

UTILITIES ELEMENT

Introduction

The City provides most urban services to its residents and businesses. However, certain critical services are provided by other agencies and private purveyors. As with City services, these services are necessary to support current residents and businesses as well as future population and employment growth. Therefore, their service levels must be adequate to support uses, residential densities, and development intensities described in the Comprehensive Plan. This element addresses electric power, natural gas, solid waste and recycling, and telecommunications services. Utilities provided by the City are addressed in the Capital Facilities Element.

Policy frameworks

The Growth Management Act requires that a utilities element include 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.

The City's utility planning efforts are also guided by various policies contained in the regional policy framework of the Puget Sound Regional Council's Vision 2040 Regional Growth Strategy and in the Snohomish County Countywide Planning Policies. Vision 2040 policies promote conservation measures to reduce solid waste and increase recycling; conservation measures to reduce energy consumption; the use of renewable energy sources; and telecommunication infrastructure that is consistent with the regional vision and friendly to the environment. The Countywide Planning Policies direct coordination with solid waste service providers to meet state mandates for the reduction of solid waste and to promote recycling, and coordination with service providers to ensure service levels are appropriate to support planned growth. The policy direction of these documents is incorporated into this and other Comprehensive Plan elements as appropriate to the circumstances and planning context of the City.

Service providers

The following agencies and private firms serve the City's planning area.

Electricity:	Snohomish County PUD No. 1
Natural gas:	Puget Sound Energy
Solid Waste/Recycling:	Republic Services/Allied Waste Waste Management
Telecommunications:	Comcast Frontier Communications Wave Broadband
Wireless:	Various providers

Electric power

Snohomish is served by the Public Utility District of Snohomish County No. 1 (PUD), which operates or purchases power from electrical generation facilities of various types throughout Snohomish County and the larger region. Most of PUD's power is purchased from the Bonneville Power Administration (BPA), which has a substation located within Snohomish city limits at 914 Avenue D. A majority of BPA's power is generated by dams located primarily on the Columbia and Snake Rivers in the Pacific Northwest.

The PUD also owns several hydroelectric dams in eastern Snohomish County, including the Jackson Hydroelectric project, the Woods Creek Hydroelectric project, and the Youngs Creek Hydroelectric project, all located southeast of Snohomish. In 2013, the PUD received 84 percent of its power supply from BPA Columbia River hydropower, six percent from its long-term wind and other renewable resources, six percent from its own hydroelectric projects, and four percent from wholesale market purchases. PUD makes short-term purchases and sales in the wholesale power market to balance daily and seasonal fluctuations in its load and resources.

The PUD services an area of 2,200 square miles, including all of Snohomish County and Camano Island, with 6,321 miles of electric lines. The PUD uses a 115,000 volt transmission system to distribute electricity to distribution substations, which then transform the electricity to an average 12,500 volts for distribution to customers. Electrical facilities of less than 55,000 volts (55 kV) are referred to as distribution facilities. Facilities of more than 55,000 kV are referred to as transmission facilities. The BPA substation located on Avenue D within city limits is a major substation facility. Snohomish is generally served by this substation. However, power could also come from several other sources, depending on system configuration. PUD transmission facilities within the City's UGA are shown on Figure UT 1.

According to the PUD, there is ample capacity to meet existing and future demand for both the incorporated city limits as well as the urban growth area. To meet future demand, PUD's policy priority is to pursue all cost-effective energy efficiency measures.

In the next several years, the PUD plans to upgrade 1.45 miles of transmission lines between the BPA substation and the Snohomish substations, as well as automation upgrades to the Snohomish substation. The PUD has been actively researching and developing alternate sources of power, including renewable energy, in the interest of preparing for growth, and creating a balanced mix of energy sources.

Natural gas

Puget Sound Energy (PSE) supplies natural gas to Snohomish. PSE is an investor-owned utility that was formed in 1997 by the merger of Washington Natural Gas Company and Puget Sound Power & Light Company. PSE is regulated by the Washington Utilities and Transportation Commission (WUTC) and the Federal Energy Regulatory Commission (FERC).

PSE operates the state's largest natural-gas distribution system, serving more than 750,000 gas customers in six counties. Snohomish is served from the main transcontinental pipeline, which extends south from Canada a distance of approximately 1,975 miles. The main lies

approximately three miles east of Snohomish. In 2010, a two-mile section of the pipeline adjacent to Snohomish was upgraded from a four-inch line to an eight-inch line, which helped stabilize the gas system and enhanced reliability in the community.

PSE's distribution system is generally comprised of the following components:

Gas Supply Mains are usually larger-diameter steel wrapped mains (eight inches and over) designed to operate at higher pressure (over 100 psig, pound per square inch gauge) to deliver natural gas from the supply source to pressure reducing stations.

Pressure Reducing Stations include district regulators, which are located throughout the system to reduce pressure to a standard distribution operating pressure of approximately 60 psig.

Distribution Mains are the pipes fed from district regulators that carry the gas to customers. These mains vary in size (usually less than eight-inch diameter) and material (typically polyethylene).

PSE owns more than 21,000 miles of gas mains and service lines. Natural gas supplies are purchased from producers in Canada and the Rocky Mountain states. Deep natural gas deposits are brought to the surface by wellhead pumps. The gas is then processed, purified, and distributed via interstate pipelines. Pressure is maintained by compressor stations that are located every 50 to 60 miles along the pipelines. PSE stores gas in large underground facilities to meet demand year-round. The gas then enters the city through a gate station where it is metered and delivered to customers through a distribution network of local gas mains, small-diameter service lines, and customer meters. For security reasons, PSE requested nondisclosure of facility locations.

Extension of natural gas service is initiated by customer request. Due to the relative cost savings of natural gas over electricity, natural gas has become the preferred fuel choice for many residents and businesses. New connections are likely to grow at a pace closely matching the City's growth rate. Upgrades to existing facilities and installation of new facilities may be needed to deliver gas to customers and maintain system reliability. These new lines would be located within existing public rights-of-way or in easements as required by site conditions.

The U.S. Department of Energy estimates that there are 2,203 trillion cubic feet of recoverable natural gas in the United States. At the current rate of consumption of about 24 trillion cubic feet per year, the current reserve is enough to last about 92 years. Reserves have increased each year since 1999 due to improvements in shale gas exploration and production technologies.

Solid waste/recycling

Snohomish currently contracts with Republic Services/Allied Waste to provide solid waste, recycling, and yard waste collection services to all residents within the municipal boundaries of the city through April 2017. Solid waste and recycling collection is a mandatory service within City limits. For unincorporated areas, solid waste collection services are provided by Waste Management. According to state law, the franchise solid waste hauler for annexed areas must be offered a City franchise for a minimum of seven years following annexation. The disposal of solid waste is guided by the *Snohomish County Comprehensive Solid Waste Management Plan*, updated in 2004.

The City provides billing services to solid waste customers, and the company invoices the City on a monthly basis. Garbage and recycling fees are included in the bi-monthly utility bills. Rates are set by the company to which a nine percent City surcharge is added for administration. Low income senior and low income disabled rates are available to eligible customers.

The company collects solid waste monthly or weekly, depending on the level of service selected by the customer. The waste is delivered to one of several disposal sites operated by Snohomish County, as stipulated by an interlocal agreement with the County. Source-separated recyclables and yard waste are processed for recycling or composted at the company's material recovery facility. Once the solid waste reaches the transfer station, it is compacted into shipping containers and hauled to the Regional Disposal Company Rail Loading Facility in Everett. The waste is then transferred by rail to the Republic Services Regional Landfill in Roosevelt, Washington. The facility was established in 1991 with an on-site landfill gas-powered power plant that generates electricity for sale to the Klickitat Public Utility District.

The capture and reuse of landfill gas at the plant creates enough energy to power more than 20,000 homes in Klickitat County and creates a sustainable disposal system. Energy produced by the landfill replaces the consumption of 20.4 million tons of coal, thus offsetting 35.4 million tons of carbon dioxide emissions. The facility is situated to accommodate future growth; it was permitted to accept 120 million tons of solid waste, and has a projected lifespan of 80 years.

Telecommunications

Telecommunication is the transmission of information from one point to another using technology. A broad range of services and media is included in the term, which generally refers to telephone, television, and internet. These communications formats are provided in a variety of ways, including telephone lines, fiber optic cables, communications satellites, cloud and enterprise services, and broadband cable. These services—and the technology which makes them available—are becoming increasingly sophisticated, and are more commonly offered as a package, or “bundle” by providers.

Cable television and broadband internet services are provided by Comcast Corporation. Based in Philadelphia, Comcast is the largest U.S. cable company, serving more than 24 million customers. Comcast operates a cloud-enabled network. There are approximately 2,500 Comcast video and internet subscribers in the city limits.

Comcast runs fiber optic cable to a “node”, which is an electronic device capable of sending and receiving information over a communications channel, and serves as an access point for cable modems. Nodes include broadband optical receivers that convert the downstream optically modulated signal to an electrical signal. Nodes generally serve 150 to 400 subscribers. The company prefers not to over-subscribe nodes, as the available bandwidth decreases with a larger number of customers. Each node has a built-in battery backup, which lasts about 12 hours for residential service, depending on usage. From the node point, service transitions to coaxial cable running to the individual residences. There are currently four nodes within City limits, all fed from a Hub located on 13th Street.

Comcast has no immediate plans to add facilities. However, the company expects to extend its cable network as needed to serve additional development. As new subscribers are added, the company adds or splits nodes to serve growth.

Telephone and internet services are provided by Frontier Communications, including local and long-distance general telephone services as well as high speed internet. Frontier Communications is the fifth largest provider of DSL broadband in the U.S., serving over 17.7 million people in 28 states. Frontier's fiber internet service is available to 1.8 million people. In Snohomish, Frontier's facilities are a combination of fiber optic and distribution copper cables, both aerial and buried, to provide telephone and internet. Telephone and internet service is delivered side by side, traveling at separate wavelengths.

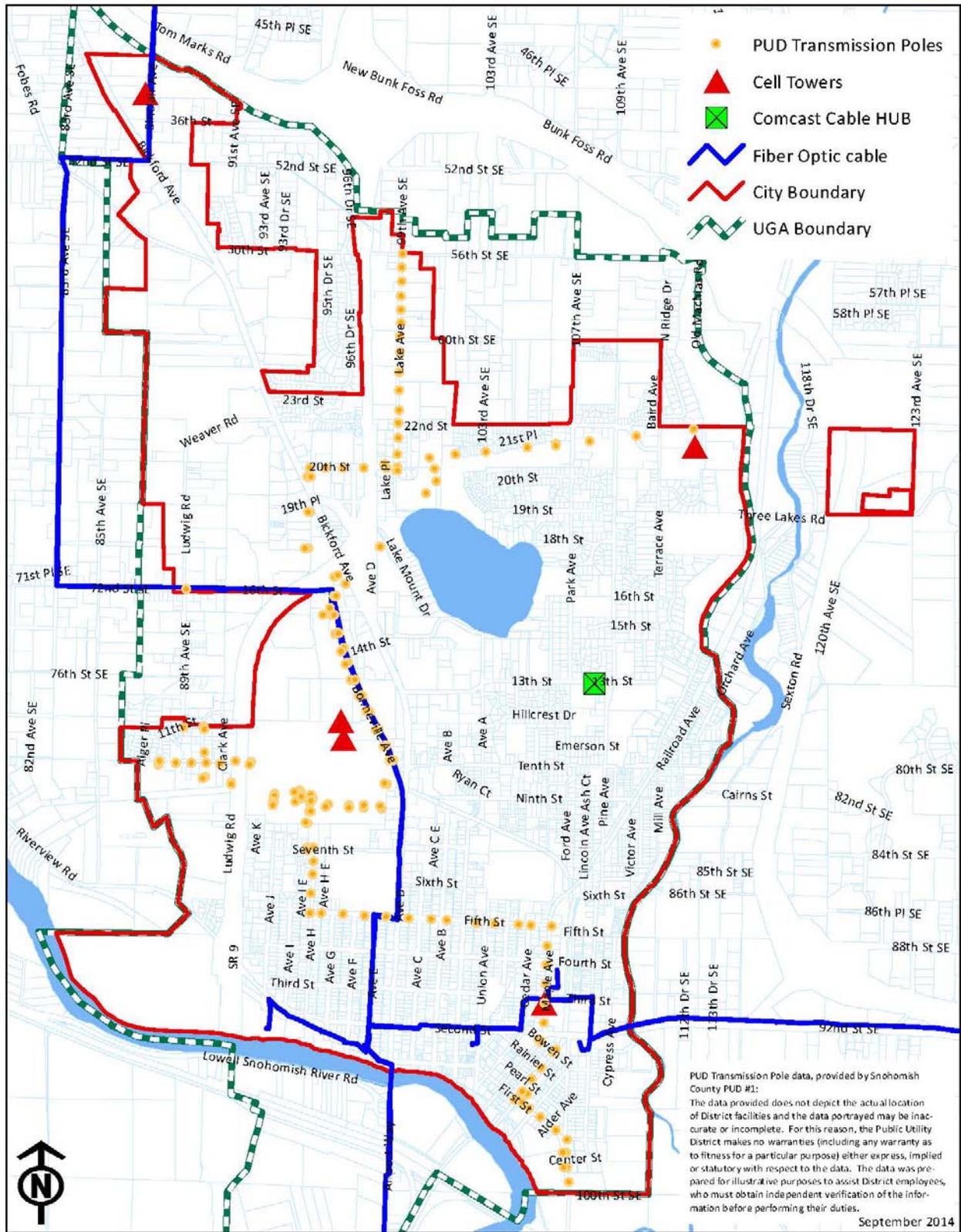
Frontier operates a central service location in Snohomish that feeds the remote electronic equipment serving individual customers. Recent upgrades to the central office location have increased the company's ability to provide open bandwidth to existing and future customers in the city. Business product speeds range from 3 megabits to 100 gigabits per second. Frontier operates approximately 7,000 lines in Snohomish.

Wave Broadband, formerly Black Rock Cable, provides fiber-based communications services including video, internet, and telephone in Washington, Oregon, and California. The company is headquartered in Kirkland, Washington, and serves over 400,000 residential and business customers. The company builds, owns, and operates its own fiber optic network. Prior to the merger with Wave Broadband in 2012, Black Rock Cable extended buried fiber optic cable through several corridors in Snohomish, including 16th Street, Bonneville Avenue to Avenue D, Second Street, and First Street. Wave Broadband's fiber optic network is shown on Figure UT 1.

Wireless

Wireless communication combines a portion of the radio frequency spectrum with switching technology, making it possible to provide mobile or portable telephone and data service to any number of subscribers within a given service area. Transmission quality is comparable to that provided by conventional wire-line telephones, and the same dialing capabilities and features available to wire-line users are available to cellular users. This involves the location of towers and antennas throughout the community. There are currently several wireless facilities in Snohomish. Three are located on industrial land near Bonneville Avenue, one is located between Bickford Avenue and Sinclair Avenue, one is located in Single Family zoning on Terrace Avenue, and one is located in the right-of-way adjacent to the Snohomish Police Department property at 230 Maple Avenue, collocated on a PUD pole. Cell tower locations are shown on Figure UT 1

Figure UT 1: Private Utility Transmission Facilities



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UTILITIES ELEMENT GOALS AND POLICIES

GOAL UT 1: To ensure services from non-City utilities further the City’s goals for growth and development, are safe and reliable, are aesthetically compatible with surrounding land uses, and are available at reasonable economic costs.

Policies:

UT 1.1: Coordinate projects. Coordinate infrastructure projects such as street improvements with private utilities to minimize disruption and reduce costs.

UT 1.2: Available land. Ensure that sufficient land is available for the location of utility facilities, including within transportation corridors.

UT 1.3: Utilities in plats. Reserve land within new plats for private utilities serving the development.

UT 1.4: Land use planning. Coordinate land use plans with private utility purveyors to ensure utility services are available for new development.

UT 1.5: Annexations. Provide notice to private utility purveyors during annexations to provide a smooth transition and minimize impacts to affected citizens.

UT 1.6: Minimize disruptions. Encourage system design and maintenance practices intended to minimize the number and duration of interruptions to customer service.

UT 1.7: New technologies. Encourage new technology that improves utility services and reliability while balancing health and safety, economic, aesthetics, and environmental factors.

UT 1.8: Franchise process. Use the franchise process to maximize the benefit to the City residents and rate payers.

UT 1.9: Undergrounding utilities. Require undergrounding of all new utilities for new developments.

UT 1.10: Visually screen facilities. Where feasible and beneficial, require landscaping or other aesthetic screening of at-grade utility facilities.

Telecommunications

- UT 1.11: Respond to changing circumstances.** Respond to changes in telecommunication and other data transfer technologies and their federal regulatory frameworks to ensure local controls are consistent with evolving circumstances.
- UT 1.12: Facility location and design.** Wireless communication facilities should be designed and located in a manner that minimizes adverse impacts, including aesthetic impacts, on adjacent land uses and neighborhoods.
- UT 1.13: Collocation.** Encourage collocation of multiple wireless carriers on the same facility.

Electric and Natural Gas

- UT 1.14: New generation facilities.** Encourage careful evaluation of proposals for electricity generation facilities to avoid impacts to local air and water quality.
- UT 1.15: Provide public information.** Assist non-City utility purveyors in disseminating information on measures to reduce energy and resource consumption and to reduce the waste stream.
- UT 1.16: Alternative technologies.** Encourage the conversion to cost-effective and environmentally sensitive alternative technologies and energy sources.
- UT 1.17: Energy efficient designs.** Encourage and support investment by developers in energy efficient designs and technologies.

Solid Waste

- UT 1.18: City management.** Maintain a responsive and cost-effective solid waste collection program.
- UT 1.19: Commercial recycling.** Evaluate opportunities to expand the City's recycling program to commercial uses.
- UT 1.20: Reduce waste stream.** Promote reductions in the waste stream by disseminating educational materials on re-using, recycling, composting, and other waste reduction methods.