

utilities



Utilities

9.1 Overview

This section provides information on Sultan’s utilities, including those owned and operated by the City and other private and public entities. Similar to the Capital Facilities chapter, the inventories that follow are primarily derived on Sultan’s existing comprehensive and functional plans. An assessment of current and future levels of service has not been conducted for several years so it is critical that the City’s Public Works Department helps to inform growth strategies for new housing and employment opportunities.

9.2 Summary of Utilities Issues and Trends

- **Upgrades and expansions of public utilities (water, sewer, and stormwater) may be necessary to accommodate Sultan’s population growth** – The availability of these utilities is critical for allocating the City’s housing and job growth and it’s likely that expanded service will be needed by 2044.
- **Sultan residents and businesses are powered by a mix of electric and natural gas** – The City is served by Snohomish County Public Utility District and Puget Sound Energy for these utilities. Trends toward electrification and renewable energy production are critical to keep in mind as the City plans for 2044.
- **Internet providers are expanding in Snohomish County** – Widespread access to fiber internet is a County goal for 2024 and providers are responding with more infrastructure investment in the Skykomish River Valley.

9.3 Regulatory Context and Planning Framework

WASHINGTON STATE GROWTH MANAGEMENT ACT

The Washington State Growth Management Act (GMA) requires jurisdictions that fully plan, including Sultan, to include a Utilities Element in their comprehensive plans, including at a minimum “electrical, telecommunications, and natural gas systems” (RCW 36.70A.070). This element analyzes the need for future utilities improvements to support the goals and growth projections outlined in the Land Use Element and the funding mechanisms available for implementation. Under the GMA, a Utilities Plan Element must be adopted before a jurisdiction can do the following:

- Implement GMA impact fees;

- Impose certain taxes (e.g., real estate excise tax); and
- Qualify for certain state funding opportunities.

WASHINGTON ADMINISTRATIVE CODE (WAC)

Section WAC 365-196-420 of the WAC requires that the Utilities Element of a comprehensive plan contain:

- The general location, proposed location, and capacity of all existing and proposed utilities;
- A forecast of future capacity needs for utilities over the planning period;
- An evaluation of the potential classification of utilities as essential public facilities; and
- Criteria for siting utilities in the future

VISION 2050

PSRC's Vision 2050 addresses many utility planning issues for the four-county Puget Sound region. An emphasis is placed on equity when planning capital facilities as historic provisions of public services have disproportionately impacted communities of color and low-income neighborhoods. Inequitable implementation of utilities has in turn led to subpar access to economic opportunity and lower quality of life. Sultan's utility planning must incorporate equity to align with PSRC guidance.

Vision 2050 contains the following key utility development requirements:

- MPP-T-3: Reduce the need for new capital improvements through investments in operations, pricing programs, demand management strategies, and system management activities that improve the efficiency of the current system.
- MPP-PS-1: Protect and enhance the environment and public health and safety when providing services and facilities.
- MPP-PS-2: Promote affordability and equitable access of public services to all communities, especially the historically underserved. Prioritize investments to address disparities.
- MPP-PS-3: Time and phase services and facilities to guide growth and development in a manner that supports the Regional Growth Strategy.
- MPP-PS-29: Site or expand regional capital facilities in a manner that (1) reduces adverse social, environmental, and economic impacts on the host community, especially on historically marginalized communities, (2) equitably balances the location of new facilities away from disproportionately burdened communities, and (3) addresses regional planning objectives.
- MPP-PS-30: Do not locate regional capital facilities outside the urban growth area unless it is demonstrated that a non-urban site is the most appropriate location for such a facility.
- PS-Action-2 Facilities Siting and Design: PSRC will facilitate cooperative efforts with special

purpose districts and local jurisdictions to site and design facilities that enhance local communities in accordance with growth management goals and VISION 2050.

SNOHOMISH COUNTY POLICIES

Climate Change Policies:

CC-7 Jurisdictions should consider rising sea level by planning for the siting of new and relocation of existing essential public facilities and hazardous industries to areas that are outside the 500-year floodplain.

Public Services and Facilities Policies:

PS-4 The County and cities should support the planned development of jobs and housing through strategic investment decisions and coordination of public services and facilities.

PS-6 The County and cities should design infrastructure and public services to promote conservation of natural resources.

PS-7 To ensure long-term water availability for both human use and environmental needs, jurisdictions should work collaboratively to reduce per capita water consumption through conservation, improvements in efficiency, and if applicable, reclamation and reuse.

PS-8 The County and cities shall work collaboratively, in coordination with tribal governments, for the planning of water and wastewater utilities to meet the area's long-term needs and support the regional growth strategy.

PS-9 The County and cities, in collaboration with water providers and utilities, should consider the potential impacts of climate change, including impacts exacerbated by seasonal or cyclical conditions, when engaged in planning efforts to ensure the county's long-term water supply.

PS-10 Jurisdictions should coordinate with solid waste service providers in order to meet and, if desired, exceed state mandates for the reduction of solid waste and promotion of recycling.

PS-11 The County and cities shall permit new development in urban areas only when sanitary sewers are available with the exception of where sewer service is not likely to be feasible for the duration of the jurisdiction's adopted plan. (Currently identified exceptions include unsewerable enclaves, as well as the Darrington, Gold Bar, and Index Urban Growth Areas.)

PS-12 Jurisdictions should promote the use and investment in renewable and alternative energy sources to meet the local and countywide energy needs.

PS-13 The County and cities should support energy conservation and efficiency in new and existing public facilities in order to achieve fiscal savings and reduce environmental impacts associated with energy generation and use.

PS-14 Jurisdictions in Urban Growth Areas shall coordinate on the data, analysis and

methodologies relating to the Levels of Service (LOS) standards for all public facilities and services that are required by the Growth Management Act. Each jurisdiction may implement and monitor its own LOS standards in accordance with each jurisdiction's adopted comprehensive plan.

PS-19 The County and cities should promote connection to sanitary sewers for residents and businesses within urban growth areas as the preferred alternative to resolving failing septic systems.

PS-20 The County and cities should support planning for the provision of telecommunication infrastructure in order to improve and facilitate access to telecommunication for all residents and businesses, especially those in underserved areas.

PS-22 Sanitary sewer mains shall not be extended beyond Urban Growth Areas (UGAs) into rural areas except when necessary to protect basic public health and safety and the environment, and when such sewers are financially supportable at rural densities and do not result in the inducement of future urban development outside of UGAs. Sewer transmission lines may be developed through rural and resource areas to meet the needs of UGAs as long as any extension through resource areas does not adversely impact the resource lands. Sanitary sewer connections in rural areas are not allowed except in instances where necessary to protect public health and safety and the environment and as allowed in RCW 36.70A.213. Sanitary sewer mains are prohibited in resource areas.

Essential Public Facilities Policies:

EPF-1 The County and each city may impose reasonable conditions and/or mitigation of adverse environmental impacts on approval of a development agreement or other land use approvals as a result of the siting of local, regional, statewide, or federal essential public facilities.

EPF-2 The County and each city may establish a process through their respective comprehensive plans and implementing development regulations to identify and site local essential public facilities that are consistent with the provisions of the GMA and ensure long-term resilience of these facilities. This process should include:

- A definition of these facilities;
- An inventory of existing and future facilities;
- Economic and other incentives to jurisdictions receiving facilities;
- A public involvement strategy;
- Assurance that the environment and public health and safety are protected;
- Consideration of impacts from climate change when selecting locations for facilities, including, but not limited to, potential flood risk and sea-level rise; and
- A consideration of alternatives to the facility.

EPF-3 Local essential public facilities should be sited or expanded to support the countywide land use pattern, minimize public costs, and protect the environment and public health, including reducing adverse impacts upon historically marginalized populations and disproportionately burdened communities.

9.4 Existing Utility Inventory

Overview

WAC 365-196-210 (39) defines utilities as:

"Utilities" or "public utilities" means enterprises or facilities serving the public by means of an integrated system of collection, transmission, distribution, and processing facilities through more or less permanent physical connections between the plant of the serving entity and the premises of the customer. Included are systems for the delivery of natural gas, electricity, telecommunications services, and water, and for the disposal of sewage.

Operating off of this definition, this chapter provides the general location, proposed location, and capacity of existing and proposed public utilities owned and operated by the City of Sultan. These public utilities are: Sewer, Water, and Stormwater.

Furthermore, this chapter also addresses these same characteristics for privately owned utilities that fit the definition of the WAC. These private utilities are:

- Solid Waste Disposal and Recycling
- Telecommunications: Cable Television, Telephone and Cellular Phone, and Internet
- Energy Supply
- Natural Gas

The following inventories are derived from the City's existing Water System Plan and Capital Facilities Element, which were updated in 2019, and the draft 2023 Capital Facilities Element for Snohomish County. Other County documents such as the Comprehensive Solid and Hazardous Waste Management Plan are referenced where noted.

PUBLIC FACILITIES

Sewer

The City owns, operates and maintains the wastewater system, which includes the collection system, one sewage lift station, a wastewater treatment facility and an effluent outfall. As part of its planning efforts the city worked with the RH2 Engineering and Katy Isaksen & Associates to update its General Sewer Plan (GSP) in 2019. The GSP is adopted by reference and may be used to enhance understanding of the wastewater system. This section summarizes the inventory section of the GSP.

Collection System

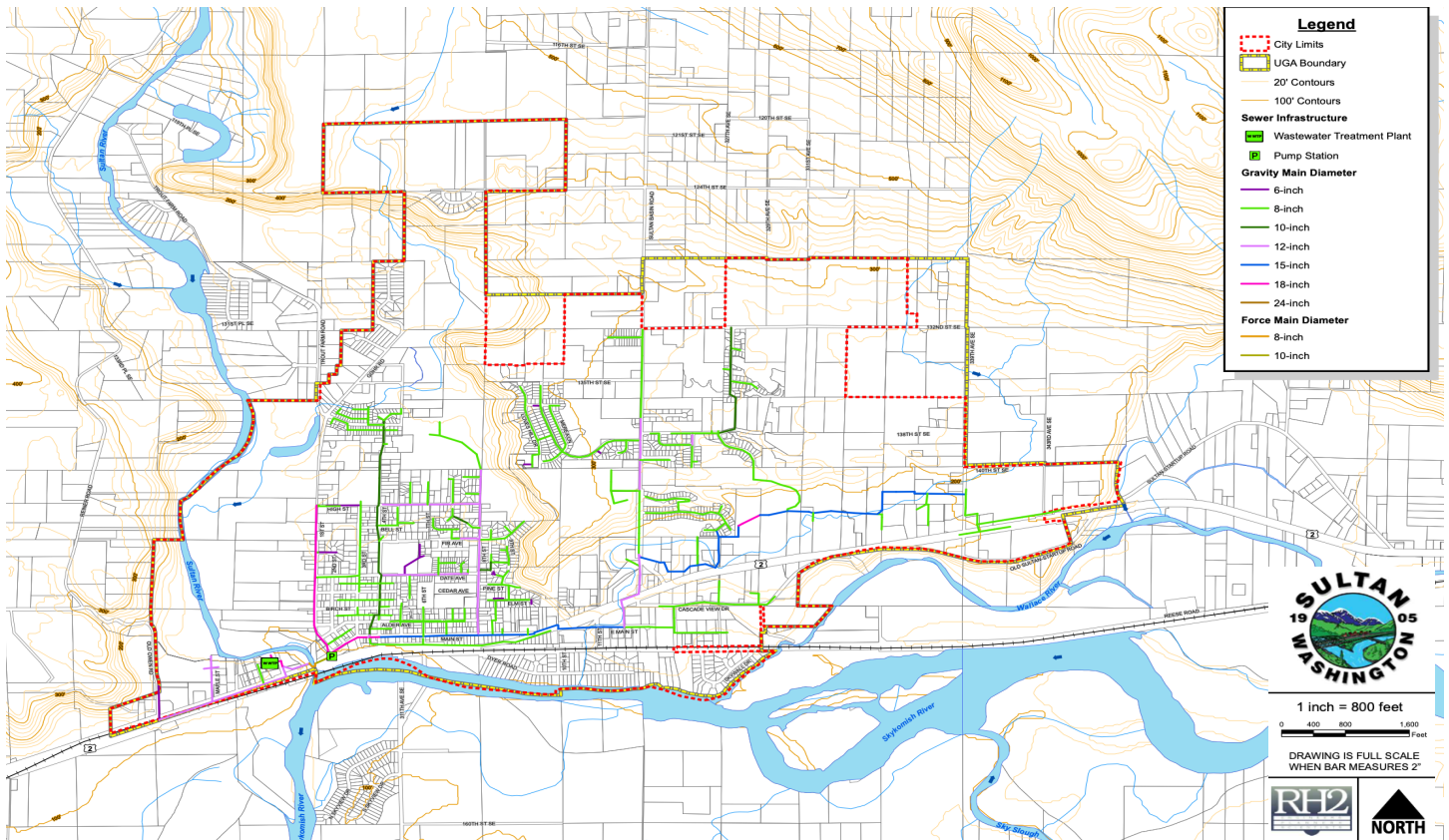
The City has approximately 19 miles of sewer piping, including collection sewers and interceptors. There is one force main in the system that is approximately 485 feet in length. A majority of the system is 8-inch-diameter gravity main, approximately totaling 10 miles. In 2023, Sultan received over \$12 million in federal funding for wastewater treatment plant upgrades and a new water treatment plant. “Sewer Pipe Inventory, 2019” summarizes the pipe by diameter. “City of Sultan, 2019” shows the existing collection system.

Figure 1 Sewer Pipe Inventory, 2019

Diameter (inches)	Total Pipe Length (ft)	Total Pipe Length (miles)	% of Total
6	2,964	0.56	3.0%
8	60,262	11.41	60.7%
10	7,033	1.33	7.1%
12	13,721	2.60	13.8%
15	10,567	2.00	10.7%
18	4,620	0.88	4.7%
24	33	0.01	0.0%
Total	99,200	18.79	100.0%

City of Sultan, 2019

Figure 2 Sultan’s Existing Sewer System, 2019



City of Sultan, 2019

Lift Station/Force Main

The lift station collects and conveys a majority of the City's wastewater from the collection system into a 18-inch diameter force main that reduces to an 14-inch diameter force main after crossing the Sultan River.

The Main Pump Station is a submersible-type lift station with two fixed speed pumps, each with a design capacity of 1,500 gallons per minute (gpm) at 56 feet of discharge head. Both pumps were replaced in kind in March 2020 with the pedestrian bridge project.

The City's lift station currently has a standby generator permanently mounted at the site with an automatic transfer switch in the case of a power outage. As an additional backup to this generator, the lift station is also wired for the trailer mounted generator owned by the City, which can provide backup power. The entire lift station was upgraded in 2020 as part of the Sultan River pedestrian bridge project.

Wastewater Treatment and Disposal

In 2022, the City started the wastewater treatment plant upgrade project. This project targets current reliability and redundancy deficiencies, as well as current hydraulic capacity limitations. This project will now include the following improvements:

- Extension of the existing influent force main to the new headworks.
- Construction of a new influent pump station to serve West Sultan.
- Construction of a new headworks including screening, grit removal and flow splitting to two oxidation ditches.
- Construction of a new oxidation ditch with diffused aeration.
- Modifications to the existing oxidation ditch to include installation of diffused aeration.
- Modifications to the existing Equipment Building to house the blowers for the new diffused aeration system in both oxidation ditches and aerobic digesters.
- Construction of a new secondary clarifier splitter box designed to ultimately split flows to four secondary clarifiers.
- Construction of one new secondary clarifier and installation of new launder covers on the new clarifier and both existing clarifiers.
- Construction of new dedicated return activated sludge pumping systems for each secondary clarifier.
- Construction of a new waste activated sludge pumping system.
- Expansion of the existing effluent pump station to handle projected year 2039 peak flows.

- Modifications to the existing effluent pump wet well to allow the installation of two new non-potable water pumps and tablet chlorination system.
- Construction of a new outfall pipe line and outfall into the Skykomish River.
- Construction of two new aerobic digesters to provide additional solids treatment.
- Construction of a new Solids Handling/Biosolids Storage Building to house the biosolids processing equipment and store biosolids for up to 3 months.
- Construction of a new odor control system to serve the Headworks and Solids Handling/Biosolids Storage Building.
- Installation of new power distribution equipment and a new standby generator to serve all critical loads in the plant.

The treated wastewater from the City’s WWTP is discharged through a 40-foot long, 12-inch diameter outfall to the Skykomish River. In 2023, Sultan received over \$2 million in federal funding for wastewater treatment plant upgrades and a new water treatment plant.

Water

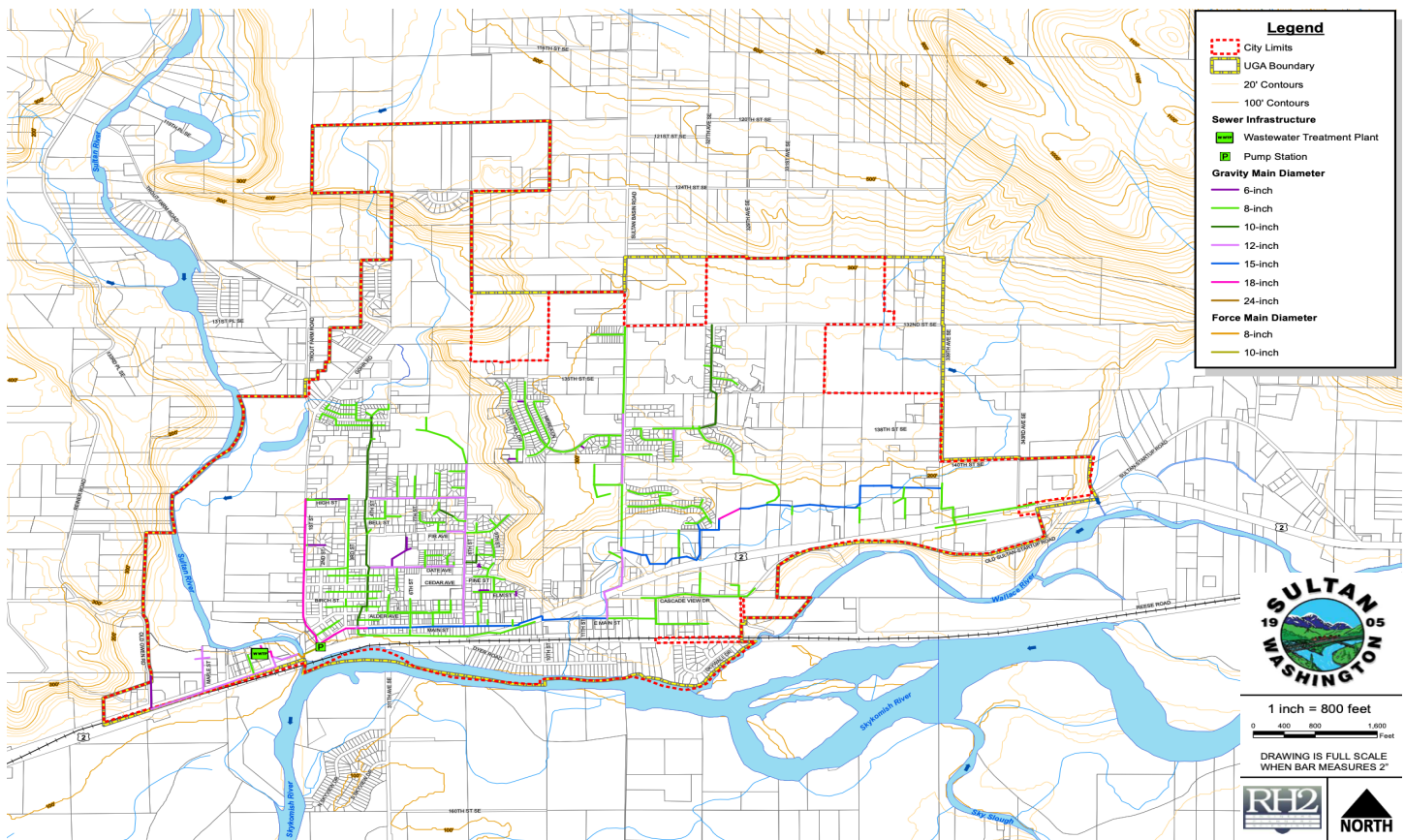
Overview

The City’s primary water supply is provided by Lake 16 located 2.5 miles north of the City and a connection (intertie) to city of Everett’s Transmission Line No.5. The City owns and operates water treatment facilities, a water booster pump station, water storage facilities, and a water distribution and transmission system. The distribution system includes approximately 34 miles of water main (pipes) ranging from 1.5 to 16 inches in diameter. This includes lines conveying water from the reservoir to the distribution system in addition to a pipeline for untreated lake water between Lake 16 and the treatment plant. A booster pump station located just downstream of the reservoir was added in 1977 and replaced in 2016. Untreated water is piped from Lake 16 to a treatment plant and reservoir located off 124th St. SE. The treatment plant has a peak capacity of 1.08 MGD.

The City’s water system has two storage facilities (reservoir) with capacities of 1.0 MG and 1.5 MG. In 2023, the City applied for \$10.5 million dollars in low interest loans to construct the new water treatment plant the city was successful in getting this loan and has received an 85% subsidy towards this project, but has not yet gone out to bid. It is unclear at this time how much the total project will cost.

Figure 3 shows Sultan’s existing water system. As part of its planning efforts the city worked with RH2 Engineering and Katy Isaksen & Associates to update its Water System Plan (WSP). The WSP is adopted by reference and may be used to enhance understanding of the water system. This section summarizes the inventory section of the WSP.

Figure 3 Existing water system



City of Sultan, 2019

Water Supply

The City's water supply is provided by Lake 16 and a connection to Everett's Transmission Line No. 5, with the primary source of water coming from Lake 16, approximately 2.5 miles north of the City limits. Lake 16 was created following the City's construction of a wood weir dam in 1911 to reduce seasonal fluctuations in supply from an artesian spring. The dam has since been reconstructed, most recently in 2020, and should now last another 30 to 50 years. Additional water is purchased by the City from Transmission Line No. 5 at a connection approximately 1 mile southwest of Lake 16, west of the Sultan River. The City uses Everett water to supplement and backup the Lake 16 supply.

In the early 1950s, the City of Everett constructed Transmission Line No. 5. In 2003, the City and Snohomish County PUD No. 1 (PUD) jointly constructed a 12- and 16-inch transmission line from Transmission Line No. 5 as part of the Water Supply Pipeline Construction, Operation and Maintenance Agreement executed on June 21, 2001. Although this connection is intended for supplemental use during normal operating conditions, the plant has a generator that provides back up power to the system during emergency events.

The City has one connection to Transmission Line No. 5, referred to as the Everett intertie, which was constructed jointly by the City and PUD in 2003, consists of a below-grade concrete vault with a flow meter. The capacity of the transmission line between the intertie and the City ranges from 3.89 MGD to 5.76 MGD, depending on Everett’s use of its pumping system. The water supply available to the City is approximately 25 percent of the transmission line capacity, based on the City’s ownership percentage of the transmission line. However, until the PUD begins withdrawing water from the transmission line, the City is permitted to withdraw 66.7 percent of the transmission line capacity. A 3-inch control valve and 8-inch altitude valve located in a concrete vault at the water treatment plant site allow the City to control the flow of water from Everett.

Water Treatment Facilities

The Sultan water treatment plant, originally constructed in 1978 and expanded to a capacity of 1.36 MG in the late 1990s, treats raw water from Lake 16 using slow sand filtration. Capacities of the individual treatment elements are shown below in “Water Treatment Capacities, 2019”. Water exits Lake 16 and enters the City’s 10-inch transmission main. Impounded water flows by gravity from Lake 16 to the water treatment plant.

Figure 4 Water Treatment Capacities, 2019

Treatment Element	Capacity (gallons per minute)	Capacity (million gallons per day)
Flocculation	944	1.36
Filtration	950	1.37

City of Sultan, 2019

Once the water is filtered, it is injected with a chlorine solution (for disinfection); caustic soda (for pH adjustment) at a rate of 12 to 16 mg/L; and fluoride (for dental health) at a rate of 0.7 mg/L immediately following filtration in the combined filter effluent pipeline. Treated water flows by gravity through a 10-inch asbestos cement pipe to the City’s reservoirs.

The water from Transmission Line No. 5 is treated by Everett before it reaches the intertie and is blended with treated water from the City of Sultan’s water treatment plant prior to entering the City’s distribution system. A 3-inch control valve and 8-inch altitude valve located in a concrete vault at the water treatment plant site allow the City to control the flow of water from Everett. The capacity of the intertie is between 3.89 and 5.76 MGD.

The City’s water treatment plant telemetry and supervisory control system was installed in 2000 and manufactured by Systems Interface, Inc. The system consists of a master telemetry unit at the water treatment plant that operates the water treatment plant and the reservoirs. The transmitting and receiving telemetry units communicate with each other using phone lines.

Booster Pump Station Facilities

The above-grade BPS was constructed in 2016 to replace the original BPS, which was constructed in 1977. The BPS is located adjacent to the 1.0 MG Reservoir and 1.5 MG Reservoir on City- owned property in the northwest corner of the City limits. The BPS has five pumps that are used to pump water supplied from the 1.0 MG Reservoir to the 600 Zone. It is operated 24 hours per day to provide normal supply directly to the 600 Zone, indirectly to the 447 Zone through PRV #2, and indirectly to the 335 Zone through PRV #5. The BPS includes one 5 hp pump rated at 60 gpm, two 15 hp pumps rated at 140 gpm, and two 125 hp pumps rated at 1,800 gpm. The two 125 hp pumps are used to backwash the filters at the water treatment plant and supplement the 335, 447 and 600 Zones during a fire flow event or other drop in pressure. The capacity of the BPS with the two largest pumps in operation is sufficient to provide water for system demands, fire flow, and backwash of the filters at the water treatment plant. The BPS was designed to have a normal pumping rate of 20 gpm to 320 gpm and a capacity of 3,300 gpm. The BPS is equipped with a 350 kilowatt (kW) emergency generator to provide backup power to the BPS and water treatment plant. The emergency generator is capable of providing emergency power to the BPS and water treatment plant under all proposed operational scenarios. During power outages at the BPS, the City continues to operate the water treatment plant and BPS while still having adequate pumping capacity available for fire flows in the 600 and 447 Zones and filter backwashing at the water treatment plant.

Water Storage Facilities

The City's water system has two storage facilities. The first is a 1.0 Million Gallon (MG) reservoir located at the western end of 124th Street SE on a fenced site at the water treatment plant location. The 82.5-foot diameter, 27-foot tall concrete tank was constructed in 1978 and provides approximately 40,000 gallons of storage per foot of height. A 10-inch diameter asbestos cement water main serves as the reservoir's inlet pipe and a separate 10-inch diameter asbestos cement water main serves as the reservoir's outlet pipe.

The second water storage facility is a 1.5 MG reservoir is located on the same site as the 1.0 MG Reservoir. The 100-foot diameter, 27-foot tall concrete tank was constructed in 1998 and provides approximately 58,750 gallons of storage per foot of height. A 12-inch diameter ductile iron water main serves as the reservoir's inlet pipe and a separate 12-inch diameter ductile iron water main serves as the reservoir's outlet pipe. The piping connecting the water treatment plant and reservoirs conveys water from the water treatment plant to the 1.5 MG Reservoir, and then from the 1.5 MG Reservoir to the 1.0 MG Reservoir before water is supplied to the distribution system.

The City can isolate either of the two reservoirs and supply the distribution system in the event that a reservoir needs to be temporarily taken out of service. Both reservoirs have a water level sensor, which is displayed on the electric screen of the control panel at the water treatment plant.

Water Distribution and Transmission Facilities

Distribution Mains

The City’s water service area contains approximately 34 miles of water main ranging in size from 4 inches to 16 inches. As shown in Figure 5, most of the water main (approximately 41 percent) within the service area is 8 inches in diameter and an additional 36 percent of the water main is 10 inches in diameter or larger.

Figure 5 Water Distribution Mains, 2019

Diameter (inches)	Length (feet)	Percentage of Total
4	14,612	8.2%
6	26,326	14.8%
8	71,896	40.5%
10	21,563	12.2%
12	26,961	15.2%
14	5,277	3.0%
16	9,485	5.3%
Total	177,358	100.0%

City of Sultan, 2019

All of the water main in the City’s system are constructed of asbestos cement, ductile iron, polyethylene, polyvinyl chloride (PVC) or steel, with 55.6 percent of the system constructed of ductile iron pipe.

Figure 6 Water Main Materials, 2019

Diameter (inches)	Length (feet)	Percentage of Total
Asbestos Cement	48,631	27.4%
Ductile Iron	98,636	55.6%
Polyethylene	472	0.3%
PVC	29,130	16.4%
Steel	490	0.3%
Totals	177,358	100.0%

City of Sultan, 2019

Pressure Reducing Stations

The City’s water system has a total of five pressure reducing stations, each located in an underground vault “Pressure Reducing Stations, 2019”. Pressure reducing stations are connections between adjacent pressure zones that allow water to flow from the higher pressure zone to the lower pressure zone by reducing the pressure of the water as it flows through the station, thereby maintaining a safe range of pressures in the lower zone. The PRV hydraulically varies the flow rate through the valve (up to the flow capacity of the valve) to maintain a constant set pressure on the downstream side of the

valve for water flowing into the lower pressure zone. A pressure reducing station normally contains two PRVs, sometimes a pressure relief valve, piping and other appurtenances.

Figure 7 Pressure Reducing Stations, 2019

Name	Location
PRV #1	12730 307th
PRV #2	Avenue SE 13000 Sultan Basin Road
PRV #3	33109 SR 2
PRV #4	14400 Sultan Basin Road
PRV #5	142nd Street SE and 143rd Place SE

City of Sultan, 2019

Stormwater

The City owns, operates and maintains the drainage, or stormwater system, consisting of conveyance assets (pipes, culverts, catch basins, and inlets), stormwater ponds, and stormwater treatment facilities. In addition to the City-owned stormwater assets, numerous privately-owned stormwater facilities are scattered throughout the City of Sultan service area. Flood management and irrigation management facilities such as levees and dikes are also located throughout the service area. This description of existing facilities includes only the City-owned and City-operated stormwater facilities.

The City has approximately 82,000 linear feet (15.5 miles) of stormwater system pipes and major culverts. Approximately 820 catch basins and 160 inlets are located throughout the service area (from City of Sultan Comprehensive Plan updated September 25, 2008). Grass-lined ditches are also part of the stormwater collection system.

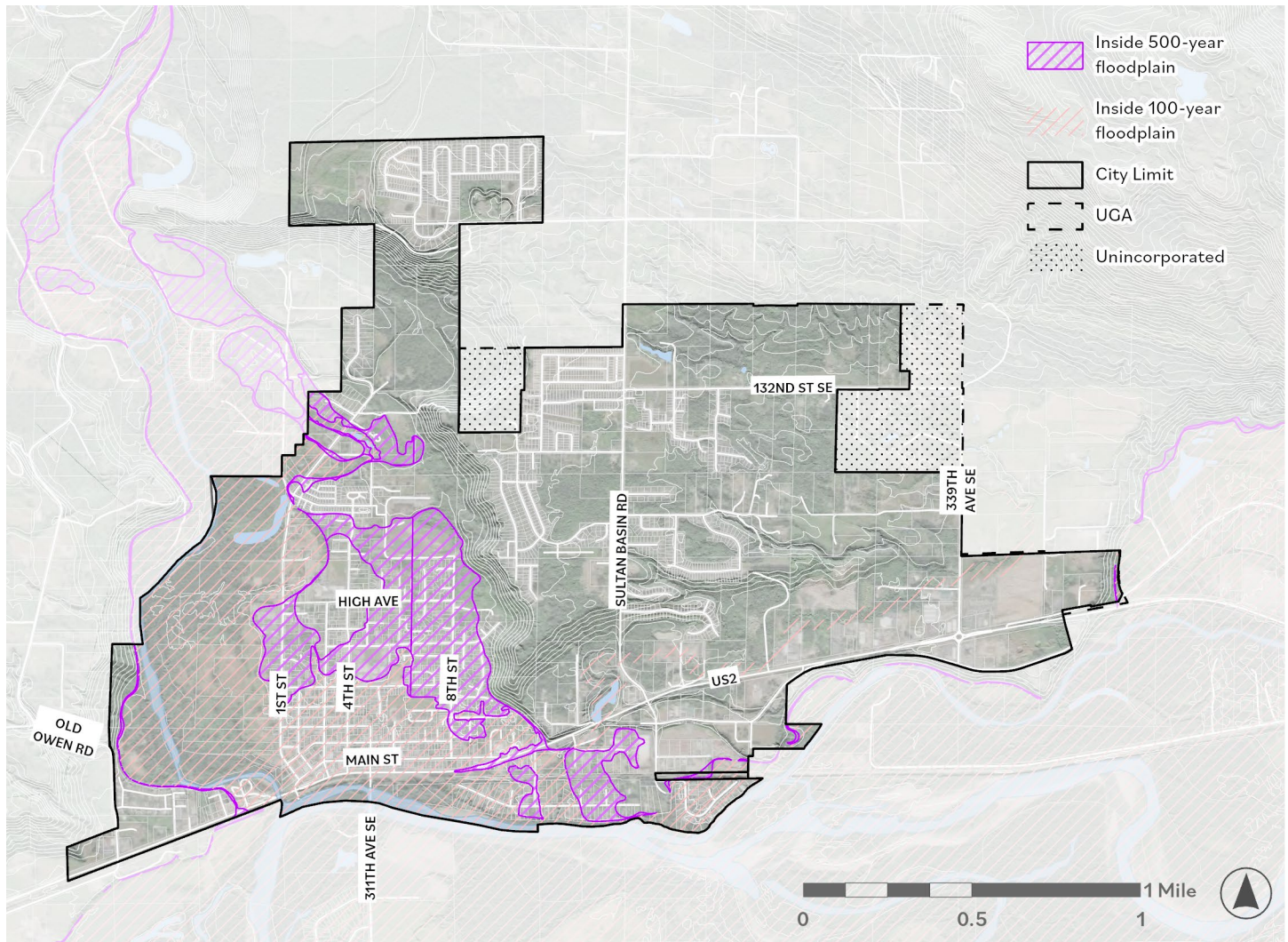
In addition to the conveyance assets, the City owns and maintains infiltration facilities and retention ponds. Approximately thirteen (13) such facilities are owned and operated by the City. (Note that there are approximately 44 privately-owned ponds in the Sultan UGA.)

The City-owned stormwater assets convey stormwater within drainage basins towards receiving water bodies. Surface water in the eastern portion of the City eventually drains into northern tributaries of Wagley Creek then flows into the Skykomish River. Surface water in the western portion of the City and city center drains to the Sultan and Skykomish Rivers. The remaining areas discharge into upper Wagley Creek.

The Sultan River runs from north to south and converges into the Skykomish River at the southwest end of the City limit. Wagley Creek is a major drainage system that discharges into the Skykomish

River about a mile east from the confluence of the Sultan and Skykomish Rivers. Winters Creek starts at the southeast end of the Water Treatment Plant and flows to the northeast of Sultan High School where it enters the Skykomish River. The Wallace River enters the Skykomish River east of the Sultan UGA. Wetlands are located throughout the UGA but are more prominent in the eastern portion of the UGA.

Figure 8 Frequently Flooded Areas



FEMA, 2020; Framework, 2023

Overbank flooding, rapid stream channel migration, and stream bank erosion occur along and within the floodplain of the Skykomish, Sultan, and Wallace Rivers. Associated with the Skykomish and Sultan Rivers is a floodway, which is located south of Dyer Road and Skywall Drive alongside the Skykomish River and West of 1st street bordering the Sultan River. The 100-year floodplain contains a large portion of the city.

HYBRID SERVICES

Solid Waste Disposal and Recycling

Government and private companies both play important roles in garbage, recycling, and hazardous waste programs in Sultan. Under the Solid Waste Management and Recovery Act (RCW 70.95), local governments are given primary responsibility for solid waste handling. Cities and towns have the option of writing their own solid waste plans or cooperating with counties in the development of a county or regional plan.

The City of Sultan has enacted an interlocal agreement with Snohomish County for the county to provide solid waste planning. The document that governs this agreement is the county's 2021-2026 Comprehensive Solid and Hazardous Waste Management Plan.

Solid waste collection companies are certified and regulated by the Washington Utilities and Transportation Commission (RCW 81.77). Cities are permitted by State Law to choose their form of waste collection regulation. Sultan has contracted with Republic Services since 2021. Utility services are provided to the City of Sultan at four levels.

- **Enforcement.** The Snohomish Health District is the regulating and enforcement agency for all solid and moderate risk waste facilities, whether operating or closed.
- **Disposal.** Snohomish County Solid Waste Division provides solid waste disposal services through the operation of landfills and transportation of waste from transfer stations to landfills.
- **Collection.** The City of Sultan contracts with Republic Services for collection. These drop boxes are used almost exclusively by self-haul customers. Altogether, they handled only 2.9% of the County's solid waste in 2019. Waste from the drop boxes is brought primarily to the Airport Road Recycling and Transfer Station, where it is compacted into shipping containers, taken by truck to a county yard in Everett, and finally hauled by rail to the Republic Services Regional Landfill in Klickitat County.
- **Recycling.** As of January 2021, the City of Sultan contracted with Republic Services to provide recycling and yard debris services to city residents.

Enforcement

The Snohomish Health District is the regulating and enforcement agency for all solid and moderate risk waste facilities, whether operating or closed. The Health District also investigates and resolves a large number of garbage accumulation, illegal dumping, and moderate risk waste related complaints. Solid waste transfer stations, rural drop box sites, open or altered landfills, petroleum contaminated soil treatment facilities, certain recycling facilities, and moderate risk waste collection facilities are required to have a permit issued by the Health District. The Health District periodically inspects each facility to verify that the Solid Waste Management Division and other solid waste facility owners are operating their facilities in accordance with applicable regulations.

Moderate risk wastes are, legally, one form of solid waste; therefore, some regulations which cover solid waste facilities also govern the operation of moderate risk waste facilities; however, facilities for handling moderate risk wastes are also covered by additional regulations. As is the case with solid waste regulations, federal, state and local jurisdictions all play roles in developing and implementing controlling regulations. Also, as in the case of solid waste, the Snohomish Health District is the organization with the bulk of regulatory and enforcement duties while the Snohomish County Solid Waste Management Division is the primary planning jurisdiction. The two agencies cooperatively implement the Solid Waste Comprehensive Plan.

Disposal

The Snohomish County Solid Waste Division operates facilities and activities to manage solid waste in the county. The facilities include three transfer stations and five drop box sites located to handle disposal for the four service areas. These include the North County Recycling and Transfer Station in Arlington, Airport Road Recycling and Transfer Station in Everett, Southwest Recycling and Transfer Station in Mountlake Terrace and five drop box facilities to serve East and part of North county, located in Granite Falls, Lake Roesiger, Oso and Sultan. Drop boxes are operated primarily for use by residential and small commercial self-haulers of un-compacted waste.

Landfills

Snohomish County closed its last landfill in 1996. Since that time waste has been compacted into shipping containers and delivered to the rail yard where a private company, under contract to the County, transports the containers by train to a privately owned landfill in Klickitat County. Following is a brief synopsis of each of Snohomish County's closed landfills:

- **Cathcart Landfill** - This 52 acre landfill opened in 1980 and was considered state-of-the-art because of its advanced liner system. This landfill was closed in 1992 after receiving 3.2 million tons of refuse.
- **Bryant Landfill** - This unlined landfill opened in the 1950's as an unregulated disposal site. The 30 acre landfill underwent final closure with a clay cap in 1987 after receiving approximately 847,000 tons of refuse.
- **Lake Goodwin Landfill** - This unlined landfill opened in the 1950's as an unregulated disposal site. The 11.5 acre landfill underwent final closure in 1983 after receiving approximately 185,000 tons of refuse.
- **Lake Stevens Landfill** - This unlined landfill opened in 1947 as an unregulated disposal site. The 27 acre landfill underwent final closure in 1984 with a bentonite dike around its perimeter and a bentonite cap.
- **McCollum Park Landfill (Emander Landfill)** - This 27 acre facility opened in 1947 as an unlined, unregulated disposal site. The facility underwent final closure in 1996 after receiving 238,000 tons of municipal solid waste (MSW) and sludge.

Household Hazardous Waste

The City of Sultan has offered annual clean up day events each year since 1999 to collect household hazardous waste, electronic equipment, metals, appliances, and construction and demolition materials. Funding for special clean up day events is provided through biennial Coordinated Prevention Grants which are administered by Snohomish County. Allied Waste provides additional funding through its contract with the City to dispose of materials collected during the event that cannot be recycled.

Recycling

The City provides mandatory weekly curbside recycling services to residential customers via a 5-year contract with Republic Services. Recycling for commercial and industrial customers is optional.

The City incorporates a residential curbside recycling system that uses a single 95 gallon “toter” bin for glass, plastic, mixed paper, newspaper, etc. These bins are furnished to single-family (single-family, duplex, triplex and fourplex) and multi-family residences (five-plex +, mobile home parks, apartments and condominiums) by the service provider.

Yard-debris collection is provided by the contracted vendor as an optional service to the residential customer. The customer is billed by the contracted vendor for regular collection service or purchases a pre-paid voucher from the City for on-call service.

Yard debris and food waste collection services include, at a minimum, anything that grows in the yard or garden, including grass clippings, leaves, weeds, and small branches less than four (4) inches in diameter or three (3) feet in length; and all compostable pre- and post-consumer food scraps, such as whole or partial pieces of produce, meats, bones, cheese, bread, cereals, coffee grounds, egg shells, and food-soiled paper accepted by the contractor’s selected composting site.

Solid Waste System Needs

According to the 2004 Solid Waste Management Plan, completion of the Airport Road Recycling and Transfer Station (ARTS) and the rebuilt Southwest Recycling and Transfer Station (SWRTS) in conjunction with the existing North County Recycling and Transfer Station (NCRTS) can accommodate the county’s waste handling needs until 2023.

PRIVATE UTILITIES

Electricity

Sultan receives its electrical power from Snohomish County Public Utility District (PUD) No. 1. Snohomish County PUD is a municipal corporation of the state of Washington, formed by a majority vote of the people for the purpose of providing electric and/or water utility service. Snohomish County PUD is the second largest publicly owned utility in the Pacific Northwest and the 12th largest in the nation in terms of customers served.

The Snohomish County PUD No. 1 provides electricity to all of the Sultan planning area, which includes approximately 10,500 customers as of December 2004. PUD utilizes a looped transmission system to distribute electrical power throughout the County. Approximately 80 percent of the electricity supply in Snohomish County originates from the Bonneville Power Authority (BPA).

In the Sultan area, the closest BPA substation is located in Snohomish where power is taken off the transmission system for local distribution. The PUD also operates a 112 megawatt (MW) generating hydropower plant, the Henry M Jackson Project, at Spada Lake to augment the BPA supply. Electricity is supplied to the Sultan area by 115,000 volt transmission lines located along the US-2 right-of-way. The transmission lines serve a system of two distribution substations that reduce the voltage to 12,470 volts. From these substations extend 12,470-volt distribution feeder lines that run along local streets. Transformers then further reduce the voltage to 120/240 volts for distribution to residents or to 480 volts for commercial and industrial users.

The Snohomish County PUD No. 1 has three hydroelectric plants located in the Sultan area - the Jackson Hydroelectric Project, Woods Creek Hydroelectric Project, and most recently, the Young's Creek Hydroelectric Project.

Jackson Hydroelectric Project

The Henry M. Jackson Hydroelectric Project, which began operating in 1984, is located in the Sultan River Basin. The 112-megawatt hydroelectric generating facility produces about 6 to 8 percent of the PUD's power needs. In addition to generating enough power for 35,800 homes using a clean renewable resource, the project also provides recreation, enhances fish and wildlife habitats, and provides an element of flood control for Sultan and unincorporated Snohomish County residents along the Sultan River. The dam also provides the majority of drinking water for South Snohomish County and North King County.

The Henry M Jackson Hydroelectric Project was built in two phases. Phase I was completed in 1965 and involved the building of Culmback Dam and the creation of the Spada Lake reservoir to increase the water supply. Phase II, completed in 1984, included the raising Culmback Dam by 62 feet which resulted in a four-fold increase in the size of Spada Lake. The Spada Lake reservoir covers 1,870 acres (1,970 acres at maximum flood) with 173 miles of shoreline. Its maximum normal elevation is 1,450 feet

Culmback Dam is located approximately 16 river miles north of Sultan on the Sultan River. It is an earthen dam that creates Spada Lake. If the Culmback Dam were to fail, it is estimated that the initial wave of water will travel down the Sultan River gathering speed and debris and will hit the City of Sultan in 1 hour and 41 minutes. The City works closely with the PUD, public safety agencies, and the Sultan School District to educate the public and practice evacuation procedures.

The PUD provides access to day use recreation sites around the perimeter of Spada Lake. The facilities provide access for fishing and boat launching at three locations, picnic areas, trails, viewpoints, interpretive signs, and public restrooms. Because Spada Lake provides drinking water, swimming and overnight camping are not allowed in the area. Only row boats and electric-powered boats are permitted on the lake.

Woods Creek

The Woods Creek Hydroelectric Project is located north of the city of Monroe, Washington, and has a nameplate capacity of 0.65 MW. The project is adjacent to Woods Creek, a tributary of the Skykomish River, with a powerhouse located at a natural impassible barrier to fish. Prior to acquisition of this small hydroelectric resource in 2008, the PUD had purchased 100% of the output since the project's construction in 1982.

Young's Creek

In 2011, the PUD constructed the Young's Creek Hydroelectric Project, which has an estimated capacity of 7.5 megawatts.

System Needs

Electric load forecasting and facility planning is conducted by the PUD as part of its regular planning and management operations. The peak load typically experienced on cold winter days is primarily a design consideration in planning new generation, transmission, and the larger distribution facilities. Population and employment forecasts from the Puget Sound Regional Council (PSRC) and the state Office of Financial Management (OFM), which provided the foundation for the GMA comprehensive planning, are also utilized by PUD and other providers for electric load forecasting.

Snohomish County Public Utility District (PUD) studies the energy usage of customers and the ensuing load placed on the system by each new resident and employee to supplement government forecasts of future land growth. PUD uses several forecast scenarios from low to high, consistent with regional electric planning. PUD has predicted long-term growth will parallel to economic recovery. Facilities projected to meet this demand company-wide include upgrades to existing distribution and transmission stations, and new upgrades to transmission lines. These facilities include the introduction of Smart Grid Technology.

Smart Grid Technology

The PUD recently completed the first major project as part of a multi-year effort to upgrade its electric grid with smart grid technology. The utility has installed 163 miles of fiber optic cable connecting its final set of 62 substations, a radio site and utility buildings. The project is supported by \$15.8 million in matching federal stimulus dollars under the American Recovery & Reinvestment Act.

- 2010 - The PUD installed 163 miles of fiber optic line.
- 2011 - Installation of a wireless field area network and automation hardware on poles and substations in a 90-square mile demonstration area in the communities of Tulalip, Warm Beach and Lake Goodwin. It will allow the PUD to test automated line switches, capacitor banks and protection devices and other equipment, which is designed to automatically re-route power and isolate problem areas during power outages creating a "self-healing grid."
- 2012 - A Distribution Management System (DMS) will be operational for the entire distribution system enabling power flow analysis and creation of switch orders. The DMS will also enable automation of field devices within the demonstration area to better manage power outages and improve efficiencies.

- 2014 - Automation hardware installed at all PUD substations.

Additional system-wide upgrades have been made in subsequent years based on the results of the pilot, technical assessments, and availability of funding. Beyond the initial efficiency and reliability benefits for the utility, the upgrades allow the PUD to pursue other features in the future, such as advanced metering. Smart grid technology will allow the PUD and its customers to be ready to take advantage of new technologies such as smart appliances and smart water heaters.

Additional Projects

The fiber installation is the first of several projects that will eventually include automation of substations, a Distribution Management System and distribution automation.

In the future, these upgrades will help customers get their service restored sooner and allow the utility to provide more detailed outage information. Additional system upgrades will allow the PUD to plan for other features as well, such as advanced metering to take advantage of new technologies including smart appliances, smart water heaters, dynamic pricing and other opportunities.

In the future, customers also will be able to better plan their consumption and incorporate small-scale generating sources, such as solar, into their energy supply. With more customers generating their own power, from sources such as solar, an upgraded grid will provide a better means for power to be used closer to the place where it's actually being created, reducing line losses. In addition, it will enable better integration of electric vehicles as they gain popularity in communities throughout the PUD service area.

Natural Gas

Existing Facilities and Service

Puget Sound Energy (PSE) is Washington State's oldest local energy utility, providing electric and natural gas service to customers primarily in the Puget Sound area. PSE supplies natural gas to six Western Washington counties; Snohomish, King, Kittitas, Pierce, Thurston, and Lewis. PSE provides natural gas service to more than 124,000 natural gas customers in Snohomish County.

Natural gas is not an essential service and therefore, is not mandated to provide service. Extension of service is based on request and the results of a market analysis to determine if revenues from an extension will offset the cost of construction.

Existing Distribution System

The Pacific Northwest (Washington, Oregon, and Idaho) receives its natural gas from a wide range of sources in North America. Sixty percent (60%) of the region's natural gas supply comes from British Columbia and Alberta in the north and forty percent (40%) comes from domestic sources including the San Juan Basin in New Mexico and Texas in the south. The Pacific Northwest consumes 380 billion cubic feet of natural gas per year (2011).

Natural gas is supplied to the City of Sultan from Williams (formerly Northwest) Pipeline Corporation. Natural gas from the pipeline is reduced to 250 pounds per square inch gauge (psig) as it feeds into high pressure supply lines.

High pressure (HP) supply lines (measuring 16", 12", 8", 6", and 4" in diameter) transport gas from gate stations to district regulators. The pipe material is typically steel wrap (STW). There are approximately 3 miles of 8" high pressure line in the Sultan Urban Growth Area. The line runs eastward from the Sultan River north of Trout Farm Road between 132nd Avenue and 124th Avenue to the city limits east of Rice Road

System Needs

Minimum pressure delivery through intermediate pressure mains from a design standard is approximately 15 psig. If main pressure drops below 15 psig, there are several methods of increasing the pressure in the line, which include:

- Looping the distribution and/or supply lines to provide an alternative route for the gas to travel to an area needing additional supply (This method often involves construction of high pressure lines, district regulators, and intermediate pressure lines),
- Installing lines parallel to existing lines to supplement supply of natural gas to a particular service area, and
- Replacing existing pipelines to increase volume. (This includes efforts to replace low pressure cast iron systems with intermediate pressure plastic systems).

There are three types of construction:

- New or replacement of existing facilities due to increased capacity requirements due to new building construction and conversion from alternate fuel,
- Main replacement to facilitate improved maintenance of facility, and
- Replacement or relocation of facilities due to municipal and state projects.

PSE makes an effort to coordinate construction work with municipal projects in order to minimize cost and impacts to surrounding communities. Due to franchise agreements, PSE is required to relocate existing facilities which, unfortunately, is costly and usually unplanned. Improved coordination decreases this occurrence.

Due to anticipated growth, PSE upgraded its natural gas system in Snohomish County to meet customers' current and future needs. PSE replaced more than two miles of 4-inch natural gas pipeline with 8-inch pipeline between a point near the east end of the Pilchuck River Bridge and the Snohomish gate station, which is on the north side of U.S. 2, east of Snohomish. PSE's natural gas system works as a large network; main line upgrades help stabilize the system in adjacent communities, as well as support reliability throughout the entire customer service area.

Due to the growing popularity of natural gas in Sultan and surrounding areas, PSE continually evaluates the necessity of system improvements and expansions.

Natural gas-system investments

Major maintenance and reliability projects include a \$5.7 million multi-year project to install more

than two miles of natural gas pipeline to upgrade the natural gas system and support reliability throughout PSE’s service area (2010 completion).

Telecommunications

Existing Facilities and Service

Telecommunications services include both switched – a temporary connection made between two points by passing through a switching device such as a phone company central office – and dedicated – a permanent connection made between two points – voice, data, video, and other communication services delivered over the telephone and cable network on various mediums such as wire, fiber optic or radio wave. Frontier provides telephone service to the City of Sultan. Various companies in Snohomish County provide cellular phone service. Cable services include communications, information, and entertainment services delivered over the cable system. Various franchised companies provide cable service throughout the entire Sultan Planning Area. Comcast is the primary cable provider.

Internet access is available to Sultan residents via cable, fiber, and satellite. A variety of providers operate locally, including AT&T, Xfinity, and Ziplify. These and other providers are planning to address gaps to broadband access across Snohomish County by 2024.

9.5 Summary

Many private utilities are under directive by their licensing agency and franchise agreements to provide a specific level of service to their service area. Services are provided on an “on demand” basis; however, most service providers monitor development plans and try to build excess capacity in their facilities at the time of construction to allow for future demand.

Because the utilities and services described in this chapter are provided by special independent districts, Snohomish County, or private companies, the City must ensure that its growth plans are consistent with these outside providers’ abilities and plans.

In the future, the City may decide to provide some utilities or services now provided by others or switch to other service providers where feasible. The City will consider criteria to assess when a change of providers is warranted or when the City is able to better provide the utilities or services needed.

Issues to consider include planning for greater density in areas with surplus sewer capacity; exploring programs that will conserve utility services, such as recycling solid waste; and seeking alternative and creative methods of providing services in cases where the outside providers are unable to meet the City’s needs.