

# VII. Utilities Element

## Introduction

### Purpose and Intent

The Utilities Element provides an inventory and general location of existing utilities, establishes the location of proposed utilities and examines the capacity of existing and proposed utilities (RCW 36.70A.070). The Utilities Element also sets out goals and policies for non-City utilities. Goals and policies must be consistent with the King County Countywide Planning Policies. Utility providers also must meet Department of Health and Department of Ecology regulations as required by the Washington Administrative Code (WAC).

The plan is required to include an analysis of capacity and the potential impacts of expected growth in the City and the urban growth area (UGA). All utilities are considered important because they are necessary to preserve the health, safety, and welfare of the community, as well as to ensure a desirable quality of life.

The city of Duvall is currently served by a combination of City-owned and non-City owned utilities. Private utility providers are discussed in this Element, while public utilities are discussed in the Capital Facilities Element. For non-City utilities, the City faces the challenge of facilitating system improvements and new technologies while minimizing impacts associated with aboveground utility installations.

Private utilities that serve Duvall include:

- Puget Sound Energy (electricity and gas services)
- Millennium Digital Media (cable TV and cable internet provider)
- Verizon Communications (telephone and DSL internet provider)
- Wireless Communications (cell phone service)
- Sno-King Waste Management (garbage and recycling collection)

## Utilities

### Electricity & Gas

Puget Sound Energy (PSE) supplies electric service to more than 982,000 customers throughout 9 counties in Western Washington and Kittitas County. The city of Duvall and the surrounding area in King County are included in PSE's electric service territory. The Duvall area is currently supplied with enough electricity to satisfy the demand for electrical power. The transmission and distribution of electricity to the city of Duvall and surrounding communities in the Snoqualmie Valley is delivered by Puget Sound Energy and regulated by the Washington Utilities and Transportation Commission (WUTC).

Puget Sound Energy is regulated by the WUTC to serve natural gas in the area that lies along the route of the Northwest Pipeline from Marysville and Lake Stevens in Snohomish County south through Olympia to Centralia in Lewis County. The entire Duvall planning area is contained within this service area.

#### Existing Conditions – PSE (Electricity)

The city of Duvall and surrounding area is presently provided electrical power service from the "Duvall Substation" located on NE 145<sup>th</sup> Street east of 275 Avenue NE. The transmission lines which feed the Duvall Substation are 115,000 volt (115kV) overhead transmission lines known as the Snoqualmie-Stillwater 115 kV and Stillwater-Cottage Brook 115 kV transmission lines. The Snoqualmie-Stillwater 115

kV line extends north from Snoqualmie Falls to south of Duvall at approx. NE 132<sup>nd</sup> Street and 277<sup>th</sup> Avenue NE. The Stillwater-Cottage Brook 115 kV line extends north from that location within a PSE right-of-way corridor through the city from the southern city limits at Big Rock Road adjacent to 275<sup>th</sup> Avenue NE to the Duvall Substation. The Stillwater-Cottage Brook 115 kV transmission line then continues west from the substation past the Duvall wastewater treatment plant and across the Snoqualmie River Valley to provide service to the Woodinville area. The remaining powerline corridor north of NE 145 Street is used for local electrical service lines only.

From the Duvall Substation, 3 distribution circuits or 12,500 volt lines extend in all directions to serve the immediate electrical customer load in the city of Duvall and surrounding area. The main feeder circuits are overhead conductors on wood poles as well as most of the lateral taps from the main feeder with some underground cables in newer developments.

The Bonneville Power Administration's (BPA) 230,000-volt (230 kV) overhead transmission line (the BPA Monroe-Sammamish 230 kV transmission line) extends from Lake Sammamish around Duvall to Monroe. This primary transmission line is part of the Northwest power grid that serves all of Puget Sound.

### Existing Conditions – PSE (Gas)

PSE's principal natural gas supply route, the Northwest Pipeline (operated by Williams), is located within an easement corridor that runs north to south across Norway Hill in Bothell and the Sammamish River corridor. The Duvall planning area is served from a 6-inch intermediate pressure supply line that extends east from the Northwest Pipeline along Woodinville-Duvall Road to the Snoqualmie River Trail then south to Stephens Street. A 4-inch intermediate pressure line supports a local service line south in the Main Street right-of-way to about NE 145<sup>th</sup> Street. Another 4-inch intermediate pressure line supplies local service lines east in the Stephens Street/150<sup>th</sup> Street right-of-way to Batten Road NE, then south to Big Rock Road. The local gas supply is controlled by 24 main valves that are located along the 4 to 6-inch intermediate pressure lines.

Figure UT –1: Electric and Gas Facilities, shows the locations of existing and proposed electric and gas facilities.

**Figure UT – 1: Electric and Gas Facilities**

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Future Conditions – PSE (Electricity)

According to PSE, no new transmission facilities are planned for the Duvall planning area. However, the “Horizon Plan” does include the rebuild of the existing 115 kV Stillwater-Cottage Brook line. This rebuild would include new poles, approximately 5 – 10 feet higher than existing poles, and a new larger wire. Additionally, an expansion of the substation at NE 145<sup>th</sup> Street and 275<sup>th</sup> Avenue NE is proposed, which will accommodate future load growth in Duvall and the surrounding area, and increase reliability. The expansion would include expanding beyond the existing fence to accommodate a second transformer and related equipment. Both of these projects are planned for more than five years in the future.

An additional 230,000-volt (230 kV) overhead transmission line is proposed to be installed in the future along the corridor from Novelty Hill around Duvall to Monroe. Another 500,000 volt (500 kV) overhead transmission line is proposed to be installed in the future along the corridor from Novelty Hill around Duvall to the intersection with an existing 500,000 volt (500 kV) overhead transmission line (the BPA Raver-BPA Monroe 500 kV transmission line) at about Harris Creek, then south to connect with the existing power grid lines located along Interstate 90. These improvements are proposed to increase transmission requirements for the Puget Sound regional power grid.

PSE expects to increase power supply by about 220 megawatts over the next 30 years to meet expected growth requirements identified within the surrounding North King County planning region. Additional transmission lines may also be required in utility corridors around the Duvall urban growth area to provide service within or across the region.

PSE considers conservation to be an integral part of the company's approach to supply management. The company hopes to meet 20 percent of future projected demand with conservation and 80 percent with new supply facilities.

Future Conditions – PSE (Gas)

PSE expects the existing system will be able to provide for the demand for natural gas supply within the Duvall planning area for the next 20 years. The company does not expect the demand will require additional pipeline corridors other than local supply and service lines. The general policy of PSE is to construct system reinforcements and loops to serve needed additional demands created by growth. The company will construct additional connections to the supply pipeline when the existing supply system has been effectively utilized to capacity.

**Cable Services (TV and Internet)**

Millennium Digital Media provides cable services and high-speed Internet services within the City and UGA.

Existing Conditions

As of March 2004, there were 1150 cable TV customers and 400 high-speed Internet customers in the city of Duvall. Digital cable services and high-speed Internet service began in 2001 when the company underwent a \$2 million upgrade to fiber optic technology. Millennium rents pole space and shares trenches with Puget Sound Energy and Verizon Communications to carry overhead and underground cables which supply service to homes and businesses within Duvall and the UGA. The City's franchise with Millennium expires in June 2006 and will be the subject of negotiations prior to that date.

Future Conditions

At the time of this writing, there were no major service changes planned. Millennium will provide new services upon construction of new development in the city and will continue to provide services to the Duvall area and upgrade systems as demand and technologies change.

## **Telephone & DSL Services**

Verizon Communications provides telephone service in the city of Duvall and surrounding area. This area is known as the Duvall Exchange and covers 63.5 square miles.

### Existing Conditions

Verizon's main Duvall Central Office is located at the intersection of West Snoqualmie Valley Road and NE Woodinville-Duvall Road. Verizon also has a remote switch in west Duvall, located at 20125 NE Woodinville-Duvall Road and the Highlands Residential Service Unit (RSU), located at 275<sup>th</sup> Avenue NE & NE 150<sup>th</sup> Street. There are ten ESA sites in this area. An ESA is an "Electronic Serving Area" that has digital loop carrier equipment at the site and is fed by copper T-1's (1.544Mbps) or a digital signal over fiber optic cable. Verizon is able to shorten the customer loop by deploying carrier equipment in the field thus improving the customers transmission and calling features.

The more recent upgrades to the Verizon network in the Duvall exchange are:

1. 2001: Replace the fiber optic cable on Main Street downtown.
2. 2002: Reinforce the fiber optic cable route between the Duvall Central office and the Host switch in Sammamish.
3. 2002: Place fiber optic cable to the Valley ESA, located at 26700 NE 124<sup>th</sup> Street.
4. 2003: Upgrade the fiber terminal at Odell ESA.
5. 2003: Place remote DSL equipment at Odell ESA.

Digital Subscriber Line (DSL) provides high-speed digital modem technology via a conventional telephone line. DSL uses signal frequencies above those used by voice or fax, so the DSL signal does not interfere with telephone conversations or faxes. When a DSL filter is connected to a phone jack, its function is to split the data (Internet) traffic from voice (phone) traffic, and route them separately. Voice traffic (talking on the phone and fax signals) goes to the phone or the fax machine, while data traffic (surfing the Web, downloading large files or photos) goes through the DSL modem and then to a computer, thus allowing the customer to use phone and DSL services at the same time.

Figure UT -2: Telecommunication Facilities, show the locations of telecommunication facilities in Duvall.

**Figure UT – 2: Telecommunication Facilities**

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Future Conditions

Verizon’s existing facilities are capable of accommodating the growth of the Duvall area in the future. The future for Verizon is in DSL and Fiber to the Premise. DSL service is available to approximately 9,000 customers that are served out of the three RSU offices. In 2003, Verizon placed remote DSL equipment at the Odell ESA site, offering this service to an additional 1,100 customers. Fiber to the Premise is a new service which targets large new developments, providing voice, video and data over fiber optic cable.

**Wireless Communications**

Wireless communication services, otherwise known as cell phones, are provided by various companies within the Duvall area.

Existing Conditions

Cell phones provide services that transmit voice and data using radio frequencies. In order to provide service, wireless companies use ground-based directional receivers, or antennas, that are typically mounted on utility poles, cell towers (monopoles) or buildings.

Future Conditions

As demand for cell phone service in Duvall increases, wireless companies will continue to expand services throughout the area. Capacity for service will be increased once more facilities are built in the area, preferably on existing facilities such as telephone and utility poles.

**Garbage & Recycling Collection**

Sno-King Waste Management operates garbage and recycling services for Duvall residents. The King County Department of Natural Resources, Solid Waste Division operates the disposal system for waste generated in Duvall.

Existing Conditions

Local waste, yard waste and recycling collection within the city limits and the UGA are provided by Sno-King Waste Management. Unincorporated areas of King County are served by private garbage collection companies, such as Waste Management, which receives oversight through the WUTC. When an area incorporates, it has the option to establish a franchise with a private hauler but is not required to do so. If a local jurisdiction enters into a franchise, the franchise regulations supersede state regulations and the private hauler is no longer regulated by the State. King County Department of Natural Resources, Solid Waste Division, operates King County’s transfer and disposal system comprised of a regional landfill, eight transfer stations, and two rural drop boxes for residential and non-residential self-haul customers and commercial haulers.

King County’s disposal system for solid waste is comprised of the Cedar Hills Regional landfill and ten closed landfills. The closest waste transfer station to Duvall is the Houghton Transfer Station located in Kirkland. The following tables show current estimates of waste generation per person per month, as well as total tonnage of refuse collected at the Cedar Hills and Houghton facilities.

**Table UT –1:  
Estimated Single Family (1-4 Units) Curbside Collection**

| Pounds Per Household/Month |         |           |            |
|----------------------------|---------|-----------|------------|
| Area                       | Garbage | Recycling | Yard Waste |
| Unincorporated             | 135     | 65        | 115        |
| Incorporated               | 130     | 54        | 110        |
| Average                    | 133     | 60        | 113        |

Source: 2003 King County Solid Waste Division Annual Report

**Table UT –2:  
Refuse Tonnage Disposed**

| <b>Facility</b>           | <b>Total Tonnage Disposed</b> |
|---------------------------|-------------------------------|
| Houghton Transfer Station | 160,931                       |
| Cedar Hills Landfill      | 939,488                       |

*Source: 2003 King County Solid Waste Division Annual Report*

Sno-King Waste Management began an all-in-one curbside cart recycling program in Duvall in March 2004. Users pay no additional fee for this weekly service. All recyclable material is transported to Waste Management’s new Cascade Recycling Center located in Woodinville, where it is sorted and then shipped to domestic and Asian markets. Curbside yard waste recycling is also available for pick-up on a weekly basis March-November, and bi-weekly December – February. This service is available to Duvall customers for an additional fee.

**Future Conditions**

Cedar Hills is expected to reach its capacity and will close by 2013, after which time waste will be exported outside King County. The County has begun to plan for this closure and is currently proposing to own and operate an intermodal facility to export and dispose of waste after Cedar Hills closes. Recent improvements to transfer stations, including Houghton, will ensure these sites will be able to accommodate future demand and provide reliable customer service. The County will also continue its Waste Reduction and Recycling programs which educate the public to conserve resources, protect the environment and reduce the costs of solid waste management for King County residents. Detailed information on these programs is available from the King County Solid Waste Division.

## Utilities Goals and Policies

**Goal UT – 1**                    **Ensure availability of utilities at the appropriate level of service to support the City’s current and planned development.**

***Policies***

UT – 1.1                    To facilitate the coordination of private services, the City should discuss and provide population forecasts and development plans with companies providing these services in order to meet the needs of Duvall's present and future service area.

UT – 1.2                    Encourage a coordinated approach to the development, installation, repair and replacement of utility lines and facilities and ensure that work is appropriately phased in conjunction with construction and roadway projects.

UT – 1.3                    Advocate the development and maintenance of telecommunications facilities, including telephone, wireless communication and cable services necessary to accommodate population growth and advancements in technology.

**Goal UT – 2**                    **Minimize impacts on adjacent properties and the natural environment associated with the siting, development and operation of utility services and facilities.**

***Policies***

UT – 2.1                    Ensure utility services are sited, designed, and buffered to fit in with their surroundings. When sited within or adjacent to residential areas, special attention should be given to improving aesthetics and to mitigate land use impacts of utilities.

UT – 2.2                    The City shall encourage implementation of resource conservation practices and best management practices according to the appropriate state and federal agencies during the construction, operation, and maintenance of utility structures and improvements.

UT – 2.3                    Require existing power distribution lines to be undergrounded at the time of new development when feasible.

UT – 2.4                    Encourage co-location of facilities, such as towers, poles, antennas, substation sites, trenches and easements and rights-of-way where reasonably feasible and in accordance with prudent utility practices.

UT – 2.5                    Encourage utility providers to allow public access of utility corridors for multiple use opportunities, such as recreational trails, open spaces or other passive land uses that benefit local residents.

**Goal UT – 3**                    **Provide safe, reliable and efficient electrical power and gas services for residents and businesses of Duvall.**

***Policies***

UT – 3.1                    Allow electrical distribution facilities as a permitted use where appropriate.

UT – 3.2                    Ensure that opportunities exist for for siting electrical facilities within the city.

- UT – 3.3 Ensure that all existing and proposed electric and gas lines for Duvall meet County, State and Federal safety standards.
- UT – 3.4 Where practical, locate natural gas supply lines within common or adjacent utility corridors using street or alley rights-of-way.
- UT – 3.5 Require installation of existing and proposed power distribution lines underground at the time of new construction to reduce possible storm damage and increase aesthetic character and views.

**Goal UT – 4                    Promote widespread availability and encourage development of increased technology of cable services for residents and businesses of Duvall.**

***Policies***

- UT – 4.1 Encourage cable service providers to offer products and services that meet the needs and interests of the community.
- UT – 4.2 As cable services are upgraded, encourage cable service providers to expand the service to reach all segments of the community.
- UT – 4.3 Encourage the provision of basic cable services to all residents, regardless of income or economic status.
- UT – 4.4 Require cable service providers to provide fiber optic connections to link public facilities.

**Goal UT – 5                    Promote widespread availability and encourage development of increased technology of telephone and DSL services for residents and businesses of Duvall.**

***Policies***

- UT – 5.1 As telecommunication technology changes, ensure that companies have provisions to upgrade capacity of facilities to allow residents to take advantage of innovative technologies.
- UT – 5.2 Minimize the visual impacts of telecommunication facilities, such as telephone poles, antennas, substations and telephone lines, near residential areas of Duvall
- UT – 5.3 Ensure telecommunication services are provided to all residents, regardless of income or economic status.
- UT – 5.4 Encourage residential and commercial developers to work with telecommunication companies to design high-speed Internet-ready homes and businesses in the city.

**Goal UT – 6                    Ensure placement of wireless communication facilities that minimizes impacts to adjacent land uses and provides the least impact on the aesthetic character of Duvall.**

***Policies***

- UT – 6.1 Require the placement of wireless communication facilities in a manner that minimizes the adverse impacts on adjacent land uses. Consider undergrounding of related equipment facilities.

- UT – 6.2      Require wireless communication facilities to attach to existing facilities, such as public facilities, buildings, utility poles, light standards and signals, prior to considering new sites.
- UT – 6.3      Consider allowing the replacement of some existing utility poles with poles of greater heights for use as wireless facility platforms.
- UT – 6.4      Allow wireless communication companies to install new freestanding towers, including monopoles, only when no other feasible alternative exists and when the visual intrusion is less than co-location on another facility or structure. Ensure such facilities are removed when they become obsolete.
- UT – 6.5      Require freestanding towers to fit in with surrounding land uses through methods such as stealth towers, landscaping, and other camouflage techniques.
- UT – 6.6      Encourage upgrades of wireless communication facilities as technology becomes available to minimize visual impacts of the environment.
- UT – 6.7      Promote a streamlined permit process to wireless communication companies that choose to install facilities which share existing poles and facilities and are less visually obtrusive than constructing new monopoles or facilities.

**Goal UT – 7                      Coordinate with Sno-King Waste Management to provide efficient and reliable solid waste and recycling services for all residents and businesses.**

***Policies***

- UT – 7.1      Encourage Duvall residents to appropriately dispose of solid waste to protect the quality of air, water and public health.
- UT – 7.2      Encourage Duvall residents to recycle and reduce the amount of solid waste transported to the landfill.
- UT – 7.3      Continue to participate in regional planning for future solid waste disposal options
- UT – 7.4      Continue to seek grant funding for recycling programs and events and implement events to increase and encourage recycling as funds are available.

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