
The Utilities Element of the Comprehensive Plan looks at existing infrastructure and proposed locations and facilities upgrades based on growth projections and community needs.

The City of Blaine Electrical Division provides electrical service to the City of Blaine and several adjacent areas, while Puget Sound Energy (PSE) provides service to portions of Blaine and the unincorporated UGA. The remaining utilities are privately provided.

The City of Blaine Electric Utility consists of four distribution circuits owned by the City that are connected to two substations owned and maintained by PSE. The City purchases all of its power from the Bonneville Power Administration (BPA).

The City has about 72 miles of overhead and underground distribution lines.

The City's power sales contract with BPA expires September 30, 2028. The contract limits the City's ability to serve new large loads over 10 average MW in size or 87,600 MWh per year at BPA's preferred rates. This is more than sufficient to serve Blaine under normal conditions.

However, BPA uses tiered rates. With tiered rates, the cost for power above a certain threshold is priced higher than the preferred power the City purchases from BPA. This has caused the City to consider establishing higher rates for new large customers or those customers that have significant expansion.

Total electric energy sales are projected to grow from about 73,417 Megawatt hours in 2013 to about 98,066 Megawatt hours in 2036.

Peak electrical demand is forecasted to increase from an actual value in December 2014 of 13.9 MW to about 18.4 MW in 2036.

The projected peak load was allocated to the four Blaine feeders. The principal implications of the projected feeder loadings are that few major system modifications for the purpose of serving load under normal conditions will be required over the forecast horizon

The most significant issue will be related to reliability in the event of a Blaine substation outage, where Circuit 11 will be required to serve as much of the Circuit 15, 16 and 17 loads as possible.

The City of Blaine remains dedicated to continue the conservation program to various consumer sectors, especially those with the biggest potential for savings relating to cost. To further broaden the program, Blaine has used the "performance payments" granted by BPA to add further dollars to the conservation program

Other private utilities within the City limits include PSE provided electrical service, Cascade Natural Gas, garbage collection by Waste Management Inc., and telephone, cable, and internet services provided for by Frontier Communication.

ACRONYMS USED IN THIS CHAPTER

BPA	Bonneville Power Administration
kW	Kilowatt
MW	Megawatt
PSE	Puget Sound Energy

CHAPTER 6 - UTILITIES

This chapter contains discussion of the general location, proposed location, and capacity of all existing and proposed utilities, including, electrical lines, telecommunication lines, natural gas lines, and garbage collection

The City of Blaine Electrical Division provides electrical service to the City of Blaine and several adjacent areas, while Puget Sound Energy (PSE) provides service to portions of Blaine and the unincorporated UGA. The remaining utilities are privately provided.

ELECTRICITY

The following section summarizes information contained in the 2016 Draft City of Blaine Electric Utility Comprehensive Plan Update. Historically, the City of Blaine’s Electric Utility has always served outside of its city limits. The current Electric Utility customer base is within the city limits, but there are less-developed areas within the city and in the unincorporated UGA where customers are served by PSE.

Evaluation of the Existing System

The City of Blaine Electric Utility consists of four distribution circuits owned by the City that are connected to two substations owned and maintained by PSE. The City purchases all of its power from the Bonneville Power Administration (BPA). The City of Blaine has a Network Transmission Agreement with BPA’s Transmission Business Line. Approximately 3 percent of the power purchased from BPA is purchased under BPA’s Environmentally Preferred Power program. The City has about 72 miles of overhead and underground distribution lines.

There is a 6.37 MW limit of power from the Semiahmoo Substation under normal conditions, based on a cost sharing agreement, which is more than adequate to meet the forecast 2036 normal winter peak load of 2.5 MW.

Under normal conditions the Blaine Substation and feeders are adequate for their intended purposes. Some improvements such as increasing the capacity of feeders, phase balancing, reducing feeder bottlenecks, and shifting loads between the four main feeders would improve the reliability of the system during abnormal conditions.

Bonneville Power Administration Contract

The BPA contract provides for both transmission and power sales to the City of Blaine. The City’s power sales contract expires September 30, 2028. The contract limits the City’s ability to serve new large loads over 10 average MW in size or 87,600 MWh per year at BPA’s preferred rates. This is more than sufficient to serve Blaine under normal conditions.

Under the contract, BPA uses tiered rates. With tiered rates, the cost for power above a certain threshold is priced higher than the preferred power the City purchases from BPA. This has caused the City to consider establishing higher rates for new large customers or those customers that have significant expansion. This tends to place the cost of higher Tier 2 power on those new large commercial or industrial customers that cause the City to purchase more of the expensive power.

BPA will fund certain approved conservation programs and provides a percentage of the total utility power bill for funding such programs. These conservation programs help preserve the City's preferred power purchases by reducing the need for Tier 2 power at higher prices. While initially the conservation program focused on residential, municipal, and public authority customers, recent efforts have focused on industrial process and lighting improvements. Future programs could include weatherization projects for low-income property owners in cooperation with the Opportunity Council in Bellingham

The Blaine transmission contract with BPA is a Network Integration or NT contract that allows Blaine to deliver energy from multiple resources to their load via multiple transmission pathways under one transmission contract. Blaine pays for transmission service based on its network load at BPA's monthly system peak. It also places the obligation of planning transmission improvement required to serve customer load growth on BPA.

Future Demand

The load forecast is designed to replicate 12-month energy sales data per sector as reported by the City of Blaine in their BPA monthly report. The population and employment growth forecasts used in the Comprehensive Plan are the key drivers for the electric load forecast. Total electric energy sales are projected to grow from about 73,417 Megawatt hours in 2013 to about 98,066 Megawatt hours in 2036.

Peak Demand is the maximum amount of electricity used during a relatively short period of time. Electrical use is traditionally higher for a Pacific Northwest utility in the morning and evening of the winter than at other times of the year. Peak Demand is measured in kilowatts (kW) or Megawatts (MW). Peak electrical demand is forecasted to increase from an actual value in December 2014 of 13.9 MW to about 18.4 MW in 2036.

The projected peak load was allocated to the four Blaine feeders. The principal implications of the projected feeder loadings are that few major system modifications for the purpose of serving load under normal conditions will be required over the forecast horizon, outside of shifting some load from Circuit 16 onto Circuits 15 and 17. The most significant issue will be related to reliability in the event of a Blaine substation outage, where Circuit 11 will be required to serve as much of the Circuit 15, 16 and 17 loads as possible. This will require

either some contingency planning or discussions with BPA and PSE on increasing emergency capacity available in the event of a PSE Blaine Substation outage.

Electric Energy Conservation

The City of Blaine remains dedicated to continue the conservation program to various consumer sectors, especially those with the biggest potential for savings relating to cost. To further broaden the program, Blaine has used the “performance payments” granted by BPA to add further dollars to the conservation program. BPA will likely continue to fund such conservation programs in the future. These conservation measures, combined with the penetration of energy-efficient appliances and lighting, and more stringent energy requirements within the state building codes, will result in slower than historic rates of growth in average electrical use per customer.

PRIVATE UTILITIES

Electrical

PSE provides electrical service to portions of the Blaine UGA. In some cases, the PSE service area overlaps with the City’s service area. The City should seek to develop a Future Service Area Agreement to establish service area boundaries and avoid such overlaps.

Natural Gas

Natural gas service within the City and Urban Growth Area (UGA) is provided by Cascade Natural Gas Corporation. Service is available to most residences and businesses in the Semiahmoo area and approximately one-third of the residences and most of the commercial and manufacturing areas in Central Blaine. Limited service is currently available within the UGA. As undeveloped areas of the City and UGA urbanize, the number of natural gas connections is likely to increase and the overall proportion of natural gas service should also increase.

Garbage Collection

The City of Blaine adopted a mandatory garbage collection ordinance in September 1994. Waste Management, Inc. provides collection service within the City Limits and the UGA outside the City Limits.

Communications

Telephone service, including mobile phone service, is provided by Frontier Communication. Cable television and internet services are available within most of the Blaine UGA from Comcast, Wave Broadband, and Black Rock Cable. The area is served by a number of radio and television stations. The City coordinates closely with private utility companies regarding placement of utility lines within public rights-of-way and utility easements, and use of City electrical poles.

UTILITY GOALS, POLICIES AND ACTIONS

GOAL 1: To provide reliable electrical service to City customers at a competitive price.

POLICIES

- 1.1 The City should continue to upgrade existing electrical facilities to provide the required degree of reliability and to support the projected increase in ultimate demand.
- 1.2 Electrical system expansion and facilities required to serve new development should be financed by new customer capital contributions, impact fees, bonds, and electric utility revenues.
- 1.3 Financial reserves should be maintained, consistent with City financial policies.
- 1.4 The City should increase electrical service area to include the complete City limits and future annexation areas.

ACTIONS

- A. Install and implement primary line extensions to make existing circuits loop feed instead of “radial” feed in high-risk areas to provide more options in the event of a power outage.
- B. Install fault-indicators to reduce outage times.
- C. Install more switch gears and in-line splices to aid in isolation and switch ability of the system and meet the increasing demand/load of existing cables.
- D. Require each new development to install padmount single and three phase fused switches to enhance and sectionalize the system.
- E. Continue the program to identify and retrofit direct-bury or non-jacketed concentric cable with new cable in conduit.
- F. Develop program to inspect wood poles and determine whether to brace/reinforce or replace as needed.
- G. Increase and stabilize the revenue base while reviewing existing programs for fiscal efficiency.
- H. Inventory assets and facilities for state regulatory compliance and to plan for adequate infrastructure to achieve maximum operating efficiency.

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- I. The City should adopt an impact or mitigation fee ordinance to require new customers to contribute toward system expansion needed to serve new development.
 - J. The City should periodically evaluate rates to align with BPA rate changes and maintain reserves at sufficient levels. This should include an annual adjustment process or formula to keep rates current with the cost of service delivery.
 - K. The Electrical Division should evaluate the cost effectiveness of its conservation programs and maintain those which are effective in helping reduce the need to purchase additional power from BPA at more expensive Tier 2 rates.

GOAL 2: To assist the operators of private utility systems in providing the best possible service to customers within the City of Blaine.

POLICIES

- 2.1 The City cooperates and maintains open communication with private utility companies who provide utility service within the City Limits.

ACTIONS

- A. Information on the location and use of public rights-of-way and utility easements within the City Limits should be available upon request.
- B. Utility providers should have reasonable access to information on new building permits and development projections.