

## APPENDIX 11: UTILITIES

### A-11.1 Existing Conditions

Utilities discussed in this appendix include water, sewer, solid waste, electricity, natural gas, and telecommunications. Existing conditions for each are described below. Utility districts' service area maps are available for viewing at the Community Development Department.

#### A-11.1.1 Water

##### Woodinville Water District

The Woodinville Water District serves the City of Woodinville. The source for the background information in this section is the Woodinville Water District Comprehensive Water Plan, prepared by HDR Engineering, Inc. in October 2000.

The Woodinville Water District was established by special election in 1959. The District boundaries encompass approximately 18,660 acres (29.2 square miles), located in northeast King County. The District population is 43,800 with approximately 12,575 connections (1999 estimate). Average annual water use in 1998 was approximately 4.4 million gallons per day (mgd).

The District purchases its water from the Seattle Water Department and is supplied from the Tolt River Pipeline and the Tolt Eastside Supply Line. The District operates and maintains 8 storage facilities, 5 pumping stations (three active and two standby), 44 pressure-reducing stations, and 253 miles of transmission and distribution piping.

The data and analysis in the Comprehensive Water Plan was broken down into 24 service zones. The City of Woodinville is partially included in service zones 3,4,5,7,9,19, 21, 2E and 2N.

King County Code Chapter 17.08 establishes minimum fire flow requirements. The County adopts fire flow rules and regulations based upon the Guide for Determination of Required Fireflow, 1974, published by the Insurance Service Office.

##### Cross Valley Water District

The Cross Valley Water District serves the Grace area southeast and north of State Route 522, see Figure A11-1. The source for the background information in this section is the Cross Valley Water District Comprehensive Water System Plan, S T Engineering Inc., P.S., September 1999. The original Cross Valley Water Association was a private non-profit corporation providing water service to an area in south Snohomish County. The initial system was completed in 1966 with a membership of 328.. In 1998 there were 4,834 customers and 4,430 connections in the South Service Area. The Cross Valley Water District formation issue was voted on and passed in the primary election of September 1989. The District boundaries encompass approximately 50 square miles in Snohomish County and include part of the Grace Neighborhood. More than eight square miles are located in the flood plain of the Snohomish River. The service area is divided into the north, or Fobes Hill area, covering about 5 square miles, and the South Service Area, covering about 45 square miles (excluding the flood plain).

The proximity of the south service area to the metropolitan Seattle-Bellevue-Everett region has tended to encourage urban-scale activities to locate in the southern part of Snohomish County near the King/Snohomish county line. Industrial and warehousing activities, requiring good road and rail access, in addition to large areas of low cost land, have spread northeast along the State Route 522 corridor from the Woodinville/Bothell area to Maltby.

The majority of the population within the District resides in the area south of the Snohomish River Valley along the State Route 9 corridor. Population projections from the Cross Valley Water District Comprehensive Plan are shown in Table 3-2 of the Plan. According to the Plan, the population projection for the Cross Valley Water District Planning Area in 2007 is 30,699. Most anticipated growth will occur in the south service area, although changing Snohomish County planning policies should encourage a more homogeneous distribution of population than presently exists (1989).

The entire supply for the south service area is from the Cross Valley Sole Source Aquifer. The present water system (1999) has approximately 150.9 miles of existing distribution and transmission piping, 10 operating wells, 2 non-operating well sites, 500,000 gallon Echo Lake standpipe, 125,000 gallon Lee Forest standpipe, 1,000,000 gallon Vine Street Reservoir, Vine Street Booster Station, and Vine Street Office and Shop facilities.

The level of public services and utilities available in the service area is consistent with its predominantly rural character. The District provides water to meet the following quality standards required by the State Department of Social and Health Services and rules and regulations relating to public water supply:

Water Supply (State Department of Social and Health Services)	800 gallons/connection/day which is equivalent to 276 gallons/capita/day in the Cross Valley Water District
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**Water Demand:**

Average Annual Demand	100 gallons per day per capita
Maximum Daily Demand	200 gallons per day per capita
Maximum Hourly Demand	350 gallons per hour per capita

According to the Comprehensive Water System Plan, the current operation of some wells 24 hours per day indicate a serious weakness in supply and backup capability. Low pressures are experienced in parts of the District during peak use days along with some odor and taste complaints. Fire protection services in the service area are provided by Districts 3 (Fobes Hill, Snohomish River Valley), and 4 and 7 (South Service Area). In the past, these districts have encountered occasional low water pressure problems in providing adequate fire protection services, particularly in the Maltby commercial and industrial areas. Other water source problems that have arisen include undersized lines and system looping (which restrict fire flows) and hydrant spacing.

**A-11.1.2 Sewer**

Sewer service is provided to the City of Woodinville at two levels. Metro, as the regional sewage authority, provides sewage treatment and disposal as well as interception/transmission of collected wastewater. The Woodinville Water District and Northshore Utility District provide for sanitary sewer collection for part of the City of Woodinville and connection to the Metro system. The Cross Valley Water District provides for sanitary sewer collection for the Woodinville Urban Growth Area in Snohomish County and connection to the Metro system (see Figure A11-1). In the future, the Alderwood Water District, in a joint project with the Cross Valley Water District, will provide sanitary sewer collection within the Woodinville Urban Growth Area.

### Metro

As of March 1993, Metro was serving approximately 651,032 residential customer equivalents. At the same time, Metro was operating 3 treatment plants, 39 pumping stations, 17 regulator stations, 3 outfall control stations, and 2 siphon level monitoring stations. Metro also maintained and controlled over 212 miles of large diameter pipelines, 31 miles of forcemains, and 7 miles of siphons.

### Woodinville Water District

The source for the sewer utility background information for this section is the Woodinville Water District 1993 Comprehensive Sewer Plan, CH2M HILL, April 1993 (An update of the Plan is budgeted in the 2002 Budget).

At the time the Comprehensive Sewer Plan was prepared, the District provided service to approximately 1,669 accounts (1,384 residential and 285 non-residential). The total service area is approximately 4,100 acres.

District-wide, approximately 80% of the Woodinville Water District's residential water customers are using onsite sewage disposal systems (i.e., septic tank/drainfield combinations). This includes a large un-sewered area in the northeastern portion of the sewer service area.

The District's sewer system includes a total of 13 connections to Metro's system and approximately 60 miles of sewer mains ranging in size from 8 to 18 inches. The District operates and maintains one pump station (which serves the English Hill area) with a design capacity of 200 GPM with one pump out of service. The District also has 3 inverted siphon stations. Residential sewage flows are assumed to be approximately equal to, or slightly less than, winter water demand (when outside irrigation is minimal to nonexistent).

Based on the District's winter water use records the current residential demand is estimated to be an average of 73 gallons per capita per day for the entire sewer service area (actual usage varied from basin to basin).

Winter water demand records were also used to estimate non-residential sewage flows. Based on the records, the current non-residential demand is estimated to be an average of 352 gallons per acre per day for the entire sewer service area.

### Northshore Utility District

The Northshore Utility District, through an interim service agreement with the Woodinville Water District, provides sanitary sewer collection within a residential area situated in the southwest corner of the City (i.e., within the Kingsgate area), see Figure A11-1. The District provides gravity sewer lines and connection to King County Department of Metropolitan Services.

### Cross Valley Water District

The source for the sewer utility background information for this section is the Cross Valley Water District Sewer System Comprehensive Plan, S T Engineering, Inc., November, 1998. Cross Valley Water District's initial comprehensive plan (May, 1992) was approved for service and facility sizing for the following areas:

1. The Maltby Industrial Area as defined in the Cathcart, Maltby, Clearview Comprehensive Plan (within Cross Valley service area),
2. The small commercial area west of State Route 522 at 212th Street (within Cross Valley service area and the Woodinville Planning Area),
3. The Wellington Hills Golf Course (within Cross Valley service area), and

4. The small light and heavy industrial areas west of State Route 522 just north of the County line as defined in the North Creek Plan (within Alderwood Water District).

Figure A11-1 identifies the area approved for sewers. This area encompasses a projected 694 acres of which the majority is designated as industrial.

The population estimates in the Sewer System Comprehensive Plan were furnished by the Snohomish County Planning Department and represent the entire DOE/DOH approved sewer service area rather than the smaller area approved for sewers in the Plan. The population of the sewer service area is 9,194. (2000 Census data)

The two most significant changes to the Cross Valley Water District's system since the last sewer comprehensive plan are (1) the initial system has been constructed and (2) the Maltby Urban Growth Area boundary has been established in Snohomish County. This has significantly increased the area where sanitary sewer collection is considered an essential element of infrastructure.

#### Alderwood Water District

The Alderwood Water District serves the Grace area to the northwest of State Route 522, see Figure A11-1. The source for the sewer utility background information for this section is the Snohomish County Council Motion 94-335 "Approving Alderwood Water District Comprehensive Sewer Plan for Portions of the Bear Creek Basin," September 28, 1994.

The Alderwood Water District has been working with the Cross Valley Water District to provide sanitary sewer service to the Maltby Industrial Area. Owners of industrial land within the Maltby Industrial Area are currently limited in utilization of their property due to their reliance on septic tanks.

### **A-11.1.3 Solid Waste**

Solid Waste utility services are provided to the City of Woodinville at two levels. The King County Solid Waste Division provides solid waste disposal services (i.e., operation of the landfills and transportation of the waste from transfer stations to the landfills). A franchise hauler collects garbage and refuse in the City and transports it to the transfer stations. The following document is the source for the solid waste background information for this section.

Department of Public Works King County Solid Waste Division Adopted 2001 Comprehensive Solid Waste Management Plan.

#### Disposal

The Solid Waste Division operates one regional landfill, two drop box facilities and manages ten closed landfills. The Cedar Hills Regional Landfill has an estimated 12.5 million tons of remaining landfill capacity (2000). The landfill is reaching capacity and is estimated to close by 2012. The Solid Waste Division is devising alternatives on how to handle the closure of Cedar Hills Regional Landfill.

#### Transfer Stations

The Solid Waste Division operates several transfer stations where solid waste is transferred from a local carrier to the county for disposal in the county's landfill. The transfer stations are located in the following areas:

Algona,  
Bow Lake,  
Enumclaw,  
Factoria,  
First Northeast,  
Houghton,  
Renton, and  
Vashon.

The City of Woodinville is in the north county service area, which is served by the First Northeast and Houghton transfer stations.

#### Collection

Under the Solid Waste Management and Recovery Act (Revised Code of Washington 70.95), local governments are given primary responsibility for solid waste handling. Cities and towns have the option of writing their own solid waste plans or cooperating with the counties in the development of a county or regional plan. The City of Woodinville has enacted an interlocal agreement with King County for the county to provide solid waste planning.

Garbage and refuse companies are certified and regulated by the Washington Utilities and Transportation Commission (Revised Code of Washington 81.77). The provisions of Revised Code of Washington 81.77 do not apply to the operation of companies under contract with a city or town, nor do they apply to cities or towns which undertake their own garbage collection. Cities and towns may allow the Washington Utilities and Transportation Commission franchise haulers to collect in their jurisdiction or they may select one of the following options:

1. Enter into a contract with private haulers (who are not required to hold a Washington Utilities and Transportation Commission certificate of necessity or a franchise in the area),
2. Issue licenses for the collection of solid waste (Washington Utilities and Transportation Commission certificates are augmented by city licenses giving the city more regulatory control), or
3. Operate their own collection system.

Garbage and refuse collection services in the City of Woodinville are provided by SnoKing (Waste Management), a Washington Utilities and Transportation Commission -certified franchise hauler.

#### **A-11.1.4 Electricity**

Puget Sound Energy (PSE) supplies electrical power to the City of Woodinville, which is within the PSE's Northshore Subarea. The source for the utility information for this report is the King County Draft Growth Management Act Electrical Facilities Plan, Puget Sound Power & Light Co., February 1993, with August 1995 amended Woodinville/Bothell Area Map. The Northshore subarea is bounded approximately by the Redmond-Kirkland Road on the south, Snohomish County on the north, and Lake Washington on the west, and Avondale Road on the east. The Northshore subarea includes the entire City of Bothell, major portions of Kirkland and Redmond, and parts of unincorporated King County. It also includes all of King County's Northshore Community Planning Area, which includes the City of Woodinville, with small portions of King County's Eastside Community Planning Area. PSE currently serves 3,641

residential customers and 1,338 commercial/industrial customers within the City of Woodinville as of April/May 2002.

Power supplies to customers in the Northshore Subarea are delivered from distant generating stations on 230 kV transmission lines to the Sammamish Transmission Substation (in Redmond) and BPA Snohomish (in Snohomish County) transmission substations where the voltage is transformed (reduced) from 230kV to 115 kV.

There are 16 existing distribution substations in the Northshore Subarea which serve the distribution feeder lines commonly found in neighborhoods and commercial areas.

### **A-11.1.5 Natural Gas**

#### Customer and Growth Information

Puget Sound Energy supplies natural gas to six Western Washington counties: Snohomish, King, Kittitas, Pierce, Thurston, and Lewis. Puget Sound Energy provides natural gas service to more than 344,648 customers in King County. It is not an essential service and, therefore, is not mandated to provide service. Extension of service is based on request and the results of a market analysis to determine if revenues from an extension will offset the cost of construction.

According to the PSE rate department, the average house (using natural gas for both heat and hot water) consumes about 1,000 therms per year. Ten therms equals approximately one "mcf" (thousand cubic feet) of gas so 1,000 therms per house equals approximately 100,000 cubic feet of gas per household per year. The total number of natural gas customers in all of King County is approximately 344,648. This equates to approximately 3.5 million therms per year (344,648 x 1,000 therms per year per house).

When planning the size of new gas mains, PSE uses a saturation model, which assumes all new households will use natural gas since 99% of new homes constructed where builders have the choice are using natural gas.

PSE forecasts customer additions using a forecast analysis calculation based on PSE's revenue report which is generated by town tax codes.

It is estimated that PSE currently serves 2,566 customers in the Woodinville area. This data was compiled via cycle, district and route service reports for tax code 148. Woodinville saw a 3.34% increase in gas customers from 2000 to 2001.

#### Existing Distribution System

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 in the north and 40% comes from domestic sources including the San Juan Basin in New Mexico/Texas in the south. The Pacific Northwest consumes 380 billion cubic feet of natural gas per year.

Natural gas is supplied to the City of Woodinville from Williams (formerly Northwest) Pipeline Corporation. Natural gas from the pipeline is reduced to 250 pounds per square inch gauge (psig) as it feeds into high pressure supply lines.

High pressure (HP) supply lines (measuring 16", 12", 8", 6", and 4" in diameter) transport gas from gate stations to district regulators. The pipe material is typically steel wrap (STW). There is approximately 1,718 feet of 8" high pressure line in the Woodinville city limits. This line runs along NE 143 St (W Hollywood Hill Rd) from 132 Ave NE to the eastern most part of the city.

District regulators (DR) reduce high pressure to typical distribution operating pressures of 60 to 25 psig. Distribution pressures are typically called intermediate pressures (IP). There are no district regulators within the Woodinville city limits. District regulators typically have a maximum operating pressure of 45 or 60 psig. The district regulators that serve the City of Woodinville will be set at approximately 54-57 psig with an MAOP (Maximum Allowable Operating Pressure) of 60 psig upon completion of the "Woodinville IP Uprate" project. The existing MAOP is 45 psig. These district regulators are located at 124 Ave NE & NE 144 St (DR2513) and 156 PI NE & NE 146 PI (DR2134) and are currently set to deliver 43 psig to the Woodinville area.

Distribution mains are fed from the district regulators. These typically are 8", 6", 4", 2", and 1-1/4" diameter lines. The pipe material typically is polyethylene (PE) or steel wrapped (STW). Puget Sound Energy has approximately 42 miles of main serving the City of Woodinville.

Individual residential service lines are fed by distribution mains and are typically 5/8" in diameter. Individual commercial and industrial service lines are typically 1-1/4" or 2" in diameter.

#### **A-11.1.6 Telecommunications**

Telecommunications services include both switched and dedicated voice, data, video, and other communication services delivered over the telephone and cable network on various mediums such as wire, fiber optic or radio wave. Verizon provides telephone service to the City of Woodinville. Various companies in King County provide cellular phone service. Cable services include communications, information, and entertainment services delivered over the cable system. Various franchised companies provide cable service throughout the entire Woodinville Planning Area. AT&T Broadband provides service to the City of Woodinville.

### **A-11.2 Trends and Projections**

#### **A-11.2.1 Water**

##### Woodinville Water District

Through its membership in the east King County Regional Water Association the Woodinville Water District is a participant in the East King County Coordinated Water System Plan. The East King County Coordinated Water System Plan assesses the water supply needs in east King County and presents a program to meet those needs. The service area established for the Woodinville Water District was utilized as the basis for the projection of future population and water demand in the District.

According to the Woodinville Water District's Comprehensive Plan, by the year 2010 18,803 dwelling units will be in the service area and by 2020 21,548 dwelling units will be located within the service area.

The District's capital improvement plan is divided into five categories of improvements. Woodinville Water District (WWD) chooses projects for the six-year CIP by a list of criteria found in the WWD Comprehensive Water Plan 2000. Below are the five categories in the CIP.

1. Source Improvements,
2. Storage Improvements,
3. Transmission and Distribution System Improvements,
4. Pumping Improvements, and
5. Miscellaneous Projects

### Cross Valley Water District

Future conditions were evaluated in the Comprehensive Water System Plan, September 1999, through the year 2008 and the year 2040 for long range water supply projections. The number of service connections within the District is projected to increase by 5% per year from 5,227 in 1998 to 7,666 in the year 2008.

### Water Supply

Based on future projections, about 54% of the available basin recharge will be needed by the year 2000. The south service area plan proposed the use of twelve wells, ten of which now exist. The additional wells would be located in the Mount Forest Area, Clearview Area, Maltby Area and Bear Creek Area to meet future demand and to provide a standby source to each zone. Future needs will consider the use of deeper wells, treated river water or water from the City of Everett's supply.

### Storage

Based on future projections, an additional 2,199,000 gallons storage capacity will be needed by the year 2000 (of which 1,688,000 is in the south service area). Four additional reservoirs, including one in the Woodinville Planning Area, are recommended. As of 1998 there are 2.9 million gallons of storage. By the year 2008, 7.59 million gallons of storage will be needed. The Clearview Project Reservoir had construction scheduled for late in 2000 with .75 million gallons of storage. The Lee Forest Standpipe will add 2.0 million gallons of storage that will serve the Maltby Industrial Area. The 1.0 million gallons of storage is scheduled for construction in 2005 at Lost Lake.

### Distribution and Transmission

An evaluation of the distribution system determined that existing long un-looped lines were inadequate in many areas. As a result, a transmission network of over-sized lines was developed rather than attempting to replace existing lines. A portion of the network is included in the Plan's 10-year capital improvement plan.

## **A-11.2.2 Sewer**

### Growth Projections

#### Woodinville Water District

The Woodinville Water District used land use maps and assessor parcel maps to estimate the number of residential dwelling units and non-residential areas contributing wastewater flow (CH2M Hill, 1993).

**Residential:** The number of existing residential lots were used to calculate densities of existing development. The acreage of existing undeveloped residential lots were calculated from assessor parcel maps; the units per acre from zoning maps. The ultimate population assumes the maximum allowable density of undeveloped lots.

According to the 1993 Comprehensive Sewer Plan the existing population within the sewer service area is 10,780, and the ultimate population is projected to be 36,053. The current sewered population is approximately 4,043, based on sewer account information.

**Non-Residential:** The 1993 Comprehensive Sewer Plan does not describe the methodology used for projecting non-residential demand. In addition, the amount of non-residential acreage forecast is not identified in the report.

Northshore Utility District

Growth projections for the area served within the City of Woodinville would be consistent with the growth projections for the Woodinville Water District, above.

Cross Valley District

According to the Cross Valley Water District's Comprehensive Plan, November 1998, population projections for the district extend to 2012. Between 1992 and 2012, the district forecasts a population growth of 70%. These population projections are the Cross Valley Water District's Sewer Planning Area. By the year 2012, Cross Valley Water District estimates that 11,095 people will reside in the Sewer Planning Area.

Alderwood Water District

Growth projections for the area to be served (i.e., the Maltby Industrial Area) would be consistent with growth projections for the Cross Valley Water District, above.

DemandWoodinville Water District

The Woodinville Water District estimated wastewater flow by calculating and combining the following flow components: residential sanitary sewage flow, non-residential (commercial and industrial) sanitary sewage flow, and infiltration and inflow (i.e., groundwater that enter a sewer system through fractured/defective pipes, leaking pipe joints, manholes, etc.) (CH2M Hill, 1993). A peaking factor is also applied to the average base sanitary flow.

1. Residential Sewage Flow: For the purpose of determining residential sanitary sewage flows, 80 gallons per capita per day (compared to the current 73 gallons per capita per day) was used as a conservative estimate.
2. Non-Residential Sewage Flow: For the purpose of determining non-residential sanitary sewage flows, an average flow of 1,000 gallons per acre per day was used. Note that the current weighted average is 352 gallons per acre per day. As a comparison, the King County Sewerage General Plan estimates a typical flow for light industry at 2,000 gallons per acre per day. Therefore, to be conservative (i.e., not underestimate non-residential demand) 1,000 gallons per acre per day was selected to estimate non-residential sewage flow.
3. Infiltration: An average estimate of 1,200 gallons per acre per day was applied on a per-acre basis for the total sewer service area. The estimate is based on guidelines established in Metro's 1985 Final Plan for Secondary Treatment Facilities (according to the Comprehensive Sewer Plan, an actual estimate for the District's system was not known).
4. Peaking Factor: Wastewater flow records were not available for the Comprehensive Sewer Plan analysis to determine the peaking factor for the Woodinville sewer system. Instead, the analysis used peaking factors which had been developed for the previously modeled Los Angeles municipal sewer system, as presented in the City of Los Angeles, Bureau of Engineering, ASCE-Manuals and Reports on Engineering Practice No. 37 "Design and Construction of Sanitary and Storm Sewers", 1979.

Northshore Utility District

Demand projections for the area served within the City of Woodinville would be consistent with the demand projections for the Woodinville Water District, above.

Cross Valley District

The following flow criteria was used to determine demand:

<b>Average Daily Flow</b>	<b>Level of Service</b>
Residential	85 gallons per capita
Industrial/Commercial	1,800 gallons per acre
Infiltration	800 gallons per acre
Peaking Factor	2.5 (both residential and commercial)

Alderwood Water District

Demand projections for the area to be served (i.e., the Maltby Industrial Area) would be consistent with demand projections for the Cross Valley Water District, above.

Capital Improvements

Metro

Until recently all sewage flow from the Woodinville Pump Station was pumped to Metro's West Point Treatment Plant in Seattle. Current Metro planning involves diversion of all of Woodinville flow to Metro's Renton Treatment Plant within the next several years.

Woodinville Water District

The District's Capital Improvement Plan (1993 - 2004) identifies 3 major groups of sewer system improvements:

1. Repairs or replacement of existing facilities required to correct existing deficiencies and accommodate future demand,
2. Sewer improvements and extensions resulting from new development or system expansions, and
3. Improvements, which provide upgraded system operations.

The estimated cost of the Capital Improvement Plan is \$11.1 million (1992 dollars) and includes the following types of projects:

	(millions)
Existing System Modifications	\$ 3.2
Sewer Extensions	7.1
Other Improvements/Studies	<u>0.8</u>
<b>Total</b>	<b>\$11.1</b>

The Comprehensive Sewer Plan identified types of revenue which could finance these projects, but a specific financing plan was not presented.

#### Northshore Utility District

The Woodinville District does not have any long range plans to take over service to the area of the City currently being serviced by the Northshore Utility District. It is easier to serve this area via the gravity system, which the Northshore Utility District has in place and which is not available through the Woodinville Water District.

#### Cross Valley District

According to the Cross Valley Water District's September 1998 Comprehensive Plan, Cross Valley's sewer system is new and no capital improvements financed by the District are anticipated within the current planning period. Any improvements made during this period will be developer-driven. All projects anticipated within the current planning period will likely be financed by Developer Extensions or ULID's. As property owners connect to the existing system and developers extend the sewer into other areas of the UGA, the system must be monitored to determine when the existing lines reach capacity. These lines would then be upsized as discussed in Chapter 7 of the Cross Valley Water District's September 1998 Comprehensive Plan or evaluated for other innovative solutions.

According to the Sewer System Comprehensive Plan Addendum No. 1, the original Plan was approved for service and facility sizing for only: 1) the Maltby Industrial Area, 2) Wellington Hills, and 3) the industrial area within the Alderwood Water District. The Sewer System Comprehensive Plan Addendum No. 1 is a clarification of the planning responsibilities of the special purpose districts (i.e., Cross Valley Water District, Alderwood Water District, and Silver Lake Water District) providing sanitary sewage facilities within the Bear Creek drainage basin in Snohomish County. Subsequent to the Cross Valley Plan, Alderwood Water District has proposed an amendment to its comprehensive plan, which pursues the long-range approach of basin-wide planning. It proposed lower end trunk facility sizing to satisfy estimated ultimate need as required by the Department of Ecology.

Since Cross Valley Water District represents 60% of the area within the drainage basin, it has agreed to amend its comprehensive plan to include a joint use 30" trunk facility at the lower end of the drainage basin, consistent with Metro's 30" interceptor line near the county line. The District proposed to assume lead agency responsibilities to construct joint-use sewage facilities with Alderwood Water District (Silver Lake Water District will be added as a latecomer if their service area develops). The following approach is proposed:

A 30-inch diameter trunk line will be constructed (in cooperation with all districts within the basin) from the previously approved 30-inch diameter Metro trunk line to 233rd Place S.E. in Snohomish County. The project will be constructed by the Cross Valley Water District's utility local improvement district to serve the Maltby Industrial Area and the Wellington Hills property and will be available as a joint use facility for other basin sewer services.

In 1998, the joint project between the Alderwood Water and Wastewater District (AWWD) and the Cross Valley Water District (CVWD) was completed. AWWD shared in the cost to construct a 30-inch diameter trunk with CVWD as the lead agency along SR 522 in the Southeast corner of AWWD. The Bear Creek Basin will be expanded by developer extensions and ULID's connecting to the existing Bear Creek Trunk as conditions for development dictate. The Sewer System Comprehensive Plan (November 1998) proposes capital improvements to the collection system located generally along existing streets and abutting the railway right-of-way. Capital improvement costs total \$2,771,000.

**Project:**

4" Force Main Sewer w/Jacked Casing

Lift Station

15" Gravity Sewer

12" Gravity Sewer

8" Gravity Sewer

**Upsize Existing Lines:**

18" Sewer

15" Sewer

The Sewer System Comprehensive Plan (September, 1998) recommends that customers be charged a base rate, either monthly or bi-monthly. The base rates would pay for capital costs, administration, billing and collection, and maintenance and operations. Metro's charges to Cross Valley for transmission and treatment of sewage would be charged to customers on a commodity basis, based on the volume of water used. According to the Plan, the volume of water is considered to be a good approximation of the amount of sewage produced. It is a requirement of the District that the Sewer Division develop adequate revenues to sustain its operation, distinct from revenues from the Water Division.

Alderwood Water District

The Alderwood Water District is working with the Cross Valley Water District on a joint construction project that extends sanitary sewer from the Woodinville area along State Route 522 north into Snohomish County. The water districts are working with business owners in the Maltby Industrial Area to form a Utility Local Improvement District to completely sewer the area.

**A-11.2.3 Solid Waste**Disposal

The King County 2001 Comprehensive Solid Waste Management Plan contains both a low and high growth scenario for solid waste generation over a 20-year planning period (2001-2020).

The county's landfill is reaching capacity, estimated to close by 2012, and the county's Solid Waste Management Division is looking at alternatives to address future needs of the region. The three alternatives are listed below:

1. Contracting with a landfill for disposal capacity and service – waste export,
2. Constructing a new County-owned landfill outside of King County, and
3. Constructing an incinerator.

Of the three listed alternatives, the county has identified waste export as the preferred alternative. The current transfer system is a mix of public and private facilities, and the county Plan recommends that this balance remain the same in the future. The county recommends making the best use of existing facilities to minimize capital outlay and improve operational efficiencies.

To prepare the regional transfer system for waste export, waste compactors will be installed at all County transfer stations. Studies of similar utilities that have made the transition to waste export show that consolidating garbage into compacted loads makes transport considerably

more economical. Other upgrades will be made at the transfer stations to improve traffic flow and queuing and the completion of necessary maintenance and repairs at some of the older stations.

#### Collection

For the 20-year planning period, The King County Solid Waste Management Division has identified issues that need to be addressed to respond to industry changes to ensure continued effectiveness in solid waste collection and recycling.

Waste flow and hauling patterns consist of the following:

1. Demand management at transfer stations,
2. Collection or curbside recyclables,
3. Special collection events,
4. Household hazardous waste collection,
5. Incentive rates, and
6. Alternative collection opportunities.

#### **A-11.2.4 Electricity**

Puget Sound Energy (PSE) studies the energy usage of customers and the ensuing load placed on the system by each new resident and employee to supplement government forecasts of future land growth. PSE uses several forecast scenarios from low to high, consistent with regional electric planning. PSE has predicted that its electrical load will nearly double over the next thirty years. Facilities projected to meet this demand company-wide include nearly eight substations, numerous upgrades to existing distribution and transmission stations, and new upgrades to transmission lines. These facilities include the following improvements within the Northshore Planning Area, which includes the electric system supplying the City of Woodinville as described in the King County Draft Growth Management Act Electrical Facilities Plan, Puget Sound Power & Light Co., February 1993, with August 1995 amended Woodinville/Bothell Area Map.

##### 2002-2020 Plan:

1. The names and general locations of the three new distribution substations are:
  - i. Kingsgate (Kingsgate shopping center area).
  - ii. Emerald (south end of the Town Center neighborhood).
  - iii. Harmony (northeast portion of the West Ridge neighborhood).
2. The names and general locations of the two new transmission substations are:
  1. Jade (southwest portion of the Valley Industrial neighborhood).
  2. Border (northwest section of the North Industrial neighborhood).
3. The names of and general locations of the two new 115,000 volt (115kV) transmission lines are:
  1. Sammamish – Border (north to south through the North Industrial and Town Center neighborhoods).
  2. Border – Turner’s Corner (north from Border substation into Snohomish County).

#### **A-11.2.5 Natural Gas**

Minimum pressure delivery through intermediate pressure mains from a design standard is approximately 15 psig. If main pressure drops below 15 psig, there are several methods of increasing the pressure in the line, which include:

1. Looping the distribution and/or supply lines to provide an alternative route for the gas to travel to an area needing additional supply (This method often involves construction of high pressure lines, district regulators, and intermediate pressure lines),
2. Installing lines parallel to existing lines to supplement supply of natural gas to a particular service area, and
3. Replacing existing pipelines to increase volume. (This includes efforts to replace low pressure cast iron systems with intermediate pressure plastic systems).

There are three types of construction:

1. New or replacement of existing facilities due to increased capacity requirements due to new building construction and conversion from alternate fuel,
2. Main replacement to facilitate improved maintenance of facility, and
3. Replacement or relocation of facilities due to municipal and state projects.

PSE makes an effort to coordinate construction work with municipal projects in order to minimize cost and impacts to surrounding communities. Due to franchise agreements, PSE is required to relocate existing facilities which, unfortunately, is costly and usually unplanned. Improved coordination decreases this occurrence.

The following major projects are anticipated between now and the year 2012 to serve customers in the City of Woodinville and adjacent areas.

#### Planned for 2002

“Woodinville IP (Intermediate Pressure) Uprate” which will increase the existing 45psig system to 60psig. This uprate will impact all gas mains within the city limits of Woodinville and is designed to improve areas that are currently experiencing low pressures during cold periods.

#### Planned for 2002-2005

“Woodinville HP (High Pressure) Uprate” is being designed to connect the end of the existing high pressure main at 124<sup>th</sup> Avenue NE at NE 144<sup>th</sup> Street with the existing high pressure main at 84<sup>th</sup> Avenue NE at NE 145<sup>th</sup> Street. None of this work will be performed within the existing city limits of Woodinville but are in close proximity to the east end of the project. It has not yet been determined what route the new 12” high pressure will take. It will depend on budget constraints regarding the timing of this project.

PSE will review projects proposed by the City of Woodinville and may choose to take advantage of an opportunity to add more pipe in an effort to reinforce our system.

Due to the growing popularity of natural gas in Woodinville and surrounding areas, PSE will continually evaluate the necessity of the above mentioned project and alternatives. Changes in project route, construction schedule and detail could occur, as they are dependent on budgets and WUTC cooperation.

#### **A-11.2.6 Telecommunications**

Telecommunications service is driven by customer demand. The telecommunications network is gradually being updated to fiber optic, but the exact schedule and locations are not available. Because telecommunications is driven by customer demand, system capacity must be evaluated on a regular basis to insure that new facilities are installed on a timely basis to meet demand.

### **A-11.3 Planning Implications**

Future development in Woodinville will be dependent on the availability of adequate utilities and services. Since the utilities and services described in this Appendix (i.e. water, sewer, solid waste, electricity, natural gas, and telecommunications) are provided by special independent districts, King County, or private companies, the City must ensure that its growth plans are consistent with these outside providers' abilities and plans. The City must avoid proceeding in a manner that the providers of utility services cannot support.

In the future, the City may decide to provide some utilities or services now provided by others or switch to other service providers where feasible. The City should develop criteria to assess when a change of providers is warranted or when the City is able to better provide the utilities or services needed.

Finally, the City should structure its plans for growth to minimize the cost of providing additional services and maximize the existing utility capacity. Issues to consider include planning for greater density in areas with surplus sewer capacity, exploring programs that will conserve utility services, such as recycling solid waste, and seeking alternative and creative methods of providing services in cases where the outside providers are unable to meet the City's needs.

When the City requires concurrency or adequate public facilities for water and sewer to meet growth projections, it must work closely with the other providers of these public facilities to assure that adequate water and sewer are available to serve development that will be approved by the City. Section A-11.3 above, discusses further the issues surrounding planning consistency, planning coordination, and level-of-service standards.

### **A-11.4 Countywide Planning Policies for Utilities**

Table 2-1 in Chapter 2 presents a comparison of King and Snohomish counties' utilities policies with the City of Woodinville's.