UTILITIES ELEMENT

TABLE OF CONTENTS

I. INTRODUCTION

1. Growth Management Act Requirements

The Growth Management Act (GMA) requires jurisdictions to prepare a utilities element that addresses "the general location, proposed location and capacity of all existing and proposed utilities, including, but not limited to, electrical lines, telecommunications lines, and natural gas lines."

2. Purpose of Utilities Element

The Utilities Element inventories the general location of existing and proposed utilities, and analyzes the capacity to serve planned land uses. The GMA defines utilities as integrated facility systems that serve the public by means of a network of wires or pipes, and ancillary structures. Included are systems for the delivery of natural gas, electricity, and telecommunications services, water systems, and sewage disposal. Utilities are distinguished from other capital facilities as essential services necessary to support basic life needs. Due to the high cost of utility infrastructure necessary to deliver the utility service, residents pay a fee for utility services while other capital facility services such as police and fire protection are funded by the whole community through taxes.

Water supply, sanitary sewers and storm sewers may also be considered as "public facilities" and the Growth Management Act requires that jurisdictions consider the capital improvement aspect of these utilities in the Capital Facilities element. Accordingly, the Capital Facilities Element provides level of service standards, projects capital facility needs and includes utility capital improvements in the 6-year Capital Facilities Plan. Utilities are either publicly or privately owned. Private utilities are regulated by a variety of entities. Natural gas and telephone utilities are regulated by the Washington Utilities and Transportation Commission, and cellular telephone communication companies are licensed by the Federal Communication Commission. Utility providers are primarily responsible for planning utility services.

However, the City will incorporate utility plans into its comprehensive planning efforts in order to coordinate the quality and delivery of services with anticipated patterns of land use. It may also assist utility providers in identifying ways of improving services provided in the City. The information included in this element will assist in ensuring the orderly and efficient provision of utility services to the City and in the City Planning or Urban Growth Area (UGA).

The following utilities are addressed in this Element:

1. Water Supply;
2. Sanitary Sewer;
3. Storm water and Drainage;
4. Electricity;
5. Natural Gas; and
6. Telecommunication System.

II. EXISTING CONDITIONS AND CAPACITY

1. Water Supply

a. Existing conditions

The City of Brier is provided with municipal water by the Alderwood Water & Wastewater District (District). The District's retail water service area encompasses approximately 44 square miles. The District is responsible for constructing, repairing, maintaining and servicing water lines as well as providing potable water to the City's residents, as established by Ordinance No. 336.

Alderwood Water & Wastewater District purchases treated water from the City of Everett. The City of Everett water supply originates in Spada Lake in the Sultan Basin and is "preset" in Lake Chaplain after passing through Snohomish County PUD's water power generating system.

The District has entered into a long-term wholesale water supply agreement with Everett that extends until January 1, 2055. The agreement will supply the District's project demands (including the City of Brier) through that period.

The District has three water storage reservoirs that serve Brier. The reservoirs are located at 156th Street SW and 36th Street W in Lynnwood's Municipal Urban Growth Area. The three reservoirs have 73 million gallons of available capacity for the 635 Pressure Zone which includes the City of Brier.

Fire flow analyses were conducted throughout the District, including Brier. This analysis was performed with the hydraulic analysis model using 2044 peak day demand conditions. The results showed that the distribution system is able to meet the current fire flow needs throughout most of the City. There are small areas where fire flow is deficient due to the age, size, and type of distribution pipe. Planned improvements will enhance the level of service in these areas by 2044.

b. Capacity

Brier's population and housing projections for the planning period (through 2044) is 7,100 persons, and 2,894 households. The number of gallons used by each single-family household per day has been decreasing since 1968 and is expected to continue to decrease due, in part, to conservation efforts, plumbing code changes and rate increases. Average daily demand per household in 2024 of 174.5 gallons per day (gpd). Average daily demand in 2044 in Brier, without conservation, is projected to be 346,000 gpd, and maximum (peak day) demand is expected to be 573,000 gpd.

The District expects a continued increase in residential and commercial growth through 2044 and beyond.

Specific improvements will be necessary in order to maintain and increase the level of service for the District's customers and meet the needs of growth. The target level of service is a minimum pressure of 30 psi (pounds per square inch).

The analysis of current conditions, future demand and ability to provide services through the year 2044 assumes that growth and development will occur in Brier consistent with its Comprehensive Plan and zoning. With scheduled improvements, the District states that there will be sufficient capacity to serve planned growth.

2. Sanitary Sewer

a. Existing Conditions

Sanitary sewage collection is provided by the City of Brier. There are currently 2,150 sewer connections in the City. Collection lines feed into two trunk lines. A 15-inch trunkline follows Oak Way in the northeast Brierwood section of the City, and ties into the 36-inch Swamp Creek trunk line that is operated by the Alderwood Water and Wastewater District. Approximately one-third of the sewer connections are routed to the north and east through this trunk line. The rest of the sewer connections are routed to the 15-inch Lyons Creek trunk line, which extends southwest from 228th Street SW into Mountlake Terrace. This trunk line is owned by both the City of Brier and Mountlake Terrace. Both the Swamp Creek and Lyons Creek trunk lines connect to the Kenmore Interceptor, which is owned and operated by King County. Sewage from the City of Brier flows to either the West Point Treatment Plant in Seattle or Brightwater Treatment Plant in Woodinville.

There are 12 sewer basins within the Brier service area, plus an additional one called the AWWD basin that is within the Alderwood Water and Wastewater

District's service area. The basins are as follows: 1) Brier Road; 2) Brierwood; 3) Alder; 4) Vine Road; 5) Shasta; 6) Old Poplar Way; 7) Crestview; 8) Castle Crest; 9) AWWD; 10)Basin B; 11) East; 12) Southeast; and 13) Northwest.

Most areas of the City are presently served by a sanitary sewer system, though several areas remain served by on-site septic systems. These areas are generally located in the southeast, southwest, and northwest corners of the City and east of Brier Road, between Vine Road and 232nd Street SW. Sewer mains have recently been extended along Vine Road, making eventual sewer connection a possibility for homes there. The other areas have remained on septic systems because they are either difficult to serve due to local topography or because the existing low- density development has not warranted extension of sewer service.

Some problems with failing septic systems persist in these areas. A few homes in the Skyline Hills area have addressed these problems by installing pumps, but there still is potential for additional homes to experience septic tank failure.

b. Capacity

The Comprehensive Sanitary Sewer Plan indicates that the existing Brier sewer system capacity is adequate to accommodate the proposed development density buildout and peak wastewater flow conditions. Two areas in the Brier Road Basin (generally in the south central part of Brier) are close to capacity at peak flow conditions. Further study on inflow and infiltration issues and remediation program is recommended to mitigate these issues. In addition, at buildout, there may be a surcharge at manhole #485 in the Brierwood Sewer Basin (generally the northern part of Brier), which could require mitigation.

In 2011 the Golden View Pump Station was removed. Development on Atlas Road provided a sewer connection for Basin B to connect by gravity flow to Alderwood Water and Wastewater District's sewer system without the need for the Golden View Pump Station. The entire city sewer system is now gravity flow.

Potential projects also include providing sewer service to the unsewered areas within the service area. A total of 23 sewer extensions are proposed in the Comprehensive Sanitary Sewer Plan to accomplish that project. In Brier, sewer lines are commonly extended or improved in the developed areas by means of Utility Local Improvement Districts (ULIDs) and extensions to serve new development are the responsibility of the developer. Service rate increases may also be necessary if the potential sewer utility expenditures exceed revenue.

c. Sewage Treatment

Sewage treatment is provided by King County Wastewater Treatment Division (WTD) through an intergovernmental agreement. Sewage from the City of Brier flows to either the West Point Treatment Plant in Seattle or Brightwater Treatment Plant in Woodinville. The West Point and Brightwater Treatment Plants have average wet weather capacity of 133 and 30 million gallons per day (mgd) and a peak hydraulic capacity of 440 and 130 mgd respectively.

In order to ensure wastewater conveyance and treatment capacity in the future WTD routinely reviews local comprehensive plans and compares growth projections to census data and population forecasts prepared by the Puget Sound Regional Council. WTD also looks at its own wastewater flow and monitoring data, and further truth-tests projections by running the data through system models to determine where future system capacity might be needed.

Recent reviews by WTD of regional conveyance and treatment plants capacity indicate that the existing capacity along with planned upgrades will provide adequate capacity to treat the City's wastewater through the 2044 comprehensive plan horizon.

3. Stormwater and Drainage

a. Existing Conditions

In 2015, a Stormwater Management Plan was prepared for the City of Brier by PACE Engineers, Inc. The Plan focuses on stormwater management throughout the city and provides a strategy for managing the City's stormwater runoff quantity and quality. A more recent update was completed in 2022, but that was to update the city's stormwater utility rates and four Capital Improvement Projects

The 2015 Stormwater Management Plan identified four primary watersheds in Brier: Swamp Creek; Scriber Creek (tributary to Swamp Creek); Lyon Creek; and Creek 0056 ("Abbey View Drainage"). The Swamp Creek watershed consists of approximately 222 acres and is located in the east central part of Brier. The Scriber Creek watershed is the largest watershed, containing approximately 476 acres, and is located in the north part of the City. The Lyon Creek watershed is located in west central Brier and is comprised of approximately 215 acres. Creek 0056 is located in the south part of Brier and consists of approximately 450 acres.

Brier is served primarily by a system of open grass-lined ditches and 12-inch

diameter storm drains/culverts with catch basins in the older, developed areas of the City. In the newer developments in the City, stormwater detention vaults and detention pipes are used for stormwater drainage.

The Stormwater Management Plan identifies general drainage problems in Brier that include local ponding, erosion, basement or crawl space flooding, and potential water quality problems. The Plan concludes that these problems are due to the increase of impervious surface and the presence of glacial till soils in the area.

There are four areas of concern identified in the Stormwater Management Plan:

1. Murphy Regional Detention Pond. The pond needs repairs to prevent subsurface water from piping beneath its berm and migrating finer material from the berm.
2. Brierwood Stormwater Pond Retrofit-Bioretention Cell. This project will provide stormwater treatment for water entering Scriber Creek, a salmonid-bearing creek.
3. Stormwater Decant Facility. The decant facility will capture sediment before the decant water drains into the sanitary sewer system. An oil/water separator may also be provided.
4. Abbeyview Pond Conveyance Channel. This project would replace existing culverts to prevent flooding.

b. Capacity

New development in the City is required to provide stormwater detention facilities to mitigate downstream drainage impacts. Stormwater detention facilities are designed to insure that peak discharge rates from a site do not exceed predevelopment existing conditions. The City has adopted the Washington Department of Ecology (DOE) standards. Brier Municipal Code states that the most current version of the Stormwater Management Manual for Western Washington is adopted. This ensures that the City always requires the most recent standards.

c. Drainage Courses

The Scriber Creek Watershed Management Plan was developed under an interlocal agreement between the cities of Brier, Lynnwood, and Snohomish County. The Plan evaluates stream conditions, habitats, and water quality in the entire watershed, and recommends a combination of regulations, education, and capital projects to prevent future flooding and to maintain water quality in Scriber Creek. In addition, the Plan recommends specific local and regional capital projects to

protect surface water resources. Implementation of the Plan has been ongoing over the past decade.

4. Electricity

a. Existing Conditions

The Snohomish County Public Utility District No. 1 supplies electricity to the City of Brier. Electricity is supplied to the area by an 115,000-volt transmission line, located along 228th Street SW. This transmission line serves a system of distribution substations, which reduce the current to 12,470 volts. From the substations, 12,470-volt distribution lines run along local streets, and transformers further reduce the voltage to 240 and 480 for distribution to residences and commercial/industrial users.

The substation which serves most of Brier is located near 228th Street SW and 40th Avenue W, in Mountlake Terrace. The substation has a capacity of 28 MVA. There is also a Snohomish County PUD substation located just north of the City Limits, near the intersection of Cypress Way and Larch Way. This substation also has a 28 MVA capacity. The PUD designs its substations to accommodate a second bank of transformers for an additional 28 MVA capacity.

Seattle City Light has an 115,000 volt transmission line that runs diagonally through the City along its own right-of-way.

b. Capacity

According to officials with the Snohomish County PUD No. 1, there are no existing plans to expand electrical facilities within the Brier planning area. The Utility projects future needs based on “small area forecasts,” which anticipate utility needs for reliability during peak load demand. Officials indicated that with respect to current load forecasts, the existing system facilities are adequate to serve projected growth for the next 5-10 years.

5. Natural Gas

a. Existing Conditions

Puget Sound Energy (PSE) is certified by the State Utilities and Trade Commission to provide natural gas to the Puget Sound area, which lies along the route of the Northwest Pipeline. The Brier planning area is included within the PSE service area. The Northwest Pipeline originates in Canada and consists of two pipes: a 26 inch diameter pipe designed to carry natural gas at a pressure of 600 pounds per square inch; and a 30 inch pipe designed for 1,000 pounds of pressure. The main Pipeline route is east of Woodinville and Redmond, with lateral lines that branch off in south Snohomish County to facilitate service to areas. The Brier planning area is served primarily from PSE lines which branch off the Northwest Pipeline lateral in the Mountlake Terrace Distribution lines (six to eight inches in diameter), which in turn branch off the main PSE supply lines. As of February 1999, there were 1,341 natural gas connections in Brier.

Puget Sound Energy has established as its optimum service standard a pressure of 45 pounds per square inch (psi), and as the minimum service threshold a pressure of 15 psi. Generally, residences in Brier are served by gas lines that provide 35 (psi). During high demand periods, gas pressure is increased from the district regulator to provide adequate pressure. According to PSE officials, the local capacity in Brier may be increased by "looping" existing systems to provide alternate directions of supply.

b. Capacity

PSE officials have indicated that the natural gas supply system will be able to meet the demand for natural gas within the planning area over the next 20 years. PSE does not anticipate the need for additional pipeline corridors within the Brier planning area.

6. Telecommunication System

a. Telephone

Ziply Communications provides telephone, televisions and internet service throughout the City of Brier planning area. Telephone system facilities include central office exchange switching stations, trunk lines which connect switching stations and distribution lines which run along streets to serve homes and businesses. The distribution lines are either pole-mounted or underground.

b. Cellular Telephone Systems

A cellular telephone system is a series of transmission facilities or "cell sites," which

use FM radio signals to transmit conversations and data to mobile/portable phone users. Cellular operators are licensed by the Federal Communications Commission (FCC). Cell sites consist of transmitting and receiving equipment and microwave relays, usually mounted on a pole or lattice tower, and ground-mounted switching equipment. In Brier, all of the existing cell sites are co-located on Seattle City Light transmission towers. Cell sites range in size from 1,000 to 2,000 square feet, and are enclosed by chain link fences.

There currently are four cell sites within the City of Brier. They are located in the following locations: Brier Park operated by T-Mobile; the 23000 block of 32nd Avenue W, operated by Verizon Wireless; and at 236th Street SW and 39th Place W, operated by AT&T and T-Mobile. Various other providers operate sites near the city that provide service within the City of Brier.

c. Fiber Optics

As part of the development of a fiber optics "ring" around Puget Sound, one fiber optics system exists in Brier. The fiber optics system is owned by Zayo Group and a portion of it extends from the north city limits, along the west side of Poplar Way/Brier Road, to 236th Street SW. Another portion of its system run's east- west, along 236th Street SW. Zayo is currently constructing a system that will be located on 32nd Avenue W, extending from 236th Street SW north to 23019 32nd Avenue W.

7. Cable Television

Ziply Communications provides televisions services within the City of Brier to all households who are eligible for the FiOS product, which is an all fiber optic network from the switching stations in Halls Lake and Bothell to the customer's home. These fiber optic cables are capable of providing telephone, internet, and televisions services, and are placed alongside existing cables on poles, or underground.

Comcast Cable provides cable television service in the Brier planning area. Brier is served by Comcast from a satellite receiving and processing station located at 185th Street SW and 40th Avenue W in Lynnwood. From the receiving station, trunk lines extend through the service area. The trunk lines branch off into distribution cables that carry the signals down residential streets. Cables then extend from the distribution lines to serve individual homes. Cables may be mounted on poles or placed underground. Comcast rents pole space or shares trenches with Snohomish County.

Presently, cable service is available to all residences in the City. Comcast Cable officials project no need for additional relay stations or trunk lines to serve the Brier planning area.

III. UTILITY ELEMENT GOALS AND POLICIES

GOAL UT 1.0: Ensure that utilities including water supply, sewage disposal, stormwater facilities, electricity, natural gas, and telecommunications are available or can be provided to support current and future development.

1. General

UT 1.1: Design and install utilities with sufficient capacity to meet the anticipated land use intensity.

UT 1.2: Allow new development only when and where such development can be adequately served by essential public utilities without reducing levels of service.

UT 1.3: Coordinate with utility providers at early stages in planning for needed facilities:

1) The City shall require that utility providers use the Land Use Element of this Plan in planning future facilities;
2) The City shall adopt procedures to review and comment on proposed actions and policies of public and private utility providers; and
3) City coordination may include involvement in consideration of alternatives to new facilities and alternate locations for new facilities.

UT 1.4: Minimize adverse environmental, aesthetic, and fiscal impacts associated with the siting, development, and operation of utility services and facilities.

UT 1.5: Require all annexations and new development to connect with City of Brier utilities.

UT 1.6: Require the location of utility facilities in conduits, shared corridors and trenches to reduce costs, minimize the amount of land allocated for this purpose, and to minimize construction disturbances.

UT 1.7: Coordinate future utility expansions with the County to ensure consistency with the Countywide Policy Plan.

2. Water

UT 2.1: Coordinate with the Alderwood Water District to provide an efficient and adequate water supply to the residents and businesses of the City.

UT 2.2: Design the size of new water utility systems to the anticipated future requirements of the area's land use.

UT 2.3: Design new water systems to allow for their extension into potential future service areas.

3. Sewer

UT 3.1: Provide an efficient and adequate sanitary sewerage service to the residents and businesses of the City in order to maintain adequate water quality.

UT 3.2: Encourage the extension of sewers to serve current development where there are limitations to on-site treatment due to soils, topography, or water resources.

UT 3.3: Require all new development to have sanitary sewer service.

UT 3.4: Design the size of new sanitary sewerage systems to the anticipated future requirements of the area's planned land use.

UT 3.5: Design new sanitary sewerage systems to allow for their extension into potential future service areas.

UT 3.6: Inspect on site wastewater treatment systems frequently, and establish proof of pump out systems in areas with a high risk of system failure.

UT 3.7: Preserve and enhance water quality by providing adequate sewerage systems adjacent to waterways.

UT 3.8: Prohibit the development of new pump stations.

UT 3.9: The latest version of the Brier Comprehensive Sewer Plan is the instrument that should be followed.

4. Storm Drainage

UT 4.1: Adopt the most current Washington DOE standards for stormwater runoff.

UT 4.2: Provide an adequate and cost effective method of preventing property damage from local storm water.

UT 4.3: Encourage non-structural as well as structural solutions to storm water control.

UT 4.4: New construction should be designed so that peak storm water discharge is no greater than the discharge was prior to any previous or supposed development.

UT 4.5: Design street systems to provide that storm water within the right-of way will be maintained within the street area.

5. Electrical and Telephone

UT 5.1: Require the undergrounding of all existing distribution points, service drops, and new electrical and communication systems.

UT 5.2: Require undergrounding to occur in existing easements or right-of-way, whenever feasible.

UT 5.3: Require the use of one trench in a corridor to accommodate all electrical and communication utilities.

UT 5.4: Encourage a minimum of disruption to areas affected by the installation of underground utilities.