VII. UTILITIES & PUBLIC SERVICES

VISION

This Element addresses the public and franchise services and infrastructure required to serve the community. The vision of the Utilities and Public Services element is to provide reliable utility and public service to the Sammamish Service Area while reducing safety, environmental and aesthetic impacts that can result from the construction and operation of utility facilities.

This Element addresses the public and franchise services and infrastructure required to serve the community, and is divided into two sub-elements:

- The vision of the Utilities Sub-element is to provide reliable utility service to the Sammamish Service Area while reducing safety, environmental and aesthetic impacts that can result from the construction and operation of utility facilities. (Ord. O2006-205).

PRIMARY ISSUES

Utilities: Existing Conditions and Forecast Future Needs

Electricity Facilities and Capacity

Existing Conditions - Electricity

Puget Sound Energy (PSE) currently provides electrical service to 17,628 residential customers, and 1,112 commercial/retail customers in the Sammamish Study Area. Residential customers include single family residences and some multi-family residences (apartment and condominium developments). Customers on commercial/retail meters include all retail stores, warehouses, office buildings, public facilities, utilities, and some multi-family developments as well.

PSE uses kilowatts (KW) as a measure for customer load analysis. PSE measures use by meters/residential units (not per capita). The following statistics are based on peak usage at any one time, or “instantaneous maximum loads,” and therefore do not provide information about daily, monthly, or yearly averages. Total residential peak demand for the Study Area is 64,842 KW, and the average residential KW/customer is 3.7 KW. The total commercial/retail demand is 16,645 KW, and the average commercial KW/customer is 15 KW. Peak demands occur during the cold winter months, while demand in spring through fall is considerably less. The range of commercial/retail demand varies considerably more than residential demands. A large grocery store or office will be 300 to 500 KW, while a condominium load may be 2 to 3 KW. Residential demands generally range from 0.5 to 10 KW.

The Sammamish Study Area is primarily served by the following substations:

1. Sahalee Substation on Sahalee Way & NE 36 St.
2. Pine Lake Substation on 228 AVE SE & SE 31 St.
3. Klahanie Substation on Issaquah-Fall City Rd & Klahanie Dr SE (shopping center)

Each substation supplies from 33,000 KW peak in the winter and 27,000 KW peak in the summer. The stations also serve some demand outside of the Study Area, and provide back-up service to each other and other stations outside of the Study Area if a station is off-line for maintenance.

In addition, other local substations provide back-up service to the Sammamish Study Area. These stations are:
1. Redmond Substation by Bear Creek Mall in Redmond,
2. Fall City Substation north of downtown Fall City,
3. Pickering Substation on East Lake Sammamish Parkway at SE 61 St.

The Pine Lake, Klahanie and Sahalee stations are currently at capacity during the winter months. The peak demand for the Sammamish area is 93,356 KW, and the maximum capacity for the three stations is 33,000 x 3 or 99,000 KW.

Other facilities necessary to the provision of electric service to the area include two transmission lines. These lines are known as the Sammamish-Lake Tradition line which is a 115kV line serving the Pine Lake & Sahalee Substations, and the Sammamish-Maple Valley Transmission line which is a 230KV line that provides service to the Klahanie Substation. Existing electrical facilities are identified on the map depicted in Figure VII-1.

**Future Conditions - Electricity**

PSE analyzes system capacity on an annual basis. The analysis is based on peak load readings for all substations in the service area. As part of the analysis, PSE looks at system capacity at peak demand for normal operation, and whether the system is capable of maintaining adequate supply and voltage in the event of the loss of any station during that peak. In addition to this, PSE factors in the anticipated load growth for the next two years based on (1) knowledge of current development activity, and (2) a 2% growth rate for the years beyond known projects out to 10 years. As indicated earlier, the Study Area currently has enough capacity for normal peak operation with some reserve, but when a station is out of service, particularly the Pine Lake station, the system is at maximum capacity. PSE anticipates the general residential growth will continue at between ½% to 2% per year, depending on the economy over the next ten years. PSE also speculates that commercial load growth will be limited, as existing commercial/retail centers have already been built out, and no significant areas are planned for commercial/retail growth in the Study Area. PSE planners stay informed of changes in land use and zoning, to ensure that they can provide adequate services to new development.

PSE has plans to install a new substation called the Plateau Substation on NE 8th Street, just east of 228th Ave NE. Permitting for this project is anticipated to occur between 2002 to 2004, and the substation may be built between 2004 and 2006. This location is close to the commercial/retail load center in the central part of the City of Sammamish. Installation of a new substation at this location will shift load from Pine Lake and Sahalee Substations during normal operation, and will ensure that adequate back up is provided in the event of a station outage. The new substation will be served by the Sammamish-Lake Tradition 115kV transmission line, and as such, it will not be necessary to extend new lines any great distance. The Plateau substation will be served by existing feeder lines, and no new distribution lines will be required.
Figure VII-1 Utilities Service Lines
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To the extent possible, PSE will install new lines during the next phase of the 228th Ave NE road project. This will enable future distribution line taps from the Plateau Substation.

Facility Undergrounding

Jurisdictions choose to require undergrounding of utilities in public rights-of-way to prevent service interruptions to power and telephone as a result of storms and auto accidents, to eliminate life and safety hazards that result from fallen wires, to prevent the need for maintenance and pruning of trees and shrubs that grow into utility wires, and to improve aesthetics. Utilities tend to favor keeping lines above ground because it is easier to detect and repair damaged wires, and it is more cost effective install and maintain above ground lines.

The Washington Utilities and Transportation Commission (WUTC) is the regulating agency for privately owned transportation and utility companies. The WUTC regulates the rates, services, and practices of privately owned utility companies, and has adopted two tariffs that are applicable to undergrounding: Schedules 70 and 71. These Schedules state the terms and conditions under which PSE will perform an underground conversion, and how the costs of undergrounding are divided among the utility provider and the party requesting the conversion. Typically when a utility requests to place facilities in a city’s right-of-way, the utility and the city will enter into a franchise agreement that spells out all aspects of the agreement between the two parties, including maintenance, costs and undergrounding of utilities.

Recently, some cities have challenged Puget Sound Energy’s (PSE) interpretation of Schedules 70 and 71, and the WUTC ruled in favor of PSE. PSE is currently working with these cities and others and WUTC staff in a collaborative process to produce revised schedules for WUTC consideration. As stated earlier, Schedules 70 and 71 specify the terms and conditions governing PSE’s undergrounding of its existing facilities, including allocation of some costs to the party requesting the conversion. Additionally, requesting parties must perform or fund portions of the work such as trenching and restoration. The schedules apply to distribution systems operating at 15,000 volts (15kV) or less, and therefore are applicable to the majority of PSE’s overhead distribution facilities. Underground installation of new facilities (such as extension to serve new development) does not typically require jurisdiction cost participation. The cost of system extensions to serve new development is typically borne by the developer and in turn a component of costs experienced by consumers of new development.

Natural Gas - Facilities and Capacity

Existing Conditions – Natural Gas

Puget Sound Energy supplies natural gas to Snohomish, King, Kittitas, Pierce, Thurston, and Lewis Counties, and serves more than 607,133 customers within those counties. It is estimated that PSE currently serves 11,065 customers within the Sammamish Study Area, including the Klahanie area.

The States of Washington, Oregon, and Idaho consume 380 billion cubic feet of natural gas per year. Sixty percent (60%) of the region's natural gas supply comes from the north - British Columbia and Alberta, while the other 40% comes from domestic sources including the San Juan Basin in New Mexico, and from Texas in the south. Based on rate information, PSE estimates that the average household consumes approximately 100,000 cubic feet of gas per year, this estimate is based on the assumption that each household uses natural gas for both heat and hot water.

In terms of distribution, natural gas is supplied to the City of Sammamish by Williams Pipeline Corporation (formerly known as the Northwest Pipeline Corporation). Natural gas from the pipeline is reduced to 250 pounds per square inch gauge (psig) to feed high-pressure supply lines. Williams Pipeline operates 26” and 30” natural gas pipelines located within the Sammamish Study Area. See Figure VII-1 for a generalized map.
High pressure supply lines (measuring 4”, 6”, 8”, 12” and 16” in diameter) transport gas from gate stations to “District Regulators”. At the present time there is approximately 13,500 feet of 12” high-pressure line within the Sammamish City limits. This line is capable of supplying 2,500,000 cubic feet per hour to the Sammamish area.

District regulators reduce high-pressure gas to distribution operating pressures of 25 to 60 psig. Natural gas is currently supplied to the Sammamish Study Area through District Regulator #1343, otherwise known as the Beaver Lake Gate Station, and District Regulator #1342, known as the Redmond Gate Station. Both District Regulators have been set at 54 psig with a maximum operating pressure of 60 psig. Distribution regulators feed “distribution mains” which range from 1¼”, 2”, 4”, 6” or 8” diameter lines. Distribution mains serve individual residential service lines which are typically 5/8” in diameter, and commercial and industrial service lines that range from 1¼” or 2” in diameter. Puget Sound Energy has approximately 165 miles of main serving the Sammamish Study Area.

**Forecast Future Needs – Natural Gas**

Because natural gas is not considered an essential service, PSE is not mandated to provide service. Extension of service is therefore based on requests for new service and the results of market analysis designed to determine if revenues from an extension will offset the cost of construction.

When planning the size of new gas mains, PSE uses a model that assumes that all new households will use natural gas, since 99% of new homes constructed (in which builders have a choice) are using natural gas. PSE forecasts customer additions using a forecast analysis calculation based on PSE’s revenue report which is generated by city tax codes.

PSE has two options for increasing capacity in its system – implementation of techniques to increase capacity in the existing system, or construction of new facilities. When increasing capacity is no longer possible, PSE must construct new facilities.

Minimum pressure delivery through intermediate pressure mains is approximately 15 psig. If pressure delivery drops below 15 psig, there are several methods that can be used to increase pressure in an existing line. These include:

- 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,
- Installation of lines parallel to existing lines to supplement supply of natural gas to a particular service area,
- Replacement of existing pipelines to increase volume. (This includes efforts to replace low-pressure cast iron systems with intermediate pressure plastic systems.)

If it is not possible to increase capacity by using the above methods, new construction may be required. There are three types of construction:

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

The following major projects are anticipated between now and the year 2010 to serve customers in the Sammamish Study Area, including the Klahanie area.
Planned for 2000-2004:
Due to growth on the plateau over the past several years, the existing system is in need of reinforcement in order to insure reliable gas service. PSE is therefore evaluating the feasibility of running 12” high pressure main from the Beaver Lake Gate Station (24400 block of SE 32nd St), northbound to NE 8th St, with an eventual tie into the existing 4” intermediate pressure main near the intersection of 228th Ave NE and NE 8th St.

Completed in 2002:
PSE recently completed a portion of the above mentioned project by extending approximately 6,000 feet of high pressure gas main from the Beaver Lake Gate Station to 248th Ave SE and approximately SE 17th. This increased pressure to the Klahanie area and surrounding areas, however, there is still need to bring increased pressure to the Sahalee area.

Planned for 2003-2005:
PSE can increase pressure to the Sahalee area by installing/replacing an existing gas main with a new 8” gas main. A definite route for this main has not yet been identified.

Due to the growing popularity of natural gas in the Sammamish Plateau and surrounding areas, PSE will continually evaluate the necessity of the project described above. Changes in the project plan alternatives, route and construction schedule may occur, as they are dependent on budgets and WUTC cooperation. In addition, Puget Sound Energy will review projects proposed by the City of Sammamish and may take advantage of opportunities to add more pipe in an effort to reinforce their system.

Telecommunication - Telephone

Telephone companies serve local exchange areas by “Central Offices” or CO’s. These offices contain switching equipment that provides service to an area. In the Sammamish Study Area, telephone service is provided in by both Qwest and Verizon. Qwest provides service to southern portion of the City and Verizon provides service to the northern portion of the Study Area. The Qwest CO is located at 6401 228th Ave SE in Issaquah. Qwest uses fiber optic lines to provide service to the area. These lines are located in E. Lake Sammamish Parkway, 228th Avenue SE, SE 8th Street, Issaquah Pine Lake Road, and SE 32nd Street/Issaquah Beaver Lake Road and are depicted on Figure VII-1. Verizon provides service to the area north of Qwest’s northern service boundary. Verizon’s service area extends north of the Redmond-Fall City Road. Due to the growth in the Sammamish area, Verizon opened a new CO to serve this area that is located at 20929 Redmond-Fall City Highway. The office serves a 29.6 square mile area. Verizon was not able to provide the City with a map of the service area.

While Qwest and Verizon were not able to provide the City with specific information related to future forecasts, both companies stated that there is adequate coverage at present, and that the existing facilities are capable of accommodating growth in the future.

Telecommunication – Personal Wireless

Personal wireless services are those services that use radio waves to transmit voice and/or data using the radio frequency spectrum. Personal wireless facilities use ground-based directional receivers, or antennas, which may be located on a variety of different types of structures including utility poles, cellular towers (also known as monopoles) or buildings. Since incorporation the City of Sammamish has issued permits to T-Mobile, (previously VoiceStream) for the construction of new cellular towers. The sites are located at 831 211th Place NE and 1103 East Lake Sammamish Blvd. Sprint has a cellular tower at 22803 SE 21st Street and AT&T has two towers, one at 2030 212th Avenue SE and one at 228th Avenue between SE 16th and SE 17th Streets. Additionally, there are a cellular monopole and tank-mounted cellular facility at the Sammamish Plateau Water and Sewer District’s water tank at 22026 NE 12th Street.
Wireless companies analyze market demand and expand services in response to increased demand. Capacity of wireless facilities is based on number of facilities in an area, number of customers, and customer use, and cellular companies consider information related to demand and capacity to be proprietary information. Capacity can be expanded, however by dividing larger service areas into smaller service areas and increasing the number of channels in the service area, or through advances in technology.

**Telecommunication - Cable**

Comcast, currently provides Video and High Speed Data (HSD) cable services to approximately 16,533 residential customers in the Sammamish Study Area, including the Klahanie area. The type of facility that is required to provide cable service is a “fiber backbone” with a coaxial distribution system. The distribution cables are typically located on poles owned and maintained by Puget Sound Energy and/or Qwest, or they are located underground.

According to AT&T, the capacity of the current cable system in relation to the existing customer base is unlimited, and it does have the capabilities to expand cable service when needed.

**General - Electromagnetic Fields (EMF)**

Electric and magnetic fields exist in nature as well as around all types of electrical devices. The electric and magnetic fields around electrical appliances and power lines fall within the extremely low frequency (ELF) range. For several years, scientists reflecting a broad range of scientific disciplines have considered the question of whether EMF presents a hazard to human health.

The Telecommunications Act of 1996 and the Federal Communications Commission (FCC) regulate the emissions of electromagnetic radiation from cellular facilities by setting thresholds for acceptable levels of radiation. Consistent with Federal requirements, the City’s development code requires that applicants provide verification from a licensed engineer documenting that acceptable levels are not exceeded. The Federal government administers the Telecommunications Act, and cities do not have the authority to interfere with, or override the standards required by the Federal Government. Provided an applicant demonstrates that the required thresholds have been met, the City cannot impose any additional requirements.

At this time, there are no federal or state regulations or standards for low frequency EMF exposure from electric power lines. There are some requirements in the National Electrical Safety Code for power line field strength. However, federal and state research provides some direction for possible techniques to lessen exposure to EMF, with federal studies suggesting passive regulatory action is warranted such as a continued emphasis on educating both the public and the regulated community on means aimed at reducing exposures.

The local service provider to the Sammamish area, Puget Sound Energy (PSE), has adopted a policy statement on electric and magnetic fields (EMF). PSE’s policy states that “Puget Sound Energy has and will continue to:

- Follow all applicable laws and regulations governing the installation of electrical facilities,
- Monitor research, regulations, legal actions, and communications on extremely low frequency EMF to further develop our ability to communicate with our customers, our employees and government officials,
- Support the existing research program on extremely low frequency EMF jointly funded with and coordinated by the federal government,
- Respond to customer and employee requests for information and provide free in-home measurements of extremely low frequency magnetic fields to customers who request them, and
• Participate in public proceedings to enhance understanding of the scientific studies, and to review the limits of existing information.”

Solid Waste

Existing Conditions – Solid Waste

The 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. Local hauling services in the unincorporated areas and a majority of cities are provided by private garbage collection companies which receive oversight through the Washington State Utilities and Transportation Commission (WUTC). The closest waste transfer stations to the City of Sammamish are in Kirkland at the Rose Hill (Houghton) station, and at the Factoria transfer station in Bellevue.

Currently, local haulers within the City of Sammamish operate within two service areas: Rabanco Connections and Waste Management Sno-King. Waste Management serves the northern portion of the City of Sammamish to north side of NE 8th Street. Rabanco serves customers from the south side of NE 8th Street to the city limits in all directions.

Table VII-A provides a comparison of Solid Waste service and rates between Rabanco Connections and Waste Management Sno-King.

### TABLE VII-A
COMPARISON OF SOLID WASTE SERVICE AND RATES

<table>
<thead>
<tr>
<th>INFORMATION ITEM</th>
<th>RABANCO CONNECTIONS</th>
<th>WASTE MANAGEMENT (SNO-KING)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequency of Service - Garbage</td>
<td>Weekly</td>
<td>Weekly</td>
</tr>
<tr>
<td>Frequency of Service – Recycle</td>
<td>Weekly</td>
<td>Weekly</td>
</tr>
<tr>
<td>Frequency of Service – Yard Waste (March - November)</td>
<td>Weekly</td>
<td>Weekly</td>
</tr>
<tr>
<td>Frequency of Service – Yard Waste (December - February, Rabanco)</td>
<td>Monthly</td>
<td>Bi-weekly</td>
</tr>
<tr>
<td>Monthly Cost – Garbage (one 32 gallon can) and Recycle, weekly pickup [1]</td>
<td>$13.73</td>
<td>$14.40</td>
</tr>
<tr>
<td>Monthly Cost (March-November) Yard Waste</td>
<td>$7.23</td>
<td>$9.33</td>
</tr>
</tbody>
</table>

Source: King County Comprehensive Solid Waste Management Plan, 2001.
Note: [1] Billed every three months (per Rabanco) with a typical bill equaling $41.19 for the three month period.

Future Needs – Local and Regional

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 would supersede state regulations and the private hauler is no longer regulated by the State. In accordance with State Law, the holder of the franchise or permit in the incorporating area may continue to operate for the remaining term of the original franchise or permit, or for seven years, whichever time period is shorter (RCW 35.02.160).
King County’s disposal system for mixed municipal solid waste (MMSW) comprises one active landfill – the Cedar Hills Regional Landfill – and ten closed landfills. The currently active Cedar Hills Regional Landfill will reach its permitted capacity and close during this 20-year planning period.

**Public Services: Existing Conditions and Forecast Future Needs**

This section provides a brief summary of existing public services which support services to City of Sammamish residents. Projected needs for the next six years are also summarized in this section and presented in table format in Appendix B. The descriptions are necessarily brief; the reader should consult the documents listed within this chapter for more detailed information on capital facilities in the City of Sammamish. Maps of various public facilities are identified in Figures VII-2 to VII-4.

**Water**

*Existing Conditions - Water*

Water facilities serving the City of Sammamish are provided primarily through the Sammamish Plateau Water and Sewer District. The northern portion of the city is served by the Northeast Sammamish Sewer and Water District. For more detailed information on existing water facilities serving the City of Sammamish, consult the Sammamish Plateau Water and Sewer District Comprehensive Water Plan and the Northeast Sammamish Sewer and Water District Water Comprehensive Plan.

The Sammamish Plateau Water and Sewer District is a Class A water system which is hydraulically divided into two parts: the Plateau Zone, located south of Redmond-Fall City Road, and the Cascade View Zone, located north of Redmond-Fall City Road. Both zones, especially the Plateau Zone, have experienced rapid population growth, particularly during the last decade. The District has responded to growth by seeking additional groundwater sources as well as pursuing connection to the regional water supply, including a regional water connection in conjunction with the Cascade Water Alliance. The Plateau Zone has 14 wells spaced throughout the Plateau Zone and five storage tanks. This zone has two interties with Issaquah, one intertie with the Overdale Water Association, and four interties with the Northeast Sammamish Sewer and Water District. The Cascade View Zone is served by three wells and two storage tanks, with interties with the Union Hill Water Association for emergency use. Due to the escalating water demand caused by rapid development in the Plateau Zone, a water allocation process was implemented in 1998 (after 9 years of intermittent temporary moratoriums) to randomly select applications for water ERUs.

Within the Northeast Sammamish Sewer and Water District, water is supplied by five groundwater wells. Three of the production wells, and a monitoring well, are located in the Evans Creek Valley. The other two wells (Well 3 and 4) are located in the Plateau above Evans Creek Valley and ground elevations 200 to 300 feet higher than the Evans Creek Well Field. Water treatment of the supply from the five production wells is not currently required except for Well 3, which is chlorinated at a sufficient concentration to control hydrogen sulfide presence in this water supply. This well is only activated during periods of peak demand.
Figure VII-2
Water and Sewer Service Lines
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Figure VII-3  Surface Water Facilities (Retention/Detention)
Figure VII-4
Public Facilities Map
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The Northeast Sammamish Sewer and Water District also has an emergency intertie with the City of Redmond. The current water rights held by the Northeast Sammamish Sewer and Water District appear to be more than adequate to meet the demand within the District’s service area through the year 2020. However, changes in a rural designation of land use for the Evans Creek Valley or any portion of it could quickly increase the demand on the system.

Projected Needs - Water

The Sammamish Plateau Water and Sewer District based its analysis of future need on current zoning on an individual parcel level, including existing development, sensitive areas, topography and other features. An average growth rate of 4 percent was assumed until buildout, anticipated in the year 2015, with a population of 79,441 within the Plateau Zone of the District (includes Klahanie). Future need was based on a level of service of 246 gallons per household (ERU) per day. The District is investigating the procurement of new water supplies to meet projected increases in demand resulting from growth in its service area. One of the District’s objectives is to obtain enough water to allow buildout to saturation, which is anticipated to occur around 2015. As a supply strategy, the District would prefer to remain independent of the regional water system and continue to serve its customers with groundwater. However, the District is also being prudent in pursuing regional alternatives as a backup strategy. A supply study conducted for the District identified 13 alternatives for obtaining additional sources of water to supplement the District’s current supplies, with 6 more alternatives subsequently added for consideration. After extensive analyses, the Board decided to pursue a combination of alternatives to meet the District’s projected supply needs. These alternatives are presented in the District’s Six-Year Water Capital Facility Plan in Appendix B.

The Northeast Sammamish Sewer and Water District based its analysis of future need on the 1995 Puget Sound Regional Council (PSRC) forecasting model, the District’s history of metered connections, current contracts for service to new development, and an analysis of the future potential for development in the planning area. The increase in households through the year 2020 is expected to be 873, with a total of 3,670 households. Future need was based on a level of service of 271 gallons per household (ERU) per day. While the water supply and hydraulic capacity are sufficient to meet expected growth, the capacity of the storage system is limiting and additional storage capacity will be required by the year 2006. In addition, evaluation has identified deficiencies for fire flow in the water supply, including the need for emergency power for to assure continued supply, and hydraulic capacity in the distribution system of the Sahalee Estates Plat. Each of these deficiencies, including the need for additional storage, is addressed in the District’s Six-Year Water Capital Facility Plan in Appendix B.

Sewer

Existing Conditions - Sewer

The City of Sammamish is provided sewer service through two districts: Sammamish Plateau Water and Sewer District and the Northeast Sammamish Sewer and Water District. For more detailed information on existing sewer facilities serving the City of Sammamish, consult the Sammamish Plateau Water and Sewer District Comprehensive Wastewater Plan and the Northeast Sammamish Sewer and Water District Sewer Comprehensive Plan.

The Sammamish Plateau Water and Sewer District is currently in the process of developing an updated sewer capital facility plan, which will reflect existing conditions of the sewer system within the District. The current Wastewater Comprehensive Plan is dated 1987/1988 with an amendment in 1994. This updated plan should be completed in 2003. In reviewing existing locations of sewer lines, the District has sewer service primarily along major roads, including Inglewood Hill Road (except between 224th Avenue NE and 211th Avenue NE), NE 8th Street, 228th Avenue, and E. Lake Sammamish.

Utilities & Public Services
Most of the planning area within the Northeast Sammamish Sewer and Water District is already sewered, with minimal opportunities for extension to occur; mostly as a result of development infill. The sewer system is comprised of 15 collection basins serving approximately 2,400 acres with 53 miles of sewer pipe and 13 lift stations. Wastewater is discharged to King County Water Pollution Control Facilities in the City of Redmond.

Projected Needs - Sewer

The Sammamish Plateau Water and Sewer District is currently in the process of developing an updated sewer capital facility plan, which will reflect projects to be undertaken by the District within the next six years. The District should be close to completion on the plan by 2003.

The Northeast Sammamish Sewer and Water District calculated the volume of wastewater it must convey at saturation development, based on the 1996 King County Comprehensive Plan and the 1995 King County Zoning Atlas. Based on historical growth within the District, the average rate of growth in customers is anticipated to be 1.6 percent per year from 2000 to 2010, and 0.4 percent per year from 2010 to 2020. In the year 2020, capacity is anticipated to be reached under current zoning, with a population of 14,500 within the District. Few capacity problems are projected to occur due to growth. Most of the anticipated capacity problems are due to the impact of lift stations pumping into the sewer system immediately downstream. The District will monitor these locations to identify the need for capital improvements. Several sections of the existing sewer system are expected to be over capacity at full development. These sections will be replaced with larger pipes as identified in the District’s Capital Improvement Plan. As part of the plan development process, the District analyzed the existing system and discovered infiltration and inflow (I/I) during large infrequent storm events, minor lift station deficiencies, minor capacity constraints, telemetry and control limitations, and wastewater quality problems. The improvements to correct these problems are listed in the District’s Six-Year Sewer Capital Facility Plan in Appendix B.

Stormwater

Existing Conditions - Stormwater

In 2001, a Stormwater Management Comprehensive Plan was developed by the City in compliance with the regulatory requirements of the Growth Management Act, the National Pollutant Discharge Elimination System (NPDES) Phase II Rule, and the Puget Sound Water Quality Management Plan.

An inventory of the constructed drainage system was conducted by the King County Surface Water Management (KCSWM) and Roads Maintenance Divisions in the mid-1990s. The information from these sources covers approximately one-third of the current area of the City. To obtain more data, the City and SPWSD jointly hired a contractor to update the drainage inventory information. The City’s stormwater facilities consist of the following system elements:

- 408,947 feet of stormwater conveyance pipe,
- 3,519 catch basins,
- 501,659 feet of open ditches,
- 154 residential retention/detention stormwater facilities,
- 34 commercial retention/detention stormwater facilities,
- 18 oil/water separators,
King County is currently the stormwater system maintenance service provider for the City, with the contract administered through two departments, the Department of Transportation and the Department of Natural Resources.

As part of the Stormwater Management Comprehensive Plan, the following four alternatives for service delivery were explored:

- **Alternative 1:** Continue to contract with King County,
- **Alternative 2:** Contract with a Utility District,
- **Alternative 3:** Contract with a Neighboring City,
- **Alternative 4:** Develop In-House Capability.

During the development of the Stormwater Management Comprehensive Plan, Alternatives 1 and 2 appeared to be the most viable. Alternative 3 does not appear to be a viable option at this time, based on inquiries to five neighboring jurisdictions. Alternative 4 is part of the City’s long-term vision, and is an option that is likely to be reconsidered as the City’s staff and capabilities expand. The City solicited proposals from three potential service providers and selected a shared service provision contract, with some services provided by King County and others by the Sammamish Plateau Water and Sewer District.

**Projected Needs - Stormwater**

In determining future need, the City utilized a total buildout population of 76,000 in the year 2014. Because this is the first stormwater CIP for the City, this program focuses initially on clearly identifiable localized problems. The CIP addresses future projects that require considerable analysis, design, and/or large amounts of funding. This plan includes recommendations to include King County Basin Study Projects that would have regional or significant local improvement benefits. The stormwater CIP also includes drainage elements of transportation projects identified in the City’s Transportation Improvement Program (TIP).

The CIP includes the following project types:

- **Two “Quick Fix” projects.** These projects can be pursued with minimal analysis or design and pose no obvious substantial risk to downstream property or resources. The projects do not require the mobilization of equipment larger than a backhoe or small dump truck, nor do they involve complicated permitting. The projects are not expected to exceed $40,000 each, but they will allow high-priority problems to be resolved quickly and will demonstrate that the City is improving its stormwater infrastructure. The CIP also recommends that $50,000 per year be set aside for as-yet unidentified “Quick Fix” projects that might result in the years following the initial improvements.

- **One “Study” project.** This project requires investigation before the capital needs can be determined.

- **Eleven “Simple Design/Construction” or “Study” and “Simple Design/Construction” projects.** These projects have a minimal degree of complexity and require a limited amount of analysis and/or design. Some permitting might be involved. It is not expected that the costs for these projects will exceed $100,000 (with the exception of one $120,000 project).
Twenty “Study/Design/Construction” projects. These projects are complex and require a large amount of analysis and/or design. They might also have complex permitting issues. Anticipated costs of these projects range from $11,000 to $1,200,000.

One “Construction Only” project. This transportation drainage project is currently under way; the design phase was completed before this CIP was developed.

The 25 CIP projects identified through the King County Basin Studies vary in type, but most involve analysis, design, and construction. These CIP Projects may be found in the Stormwater CIP tables located in Appendix B.

**Public Educational Facilities**

*Existing Conditions – Public Education*

The City of Sammamish is served by the Lake Washington School District #414 (LWSD) and the Issaquah School District #411 (ISD) for public elementary, junior and high school education. The Lake Washington School District Capital Facility Plan and the Issaquah School District Capital Facility Plan should be consulted for more detailed information regarding school facility development planning in the Sammamish area. The City of Sammamish adopted its original school impact fee ordinance in September of 1999 to fund capital facilities within these school districts.

The following Lake Washington School District schools are either located within the City limits of Sammamish or serve the City of Sammamish:

- Blackwell Elementary,
- McAuliffe Elementary,
- Mead Elementary,
- Smith Elementary,
- Inglewood Junior High, and
- Eastlake High School.

The following Issaquah School District schools are either located within the City limits of Sammamish or serve the City of Sammamish:

- Cascade Ridge Elementary,
- Endeavor Elementary,
- Challenger Elementary,
- Sunny Hills Elementary,
- Discovery Elementary,
- Pine Lake Middle School,
- Beaver Lake Middle School, and
- Skyline High School.
Projected Needs – Public Education

The Lake Washington School District established a “standard of service” in order to ascertain current and future capacity (see Policy CF-1.2.1). School capacity is based on the district standard of service and the existing inventory. The district’s overall capacity is 24,810 Full-Time Equivalent (FTE) students. For this same period of time, student enrollment is 22,835. Enrollment is projected to decline to 22,459 FTE in 2006. Though there is an overall decrease, growth in the Redmond area will necessitate the construction of one elementary and enrollment will exceed capacity through the 2005 school year. In addition, the district will modernize six elementary schools, two junior highs and one senior high school. All of these schools are planned to receive some additional permanent capacity to replace relocatable classrooms. None of the schools projected to be built or modernized within the Lake Washington School District are within the Sammamish city limits.

The Issaquah School District also established a “standard of service” in order to ascertain current and future capacity (see Policy CF-1.2.1). The District compared enrollment forecasts with permanent capacity figures to determine the need for new schools, based on grade level and geography. The 2000 Issaquah School District Capital Facilities Plan proposes the construction of three elementary schools, a middle school, modernization of three support facilities, expansion of two elementary schools, purchase of portable classrooms, site improvements and land acquisition(s). The planned facilities will be funded by a bond issue passed on April 27, 1999, school impact fees, and reserve funds held by the district. New school facilities are a response to new housing which the county or cities have approved for construction. The new middle school is proposed just outside of the city limits of Sammamish at 244th SE and Issaquah-Fall City Road and the new Cascade Ridge Elementary is just east of the city at 2020 Trossachs Boulevard SE. The location of the other two elementary schools are yet to be determined.

A Six-Year Finance Plan for each district is located in Appendix B.

It should be noted that with the long-term implementation of the Comprehensive Land Use Plan in Chapter III, students would likely be added to both school districts, potentially 3,000 +/- students combined between the two districts. The School Districts would address capital needs to accommodate changing enrollment levels at expanded or new schools in future Six-year Capital Facility Plans. Additional information may be found in the Comprehensive Plan Supplemental Environmental Impact Statement under separate cover.

Fire and Emergency Medical Response Services

Existing Conditions – Fire and Emergency Response

Eastside Fire and Rescue (“Eastside”) serves the City of Sammamish with a full-range of fire suppression and emergency medical services. A Capital Facilities Plan (“CFP”) specific to City of Sammamish-owned stations was developed in consultation with Eastside in mid-2005. While strongly focused on maintaining existing facilities, the CFP contains some elements that will be necessary as the community grows.

Eastside receives around 8,000 calls annually; about 75% are emergency medical service calls. (Ord. O2005-192)

Eastside is tracking their response times as shown in Tables VII-B-1 and VII-B-2.
TABLE VII-B
EASTSIDE FIRE & RESCUE RESPONSE STATISTICS FOR 2001

<table>
<thead>
<tr>
<th></th>
<th>DISTRICT-WIDE</th>
<th>STATION 81 2030 212th Ave. SE RESPONSE AREA</th>
<th>STATION 82 1851 228th Ave NE RESPONSE AREA</th>
<th>STATION 83 3425 Issaquah-Pine Lake Rd. SE RESPONSE AREA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Calls</td>
<td>7,193</td>
<td>302</td>
<td>883</td>
<td>1,423</td>
</tr>
<tr>
<td>EMS Calls</td>
<td>5,109</td>
<td>228</td>
<td>597</td>
<td>955</td>
</tr>
<tr>
<td>EMS % of Calls</td>
<td>71%</td>
<td>76%</td>
<td>68%</td>
<td>67%</td>
</tr>
<tr>
<td>Response Time *</td>
<td>7:18</td>
<td>7:08</td>
<td>6:49</td>
<td>7:01</td>
</tr>
<tr>
<td>EMS Response Time *</td>
<td>6:56</td>
<td>6:42</td>
<td>6:31</td>
<td>6:41</td>
</tr>
</tbody>
</table>

* Time includes time dispatched to time on scene
Source: Eastside Fire and Rescue, April 2002

TABLE VII-B-2
EASTSIDE FIRE & RESCUE RESPONSE STATISTICS FOR 2004

<table>
<thead>
<tr>
<th></th>
<th>EFR</th>
<th>Station 81 2030 212th Ave. SE Response Area</th>
<th>Station 82 1851 228th Ave. NE Response Area</th>
<th>Station 83 3425 Issaquah-Pine Lake Rd. SE Response Area</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Calls</td>
<td>7,583</td>
<td>325</td>
<td>847</td>
<td>1,199</td>
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<tr>
<td>EMS Calls</td>
<td>5,674</td>
<td>258</td>
<td>605</td>
<td>948</td>
</tr>
<tr>
<td>EMS % of Calls</td>
<td>75%</td>
<td>79%</td>
<td>71%</td>
<td>79%</td>
</tr>
<tr>
<td>Response Times *</td>
<td>7:16</td>
<td>7:04</td>
<td>6:45</td>
<td>6:31</td>
</tr>
</tbody>
</table>

* Time includes time dispatched to time on scene
Source: Eastside Fire and Rescue
(Ord. O2005-192)

[Levels of Service (LOS) Adopted removed by Ord. O2006-205.]

Projected Needs

The Capital Facility Plan provides for growth as well as those capital improvements and renewal projects necessary to maintain fire and emergency medical facilities in working order. A six-year CFP for these facilities should be reviewed and updated annually by City staff and adopted by a resolution of the City Council. (Ord. O2005-192)

Fire Impact Fees
A Fire Impact Fee maybe adopted and should be based on criteria under state law. Such an action would be separate from the Comprehensive Plan update process. (Ord. O2005-192)

**Police**

*Existing Conditions - Police*

The City of Sammamish contracts with the King County Sheriff’s Department to provide crime prevention and law enforcement in the City of Sammamish. The Sammamish Station is located at 482 228th Avenue Northeast. The station currently has 21 police officers dedicated to policing the area, resulting in a level of service of 1 officer per 1,600 residents of the City of Sammamish. The King County Sheriff’s Department has issued a year 2000 Annual Report which includes the following data for the City of Sammamish as compared to countywide figures:

<table>
<thead>
<tr>
<th>TYPE OF CASE</th>
<th>SAMMAMISH</th>
<th>SAMMAMISH CRIME RATE*</th>
<th>KING COUNTY</th>
<th>KING COUNTY CRIME RATE*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part I Crimes</td>
<td>543</td>
<td>15.71</td>
<td>19,842</td>
<td>35.20</td>
</tr>
<tr>
<td>Part II Crimes</td>
<td>735</td>
<td>21.27</td>
<td>20,185</td>
<td>35.81</td>
</tr>
<tr>
<td>Arrests</td>
<td>437</td>
<td></td>
<td>12,150</td>
<td></td>
</tr>
<tr>
<td>Dispatched Calls for Service</td>
<td>3,880</td>
<td></td>
<td>124,844</td>
<td></td>
</tr>
<tr>
<td>Traffic Citations Issued</td>
<td>1,873</td>
<td></td>
<td>45,758</td>
<td></td>
</tr>
<tr>
<td>Accident Investigations</td>
<td>221</td>
<td></td>
<td>n/a</td>
<td></td>
</tr>
</tbody>
</table>

*Crime rate is calculated on the basis of the number of crimes per 1,000 people.
Source: King County Sheriff's Office, 2001
As noted in Table VII-C, the crime rate is much lower in Sammamish than for the County service area as a whole.

Projected Needs - Police

Specific objectives and programs planned for the City of Sammamish within the next year may be reviewed within the City of Sammamish 2001-2002 Budget. No major capital facilities are planned within the City of Sammamish within the next six years.

City Hall

Existing Conditions – City Hall
The City Hall, located at 801 228th Ave SE, is a 38,000 sq. ft. facility that includes the Police Department. The building is located in an encompassing 39+ acre site called “Sammamish Commons” of which 27 acres are specifically designated for park and recreation use. There are 9+ acres to the SW of City Hall, which currently has a single-family residence on it; final use of this area has not been determined. The remaining 3.4 acres are the City Hall building, associated parking and a site for a future (undesignated use) building. (Ord. O2006-205)

GOALS - UTILITIES

GOAL UG 1: Ensure that privately provided utilities, including electricity, natural gas, cable television, and communication, are available or can be provided to serve the community.

GOAL UG 2: Coordinate the timing and location of utilities to minimize cost and disruption.

GOAL UG 3: Facilitate the provision of reliable utility service in a way that reduces environmental and safety impacts while allowing for a fair and reasonable price for the utility’s product.

GOAL UG 4: Encourage undergrounding of overhead utilities and co-location of utilities to reduce aesthetic impacts and service disruptions.

GOAL UG 5: To the greatest extent possible, encourage the placement of personal wireless communication facilities in a manner that minimizes adverse impacts on adjacent land uses, and encourage siting and design of communication facilities in a manner that provides the least impact on the aesthetic character of the community.

GOAL UG 6: Stay abreast of scientific research and changes in legislation regarding electromagnetic fields.

GOAL UG 7: Promote and support energy conservation.
GOAL UG 8: Monitor the delivery of solid waste services provided by King County and waste handlers to ensure appropriate service levels are provided at a reasonable cost.

GOALS & POLICIES - UTILITIES

GOAL UG 1: Ensure that privately provided utilities, including electricity, natural gas, cable television, and communication, are available or can be provided to serve the community.

UP-1.1 The City should ensure that City regulations allow for improvements and additions to electric, natural gas, cable television, and telecommunication facilities as needed to improve service and reliability and accommodate growth.

UP-1.2 The City should furnish regular updates of population, employment, and development projections to private utilities and service providers in order to ensure appropriate services will be available as needed.

UP-1.3 The City shall require franchise agreements where necessary for private utility use of the City rights-of-ways.

UP-1.4 The City should support the availability and efficient use of electricity and natural gas and alternative energy sources.

UP-1.5 The City should encourage state of the art telecommunication services as a means to offset the transportation impact of traditional development and growth.

UP-1.6 The City should support cable video and high speed data services that meet the cable-related needs and interests of all segments of the community, taking into account the cost of meeting such needs and interests.

GOAL UG 2: Coordinate the timing and location of utilities to minimize cost and disruption.

UP-2.1 The City should strive to notify private utilities and service providers of construction work in the public rights-of-way which may affect their equipment, and encourage coordination of public and private utility trenching activities for new construction and maintenance and repair of existing roads.

UP-2.2 When reasonably feasible, the City should promote co-location of new public and private utility distribution facilities in shared trenches and coordination of construction timing to minimize construction-related disruptions to the public and reduce the cost to the public of utility delivery.

GOAL UG 3: Facilitate the provision of reliable utility service in a way that reduces environmental and safety impacts while allowing for a fair and reasonable
price for the utility’s product.

UP-3.1 The City should require in the planning, siting, and construction of all electrical facilities, systems, lines, and substances, reasonable cost-effective steps that reduce exposure to potential health effects.

UP-3.2 Where possible, the City should require utilities to define alternative routes to avoid impacts to environmentally sensitive areas.

UP-3.3 The City should require co-location of utility facilities and equipment where feasible, to minimize aesthetic impacts and increase efficiency in service.

UP-3.4 The City should obtain and review technical reports and model ordinances that establish safety parameters and appropriate land uses in proximity to natural gas pipelines. If the City chooses to adopt a pipeline safety ordinance, the City should review existing franchise agreements with service providers, and coordinate with the appropriate parties in the adoption of a new ordinance, including, but not limited to, the Puget Sound Energy and the Williams Pipeline Corporation.

UP-3.5 The City shall prepare regulations to preserve and protect trees in easements, rights-of-way, parks, and potentially, under certain circumstances, private property. These regulations shall include, but shall not be limited to, guidelines for utility providers, private firms, City contractors and staff, as well as private individuals and neighborhood associations regarding appropriate practices for the pruning, maintenance, and/or removal of trees.

UP-3.6 Utility companies shall perform pressure checks on a regular basis to ensure proper function and safety of the gas utility/transmission lines.

**GOAL UG 4:** Encourage undergrounding of overhead utilities and co-location of utilities to reduce aesthetic impacts and service disruptions.

UP-4.1 To the extent feasible, the City should require underground utility networks in new developments in the City.

UP-4.2 Where significant work in existing rights-of-way will occur, the City should coordinate with service providers to investigate the possibility of buried lines where existing overhead lines are presently located.

UP-4.3 The City should consider creating a funding mechanism for undergrounding of utilities on a continuing basis in developed areas.

UP-4.4 The City should consider requiring undergrounding of new utility distribution lines, except where undergrounding would cause greater environmental harm than alternatives, or where the Washington Utilities and Transportation Commission tariff structure is not consistent with the policy.
GOAL UG 5:  To the greatest extent possible, encourage the placement of personal wireless communication facilities in a manner that minimizes adverse impacts on adjacent land uses, and encourage siting and design of communication facilities in a manner that provides the least impact on the aesthetic character of the community.

UP-5.1 The City should encourage permit applicants for wireless communications facilities to submit an area wide plan that demonstrates the lowest land use impacts consistent with telecommunication customer needs.

UP-5.2 The City should promote the following list of zoning districts as the preferred and descending order for locating personal wireless communication facilities: Office, Community Business, Neighborhood Business, Multifamily zones (R-12 through R-18), park sites, and Single Family Residential zones (R-1 through R-8).

UP-5.3 The City should require the following list of system designs as the preferred and descending order for facility type: attached to public facility structures; building mounted; integrated with utility poles, light standards, and signal supports; co-located on utility poles, light standards, and signal supports; co-located on existing Communication, Broadcast and Relay Towers; and freestanding towers.

UP-5.4 The City should encourage upgrading of wireless communication facilities as improvements in telecommunications technology create smaller and less visually intrusive facilities.

UP-5.5 Telecommunications companies should propose the construction of new freestanding facility towers and structures only when no feasible alternative exists, or when visual intrusion is less than the visual intrusion that is associated with placing the facility on an existing structure or building.

UP-5.6 Telecommunications companies should consider the use of street light poles owned by the City or by Puget Sound Energy to install wireless equipment compatible with the lighting function.

UP-5.7 For infrastructure opportunities on City property, other than street rights-of-way, offer appropriate City-owned properties for lease to install wireless communications equipment that is compatible with existing City uses of the sites and consistent with land use requirements.

UP-5.8 The City should encourage the co-location of telecommunications equipment on City sites which reduce total impact of antennas on the community.

GOAL UG 6: Stay abreast of scientific research and changes in legislation regarding power-line electromagnetic fields.

UP-6.1 The City should periodically review the state of scientific research on power-line electromagnetic fields (EMF), and make changes to policies if the situation warrants.
The City should encourage the development of regional and statewide policies regarding exposure to power-line electromagnetic fields (EMF) through a process involving local, regional and State governments, as well as electric utilities. As part of this process, the City should encourage the use of best available science in the development of the policies.

The City should consider educational and regulatory measures aimed at prudent avoidance of potential power-line EMF exposure such as:

- Siting power lines to reduce exposures and exploring with service providers measures to reduce the creation of magnetic fields around transmission and distribution lines without creating new hazards,
- Encouraging service providers to measure fields in their customers’ homes and help them to identify sources of high fields; and,
- Encouraging underground electrical lines wherever practical consistent with the policies of this Element.

**GOAL UG 7: Promote and support energy conservation.**

The City should continue to enforce State Energy Code requirements.

The City should work with electrical utilities to encourage the public to conserve electrical energy through public education.

The City should review and update codes as necessary regarding solar energy and other alternative energy sources.

To create a pleasing environment and to increase energy efficiency by reducing heat absorbed by asphalt that increases ambient temperatures, the City should:

a. Develop a street tree and landscape ordinance specifying appropriate vegetation types,

b. Require the planting of specified trees along street edges, parking areas, and other locations where feasible,

c. Support electric service provider street tree programs, and local community urban forestry programs.

**GOAL UG 8: Monitor the delivery of solid waste services provided by King County and waste handlers to ensure appropriate service levels are provided at a reasonable cost.**

The City should support the planning of solid waste services, and the provision of disposal capacity on a regional basis.

The City should monitor the levels of solid waste service and costs currently provided to the Sammamish community through the Washington State Utilities and Transportation
Commission’s oversight of the local private hauler.

UP-8.3 The City should coordinate with current service providers to ensure that waste pick-up and curb-side recycling services are reliable.

- Lower the level of service standard
- Change the Land Use Plan
- Increase the amount of revenue from existing sources
- Adopt new sources of revenue.

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