Chapter 6

Utilities

Introduction

The Utilities element examines the extent to which utility services provided by both public and private purveyors will support planned growth in the community. This element also studies whether needed growth in utility infrastructure will accommodate anticipated growth and development during the next twenty years.

Utility systems help to define the boundaries between urban and rural environments. Indeed, the GMA requires that the urban utility infrastructure shall not be extended beyond the UGA. This sharply defined limitation requires that communities plan carefully to ensure that the urbanizing influence of utility infrastructures is used to promote the development of a compact development pattern, rather than promoting the sprawl that often accompanies the unplanned and uncoordinated extension of utilities such as public water and sanitary sewer lines.

Utilities are services that ensure the health, safety and convenience of community residents. The provision of clean, safe water for drinking or for fire protection, the construction of stormwater drainage facilities to minimize flooding potential, and the conveyance and treatment of sanitary sewer wastes to avoid pollution of groundwater sources are all examples of the benefits of public utilities. Figures U-1, U-2 and U-3 located at the end of this chapter demonstrate the significance of the known placement of Utilities for emergency management in the Lewis County 2009 Multi-jurisdictional Hazard Mitigation Plan.

This element has been developed to be consistent with the other elements of the comprehensive plan. It relies upon the Land Use and Housing elements for information on likely areas for future utility extensions. It also helps the Capital Facilities element to prioritize spending for projects that will update existing systems and expand utility capacities. Also, because utility lines often run through public ways, coordination with the Transportation element is important to ensure that plans for expansion, improvement, or upgrades are implemented in a cost-effective manner.

RELATIONSHIP TO OTHER PLANS

GMA LAND USE PLANNING GOALS (RCW 36.70A.020)

The Washington State Growth Management Act (GMA) includes 14 goals, which were adopted to guide the development and adoption of comprehensive plans and development regulations. While all of these goals are important, the goals that are most directly related to the public facilities, services, utilities element state:

> *Public Facilities and Services. "To ensure that adequate public facilities and services necessary to support development shall be adequate to serve the development at the time the development is available for occupancy and use without decreasing current service levels below locally established minimum standards."*
>
> *Public Facilities. To include streets, roads, highways, sidewalks, street and road lighting systems, traffic signals, domestic water systems, storm and sanitary sewer systems, parks and recreational facilities, and schools.*

COUNTYWIDE PLANNING POLICIES

In 1991, GMA was amended requiring each county legislative body planning under the act to adopt countywide planning policies in cooperation with the cities in the county. This framework provides for consistency amongst the different governmental agencies' plans. The plans must address issues that uniformly affect the county as a whole including the siting of public facilities, transportation facilities, housing, economic development, and land use development.

The Lewis County Planned Growth Committee adopted updated planning policies in December 2006. The requirements of the countywide planning policies were considered along with other factors to determine the direction of the Utility Element for the City of Chehalis.

The following lists other plans and documents that relate to the development and implementation of the updated 2006 Comprehensive Plan. For more in-depth information on these subjects refer to the listed documents.

- **Lewis County Comprehensive Plan.** The Lewis County Comprehensive Plan was adopted in April, 2002.
- **Transit Development Plan.** The Transit Development Plan 2007-2012 was approved March 2007.
- **Airport Master Plan/Chehalis-Centralia.** The Airport Master Plan was approved Fall 2001.

City Managed Utilities

Water Division

Mission Statement

The Water Division is responsible for the procurement, treatment, and distribution of potable water, meeting all state standards for the city of Chehalis and associated service areas. It also undertakes the planning, operation, and maintenance of all city water facilities.

Services Provided

WATER TREATMENT - The water treatment program includes operation of the intakes, delivery to the treatment plant, and production of water to state and federal health and safe drinking water standards. The treatment process utilizes filtration, disinfection and fluoridation. Water quality monitoring and analysis for regulator compliance are conducted.

WATER SYSTEM OPERATIONS & MAINTENANCE - The water division operates and maintains the city's distribution system and treatment plant. Activities include planning, design, construction, management, cross-connection control, and customer services.

FIRE SERVICE FACILITIES - The water division provides fire hydrants and performs installation, maintenance, improvements, and hydraulic/fire flow planning in cooperation with the city Fire Services Division and for Lewis County Fire District 6.

EQUIPMENT/ELECTRICAL MAINTENANCE - This program provides for the maintenance of all water system machinery, equipment and facilities, and all associated electrical, electronic and control circuitry.

ADMINISTRATION & PLANNNING - This function involves the management and supervision of all the various operations and programs of the division. It also includes and undertakes rate studies, capacity analysis and related functions.

Stormwater Division

Mission Statement

It is the responsibility of the storm & surface water utility to provide for the planning, design, construction, operation and maintenance of the storm drainage system, and to monitor, control and regulate discharges and land disturbing activities that could affect the system or nearby receiving waters.

Services Provided

STORM DRAINAGE MAINTENANCE - Operation and maintenance of the storm drainage system includes cleaning, televising, repairing, and replacing storm drainage collection lines and related facilities, as well as clearing and cleaning roadside ditches and other drainage channels.

STORMWATER MANAGEMENT - Through a permitting process and regulations established by ordinance, land disturbing activities 9such as filling, grading, and clearing) are evaluated and monitored within the division.

ADMINISTRATION & PLANNING - This function involves the management and supervision of all the various operations and programs of the utility it also includes planning and reporting efforts, such as capital improvement planning and regulatory compliance.

Wastewater Division

Mission Statement

The Wastewater Division is responsible for the collection and treatment of wastewater from Chehalis, Napavine, Lewis County Sewer District #4 and associated service areas. Wastewater is treated to state and federal standards and discharged to the Chehalis River. The wastewater division also handles the planning, operation, and maintenance of all city wastewater facilities.

Services Provided

WASTEWATER TREATMENT - The division provides wastewater treatment through primary and advanced secondary processes to meet all applicable standards. Residual solids are treated to state and federal requirements before being recycled via land application. The division performs laboratory analysis, constituent monitoring, process control, biosolids, recycling, poplar plantation maintenance, and facility operation and maintenance.

WATER SYSTEMS OPERATION & MAINTENANCE - The wastewater division operates and maintains the sanitary sewage collection system. Activities include collection system management, waste reduction, inflow and infiltration reduction, industrial pretreatment management, planning, design and construction.

EQUIPMENT/ELECTRICAL MAINTENANCE - This work includes maintenance of all wastewater system machinery, equipment and facilities, and all associated electrical, electronic and control circuitry.

ADMINISTRATION & PLANNING - This function involves the management and supervision of the various operations and programs of the division. It also includes planning and reporting efforts, regulatory compliance, capital improvement planning, utility rate studies, capacity analysis, and related functions.

Overview

The Chehalis Regional Water Reclamation Facility was constructed in 2007 to replace the city's sewage treatment plant built in 1948. The CRWRF was designed t meet stringent Department of Ecology permit requirements and projected wastewater treatment needs for the next twenty years. The CRWRF processes wastewater for the City of Chehalis, the City of Napavine, and Lewis County Water and Sewer District #4. The facility treats an average of 1.3 million gallons per day (MGD) and peak flows in excess of 10 MGD during the wet weather. In addition, the CRWRF is capable of producing 3.5 MGD reclaimed water for irrigation of the city's 250-acre poplar tree plantation when flows in the Chehalis River drop below 1,000 cubic feet per second (CFS). The CRWRF has a staff of seven and maintains a state certified lab to perform numerous daily analyses for process control and regulatory monitoring.

Natural gas, cable television, telephone, cellular telephone and high-speed internet are non-city managed private utilities. Although cities and counties do not regulate these utilities, the State Growth Management Act (Growth Management Act of 1990) requires all cities and counties to consider the location of existing and proposed utilities and potential utility corridors in land use planning. With adoption of GMA, current law now suggests that both the Washington Utilities and Transportation Commission (WUTC) and Chehalis have principal jurisdiction over actions of electric, gas and telephone utilities within the corporate limits of Chehalis.

LIQUID TREATMENT SYSTEM - Initial treatment begins at the headworks with two parallel 1/4-inch screens that remove rags and debris. The wastewater then goes through two grit removal units. After the grit is washed, the grit, rags and debris are disposed of at the landfill.

Wastewater is then directed to one of three Sequencing Batch Reactor (SBR) tanks by automated jplug valves. Each SBR has a capacity of 1.55 million gallons (MG). During the summer month only two basins are used, the third is brought online for wet-weather operation. Four 200 HP blowers supply air to the SBRs and mixing is done with three motive pumps located outside the SBRs. Each SBR has two floating decanters to direct treated effluent to one of two equalization (EQ) storage basins. One EG has a capacity of 0.9 MG and the other 2.9 MG.

During wet weather, wastewater flows by gravity from the EQ basins to the Ultraviolet (UV) disinfection system and then is discharged by gravity to the Chehalis River. Three pumps with a capacity of 4,500 gallons per minute are used to pump effluent to the river during flood conditions.

During dry weather, treated wastewater is piped from the EQ basins to the chemical feed building where alum is injected prior to a sand filtration process. After sand filtration the effluent or reclaimed water is UV disinfected and then discharged to the effluent pump station. Four 833 gpm pumps are used to pump reclaimed water to the poplar tree plantation. Chlorine is injected inline so the reclaimed water has a chlorine residual of at least 0.5 mg/l.

The poplar tree plantation, located off Hwy. 6, is divided into 11 management units and planted with nine different hybrid varieties. One or two units are irrigated at a time. Most of the water evaporated and any excess infiltrates into the ground. The trees grow eight to ten feet per year and are harvested every ten to fifteen years to make paper. plywood, furniture, etc.

NON-CITY MANAGED UTILITIES

The WUTC has the authority under long-standing state law to regulate the services a private utility can provide, to define the costs that a utility can recover and to ensure that the utility acts prudently and responsibly. The City of Chehalis has the authority to regulate land use and, under GMA, to plan for adequate provision of utilities consistent with the goals and objectives of its Comprehensive Plan, taking into consideration the public service obligation of the private utility involved.

SOLIDS TREATMENT SYSTEM - At the end of each SBR treatment cycle s small portion of waste sludge is pumped to a 350,000 gallon holding tank. The sludge is dewatered by a belt filter process to approximately 15% solids. The solids then go to a lime pasteurization system and heated to 158 degrees F and the pH raised to 12, producing a class A biosolid. The biosolids are sold to local farmers for use on their various crop fields.

Natural Gas

Natural gas service within the City of Chehalis provided by the Puget Sound Energy (PSE). The Pacific Northwest (Washington, Oregon, and Idaho) receives its natural gas from a wide range of sources in North America. Sixty percent (60%) of the region's natural gas supply comes from British Columbia and Alberta, Canada to the north; 40% comes from domestic sources including the San Juan Basin in New Mexico/Texas in the south.

PSE is an investor-owned natural gas utility that supplies natural gas to more than 100 cities and towns in six western Washington counties: Lewis, Thurston, Pierce, King, Kittitas, and Snohomish. It is not an essential service, and, therefore natural gas service is not required. Extension of service is based upon request and the results of a market analysis to determine if revenues from an extension will offset the cost of construction.

Franchise agreements are common with utility companies and cities. The City has entered into a number of franchise agreements to provide services like solid waste, natural gas, telephone, and cable TV.

The following are some common concerns for all utilities:

1. Adequacy of Service: Chehalis wants to ensure that private utilities provide adequate service for projected growth within the City and the UGA. It is the City's intention to facilitate the provision of private utility services by continuing to work cooperatively.

2. Environmentally Critical Areas: Both the City and private utility providers support the protection of environmentally critical areas while providing facilities necessary for high quality service. Activities that interfere with the functions and values of environmentally critical lands are strongly discouraged. Nonetheless, the need for access, repair, and maintenance to existing utility facilities located in or adjacent to critical areas is recognized. New facilities will be located outside critical areas whenever possible.

3. Community Character: Care in the design of utility facilities (Including telecommunication towers and antennas) particularly in siting, site treatment, visual screening, and noise attenuation is particularly important to preserve the visual character of neighborhoods.

4. Joint Utilization of Public Rights-of-Way and utility Corridors: Public rights-of way (roads) serve two purposes: movement of traffic and as a location for utility infrastructure. Coordinating road improvements and road maintenance with improvements to cable TV, electrical power, telecommunication, and telephone systems may have a substantial benefit on economic development.

Telecommunications

Telecommunications is not only important for the transmission of voice, but also provides the infrastructure for the transmission of electronic data such as faxes and electronic mail. This section focuses three types of telecommunication services: landline telephone, cellular telephone, and cable TV/internet.

1. Landline Telephone. The City of Chehalis is served by Qwest Communications for telephone (line or wire) service. Qwest Communications delivers telecommunication service to the Chehalis planning area as regulated by the Washington Utilities and Transportation Commission (WUTC).

2. Voice over Internet Protocol (VoIP). VoIP provides phone service using high-speed internet connections. This is a technology that is becoming increasingly popular and at this time both Qwest Communications and myphonecompany.com provide this service in Chehalis.

3. Cellular. Cellular service is very important in the telecommunications world. It combines 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 area. When service is available transmission quality is comparable to that provided by conventional landline telephones. The City of Chehalis is served by a number of national wireless companies these include: Sprint, Nextel, Cingular (AT&T), U.S. Cellular, and T-mobile.

A cellular system consists of cells and cell sites, a switching station (mobile telephone switching office or MTSO), carrier and cellular phones. Because cellular phones operate in high frequencies (in the 800 to 900 megahertz [MHZ] range), transmission of the signal is greatly weakened and deflected by obstacles in its path. As a result, cellular transmitting and receiving antennae are always located on towers or poles or atop buildings where they have clear line of sight signal paths to mobile or portable phone users.

Capacity is a function of frequency of use, the number of cell sites in a geographic area, and the number of subscribers or customers. Companies consider the number of calls handled, number of customers, and cell site capacity to be proprietary information.

1. Cable TV. Three companies provide Cable TV service in the City of Chehalis: Comcast Cablevision (land-lines), DirectTV, and Dish Network. DirectTV and Dish Network are both by satellite dishes.
2. High Speed Internet. High-speed internet connections are very important to economic development and for residential uses. High speed internet is provided by a number of companies including: Qwest, Comcast, HughesNet, and Earthlink. The City is also in the process of looking into high speed internet over the City's electric lines. This would provide every home in the City with the opportunity of high speed internet.

V. UTILITY GOALS AND POLICIES

Goal U 1 To manage all utility growth through out the city and urban growth areas.

Policies

U 1.1 Consider impacts on future City development and land use patterns due to the timing and location of new facilities and existing facilities improvements.

U 1.2 Facilitate the development and maintenance of all utilities at the appropriate levels of service to accommodate the City of Chehalis projected growth.

U 1.3 Encourage the joint use of public facilities.

U 1.4 Recover costs related to the extension of services, as well as the costs of maintaining and operating these systems.

U 1.5 Encourage extension of utilities to mitigate existing or potential environmental problems.

U 1.6 Require all utility design and construction to comply with the City's accepted Public Works Standards and/or adopted Development Guidelines

U 1.7 Operate, maintain, repair, replace and improve the water, wastewater, stormwater and other utility systems' infrastructure and facilities, in a manner that provides

protection to public health and the environment; protects the infrastructure, facilities and system; corrects deficiencies; increases system efficiencies; and is in compliance with federal, state and local regulations.

U 1.8 Review, at regular intervals, the city's utility plans and utility finances to ensure utility revenue and funding sources are sufficient to provide for the utility systems' operation, maintenance, repair, replacement and improvements.

Goal U2 To use public right-of-ways within the City and the adopted Urban Growth Areas for utilities wherever possible (i.e., water, sewer, communications, electric, stormwater, natural gas, etc).

Policies

U 2.1 Maintain public rights-of-way for existing and/or planned utilities.

U 2.2 Require effective and timely coordination of all public and private utility trenching activities.

U 2.3 Encourage utility providers that work in public rights-of-way to coordinate and install facilities in the common utility trenches.

Water

Goal U 3 To assure that culinary water facilities are developed, maintained, and operated in a resourceful manner

Policies

U 3.1 Provide a water service for domestic use, fire flow protection, and emergencies.

U 3.2 Provide a water supply that meets all federal drinking water quality standards.

U 3.3 Size water system improvements to accommodate for at least a 25-year life cycle as per the uses shown in the comprehensive land use plan.

U 3.4 Protect the underground aquifer by following city, state, and federal requirements for wellhead protection

U 3.5 Implement and maintain a water conservation program that encourages and promotes customer conservation and discourages (or penalizes) water waste.

U 3.6 Require all developers and/or benefiting property owners to be responsible for funding the planning, installation, and possible upgrade of water system

U 3.7 Develop specific policies and regulations to safeguard the City's water resources, including wellhead protection, limiting impervious surfaces and regulating hazardous uses in the critical aquifer recharge areas.

Sewer

Goal U 4 To encourage homeowners to connect to the City's sewer system.

Policies

U 4.1 Allow existing single-family homes with septic systems to continue to utilize septic systems, providing there are no health or environmental problems and there is no city sewer line in the vicinity.

U 4.2 Require all developers and/or benefiting property owners to be responsible for funding the planning, installation, and possible upgrade of sewer system.

Water & Sewer

Goal U 5 To plan and develop water and sewer systems to complement the land use plan.

Policies

U 5.1 Size sewer system improvements to accommodate for at least a 25-year life cycle as per the uses shown in the comprehensive land use plan.

U 5.1 Size sewer system improvements to accommodate for at least a 25-year life cycle as per the uses shown in the comprehensive land use plan.

Stormwater

Goal U 6 To provide storm water management to protect, preserve and enhance, where possible, the water quality of streams, lakes, and wetlands and protect life and property from hazardous conditions.

Policies

U 6.1 Require developments to meet the Phase II stormwater permits to limit erosion,

siltation, and protect environmental sensitive areas.

U 6.2 Control quantity and velocity of surface water runoff during and after development to pre-development levels.

U 6.3 Require mitigating measures for development activities that impact drainage and flood control facilities.

U 6.4 Provide an educational program that will inform the public of the importance of controlling storm water quantity and reducing stormwater pollution as a means to preserve and enhance the water quality of streams, lakes, and wetlands and protect life and property.

U 6.5 Continue to implement and when needed update the storm water plan.

U 6.6 Coordinate when necessary with adjacent jurisdictions on drainage basins to protect groundwater sources and provide stormwater facilities.

U 6.7 Require developers to construct storm drainage improvements directly serving the development, including any necessary off-site improvements.

U 6.8 Require that storm drainage improvements needed to serve new development are built prior to or simultaneous with such development.

U 6.9 Ensure that stormwater facilities required of new development are designed and built for low-cost, long-term maintenance.

U 6.10 Require developers to consider aesthetics as well as functional requirements in designing surface water facilities.

U 6.11 Encourage developers to include multiple-use surface water facilities in their developments. Consider recreational, habitat, educational, cultural, open space, and aesthetic opportunities.

U 6.12 Meet all federal and state guidelines that demonstrate compliance with U.S. EPA National Pollution Discharge Elimination System (NDES)(Section 402) Phase II permits requirements and utilize the State Department of Ecology's Stormwater Manual for Western Washington.

U 6.13 Coordinate with other local, regional, and State and Federal agencies to evaluate successful stormwater management techniques.

U 6.14 Require all utility design and construction to comply with stormwater control standards acceptable to the City.

U 6.15 Require all developers and/or benefiting property owners to be responsible for funding the planning, installation, and possible upgrade of stormwater system.

Flood Control

Goal U 7 To minimize the damage to life and property from flood disaster.

Policies

U 7.1 Support the establishment of flood control projects when beneficial to the City residents through the use of creative projects that may include levees and storm drainage facilities.

Electrical Utility

Goal U 8 To provide electrical utility service to city residents, the Centralia UGA, and adjacent areas.

Policies

U 8.1 Assure that transmission of electrical power is done safely, and with disruption of service.

U 8.2 Encourage conservation of electricity.

U 8.3 Where appropriate, all electrical distribution lines are placed underground.

U 8.4 Coordinate closely, the under grounding of electrical distribution lines with other possible underground work to minimize disruption of street surfaces.

U 8.5 Require all developers and/or benefiting property owners to be responsible for funding the planning, installation, and possible upgrade of electrical system.

Solid Waste

Goal U 9 To provide a solid waste collection service.

Policies

U 9.1 Manage the franchise agreement for waste collection service.

U 9.2 Require that solid waste be deposited at approved disposal sites.

U 9.3 Consider the long-term cost-effectiveness of alternative disposal techniques and

recycling.

Hazardous Waste

Goal U 10 To minimize the risk of dangers of hazardous wastes, including hazardous household waste substances.

Policies

U 10.1 Cooperate with other private and public agencies in the region to manage and control hazardous wastes and moderate risk wastes, including hazardous household substances

Non-City Managed Utilities

Goal U 11 To work with providers of telephone, cellular phone, and cable television service and the regulatory agencies to assure appropriate levels of service.

Policies

U 11.1 Promote the development of a telecommunications and data transfer systems for all users (commercial, industrial, residential, etc.).

U 11.2 Assure that all users are obtaining an appropriate level of service at reasonable rates.

U 11.3 Assure that the transmission of electronic communication signals is done with a minimum of adverse aesthetic impacts to the community.

U 11.4 Limit the amount of disturbance to city infrastructure by encouraging co location to telecommunications conduit in the public right-of-way.

U 11.5 Underground all telecommunication and power lines whenever possible.

U 11.6 Require all utility equipment support facilities to be aesthetically compatible with the area in which they are placed by using landscaping screening and/or architecturally compatible details and integration.

U 11.7 Encourage the placement of personal wireless communication facilities in a manner that minimizes the adverse impacts on adjacent land uses.

U 11.8 Recognize that personal wireless communication facilities will be deployed in all areas of the city to provide coverage and capacity consistent with the changing use of wireless technology. Minimize the impacts, particularly the visual impacts of, personal wireless communication towers by using creative design and co-locations

Figure U-1 Water Utility

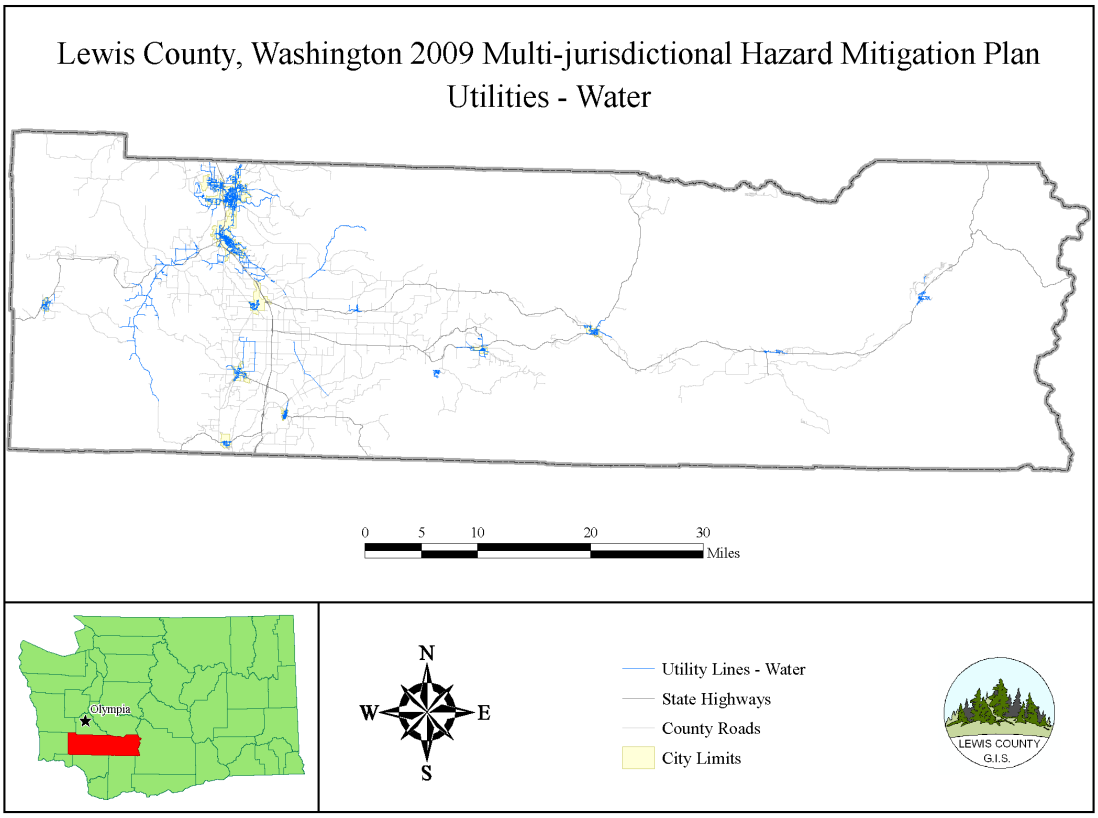

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Figure U-2 Sewer Utility

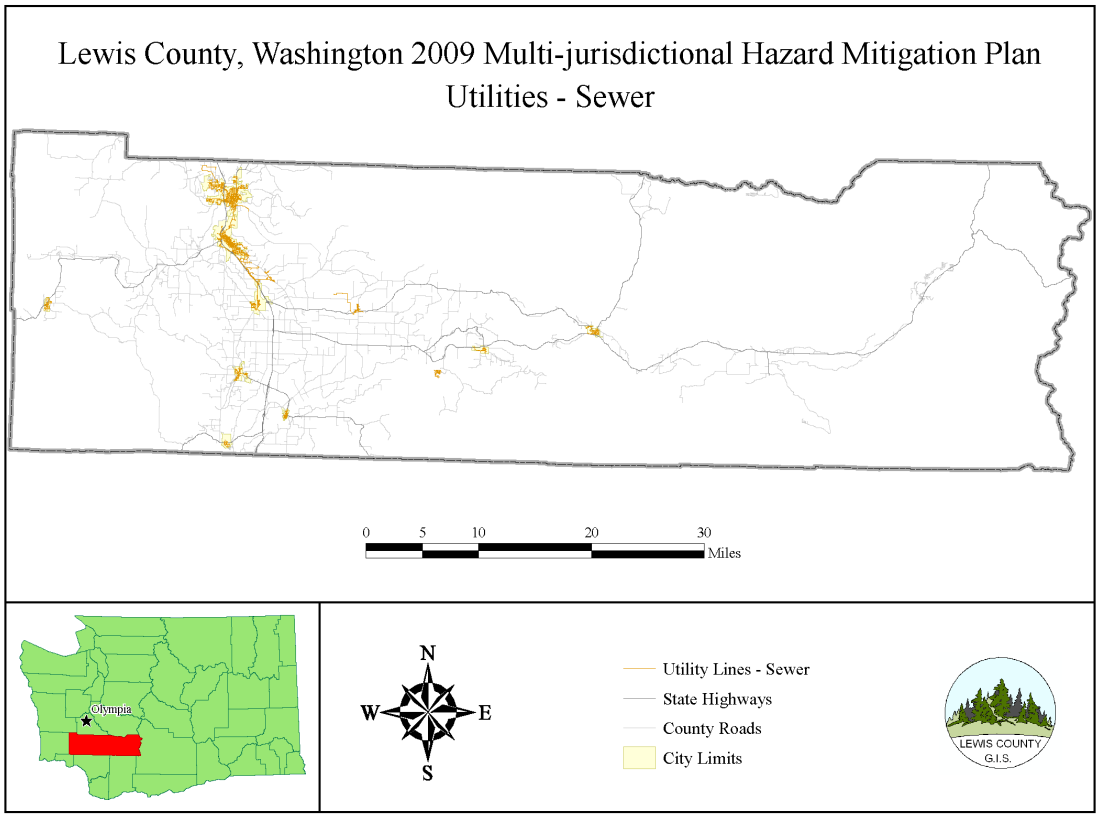

Figure U-3 Gas Utility