided by the City of Edmonds and the King County Department of Natural Resources Wastewater Division (formerly Metro). King County DNR also provides gravity and pumped interceptor service.

### ***Ronald Wastewater District (RWD)***

#### **Existing Ronald Wastewater District Services and Facilities**

Ronald Wastewater District's service area includes the entire City of Shoreline, with the exception of the Highlands neighborhood. In October 2001, RWD purchased the portion of sewer system owned by Seattle Public Utilities known as the Lake City Sewer District. This area covers most of the I-5 corridor, along with the southeastern portion of the City. The District presently owns, operates, and maintains a domestic wastewater collector and interceptor system consisting of 16 lift stations, 21 individual grinder pumps, and approximately 190 miles of 6" to 30" diameter sanitary sewer mains, not including private sewers. Sewer service is generally provided to customers by gravity flow through the District system, or by gravity flow to District owned and operated lift stations.

The wastewater collected from within the District is treated at two facilities, King County Wastewater Division's West Point Treatment Plant and the City of Edmonds Treatment Plant, under contract arrangements. The Highlands Sewer District discharges wastewater flow into the Ronald Wastewater District system. The existing collection system is detailed in the District's 2010 Comprehensive Water Plan.

#### **Planned Ronald Wastewater District Services and Facilities**

To further the goal of consolidating services, the City and District entered into an Interlocal Operating Agreement in 2002, which facilitates assumption of the District in October 2017. This assumption, as with the future assumption of the Shoreline Water District, would allow

coordination and resource sharing with other City utility and street operations. The Agreement outlines the unification process between the City and the District. The City intends use the assumption process authorized in Chapter 38.13A, which means all assets, reserve funds, employees, equipment and any District debt would be assumed by the City, and the Ronald Wastewater District would cease to exist as a separate government entity.

Currently the District maintains a 10-year capital improvement program for its original sewer system and the old Lake City Sewer District system. The Capital Improvement Program includes an ongoing infiltration and inflow monitoring and reduction program. The City will re-evaluate the capital improvement plans as part of the unification process.

### **Highlands Sewer District (HSD)**

#### ***Existing and Planned Highlands Sewer District Services and Facilities***

The Highlands Sewer District maintains a sanitary sewer collection system that conveys wastewater from approximately 100 households in the Highlands Neighborhood to the Ronald Wastewater District. There are no known changes to future provision of service within the Highlands Sewer District.

### ***Treatment Facilities***

#### **Existing King County Department of Natural Resources Wastewater Division (KCDNRWD) and the City of Edmonds Services and Facilities**

King County maintains a system of interceptor sewers and three (3) pumping stations within the City of Shoreline. King County transfers the majority of the flows from within the City of Shoreline via gravity and pumping to the West Point Treatment Plant. The West Point Treatment Plant currently has the capacity to treat up to 133 million gallons of wastewater per day.

The majority of the wastewater flows in the District's sewer pipes are generated by the citizens of Shoreline. Flows are also transferred from areas in Lake Forest Park, Highlands Sewer District, and from Woodway, Mountlake Terrace, and Olympic View in Snohomish County through the District's sewer mains into either King County or City of Edmonds interceptors.

A small area within the City of Shoreline (approximately 2,200 households) is served via gravity and pumping into Snohomish County and to the City of Edmonds Wastewater Treatment Plant. The Edmonds Wastewater Treatment Plant currently has capacity to treat approximately 12 million gallons per day.

#### **Planned King County Department of Natural Resources Wastewater Division and City of Edmonds Services and Facilities**

In response to increased growth in our region, King County constructed a regional wastewater treatment plant, called Brightwater. Construction started in 2006. Treatment plant start-up and operations began in September 2011.

Brightwater serves portions of King and Snohomish. The facilities include a treatment plant, conveyance (pipes and pumps taking wastewater to and from the plant), and a marine outfall (at Point Wells).

The capacity needed to treat future wastewater flows from Shoreline will be accommodated by this facility.

## ***Solid Waste***

### **Existing Solid Waste Collection Services and Facilities**

The City of Shoreline currently has a solid waste collection contract with Cleanscapes, LLC, that expires in 2015 for residential curbside solid waste and recycling collection and commercial solid waste collection. Shoreline maintains an interlocal agreement with King County for use of the First Northwest Transfer Station. In addition to solid waste collection, the City also operates a household battery recycling program and a composting facility for recycling city-managed and school district green waste. The City also sponsors two recycling events during the year for residents to recycle household items.

### **Planned Solid Waste Services and Facilities**

The City plans to continue solid waste collection through contract services, and to continue its agreement with King County for the use of the First Northwest Transfer Station, which was renovated in 2008. The facility no longer accepts plastic, glass, cardboard, or mixed paper for recycling. Curbside recycling for these materials is provided by Cleanscapes. The City continues to encourage recycling by modeling it in all City-owned facilities, and through environmental education and stewardship.

## ***Capital Facility Issues***

### **General Growth Projections**

According to growth projections, which provide the foundation for the Land Use element of the Comprehensive Plan, the City of Shoreline could experience an increase of up to approximately 5000 additional households over the next twenty years. This figure is based on the housing target allocated to the City by King County (see the Land Use Element for additional discussion of the City's housing target).

For capital facilities planning purposes, the projected growth expected over the twenty-year period was allocated on an average basis over the twenty-year period rather than allocated based on a year-by-year prediction that tries to factor in anticipated economic cycles. Growth will undoubtedly not occur precisely as projected over the next six-year or even the twenty-year period. For this reason, the GMA requires that the Capital Facilities Plan be updated at least every six years. This provides local governments with the opportunity to re-evaluate their forecast in light of the actual growth experienced, revise their forecast if necessary, and adjust the number or timing of capital facilities that are needed.

The Capital Facilities Plan is updated annually as part of the City's budget process, thereby ensuring that the Plan reflects the most current actual statistics related to growth in Shoreline, and that City-managed capital facilities are slated for upgrade in accordance with both the level of service standards and the City's concurrency policies.

### ***Levels of Service***

Level of service is a term that describes the amount, type, or quality of facilities that are needed in order to serve the community at a desired and measurable standard. This standard varies, based not only on the type of service that is being provided, but also by the quality of service that is desired by the community. A community can decide to lower, raise, or maintain the existing levels of service for each type of capital facility and service. This decision will affect both the quality of service provided, as well as the amount of new investment or facilities that are, or will be, needed in the future to serve the community.

Level of service standards state the quality of service that the community desires and for which service providers should plan. The adoption of level of service standards indicates that a community will ensure that those standards are met, or can be met at the time development occurs. If such standards cannot be met, the community may decide to decrease the standard, determine how the needed improvements will be paid for, or deny the development. The Growth Management Act only requires communities to adopt level of service standards for transportation facilities; however, some communities may elect to establish service standards for City-managed capital facilities.

For many of the capital facilities in Shoreline, the City is not the direct provider of service. In the instances where the City does not provide the service, the City contracts with either districts or other governmental entities. As noted in the inventory, the only capital facilities that the City has direct financial and managerial authority for are City-managed buildings, transportation facilities (streets), and parks and recreation facilities. Because the City Public Works Department has planning, operational, and managerial responsibility for the City’s storm water management system, this utility has been categorized as a City-managed capital facility.

Capital facilities such as water or wastewater service are provided through a public or private utility or district, or through a contract for services with another agency. The City may recommend levels of service or “service goals” for these capital facilities and services, but it does not have ultimate authority to affect these services directly, except in its agreements to pay for services. The City may establish minimum levels of service that it wishes to use as a guide to inform providers of the level of service desired by the community, and then it may coordinate with the service provider to reasonably provide that level of service.

**Levels of Service– City-Managed Facilities**

The City of Shoreline has identified the desired level of service for the city-managed facilities and services listed in Table CF-2. These standards should be met, with facilities in place at these minimum thresholds, in order to serve new development adequately.

**Table CF-2: Level of Service Standards for City-Managed Facilities and Services**

Type of Capital Facility or Service	Level of Service
<b>Park Facilities</b>	<p>Park Facility Classification and Service Areas:</p> <ul style="list-style-type: none"> <li>• Regional Parks - Citywide</li> <li>• Large Urban Parks - Citywide</li> <li>• Community Parks - 1 ½ miles</li> <li>• Neighborhood Parks - ½ miles</li> <li>• Natural Areas - ½ miles</li> <li>• Special Use Facilities - Citywide</li> <li>• Street Beautification Areas - None</li> </ul> <p>The adopted 2011-2017 Parks, Recreation and Open Space (PROS) Plan provides an inventory of park facilities by classification and service area. The PROS Plan creates an “Amenity Driven Approach” establishing an interconnected relationship between park facilities within</p>

	the overall park system. Chapter 4 of the PROS Plan analyzes the target level of service for each classification.
<b>Transportation</b>	As recommended in the Transportation Element of the Comprehensive Plan and adopted Transportation Master Plan
<b>Surface Water</b>	To ensure proper management of storm water runoff, to protect and enhance the natural environment, and to meet regulatory requirements, surface water capital improvement projects will provide the following services: <b>Flood Protection:</b> Prevent or minimize structural damage and flooding of principal, major, minor, and collector arterials; enhance public safety; and reduce property damage. <b>Water Quality:</b> Meet NPDES regulatory requirements to protect water quality. <b>Stream Habitat:</b> Prioritize to protect and preserve existing habitat in accordance with applicable regulations, especially those related to anadromous fish species, and enhance habitat where feasible.

#### **Level of Service Standards – Non-City-Managed Facilities**

In addition, the following planning goals are established to provide a *target* to guide the future delivery of important community services and facilities, and to provide a measure to evaluate the adequacy of actual service.

**Table CF-3: Targets for Delivery of Non-City-Managed Facilities and Services**

<b>Type of Capital Facility or Service</b>	<b>Target Level of Service Standard</b>
<b>Wastewater:</b>	Collection of peak wastewater discharge, plus infiltration and inflow, resulting in zero overflow events per year due to capacity and maintenance inadequacies (or consistent with current health standards).
<b>Water:</b>	Consistent with fire flow rates stated in the adopted Fire Code (based upon land use type for system planning and actual use at the project level).

#### **Adequacy and Concurrency**

According to the GMA, public facilities and services shall be adequate to serve the development at the time the development is first occupied without decreasing the level of service described in the Comprehensive Plan. Adequate public facilities and services, such as water, sewer, and surface water management, are required to serve development. Additionally, the GMA mandates concurrency for transportation services to ensure that transportation improvements or strategies are in place at the time of development, or that a financial commitment is made to complete the improvement within six years.



Water and sewer service providers have demonstrated the ability to meet current demand at the service levels established in the Comprehensive Plan. The City uses the most current Department of Ecology stormwater manual to assure that new development meets the established service standards for surface water management and requirements of the current NPDES permit. The City continues to work with all non-City-managed service providers to determine their ability to continue to meet these service standards over the next 20 years under the Land Use Designation Plan identified in *Figure LU-1*. If the City determines that water and sewer providers or the City (for transportation and surface water management) will not be able to meet these service standards, the City could choose to: 1) modify the Land Use Designation Plan identified in *Figure LU- 1* through an amendment to the Plan, 2) modify the level of service standards through an amendment to the Plan, 3) or restrict development until service can be provided at the established levels of service standards.

Other services are extremely important (like police, fire, and schools) and may be generally available at the time of occupancy; however, upgrades may be needed to provide services to new development at the same level or rate as other parts of the community. In these situations, it may take a few years for these full improvements to come on-line.

Finally, there are other services that may be needed but are not critical or extremely important, and barriers to the availability of service may take time to overcome. This situation can happen with services such as cable television or natural gas service. In addition, there may be situations (e.g., parks and libraries) where, for several years, the level of service may not be available for new development at the same rate as it is available for the existing community.

The City of Shoreline believes that water, sewer, and surface water management should be included in concurrency requirements even though the Growth Management Act does not specifically list them. The concurrency policies establish minimum standards for service availability for new development.

### ***Capital Facility Concerns***

#### **Coordinating Among Competing Projects**

The community will face a number of issues over the coming years that will determine if facilities need to be refurbished, expanded, or developed; and then when, where, and how this will occur.

Many capital projects will be competing for development because not all facilities can be funded and built at the same time. Analysis of the end life cycle and long-term major maintenance for facilities will need to be completed to prioritize projects, establish schedules and develop capital fundraising strategies. Not only will funding need to be prioritized, but also construction resources and land will need to be carefully allocated.

The competition between projects can be mitigated in some cases by greater coordination and co-location. Enhanced efficiency can also reduce the need for additional construction projects or facilities.

#### **Prioritization**

The community must balance a wide range of capital facility needs and desires with available funding. Many of these facilities are provided by public entities other than the City. For capital facility projects that are developed by the City, there will not be adequate

resources to complete all capital improvement projects at the same time; therefore, decisions must be made to prioritize projects. The community must clearly identify which projects are most important to meeting their complex. The policies on prioritization provide City officials with guidance when evaluating competing capital projects.

### **Coordination and Public Involvement**

The construction of new or renovated facilities within the community requires the involvement of many parties, including the public, local service providers, and other entities. Coordination and public involvement policies identify ways the City can bring all parties within the community together in the process of making these decisions on capital projects.

### **Mitigation and Efficiency**

New facilities have an impact on the community. There are a variety of ways in which the community can address and mitigate impacts of these facilities. In addition, the community can evaluate the impact of new development in the context of need for new facilities. The policies on mitigation and efficiency provide guidance on how and when mitigation should be used to address capital facilities planning.

### **Inadequate Infrastructure**

There are indications that sewer, water, and storm water facilities will need to be upgraded or replaced in parts of the community. In some cases, these improvements will be necessary because of the advanced age or condition of the pipes/facilities. In other situations, existing systems may be insufficient to meet desired service levels. Addressing these deficiencies may require installation of new infrastructure, including water mains and hydrants, sewer lines, and storm drainage pipe and/or facilities. The City has determined that attracting development is a priority, and so identifying options for funding such infrastructure upgrades should also be a priority, since the cost of these improvements could be prohibitively large for developers to assume.

The City is currently dependent upon the service providers to inventory and address deficiencies.

For utilities that the City does not directly operate, acquisition, assumption, service contracts, or interlocal agreements can be used to guarantee the future provision of adequate infrastructure and corresponding service. The City has contracts or interlocal agreements with most providers, although some service continues to be provided based upon historical service obligations (such as Seattle Public Utilities services). Without a service contract, the City has limited ability to address inadequate infrastructure if the provider does not intend to do so. In these situations, the City may have problems ensuring adequate infrastructure and the City may need to look to assume direct provision of service in order to ensure adequate infrastructure.

### **Equitable Funding**

Most utility services are financed by rates, which the customers pay directly to the providers. In some cases, taxes are used to support services provided by public entities. Seattle Public Utilities provides water service to portions of Shoreline. Utility taxes are collected by the City of Seattle for these services; however, Seattle's utility tax revenues go into Seattle's general fund, and do not directly support the operation of the utility. The utility taxes Shoreline residents pay to Seattle Public Utilities do not directly help maintain infrastructure and provide service within Shoreline.

In several situations, such as water, sewer and cable service, utility rates paid by customers to different providers for similar service is significantly different. These rate differentials may be the result of different capital improvement programs or administrative systems.

### **Environmental Impacts from Utility Improvements**

When capital facilities and utilities are renovated, expanded, or created, they have an impact on the community. These projects raise questions about how the community addresses and mitigates utility facilities. The City relies upon SEPA and adopted development regulations to identify and address most impacts; however, the community may consider additional approaches to mitigate the impact of utility facilities and infrastructure through enhanced development regulations.

### **Opportunities for Cooperation**

The utilization of multiple providers to serve the utility needs of the community raises a number of issues about coordination within the City and among service providers. Activities can often be consolidated through coordination, reducing the cost and adverse impacts of these activities. In some cases, cooperative use of utility facilities can benefit the community. The use of utility corridors like the Seattle City Light right-of-way for a trail facility (Interurban Trail) is an example of beneficial, cooperative arrangements.

### **Adequacy of Service**

The community has expressed a desire to maintain current levels of service. However, in several areas, concern has been expressed about the quality of current services, and the means to improve the way that these utilities provide service to the community. These concerns range from equitable rates to the quantity of available water for fire suppression for existing buildings and future development. In response to these concerns, the City is pursuing purchase of Seattle Public Utilities facilities in the City of Shoreline, acquisition of Ronald Wastewater, and evaluating acquisition of Shoreline Water District.

The City may face difficulties in assuring adequate services and facilities from providers the City does not directly control. This significant issue in the provision of essential services can be addressed through contracts or interlocal agreements with individual agencies, or through direct provision of service (such as water, sewer, or surface water management). Lack of needed infrastructure from these services may result in permitting delays or moratoriums if services are required for concurrency.

### **Siting and Mitigating Environmental Impacts**

Large capital projects, whether for city-managed or non-city managed public facilities, can have a significant impact upon the community and neighborhoods where facilities are sited. Such projects can result in impacts to adjacent areas and the community. The community must identify how to best respond to the siting and impacts of new facilities. The impacts of new facilities can be considered through SEPA, but the community may wish to explore additional ways to identify and mitigate the impacts of existing facilities, such as through master planning. In addition, siting criteria can help clarify where certain facilities are inappropriate or beneficial.

These issues apply to all public facilities, including essential public facilities. Under the Growth Management Act, the community cannot restrict the siting of essential public facilities within the City, and has limited control over decisions regarding these projects. The community can, however, establish guidelines that will direct how and where these facilities

can be established. (See the Land Use Element for discussion of Essential Public Facilities).

### **Maintaining and/or Improving Services**

The community will face challenges in maintaining current services over the coming years. Aging facilities will need to be replaced or refurbished, and additional or expanded facilities will be needed to serve new development.

In addition, community input must be solicited during the preparation of the annual update to the Capital Facilities Plan to identify areas where there is a desire for increased levels of service, and to identify potential projects to include in the six-year planning period.

### ***Limited Funding Sources***

The cost of desired capital facilities will always exceed current revenue sources, which necessitates conversations about trade-offs, and pros and cons of topics like development and density. Private redevelopment or publicly-funded improvement projects are mechanisms to provide desired amenities, but in lieu of these, community members will be faced with considering alternate funding sources, such as user fees, bonds, local improvement districts, or impact fees.

Impact fees are one method that could be used to pay for capital improvements, such as parks or roads. For development, impact fees can create public benefits, but also raise home sale prices, and thus property taxes for existing homes. A potential trade-off is reduced demand on the general fund for capital improvements that support growth. However, in a built-out community the amount of revenue derived from new and redevelopment will be limited. The community will need to decide if impact fees are an acceptable way to help fund new capital facilities. Likewise, they may have to consider creation of local improvement districts to fund sidewalk construction, because the demand exceeds City resources to develop them.

# Utilities Element Goals & Policies

## Introduction

The Growth Management Act (GMA) requires the City of Shoreline to include a Utilities Element within its Comprehensive Plan consisting of the general location, proposed location, and capacity of all existing and proposed utilities, including, but not limited to, electrical lines, telecommunication lines, and natural gas lines (RCW 36.70A.070). The Utilities Element should also provide a framework for the efficient and predictable provision and siting of utility facilities and services within the City, consistent with each of the serving utility's public service obligations.

This Element contains the goals and policies necessary to support the City's responsibility for ensuring that City residents are provided with basic utility services, and for coordinating with private utilities to ensure that the City's Comprehensive Plan is supported by utility infrastructure. Publicly operated utilities – water, wastewater and surface water – are addressed in the Capital Facilities Element. This Element, in concert with the Capital Facilities Element and the Land Use Elements, provides the goals and policies that guide utility provision within the City. (Refer to the Capital Facilities Element for water, stormwater, sewer facilities.)

The *Utilities Element – Supporting Analysis* section of this Plan contains an inventory of utility services in the City, specifically electrical, natural gas, and telecommunication services, (cable, telephone, etc.) and provides the foundation for the following goals and policies.

## Utilities Goals

**Goal U I:** Promote city-wide utility services that are:

- consistent,
- high quality,
- equitable,
- responsive,
- forward looking,
- environmentally sensitive and energy efficient,
- locationally and aesthetically sensitive, and
- functionally and financially efficient.

**Goal U II:** Facilitate the provision of appropriate, reliable utility services, whether through City-owned and operated services, or other providers.

**Goal U III:** Acquire Seattle Public Utilities water system in Shoreline.

**Comment [m1]:** This is also included as a goal in the Capital Facilities Element. Should it be in 1 or both elements (if so, which?) How should it be phrased (worded slightly differently in CF, but still not that meaningful)?

**Comment [m2]:** Delete or replace with something more directive/meaningful

## Utilities Policies

- U1:** Coordinate with utility providers to ensure that the utility services are provided at reasonable rates citywide and that those services meet service levels identified/recommended in the Capital Facilities Element.
- U2:** Investigate alternative service provision options that may be more effective at providing services to our residents, including the acquisition of Ronald Wastewater, Shoreline Water District, and those portions of Seattle Public Utility water customers within the City of Shoreline.
- U3:** Encourage/Assist the timely provision of the full range of utilities within Shoreline in order to serve existing businesses, including home businesses, and promote further economic development.
- U4:** Support the timely expansion, maintenance, operation, and replacement of utility infrastructure in order to meet anticipated demand for growth identified in the Land Use Element.

## Consistency and Coordination

- U5:** Coordinate with other jurisdictions and governmental entities in the planning and implementation of multi-jurisdictional utility facility additions and improvements.

## Mitigation and Efficiency

- U6:** Encourage the design, siting, construction, operation, and relocation or closure of all utility systems in a manner that:
- is cost effective,
  - minimizes and mitigates impacts on adjacent land uses,
  - is environmentally sensitive, and
  - is appropriate to the location and need.
- U7:** Encourage the co-location or joint use of trenches, conduits, or poles so that utilities may encourage expansion, maintenance, undergrounding, and upgrading facilities with the least amount of disruption.

**U8:**

## Solid Waste

- U98:** Monitor solid waste collection providers for adequacy of service and compliance with service contracts.
- U940:** Support recycling efforts throughout the community.

**Comment [m3]:** Create language to reflect that transfer station has closed or to address potential remedy through CleanScapes contract or other provider (CleanSweep events, etc.)

**Electricity**

**U110:** Where found to be safe and appropriate, promote recreational use of utility corridors, such as trails, sport courts, and similar facilities.

**U12:**

**U131:** Negotiate and condition electric utility providers to limit disturbance to vegetation within major utility transmission corridors to that which is necessary for the safety and maintenance of transmission facilities, where feasible

**Comment [m4]:** DaMa: trimming of

~~**U14:** Negotiate and condition electric utility providers to exercise restraint and sensitivity to neighborhood character in trimming vegetation and tree limbs around aerial lines, where feasible.~~

**Comment [m5]:** JF: This policy has been here for 7 years. Development reg's should reflect this policy.

**Comment [j6]:** Talk to Paul Laine about what is in the franchise agreement. Can we actually "condition", is there a permit? DL – This language is pretty awful. As recently seen in the Westminster Triangle, SCL will need to adopt their own policies or be willing to meet with residents.

**U152:** -Promote the undergrounding of new and existing electric distribution lines where physically and financially feasible as streets are widened-improved and/or areas are redeveloped, based on coordination with local utilities.

**Comment [tj7]:** Re-word but something along this lines is needed/appropriate. It is not adequately covered in the Franchise agreement and the Agreement only covers trimming in ROW, not on private property

~~**U17:** Promote the undergrounding of new electric distribution lines, with the exception of high voltage electrical transmission lines, based on coordination with local utilities. COMBINED WITH U16U12~~

**Comment [m8]:** DaMa: Eliminate in favor of first option.

**Comment [DM9]:** ????

**Telecommunications**

**U183:** Minimize impacts of telecommunication facilities and towers on the community.

**U194:** Promote the undergrounding of telecommunication lines in coordination with the undergrounding of other utilities and capital facility systems.

**U2015:** Support the provision of high quality cable and satellite service throughout the community.

**U216:** Promote opportunities for distance learning and telecommuting in coordination with telecommunication and cable providers.

**Comment [j10]:** Is this still relevant? Seems like there's something here that might be useful, but in coordination with Economic Development and climate initiatives instead of cable providers. Attract home businesses or others that can operate virtually and don't generate traffic, etc.

**U2217:** Encourage and work with telecommunication providers to develop networks which employ technologies that increase interconnectivity between different networks.

**U2318:** Work with utility companies and public institutions to develop a full range of community information services, available to citizens and businesses through the telecommunication network.

**Wireless Communications Facilities**

**U19:** Facilitate access to reliable wireless communications services throughout the City of Shoreline, including increasing the service area in the western side of the city.

**Comment [m11]:** Add goal relating to increasing service, particularly in the western side of the City. Below.

**U20:** Protect community aesthetics by planning for well-sited and well-designed wireless service facilities that fit unobtrusively in the Shoreline environment.

U21: Manage the placement of all communication antennas, antenna support structures, buildings, and associated equipment ~~so as to~~ promote efficient service delivery and avoid unnecessary proliferation.

U22: Ensure the safety of wireless communications facilities, and avoid potential damage to people and property.

**Comment [m12]:** We should have these standards generally, no need to call out specifically.  
REDUNDANT

**Natural Gas**

U23: Coordinate Cooperate with natural gas utilities for improvements and expansion throughout the community, and support the eventual provision of full coverage of natural gas services.



# Utilities Element Goals & Policies

## *Introduction*

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This Element contains the goals and policies necessary to support the City's responsibility for ensuring that City residents are provided with basic utility services, and for coordinating with private utilities to ensure that the City's Comprehensive Plan is supported by utility infrastructure. Publicly operated utilities – water, wastewater and surface water – are addressed in the Capital Facilities Element. This element, in concert with the Capital Facilities and the Land Use Elements, provides the goals and policies that guide utility provision within the City. Refer to the Capital Facilities Element for water, stormwater, sewer facilities.

The *Utilities Element – Supporting Analysis* section of this Plan contains an inventory of utility services in the City, specifically electrical, natural gas, and telecommunication services, (cable, telephone, etc.) and provides the foundation for the following goals and policies.

## *Utilities Goals*

- Goal U I:** Promote city-wide utility services that are:
- consistent,
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  - forward looking,
  - environmentally sensitive and energy efficient,
  - locationally and aesthetically sensitive, and
  - functionally and financially efficient.
- Goal U II:** Facilitate the provision of appropriate, reliable utility services, whether through City-owned and operated services, or other providers.
- Goal U III:** Acquire Seattle Public Utilities water system in Shoreline.

## ***Utilities Policies***

- U1:** Coordinate with utility providers to ensure that the utility services are provided at reasonable rates citywide and that those services meet service levels identified/recommended in the Capital Facilities Element.
- U2:** Investigate alternative service provision options that may be more effective at providing services to our residents, including the acquisition of Ronald Wastewater, Shoreline Water District, and those portions of Seattle Public Utility water customers within the City of Shoreline.
- U3:** Encourage/Assist the timely provision of the full range of utilities within Shoreline in order to serve existing businesses, including home businesses, and promote further economic development.
- U4:** Support the timely expansion, maintenance, operation, and replacement of utility infrastructure in order to meet anticipated demand for growth identified in the Land Use Element.

## **Consistency and Coordination**

- U5:** Coordinate with other jurisdictions and governmental entities in the planning and implementation of multi-jurisdictional utility facility additions and improvements.

## **Mitigation and Efficiency**

- U6:** Encourage the design, siting, construction, operation, and relocation or closure of all utility systems in a manner that:
- is cost effective,
  - minimizes and mitigates impacts on adjacent land uses,
  - is environmentally sensitive, and
  - is appropriate to the location and need.
- U7:** Encourage the co-location or joint use of trenches, conduits, or poles so that utilities may encourage expansion, maintenance, undergrounding, and upgrading facilities with the least amount of disruption.

## **Solid Waste**

- U8:** Monitor solid waste collection providers for adequacy of service and compliance with service contracts.
- U9:** Support recycling efforts throughout the community.

## **Electricity**

- U10:** Where found to be safe and appropriate, promote recreational use of utility corridors, such as trails, sport courts, and similar facilities.

- U11:** Negotiate and condition electric utility providers to limit disturbance to vegetation within major utility transmission corridors to that which is necessary for the safety and maintenance of transmission facilities, where feasible
- U12:** Promote the undergrounding of new and existing electric distribution lines where physically and financially feasible as streets are improved and/or areas are redeveloped, based on coordination with local utilities.

### **Telecommunications**

- U13:** Minimize impacts of telecommunication facilities and towers on the community.
- U14:** Promote the undergrounding of telecommunication lines in coordination with the undergrounding of other utilities and capital facility systems.
- U15:** Support the provision of high quality cable and satellite service throughout the community.
- U16:** Promote opportunities for distance learning and telecommuting in coordination with telecommunication and cable providers.
- U17:** Encourage and work with telecommunication providers to develop networks which employ technologies that increase interconnectivity between different networks.
- U18:** Work with utility companies and public institutions to develop a full range of community information services available to citizens and businesses through the telecommunication network.

### **Wireless Communications Facilities**

- U19:** Facilitate access to reliable wireless communications services throughout the City of Shoreline, including increasing the service area in the western side of the city.
- U20:** Protect community aesthetics by planning for well-sited and well-designed wireless service facilities that fit unobtrusively in the Shoreline environment.
- U21:** Manage the placement of all communication antennas, antenna support structures, buildings, and associated equipment to promote efficient service delivery and avoid unnecessary proliferation.
- U22:** Ensure the safety of wireless communications facilities, and avoid potential damage to people and property.

### **Natural Gas**

- U23:** Coordinate with natural gas utilities for improvements and expansion throughout the community, and support the eventual provision of full coverage of natural gas services.

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# Utilities Element Supporting Analysis

## Background and Context

The Utilities Element is based on estimates of existing and future demand for utility service. Where possible, current utility consumption trends are used to indicate likely future consumption. Some utilities, such as cellular telephone, are rapidly growing with changing technologies. Consequently, future demand is difficult to predict. In other instances, where utility providers are private corporations, specific information on utility consumption and demand are considered to be proprietary, and are therefore not disclosed.

The Utilities Element gauges the ability of existing and planned utility facilities to meet future demand. ~~(I'm pretty sure that GMA requires that Land Use Plans direct utility investment, not the other way around)~~ Generally, the current provision of utility services and the ability to meet future population demand in Shoreline are not hindered by any serious constraints.

The Supporting Analysis section presents basic information regarding the general location, proposed location, and capacity of all existing and proposed utilities, including electrical, natural gas, telephone, and cable (water, wastewater, and surface utilities water are discussed in the Capital Facilities Element). Further information is available from individual utilities or in the planning documents of the various service districts.

The City of Shoreline does not own or manage most of its public utilities. The only City-owned utility is the City's Surface Water Utility, which is addressed in the Capital Facilities element. Utilities addressed here and in the Capital Facilities Element have a broad impact on the future of the community. In many cases, utilities are needed to meet the basic needs of daily living and ensure health and safety. Utilities can also significantly enhance the quality of life in the community.

When considering the future provision of utility services, a number of issues must be considered: legal requirements; aesthetic and environmental impacts; ~~administration, governance;~~ costs, and revenues. In order to address these issues, the community (through its utility providers) must identify the type and quality of utilities needed to serve local residents and determine how these services can best be provided. As a part of this discussion, the community must consider the aesthetic and environmental impacts of new services on the community, ~~in addition to considerations mentioned above as well as issues of governance, costs and revenues.~~

## Existing Conditions

The City maintains a number of franchise agreements between utility providers and the City, ~~which~~ allowing for the existence of support facilities (e.g., cable, electrical wire, natural gas pipe)

**Comment [sc1]:** Update map

**Comment [sc2]:** GMA requires:  
(4) A utilities element consisting of the general location, proposed location, and capacity of all existing and proposed utilities, including, but not limited to, electrical lines, telecommunication lines, and natural gas lines.

within the City's right-of-way (streets). Non-City-managed utility services are controlled by franchise agreements between the utilities and the City of Shoreline.

The status of the franchise agreements is noted in the listing of current providers.

~~(Following information needs to be updated)~~

Comment [jef3]: Done

### Electrical Service

Electrical service is provided within the City of Shoreline by Seattle City Light. The City has a non-exclusive franchise agreement with Seattle City Light through January 31, 2014 (Ordinance #187).

### Natural Gas Service

Puget Sound Energy provides natural gas service to the residents of the City of Shoreline. The City maintains a franchise agreement (Ordinance #308) with Puget Sound Energy through October 31, 2017.

#### *Existing Natural Gas Service and Facilities*

Puget Sound Energy- is a power and natural gas utility serving King and four other Counties. Puget Sound Energy purchases gas from other regions and manages the distribution of natural gas to customers within its service area. This involves pressure regulation and the development and maintenance of distribution lines.

~~(This may need updating)~~ Natural gas is currently supplied to most areas within the City of Shoreline through 136 miles of natural gas mains. Gas flows through the system under high pressure in the main located along 5<sup>th</sup> Avenue NE and along Fremont Avenue North from North 185<sup>th</sup> Street down to North 155<sup>th</sup> Street over to Dayton Avenue North, then down Dayton Avenue North to North 150<sup>th</sup> Street, over to Fremont Avenue North, down to North 145<sup>th</sup> Street.

Comment [sc4]: Maybe we can replace this paragraph with a map.

As of December 2011, Puget Sound Energy serves approximately 40,344 11,556 customers in the City of Shoreline. ~~(update)~~

Comment [m5]: Double-check w/ PSE

Washington State Utilities and Transportation Commission (WUTC) does not define natural gas as an essential service. Therefore, Puget Sound Energy is not required to provide services.

#### *Planned Natural Gas Services and Facilities*

Extension of service is based on individual requests and the results of a market analysis to determine if revenues from an extension will offset the cost of construction. Overall, Puget Sound Energy does not foresee any problems that would limit the supply of natural gas to the City of Shoreline in the future. ~~(update)~~

Comment [sc6]: Perhaps add discussion about how telecom, internet and cable are interconnected

### Telecommunications

#### *Existing Telephone Services and Facilities* ~~(update)~~

Local telephone service in Shoreline is provided by CenturyLink east of Meridian Avenue N and South of N 160 Street/NW Innis Arden Way, and by Frontier west of Meridian Avenue N and North of N 160 Street/NW Innis Arden Way. The City does not have franchise agreements with CenturyLink or Frontier for local telephone service.

CenturyLink and Frontier collectively provide telephone service to about 15,000 customers in the City of Shoreline. Of these 15,000 customers, 12,000 are residential and 3,000 are commercial. CenturyLink and Frontier do not provide estimates of local capacity due to the proprietary nature of this information.

#### *Future Telephone Services and Facilities*

Washington Utilities Trade Commission (WUTC) regulations require CenturyLink and Frontier to provide adequate telecommunications service on demand, and Section 480-120-086 of the Washington Administrative Code requires CenturyLink and Frontier to maintain adequate personnel and equipment to handle any reasonable demand and traffic. New technology, such as multiplexing and digital transmission, and cellular and fiber optic technologies are allowing dramatic advances in communication. Because CenturyLink and Frontier provide service on demand, there are no limits to future capacity.

#### *Existing Cable Television Service*

Land-line Cable Television service is provided in the City of Shoreline by Comcast and Frontier. The City maintains franchise agreements with Comcast and Frontier for use of the City's rights-of-way to maintain and operate their cable network. The City of Shoreline is also served by two satellite Cable Television providers – Dish Network and Direct TV.

Comcast serves the entire [city of Shoreline](#). Frontier serves the same area as their telephone network - west of Meridian Avenue N and North of N 160 Street/NW Innis Arden Way.

#### *Future Cable Television Services and Facilities (update)*

The demand for cable television is likely to continue to increase as population grows. At the same time, new technology will allow cable companies to provide more channel options to their customers. Most areas in Shoreline are served by cable television currently.

#### *Fiber Optic Facilities (update)*

The City maintains franchise agreements with Electric Lightwave and AboveNet Communications for their fiber optic data networks in Shoreline. These franchise agreements expire on July 24, 2026 and September 9, 2021 respectively.

~~Other Telecommunications – data, internet etc.~~

~~Water/Sewer and Surface Water Utilities are discussed in the Capital Facilities Element and Supporting Analysis.~~

## Utility Issues

### *Equitable Funding*

Most utility services are financed by rates, which the customers pay directly to the providers. In some cases, taxes are used to support services provided by public entities. For example, Seattle City Light provides electricity to the community. Utility taxes are collected by the City of Seattle for these services; however, Seattle's utility tax revenues go into Seattle's general fund and do not directly support the operation of the utility. The utility taxes Shoreline residents pay to Seattle Public Utilities do not directly help maintain infrastructure and provide service within Shoreline. This practice has been identified by the City as not being supported by the goals and policies of this Plan. The City has established goals to become a service provider of ~~s~~Sewer

**Comment [j7]:** This probably needs to be updated. Future needs will rely more on the fiber optic network providing all communication services – voice, data and cable TV. Thus having a separate section for future cable needs is already a little outdated. The same issue could be brought up regarding future telephone service. Many new telephone subscribers are using digital voice (VOIP), rather than traditional copper-wire telephone. Thus, you may want to reconfigure this for “Future telecom”

and water services within Shoreline to ensure that taxes collected fund the maintenance and enhancement of infrastructure. In some situations, such as cable service, utility rates paid by customers to different providers for similar service is significantly different. These rate differentials may be the result of different capital improvement programs or administrative systems.

#### *Environmental Impacts from Utility Improvements*

When utility facilities are renovated, expanded or created they have an impact on the community. One example of a utility project that could impact a community is the addition of transmission towers. Such infrastructure can have aesthetic impacts on neighborhoods, and a community must consider how it should address and mitigate such facilities.

#### *Opportunities for Cooperation*

The utilization of multiple providers to serve the utility and capital facility needs of the community raises a number of issues about coordination with the City and among service providers. Trenching activities can often be consolidated through coordination, reducing the cost and impact of these activities. In some cases, cooperative use of utility facilities can benefit the community. The use of the City Light right-of-way for a trail facility is an example of a potential beneficial cooperative arrangement.

#### *Adequacy of Service*

The community has a legitimate interest in not only that utility services are available, but also in the quality of those services and the opportunities for enhancing those services to the community. These concerns range may include the unavailability of natural gas service, and the quality of service for cable television, and telephone and cellular telephone service.

The City may face difficulties in ensuring adequate services and facilities from providers the City does not directly control. This issue can be addressed through contracts or interlocal agreements with individual agencies for services, or through the decision to have the City provide the service directly. Lack of infrastructure needed to provide these services may result in permitting delays or moratoriums if services are required for concurrency.

In order to ensure that the community receives service at the desired levels of service, the City may need to consider changes to its service contracts, interlocal agreements, or possibly expand City services in order to serve existing and planned growth at desired levels and meet concurrency requirements.



### Non-City Managed Capital Facilities Plans

For capital facility plans from service providers other than the City of Shoreline, the reader is referred to the current comprehensive and/or capital facility plans of the responsible agencies.

**General Facilities**

Historical Museum, Shoreline Center  
Shoreline School District

Libraries

King County Library District

Postal Buildings

U.S. Postal Service

Public Housing

King County Housing Authority

Human Services

Washington Department of Health  
Washington State Department of  
Social and Health Services (DSHS)

Public Safety

Fire Department No. 4  
King County Corrections  
King County District Court  
Washington State Patrol

Public Schools

Shoreline School District

Community College

Shoreline Community College

Transportation

King County Metro  
Community Transit  
Sound Transit  
Washington State Department of  
Transportation

Land Reserves

Washington Department of Natural  
Resources

**Non-City Managed Facilities and Utilities**

Water

Seattle Public Utilities Water Division  
Shoreline Water District

Wastewater

Highlands Sewer District  
Ronald Wastewater District

Solid Waste

King County Solid Waste Division  
CleanScapes

Electricity

Seattle City Light

Natural Gas

Puget Sound Energy

Telecommunications and Cable

Comcast  
Electric Lightwave  
AboveNet Communications  
Frontier  
CenturyLink

**Comment [m8]:** They moved, who owns the new building?

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Shoreline School District

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King County Library District

#### Postal Buildings

U.S. Postal Service

#### Public Housing

King County Housing Authority

#### Human Services

Washington Department of Health  
Washington State Department of  
Social and Health Services (DSHS)

#### Public Safety

Fire Department No. 4  
King County Corrections  
King County District Court  
Washington State Patrol

#### Public Schools

Shoreline School District

#### Community College

Shoreline Community College

#### Transportation

King County Metro  
Community Transit  
Sound Transit  
Washington State Department of  
Transportation

#### Land Reserves

Washington Department of Natural  
Resources

### **Non-City Managed Facilities and Utilities**

#### Water

Seattle Public Utilities Water Division  
Shoreline Water District

#### Wastewater

Highlands Sewer District  
Ronald Wastewater District

#### Solid Waste

King County Solid Waste Division  
CleanScapes

#### Electricity

Seattle City Light

#### Natural Gas

Puget Sound Energy

#### Telecommunications and Cable

Comcast  
Electric Lightwave  
AboveNet Communications  
Frontier  
CenturyLink

land use map to assure that the special study area encompasses the appropriate planning area; and reporting back to the full Commission on the subcommittee's recommendations. The Commission may forward this recommendation to the Council for review.

The Subcommittee should discuss the timing, schedule, reporting, and the overall goal of the Committee at its first meeting.

**RECOMMENDATION**

Staff recommends that the Planning Commission Chair seeks volunteers from the Commission and appoint a maximum of three Commissioners to serve on the light rail station planning subcommittee; and the Commission verify the purpose and terms of the Committee.