

UTILITIES APPENDIX

INTRODUCTION

The Growth Management Act requires comprehensive plans to include utilities elements. Specifically, this element must address electrical power, natural gas and telecommunications in the following manner:

- Inventory the general location of existing utilities.
- Establish the proposed location of proposed utilities.
- Examine the capacity of existing and proposed utilities.

UTILITIES ISSUES

The distribution system for natural gas to Orting and Puyallup is nearing capacity. As the population in these two areas grows, what improvements must be made to provide for the needs of the future population?

ELECTRICAL SYSTEM

Puget Sound Energy (PSE) is an investor-owned utility providing electrical service to approximately 1,000,000 residential, commercial, and industrial customers in a nine county, 4,500 square mile service territory in western Washington. To provide reliable service, PSE builds, operates, and maintains an extensive electrical system consisting of generating plants, transmission lines, substations, and distribution systems. PSE is regulated by the Washington Utilities and Transportation Commission (WUTC) and is obligated to serve its customers subject to WUTC rates and tariffs.

Existing System

There are two main access points for receiving power in Pierce County: White River 230/115 kiloVolt (Kv) Transmission Station located north of Orting; and at PSE's Frederickson Generation station located in Frederickson Industrial area of Pierce County. A third access point from St. Clair switching station near the Thurston/Pierce County line provides a major tie between Pierce and Thurston Counties. The existing electrical system serving the Orting area consists of the following:

Transmission Substations:

- The White River Transmission Station (immediately east of Sumner, north of Orting)
- Alderton Transmission Station (in Alderton).
- Electron Heights Switching Station
- Frederickson Generation Station

Distribution Substations:

- Orting
- Rhodes Lake
- Kapowsin
- Gardella

Transmission Lines (115kV):

- White River-Electron Heights
- White River – Alderton # 2
- Electron Heights - Blumaer

Existing Capacity to serve the City of Orting

The power utilization factor of all distribution substations serving the City of Orting and surrounding area is at 91.6 percent. The utilization factor is a comparison of current peak system load (during the winter heating season), divided by the design capacity of the substations in the area. The following table illustrates the capacity versus peak winter loads for the Orting distribution substations.

**Table U-1
Existing Capacity: Electrical Utilities**

Distribution Substations	Capacity (MVA)	Winter Load (MVA) (Jan 05, 2004)
Orting	20	20.6
Rhodes Lake	25	26.9
Kapowsin	20	13.2
Gardella	25	21.7
Total 90	82.4 MVA = Mega Volt Amperes)	

The electrical system can be expanded as the area load develops. The timing of future construction is largely dependent on the development growth of an area, and the associated increase electric demand (load), as well as facility maintenance requirements, reliability related improvements, or system replacement needs.

Projected Needed Capacity

PSE's 2013 Electrical Facilities Plan for all of Pierce County predicts a projected load level in Mega Volt Amperes (MVA's) of 592 MW. This represents a growth of about 100 MVA from the current 2004 peak load levels for the entire county. This projected load will be revised (most likely upwards) in the near future. PSE's long-range plans for the City of Orting and surrounding areas are based on electrical growth projections anticipated in future years. Projected load is calculated as the existing load, minus conservation reductions, minus demand side management, plus the forecast of new load.

The population and employment forecasts are based on a regional economic and demographic model and then allocated into each of the counties within the service territory. The regional forecasts account for the latest assumption about the national economy and reflect the historical structure of employment and population within each county as well as their recent growth patterns. The historical population data by county is based on the state's Office of Financial Planning reports, while the employment data is based on the state's Employment Security Department's monthly reports. The projection of these inputs together with the company's projections of conservation, retail rates and any known short term large load additions or deletions form the company's forecast of energy and peak loads.

Proposed System

Puget Sound Energy has identified system and transmission improvements required to serve the forecasted load growth in Pierce County. Many improvements are in progress or planned for the future; others have been identified as future improvements to meet the growth demand. These improvements are intended to meet the growth and reliability demands for the City of Orting and the surrounding area, as well as other portions of Pierce County.

System Improvements in Progress - White River – Electron Heights transmission loop into Alderton – These improvements will provide a transmission route from the Bonney Lake area into the Alderton Transmission Station and from the Rhodes Lake Area also into Alderton Transmission Station.

Future Transmission Improvements - PSE has identified the need for a new bulk power delivery point for Pierce County at the Alderton Transmission Station, located approximately 5 miles north of Orting City limits. Existing transmission lines are planned to be upgraded to provide a 230 kV tie between the White River Transmission Station and the Alderton Transmission Station. The timing for this 230 kV upgrade project is largely driven by future generation addition in the Frederickson area. Future improvements are as follows:

- **Alderton 230 kV Development** -- Pierce County will need a major upgrade of bulk power delivery system in the near future. The Alderton Transmission

Station has been identified as future 230 kV transformation station. The project will involve upgrade of an existing transmission lines north of Orting and installation of a 230 – 115 kV transformer at the Alderton Station.

- Woodland – St. Clair Phase II – This project will involve upgrade of Woodland substation (in southwest Puyallup) to a switching station and rebuilding of existing lines. When completed, the project will increase transmission capacity and improve reliability to Orting, Puyallup and surrounding areas.

Future Distribution Substations:

- Knoble -The Knoble Substation will serve new developments in Cascadia and Falling Water area, and provide additional load back-up for the Orting region of Southeastern Pierce County. Construction of a loop-through of the existing or future transmission will be included as part of this project.
- Sunrise Substation -The Substation will serve new residential and commercial load growth in the South Hill area of Southeastern Pierce County. Construction of this substation is scheduled in 2005.
- Pioneer Substation- A new distribution substation is planned for the downtown Puyallup area.

NATURAL GAS

Puget Sound Energy, Inc. (PSE) supplies natural gas to six Washington counties-Snohomish, King, Pierce, Thurston, Lewis and Kittitas. PSE is an investor-owned natural gas and electric utility. As of April 2004, PSE supplied natural gas to 652,500 customers. Natural gas is not considered an essential service, and therefore, PSE is not mandated to serve natural gas customers as they are electric customers within its service territory. Extension of natural gas service is based on customer request and the results of a market analysis to determine if revenues from an extension will offset the cost of construction. Although natural gas is a fuel of choice, most new residential construction includes natural gas when and where available.

Existing Conditions

The Williams Pipeline Corporation (Williams) supplies natural gas to the entire Puget Sound region. Williams' system within Washington is primarily two large pipelines (26-inch and 30-inch) which roughly follow the I-5 corridor. These pipelines are located north of Orting. Natural gas is supplied from Williams to PSE as a colorless and odorless gas. PSE adds a powerful odorant, typically mercaptan, for safety purposes. Natural gas is delivered through Williams' pipelines at relatively high pressure, up to 1,000 pounds per square inch (psi). Natural gas is delivered to the residential customer, through a series of pressure reducing stages, at a pressure of from 0.25 to 2 psi. The natural gas delivery system is as follows:

- Transmission Mains – Supply from Williams to PSE at 300 to 800 psi.
- Gate Stations – Delivery point of the natural gas to PSE. Gate stations include meters, odorizer and pressure regulators, which reduce the pressure to less than 250 psi.
- Supply Mains – PSE’s supply mains transport natural gas to district regulators throughout PSE’s service territory. These supply mains vary in size from 4-inches to 20-inches and generally supply natural gas at a pressure of up to 250 psi. Supply mains are generally located within Rights-of-Way.
- Limiting Stations – A limiting station reduces the pressure along a supply main system, generally in the range of from 60 to 200 psi. A supply main located downstream of a limiting station is referred to as a limited supply main.
- District Regulators – District regulators are pressure-regulating stations that supply natural gas to the local distribution system at intermediate pressure (IP), which normally ranges from 20 to 60 psi. Distribution mains range in size from 1-inch to 12-inch. District regulators are generally located in in easement adjacent to Rights of Way, while IP mains are generally located in Rights of Way.

The Washington Utilities and Transportation Commission (WUTC) regulates PSE within Washington. The WUTC reviews, approves and monitors the rates and charges as well as the facilities and operating practices of PSE’s natural gas system. The WUTC requires PSE to demonstrate that existing ratepayers are not subsidizing new customer growth. Thus, historically natural gas main extensions are not planned in advance in anticipation of new growth, but only initiated to keep up with existing demand.

The North Tacoma Gate Station (located in north Sumner), the Rainier Gate Station (located in southwest Puyallup) and the Bethel Gate Station (located in south Pierce County) all supply natural gas to the City of Orting as part of a natural gas supply system. Supply and distribution mains supply natural gas to the City of Orting. PSE’s records indicate that as of August 2004 there are approximately 960 natural gas customers within the Orting City limits.

Proposed system

If Orting is to grow consistent with current PSE projections (3%-5%), then PSE estimates that there will be approximately 2,500 residential and commercial customers within the Orting City limits by the year 2024. PSE’s long range planning group continually performs load and growth analysis to determine PSE’s capacity to serve its existing customers, and to prioritize system capital improvements. The capacity of the existing distribution system can be increased as required by one or more of the following:

- Increasing distribution and supply pressures in existing lines.
- Adding new distribution and supply mains for reinforcement.

- Increasing existing distribution system capacity by replacement with larger sized pipes.
- Adding more district regulators for supply mains to provide additional capacity.
- Looping the distribution mains to provide an alternative route for natural gas supply.

PSE's long range planned projects for the City of Orting area include the following (subject to on-going review, and revision as additional load and growth information is received):

- Install a new HP main going through Orting (from Bethel Gate Station to serve Orting and Cascadia)
- Install a new District Regulator in Orting
- Replace 1" and 2" natural mains with 6" natural gas main along Deeded ST from Calistoga AV easterly to Eldridge ST
- Replace 1" natural gas main with 6" natural gas main along Eldridge ST from Deeded ST southerly to Kansas ST
- Replace 1" natural gas main with 6" natural gas main along Kansas ST from Eldridge ST easterly to Harmon WY
- Replace existing 2" and 4" natural gas mains with 6" natural gas main along Harmon WY from Kansas ST southeasterly to Orville RD E
- Replace existing 2" natural gas main with 6" natural gas main (crossing RR) along Whitesell ST NW from Washington ST southwesterly to Corrin AV NW

TELECOMMUNICATION SYSTEM

Telephone Service

Century Tel furnishes local telephone and DSL service. Service to the area is now considered state-of-the-art.

The extended area service has also been expanded, enabling city residents to make local calls to Buckley, Enumclaw, Graham, Puyallup, South Prairie, Sumner and Tacoma. Calls outside of these two areas are considered long distance. For long distance services, residents may choose from a variety of companies, including but not limited to US West, AT&T, Sprint, and Century Tel.

Orting is now provided by most wireless telephone providers.

Cable Television

Cable television service is provided in Orting by Comcast, . The Orting area is handled through the TCI Cable of Auburn Office. TCI Cablevision is in the process of expanding their services north and south of the City along Pioneer Way, as well as westward towards the Soldier's Home.

System Capacity

There are no shortages in the existing or future capacity of the telecommunication services for Orting at this time. The existing network of phone and cable television lines has sufficient capacity to accommodate increases in development or subscription. The limitation in providing services would stem from lack of a direct hook-up from a specific residence to the television or telephone line. This linkage can be installed when service is desired.

SOLID WASTE MANAGEMENT

The Tacoma-Pierce County Solid Waste Management Plan, updated in 2000 guides solid waste disposal in Pierce County. Orting contracts with the County for collection and disposal of solid waste generated within the City. County waste is shipped to Klickitat County for disposal in a landfill.

Recycling

Under state law governing solid waste management(RCW 70.95.090) local governments are required to provide collection of source separated recyclable materials from single and multi-family residences; drop-off or alternative systems for rural residents; yard waste collection; educational and public outreach programs; programs to monitor the collection of recyclables from commercial sources; in-house recycling and procurement programs; and any other programs the municipalities determine are necessary to achieve state and local waste reduction and recycling goals. The legislation set a statewide goal of achieving a 50% recycling rate by 1995, which has been achieved in Pierce County.

Orting's household and commercial recyclables and yard waste are collected by Pierce County. Currently there are no programs offered through the city for the recycling of hazardous wastes such as tires, batteries and oil, as well as plastics. There are a number of recycling drop-off and buy-back centers located in the area.