Utilities Element

City of Ferndale

Contents

EXECUTIVE SUMMARY

City residents rely on a number of basic services that help define their quality of life and maintain their health and well-being. These utilities include the delivery of natural gas, electricity, cellular, telecommunication, and solid waste services are key to that quality of life.

In Ferndale, these services are provided by private or quasi-public agencies. As a result, the City and the community in general does not have direct involvement in determining the methods or expectations for future services over the 20-year planning horizon.

The Washington Utilities and Transportation Commission (WUTC) regulates the services and defines the costs that a utility can recover, to ensure that the utility acts prudently and responsibly. The Growth Management Act gives the City and the WUTC jurisdiction over the activities of gas, electric, and telephone utilities within the City of Ferndale.

During the 20-year planning horizon for the Comprehensive Plan, changes will occur in how utilities are provided. As technology evolves, it is essential that all citizens of Ferndale continue to have access to these services. It is the City's goal for these utility services to be both economical to the service provider and affordable to the consumer.

UTILITIES ELEMENT: SUMMARY OF CONCLUSIONS

- The utilities subject to this element are private and are generally not regulated or administered by the City.
- Opportunities exist to improve coordination with utility companies related to capital projects and day-to-day maintenance.
- The City has the responsibility through its franchise agreements to ensure that utility companies are attentive to the needs of Ferndale residents and the City in general.

BACKGROUND AND PURPOSE

The purpose of the Utilities Element is to ensure that utility services provided by both public and private purveyors will be consistent with the City's Comprehensive Plan and be available to support the community's growth and development as anticipated in the Plan during its 20-year planning horizon. The design and timing for extension of utility services should promote the land use pattern and policies proposed in the Land Use Element, and be coordinated with the infrastructure improvements outlined in the Transportation Element and Capital Facilities Element.

The costs of private utility expansions or modifications are typically paid for by the consumers or subscribers to that utility (the customers). The City does not finance these

changes; however; the City can provide guidance to private utilities as to where future population growth is anticipated.

This element is also intended to supplement and guide franchise agreements between the City and the various utilities described in this plan, and to seek facilitation with those utilities, so that they are not only available to Ferndale residents, but are also provided in an efficient manner that respects Ferndale residents as customers.

The Growth Management Act (GMA) and Utilities Planning

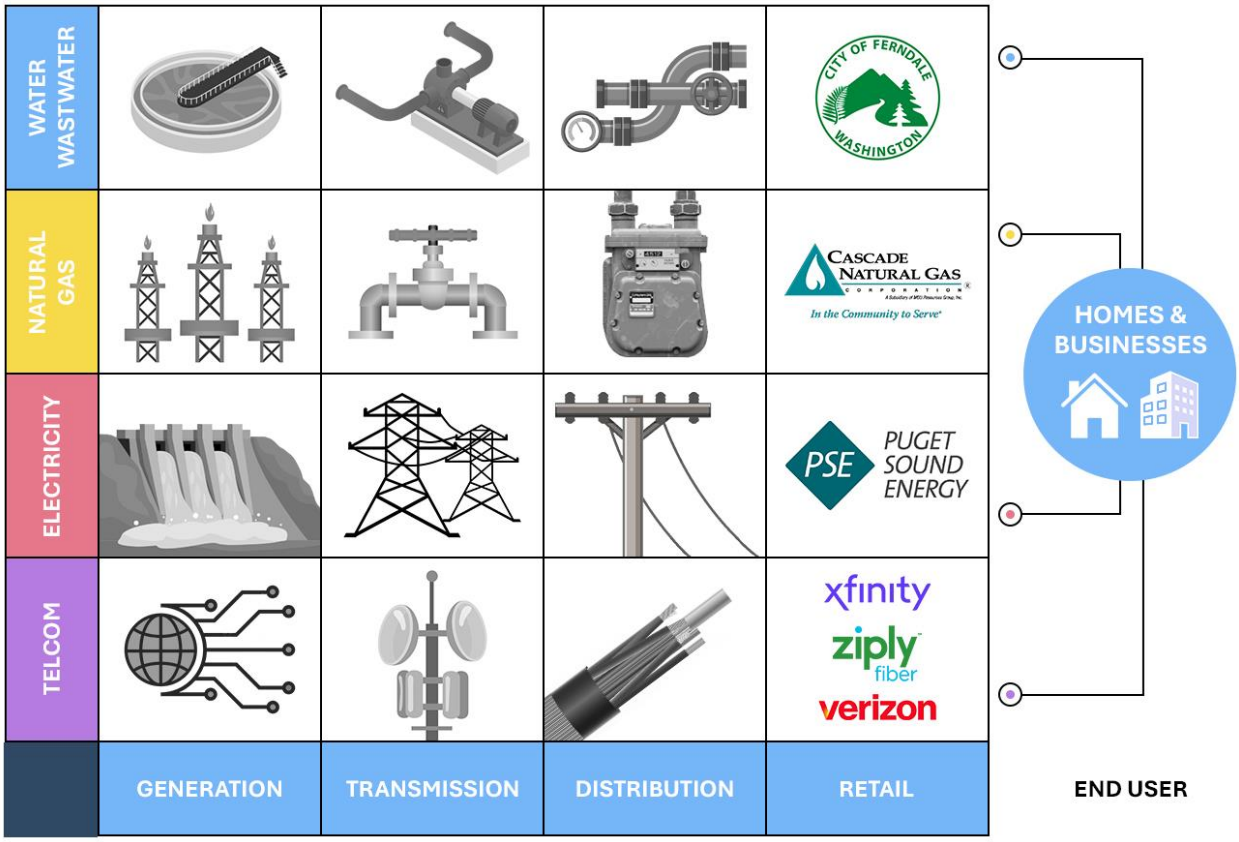
The Growth Management Act requires that each city develop a Utilities Element as a part of its Comprehensive Plan. The Utilities Element must include an inventory of the general location of all existing and proposed utility facilities, and a description of the current capacity and expected future capacity of each utility. The utilities addressed in this Element are: electricity, natural gas, utility conveyance systems (such as major transmission lines and pipelines), telecommunications (including cellular service, cable TV, and internet), and solid waste and recycling. Domestic water, wastewater (sanitary sewer), and stormwater are discussed in their respective sub-elements of the Capital Facilities Element.

Unlike public or municipal providers, private utility providers are not required to meet specific level of service standards or demonstrate concurrency prior to development. The WUTC mandates that these private utilities provide service on demand and provide the same level of service to all customers, without forcing existing users to subsidize new growth. Electric and telephone utilities are further regulated by the Federal Energy Regulatory Commission (FERC). Additionally, cellular telephone communication companies are licensed by the Federal Communications Commission (FCC). Cable television companies are regulated by the Federal Communications Commission (FCC) and the Communications Act of 1934, as amended.

DESCRIPTION, INVENTORY, AND ANALYSIS OF UTILITY SYSTEMS

Typically, utility systems have at least two components, a transmission system that transports the utility to the area and a distribution system that provides the individual customer with the utility service (see Figure 1). The focus of this chapter is on transmission systems. It is assumed that each utility will have its own distribution system located throughout the City and Urban Growth Area (UGA). These systems are necessary and desirable in order to serve each customer who requests service.

Figure 1
Utility Systems

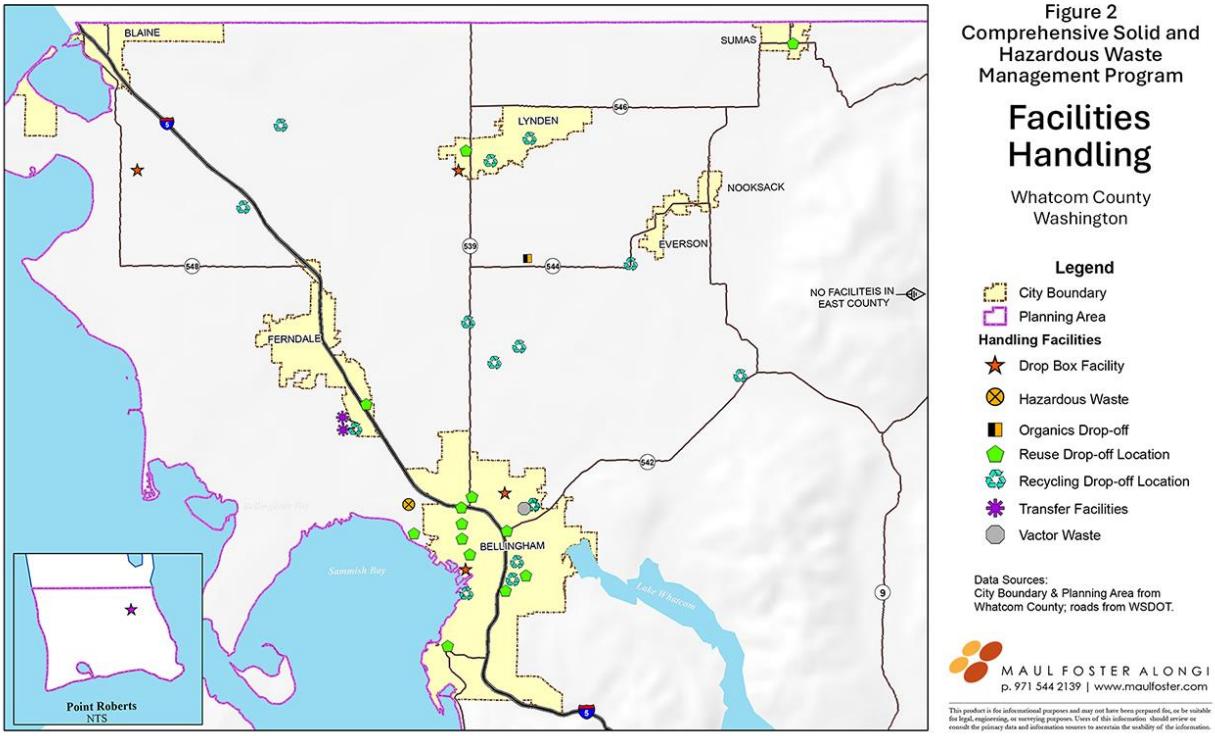


Solid Waste and Recycling

All homes, businesses, and public facilities within the City and Ferndale Urban Growth Area generate municipal solid waste. Solid waste is generally defined as being household trash or garbage. Sanitary Service Company (SSC), under contract with the City, collects municipal solid waste within the City of Ferndale. SSC is certified by the Washington State Utilities and Transportation Commission, and has the exclusive right to collect solid waste generated within the City. SSC has also been granted the exclusive right to collect both residential and commercial solid waste from areas located within the Ferndale UGA.

Solid and hazardous waste in Whatcom County is administered by the Whatcom County Health Department, subject to the Comprehensive Solid and Hazardous Waste Management Plan (2022-2027) which is hereby adopted by reference to this plan. See Figure 2 for a regional map of solid and hazardous waste facilities.

Figure 2
Solid Waste Facilities



Existing and Future Conditions

SSC deposits municipal solid waste at two regional transfer station facilities located in Ferndale, operated by Republic Services of Washington, Inc. and Recycling and Disposal Services (RDS). Republic Services processes and loads solid waste into trucks or railroad cars for transport to southeast Washington at the Roosevelt Regional Landfill. Materials deposited at RDS are sent via truck or railroad cars to Columbia Ridge Landfill located in Oregon.

Recycled materials are collected by Recycling and Disposal Services (RDS) at the LaBounty Road transfer facility, where they are then sorted and distributed to recycling companies, including Slater Road Lautenbach Recycle Park, located across the street. Organic materials, such as yard and food waste, and other certified compostable items, are collected curbside and processed at Green Earth Technology, located in Lynden. The collected materials are subsequently turned into compost in approximately eight weeks, which is then available for purchase by the public.

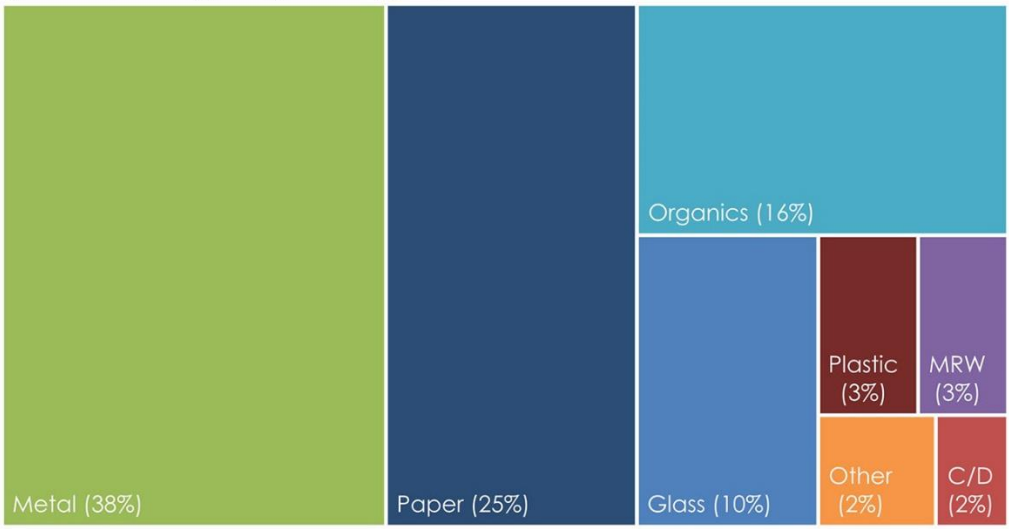
All residential properties within Ferndale are required to have solid waste and recycling services. Commercial properties are only required to have solid waste services. Organic services are an optional service for both residential and commercial.

It is estimated that Whatcom County's residential recycling rates (46-55%) and diversion rates (41-54%) are generally higher than the state average, as well as having some of the lowest contamination rates. In Ferndale, SSC recently switched from the three-bin approach to single stream recycling, and will continue to transition all of the County in the coming years.

Figure 3
Whatcom County Waste Stream Composition
2015 Seasonal Study (All seasons)*

*Ecology seasonal percentages of total waste disposal by weight have been averaged among the four seasons

Figure 4
Whatcom County Recycled Stream Composition (Percentage by Weight) 2017



The City is committed to reducing the waste stream through source separation and recycling. New and extended recycling programs will continue to be the preferred approach in an effort to minimize the need for future disposal facilities.

Whatcom County in general, and Ferndale specifically, seeks to reduce or prevent the generation of solid waste. While no deficiencies in the solid waste, recycling, and organic material management utilities were identified in the Comprehensive Management Plan, this does not mean that improvements cannot be made, or that the City has no role to play.

Ferndale's role in solid waste diversion will be experienced most dramatically through expanded education and outreach to private households and the construction industry, which together comprise the majority of all waste generated in Whatcom County. Figures 3 and 4 demonstrate that well over half of all products disposed of in Whatcom County in 2015 could have been diverted from a landfill.

Ferndale's association with solid waste is somewhat unique, as it hosts three of the largest solid waste disposal/recycling businesses in Whatcom County. While Ferndale's share of total solid waste is reflective of its size (rather than location), the City does play a role in working with those businesses to ensure that sustainable waste disposal and recycling remains the first option for consumers.

Electricity

Ferndale and its growth area are served by Puget Sound Energy (PSE). This regional purveyor provides service to nearly 2 million people in their 4,500 square mile service area. Electricity is transmitted into Whatcom County by high voltage lines from Canada and Skagit County, much of it on lines owned by the federal Bonneville Power Administration (BPA). PSE purchases electricity from BPA, private sources, and also generates some of its own.

The "Bulk Transmission System" is operated by the BPA, which operates a region wide, interconnecting, transmission system that supplies electric power to utilities from federal hydroelectric projects east and west of the Cascades. The primary service BPA provides to PSE is wheeling energy around the region. All the transmission lines supplying Ferndale are energized at 115kV (Kilovolt). These lines supply power into the electrical distribution system and provide connections to customers countywide. The electricity is distributed through Whatcom County via high voltage transmission lines which connect to distribution substations. These substations reduce the voltage levels for distribution to local levels.

There are several substations located within or very near Ferndale. These substations provide the distribution lines that deliver electricity to residential and commercial customers within the area.

Level of Service

Puget Sound Energy's future electrical service plans are designed not only to provide for future growth and accommodate new and increased loads, but also include changes to the existing systems to improve reliability, maintain power quality, and maintain redundancy backup service in the system. PSE foresees no immediate energy issues and will continue to be able to supply energy to Ferndale as the City grows.

Existing and Future Deficiencies

Additional construction of cogeneration facilities and transmission lines/transformer capacity could potentially expand the existing system. The timing of any improvement would depend on the design and capacity of the cogeneration facility.

PSE also has an active asset management plan. The plan includes replacing poles as they age and as necessary to maintain or to increase line clearances, as well as working with local jurisdictions to "underground" utilities when associated with new development or as part of planned capital projects.

No deficiencies currently exist, and no deficiencies are forecasted; however, the transition to electric vehicles will likely require increased infrastructure to provide safe, reliable, and effective sources of energy for charging. Infrastructure modifications may include replacing existing transmission and distribution equipment, such as modifications to existing substations, or the addition of new distribution and transmission equipment to meet customer needs.

PSE has sought to promote the use of solar energy and other renewable energy forms as a method to supplement existing energy systems. These programs have generally focused on solar installation with a return on investment, such as private residences, but it is expected that commercial and public users will continue to adopt these methods over the planning period and legislation will provide adequate incentives to support this transition.

As Ferndale residents move toward increased renewable energy, local renewable energy generating resources may result in additional infrastructure required to deliver energy to the grid in a safe, effective, and reliable manner. Additionally, considering energy storage, both residential and utility scale, will have the potential of providing additional benefits for renewable energy sources and providing benefits to the community.

Natural Gas

Natural gas is distributed throughout Whatcom County by Cascade Natural Gas Corporation (CNGC). Natural gas is a fuel provided to homes and businesses through underground piping. It is colorless, odorless, flammable and lighter than air. Gas is odorized to make leaks more perceptible. Most natural gas use in the urban growth area is for space and hot water heating. Major gas transmission pipelines are illustrated in Figure 5.

THE POWER OF PUBLIC INFORMATION

This element describes a variety of private or quasi-public utilities that have a variety of different objectives, response times, and ability to deliver resources.

While some of these utilities, such as telecommunications, are in a competitive marketplace and seek to expand their services to the greatest extent possible, others (such as Puget Sound Energy) seek to encourage the conservation of scarce resources.

The City is in a unique position to provide objective and free information to the public concerning all of these utilities. Working with other public agencies and through franchise agreements, the City can inform the public of its rights as consumers – and of its responsibilities as they relate to the conservation of resources.

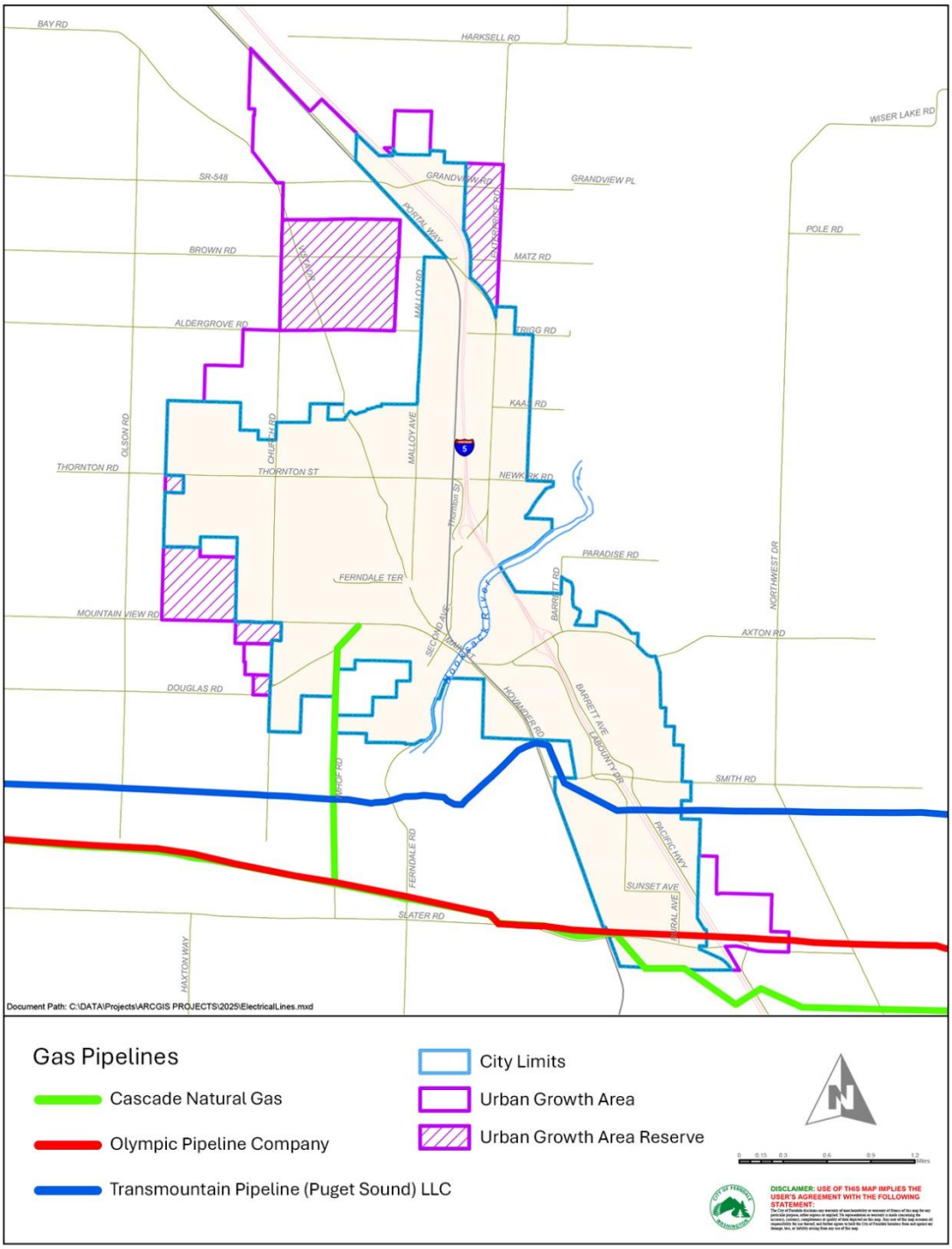
The City can also provide a transparent (and trusted) voice when informing the public when significant expansions of utility systems are proposed, especially when those expansions may have the potential to impact the life or safety of the Ferndale community.

CNGC provides natural gas to the City and surrounding communities through a network of interconnecting supply and distribution mains. According to CNGC's Rate Department,

the average house (using natural gas for both heat and hot water) consumes about 1,000 therms per year. Ten therms equals approximately one “mcf” (one thousand cubic feet) of gas per year, in which case1,000 therms per house equals approximately 100,000 cubic feet of gas per year per house. When planning the size of new gas mains, CNGC uses a saturation model which assumes all new households will use natural gas. 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.

Typically, natural gas used in Whatcom County flows from Canada, through Sumas, then west to Cherry Point and south and east to Ferndale. The primary high pressure distribution line for Ferndale runs adjacent to Slater Road and continues to Bellingham and other points south. Large distribution lines are also located in the Urban Growth Area, along Imhoff Road to the south of the City limits, and east of the freeway and south of Smith Road. Delivery to homes and businesses occurs from smaller pipelines throughout the City. Not all of the City has access to natural gas, although most newer subdivisions install it as a standard utility service.

Figure 5
Natural Gas Transmission Lines



Level of Service

The capacity of the natural gas supply system is primarily constrained by the volume of gas entering the network. As it is not an essential service, CNGC is not mandated to provide residential or commercial service; however, according to CNGC officials, there is ample supply to accommodate existing and future demand.

Existing and Future Deficiencies

The availability of natural gas does not appear to be an issue during the next 20 years. Based on growth projections, CNGC anticipates that the existing system is capable of supplying approximately 50,000 customers in Ferndale. If supply issues become problematic, potential methods for increasing supply to a particular area include replacement of the lines with larger pipelines, looping pipeline systems, installing parallel lines, and system pressure increase. Three types of construction anticipated in the Ferndale area include:

- New installation to increase capacity of existing customers or conversions from an alternate fuel;
- Main replacement projects to improve maintenance and system reliability; and
- Replacement or relocation of facilities due to municipal and State projects.

Changes to federal law over the last two decades were designed to increase competition among energy sources by encouraging the development of new natural gas resources and the development of nationwide transmission pipelines. New homes are more likely to have heat pumps installed, and the use of natural gas for other appliances. Utility policies should be updated in the future to take into consideration changes in technology, facilities, and services.

Natural gas service and availability are currently sufficient to meet existing demand. Northwest Pipeline works together with Cascade Natural Gas to ensure that local gas supply needs are met.

Cascade Natural Gas Corporation does have pressure deficiencies that are being addressed in the next five to ten years. Some of the projects plans budgeted include installation of reinforcement pipelines to support light industrial expansion and surrounding business, as well as several projects related to supporting northeast section of town particularly Portal Way/Enterprise Rd areas. Additionally, Cascade Natural Gas may install additional infrastructure to support residential and commercial customers in response to demand.

Cascade's Integrated Resource Plan describes the two- to four-year and 20-year expectation of how Cascade expects to safely serve customers' energy needs at the lowest reasonable and safe cost. The analyses in this 12–18 month process includes

existing and potential new pipelines and natural gas supply contracts (among others) as well as benefits of energy efficiency to customers. The IRP provides comprehensive and transparent insight into how Cascade plans for customers' energy future. Cascade's Integrated Resource Plan is located at www.cngc.com.

Telecommunications

Telecommunications is the transmission of information by wire, radio, fiber optic cable, electromagnetic, or other similar means. In Ferndale, telecommunications utilities include telephone, wireless communication, internet service and cable TV. Telecommunications is not only important for voice transmission, but also provides the infrastructure for the transmission of images and electronic data. In the City, telecommunications service providers include, Comcast, Ziply, formally known as Frontier Communications, and Astound Broadband (Wave). In addition, several wireless providers provide mobile services via a system of wireless communication towers and several companies provide cable TV and internet service.

Federal and state regulations require that telecommunications purveyors provide adequate telecommunications services on demand. Continuing coordination between the City and telecommunications purveyors will help ensure maintenance of an adequate level of service.

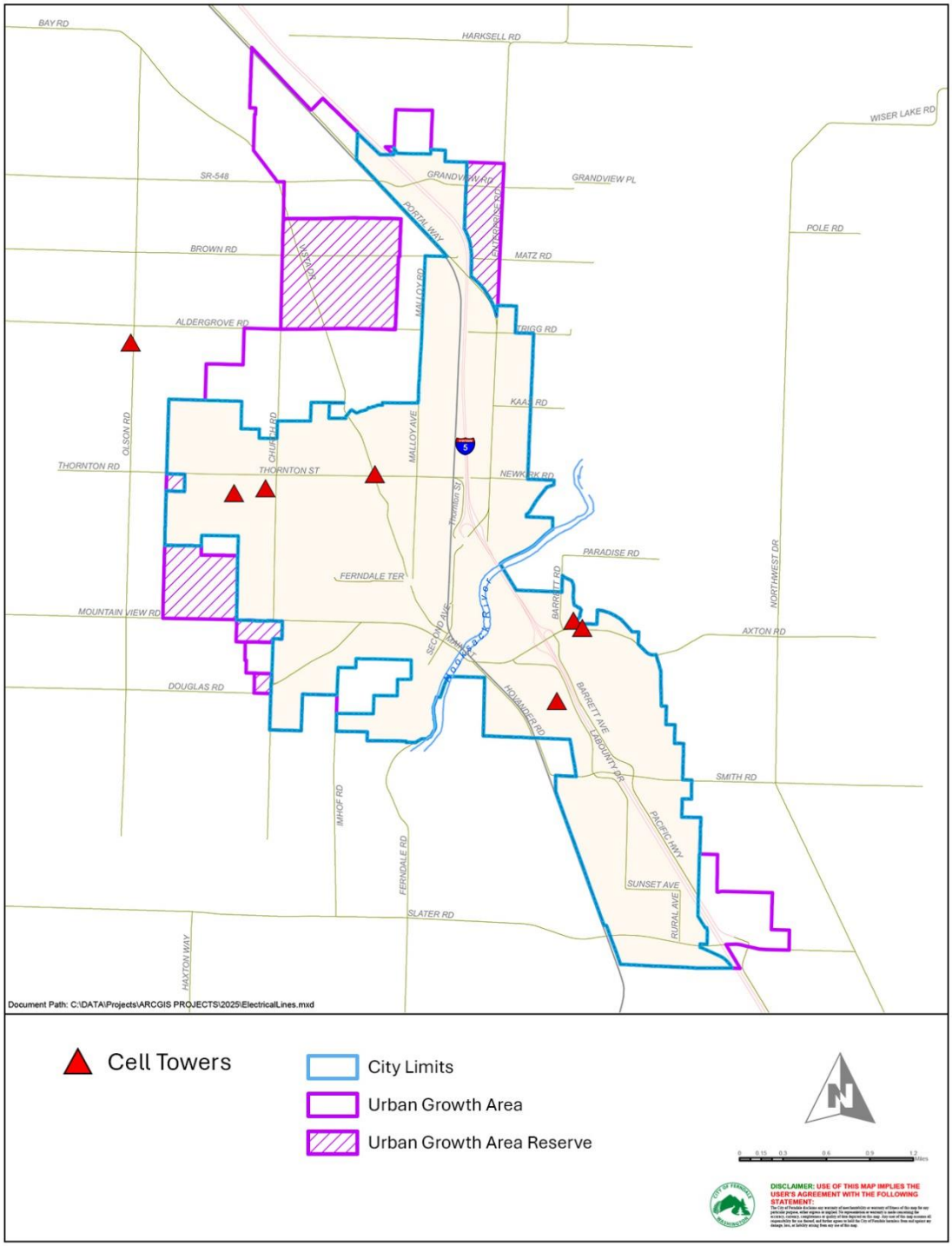
Telephone Services

Conventional telephone service (or "landline" service) is regulated by the WUTC, and while there may be some utilities that still provide this service, it has almost entirely been replaced by Voice Over IP (VOIP). In fact, phone jacks are rarely installed in new developments. Fiber and cable lines are used by Ziply and Comcast respectively to provide VOIP to residents. In most cases, it is wireless services that residents rely on.

Wireless facilities are regulated by the FCC and the City of Ferndale has adopted local regulations that are consistent with federal standards. The majority of improvements anticipated within the planning period consist of the maintenance, updating, and co-locations on existing facilities.

The location of cellular wireless tower facilities is illustrated in Figure 6. These are owned and/or operated by a variety of companies, including Verizon, T-Mobile, and AT&T.

Figure 6
Cell Tower Locations



Level of Service

According to Pew Research, as of 2024, 98% of Americans own and use a cell phone, with nine-in-ten owning a smartphone. Furthermore, as of 2022, according to US Centers for Disease Control, 29% of adults are living in a household without a landline (whether conventional or VOIP).

Existing and Future Deficiencies

Telecommunications companies are required by law to provide adequate telecommunications services on demand. Accordingly, these companies must provide facilities to accommodate whatever growth pattern occurs within the City. Due to advances in technology, additional capacity is easily and quickly added to the system. The City has authority through its franchise licensing authority to ensure that utility companies maintain their responsibilities.

Forecasting for new cellular facilities uses a relatively narrow time frame of two years. Expansion is demand driven, and services are expanded in response to customer demand. Raising the density of transmission/reception equipment to accommodate additional subscribers follows rather than precedes increase in local system load. For this reason, companies closely analyze market demand to determine expansions into new service areas. Capacity may also be expanded through technological advances in digital equipment. Therefore, cellular companies are likely to maintain a short response time and a tight planning horizon.

Internet Service

The internet has become so pervasive in daily life that it is now considered an essential utility that some consider to be on par with water and electricity for billions of people. In Ferndale, internet service is presently provided by, cable, fiber, and satellite. In addition, as the City constructs or reconstructs streets, it is providing conduits to assist in the installation of fiber optic communication systems.

Level of Service

Federal and state regulations require that telecommunications purveyors provide adequate telecommunications services on demand. Continuing coordination between the City and telecommunications purveyors will help ensure maintenance of an adequate level of service. Comcast maintains that coaxial services exists within all areas of Ferndale City limits, while Ziply is in the process of bringing fiber internet options to many more residential areas within Ferndale.

Existing and Future Deficiencies

There are currently no specific deficiencies for internet services within Ferndale. Some of those deficiencies do exist within the UGA; however, as areas are annexed into the City

and development occurs, internet providers will have the obligation and opportunity to extend services.

Cable and Satellite Television

Cable television service in Ferndale is provided by Comcast, while satellite television is provided by DIRECTTV and DISH Network. Cable systems receive their signals in several different ways. Some are received through the air directly from broadcast television stations using antennas similar to those used by homeowners. Other signals are transmitted from point to point via microwave. Microwave transmission differs from off-air broadcast channels because the carrier that the video, color and sound are modulated upon is at a much higher frequency in microwave transmission. A third source of signal is via satellites.

Main trunk cable lines (coaxial cable and fiber) distribute cable television signals throughout Ferndale. Feeder cables branch from the main trunk cables to distribute the signals to neighborhood areas. From there, individual connections are made to the customer's service entry. Satellite television utilizes a satellite receiver, or dish, located on the customer's property and receives information (internet, telephone, television) via direct line of site to a satellite.

Level of Service

Existing cable television facilities are currently capable of servicing approximately nearly all potential customer connections in Ferndale. Comcast policies encourage the provision of service to all residents within its franchise areas. Factors considered in extending service are overall technical integrity, economic feasibility, and franchise requirements.

FRANCHISE AGREEMENTS

The various utilities described in this element operate within the City under "Franchise Agreements" that allow the utility to use the City's public rights-of-way. In turn, these agreements are intended to provide the utility with the ability to quickly and efficiently serve their customers.

It is vitally important that franchise agreements are updated on a regular basis and that the City and the utility are able to discuss their individual goals and objectives, as well as upcoming projects that may impact the other.

In some cases, the lack of discussion may lead to project delays, redesign of projects, or inconsistent elements within projects (such as failure to underground utilities or subsequent modification to the project once it is complete).

Cities may also negotiate in-kind or financial support from utilities in order to distribute information to the public about the utility as well as City processes, to support local programs, and other projects.

Franchise agreements may include agreements related to customer complaints associated with the utility, including the basic expectations of the community for response time, and even including penalties should the utility fail to perform.

Existing and Future Deficiencies

No deficiencies in cable or satellite television service systems were identified so no improvement recommendations were developed.

UTILITY DEMAND PROJECTIONS

Utility providers must consider the regional as well as local needs for the services they provide. Consideration must be given not just to the number of people within a given area, but where they work, live, and shop. An analysis of the population projections and land use plan is key to development of these demand projections. As future growth and development generate demand for additional utility service, major utility providers are encouraged to work with the City to identify potential sites for infrastructure and facility expansion.

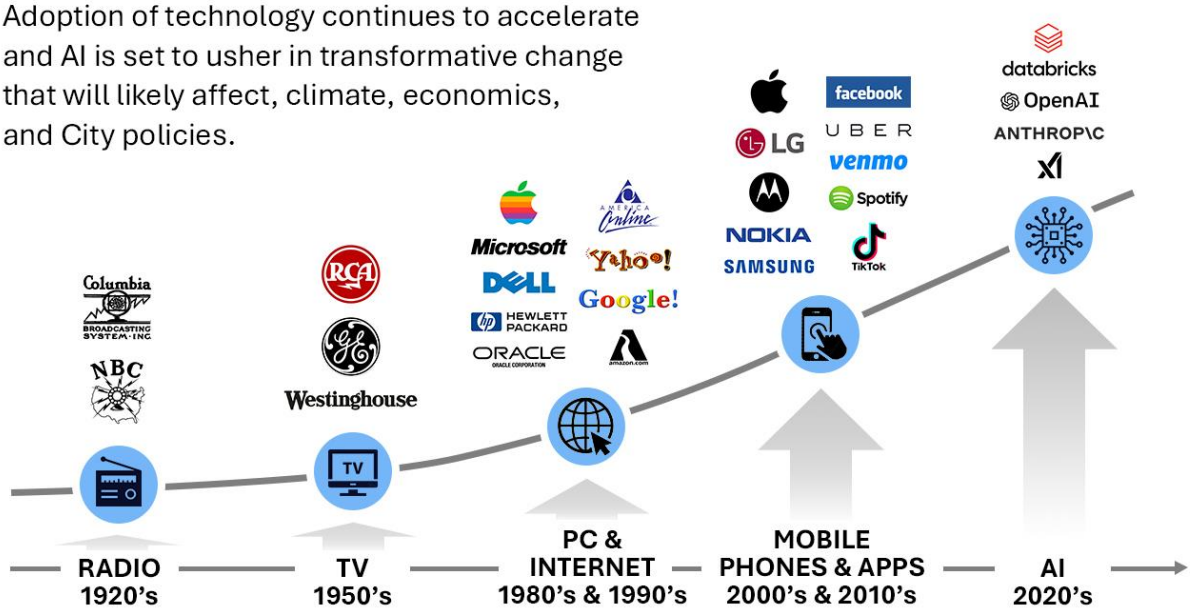
Major utility facilities and transmission lines are typically difficult to site within an urbanizing area. While there may be some community resistance to permitting particular private utility and service providers to locate and operate facilities within the City, it is important to remember that it is the demand for utility services and community resources that create the need for these facilities in the first place. State law does not permit jurisdictions to preclude the siting of essential public facilities within the City. A discussion on essential public facilities is contained within the Capital Facilities Element.

While few deficiencies exist with most of the utilities presented in this element at this time, the 20-year planning horizon comes with its own challenges when it comes to the change of technology. The continued advancement and use of AI is likely to create different challenges for the City and its needed utilities in the future.

Figure 7

Forcasting Technology: The Speed of Change

Adoption of technology continues to accelerate and AI is set to usher in transformative change that will likely affect, climate, economics, and City policies.



Stepmark Partners https://stepmark.ai/about/

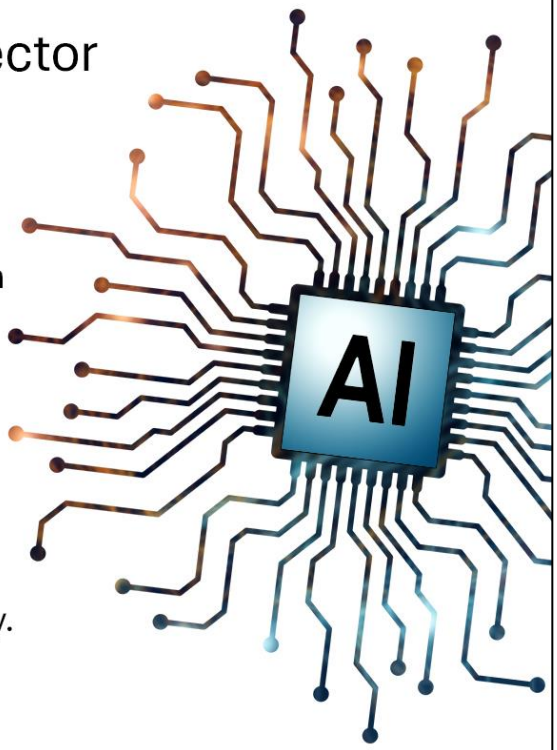
Figure 8

How AI Affects The Utility Sector

Predictitive AI improves the efficiency of the energy grid.

AI's best decision for system optimization might not be the best decision for human beings. AI will still need active and capable human oversite.

AI internet searches use **10 times** more electricity than traditional searches. In 2023, the data centers that power these searches used 4.4% of total US electricity. By 2028 that usage is expected to rise between 6.7% and 12%.



Washington State Artificial Intelligence Task Force Report December 2024, US Department of Energy Berkeley Lab Report January 2025

UTILITY GOALS AND POLICIES

1. **The City will take an active role in working with private and quasi-public utility providers.**

Rationale: Prioritizing coordination with utility providers both before and during any project will overall provide a more organized outcome with fewer issues for the City, the utility provider, and Ferndale residents.

Policies:

A. Franchise agreements will not be allowed to lapse.

B. The City will seek to initiate franchise agreement negotiations no less than six months prior to expiration of previous agreements.

C. The City will seek to maintain maps and other information online that will provide utility companies with long-range notice of pending or potential capital projects.

D. The City will seek to inform utilities companies of pending private development projects that will require the extension of utilities in order to minimize or prevent subsequent encroachment into the public infrastructure soon after installation.

E. The City will establish Development Standards that anticipate the joint use of public right of way and utility corridors.

2. **Ferndale residents should be informed of their legal rights and have agency when resolving conflicts with utility providers.**

Rationale: The installation and maintenance of utilities is a needed aspect of the City. When utility providers are working in neighborhoods, there is always the chance of disruptions and impacts. It is important that residents of Ferndale understand that while they have agency when it comes to work being completed on their property, utility providers also have the right to install and maintain their utility where required.

Policies:

A. The City will seek to utilize franchise agreements when funding public information outreach and surveys related to individual utilities.

B. The City will seek to utilize franchise agreements to fund improved access to public meetings, public events, and general outreach.

C. The City will seek to work with utilities companies to inform the public of significant utilities projects in advance of their development.

D. When new utility facilities must be located in close proximity to residential neighborhoods, every effort should be made to minimize the impacts of the facility through the use of buffers, landscaping, undergrounding of utilities, co-location of utilities, and designing the facility to minimize aesthetic impacts.

E. Establish development regulations that permit utilities to efficiently serve their customer base, without abrogating the City's responsibilities to protect its citizens.

3. Promote conservation of utility resources and the environment to extend the life and capacity of both

Rationale: As the demand for energy increases, the need to find ways to conserve energy and protect the environment also increases. The City and utility providers should find ways to improve the conservation both in use and maintenance of the specific utility, as well as ensure that environmental impacts are appropriately considered and where appropriate, mitigated.

Policies:

A. City will facilitate the conversion to cost-effective, environmentally sensitive and energy-efficient technologies.

B. When possible, the City will minimize encroachment on view and solar access of existing residences by new utility facility construction or improvements.

C. The City will target goals and timelines for reduction of energy consumption within City-owned facilities, and implement measures to achieve these goals.

D. The City will seek to implement waste reduction measures by coordinating with Sanitary Service Company and other utilities, and will seek assistance in these measures through revised franchise agreements.

E. The City will seek ways to support reliable energy systems, such as energy storage systems, in coordination with utility providers.

4. Encourage utility providers to site utility substations and transmission lines in a manner that is compatible with surrounding land uses.

Rationale: The City recognizes that utility substations, transmission lines, and facilities are necessary components of utility service in urban areas, but should work with the utility provider to site facilities in such a way to prevent disruptions to Ferndale residents.

Policies:

A. The City will encourage utility providers to locate new facilities in areas that are compatible with surrounding land uses and away from established residential neighborhoods whenever possible.

Utility Providers

AT&T

Astound Broadband

Cascade Natural Gas Corp. (CNGC)

Comcast (Xfinity)

DirectTV

DISH

Puget Sound Energy (PSE)

Sanitary Service Company (SSC)

T-Mobile

Verizon

Ziply Fiber