

Utilities

9



Chapter 9 – Utilities

Introduction

This chapter of the Draft Environmental Impact Statement (DEIS) covers utilities, including the affected environment (existing conditions) as well as potential impacts associated with growth under the alternatives and mitigation measures to address potential impacts. Utilities analyzed include:

- Water
- Sanitary Sewer/Wastewater
- Surface and Stormwater Management
- Power and Communications

Impacts of the alternatives would be considered significant if they result in:

- Increased demand for public utilities that cannot be accommodated through regular systems planning and funding of future improvements.
- Insufficient capacity to serve expected population based on levels of service metrics as applicable under each area of utility service, as applicable.

Affected Environment

The Shoreline 2044 Comprehensive Plan includes all goals and policies relevant to these service areas, including the provision of utility services in the city. The Capital Facilities Element serves as a guide to the City’s financial commitment in providing those facilities desired by the community by monitoring planned investments relative to adopted levels of service in key areas.

The Growth Management Act (GMA) requires that communities plan for both utilities and capital facilities to ensure there is an adequate level of facilities and services in place to support development at time of occupancy or use. The overall goal is to ensure that new development does not exceed a jurisdiction’s ability to pay for needed utilities, public services, and facilities or that new development does not decrease current service levels below locally established minimum standards.

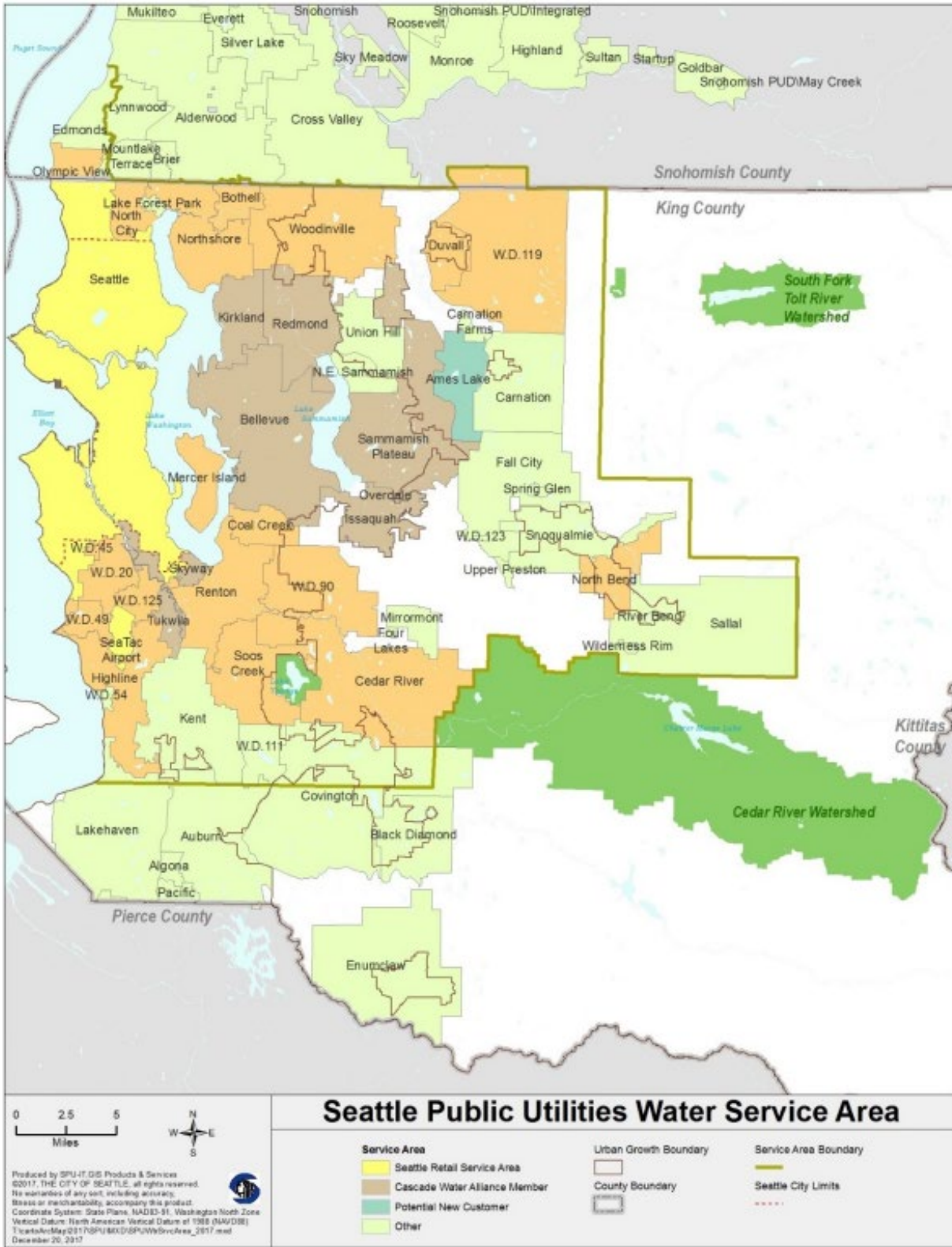
Affected environment is described for each area of utility service—water, sanitary sewer/wastewater, surface and stormwater management, and power and communications—in the text below and on the following pages.

Water

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 (see **Figure 9.1**)
- North City Water District which serves the portion of the city generally east of I-5

Figure 9.1 Seattle Public Utilities Water Service Area



SPU is a direct provider of water, servicing about 58% of the city's population. The other 42% of the city is serviced by the North City Water District, which purchases water wholesale from SPU.

Seattle Public Utilities (SPU) Water Services and Facilities

SPU facilities in the City of Shoreline are serviced under the "Seattle Retail Service Area" which encompasses 98 square miles some of which is located within the City of Shoreline. In addition, SPU has the following four major facilities within the City:

- Richmond Highlands Tanks at the Southwest corner of N 195th Street & Fremont Avenue N;
- Foy Standpipe at the northeast corner of Dayton Avenue N and N 145th Street;
- Foy Pump Station at the northeast corner of 5th Avenue NE and NE 145th Street; and
- 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 provides water conveyance and fire flow service to hydrants, single- 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 8th Avenue NE. The Seattle Public Utilities' primary sources of water are the Cedar and Tolt Rivers.

North City Water District

The North City Water District's administrative offices are located at 15th Avenue NE and NE 177th Street. The District was formed in 1931 and has operated as North City 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; North City Water was one of these districts. The contract signed by North City in 1982 was effective until January 1, 2012. In November 2001, North City 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 North City to acquire all of its water from metered connections from SPU's Tolt Transmission Pipeline.

The North City Water District system contains more than 96 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 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% of the mains were installed between 1966 and 1968.

The North City Water District storage capacity is composed of a 3.7 million gallon reservoir, a 2.0 million gallon reservoir, four supply stations, two booster stations, and one pump station. A detailed inventory of the system's existing facilities is included in the District's 2020-2030 Water System Plan completed in 2019.

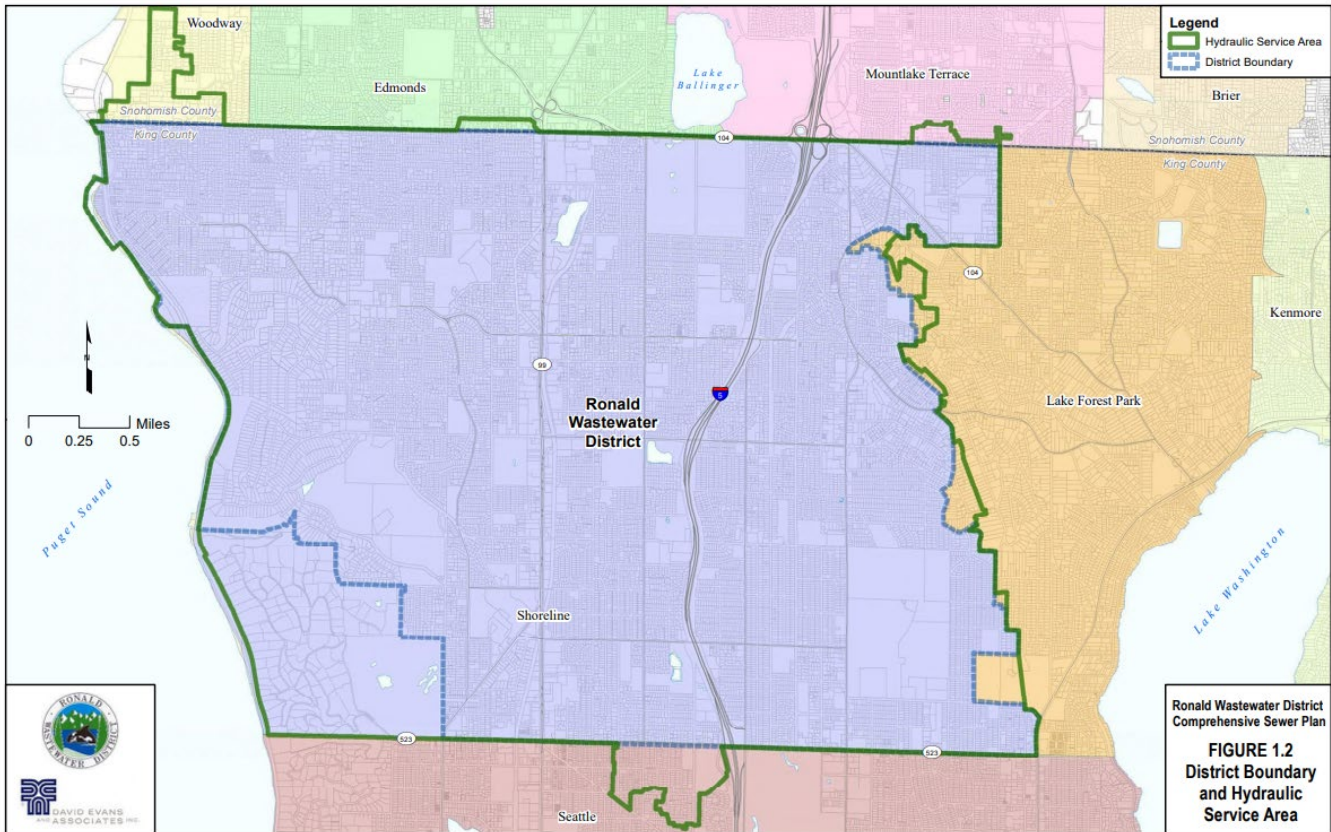
Sanitary Sewer/Wastewater

Ronald Wastewater District (RWD) was formed in 1951 and served as 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. In 2021, the City assumed jurisdiction and ownership of the Ronald Wastewater District's service areas, assets, facilities, responsibility, property, and equipment. The Highlands Sewer District serves a small part of the city in the Highlands neighborhood. See **Figure 9.2**.

There are 31 known lots scattered individually throughout the District with onsite sewage disposal systems. Many of the lots have sewer available, but the property owners have not chosen to connect for a variety of reasons. The Shoreline Wastewater Utility service area includes the entire City of Shoreline, with the exception of the Highlands neighborhood (see below). In October 2002, 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 City of Shoreline presently owns, operates, and maintains a domestic wastewater collector and interceptor system consisting of 16 lift stations, 21 individual grinder pumps, and approximately 194.3 miles of gravity sanitary sewer mains, not including private sewers. Sewer service is generally provided to customers by gravity flow through the City system, or by gravity flow to City owned and operated lift stations.

The wastewater collected from within the City 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 City system. The existing collection system is detailed in the District's 2010 Comprehensive Sewer Plan (CSP) which became the City's CSP upon the City's assumption of Ronald Wastewater.

Figure 9.2 Ronald Wastewater District Service Area, Assumed by City of Shoreline in 2021



Highlands Sewer District (HSD) Services and Facilities

The Highlands Sewer District maintains a sanitary sewer collection system that conveys wastewater from approximately 200 lots in the Highlands Neighborhood to the City of Shoreline Wastewater Utility. There are no known changes to future provision of service within the Highlands Sewer District.

Treatment Facilities

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.

King County maintains a system of interceptor sewers and 3 pumping stations within the City of Shoreline. King County transfers the majority of the flows from within the city 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 20 million gallons per day.

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 counties. 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. The existing Shoreline Sewer District service area is as shown below.

Surface and Stormwater Management

The [Surface Water Master Plan](#), adopted in 2018, provides a detailed discussion of the stormwater 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 stormwater 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 stormwater facilities and necessary capital facility upgrades.

Power and Communications

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 August 31, 2029 (Ordinance #686). Based on current forecast projections detailed in their 2022 Integrated Resource Plan and 2024 Progress Report, Seattle City Light will need to expand their resource profile in order to accommodate the projected electric demands. The 2024 Progress Report outlines several avenues for this expansion.

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. The City maintains a franchise agreement (Ordinance #860) with Puget Sound Energy through July 31, 2034.

Natural gas is currently supplied to most areas within the city through 136 miles of natural gas mains. Gas flows

through the system under high pressure in the main located along 5th Avenue NE and along Fremont Avenue N, from N 185th Street down to N 155th Street, over to Dayton Avenue N, then down Dayton Avenue N to N 150th Street, over to Fremont Avenue N, and down to N 145th Street.

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.

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 in the future.

Telecommunications

As telecommunication technologies have evolved, merging of these technologies has occurred, resulting in multiple communication services migrating into consolidated networks. This typically involves the merging of previously distinct media, such as telephone, video, and data communications being transmitted over fiber optic or other infrastructure. This section describes both the current infrastructure used to provide telecommunication services in Shoreline, as well as future services and facilities (as they can best be described now, given the rapid changes in how telecommunication services are provided and regulated).

Local telephone service in Shoreline, referred to as Public Switched Telephone Network (PSTN), is provided by CenturyLink east of Meridian Avenue N and south of N 160 Street/NW Innis Arden Way, and by Zply 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 Zply for local telephone service.

CenturyLink and Zply 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 Zply do not provide estimates of local capacity due to the proprietary nature of this information.

In addition to the PSTN telephone service provided in Shoreline, Voice over Internet Protocol (VoIP) telephone service, also known as digital telephone service, is locally available. This service is provided by Xfinity (Comcast), which provides service throughout the entire city. CenturyLink and Zply also provide this service in addition to their PSTN services. CenturyLink provides this through their Digital Subscriber Line [DSL] internet service; and Zply, provides this service in the same areas as their PSTN telephone service. VoIP telephone uses technology that allows phone calls to be made over an Internet Protocol (IP) network, such as the Internet.

Finally, mobile (cellular) telephone services are widely available in Shoreline and are operated by many different cellular networks, including Verizon, Cingular Wireless(AT&T), Sprint Communications, and T-Mobile USA, among others. Mobile telephones make and receive telephone calls over a radio link by connecting to a cellular network provided by a mobile phone operator, allowing access to the public telephone network. All of Shoreline is serviced by multiple cellular networks, although some areas of Shoreline, particularly on in the western portion of the City, do not have reliable access to cellular networks.

Washington Utilities Trade Commission (WUTC) regulations require CenturyLink and Zply to provide adequate PTSN telecommunications service on demand, and Section 480-120-086 of the Washington Administrative Code (WAC) requires CenturyLink and Zply to maintain adequate personnel and equipment to handle reasonable demand and traffic. Because CenturyLink and Zply provide service on demand, there are no limits to future capacity. Additionally, VoIP telephone service should only be restricted by bandwidth constraints on fiber optic networks that provide this digital service.

Cable Television Service

Land-line Cable Television service is provided in the city by Zply, CenturyLink, and Xfinity (Comcast). The City maintains franchise agreements with these providers for use of the City's rights-of-way to maintain and operate their cable network. The city is also served by two satellite Cable Television providers: Dish Network and Direct TV. The franchise agreements for land-line cable television services expire on November 4, 2023; June 16, 2025; and November 17, 2030, respectively.

Comcast serves the entire city of Shoreline. Zply serves the same area as their PTSN telephone network - west of Meridian Avenue N and north of N 160 Street/NW Innis Arden Way. Dish Network and Direct TV serve all of Shoreline, depending on the geography and satellite line-of-site access of individual properties.

Although the demand for cable television is likely to continue to increase as population grows, access to cable television in Shoreline is extensive, and thus, growth in cable subscribers is likely to increase at the same pace as population growth. However, the demand for broadband services, whether they be cable television, VoIP telephone or data/internet services, is likely to continue to grow as networks are bolstered with additional bandwidth. This growth will most likely occur relative to data/internet service, as more content become accessible online, and as we continue to communicate and interact online. These broadband services can be provided over fiber optic networks, cable networks, or DSL telephone networks.

The City maintains franchise agreements with Zayo Group, Astound Broadband, and Version Access Transmission Services for their fiber optic data networks in Shoreline. These fiber optic networks, which primarily serve commercial or institutional users, pass through Shoreline, but there are currently very few end users in Shoreline. Given that these networks utilize City streets and rights-of-way, franchise agreements are required for these service providers. These franchise agreements expire on July 24, 2026; April 21, 2025; and January 29, 2033, respectively.

Potential Impacts and Mitigation Measures

One of the purposes of this DEIS is to support an understanding of what the future demands would be under the alternatives studied. Population growth and related utility service demands would increase under all alternatives. Similarly to the analysis of potential impacts for public services, understanding the projected population levels for the alternatives provides insight into the potential per capita increased demand for utilities. Estimated growth of housing units and population under each of the alternatives is shown in **Table 9-1**.

Table 9-1 Estimated Growth Projections for Population Under Each Alternative

	2024 Baseline Population ¹	Future Population ²	Population Change from 2024
Alternative 1 —No Action (No Adoption of the Comprehensive Plan); Growth is Consistent with Allocated Targets	61,910	2044: 86,202 to 91,789+	+24,292 to 29,879+
Alternative 2 —Growth is Consistent with Allocated Targets	61,910	2044: 86,202 to 91,789+	+24,292 to 29,879+
Alternative 3 —Growth Occurs More Rapidly, Meeting Targets by 2034 Rather than 2044	61,910	2034: 86,202 to 91,789+ 2044: 118,942 to 124,529+ (if the pace of growth doubles)	+24,292 to 29,879+ +57,032 to 62,619+

1 Washington State Office of Financial Management, April 1, 2024

2 2044 estimates ranging from 86,202 (Puget Sound Regional Council LUV-IT Model) to 91,789+ (37,372 x 2020 census household size of 2.4561 with the household size trending upward in Shoreline)

All three alternatives assume increasing levels of growth and related new development and redevelopment over the next 20 years. Alternatives 1 and 2 assume the same level and pace of growth and development would occur, reaching allocated targets in 20 years, while Alternative 3 assumes that growth and development would happen at a more rapid pace, reaching allocated targets in 10 years.

Alternatives 1 and 2 assume a population growth over the next 20 years, from the 2024 population of 61,910 (Washington State Office of Financial Management, April 1, 2024) to 2044 estimates ranging from 86,202 (Puget Sound Regional Council LUV-IT Model) to 91,789+ (37,372 x 2020 census household size of 2.4561 with the household size trending upward in Shoreline). That results in an increase in population of 24,292 to 29,879 more people or 39.23% to 48.26% over the 20 year period. The allocated targets for household units and jobs for that 20 year period are an additional 13,330 housing units and an additional 10,000 jobs.

Alternative 3 assumes that the same level of growth and development and related increases in population, housing units, and jobs will occur more rapid pace—occurring over 10 years instead of over 20 years. This means that if the same pace of growth were to continue over a 20 year pace, the level of population, housing units, and jobs and related development would double that projected under Alternative 1 and Alternative 2.

While the levels of growth and development under Alternative 1 or Alternative 2 could occur under existing zoning, the level of growth and development under Alternative 3 likely would require adjustments in zoning,

particularly related to expanding the capacity for jobs in the future. The rate of growth and extent of new development and redevelopment would be influenced by market changes and property owner decisions, and as such, cannot be accurately predicted. However, growth would be expected to occur incrementally, year upon year under any of the alternatives.

The City of Shoreline will be monitoring growth closely on an annual basis in the coming years to determine how plans, capital improvements, transportation improvements, services, programs, and other pieces may need to be adjusted to respond to growth. While the next full periodic update of the Comprehensive Plan would occur in 2034, the City will complete a five-year review of growth trends and will make interim updates to the Comprehensive Plan as needed.

In summary, under Alternative 3 there would be more potential for increased demand for utilities, requiring more mitigation measures than under Alternative 1 and Alternative 2 given that more growth and development would occur under Alternative 3 during the 20-year planning period. Alternative 1 would be disadvantaged as the “No Action” alternative, because “No Action” assumes the updated Comprehensive Plan would not be adopted, and as such, citywide planning would not be in alignment with the most recent state, regional, county, and local planning policies, provisions, and requirements—which could mean a lack of coordination and alignment with planning for utilities.

Comprehensive Plan Goals and Policies Related to Utilities

Refer to the Shoreline 2044 Comprehensive Plan (draft posted for public review for goals and policies from the Utilities Element that would be in effect under Alternatives 2 and 3. These provisions would be in addition to the planned facility improvements.

Water System Services and Facilities

A comprehensive Water System Plan update was completed by the North City Water District in 2019. It identifies numerous project needs to serve projected growth, including:

- Equipment replacement and maintenance,
- Pressure zone improvements, main replacements,
- New booster pump station to increase fire flows, and
- Continued monitoring of water quality.

Currently, rate and management decisions are made solely by the City of Seattle. It will be important for the City to study and solicit input regarding the best course of action as North City Water District’s franchise nears expiration in 2027.

Sewer System/Wastewater Services and Facilities

To further the goal of consolidating services, the City and the Ronald Wastewater District entered into an Interlocal Operating Agreement in 2002, which facilitates assumption of the Ronald Wastewater District in October 2017. On February 19, 2021, the King County Superior Court entered an Order of Dissolution of the Ronald Wastewater District (Case No. 21-2-01276-7 SEA). The Order provides in pertinent part that as of 12:01

a.m. on April 30, 2021, the Ronald Wastewater District “shall be dissolved and all the functions performed by the Ronald Wastewater District within its boundaries ... shall be performed by the City of Shoreline.” Therefore, by operation of law, the City of Shoreline became the owner and operator of the sanitary sewer system.

Currently the City 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 would re-evaluate the capital improvement plans as part of the unification process. As per the 2021 comprehensive Sewer Plan completed by CHS Engineers, there were two lift stations (Lift station 15 and 12) that were identified as needing improvements with Lift station 15 being identified as needing to be abandoned and relocated outside WSDOT right of way. In addition, it was identified that Lift Stations 3,6,7,11, and 14 were needing back-up generators, with other minor modifications needed for Lift station 12 and 5. These repairs and upgrades were deemed necessary to handle current capacity and account for future growth.

Surface and Stormwater Management

Surface and stormwater management must support the natural environment while also managing growth predictions and impervious surface allowances within the adopted zoning within the City. Utilization of low impact development techniques, best management practices, and environmental code requirements will ensure the City can achieve goals of minimizing flooding, promoting fish habitat, enhancing surface water and stream health, and supporting the health and safety of all residents now and into the future.

The City’s Storm and Surface Water Master Plan referenced earlier in this chapter includes more discussion of future needs, including a catalogue of known issues associated with the water flow, surface water quality, and habitat elements of the basins within the Shoreline City limits. Proposed capital improvements in the plan are being integrated into the City’s Comprehensive Plan.

Common to All Alternatives

Due to larger and more intense rain events which are happening on a more frequent basis, more runoff volume from the same amount of impervious surface would be expected. Existing conveyance and flow detention systems that were sized based on more gradual 25-year storms could become more frequently overwhelmed, leading to more frequent localized flooding.

Benefits of redevelopment for flow control and water quality improvement: If strict stormwater development regulations, based on best available science, are sufficient to mitigate the negative impacts of development on stormwater runoff, redevelopment could have a positive impact on runoff quantity and quality. If requirements to provide flow control and water quality during development are not decreased or waived, redevelopment aligned with Department of Ecology size thresholds would construct flow control and water quality features to mitigate the amount of new and replaced hard surface added. If the new systems work as they are designed, peak flows should remain constant or even decrease. Water quality metrics should increase, since pollutants will be captured before leaving the site.

Level of inspection:

As more privately-owned flow control and water quality systems are installed during redevelopment, the City's obligation to inspect new facilities annually and the follow-up required to have property owners maintain them also would increase.

Pollutant loading on roads increases: 2024 Department of Ecology stormwater permit requirements may lower new and replaced surface thresholds for roads that require water quality treatment. This will in turn drive more regional water quality treatment projects, both for retrofits and for new roads.

Under Action Alternative 2, with anticipated system and facility improvements/upgrades, as well as development permit requirements and improvements on a project by project basis, there would generally be low to moderate level increases in flooding risk and risk of impacts to local water quality. Action Alternative 3 would result in a higher risk of increase in flooding and impacts to local water quality than under Alternative 2, due to the higher level of development and redevelopment anticipated across the city.

Under either action alternative, future systems and facilities would be designed and sized to address urban development with anticipated system and facility improvements/upgrades, as well as development permit requirements and improvements on a project by project basis. It is anticipated that these measures would sufficiently mitigate potential impacts. More analysis would be needed related to each new project, and on an ongoing basis to address potential deficiencies and determine future mitigation.

Power and Communications

As noted above, there would be an increased demand for power and communications services under the alternatives. The City would continue to maintain service agreements as applicable with service providers. These services are supported by customer charges across the service areas. Given that power and communications services are customer funded and service providers proactively plan infrastructure to serve future growth, it is anticipated that service levels would be able to keep pace with demand based on population growth under any of the alternatives studied; however, through the agency review process of the DEIS, the planning team will conduct further coordination and communications with power and communications providers to confirm capacities and service levels.

Significant, Unavoidable Adverse Impacts

Under all the alternatives, growth would increase demand for utilities, with the highest level of demand occurring under Alternative 3 during the 20 year planning period. With regular coordination, proactive planning of utilities services, capital facility plan updates, and applications of code requirements for adequate facilities and other standards, potential impacts should be addressed as growth continues in the future. As such, it is anticipated that provision of and capacity of utilities services would be able to keep pace with growth and demand. However, Action Alternative 3 would place a high intensity of demand on utilities within the 20 year period—approximately double that of Action Alternative 2. The City will be closely monitoring the pace of growth and will coordinate with utilities providers in monitoring these trends.

Under Alternative 1, without adoption of the Comprehensive Plan and related capital improvement planning, there would be a lack of policy updates to meet state, regional, and county planning mandates regarding growth targets. Under Alternatives 2 and 3, Comprehensive Plan amendments would address these limitations, and with ongoing implementation of services and improvements keeping pace with growth, significant unavoidable adverse impacts would be avoided.