X. UTILITIES ELEMENT

INTRODUCTION

The Growth Management Act defines electricity, gas, telecommunications, and cable television as "utilities." It defines water and sewer systems separately as "public facilities." As used in this Comprehensive Plan "utility" and "public facility" are not interchangeable terms. Plans for water supply and sewer are found in the Public Facilities and Services as well as Capital Facilities Plan Elements. Coordinated community planning and utility delivery benefits to residents. By increasing development density, utility delivery efficiency is maximized and public costs are minimized. In turn, both siting and sizing of public utilities have a significant impact on land use patterns and future growth. Planned delivery of utilities increases long-range economic stability by assuring industries the future utilities they need. By investing in these utilities and scheduling their provision, Marysville residents will have a key role in implementing the policies set forth in the Comprehensive Plan. As Marysville grows, the demand for utilities will increase substantially. The utilities discussed in this section are:

- Electricity
- Natural Gas
- Telecommunication
- Olympic Pipeline

A. ELECTRICITY

Snohomish County Public Utilities District No. 1

The Snohomish County Public Utilities District No. 1 (PUD) provides electrical service to the City of Marysville's planning area. The PUD, which serves all of Snohomish County plus Camano Island, is the largest public utility district in the State of Washington, and is the 12th largest in the nation in terms of customers served. The PUD relies on a diversified power portfolio consisting of a long-term power supply contract with the Bonneville Power Administration (BPA), a broad range of conservation and energy-efficiency programs, three PUD-owned hydroelectric projects, some customer-owned generation and several long-term power supply contracts. In 2013, the PUD received 84 percent of its power supply from BPA, 6 percent from its long-term wind and other renewable resources contracts, 6 percent from its own hydroelectric projects, and 4 percent from wholesale market purchases. The PUD makes short-term purchases and sales in the wholesale power market to balance daily and seasonal fluctuations in its load and resources. The utility maintains over 6,300 miles of distribution and transmission lines to serve its more than 330,000 customers.

The Bonneville Power Administration, part of the U.S. Department of Energy, owns and operates three-fourths of the high-voltage power transmission grid inits service territory (Washington, Idaho, Oregon, western Montana and small parts of eastern Montana, California, Nevada, Utah and Wyoming. BPA's high voltage lines transmit power from federally owned and managed hydroelectric dams, one nonfederal nuclear plant, and other sources, including power generated by other utilities.

The PUD's Mission Statement is to make a difference in its customers' lives by safely providing quality products and services in a cost-effective and environmentally sound manner. There are many ways in which the PUD strives to meet this mission.
One of PUD's primary goals is to be sensitive to the natural environment in its planning, construction and operations. PUD also values and promotes a safe workplace and a healthy and safe environment for its employees and customers. Valuing clean air, clean water, and responsible resource use helps ensure a healthy and safe environment for all.

The PUD:

- Encourages waste reduction, conservation and recycling.
- Introduces new energy-efficient products and services, like LED lighting for homes and street lights.
- Applies current science and technology to managing its own generation facilities.
- Directly invests in new, local, environmentally sound energy technologies, including geothermal, solar, small hydro and energy storage.

The PUD is committed to continuous improvement throughout the organization and strives to be a leader among utilities in environmental responsibility. In acting on the PUD's mission, the Snohomish County PUD's Board of Commissioners has committed the utility to meeting load growth, to the extent possible, through cost effective energy efficiency and renewable generation sources.

The PUD's Board of Commissioners has provided clear policy direction to meet the utility's load growth first by pursuing all cost-effective energy efficiency measures. For load growth not met by conservation, the utility will pursue a diverse portfolio of clean, renewable resource technologies. This is reflected in the PUD's Integrated Resource Plan (IRP), which positions the utility to serve the electricity needs of its customers well into the future through the following actions:

- Implement all cost-effective energy conservation measures.
- Conduct a thorough situational scan of demand response technologies and applications.
- Evaluate energy storage technologies and execute the Modular Energy Storage Architecture project.
- Continue to evaluate geothermal development potential within Washington State.
- Continue to identify and evaluate new small hydroelectric resources.
- Participate in Initiative 937 rulemaking (the State of Washington's "Energy Independence Act").
- Continue to monitor new demand-side and supply-side technologies and pursue where applicable.
- Actively participate in capacity planning efforts underway in the region.

From a planning perspective, capacity assessments for the PUD focus on analysis of "System Peak Demand" – the largest amount of power the utility is called upon to deliver at any one time. The Normal Winter System Peak Demand is expected to rise from the 2014 level of 1,383 megawatts to 1,604 megawatts in 2032, an increase of 16 percent. To meet this growing peak, the PUD has identified a Preferred Plan developed in 2013 as part of its IRP process. Covering the 15-year period from 2014 through 2028, the Plan realizes the Commission's two guiding principles.

Consistent with the first guiding principle to first meet load growth by pursuing all cost-effective energy efficiency measures, the Preferred Plan forecasts 109 average

megawatts (aMW) of new cost-effective energy efficiency across the planning horizon. This, given the PUD's long-term contract with the BPA, which is set to meet the majority of the PUD's load with power produced from the Federal Columbia River Power System, leaves a small amount of new resource needed to meet the wide range of possible futures. With regard to this small amount of resource needed, the PUD is equally committed to fulfilling the second guiding principle to pursue a diverse portfolio of clean, renewable resource technologies. Specifically, the PUD is continuing to design and develop the Hancock and Calligan Creek hydroelectric projects, expected online in late 2017. Staff has been evaluating small hydro resources in or near the PUD service territory to meet future needs, including a site near Sunset Falls. The PUD commissioned the Youngs Creek Hydroelectric project in November 2011; it was the first new small hydroelectric project constructed in the Northwest in over 17 years. Beyond these commitments, the Preferred Plan adds an as yet to be identified small hydro resource by 2024 and a 10 MW geothermal resource in 2026.

The Preferred Plan is compliant with Washington State's Energy Independence Act (EIA) and Revised Code of Washington (RCW) 19.285 (Initiative 937) for both conservation and renewable resources. The PUD conducted a conservation utility-specific analysis for the Base Case and the scenarios, and elected to meet its renewable EIA resource requirement for 2013 through an alternate compliance method. Additionally, the Preferred Plan considers in its design cost, reliability, risk, environmental concerns and operational constraints.

Working with the City of Marysville, the PUD, through its planning process, can ensure that future load within the City is met in a sustainable manner. This includes the addition of energy efficiency in both the existing and future building and housing stock, as described in more detail below, and ensuring that additional energy and capacity needs are met through sustainable, renewable resources. Not only does this give the City a tool by which to ensure that the community's goal to protect the environment is maintained, but it will continue to secure access to a low-cost source of electricity for both residents and businesses which, in turn, will support economic development in the City while playing a role in keeping the City an affordable place to live.

As noted above, the PUD plans to use conservation and energy efficiency programs to serve population growth within the City. This will be done in conjunction with improvements in system operation and infrastructure. Future service plans to meet growth throughout Snohomish County are guided by PUD's short-term (seven years) and long-term (20 to 60 years) capital plans which are both updated periodically. Capital construction projects in the Marysville area identified in PUD's latest Seven Year Plan are listed in Table 10-1; the complete Seven Year Plan is available upon request from PUD.

Table 10-1 Capital Construction Projects in the Marysville Area Identified in the PUD's Seven Year Capital Plan (2015-2021)

Project Name	Project Description	Problem Summary
Stimson to Sills Corner New 115kV Transmission Line (359)	Construct 3.3 miles of 115kV transmission line from Stimson Crossing Switching Station to Sills Corner. Perform necessary vegetation clearing and line terminations.	Completion of this work will improve area transmission reliability and provide adequate normal and emergency capacities to better serve the area loads.
Stimson Crossing Substation-Double Bank (280)	Install a 2nd standard 115/12kV, 28MVA transformer and four new 12kV feeders to reinforce the distribution system	Completion of this work will improve area distribution reliability and provide sufficient normal and emergency capacities to accommodate load growth
Central Marysville Substation-Relocate and Double Bank (380)	Relocate existing transformer bank to a new substation site. Install a 2nd standard 115/12kV, 28MVA transformer, eight new 12kV feeders, and new 115kV lines to loop in and out of the new substation	Completion of this work will improve area distribution reliability and provide sufficient normal and emergency capacities to accommodate load growth
North County 230kV Bank Addition (376)	Install a 230/115kV, 300MVA transformer at either Stimson Crossing or BPA Murray switching station	Install a 230/115kV, 300MVA transformer at either Stimson Crossing or BPA Murray switching station

The objectives of the PUD's 60-year planning horizon for the electric system are to:

- Decrease electric system capital and operating costs;
- Increase system utilization;
- Improve financial integrity;
- Reduce undesirable service quality impacts;
- Ensure environmental compatibility; and
- Comply with the latest applicable local, state and federal regulations.

The approach in development of the ultimate system needs for the PUD electrical system includes three major steps:

- Ultimate Electric Load Saturation Forecasting;
- Transmission and Distribution Facility Sizing Optimization Analysis; and
- Load Center, Facility Siting, and Capital Addition Optimization.

The PUD's capital plans rely on comprehensive land use plans as their basis, and it is expected that the land use plans will continue to change in future years. In addition, as sustainability and energy efficiency measures are more heavily implemented, load

forecasting models will likely be revised. Therefore, it is expected that data models will be updated, and the PUD's capital plans will be updated as necessary, or on a periodic basis.

In order to most reliably and cost-effectively serve electrical demand, load-serving facilities are sited as close as practicable to the load center. Transmission facilities are located so as to optimize electrical system reliability and performance, and these plans are developed and implemented in close collaboration with neighboring utilities. Siting, construction and equipment requirements for Snohomish PUD's distribution system are established to comply with PUD policies, electrical industry standards and applicable national, State and local construction and electrical codes. The PUD's 'Electrical Service Requirements Manual' is intended to provide electrical contractors, architects, building contractors, engineers, and other customers with the information needed for determining acceptable methods of receiving electrical service from the PUD. These requirements are based on PUD policies and standards as well as national, State, and local electrical codes. Their use is intended to promote a safe, efficient manner for receiving electrical service. It is the responsibility of the customer to conform with the PUD's requirements, as well as pertinent national, State and local electrical codes. When new facilities are required to serve capacity-constrained areas, to improve reliability of electric service to PUD customers, or to support customer requests for dedicated electrical facilities, the PUD makes every attempt to work with local jurisdictions to ensure that facilities blend with the character of the area as well as meeting the operational needs of the utility.

Energy efficiency programs help to ensure that homes and businesses use energy in ways that reduce costs for customers and support customer interests such as business productivity, sustainability, and residential housing affordability. The PUD develops and implements energy efficiency programs because energy efficiency is a "least cost resource" (i.e., it costs less to save energy than to produce it) that mitigates the cost of the energy system thereby saving customers money. Improving the energy efficiency of homes and businesses is consistent with the sustainable development goals of Vision 2040 that pertain to support for economic growth, the environment, mitigation of climate change and development of healthy, sustainable and affordable housing.

As part of its commitment to sustainability and energy conservation, the PUD offers a wide range of energy efficiency solutions for its commercial, industrial and residential customers. Many of these solutions include technical assistance, financial incentives or rebates for existing building retrofits, HVAC system optimization, solar panels, efficient lighting upgrades, commercial kitchen appliances, new construction and residential weatherization and heating. Rebates and incentives available to Snohomish County PUD customers as of June 1, 2014 are provided in Tables 10-2, 10-3, and 10-4 below.

TABLE 10-2 COMMERCIAL & INDUSTRIAL ENERGY EFFICIENCY INCENTIVES, AS OF JUNE 1, 2014

Measure	Proposed Incentive Rates
Lighting Retrofit Program	
Lighting Retrofit	$/fixture (based on 15¢ - 28¢)
Lighting Controls	$/fixture controlled (based 15¢ - 25¢)
Rebates Program	

Small AC's and Heat Pumps in Existing Facilities	$/ton (based on 20¢ - 25¢)
Small AC's and Heat Pumps in New Construction	$/ton (based on 20¢ - 25¢)
Retrofit Program	
Other HVAC Units and Equipment	20¢ - 25¢
HVAC Systems	25¢
HVAC Controls	15¢
Advanced Rooftop Controllers (Catalyst, etc.)	20¢
Compressed Air Equipment and Systems	25¢
Variable Flow Systems (VSDs for fans and pumps)	20¢
Building Envelope, Refrigeration, Motors and Other Custom Measures	25¢
New Construction Program	
Lighting	18¢ (5% better than Code) 23¢ (20% better than Code)
Lighting Controls	15¢
Small AC and Heat Pumps *(Part of Rebates Program)*	$/ton (based on 20¢ - 25¢)
Other HVAC Units and Equipment	20¢ - 25¢
HVAC Systems	20¢
HVAC Controls Upgrades	10¢
Advanced Rooftop Controllers (Catalyst, etc.)	20¢
Compressed Air Equipment and Systems	20¢
Variable Flow Systems (VSDs for fans and pumps)	20¢
Building Envelope, Refrigeration, Motors & Other Custom Measures	20¢
Whole Building Performance *(for office, school and retail facility ≥ 50,000 ft²)*	20¢

TABLE 10-3 RESIDENTIAL/MULTI-FAMILY ENERGY EFFICIENTCY INCENTIVES, AS OF JUNE 1, 2014

Measure	Proposed Incentive Rates
Residential	
Attic Insulation	50¢ per square foot
Floor/Wall Insulation	70¢ per square foot
Duct sealing and insulation	$5 per l.f. up to $800
Manufactured Homes	*$200 single – wide* *$400 - double/triple-wide*

Glass double metal frame to double-pane (U<=.30)	$6.00 / sq. ft.
Glass single-pane to double-pane (U<=.30)	$8.00 / sq. ft.
Heat pumps, ducted - air source conversion	8.5 HSPF - $2000 9.0 HSPF - $2500
Heat pumps, ducted - air source upgrade	$600
Heat pumps - geothermal	$2,000
Multi-Family	
Attic Insulation	65¢ per square foot
Wall Insulation	50¢ per square foot
Floor Insulation	75¢ per square foot
Duct sealing & insulation	Contact PUD
Windows (U<=.30)	
SP – DP	$8 / sq ft.
Metal DP - Vinyl DP	$6 / sq. ft.
Digital electronic thermostats	$30 each
ENERGY STAR CFL lighting fixtures	$15 each
Heat pumps	Contact PUD

Table 10-4 SOLAR ELECTRIC/PHOTOVOLTAIC ENERGY EFFICIENCY INCENTIVES, AS OF JUNE 1, 2014

Measure	Proposed Incentive Rates
Commercial/Industrial	
Solar Hot Water System	$500 per system
Photovoltaic system	$500 per KW up to $10,000
Residential	
Solar Hot Water System	$500 per system
Photovoltaic system	$500 per KW up to $2,500

Where multi-use and higher density housing is to play a role for the City, PUD desires to work with the City in overcoming the unique challenges to improving the energy efficiency performance of these housing units. A persistent impediment arises due to the split owner/occupant nature of a large number of multi-family developments: the owner pays for efficiency improvements but the occupant pays the electricity bill. This "split incentive" issue has been a perennial challenge to nationally improving energy efficiency in multi-family housing.

Snohomish County PUD continues to pursue approaches to address these multi-family issues and challenges and is very interested in pursuing partnerships with the City to help ensure that, as multi-use and higher density housing is developed, it is done so in an energy-efficient manner. To that end, PUD encourages the City to explore potential incentives, processes and other opportunities to support investment by developers in pursuing energy efficient designs and technologies as they design, construct and maintain these types of developments. Snohomish County PUD looks forward to the opportunity to continue to work with the City in this regard.

Investing now in sustainable building practices, energy efficiency measures and conservation programs is a practical way to reduce operating expenses, add money directly to our customer's bottom line, support our community's economic vitality and reduce environmental impact.

The following is information on, and links to, helpful electrical energy resources.

Electrical Service Requirements Manual
The information contained in this manual is intended to provide electrical contractors, architects, building contractors, engineers, and other customers with the specific technical information needed for determining acceptable methods of receiving electrical service from the PUD.
http://www.snopud.com/Construction/esrman.ashx?p=1174

Energy Efficiency Incentives
Detailed information on conservation and corresponding measures and incentives are provided on the Snohomish County PUD website at the following link http://www.snopud.com/conservation.ashx?p=1100 .

Select measures and incentives include:

- Weatherization and Heating: http://www.snopud.com/conservation.ashx?p=1100
- Ductless Heat Pumps: http://www.snopud.com/weatherization/dhp.ashx?p=1604
- Efficiency Lighting: http://www.snopud.com/conservation/homeliting.ashx?p=1140
- Multi-Family: http://www.snopud.com/conservation/multifamily.ashx?p=1290
- Rebates and Custom Incentives for Businesses: http://www.snopud.com/business/rebatesincentives.ashx?p=2051

Integrated Resource Plan
The PUD's Integrated Resource Plan (IRP) provides a long-term strategy regarding future energy resources. It establishes an action plan that ensures enough resources are available, at a reasonable cost, to meet future energy loads. The PUD's 2013 IRP covers the planning horizon spanning from 2014 through 2028 and reaffirms the PUD's commitment to acquire new, cost-effective conservation and energy efficiency as its resource of choice. The Preferred Plan identifies cumulative new, cost-effective conservation and additional energy efficiency of 109 average megawatts over the planning horizon – enough energy to serve nearly 90,000 homes. With the PUD's owned hydro, contracts for wind, customer-owned generation and Bonneville Power Administration supply contracts, future power supplies are not needed until 2024. Future power resources consist of a mix of small hydro, landfill gas, geothermal, wind and biomass. http://www.snopud.com/PowerSupply/irp.ashx?p=1161

Puget Sound Energy

Puget Sound Energy (PSE) is a private utility providing electric service to homes and businesses in Puget Sound region, covering eight counties. PSE's regional and local electric planning efforts are integrated and centered on providing safe, dependable, and efficient energy service. PSE provides electrical power to more than 1.2 million electric customers.

Regulatory Environment
PSE's operations and rates are governed by the Washington Utilities and Transportation Commission (WUTC). PSE electric utility operations and standards are further governed by the Federal Energy Regulatory Commission (FERC), the National Electric Reliability Corporation (NERC), and the Western Electricity Coordinating Council (WECC). These respective agencies monitor, assess and enforce compliance and reliability standards for PSE. The region relies on the coordinated effort between PSE and cities for the adoption and enforcement of ordinances and/or codes to protect transmission and distribution line capacity and support federal and state compliance of safe, reliable, and environmentally-sound operation of PSE's electric facilities. Routine utility maintenance work, including vegetation management is required to maintain compliance with FERC, NERC, and WECC regulations.

System Overview
Currently PSE does not provide the City of Marysville with electricity. However, portions of PSE's transmission line system are within the city limits of Marysville. PSE builds, operates, and maintains an extensive integrated electric system consisting of generating plants, transmission lines, substations, switching stations, subsystems, overhead and underground distribution systems, attachments, appurtenances, and metering systems.

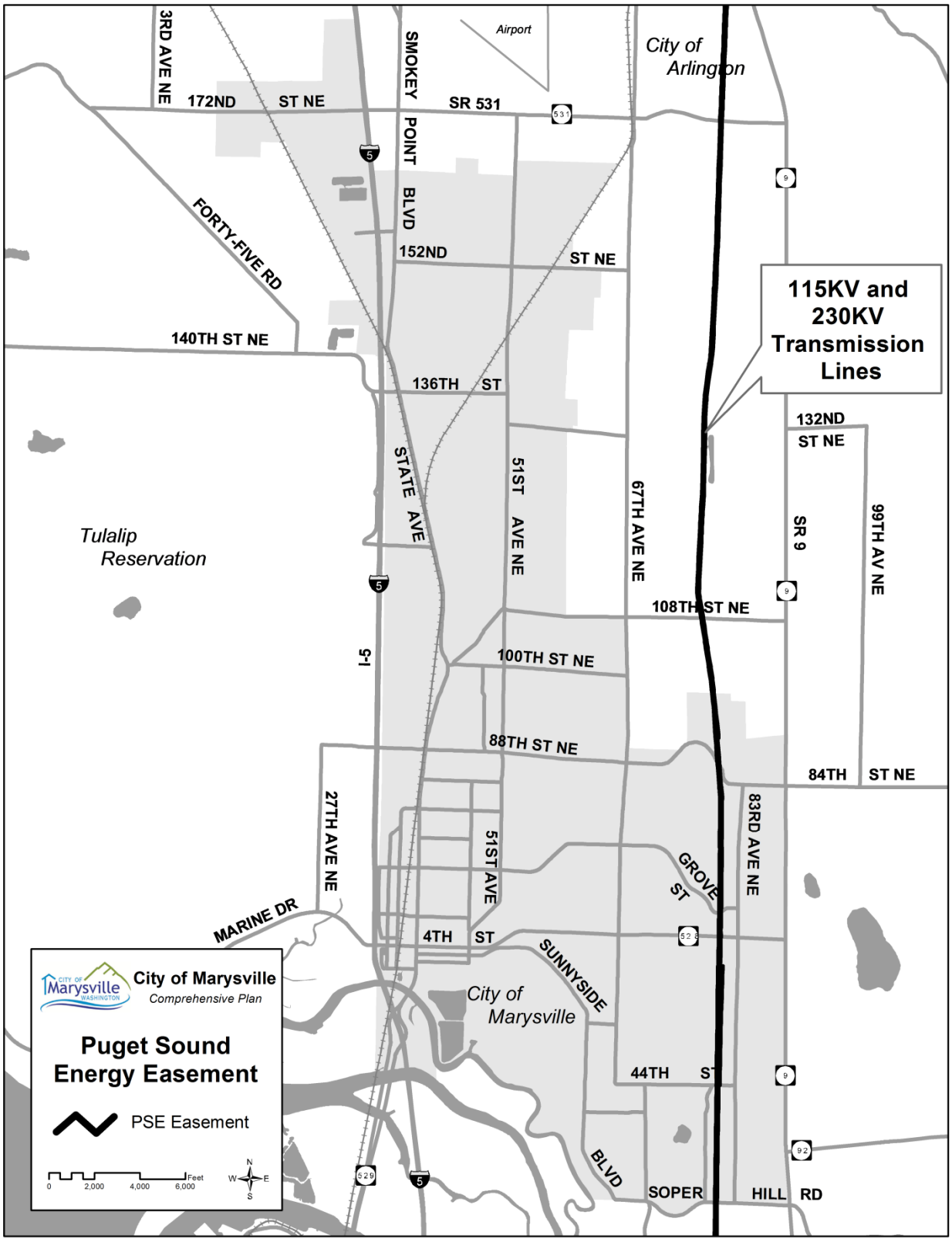
Electricity provided by PSE is often produced elsewhere and is interconnected to the Northwest's regional transmission grid through an extensive network of transmission facilities providing bulk transmission service to meet the demands of electricity customers within the region's eight states. The PSE electric transmission facilities within the City of Marysville are important components of the electric energy delivery grid serving the Puget Sound region. As electricity nears its destination, the voltage is reduced and redistributed through lower-voltage transmission lines, distribution substations, overhead and underground distribution lines, and maller transformers to individual meters.

PSE will be prudently and systematically deploying smart grid technology at each level of infrastructure to enhance and automate monitoring, analysis, control and communications capabilities along its entire grid. Smart grid technologies can impact the electricity delivery chain from a power generating facility all the way to the end-use application of electrical energy inside a residence or place of business. The ultimate goals of the smart grid are to enable PSE to offer more reliable and efficient energy service, and to provide customers with more control over their energy usage.

Within Snohomish County, PSE operates and maintains approximately 160 miles of 230Kv high-voltage transmission lines of which approximately 8.5 miles are within the City limits of Marysville.

Future Projects
To meet regional electric demand, new transmission lines and substations may need to be constructed. In addition, existing facilities will need to be maintained and possibly rebuilt to serve current and future demand. At this time, there is no new major transmission and substation construction anticipated within the City of Marysville in the next 10 years.

Figure 10-1 Existing Puget Sound Energy Electrical Transmission System



B. NATURAL GAS

Puget Sound Energy (PSE) is a private utility providing natural gas and electric service to homes and businesses in the Puget Sound region of Western Washington and portions of Eastern Washington, covering 10 counties and approximately 6,000 square miles. PSE's regional and local natural gas and electric planning efforts are integrated and centered on providing safe, dependable, and efficient energy service. PSE provides natural gas to more than 770,000 customers, throughout six counties, covering an approximately 2,900 square mile area.

Regulatory Environment
PSE's operations and rates are governed by the Washington Utilities and Transportation Commission (WUTC). PSE natural gas utility operations and standards are further regulated by the U.S. Department of Transportation (DOT), including the Pipeline and Hazardous Materials Administration (PHMSA). PHMSA's Pipeline Safety Enforcement Program is designed to monitor and enforce compliance with pipeline safety regulations. This includes confirmation that operators are meeting expectations for safe, reliable, and environmentally sound operation of PSE's pipeline infrastructure. PHMSA and the WUTC update pipeline standards and regulations on an ongoing basis to assure the utmost compliance with standards to ensure public safety. The residents within the City of Marysville rely on the coordinated effort between PSE and the County/City for the adoption and enforcement of ordinances and/or codes to support the safe, reliable, and environmentally sound construction, operation and maintenance of PSE's natural gas facilities.

Integrated Resource Plan
In order for PSE to meet its regulatory requirements, it updates and files an Integrated Resource Plan (IRP) with the WUTC every two years. The IRP identifies methods to provide dependable and cost effective natural gas service that address the needs of retail natural gas customers. Natural gas sales resource need is driven by design peak day demand. The current design standard ensures that supply is planned to meet firm loads on a 13 degree design peak day, which corresponds to a 52 Heating Degree Day (HDD). Currently, PSE's supply/capacity is approximately 970 MDth/Day at peak. This figure will be updated in the fall of 2015. The IRP suggests the use of liquefied natural gas (LNG) for peak day supply and supports the needs of emerging local maritime traffic and truck transport transportation markets.

Natural Gas Supply
PSE controls its gas supply costs by acquiring gas, under contract, from a variety of gas producers and suppliers across the western United States and Canada. PSE purchases 100 percent of its natural gas supplies needed to serve its customers. About half of the natural gas is obtained from producers and marketers in British Columbia and Alberta, and the rest comes from Rocky Mountain States. All the gas PSE acquires is transported into PSE's service area through large interstate pipelines owned and operated by Williams Northwest Pipeline. PSE buys significant amounts of natural gas during the summer months, when wholesale gas prices and customer demand are low, and stores it in large underground facilities withdrawing it in winter when customer usage is highest, thus ensuring a reliable supply of gas.

System Overview
To provide the City of Marysville and adjacent communities with natural gas, PSE builds, operates, and maintains an extensive system consisting of transmission and distribution

natural gas mains, odorizing stations, pressure regulation stations, heaters, corrosion protection systems, above ground appurtenances, and metering systems. When PSE takes possession of the gas from its supplier, it is distributed to customers through more than 21,000 miles of PSE-owned natural gas mains and service lines.

PSE receives natural gas transported by Williams Northwest Pipeline's 36-inch and 30-inch high pressure transmission mains at pressures ranging from 500 PSIG to 960 PSIG. The custody change and measurement of the natural gas occurs at locations known as Gate Stations. PSE currently has 39 such locations throughout its service territory. This is also typically where the gas is injected with the odorant mercaptan. Since natural gas is naturally odorless, this odorant is used so that leaks can be detected. The Gate Station is not only a place of custody transfer and measurement but is also a common location of pressure reduction through the use of "pressure regulators". Due to State requirements, the pressure is most commonly reduced to levels at or below 250 PSIG. This reduced pressure gas continues throughout PSE's high pressure supply system in steel mains ranging in diameter of 2-inches to 20-inches until it reaches various other pressure reducing locations. PSE currently has 755 pressure regulating stations throughout its service territory. These locations consist of Limiting Stations, Heaters, District Regulators, and/or high pressure Meter Set Assemblies.

The most common of these is the intermediate pressure District Regulator. It is at these locations that pressures are reduced to the most common levels ranging from 25 PSIG to 60 PSIG. This reduced pressure gas continues throughout PSE's intermediate pressure distribution system in mains of various materials consisting of polyethylene and wrapped steel that range in diameters from 1-1/4-inches to 8-inches (and in a few cases, larger pipe). The gas flows through the intermediate pressure system until it reaches either a low pressure District Regulator or a customer's Meter Set Assembly.

To safeguard against excessive pressures throughout the supply and distribution systems due to regulator failure, over-pressure protection is installed. This over-pressure protection will release gas to the atmosphere, enact secondary regulation, or completely shut off the supply of gas. To safeguard steel main against corrosion, PSE builds, operates, and maintains corrosion control mitigation systems to prevent damaged pipe as a result of corrosion.

Currently within the City, PSE operates and maintains: approximately five miles of high pressure main, five District Regulators, approximately 200 miles main, and 150 miles of service lines serving 12,860 metered customers.

Future Projects

To meet the regional and City of Marysville natural gas demand, PSE's delivery system is modified every year to address new or existing customer growth, load changes that require system reinforcement, rights-of-way improvements, and pipeline integrity issues. The system responds differently year to year and PSE is constantly adding or modifying infrastructure to meet gas volume and pressures demands. With that said, the major construction that is anticipated in the City of Marysville in the next 10 to 20 years includes the following:

- 8-inch intermediate pressure main reinforcement along 51st from 145th Pl NE to 152nd Pl NE;
- 4-inch intermediate pressure reinforcement main in Sunnyside Blvd NE from 60th Dr NE to 52 St NE;
- The replacement of DuPont manufactured polyethylene main and service piping and certain/qualified steel wrapped intermediate pressure main and service piping. There will be ongoing pipe investigations throughout the city to

determine the exact location of any DuPont pipe and qualified steel wrapped pipe to be replaced.
• There will be ongoing investigations throughout the city to determine the location of where gas lines have been cross bored through sewer lines and make subsequent repairs.

C. TELECOMMUNICATIONS

Telecommunications is the transmission of sound, images and/or data by wire, radio, optical cable, electromagnetic, or other similar means. Telecommunications include, but are not limited to, telephone, cable television, personal wireless services, and internet services.

Telephone Services

Frontier is the telephone service provider in the Study Area. Fiber optic cable connects all Frontier switching offices and is used for transport of data and voice traffic.

Cable Services

Comcast and Wave Broadband, provide digital cable service, which is an alternative to digital subscriber lines (DSL), and cable television to the majority of the Study Area.

Wireless Communication

Wireless communication is a combination of a portion of the radio frequency spectrum with switching technology, making it possible to provide mobile or portable telephone service to virtually any number of subscribers within a given service area. Transmission quality is comparable to that provided by conventional landline telephones, and the same dialing capabilities and features available to landline users are available to cellular users. This involves the location of towers and antennas throughout the community.

Internet Service Providers

Numerous Internet Service Providers (ISP) serve the City including Frontier, Xfinity (Comcast), CenturyLink, NetZero, EarthLink, and Dishnet. High-speed internet services are available through DSL, satellite, fiber, and cable. Dial-up internet services are available for those who have access to telephone service.

D. OLYMPIC PIPELINE

Portions of the BP Olympic Pipeline traverse the City of Marysville. This pipeline consists of a 400-mile interstate pipeline system that runs in a 299-mile corridor the entire length of Western Washington (from Blaine, Washington to Portland, Oregon). It is used to transport over 4.9 billion gallons of gasoline, diesel, and jet fuel from four refineries located in Whatcom and Skagit Counties. Olympic serves a variety of distributors including those at Seattle's Harbor Island, Seattle-Tacoma International Airport, Renton, Tacoma, Vancouver, Washington, and Portland. It is the sole supplier of jet fuel to Seattle-Tacoma International Airport. The diesel fuel and gasoline supply fuel stations across Washington and other states. There are two lines (16" and 20") located in the pipeline corridor. These are located at an average depth of 3-4 feet below ground surface.

Between 2004 and 2009, over $50 million dollars have been invested to improve the integrity and safety of the pipeline. In January 2006 BP sold majority ownership in the

Olympic Pipeline to Enbridge, Inc., and now retains only 35 percent ownership. Coordination of development activity between the City and the Olympic Pipeline is necessary in order to ensure the pipeline remains undisturbed.

E. FUTURE NEEDS AND ASSUMPTIONS

Growth and development will place increased demands on these services. The rate of growth will affect timing of the need for planned system improvements.

F. GOALS AND POLICIES

Goals:

1. Facilitate the development of all utilities at the appropriate levels of service to accommodate the growth that is anticipated to occur in the City of Marysville.

2. Facilitate the provision of utilities to ensure environmentally sensitive, safe, and reliable service that is aesthetically compatible with the surrounding land uses and results in reasonable economic costs.

3. Process permits and approvals for utility facilities in a fair and timely manner and in accord with development regulations which encourage predictability.

Policies:

UT-1 Accommodate new residential, commercial, and industrial development only when required utilities are available prior to, or concurrent with, development. Concurrency indicates that utilities are available within six years of construction of the new development. Payment of mitigation fees is considered concurrency.

UT-2 Coordinate the City's land use planning with the utility providers' planning. Adopt procedures that encourage providers to utilize the Land Use Element and Urban Growth Area in planning future facilities.

UT-3 Encourage development in areas where utilities are already available before developing areas where new utilities would be required.

UT-4 Provide urban level utilities only in Urban Growth Areas

UT-5 Provide urban level utilities in Urban Growth Areas to enhance the quality of life, and maintain viable, efficient, and cost-effective delivery.

UT-6 Give priority to utility line extensions where on-site systems have created known pollution or health hazards.

UT-7 Seek to coordinate, where appropriate, investment in utilities with business, employment, and economic development opportunities.

UT-8 Reduce the per unit cost of public utilities by encouraging urban density development, allowing the distribution of public and private services more efficiently.

UT-9 Coordinate and consolidate utilities districts, where feasible, to distribute public and private services more efficiently.

UT-10 Facilitate and encourage conservation of resources to delay the need for additional facilities.

UT-11 Encourage the development of telecommunications infrastructure city-wide and region-wide.

UT-12 Allow location of utility distribution sites within residential areas, provided they are suitably landscaped and buffered, designed, and improved to prevent hazards to life and adverse effects on the surrounding neighborhood.

UT-13 Use incentives to encourage undergrounding of utility distribution lines.

UT-14 Public easements and rights-of-way should be considered multiple-purpose utility/public facility corridors. New utility systems, including gas, power, communications and transmission and distribution lines, should be located in existing public rights-of-way and easements where possible.

UT-15 Recognize the inter-jurisdictional characteristics of providing utilities and work with Snohomish County, other jurisdictions, and area wide residents.

UT-16 Extension of utilities should be carefully staged to achieve orderly, regular, and compact development.

UT-17 The City/Utility Providers, and school districts should maintain open communications to keep each other abreast of plans and recommendations regarding closures, changes, and expansions of schools, streets, utilities, and other facilities that might impact each other.

UT-18 Process permits and approvals for utilities in a fair and timely manner, and in accordance with development regulations that ensure predictability.

UT-19 Provide utilities with annual updates of population, employment, and development projections. The City and utilities will seek to jointly evaluate actual patterns and rates of growth, and compare such patterns and rates to demand forecasts.

UT-20 Coordinate the formulation and periodic update of the utility element with adjacent jurisdictions.

UT-21 Coordinate and seek to cooperate with other jurisdictions in the implementation of multi-jurisdictional utility facility additions and improvements.

UT-22 Promote, when feasible, sharing trenches and coordination of construction timing to minimize construction-related disruptions to the public and reduce the cost to the public of utility delivery.

UT-23 To facilitate coordination of public and private utility trenching activities, to promote cost efficiencies, and to reduce disruption in the street right-of-way, the Public Works Department shall provide timely and effective notification to interested utilities of road construction and of maintenance and upgrades of existing roads.

UT-24 To ensure that growth is accommodated and adequate utilities are provided in a timely and cost-effective manner, facility location should be determined by the needs of facility users and clients, and the requirements of utility providers. The siting of facilities should address negative impacts on surrounding neighborhoods. Dispersal among neighborhoods should be an important consideration, but not a sole determinant of final siting decisions. The City's goal is to foster positive relationships between facilities and their neighbors, so that facilities will be regarded as assets to communities.

UT-25 In order that utilities make a positive contribution to the built environment, the City will consider opportunities to incorporate accessible open space as an element of major public projects, including public utilities' facilities. Innovative approaches to planning, design, and development of these facilities to address existing and growth-related open space needs will be encouraged.

UT-26 Require collocation of telecommunication facilities whenever possible to minimize the aesthetic impacts of multiple towers in the community.

UT-27 Work with telecommunication providers to construct antennas on existing structures, and new towers that use materials and structures that minimize visual impacts to the community.