



CITY OF KIRKLAND

Planning and Community Development Department

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MEMORANDUM

Date: September 30, 2014

To: Planning Commission

From: Joan Lieberman-Brill, AICP, Senior Planner
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Eric R. Shields, AICP, Planning Director

Subject: Comprehensive Plan Update, File No. CAM13-00465 #5

This memo addresses the following Comprehensive Plan Update topics:

- Utilities Element Update, Study Session #2
- Public Services Element Update, Study Session #2

I. RECOMMENDATION

Review final drafts of the Utility and Public Services Elements in preparation for public hearing in summer 2015.

The Elements will continue to be shaped by the following ongoing processes:

- Neighborhood Plan update discussions
- Public input
- EIS analysis of growth alternatives
- City, public non-city, and private utility and service purveyor discussions.
- Capital Facilities and Natural Environment Element updates.

II. BACKGROUND DISCUSSION

At your August 28, 2014 study session, the Planning Commission reviewed and provided direction to staff on the first draft of both Elements. Staff has taken the comments from the Planning Commission and incorporated them into a final draft of both Elements for Planning Commission final review and direction prior to the public hearing to be scheduled in 2015.

Changes to the Utility and Public Services Elements since the last PC meeting are discussed below by element. In addition, the major changes to each element are summarized.

A. Utility Element

The **Utilities Element** addresses water, sewer, surface water, natural gas, electricity, telecommunications and hazardous liquid pipelines.

1. Planning Commission Aug. 28 comments and responses:

- PC Comment: address "grey water".

Staff Response: According to our surface water manager Jenny Gaus; the term grey water is typically used to denote reuse of potable water that has been used inside buildings – an example would be using water from showering to water a garden, or cooking water to water house plants. When talking about collecting rain water, we usually say "rain water collection and reuse". The term "reclaimed water" refers to sanitary sewers flows that have been through a wastewater treatment process.

Policy U-4.4 addresses rain water collection and reuse as a low impact development best management practice.

Policy U-3.6 addresses reclaimed water by encouraging water reuse and reclamation utilizing purple reclaimed water pipe for toilets and irrigation.

Grey water will be addressed in the Environment Element since it is a technique to conserve water resources that is not regulated or managed.

- PC Comment: In addition to considering acquisition of stream corridors and/ or wetlands to further surface water utility goals to reduce flooding, improve water quality and improve fish habitat, address acquisition of open space property to reduce landslides and erosion and stabilize downstream properties.

Staff Response: Protecting streams is related but different than acquisition of property to reduce risk from landslides. The City will be studying critical areas including landslide hazards comprehensively outside of the Comprehensive Plan process, resulting in part, from heightened public concern as a response to the Oso landslide. The update of the critical areas ordinance will start in late 2015.

If funding is approved as part of the 2015-2016 budget, it will include mapping of landslide hazards in the Juanita, Finn Hill and Kingsgate neighborhoods to get updated baseline information. Once the City has better information, and the City Council has had an opportunity to provide guidance on risk management, the Environment Element would incorporate policies to reflect that. In the meantime, new Environment Element policies are being proposed that address geologic hazards. Further discussion on these policies will be coming before the Planning Commission in November.

Policy U-4.18 is revised to include open space acquisition to address storm water

impacts to streams.

- PC Comment: address energy co-generation.

Staff Response: Co-generation uses an otherwise unused byproduct of fossil fuel electricity generation to become a useful commodity by capturing heat generated while producing electricity to supply hot water, steam, space heating and cooling.

Policy U-7.4 is revised to encourage PSE to increase the use of renewable energy and co-generation.

- PC Comment: address rationale for consolidation of special districts.

Staff Response: Vision 2040, the Growth Management Act and King County Planning Policies call for consolidation of special districts.

Policy U-8.5 is revised to reflect this unified vision for urban service delivery.

2. Staff driven revisions:

- Revise Policy U-1.6 narrative to prioritize increased renewable energy use and adds geothermal heat pumps to those identified for use on City facilities.
- Revise Policy U-3.3 narrative to describe the sewer extension program.

3. Summary of the major changes to the existing Utility Element:

This section reiterates the main changes to the Utility Element for your consideration.

- Revises the Utility Concept to address the following draft **Guiding Principles**:

The Sustainable theme – the Utility Concept adds renewable energy as an additional cost effective means of accommodating growing demand for services and reducing carbon emissions. Existing text addresses only efficiency and conservation as strategies to address demand, and is silent on using renewable energy and reducing carbon emissions.

Connecting to the City theme – The Utility Concept is revised with focus on how telecommunications connect the City and its citizens.

- Adds new and revised **Energy/Climate Change** Goals and Policies as mandated by Countywide Planning Policies, PSRC Vision 2040, and highlighted in the draft Vision and Guiding Principles:

Promotes renewable energy, energy efficiency, conservation and water reuse and

reclamation to address climate change generally and more specifically in the water, sewer, and surface water sections of the Element.

- Adds new **Social Equity** Policy as mandated by the Countywide Planning Policies to commit resources for utilities to underserved and economically disadvantaged.
- Addresses **public comments** expressed during Neighborhood meetings in winter 2014 and various public outreach venues in 2013:

Surface Water concerns - Incorporates Surface Water Master Plan Policies.

Electric Vehicle Charging Stations – New Energy Policy addresses promoting renewable energy by increasing these and other sustainable utility practices to reduce City output of greenhouse gases.

Attachment 1 contains track changes highlighted in yellow which indicate revisions to the Utility Element since the last study session. Attachment 2 contains a clean copy with all the changes incorporated.

B. Public Services Element

The **Public Services Element** addresses fire and emergency medical services, emergency management, police protection, solid waste collection and transfer, schools and libraries.

1. Planning Commission Aug. 28 comments and responses:

- PC Comment: confirm that the level of service standards for five minute emergency response times 90 percent of the time are achievable.

Staff Response: Assistant Fire Chief Joe Sanford stated that the existing LOS is not achievable without adequate additional resources. A response time study in the Standards of Coverage and Deployment Plan for the entire City indicated that the Fire Department achieved the Fire goal of 5:20 62 percent of the time, and the EMS goal of 5:00 69% of the time. The new fire station location in the Juanita, Finn Hill and Kingsgate vicinity is being driven by a number of factors, but primarily the ability to reduce response times in the areas that currently are below standard. The emergency response time goals are a target for achievement when resources are available to do so. Staff recommends retaining the current response time for EMS and Fire. These policies contribute to the policy basis for funding.

- PC Comment: Continue to identify planned emergency response routes in the Implementation Strategies Element, rather than the Public Services Element.
- Staff Response: So noted. Retain the previously identified Highlands 111th Street for Forbes Creek Drive emergency vehicle connection in the Implementation Strategies Element. It was identified in the 2007 Highlands Neighborhood plan update as a candidate to improve fire and emergency

medical response time level of service by connecting the Highlands and Juanita neighborhoods. The Fire, Police and Public Service Departments continue to support this connection.

Policy narrative PS-1.2 addresses general strategies for improving response times rather than specific opportunities for improvements.

- PC Comment: Address emergency response time deficiencies in Juanita, Finn Hill, and Kingsgate neighborhoods.

Staff Response: The narrative in the Fire Protection and Emergency Medical Services existing conditions section addresses emergency response deficiencies in JFK by stating a new planned fire station to serve the northern areas of the City is to be completed by 2017.

Policy PS 1.2 narrative is revised to note that increased funding is required to meet the adopted levels of service.

Too, Policy PS 1.3 narrative is revised to note that street improvement opportunities should be considered as funding becomes available, and refers to emergency response maps showing where deficiencies exist.

- PC Comment: Address joint school/city development and maintenance of school sites to maximize community use.

Staff Response: The narrative for Policy PS-3.5 is revised to include this partnership.

2. Staff driven revisions:

- Eliminate the Fire Department Standards of Coverage and Deployment Plan as a functional plan that is adopted by reference. This is a study prepared by a consultant that has not been adopted by the City Council but is the basis for discussion and further analysis.
- The King County Waste Division Solid Waste Management Comprehensive Plan is a draft plan, never ratified by the KC Council. KC, in consultation with cities, is scheduled to re-evaluate the draft plan with adoption expected in 2016. 37 cities, including Kirkland, with solid waste interlocal agreements with King County, would then review and approve the plan. Staff will revise the corresponding policies to be consistent with the 2016 Solid Waste Comprehensive Plan post adoption of the GMA Comprehensive Plan during the annual cycle of Plan updates. Until then, the 2013 draft SWMCP policy targets, adopted by reference, are in effect. These policies address waste prevention and disposal and recycling goals and closure of the Houghton Transfer Station.

Indicate in Policy PS-2.3 that as a result of the planned update, the waste

prevention, disposal and recycling goals and the target date for closure of the Houghton Transfer Station may change.

- Add new policy PS-3.7 to align with and support the American's with Disabilities Act which guarantees equal access to people with disabilities. Title II of the American's with Disabilities Act states; "No qualified person with a disability may be excluded from participating in, or denied the benefits of, programs, services, and activities provided by state and local governments because of a disability."

1. Summary of the major changes to the existing Public Services Element:

This section reiterates the main changes to the Public Services Element for your consideration.

- Revises the **Public Services Concept** to address draft Guiding Principles:
Strengthens the Connected theme – by stating that it ensures a sense of community and high quality of life in addition to provision of adequate public services to support development and correct deficiencies.
- Adds **Emergency Management** to the Public Services element to address disaster response and recovery.
- Revises **Solid Waste** Policy addressing the new target date for the closure of the Houghton Transfer Station by 2021 in coordination with King County.
- Adds new and revised **School** Policies mandated by the Growth Management Act, addressing public comments, and highlighted in the draft Vision and Guiding Principles:
Articulates City's role in supporting LWSD meeting its level of service by charging school impact fees, by coordinated planning, siting, and development of facilities, by sharing and maintaining joint use facilities, and sharing the City's growth projections.
- Adds new **Social Equity** Policy as mandated by the Countywide Planning Policies to commit resources for public services to underserved and economically disadvantaged.
- Adds new **Disabled Access** Policy to address American's with Disability Act. Currently the City is undergoing a process to inventory and identify deficiencies in meeting our obligation in all City services, programs and facilities. The City's Americans with Disabilities Act Transition Plan will identify transportation and other public service facility improvements to correct deficiencies over time.

III. DISCUSSION:

Staff would like the Planning Commission to discuss and provide direction on the following issues:

1. Does the Commission have additional edits to either Element?
3. Does the Commission wish to hold another study session to discuss further edits or should it be considered a final draft pending additional public comment or EIS guidance?

Attachments:

1. Utility Element showing track changes
2. Clean copy of Utility Element
3. Public Services Element showing track changes
4. Clean copy of Public Services Element

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Utilities Element

• RELATIONSHIP TO THE FRAMEWORK GOALS •

The **Utilities Element** highlights the following Framework Goals:

~~FG-1 Maintain and enhance Kirkland's unique character.~~

~~FG-2 Support a strong sense of community.~~

~~FG-3 Maintain vibrant and stable residential neighborhoods and mixed-use development, with housing for diverse incomes, ages, and lifestyles.~~

~~FG-4 **Promote a strong and diverse economy.**~~

~~FG-5 Protect and preserve environmentally sensitive areas and reduce greenhouse gas emissions to ensure a healthy environment.~~

~~FG-6 Identify, protect and preserve the City's historic resources, and enhance the identity of those areas and neighborhoods in which they exist.~~

~~FG-7 **Encourage a sustainable community.**~~

~~FG-8 Maintain and enhance Kirkland's strong physical, visual, and perceptual linkages to Lake Washington.~~

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~~FG-9 Provide safety and accessibility for those who use alternative modes of transportation within and between neighborhoods, public spaces, and business districts and to regional facilities.~~

~~FG-10 Create a transportation system which allows the mobility of people and goods by providing a variety of transportation options.~~

~~FG-11 Maintain existing park facilities, while seeking opportunities to expand and enhance the current range and quality of facilities.~~

~~FG-12 Ensure public safety.~~

~~FG-13 Maintain existing adopted levels of service for important public facilities.~~

~~FG-14 Plan for a fair share of regional growth, consistent with State and regional goals to minimize low density sprawl and direct growth to urban areas.~~

~~FG-15 Solve regional problems that affect Kirkland through regional coordination and partnerships.~~

~~FG-16 Promote active citizen involvement and outreach education in development decisions and planning for Kirkland's future.~~

~~FG-17 Establish development regulations that are fair and predictable.~~

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A. INTRODUCTION

The Utilities Element addresses water, sewer, surface water, electric power, natural gas, ~~and telecommunications, and hazardous liquid pipelines.~~

Utility planning has contributed to a high quality of life for Kirkland residents and businesses by ensuring efficient utility delivery. Kirkland's existing utility infrastructure is generally adequate to meet the growth needs of the City for many years. The primary focus of the City ~~in the coming years~~ will be to continue to ~~update~~ upgrade existing systems to increase efficiency and to avoid maintenance problems associated with older facilities, to reduce demand through conservation, and to transition to renewable and alternative technologies to reduce greenhouse gas emissions. The objective is to meet the needs of the present without compromising the ability of future generations to meet their own needs.

Each utility function presents a unique problem. For water, Kirkland faces regional supply issues that require regional solutions. For sewer, the City must consider how to service areas on septic systems as those areas become more urbanized and prevent non-degradable materials and contaminated effluents from entering the sewer system. For surface water, the City is challenged to manage a growing system to handle increased urbanization without flooding, while maintaining and enhancing water quality and aquatic habitat. For hazardous liquids, Kirkland land development regulations near the pipeline corridor will continue to be enforced to help reduce the risk of a pipeline accident. For telecommunications, the City ~~must find economical ways to install~~ will continue to develop its ~~fiber-optic telecommunications~~ network to meet the City's needs and respond to changes in technology, and, where possible, the City will utilize its telecommunications investments and partnerships to benefit citizens, businesses and public institutions. The City recognizes that excellent Internet connectivity is a key resource for business success. To that end, the city will work with telecommunications providers to help them succeed.

For both City and non-City-managed utilities, ~~the City Kirkland~~ faces the challenge of facilitating system improvements, efficiencies and new technologies while minimizing appropriately managing the impacts associated with above-ground utility installations.

EXISTING CONDITIONS

The City of Kirkland currently provides the following utility services:

- **Water** – All areas of the City except those north of NE 116-124th Street that are outside the City's service area. Figure U-1 shows the City's water system.
- **Sewer** – All areas of the City except those north of NE 116th Street that are outside the City's service area. Figure U-2 shows the City's sewer system.
- **Surface Water** – All areas of the City. Figure U3 shows the City's surface water system.

The following non-City-managed utilities provide additional services:

- **Northshore Utility District and Woodinville Water District** – Both are special purpose districts that operate independently from the City. They provide water and sewer services to the northern portions of the City. Both have franchise agreements that include provisions for future City assumption of service at such time as it is desirable to do so. The Washington State Departments of Health and Ecology review and approve the Utility Districts' Comprehensive Plans, and they are bound by the same service regulations as the City. Figures U-4 and U-5 show the water and sewer systems.

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- **Puget Sound Energy** ~~–Is a public service company - a corporation or other non-governmental business entity which delivers certain services considered essential to the public interest. It~~ transmits and distributes electric power and natural gas in a nine-county area, including Kirkland and much of King County. ~~Figures U-6 and U-7 show Puget Sound Energy's showing the location of electrical and gas facilities-are not available from PSE.~~ (NEW MAPS TO BE ADDED)
- **Telecommunications** ~~– are provided by a variety of non-City managed companies.~~ Kirkland has both wired and wireless telephone ~~services~~, cable TV ~~service~~, and high speed cable ~~and fiber-optic~~ internet services, all provided by a variety of non-managed providers. ~~Those that use City rights-of-way to provide services have franchise agreements with the City. Figure U-8 shows the City's fiber optic network.~~ (NEW TELECOMMUNICATIONS MAP TO BE ADDED)

CITY MANAGED FACILITIES

Water

The City of Kirkland Water Utility provides water service to all of its residents, except those generally north of NE ~~116~~ 124th Street who are served by the Northshore Utility District or the Woodinville Water District (see Figure U-1).

The City's water system is primarily a gravity system consisting of ~~181~~ 171 miles of water lines and ~~19.5~~ 12.62 million gallons of storage capacity that includes 1.5 million gallons of fire protection storage. This averages 5.3 million gallons of water per day that is distributed to Kirkland's water service area customers. Projected costs associated with the water system are primarily maintenance and replacement costs for aging pipe and fire flow needs. The system generally has sufficient capacity to serve growth anticipated through the land use plan and future water customers into the year 2035. The City anticipates approval of its Comprehensive Water System Plan in the fall of 2014 by the Washington State Department of Health. It will outline water projects to upgrade any deficiencies in the system for the next 20 years no capacity costs are anticipated through 2022.

~~Seattle Public Utilities supplies the City's drinking water and is contracted to do so into the near future. The City, as a member of the Cascade Water Alliance, is also planning to secure and develop water supplies from other areas in the long-term. Cascade collects regional capital facilities charges to fund planning and development of future water sources. The City is part of a regional solution to address water needs. Kirkland purchases its water supply from Seattle Public Utilities. The water is then distributed to Kirkland customers through the City's distribution system. The City currently receives all of its water supply from Seattle from the Tolt River Watershed, with occasional supply from the Cedar River Watershed when routine maintenance is required at the Tolt Treatment Facility. Cascade Water Alliance currently has an agreement with Seattle to provide 33.3 million gallons of water per day to its member through the year 2039 with the opportunity for an extension of the contract until 2063.~~

~~In addition to the supply from Seattle, Cascade Water Alliance also has an agreement with the City of Tacoma for additional supply into the year 2042, and has the capability of developing Lake Tapps in East Pierce County if the need arises beyond 2063. According to Cascade Water Alliance, based on current trends of customer's use of water, responsible plumbing codes, and water efficient appliances, it is likely that Lake Tapps will not need be developed for decades.~~

~~Cascade Water Alliance Water Efficiency Program has a single regional water efficiency savings goal for all its members of a cumulative savings of 0.6 million gallon per day on an annual basis and 1.0 mg per day on a peak season basis through 2020. By utilizing existing water supplies more efficiently, millions of dollars will be saved for its members and ratepayers, leave more water in streams for fish, and reduce the region's carbon footprint through decreased energy usage involved in the treatment, transmission and heating of drinking water.~~

Sewer

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The City of Kirkland Sewer Utility provides sanitary sewer service to all of its residents south of NE 116th Street (see Figure U-2). The Northshore Utility District provides sewer service to most residents north of NE 116th Street.

The collection system consists of ~~35~~ 40 wastewater collection basins, ~~88~~ 122 miles of sewer pipe, ~~nine~~ six lift stations and force mains, and approximately ~~2200~~ 3184 manholes. Approximately five to 10 percent of Kirkland residents use septic systems. Sewer extensions have typically been funded by developers ~~and-or~~ local homeowners ~~through the City-managed Emergency Sewer Program in compliance with the Kirkland Municipal Code.~~

The system's most serious deficiency is the age of some of the pipelines. ~~Twenty percent of the conveyance system consists of The 45-year-old~~ concrete pipes ~~that were installed prior to the 1950's.~~ Many allow inflow/infiltration and root intrusions which reduce capacity of the system and increase operation and maintenance costs. ~~In addition, downtown businesses that produce fats, oils, and grease (FOG), release damaging amounts into conveyance pipes, contributing to odors downtown and increasing the risk of overflows. As a founding members of the Northwest FOG alliance, the City continues to lead the region in its efforts to educate businesses about proper kitchen practices and regular cleaning of FOG controls to prevent these impacts.~~ The primary costs anticipated to maintain existing levels of service are related to replacement and rehabilitation of older pipelines, improvement of pumping capacity, and system expansions in the Lake Plaza Basin, Central Way Basin, and Juanita Basin. ~~These improvements will provide adequate capacity to serve growth anticipated through the land use plan through 2022.~~

~~The 2008 Sewer Comprehensive Plan establishes the policy basis for recommended capital improvements to correct deficiencies and meet future service needs. Updated every ten years, the Plan provides the City with a guide to evaluate the impacts of future proposed development and land use on the sewer system.~~

The King County ~~Department of Metropolitan Services (METRO) Wastewater Treatment Division (WTD)~~ provides the City's service area with sanitary sewer treatment services. ~~at a capacity of 100 gallons per day per capita under the terms of an intergovernmental agreement. Northshore Utility District and City sewage and a majority of Northshore Utility District's sewage, are treated at Metro's King County's Renton treatment plant. Very small portions of Northshore's sewage flows to the Brightwater Treatment Plant in Woodinville and the West Point Treatment Plant in Seattle.~~

~~King County WTD's review of regional conveyance and treatment plants capacity, indicates that the existing capacity is adequate to treat the region's wastewater until the 2030's. Planned upgrades to the treatment facilities will occur in order to maintain adequate capacity to serve anticipated growth beyond the 2030s.~~

Surface Water

The City maintains conveyance, ~~flow control detention~~ and water quality treatment systems in public rights-of-way, ~~and flow control and water quality treatment facilities that serve single-family developments.~~ ~~These facilities are managed to reduce flooding and to protect water quality systems accept stormwater runoff and surface water from private property within the City and from neighboring jurisdictions.~~ As of 20014, the City ~~owns and manages 257 miles of conveyance pipe and 539 retention /detention facilities (tanks, vaults and ponds).~~ ~~system contains 364 public and private detention systems which include vaults and ponds, 9,867 public and private catch basins and 170.4 miles of public and private pipes.~~

~~Kirkland is subject to the Phase II Western Washington Municipal Stormwater Permit (the Permit). The Permit is issued by the State of Washington under authority from the Environmental Protection Agency, and is part of the National Pollutant Discharge Elimination System (NPDES), a program which seeks to reduce pollution in the Nation's waterways by controlling sources of pollution. The current Permit became effective on August 1, 2013, and will expire on July 31, 2018. The Permit allows Kirkland to discharge stormwater into water of the State if the City takes specific steps in each of the following areas to minimize discharge of pollutants to stormwater: public education and outreach, public involvement, illicit discharge~~

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detection and elimination, controlling runoff from new development, redevelopment, and construction sites, municipal operations and maintenance, and monitoring and effectiveness studies.

Privately owned stormwater facilities consist of conveyance, flow control and water quality treatment facilities that serve multi-family and commercial developments, and certain private roads and single-family developments. City staff inspect 631 private flow control and water quality treatment systems to insure that they are cleaned and functioning as designed. In addition, staff provide technical assistance for drainage and water quality problems that impact these systems. Figure U-3 shows the City surface management water system.

The Kirkland Surface Water Master Plan is a functional plan that Kirkland uses to identify capital projects to address deficiencies in the system. This provides the policy basis for capital projects.

A watershed approach has been used for managing the surface water utility by dividing the City into 135 drainage basins. The largest and most important streams are Juanita and Forbes Creek. The size of their drainage basins makes them especially important for receipt of stormwaters and discharge into Lake Washington. Yarrow Creek, Denny Creek, Juanita Creek, Forbes Creek, and Champagne Creek also have large basin areas within the City and are significant because they provide salmonid fish habitat and productive associated wetlands. Smaller critical drainages include Carillon Creek, Cochran Springs Creek, Everest Creek, Holmes Point, and Kingsgate Slope. More information on the watershed and drainage basins, and a map illustrating their location, can be found in the Natural Environment Element.

City Telecommunications

Over time, the City is installing a fiber-optic network to service its governmental facilities and traffic control systems by addition, the City is partnering with other cities and schools to lay the foundation for a regional fiber optic telecommunication system. Figure U-6 8 shows the fiber-optic network in Kirkland, which includes partnerships with the City, Lake Washington School District, the University of Washington and the City of Bellevue to install publicly owned fiber-optic in major rights-of-way.

(MAPS GO HERE)

NON-CITY-MANAGED UTILITIES

Northshore Utility District: Water and Sewer

The Northshore Utility District provides water and sewer services to northern portions of the City. Figure U-4 illustrates the existing Northshore water system and proposed improvements. Figure U-5 illustrates the existing Northshore sewer system and proposed improvements.

Northshore's sewer system is primarily a gravity system. Wastewater is are treated at King County's Department of Natural Resources West Point and Renton treatment plants. Sewer Level of Service is 71 gallons per capita flow rate. Potable water from the Tolt River Watershed is purchased from Seattle Public Utility (SPU). The water system has five reservoir sites with a 29-million-gallon capacity. Water Level of Service is 174 gallons per day (GPD) per Equivalent Residential Units (ERU).

The District's is in the process of developing a sewer system capital improvement plan sewer and water plans include identification of capital improvements for replacement and repair of the older, damaged sections of the system. Repair and maintenance of the system occur when needed and extensions necessitated by future development will be provided by the developer.

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The District, as one of a group of 18 utilities who also purchase water from SPU, are part of the Saving Water Partnership (SWP) administered by SPU. All have adopted the Saving Water Partnership Regional Conservation Program Water Use Efficiency Goal. The conservation goal is to reduce per capita water use from current levels so that the total average annual retail water use of members of the SWP is less than 105 million gallons per Day (MGD) from 2013 through 2018 despite forecasted population growth. Due to the high cost of connecting to the Brightwater Wastewater Treatment Facility reclaimed water distribution system, the District does not currently have sufficient need or cost-justification to develop and manage a reclaimed water distribution system. They will continue to evaluate the feasibility of doing so in the future.

Northshore can provide service to accommodate Kirkland's future growth.

Woodinville Water District: Water and Sewer

The Woodinville Water District provides water services to the northeast portion of the City and sewer service to only a few single family homes ~~in the City~~. Figure U-4 illustrates the existing Woodinville water system and proposed improvements. Figure U-5 illustrates the existing and proposed Woodinville sewer system.

Woodinville's sewer system is primarily a gravity system. Due to the topographical difficulty of providing gravity sewer service to the Kingsgate area, Northshore Utility District provides sewer service there, even though it is within Woodinville's service area. Figure U-4 illustrates the existing Woodinville water system and proposed improvements. Figure U-5 illustrates the existing Woodinville sewer system. Woodinville Water wastewaters are treated at King County's ~~Department of Natural Resources~~ West Point and Renton treatment plants. Sewer Level of Service is 75 gallons per day per capita. Woodinville's Sewer General Plan indicates that Woodinville Water district can provide sewer service to accommodate Kirkland's future growth.

Potable water from the Tolt River Watershed is purchased from Seattle Public Utility. The water system has ~~six~~ eight reservoir sites with a 14.9-million-gallon capacity. Water Level of Service is 193 gallons per day /Equivalent Residential Units. Woodinville's Comprehensive Water System Plan indicates that by the year 2027, the District's water needs in the west service area, which includes Kirkland, will be deficient of source availability for projected demands and fire suppression storage. The District has a capital improvement plan for the system. Depending on future demand, a new water reservoir will be built to provide new capacity where the existing Kingsgate reservoir is located. In the meantime, a new booster pump station at this site has delayed the need for the new reservoir. Repair and maintenance of the system occur when needed and extensions necessitated by future development will be provided by the developer.

The district's conservation goal is to reduce per capita water use from current levels so that the total average annual retail water use of the members of Seattle Public Utility Saving Water Partnership is less than 105 Million Gallons per Day (MGD) from 2013 – 2018 despite forecasted population growth.

Woodinville Water can provide service to accommodate Kirkland's future growth. However, water needs in the west service area, which includes Kirkland, indicates that there will be a deficit

Puget Sound Energy: Electricity and Natural Gas

Puget Sound Energy (PSE) is regulated by the Washington Utilities and Transportation Commission (WUTC), which provides the Kirkland area with electricity and natural gas. Figures U- 6 and U-7 illustrate the existing and proposed electrical system. Figures U-8 and U-9 illustrate the existing and proposed natural gas system. (NEW MAPS TO BE ADDED)

Electricity

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~~Puget Sound Energy (PSE) is a public service company regulated by the Washington Utilities and Transportation Commission (WUTC), which provides the Kirkland area with electricity and natural gas. PSE distributes power transmitted by Bonneville Power Administration (BPA), and generates, transmits, and distributes power as part of the interconnected Northwest power grid. As of 2014, PSE generates approximately 40% of its electricity from their own power plants and acquires the rest from generation sources on the Columbia River and across the western United States and Canada. The electricity that PSE delivers to customers is generated from hydroelectric dams, coal, natural gas, wind, and to a much smaller degree from nuclear, and other (solar, biomass landfill gas, petroleum, and waste). Although there has historically been a net surplus in electricity supply in the Northwest, in recent years there has been a balance between supply and demand. Future forecasts indicate some scenarios where deficits may emerge, requiring additional power purchases, new generation, and further conservation.~~

~~Kirkland is a part of the PSE's Eastside and Northshore Electrical Subareas. Power is delivered on 230,000 volt (230 kV) transmission lines to substations in Redmond and Renton, where the voltage is transformed to 115 kV. Several distribution stations in Kirkland further transform the voltage to 12.5 kV which is then distributed to customers. A new 115KV transmission line connecting PSE's Sammamish Substation in Redmond to Kirkland's Juanita Substation is planned for construction in 2016 along a route that enters Kirkland near NE 124th Street and generally follows the Cross Kirkland Corridor until heading north along 120th Avenue NE, and then west along NE 124th Street.~~

~~A double-circuit 230 kV Seattle City Light transmission line runs through Kirkland north to south near 124th Avenue NE, but does not directly serve the Eastside subarea.~~

~~PSE's long-range electrical energy plans through the year 2022³⁵ indicate the need for three include a new 230 kV transmission distribution substations in Kirkland and a new 115-kV line along the eastern and northern City boundaries to connect to the Sammamish substation in Redmond to Renton. Siting of the new transmission line goes through a public involvement process that is expected to be complete at the end of 2014, followed by environmental review and permitting in 2015-2016. Construction is planned for 2017.~~

~~Washington State's Energy Independence Act requires utilities to acquire specified amounts of renewable resources or equivalent renewable energy credits (RECs). Sufficient "qualifying renewable energy" must equal at least 3 percent of retail sales in 2012, 9 percent in 2016 and 15 percent in 2020. PSE has acquired enough eligible renewable resources and REC's to meet the requirements of the law through 2022 from wind resources.~~

Natural Gas

~~PSE provides natural gas to five six Washington counties, including King County via PSE's distribution system. The natural gas originates from various regions of the U.S. and Canada. Natural Gas is transported throughout Washington via a network of interstate transmission pipelines owned and operated by Northwest Pipeline Corporation. PSE takes delivery of natural gas from Northwest at a gate station located east of Lake Sammamish outside Kirkland City limits. PSE gas distribution lines up to eight inch in diameter in Kirkland, together with future extensions and upgrades, will service Kirkland's growth.~~

~~While PSE has not historically planned for gas main and service extensions, but reacts plans for gas system demand growth, installation of gas main extensions and new service lines respond to customer demand. The gas industry is regulated by the Washington Utilities and Transportation Commission, which rules requires gas companies to demonstrate that existing ratepayers will not subsidize new customers.~~

~~The Northwest distribution pipeline and gas station are located east of the Kirkland City limits. Existing four inch to eight inch gas lines in Kirkland, as well as extensions currently anticipated, will service Kirkland's growth.~~

Telecommunication Service Providers

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Telephone services are regulated by the Washington Utilities and Transportation Commission. Personal wireless service providers serving Kirkland are those licensed by the Federal Communications Commission (FCC) in the Radio Frequency Spectrum for wireless communications service and registered to do business in Kirkland. Cable services are provided under municipal franchise.

Telephone

Wired telephone service and certain related special services are available in the City. System facilities within Kirkland include switching stations, trunk lines, and distributions lines. ~~There are four switching stations in Kirkland at 101 Market Street, 10020 133rd Place NE, NE 95th Street/128th Avenue NE, and NE 43rd Street/Lake Washington Boulevard. Trunk lines connecting the switching stations are concrete-encased four-inch conduit, and D~~ distribution lines are either pole-mounted or underground. Service and facility expansions are driven by customer demand.

Personal Wireless

Several companies provide wireless (cellular) telephone service. Cellular telecommunication permits wireless transmission of messages on a network of strategically placed receivers (i.e., mobile telephone communications). Receivers may be placed on tall poles, lattice-type towers, or buildings. The cellular telephone industry does not plan facilities far into the future, but uses market demand to determine expansion into new service areas.

Cable

Cable TV and Internet services are also available in Kirkland. ~~Most homes area served by at least two providers. The Kirkland system is fed from a microwave receiving site in Bellevue. The majority of trunk and distribution lines are overhead lines rather than underground.~~ The local provider has the technical capacity to serve any new development in the City ~~by simply adding new trunk or distribution lines.~~ Residential hHigh speed DSL services, cable-based Internet, and fiber are available in most locations in the community.

Fiber Optic

Many telecommunication vendors own optic fiber in Kirkland rights-of-way for commercial use. The City of Kirkland has access to some of these strands through franchise agreements.

Olympic Pipeline Company: Hazardous Liquid Pipelines

The Olympic Pipeline Company, operated by BP Pipelines, North America, operates a 400-mile-long petroleum pipeline system from Ferndale, Washington, to Portland, Oregon. Two parallel lines, 16-inch and 20-inch, generally along the Puget Sound Energy easement north-south corridor, pass through the Kingsgate and Totem Lake neighborhoods in the northeast portion of Kirkland and close to a portion of the eastern boundary of the Bridle Trails neighborhood. The pipelines carry gasoline, diesel and aviation fuel. Delivery lines carry products from this mainline to bulk terminals at Sea-Tac International Airport; Seattle, Tacoma and Vancouver, Washington; and Linnton and Portland, Oregon.

The pipelines are hazardous liquid pipelines, as defined by state law (RCW 81.88.040). Pipeline facilities, if ruptured or damaged, can pose a significant risk to public safety and the environment due to the high operating pressure and the highly flammable, explosive and toxic properties of the fuel.

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The Federal Office of Pipeline Safety (OPS) is responsible for regulation of the interstate pipeline facilities and addresses safety in design, construction, testing, operation, maintenance and emergency response of pipeline facilities. The Washington State Utilities and Transportation Commission (UTC) has authority to act as an agent for OPS.

Kirkland's Fire Department has reciprocal emergency response agreements with Redmond and other surrounding jurisdictions in the event of a pipeline failure. The Redmond Fire Department Olympic Pipeline Response Plan includes technical information about the pipeline, potential hazards, a guide to hazardous materials scene management, emergency response and evacuation plans, and contacts and other resources. It contains the fundamentals of the City of Kirkland Fire Department response, and in addition maintains city specific data to be used in such an emergency.

The City has established policies to supplement state regulations and the City's risk management/response plan. Utility Element policies focus primarily on land use measures that help minimize and prevent unnecessary risk to the public due to hazardous liquid pipelines, recognizing it is impossible to eliminate risk entirely.

The City also enforces the state's Call Before You Dig Law to safeguard the public and construction personnel who work around utilities and the underground infrastructure of pipes, mains, and lines, with an emphasis on protecting fuel transport lines. It requires notification when excavating near underground utilities and ensures that they will be marked, in order to prevent damage, service interruptions and bodily injury.

RELATIONSHIP TO OTHER ELEMENTS

The Utilities Element supports other elements of the Comprehensive Plan by establishing policies for provision of efficient and sustainable urban services to serve anticipated growth and development. This Element supports an infrastructure for servicing existing development and areas targeted for growth by the Land Use Element. The general policies in this Element support the Shoreline Area Chapter by encouraging joint use of utility corridors and mitigating environmental impacts caused by the utility. Energy policies support the sustainability objectives found in the Natural Environment Chapter. The telecommunications policies will help implement the policies of the Land Use, Economic Development, Transportation, and Public Services Elements by facilitating the movement of information as an alternative to the historic commuter/work relationship. Finally, utility policies provide direction to the funding, concurrency, and level of service goals and policies of the Capital Facilities Element. The Capital Facilities Element contains further explanation regarding the analysis of need for capital projects to meet the level of service standards for city managed utilities.

Policies for public services such as emergency services, schools, and libraries are contained in the Public Services Element.

RELATIONSHIP TO OTHER PLANS

In preparing this Element, the City has reviewed and considered the following documents that are adopted by reference:

- City of Kirkland Comprehensive Water System Plan (2014);
- City of Kirkland Comprehensive Sewer Plan (2008);
- City of Kirkland Surface Water Master Plan (2014);
- Northshore Utility District Comprehensive Water Plan (2009);
- Northshore Utility District Sewer and Water Plan Maps (2009);

XI. UTILITIES

- Woodinville Water District Comprehensive Water ~~System~~ Plan (2008)
- ~~and Woodinville Water District~~ General Sewer Plan (2007);
- Puget Sound Energy GMA Electrical Facilities Plan (1993);
- State Building Code Adoption and Amendment of the 2012 Edition of the International Energy Conservation Code, Residential Provisions WA State Energy Code, Residential Provisions (2012)
- Redmond Fire Department Olympic Pipeline Response Plan (2000).

B. UTILITIES CONCEPT

The Utilities Element supports the continued provision of adequate utility services to support existing and future development. Levels of service are established for City-managed water, sewer and surface water utilities and levels of service are established for non-City purveyors of water and sewer. In addition, water and sewer concurrency requirements are established for new development. A detailed explanation of level of service and concurrency requirements are in the Capital Facilities Element.

The Utilities Element provides policies for regional coordination of utility needs. A basis for coordination with regional and local providers is established to ensure fair and consistent review of system expansions and enhancements while providing appropriate public input. The environmental and aesthetic concerns of the community are balanced with the need to provide affordable and reliable utility service. As telecommunication technologies continue to evolve, the Utility Element supports systems that are widely available, reliable, efficient, and complete, and that respond to the ever greater business and residential demand to be connected.

The importance of efficiency, renewable energy and conservation is are stressed as cost-effective means of accommodating the growing demand for services and reducing carbon emissions.

C. UTILITIES GOALS AND POLICIES

Goal U-1: Maintain the quality of life in Kirkland through the planned provision of public and private utilities.

Goal U-2: Provide an efficient system to deliver high quality water.

Goal U-3: Protect public health and environmental quality through appropriate and efficient design, installation, and maintenance of sanitary sewer facilities infrastructure.

Goal U-4: Provide surface water management facilities programs and services that provide adequate drainage and minimize flooding while protecting and enhancing the water quality and habitat value of streams, lakes, and wetlands.

XI. UTILITIES

Goal U-5: Ensure adequate and competitively priced telecommunication infrastructure, facilities and services for residents and businesses.

Goal U-6: Reduce the risk to public safety and the environment in the event of a hazardous liquid pipeline failure.

Goal U-7: Promote energy infrastructure that is energy efficient, addresses climate change, and protects the community character.

Goal U-7~~8~~ Facilitate the development and maintenance of non-City-managed utilities at the appropriate levels of service.

~~GENERAL~~

Community Values General

As an urban area, Kirkland is accustomed to a high level of utility service. These services accommodate the lifestyles of Kirkland residents and the success of Kirkland businesses. To maintain these community values, which are reflected in levels of service standards, Kirkland must balance the quality of the service provided with the costs and community and environmental impacts. New policy initiatives for achieving sustainable utility services can ensure this level of utility service is maintained into the future.

Goal U-1: Maintain the quality of life in Kirkland through the planned provision of public and private utilities.

Policy U-1.1: Maintain an inventory of existing capital facilities and utilities, including locations and capacities of such systems and facilities.

An accurate inventory of existing public and private utility locations and capacities will ensure that the City can plan for new growth in a manner that reflects the ability to service that growth with adequate services.

Policy U-1.2: Provide for needed capital facilities and utilities based on adopted levels of service and forecasted growth in accordance with the Land Use Element of this Plan.

This policy is intended to ensure that the Capital Facilities, Land Use, and Utilities Elements are functioning in concert. This systematic Coordinated planning allows the City to make accurate land use projections based on utility plans, and allows utility providers to plan for utilities in a manner that reflects expected land use patterns and densities- and ensures that adequate capital facilities and utilities will be available with development.

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Policy U-1.3: Use the following level of service standards for determining the need for City-managed public sewer, water, and surface water facilities:

Table U-1
Water, Sewer and Surface Water Level of Service

Facility	Standard
Water distribution <u>residential use</u> :	103 gallons/day/capita
Water <u>storage distribution all other uses</u> : <u>Irrigation</u> <u>Businesses</u> <u>Fire suppression</u>	249 gallons/ <u>day</u> /capita (includes 1.5 million gallons for fire storage)
Sanitary sewer collection:	100 gallons/day/capita
Surface water management:	Convey, detain and treat stormwater runoff in a manner that provides adequate drainage for the appropriate storm to ensure safety, welfare, and convenience in developed areas while protecting the hydrologic regime and quality of water and fish/wildlife habitat in streams, lakes and wetland.

Policy U-1.4: *Ensure that utility services are provided in a manner that is environmentally sensitive, safe and aesthetically compatible with surrounding land uses.*

A variety of factors are at stake in the consideration of any proposed utility expansion. For example, clearing for installation or maintenance should minimize impacts to trees and vegetation as well as fish and wildlife habitat. Utilities also should be installed and maintained to protect the environment from contamination. Ensuring that utilities are screened to blend in with their surroundings should increase community acceptance of conspicuous infrastructure.

Mitigating environmental and aesthetic impacts can have implications on cost and efficiency of the system. Therefore, it is appropriate to weigh costs against a full consideration of long term benefits that will be derived. Individual implementation issues arising under this policy should be resolved on a case-by-case basis in light of all these considerations.

Policy U-1.5: *Facilitate and encourage the conservation of utility resources*

The demand for utilities, such as water and electricity, may be met by either increasing the supply or reducing the demand. As the region ~~continues to~~ faces increased challenges to ~~the~~ supply of these resources, ~~the~~ conservation and efficiency measures can be employed to delay the need for new supplies. Reducing the rate of energy consumption is a means to lower energy costs and mitigate environmental impacts associated with traditional energy supplies.

Policy U-1.6: Promote renewable energy

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Kirkland should lead by example. Reducing the City's carbon footprint by reducing our output of greenhouse gasses will help decrease the impacts of climate change and support the vision of an ecologically sustainable city. The City should continue ~~participate~~ participating in Puget Sound Energy's Green Power program which ensures that a portion of Kirkland's municipal electricity use is matched with clean renewable energy resources located in the Northwest. Increased use of renewable energy should be a priority. The City's should ~~also~~ continue to replace its vehicle fleet with hybrid and electric vehicles to boost fuel efficiency and increase the number of electric charging stations at public facilities. Other opportunities to reduce energy use should be aggressively pursued. Installation of solar panels, geothermal heat pumps, and other renewable energy applications on City facilities can further reduce greenhouse gas emissions to meet our reduction targets and encourage community use of these technologies. Targets are described in the Natural Environment Element.

Move this policy to Telecommunication Policy U-5.6 ~~*Policy U-1.6: Minimize impacts of personal wireless services, telecommunication facilities, and towers on adjacent land uses through careful siting and design. Facilitate the approval of facilities that meet certain standards relating to location and configuration.*~~

~~In order to minimize potential impacts, personal wireless services facilities should be located to the extent possible in nonresidential areas. They should be encouraged to be located in areas where the impact of the facilities will be minimal on residential areas such as in industrial or some commercial areas. In general, there should be a preference for more, smaller facilities located on existing structures, such as buildings or electrical transmission towers, or for co-locating on existing towers. When new facilities are required, carriers should be required to use techniques to disguise or camouflage the facilities and associated equipment shelters, so that they fit in with the surroundings.~~

~~In recognition of the important role telecommunications plays in facilitating business and personal communication, the City should enable carriers to quickly and efficiently site and configure facilities in ways that meet our standards. One of the best ways is to provide faster permit review for the locations and types of facilities the City wants to encourage.~~

~~Also recognizing changing technology and flux in the industry, the City should ensure that abandoned facilities are removed promptly. The burden of removing the facilities should fall to the property owner or operator of the facility and not the City.~~

~~***Policy U-1.7: Provide equal access to utility services, regardless of historic disparities in income and employment opportunities.***~~

~~Utility service should be available and provided at the adopted level of service throughout Kirkland. The City or non-City managed utility provider should plan to extend service or upgrade infrastructure where deficiencies are identified.~~

~~***Policy U-1.78: Install new and, where feasible, existing utility distribution lines underground.***~~

~~Undergrounding of utility lines will visually enhance the area in which it occurs. In addition, undergrounding can reduce the potential for power utility outages associated with wind damage and ~~eliminate unsightly~~ reduce the need for pruning of vegetation. The complexities of undergrounding could increase as new utility lines are added to existing poles (i.e., new franchises).~~

~~Undergrounding utilities can be especially effective along major routes with good regional views; especially of Lake Washington and within view corridors. The City should explore prioritizing the undergrounding of existing utility lines in these areas.~~

~~Kirkland should acknowledge the disproportionate costs of undergrounding existing lines for smaller developments by allowing owners to defer until undergrounding occurs as part of a larger project where economies of scale can be realized. The City will need to consider the rates and tariffs of on file with the WUTC in deciding where to underground existing distribution lines.~~

XI. UTILITIES

Policy U-1.89: *Encourage the joint use of utility corridors and facilities ~~consistent with prudent utility practice.~~*

Besides the benefit of minimizing the extent of environmental impacts, utility co-location, consolidation, and joint use increases the efficient use of resources. For example, there is significant land devoted to public stormwater facilities. Joint use of this land consistent with prudent practice, would enhance the community while still providing the stormwater functions for which the facilities were built.

Other Examples of joint use include:

- Sharing right-of-way acquisition costs ~~and joint use of rights-of-ways for utility and pedestrian trails. Utility co-location and consolidation also have the benefit of minimizing the extent of environmental impacts.~~
- Developing pedestrian and bicycle trails and community gardens in utility corridors.
- Developing passive recreation, play areas, community gardens or wildlife habitat in storm and surface water detention areas.
- Sharing telecommunication trenches between providers and for the City's expansion of its fiber-optic network.

Policy U-1.910: *Coordinate with other jurisdictions when utility additions and improvements cross jurisdictional boundaries to ensure that decisions are consistent with regional demand and resources and consistency in timing of permit review.*

Where utility improvements are planned to serve regional demand, it is imperative that affected jurisdictions, tribal governments and utilities work together from the early planning stage. This will help reduce delays and a lower quality of regional service.

CITY-MANAGED UTILITIES

Water

Goal U-2: *Provide an efficient system to deliver high quality water.*

XI. UTILITIES

Policy U-2.1: Work in coordination with other jurisdictions and purveyors in the region to ensure a reliable, economic, and sustainable source of water and to address ~~the~~ long-term regional water demand ~~needs of all agencies and purveyors.~~



Water tank in North Rose Hill Neighborhood

~~To accomplish this, Kirkland needs to participate in and facilitate the development of a regional water supply system that effectively balances regional water resources and regional water supply needs and provides equitable participation in ownership and management. As a member of the Cascade Water Alliance, Kirkland has played a large role in securing long term regional water supplies well into the future and will continue to work with neighboring agencies and tribal governments, to provide its customers with reliable, safe water at a reasonable cost, and address the potential impacts of climate change on regional water resources.~~

Policy U-2.2: Implement system rehabilitation and improvements in order to manage water resources.

Increasing system efficiencies by taking such measures as replacement of older pipes can delay the need for new and more costly supply solutions.

Policy U-2.3: Protect public health and safety, through the appropriate design, installation, and maintenance of water facilities.

The primary concerns with water supply are quantity and quality. The quantity of water has health and safety implications, particularly related to fire suppression. Water quality has obvious public health implications regulated by ~~different levels of government~~ the Washington State Department of Health and United States Environmental Protection Agency through the Safe Drinking Water Act.

Policy U-2.4: Visually screen new water towers and other water utility infrastructure to blend into their surroundings.

Utilizing vegetative buffers and camouflaging techniques can conceal and screen otherwise visually impacting facilities.

Sewer

XI. UTILITIES

Goal U-3: Protect public health and environmental quality through appropriate and efficient design, installation, and maintenance of sanitary sewer facilities infrastructure.

Policy U-3.1: Work with King County, adjoining jurisdictions, and local purveyors to manage, regulate, and maintain the regional sewer system.

The existing regional sewage system has the capacity to handle Kirkland's future growth. The system will require maintenance and improvements to increase efficiencies.

Policy U-3.2: Ensure that all new development proposals are served by adequate sanitary sewer systems.

In general, new development should not be permitted on property that is served only by septic tanks. However, in limited situations, septic systems should be considered for low-density residential development where no reasonable alternatives exist upon demonstration that soil conditions will permit proper functioning of a septic system. Alternative and innovative techniques in lieu of sewer, such as composting toilet systems and mini treatment systems, should be explored and encouraged by the City.

Policy U-3.3: Connect areas that are on septic systems to sanitary sewer.

Some older, less urbanized areas of the City are served only by septic systems. As these systems age and fail, they present health and environmental risks. Continued testing for markers of poor water quality and failed or leaching septic systems will identify priority areas for upgrades. The City ~~should facilitate~~ sewer extensions to these areas in compliance with the Kirkland Municipal Code, by prioritizing utilizing City-funded extensions and facilitating innovative privately funded solutions such as Local Improvement Districts and latecomer agreements or the sewer extension program, whereby private property owners are able to pay their proportionate share of the City's cost to extend sewer to areas within the City's sewer district not currently being served.

Policy U-3.4: Correct deficiencies and increase system efficiency. Emphasis should be placed on correcting deficiencies that present sewage overflow risks.

The greatest system deficiencies in Kirkland's sanitary sewer system are related to the age and reliability of parts of the system. Infiltration and inflow of stormwater into the older pipes decreases system capacity and exfiltration of effluent from older pipes presents environmental and health risks. A new lift station downtown provides significant unused capacity and overflow storage to prevent discharge to Lake Washington during storm events. The focus should continue to be on updating older portions of the systems, with an emphasis on areas where overflows could occur near water bodies. Diligence to maintain and expand the funding support to maintenance programs; such as inspection programs, technological upgrades, and tracking will continue to protect the system from overflows into Lake Washington.

Policy U-3.5: Educate businesses on the proper use of the sewer conveyance system.

Public education and outreach focuses on proper management of fats, oils and grease (FOGs) and non-dispersible products to prevent them from entering the sewer system. The outreach program reduces degradation of infrastructure and overflows, control odors, and protects both the public investment in the system and the environment.

XI. UTILITIES

Policy U-3.6: Encourage water reuse and reclamation.

The City should take advantage of the opportunity to access the regional repurposed water provided by the King County Wastewater Division at the Willows Pump Station. With development of the Cross Kirkland Corridor, the City may benefit by installing purple reclaimed water pressurized conveyance pipe that future development can access to irrigate landscapes and flush toilets. This will help protect Kirkland residents from any future water shortages. Future opportunities to reuse water for irrigation of parks and school facilities should also be explored.

Surface Water

Goal U-4: Provide surface water management facilities programs and services that provide adequate drainage and minimize flooding while protecting and enhancing the water quality and habitat value of streams, lakes, and wetlands.

Policy U-4.1: Implement the priorities and needs identified in the City's Surface Water Master Plan.

The Surface Water Master Plan sets the course for the next 5-10 years of surface water utility operations. The plan is updated periodically and serves as a tool to guide the City's surface water utility work program while managing resources, complying with regulations, and coordinating with various entities that are responsible for different aspects of surface water and stormwater management.

Policy U-4.12: Adopt surface water design standards for new development and redevelopment that incorporate best available research and technology in protecting water resources in an economical and feasible manner.

The goal of surface water design for new development and redevelopment projects is to provide adequate drainage and to provide post-construction controls that mimic predevelopment hydrologic patterns and protect water quality to the degree that is economically feasible. Such facilities may include low impact development techniques and/or structural controls such as detention vaults or ponds, infiltration facilities, biofiltration rain gardens and swales, or wetvaults. The Phase II Western Washington Municipal Stormwater Permit requires that the City at a minimum follows the Department of Ecology's stormwater management design standards.

Policy U-4.23: Adopt and implement standards for control of runoff and erosion from construction sites.

In order to reduce construction related erosion and delivery of sediment to our waterways from construction, use of sediment and erosion control techniques should be required at all sites where significant clearing and grading will take place.

XI. UTILITIES

Policy U-4.34 Encourage or require use of "low impact development" principles and practices to minimize the surface water impacts of development through the use of environmentally "low impact development" techniques.

The City of Kirkland encourages the use of low impact development practices and should identify incentives and evaluate potential changes to land use development regulations and building codes to support and promote low impact development.

Low impact development (LID) is a set of ~~techniques-practices~~ that mimic natural watershed hydrology by slowing, evaporating/transpiring, and filtering water before it reaches a stream channel. LID contrasts with ~~current~~ past drainage techniques that collect and convey water to streams quickly – damaging stream channels and degrading water quality.

This approach uses various land planning and design practices to conserve and protect natural resources and reduce infrastructure costs. LID techniques seek to minimize the amount of stormwater runoff; LID facilities use soils and vegetation to treat and slow the stormwater runoff that is produced on the site. LID allows land to be developed cost-effectively, which helps reduce potential environmental impacts.

Low impact development ~~techniques~~ principles include the following:

- Minimize creation of impervious surfaces;
- Preserve Native Vegetation
- Cluster housing to allow for preservation of open space
- Use site soils and vegetation to soak up and filter stormwater runoff;

Low Impact Best Management Practices include the following:

- Amend soils with compost to improve water retention;
- Construct bio-retention swales or cells, which are natural areas that have specifically chosen plants and engineered soils that slow, filter and absorb water;
- Use permeable pavement for roadways, driveways and walkways;
- Use green roofs to minimize runoff from impervious surfaces; and
- Collect and store water for landscaping or other nonpotable water uses.

When combined, such ~~techniques~~ principles and practices can greatly reduce the amount of stormwater runoff from developed sites and improve water quality.

Policy U-4.5: Require businesses and residents to take steps to prevent stormwater pollution.

It is much easier to prevent pollution than to clean up polluted waters. Businesses and residents should be required to use both nonstructural and structural "best management practices" (BMPs) to prevent discharge of pollutants from everyday activities. BMPs range from covering materials stored outdoors, sweeping rather than using water to clean parking lots, and installation of oil/water separators to connecting car washing areas to sanitary sewers.

XI. UTILITIES

Policy U-4.46: Minimize environmental damage from spilling and/or dumping of pollutants into the storm drainage system.

The City should respond to instances of spilling and dumping of materials into the storm drainage system through activities such as the following:

- Identify and where appropriate take enforcement action against those responsible for nonstormwater discharges, including requiring cleanup or conducting abatement;
- Maintain and periodically update inter-City and intraagency spill coordination and response training and procedures; and
- Conduct surveys and inspections to identify and eliminate illicit connections to the storm drainage system.
- Maintain maps of the drainage system that allow pollutants to be quickly traced to their source.

Policy U-4.67: Assess the quality of water and habitat in local streams and lakes to evaluate the effectiveness of utility standards and programs and to focus future efforts.

Identification of specific water quality and habitat concerns and the tracking of changes over time should help to improve the efficiency and cost-effectiveness of programs and projects. Such assessment is a recommended element of several State and federal programs.

Policy U-4.78: Ensure that privately owned stormwater facilities are operated and maintained in a manner that maximizes their quantity and quality control benefits.

When well-maintained detention and water quality facilities on private property serve to protect downstream resources, City programs should be continued to ensure that privately owned stormwater facilities are operated and maintained so that downstream systems are not affected.

Policy U-4.89: Educate the public on protecting and enhancing the quality of our water resources.

The City should strive to raise awareness of the impact that everyday business and residential activities can have on water quality and fish habitat and populations, and to provide information on practices, such as natural yard care, proper storage of materials, and washing practices, that can prevent the discharge of pollutants. Citizen volunteers should be involved in activities that increase stewardship of our water resources. The City should also explore new techniques for engaging the public and effecting positive changes in behavior.

Policy U-4.10: Explore the potential for regional stormwater facilities.

In some cases, particularly where there is significant redevelopment, providing regional facilities for flow control and water quality treatment may provide efficient and effective means of management of stormwater.

Policy U-4.11: Take steps to remove fish passage barriers and to protect and enhance fish habitat.

The Muckleshoot Indian Tribe has Treaty fishing rights in Kirkland. The City should work closely with the Muckleshoot Tribe to prioritize fish passage barriers and other habitat enhancement projects to maximize the habitat benefits with available funding.

XI. UTILITIES

Policy U-4.12: Conduct municipal operations in a manner that protects water quality to the degree possible.

Use erosion control and pollution prevention practices in City operations including but not limited to parks, streets, wastewater, stormwater, and water in order to minimize the discharge of pollutants to the stormwater system.

Policy U-4.913: Coordinate basin planning, pollution prevention, and restoration activities with neighboring jurisdictions.

Watersheds do not stop at jurisdictional boundaries, and must be analyzed and restored as whole entities. The City should coordinate activities with King County, Bellevue and Redmond and other jurisdictions as appropriate to maximize the positive impact of projects and programs.

Policy U-4.104: Participate in regional surface water resources and fish resource conservation planning efforts.

The City should continue in the participation of the WRIA 8 salmon conservation planning effort and the Puget Sound Shared Strategy. The purpose of this project is to develop a plan for recovery of salmon habitat functions of the greater Lake Washington Watershed. Habitat is the only one of the four "H's," Habitat, Hydropower, Hatcheries, and Harvest, which is under local government control. Recovery of salmon stocks listed as threatened under the Federal Endangered Species Act would reduce the regulatory and liability burden for local jurisdictions, help to protect a vital part of our regional economy, and protect a species that has great cultural significance in the Pacific Northwest.

Policy U-4.15: Ensure compliance with State and federal regulations related to surface water quality and fisheries resources.

The City should coordinate surface water management requirements and programs with a variety of State and federal programs and regulations, including but not limited to the following:

- National Pollutant Discharge Elimination System, Phase II;
- Puget Sound Partnership Action Agenda for Puget Sound Water Quality Management Plan; and
- Federal Endangered Species Act listing of Chinook salmon as a threatened species.

This policy is intended to acknowledge and accommodate future regulatory changes.

Policy U-4.16: Investigate and plan for the impacts of climate change on operation, maintenance and construction of the stormwater system.

Changes in precipitation patterns and climate may impact flooding and the need to store and reuse rainwater. Investigate and plan for sizing of the conveyance system, provision of additional areas for storage of flood waters, and potential for rainwater reuse. Evaluate construction methods used for stormwater system to insure that they minimize the production of greenhouse gases to the degree possible.

XI. UTILITIES

Policy U-4.17: Conduct asset management and planning to insure uninterrupted and efficient operation of the stormwater system.

Assessment of the condition, and ranking of assets according to their criticality and likelihood of failure, should be done to help prioritize replacement and rehabilitation of the system.

Policy U-4.18: Consider acquisition of open space, stream corridors and/or wetlands in cases where this would further goals of reducing flooding, improving water quality and improving fish habitat.

There are cases where preservation and /or restoration of stream corridors and wetlands may benefit City functions, and where this may not happen despite critical areas regulations. In addition, there may be cases where restoration of streams or wetlands would have significant benefits for water quality and habitat, and this work would likely not happen if the property were not under City ownership.

Telecommunications

Goal U-5: Ensure adequate and competitively priced telecommunication infrastructure, facilities and services for residents and businesses.

Policy U-5.1: Manage the City's existing and planned telecommunication improvements to optimize service delivery opportunities in Kirkland.

The City should plan and install sufficient capacity into its telecommunication system to meet future City needs.

Policy U-5.2: ~~Use partnerships~~ Partner with public agencies and private sector organizations to achieve cooperation and cost-sharing in building telecommunication systems and providing service.

The City should establish partnerships with ~~other~~ public agencies and private sector organizations and encourage collocation of to achieve cooperation and cost-sharing in building telecommunication systems and providing services. Partnerships may ~~include the use of shared~~ telecommunication space, ~~such as on~~ towers, ~~and~~ buildings and ~~in~~ fiber-optic lines.

Policy U-5.3: Review and update City policies, procedures and regulations to facilitate the installation and maintenance of telecommunication systems.

The City should review and update its policies, procedures and practices to ensure that they facilitate the installation of new telecommunication systems and support existing systems. In addition, the City's development regulations need to be flexible or revised on a regular basis to respond to changes in technology and consumer needs.

Policy U-5.4: Seek opportunities to enhance the number of service providers in the community to increase choice and fair access and encourage competitive pricing and high quality customer service.

Choice, availability and price are important factors to telecommunication consumers. The City should look for opportunities to increase the number of high quality service providers to have competitively priced and high quality telecommunication systems in Kirkland.

XI. UTILITIES

Policy U-5.5: Involve community stakeholders and service providers in telecommunication decisions.

The City should involve consumers, service providers and other public entities with telecommunication systems in Kirkland when reviewing its policies, practices and development regulations to ensure that consumer needs are being met and that providers and other public entities can install the facilities.

Moved from Community Value Policy U-1.6 Policy U-1.6_5.6: Minimize Mitigate impacts of ~~personal wireless services, telecommunication facilities, and towers~~ on adjacent land uses through careful siting and design. Facilitate the approval of wireless service facilities that meet certain standards relating to location and configuration to balance the need for community connectivity with aesthetic standards. Stay up-to-date with changing technologies and rules.

In order to minimize potential impacts, personal wireless services facilities should be located to the extent possible in nonresidential areas. ~~They should be encouraged to be located in areas where the impact of the facilities will be minimal on residential areas such as in industrial or some commercial areas. In general, t~~There should be a preference for ~~more, smaller~~ facilities ~~co-~~located on existing ~~structures, such as buildings or electrical transmission towers, and located on existing structures such as building or equipment structure facades, transmission towers or utility poles, or for co-locating on existing towers to avoid unnecessary proliferation.~~ When new facilities are required ~~or existing facilities are expanded,~~ ~~carriers-providers~~ should be required to use techniques to ~~disguise or camouflage screen or conceal the wireless service facilities and associated equipment shelters, so that they fit in with~~ to be compatible with the surroundings.

In recognition of the important role telecommunications wireless services plays in facilitating business and personal communication, the City should enable carriers to quickly and efficiently site and configure facilities in ways that meet our standards. One of the best ways is to provide faster permit review for the locations and types of facilities the City wants to encourage.

Also, ~~in recognition of the recognizing~~ changing technology and ~~flux in the~~ industry, the City should ensure that ~~abandoned facilities are property owners or providers removed abandoned facilities~~ promptly. ~~The burden of removing the facilities should fall to the property owner or operator of the facility and not the City. In addition, federal regulations covering wireless service facilities change frequently and the city should monitor and amend regulations accordingly.~~

Policy U-5.7: Allow new aerial telephone and cable lines in the right-of-way, provided that they are designed and installed to minimize aesthetic impacts and are subsequently required to be placed underground at the time of undergrounding electrical distribution lines..

~~Communication lines (telephone and cable) are often located on electrical utility poles. However electrical lines are typically the determinate for when communication lines are undergrounded. When electrical distribution lines are placed underground communication facilities must also be undergrounded.~~

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Policy U-5.8: Ensure that franchise and right of way agreements with telecommunication service providers require collaborative undergrounding of facilities when electrical distribution lines are placed underground.

The City's objective for undergrounding is to minimize aesthetic impacts and create more resilient infrastructure. Collaborative undergrounding creates economies of scale for all parties and minimizes traffic disruption.

Policy U-5.9: Screen ground mounted cabinets associated with telephone and cable telecommunication equipment so that they fit in with their surroundings.

Landscaping, proper placement and camouflaging techniques should be used to soften the appearance of the structures. Recognize that the provider must have access to the facilities in order to service and maintain them.

NON-CITY-MANAGED UTILITIES

The Washington Utilities and Transportation Commission (WUTC) has traditionally been the primary regulatory agency for private utilities. The WUTC has the authority to define the costs that a regulated utility can recover, and consequently provides ~~has the~~ oversight to ensure that the utility acts prudently and responsibly. Under the Growth Management Act, local jurisdictions ~~now~~ have the obligation and requirement to plan for utilities including the identification of utility corridors. Kirkland will need to consider the obligations of the utilities to WUTC regulation when considering policies and regulation affecting their operations.

Hazardous Liquid Pipelines

Goal U-6: Reduce the risk to public safety and the environment in the event of a hazardous liquid pipeline failure.

This goal addresses safety concerns. Damage from external forces such as construction equipment can produce an immediate fuel release or a scratch on a coated-steel pipeline can lead to accelerated corrosion and failure at a later time. Other safety concerns are location of land uses with high on-site populations that are difficult to evacuate, and location of emergency facilities and other land uses where the consequence of the loss in the event of a pipeline failure is high.

Actions that can be taken to ensure a higher degree of safety include early detection of potential pipeline damage or failures through adequate maintenance of the hazardous liquid pipeline corridor, neighborhood education, and working with other governments and industry representatives to seek improvements in safety measures for hazardous liquid pipelines. These provisions are intended to protect the health, safety and welfare of the general public.

During development review and construction of projects in the vicinity of the pipeline, setting requirements for avoidance of damage and coordination between Kirkland and the pipeline operator, Olympic Pipeline Company, or its successor can help avoid problems. The following actions can reduce the chance of an incident:

Identifying the location of the pipeline corridor on site plans, plats or other construction drawings;

Using the one-call locator service, particularly during construction on adjacent properties;

Physically verifying pipeline locations as needed to minimize the likelihood of damage;

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Establishing and maintaining setback requirements from the hazardous liquid pipelines for new or expanded structures and other significant land disturbance; and

Monitoring land disturbance close to the pipeline by the pipeline operator or its representative.

Policy U-6.1: Establish standards to minimize pipeline damage.

Require development activity near pipelines to provide the following information in order to evaluate the proposal:

- Location of the liquid pipeline corridor in relation to proposed structures, utilities, or clearing and grading activities.
- Proposed techniques to minimize the potential disturbance to the pipeline prior to and during construction.
- Potential stormwater discharge impacts to the pipeline, and mitigation measures to prevent erosion.
- Setbacks and other site design techniques to minimize the potential hazard.
- Emergency plans as appropriate.

Policy U-6.2: Coordinate with the pipeline operator when developments are proposed near the hazardous liquid pipeline corridor to reduce the potential for problems.

The City and operator should communicate and coordinate their review. Methods include the following:

- Notifying the pipeline operator of proposed development projects located near the pipeline corridor.
- Receiving verification that the pipeline operator has received and reviewed the proposal, and provided comments prior to City review of development activity.
- Seeking the pipeline operator's participation in preconstruction meetings if warranted.
- Seeking monitoring by the pipeline operator of development that involves land disturbance or other significant work within or near the pipeline corridor.

Policy U-6.3: Prohibit new high consequence land uses from locating near a hazardous liquid pipeline corridor. Design proposed expansions of high consequence land uses to avoid increasing the level of risk in the event of a pipeline failure, and where feasible, to reduce the risk.

Kirkland can help reduce the risk of injury in the event of a pipeline failure by not allowing certain land uses to locate near hazardous liquid pipelines. Land uses with high-density on-site populations that cannot be readily evacuated or protected in the event of a pipeline failure are considered "high consequence land uses." Examples are schools and multifamily housing exclusively for the elderly or the handicapped. Uses such as these carry a relatively higher risk and have higher potential consequences in the event of a pipeline failure and therefore are not as appropriate as other uses near pipelines. Facilities that serve critical "lifeline" or emergency functions, such as fire and police facilities or utilities that provide regional service, are also considered "high consequence land uses."

John Muir Elementary School is located near the pipeline corridor in the Kingsgate neighborhood. Future expansions can use measures such as site planning that reflect anticipated flow paths for leaking hazardous materials and emergency response.

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Policy U-6.4: Require maintenance of the hazardous liquid pipeline corridor through a franchise agreement or other mechanisms.

The pipeline operator can help reduce the likelihood of accidental damage by adequately maintaining the pipeline corridor. Dense vegetation such as blackberry bushes can impede visibility and access. Instead, the pipeline corridor can be properly maintained with grass or other low-growing vegetation that enables easy inspection while preventing erosion. Ensuring that the pipeline locations are marked and that missing markers are replaced is also important, as is periodic aerial inspection of the pipeline corridor to detect potential problems. Kirkland can assist this effort when permits are necessary for inspections or repair with prompt permit processing. The pipeline operator should maintain the pipeline corridor on a continual basis by:

- Maintaining vegetation to enable visibility and access for inspection while ensuring that such maintenance does not contribute to soil erosion;
- Using plant species and plantings that prevent erosion;
- Ensuring that above and below grade pipeline markers containing information, such as operator name and number and facility type, are in place; and
- Conducting periodic visual inspections of the corridor.

Policy U-6.5: Expedite permits for the hazardous liquid pipeline company necessary for inspections and repairs.

Policy U-6.6: Continue to work with other jurisdictions, state and federal governments, and the pipeline operator to seek improvements in safety measures for hazardous liquid pipelines.

Working with other jurisdictions and agencies as part of a unified approach to addressing pipeline safety issues is important. This unified approach can address issues such as maintaining a model franchise agreement, periodic review of the pipeline operator's safety action plan to identify any deficiencies, and advocacy of City concerns regarding pipeline safety regulations.

Policy U-6.7: Encourage the pipeline operator to maintain a neighborhood education program for those who live and work within one-quarter mile of the hazardous liquid pipeline to educate them and the general public about pipeline safety.

People who live on property or work near the pipelines can also play an important part in avoiding pipeline damage and identifying potential problems early on. The Olympic Pipe Line Company or its successor can promote public safety through periodic neighborhood mailings and meetings. Important information should include facts about the pipelines, how to avoid damage, potential problems to watch out for, such as unusual smells or suspicious construction activities, and how to respond in the event of a failure or other problem.

Energy

Goal U-7: Promote energy infrastructure that is energy efficient, addresses climate change, and protects the community character.

Policy U-7.1: Encourage the public to conserve energy through public education.

Utilizing renewable energy sources, conserving energy, and employing new energy technologies and efficiency's further Kirkland's sustainability goals.

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Policy U-7.2: Participate in regional efforts to increase the use of renewable energy sources

Kirkland must advocate for the transition from carbon based energy to renewables in coordination with the King County Climate Change Collaborative (K4C) at the state level. As a founding member of the K4C, Kirkland leads in its commitment to advance legislation to reduce greenhouse gas emissions. Renewables include solar, wind and other sustainable energy sources.

Policy U-7.3: Encourage and collaborate in regional efforts to strengthen codes in order to reduce energy consumption and greenhouse gas production.

Kirkland's collaboration with regional efforts to reduce barriers and establish standards, such as participation in the update of the Washington State Energy Code Residential Provisions, for the effective use and conservation of energy over the useful life of buildings, supports our efforts for a sustainable community.

Policy U-7.4: Work with and encourage Puget Sound Energy to plan, site, build and maintain an electrical system that increases the use of renewable energy and co-generation to meet the needs of existing and future development, and provides sustainable, highly reliable and energy efficient service for Kirkland customers.

Kirkland requires highly reliable service for public health and safety and to meet the needs of our residents and businesses. As PSE increases its renewable energy portfolio and use of co-generation, energy is conserved, efficiency is increased, and the carbon footprint is reduced. Cogeneration uses an otherwise unused byproduct of fossil fuel electricity generation to become a useful commodity by capturing heat that is generated while producing electricity to supply hot water, steam, space heating and cooling.

Policy U-7.5: Promote the use of small to large scale renewable energy production facilities.

The City should promote solar energy to generate electricity and heating for residential and commercial development. Wind turbines and other types of emerging technologies, such as digesters that divert and break down horse manure and fats, oils and grease to produce energy should also be encouraged. The City must balance the goal of increasing renewable energy with aesthetic concerns and tree preservation objectives.

Policy U-7.6: Require new and, where feasible, existing electrical distribution lines in the right of way to be underground.

Electrical distribution lines, often located in the public rights-of way, carry electricity to homes and businesses throughout Kirkland. Electrical service is provided to private property by service lines connecting to these power lines. Electric transmission lines are located both above and below ground throughout Kirkland. In more recent development areas systems are typically underground.

Undergrounding of electrical distribution lines can reduce the potential for power outages associated with wind damage, eliminate reduce the need for pruning vegetation, and enhance views.

Kirkland should acknowledge the disproportionate costs of undergrounding existing lines for smaller developments by allowing owners to defer until undergrounding occurs as part of a larger project where economies of scale can be realized.

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Policy U-7.7: Screen above ground equipment cabinets and other structures associated with electrical distribution without hindering access as required by the provider.

Landscaping or other techniques to screen these structures will generally soften their appearance so that they fit in with the surroundings.

Policy U-7.8: Require siting analysis in the development review process for new and expanded electrical transmission and substation facilities to address land use and sensitive areas and provide mitigation to minimize visual and environmental impacts.

Electrical transmission lines are located within corridors in public rights of way or within utility easements on private property. Existing transmission lines in Kirkland are above ground. Electric substations are located on private property owned by the utility. The additional cost to underground PSE's electrical transmission lines is regulated by the WUTC and borne by the entity requesting the undergrounding. New or expanded aerial transmission lines should be sited and designed to avoid critical areas and minimize visual impacts, especially where views of Lake Washington and view corridors are affected.

Coordination

Goal U-78: Facilitate the development and maintenance of non-City-managed utilities at the appropriate levels of service.

Policy U-78.1: Work with non-City-managed utilities and review facility plans to ensure that they reflect and support Kirkland's land use plan. Likewise, the City should work with providers to ensure that utilities are available to support land uses and to maintain appropriate levels of service.

This policy is intended to ensure that non-City providers are in compliance with the City's Comprehensive Plan as mandated by the Growth Management Act. This systematic planning allows the City to make accurate land use projections based on utility plans and allows utility providers to plan for utilities in a manner that reflects expected land use patterns and densities.

Policy U-78.2: Coordinate with non-City providers of water and sewer on a joint program for maintaining adopted levels of service, concurrency requirements, funding, and construction of shared public facilities.

Under the provisions of this Comprehensive Plan, the City is establishing specific utility requirements for itself and utilities serving the Kirkland area consistent with the requirements of the Growth Management Act.

Policy U-78.3: Coordinate with the appropriate utility provider when considering land use decisions in the vicinity of proposed facility locations to ensure land use compatibility.

Working with utilities in advance of key land use decisions has the potential to eliminate potential conflicts and ensure that utility considerations are factored into the development review process.

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Policy U-78.4: Provide timely and effective notice to utilities of the construction, maintenance, or repair of streets, roads, or other facilities and coordinate such work with the serving utilities.

Timely information about capital improvement plans ~~Providing~~ provides utilities the opportunity to coordinate construction projects with City projects. This has two distinct advantages: it could save the utility money by reducing construction expenditures and it can help the City to avoid multiple roadcuts for various utility installations.

Policy U-8.5: Encourage the consolidation of special districts.

Obtaining urban services from cities or appropriate regional service providers, and encouraging special service districts, including sewer, water, and fire districts, to consolidate or dissolve as a result, advances the Growth Management, regional and county wide vision for municipalities to be the primary providers of urban services. the Puget Sound region Services should be provided in an efficient, environmentally sensitive, timely, and cost-effective manner.

XI. UTILITIES

A. INTRODUCTION

The Utilities Element addresses water, sewer, surface water, electric power, natural gas, telecommunications, and hazardous liquid pipelines.

Utility planning has contributed to a high quality of life for Kirkland residents and businesses by ensuring efficient utility delivery. Kirkland's existing utility infrastructure is generally adequate to meet the growth needs of the City for many years. The primary focus of the City will be to continue to upgrade existing systems to increase efficiency and to avoid maintenance problems associated with older facilities, to reduce demand through conservation, and to transition to renewable and alternative technologies to reduce greenhouse gas emissions. The objective is to meet the needs of the present without compromising the ability of future generations to meet their own needs.

Each utility function presents a unique problem. For water, Kirkland faces regional supply issues that require regional solutions. For sewer, the City must consider how to service areas on septic systems as those areas become more urbanized and prevent non-degradable materials and contaminated effluents from entering the sewer system. For surface water, the City is challenged to manage a growing system to handle increased urbanization without flooding, while maintaining and enhancing water quality and aquatic habitat. For hazardous liquids, Kirkland land development regulations near the pipeline corridor will continue to be enforced to help reduce the risk of a pipeline accident. For telecommunications, the City will continue to develop its telecommunications network to meet the City's needs and respond to changes in technology. Where possible, the City will utilize its telecommunications investments and partnerships to benefit citizens, businesses and public institutions. The City recognizes that excellent Internet connectivity is a key resource for business success. To that end, the city will work with telecommunications providers to help them succeed.

For both City and non-City-managed utilities, Kirkland faces the challenge of facilitating system improvements, efficiencies and new technologies while appropriately managing the impacts associated with above-ground utility installations.

EXISTING CONDITIONS

The City of Kirkland currently provides the following utility services:

- **Water** – All areas of the City except those north of NE 124th Street that are outside the City's service area. Figure U-1 shows the City's water system.
- **Sewer** – All areas of the City except those north of NE 116th Street that are outside the City's service area. Figure U-2 shows the City's sewer system.
- **Surface Water** – All areas of the City. Figure U3 shows the City's surface water system.

The following non-City-managed utilities provide additional services:

- **Northshore Utility District and Woodinville Water District** – Both are special purpose districts that operate independently from the City. They provide water and sewer services to the northern portions of the City. Both have franchise agreements that include provisions for future City assumption of service at such time as it is desirable to do so. The Washington State Departments of Health and Ecology review and approve the Utility Districts' Comprehensive Plans, and they are bound by the same service regulations as the City. Figures U-4 and U-5 show the water and sewer systems.

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- **Puget Sound Energy** –Is a public service company - a corporation or other non-governmental business entity which delivers certain services considered essential to the public interest. It transmits and distributes electric power and natural gas in a nine-county area, including Kirkland and much of King County. Figures U-6 and U-7 show Puget Sound Energy's electrical and gas facilities. (NEW MAPS TO BE ADDED)
- **Telecommunications** – are provided by a variety of non-City managed companies. Kirkland has both wired and wireless telephone, cable TV and high speed cable and fiber-optic internet services, all provided by a variety of non-managed providers. Those that use City rights-of-way to provide services have franchise agreements with the City. Figure U-8 shows the City's fiber optic network. (NEW TELECOMMUNICATIONS MAP TO BE ADDED)

CITY MANAGED FACILITIES

Water

The City of Kirkland Water Utility provides water service to all of its residents, except those generally north of NE 124th Street who are served by the Northshore Utility District or the Woodinville Water District (see Figure U-1).

The City's water system is primarily a gravity system consisting of 171 miles of water lines and 12.62 million gallons of storage capacity that includes 1.5 million gallons of fire protection storage. This averages 5.3 million gallons of water per day that is distributed to Kirkland's water service area customers. Projected costs associated with the water system are primarily maintenance and replacement costs for aging pipe and fire flow needs. The system generally has sufficient capacity to serve growth anticipated through the land use plan and future water customers into the year 2035. The City anticipates approval of its Comprehensive Water System Plan in the fall of 2014 by the Washington State Department of Health. It outlines water projects to upgrade any deficiencies in the system for the next 20 years.

As a member of the Cascade Water Alliance Kirkland purchases its water supply from Seattle Public Utilities. The water is then distributed to Kirkland customers through the City's distribution system. The City currently receives all of its water supply from Seattle from the Tolt River Watershed, with occasional supply from the Cedar River Watershed when routine maintenance is required at the Tolt Treatment Facility. Cascade Water Alliance currently has an agreement with Seattle to provide 33.3 million gallons of water per day to its member through the year 2039 with the opportunity for an extension of the contract until 2063.

In addition to the supply from Seattle, Cascade Water Alliance also has an agreement with the City of Tacoma for additional supply into the year 2042, and has the capability of developing Lake Tapps in East Pierce County if the need arises beyond 2063. According to Cascade Water Alliance, based on current trends of customer's use of water, responsible plumbing codes, and water efficient appliances, it is likely that Lake Tapps will not need be developed for decades.

Cascade Water Alliance Water Efficiency Program has a single regional water efficiency savings goal for all its members of a cumulative savings of 0.6 million gallon per day on an annual basis and 1.0 mg per day on a peak season basis through 2020. By utilizing existing water supplies more efficiently, millions of dollars will be saved for its members and ratepayers, leave more water in streams for fish, and reduce the region's carbon footprint through decreased energy usage involved in the treatment, transmission and heating of drinking water.

Sewer

The City of Kirkland Sewer Utility provides sanitary sewer service to all of its residents south of NE 116th Street (see Figure U-2). The Northshore Utility District provides sewer service to most residents north of NE 116th Street.

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The collection system consists of 40 wastewater collection basins, 122 miles of sewer pipe, six lift stations and force mains, and approximately 3184 manholes. Approximately five to 10 percent of Kirkland residents use septic systems. Sewer extensions have typically been funded by developers or local owners in compliance with the Kirkland Municipal Code.

The system's most serious deficiency is the age of some of the pipelines. Twenty percent of the conveyance system consists of concrete pipes that were installed prior to the 1950's. Many allow inflow/infiltration and root intrusions which reduce capacity of the system and increase operation and maintenance costs. In addition, downtown businesses that produce fats, oils, and grease (FOG), release damaging amounts into conveyance pipes, contributing to odors downtown and increasing the risk of overflows. As a founding members of the Northwest FOG alliance, the City continues to lead the region in its efforts to educate businesses about proper kitchen practices and regular cleaning of FOG controls to prevent these impacts. The primary costs anticipated to maintain existing levels of service are related to replacement and rehabilitation of older pipelines, improvement of pumping capacity, and system expansions in the Lake Plaza Basin, Central Way Basin, and Juanita Basin.

The 2008 Sewer Comprehensive Plan establishes the policy basis for recommended capital improvements to correct deficiencies and meet future service needs. Updated every ten years, the Plan provides the City with a guide to evaluate the impacts of future proposed development and land use on the sewer system.

The King County Wastewater Treatment Division (WTD) provides the City's service area with sanitary sewer treatment services under the terms of an intergovernmental agreement. City sewage and a majority of Northshore Utility District's sewage, are treated at King County's Renton treatment plant. Very small portions of Northshore's sewage flows to the Brightwater Treatment Plant in Woodinville and the West Point Treatment Plant in Seattle.

King County WTD's review of regional conveyance and treatment plants capacity, indicates that the existing capacity is adequate to treat the region's wastewater until the 2030's. Planned upgrades to the treatment facilities will occur in order to maintain adequate capacity to serve anticipated growth beyond the 2030s.

Surface Water

The City maintains conveyance, flow control and water quality treatment systems in public rights-of-way, and flow control and water quality treatment facilities that serve single-family developments. These facilities are managed to reduce flooding and to protect water quality. As of 2014, the City owns and manages 257 miles of conveyance pipe and 539 retention /detention facilities (tanks, vaults and ponds).

Kirkland is subject to the Phase II Western Washington Municipal Stormwater Permit (the Permit). The Permit is issued by the State of Washington under authority from the Environmental Protection Agency, and is part of the National Pollutant Discharge Elimination System (NPDES), a program which seeks to reduce pollution in the Nation's waterways by controlling sources of pollution. The current Permit became effective on August 1, 2013, and will expire on July 31, 2018. The Permit allows Kirkland to discharge stormwater into water of the State if the City takes specific steps in each of the following areas to minimize discharge of pollutants to stormwater: public education and outreach, public involvement, illicit discharge detection and elimination, controlling runoff from new development, redevelopment, and construction sites, municipal operations and maintenance, and monitoring and effectiveness studies.

Privately owned stormwater facilities consist of conveyance, flow control and water quality treatment facilities that serve multi-family and commercial developments, and certain private roads and single-family developments. City staff inspect 631 private flow control and water quality treatment systems to insure that they are cleaned and functioning as designed. In addition, staff provide technical assistance for drainage and water quality problems that impact these systems. Figure U-3 shows the City surface management water system.

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The Kirkland Surface Water Master Plan is a functional plan that Kirkland uses to identify capital projects to address deficiencies in the system. This provides the policy basis for capital projects.

A watershed approach has been used for managing the surface water utility by dividing the City into 15 drainage basins. The largest and most important streams are Juanita and Forbes Creek. The size of their drainage basins makes them especially important for receipt of stormwaters and discharge into Lake Washington. Yarrow Creek, Denny Creek, Juanita Creek, Forbes Creek, and Champagne Creek also have large basin areas within the City and are significant because they provide salmonid fish habitat and productive associated wetlands. Smaller critical drainages include Carillon Creek, Cochran Springs Creek, Everest Creek, Holmes Point, and Kingsgate Slope. More information on the watershed and drainage basins, and a map illustrating their location, can be found in the Natural Environment Element.

City Telecommunications

The City is installing a fiber-optic network to service governmental facilities and traffic control systems by partnering with other cities and schools to lay the foundation for a regional fiber optic telecommunication system. Figure U-8 shows the fiber-optic network in Kirkland, which includes partnerships with the City, Lake Washington School District, the University of Washington and the City of Bellevue to install publicly owned fiber-optic in major rights-of-way.

(MAPS GO HERE)

NON-CITY-MANAGED UTILITIES

Northshore Utility District: Water and Sewer

The Northshore Utility District provides water and sewer services to northern portions of the City. Figure U-4 illustrates the existing Northshore water system and proposed improvements. Figure U-5 illustrates the existing Northshore sewer system and proposed improvements.

Northshore's sewer system is primarily a gravity system. Wastewaters is treated at King County's West Point and Renton treatment plants. Sewer Level of Service is 71 gallons per capita flow rate. Potable water from the Tolt River Watershed is purchased from Seattle Public Utility (SPU). The water system has five reservoir sites with a 29-million-gallon capacity. Water Level of Service is 174 gallons per day (GPD) per Equivalent Residential Units (ERU).

The District's sewer and water plans include identification of capital improvements for replacement and repair of the older, damaged sections of the system. Repair and maintenance of the system occur when needed and extensions necessitated by future development will be provided by the developer.

The District, as one of a group of 18 utilities who also purchase water from SPU, are part of the Saving Water Partnership (SWP) administered by SPU. All have adopted the Saving Water Partnership Regional Conservation Program Water Use Efficiency Goal. The conservation goal is to reduce per capita water use from current levels so that the total average annual retail water use of members of the SWP is less than 105 million gallons per Day (MGD) from 2013 through 2018 despite forecasted population growth. Due to the high cost of connecting to the Brightwater Wastewater Treatment Facility reclaimed water distribution system, the District does not currently have sufficient need or cost-justification to develop and manage a reclaimed water distribution system. They will continue to evaluate the feasibility of doing so in the future.

Northshore can provide service to accommodate Kirkland's future growth.

Woodinville Water District: Water and Sewer

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The Woodinville Water District provides water services to the northeast portion of the City and sewer service to only a few single family homes. Figure U-4 illustrates the existing Woodinville water system and proposed improvements. Figure U-5 illustrates the existing and proposed Woodinville sewer system.

Woodinville's sewer system is primarily a gravity system. Due to the topographical difficulty of providing gravity sewer service to the Kingsgate area, Northshore Utility District provides sewer service there, even though it is within Woodinville's service area. Woodinville Water wastewaters are treated at King County's West Point and Renton treatment plants. Sewer Level of Service is 75 gallons per day per capita. Woodinville's Sewer General Plan indicates that Woodinville Water district can provide sewer service to accommodate Kirkland's future growth.

Potable water from the Tolt River Watershed is purchased from Seattle Public Utility. The water system has six eight reservoir sites with a 14.9-million-gallon capacity. Water Level of Service is 193 gallons per day /Equivalent Residential Units. Woodinville's Comprehensive Water System Plan indicates that by the year 2027, the District's water needs in the west service area, which includes Kirkland, will be deficient of source availability for projected demands and fire suppression storage. The District has a capital improvement plan for the system. Depending on future demand, a new water reservoir will be built to provide new capacity where the existing Kingsgate reservoir is located. In the meantime, a new booster pump station at this site has delayed the need for the new reservoir. Repair and maintenance of the system occur when needed and extensions necessitated by future development will be provided by the developer.

The district's conservation goal is to reduce per capita water use from current levels so that the total average annual retail water use of the members of Seattle Public Utility Saving Water Partnership is less than 105 Million Gallons per Day (MGD) from 2013 – 2018 despite forecasted population growth.

Puget Sound Energy: Electricity and Natural Gas

Puget Sound Energy (PSE) is regulated by the Washington Utilities and Transportation Commission (WUTC), which provides the Kirkland area with electricity and natural gas. Figures U- 6 and U-7 illustrate the existing and proposed electrical system. Figures U-8 and U-9 illustrate the existing and proposed natural gas system. (NEW MAPS TO BE ADDED)

Electricity

PSE generates, transmits, and distributes power as part of the interconnected Northwest power grid. As of 2014, PSE generates approximately 40% of its electricity from their own power plants and acquires the rest from generation sources on the Columbia River and across the western United States and Canada. The electricity that PSE delivers to customers is generated from hydroelectric dams, coal, natural gas, wind, and to a much smaller degree from nuclear, and other (solar, biomass landfill gas, petroleum, and waste). Although there has historically been a net surplus in electricity supply in the Northwest, in recent years there has been a balance between supply and demand. Future forecasts indicate scenarios where deficits may emerge, requiring additional power purchases, new generation, and further conservation.

Kirkland is a part of PSE's Eastside and Northshore Electrical Subareas. Power is delivered on 230,000 volt (230 kV) transmission lines to substations in Redmond and Renton, where the voltage is transformed to 115 kV. Several distribution stations in Kirkland further transform the voltage to 12.5 kV which is then distributed to customers. A new 115KV transmission line connecting PSE's Sammamish Substation in Redmond to Kirkland's Juanita Substation is planned for construction in 2016 along a route that enters Kirkland near NE 124th Street and generally follows the Cross Kirkland Corridor until heading north along 120th Avenue NE, and then west along NE 124th Street.

A double-circuit 230 kV Seattle City Light transmission line runs through Kirkland north to south near 124th Avenue NE, but does not directly serve the Eastside subarea.

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PSE's long-range electrical energy plans through the year 2035 include a new 230 kV transmission line to connect Redmond to Renton. Siting of the new transmission line goes through a public involvement process that is expected to be complete at the end of 2014, followed by environmental review and permitting in 2015-2016. Construction is planned for 2017.

Washington State's Energy Independence Act requires utilities to acquire specified amounts of renewable resources or equivalent renewable energy credits (RECs). Sufficient "qualifying renewable energy" must equal at least 3 percent of retail sales in 2012, 9 percent in 2016 and 15 percent in 2020. PSE has acquired enough eligible renewable resources and REC's to meet the requirements of the law through 2022 from wind resources.

Natural Gas

PSE provides natural gas to six Washington counties, including King County via PSE's distribution system. The natural gas originates from various regions of the U.S. and Canada. Natural Gas is transported throughout Washington via a network of interstate transmission pipelines owned and operated by Northwest Pipeline Corporation. PSE takes delivery of natural gas from Northwest at a gate station located east of Lake Sammamish outside Kirkland City limits. PSE gas distribution lines up to eight inch in diameter in Kirkland, together with future extensions and upgrades, will service Kirkland's growth.

While PSE plans for gas system demand growth, installation of gas main extensions and new service lines respond to customer demand. Washington Utilities and Transportation Commission rules requires gas companies to demonstrate that existing ratepayers will not subsidize new customers.

Telecommunication Service Providers

Telephone services are regulated by the Washington Utilities and Transportation Commission. Personal wireless service providers serving Kirkland are those licensed by the Federal Communications Commission (FCC) in the Radio Frequency Spectrum for wireless communications service and registered to do business in Kirkland. Cable services are provided under municipal franchise.

Telephone

Wired telephone service and certain related special services are available in the City. System facilities within Kirkland include switching stations, trunk lines, and distributions lines. Distribution lines are either pole-mounted or underground. Service and facility expansions are driven by customer demand.

Personal Wireless

Several companies provide wireless (cellular) telephone service. Cellular telecommunication permits wireless transmission of messages on a network of strategically placed receivers (i.e., mobile telephone communications). Receivers may be placed on tall poles, lattice-type towers, or buildings. The cellular telephone industry does not plan facilities far into the future, but uses market demand to determine expansion into new service areas.

Cable

Cable TV and Internet services are also available in Kirkland. Most homes area served by at least two providers. The local provider has the technical capacity to serve any new development in the City. Residential high speed DSL services, cable-based Internet, and fiber are available in most locations in the community.

Fiber Optic

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Many telecommunication vendors own optic fiber in Kirkland rights-of-way for commercial use. The City of Kirkland has access to some of these strands through franchise agreements.

Olympic Pipeline Company: Hazardous Liquid Pipelines

The Olympic Pipeline Company, operated by BP Pipelines, North America, operates a 400-mile-long petroleum pipeline system from Ferndale, Washington, to Portland, Oregon. Two parallel lines, 16-inch and 20-inch, generally along the Puget Sound Energy easement north-south corridor, pass through the Kingsgate and Totem Lake neighborhoods in the northeast portion of Kirkland and close to a portion of the eastern boundary of the Bridle Trails neighborhood. The pipelines carry gasoline, diesel and aviation fuel. Delivery lines carry products from this mainline to bulk terminals at Sea-Tac International Airport; Seattle, Tacoma and Vancouver, Washington; and Linnton and Portland, Oregon.

The pipelines are hazardous liquid pipelines, as defined by state law (RCW 81.88.040). Pipeline facilities, if ruptured or damaged, can pose a significant risk to public safety and the environment due to the high operating pressure and the highly flammable, explosive and toxic properties of the fuel.

The Federal Office of Pipeline Safety (OPS) is responsible for regulation of the interstate pipeline facilities and addresses safety in design, construction, testing, operation, maintenance and emergency response of pipeline facilities. The Washington State Utilities and Transportation Commission (UTC) has authority to act as an agent for OPS.

Kirkland's Fire Department has reciprocal emergency response agreements with Redmond and other surrounding jurisdictions in the event of a pipeline failure. The Redmond Fire Department Olympic Pipeline Response Plan includes technical information about the pipeline, potential hazards, a guide to hazardous materials scene management, emergency response and evacuation plans, and contacts and other resources. It contains the fundamentals of the City of Kirkland Fire Department response, and in addition maintains city specific data to be used in such an emergency.

The City has established policies to supplement state regulations and the City's risk management/response plan. Utility Element policies focus primarily on land use measures that help minimize and prevent unnecessary risk to the public due to hazardous liquid pipelines, recognizing it is impossible to eliminate risk entirely.

The City also enforces the state's *Call Before You Dig Law* to safeguard the public and construction personnel who work around utilities and the underground infrastructure of pipes, mains, and lines, with an emphasis on protecting fuel transport lines. It requires notification when excavating near underground utilities and ensures that they will be marked, in order to prevent damage, service interruptions and bodily injury.

RELATIONSHIP TO OTHER ELEMENTS

The Utilities Element supports other elements of the Comprehensive Plan by establishing policies for provision of efficient and sustainable urban services to serve anticipated growth and development. This Element supports an infrastructure for servicing existing development and areas targeted for growth by the Land Use Element. The general policies in this Element support the Shoreline Area Chapter by encouraging joint use of utility corridors and mitigating environmental impacts caused by the utility. Energy policies support the sustainability objectives found in the Natural Environment Chapter. The telecommunications policies will help implement the policies of the Land Use, Economic Development, Transportation, and Public Services Elements by facilitating the movement of information as an alternative to the historic commuter/work relationship. Finally, utility policies provide direction to the funding, concurrency, and level of service goals and policies of the Capital Facilities Element. The Capital Facilities Element contains further explanation regarding the analysis of need for capital projects to meet the level of service standards for city managed utilities.

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Policies for public services such as emergency services, schools, and libraries are contained in the Public Services Element.

RELATIONSHIP TO OTHER PLANS

In preparing this Element, the City has reviewed and considered the following documents that are adopted by reference:

- City of Kirkland Comprehensive Water System Plan (2014);
- City of Kirkland Comprehensive Sewer Plan (2008);
- City of Kirkland Surface Water Master Plan (2014);
- Northshore Utility District Comprehensive Water Plan (2009);
- Northshore Utility District Sewer and Water Plan Maps (2009);
- Woodinville Water District Comprehensive Water Plan (2008)
- Woodinville Water District General Sewer Plan (2007);
- Puget Sound Energy GMA Electrical Facilities Plan (1993);
- State Building Code Adoption and Amendment of the 2012 Edition of the International Energy Conservation Code, Residential Provisions WA State Energy Code, Residential Provisions (2012)
- Redmond Fire Department Olympic Pipeline Response Plan (2000).

B. UTILITIES CONCEPT

The Utilities Element supports the continued provision of adequate utility services to support existing and future development. Levels of service are established for City-managed water, sewer and surface water utilities and levels of service are established for non-City purveyors of water and sewer. In addition, water and sewer concurrency requirements are established for new development. A detailed explanation of level of service and concurrency requirements are in the Capital Facilities Element.

The Utilities Element provides policies for regional coordination of utility needs. A basis for coordination with regional and local providers is established to ensure fair and consistent review of system expansions and enhancements while providing appropriate public input. The environmental and aesthetic concerns of the community are balanced with the need to provide affordable and reliable utility service. As telecommunication technologies continue to evolve, the Utility Element supports systems that are widely available, reliable, efficient, and complete, and that respond to the ever greater business and residential demand to be connected.

The importance of efficiency, renewable energy and conservation are stressed as cost-effective means of accommodating the growing demand for services and reducing carbon emissions.

C. UTILITIES GOALS AND POLICIES

XI. UTILITIES

Goal U-1: Maintain the quality of life in Kirkland through the planned provision of public and private utilities.

Goal U-2: Provide an efficient system to deliver high quality water.

Goal U-3: Protect public health and environmental quality through appropriate and efficient design, installation, and maintenance of sanitary sewer infrastructure.

Goal U-4: Provide surface water management facilities programs and services that provide adequate drainage and minimize flooding while protecting and enhancing the water quality and habitat value of streams, lakes, and wetlands.

Goal U-5: Ensure adequate and competitively priced telecommunication infrastructure, facilities and services for residents and businesses.

Goal U-6: Reduce the risk to public safety and the environment in the event of a hazardous liquid pipeline failure.

Goal U-7: Promote energy infrastructure that is energy efficient, addresses climate change, and protects the community character.

Goal U-8 Facilitate the development and maintenance of non-City-managed utilities at the appropriate levels of service.

General

As an urban area, Kirkland is accustomed to a high level of utility service. These services accommodate the lifestyles of Kirkland residents and the success of Kirkland businesses. To maintain these community values, which are reflected in levels of service standards, Kirkland must balance the quality of the service provided with the costs and community and environmental impacts. New policy initiatives for achieving sustainable utility services can ensure this level of utility service is maintained into the future.

Goal U-1: Maintain the quality of life in Kirkland through the planned provision of public and private utilities.

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Policy U-1.1: Maintain an inventory of existing capital facilities and utilities, including locations and capacities of such systems and facilities.

An accurate inventory of existing public and private utility locations and capacities will ensure that the City can plan for new growth in a manner that reflects the ability to service that growth with adequate services.

Policy U-1.2: Provide for needed capital facilities and utilities based on adopted levels of service and forecasted growth in accordance with the Land Use Element of this Plan.

This policy is intended to ensure that the Capital Facilities, Land Use, and Utilities Elements are functioning in concert. Coordinated planning allows the City to make accurate land use projections based on utility plans, allows utility providers to plan for utilities in a manner that reflects expected land use patterns and densities and ensures that adequate capital facilities and utilities will be available with development.

Policy U-1.3: Use the following level of service standards for determining the need for City-managed public sewer, water, and surface water facilities:

Table U-1

Water, Sewer and Surface Water Level of Service

Facility	Standard
Water distribution residential use:	103 gallons/day/capita
Water distribution all other uses: Irrigation Businesses Fire suppression	249 gallons/day/capita (includes 1.5 million gallons for fire storage)
Sanitary sewer collection:	100 gallons/day/capita
Surface water management:	Convey, detain and treat stormwater runoff in a manner that provides adequate drainage for the appropriate storm to ensure safety, welfare, and convenience in developed areas while protecting the hydrologic regime and quality of water and fish/wildlife habitat in streams, lakes and wetland.

Policy U-1.4: Ensure that utility services are provided in a manner that is environmentally sensitive, safe and aesthetically compatible with surrounding land uses.

A variety of factors are at stake in the consideration of any proposed utility expansion. For example, clearing for installation or maintenance should minimize impacts to trees and vegetation as well as fish and wildlife habitat. Utilities also should be

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installed and maintained to protect the environment from contamination. Ensuring that utilities are screened to blend in with their surroundings should increase community acceptance of conspicuous infrastructure.

Mitigating environmental and aesthetic impacts can have implications on cost and efficiency of the system. Therefore, it is appropriate to weigh costs against a full consideration of long term benefits that will be derived. Individual implementation issues arising under this policy should be resolved on a case-by-case basis in light of all these considerations.

Policy U-1.5: Facilitate and encourage the conservation of utility resources

The demand for utilities, such as water and electricity, may be met by either increasing the supply or reducing the demand. As the region faces increased challenges to supply these resources. Conservation and efficiency measures can be employed to delay the need for new supplies. Reducing the rate of energy consumption is a means to lower energy costs and mitigate environmental impacts associated with traditional energy supplies.

Policy U-1.6: Promote renewable energy

Kirkland should lead by example. Reducing the City's carbon footprint by reducing our output of greenhouse gasses will help decrease the impacts of climate change and support the vision of an ecologically sustainable city. The City should continue participating in Puget Sound Energy's Green Power program which ensures that a portion of Kirkland's municipal electricity use is matched with clean renewable energy resources located in the Northwest. Increased use of renewable energy should be a priority. The City's should continue to replace its vehicle fleet with hybrid and electric vehicles to boost fuel efficiency and increase the number of electric charging stations at public facilities. Other opportunities to reduce energy use should be aggressively pursued. Installation of solar panels, geothermal heat pumps and other renewable energy applications on City facilities can further reduce greenhouse gas emissions to meet our reduction targets and encourage community use of these technologies. Targets are described in the Natural Environment Element.

Policy U-1.7: Provide equal access to utility services, regardless of historic disparities in income and employment opportunities.

Utility service should be available and provided at the adopted level of service throughout Kirkland. The City or non-City managed utility provider should plan to extend service or upgrade infrastructure where deficiencies are identified.

Policy U-1.8: Install new and, where feasible, existing utility distribution lines underground.

Undergrounding of utility lines will visually enhance the area in which it occurs. In addition, undergrounding can reduce the potential for utility outages associated with wind damage and reduce the need for pruning of vegetation. The complexities of undergrounding could increase as new utility lines are added to existing poles (i.e., new franchises).

Undergrounding utilities can be especially effective along major routes with good regional views; especially of Lake Washington and within view corridors. The City should explore prioritizing the undergrounding of existing utility lines in these areas.

Kirkland should acknowledge the disproportionate costs of undergrounding existing lines for smaller developments by allowing owners to defer until undergrounding occurs as part of a larger project where economies of scale can be realized. The City will need to consider the tariffs on file with the WUTC in deciding where to underground existing distribution lines.

Policy U-1.9: Encourage the joint use of utility corridors and facilities.

Besides the benefit of minimizing the extent of environmental impacts, utility co-location, consolidation, and joint use increases the efficient use of resources. For example, there is significant land devoted to public stormwater facilities. Joint use of this

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land consistent with prudent practice, would enhance the community while still providing the stormwater functions for which the facilities were built.

Other Examples of joint use include:

- Sharing right-of-way acquisition costs.
- Developing pedestrian and bicycle trails and community gardens in utility corridors.
- Developing passive recreation, play areas, community gardens or wildlife habitat in storm and surface water detention areas.
- Sharing telecommunication trenches between providers and for the City's expansion of its fiber-optic network.

Policy U-1.10: Coordinate with other jurisdictions when utility additions and improvements cross jurisdictional boundaries to ensure that decisions are consistent with regional demand and resources and consistency in timing of permit review.

Where utility improvements are planned to serve regional demand, it is imperative that affected jurisdictions, tribal governments and utilities work together from the early planning stage. This will help reduce delays and a lower quality of regional service.

CITY-MANAGED UTILITIES

Water

Goal U-2: Provide an efficient system to deliver high quality water.

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Policy U-2.1: Work in coordination with other jurisdictions and purveyors in the region to ensure a reliable, economic, and sustainable source of water and to address long-term regional water demand.



Water tank in North Rose Hill Neighborhood

As a member of the Cascade Water Alliance, Kirkland has played a large role in securing long term regional water supplies well into the future and will continue to work with neighboring agencies and tribal governments, to provide its customers with reliable, safe water at a reasonable cost, and address the potential impacts of climate change on regional water resources.

Policy U-2.2: Implement system rehabilitation and improvements in order to manage water resources.

Increasing system efficiencies by taking such measures as replacement of older pipes can delay the need for new and more costly supply solutions.

Policy U-2.3: Protect public health and safety, through the appropriate design, installation, and maintenance of water facilities.

The primary concerns with water supply are quantity and quality. The quantity of water has health and safety implications, particularly related to fire suppression. Water quality has obvious public health implications regulated by the Washington State Department of Health and United States Environmental Protection Agency through the Safe Drinking Water Act.

Policy U-2.4: Visually screen new water towers and other water utility infrastructure to blend into their surroundings.

Utilizing vegetative buffers and camouflaging techniques can conceal and screen otherwise visually impacting facilities.

Sewer

Goal U-3: Protect public health and environmental quality through appropriate and efficient design, installation, and maintenance of sanitary sewer infrastructure.

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Policy U-3.1: Work with King County, adjoining jurisdictions, and local purveyors to manage, regulate, and maintain the regional sewer system.

The existing regional sewage system has the capacity to handle Kirkland's future growth. The system will require maintenance and improvements to increase efficiencies.

Policy U-3.2: Ensure that all new development proposals are served by adequate sanitary sewer systems.

In general, new development should not be permitted on property that is served only by septic tanks. However, in limited situations, septic systems should be considered for low-density residential development where no reasonable alternatives exist upon demonstration that soil conditions will permit proper functioning of a septic system. Alternative and innovative techniques in lieu of sewer, such as composting toilet systems and mini treatment systems, should be explored and encouraged by the City.

Policy U-3.3: Connect areas that are on septic systems to sanitary sewer.

Some older, less urbanized areas of the City are served only by septic systems. As these systems age and fail, they present health and environmental risks. Continued testing for markers of poor water quality and failed or leaching septic systems will identify priority areas for upgrades. The City facilitates sewer extensions to these areas in compliance with the Kirkland Municipal Code, by utilizing latecomer agreements or the sewer extension program, whereby private property owners are able to pay their proportionate share of the City's cost to extend sewer to areas within the City's sewer district not currently being served.

Policy U-3.4: Correct deficiencies and increase system efficiency. Emphasis should be placed on correcting deficiencies that present sewage overflow risks.

The greatest system deficiencies in Kirkland's sanitary sewer system are related to the age and reliability of parts of the system. Infiltration and inflow of stormwater into the older pipes decreases system capacity and exfiltration of effluent from older pipes presents environmental and health risks. A new lift station downtown provides significant unused capacity and overflow storage to prevent discharge to Lake Washington during storm events. The focus should continue to be on updating older portions of the systems, with an emphasis on areas where overflows could occur near water bodies. Diligence to maintain and expand the funding support to maintenance programs; such as inspection programs, technological upgrades, and tracking will continue to protect the system from overflows into Lake Washington.

Policy U-3.5: Educate businesses on the proper use of the sewer conveyance system.

Public education and outreach focuses on proper management of fats, oils and grease (FOGs) and non-dispersible products to prevent them from entering the sewer system. The outreach program reduces degradation of infrastructure and overflows, control odors, and protects both the public investment in the system and the environment.

Policy U-3.6: Encourage water reuse and reclamation.

The City should take advantage of the opportunity to access the regional repurposed water provided by the King County Wastewater Division at the Willows Pump Station. With development of the Cross Kirkland Corridor, the City may benefit by installing purple reclaimed water pressurized conveyance pipe that future development can access to irrigate landscapes and flush toilets. This will help protect Kirkland residents from any future water shortages. Future opportunities to reuse water for irrigation of parks and school facilities should also be explored.

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Surface Water

Goal U-4: Provide surface water management facilities programs and services that provide adequate drainage and minimize flooding while protecting and enhancing the water quality and habitat value of streams, lakes, and wetlands.

Policy U-4.1: Implement the priorities and needs identified in the City's Surface Water Master Plan.

The Surface Water Master Plan sets the course for the next 5-10 years of surface water utility operations. The plan is updated periodically and serves as a tool to guide the City's surface water utility work program while managing resources, complying with regulations, and coordinating with various entities that are responsible for different aspects of surface water and stormwater management.

Policy U-4.2: Adopt surface water design standards for new development and redevelopment that incorporate best available research and technology in protecting water resources in an economical and feasible manner.

The goal of surface water design for new development and redevelopment projects is to provide adequate drainage and to provide post-construction controls that mimic predevelopment hydrologic patterns and protect water quality to the degree that is economically feasible. Such facilities may include low impact development techniques and/or structural controls such as detention vaults or ponds, infiltration facilities, biofiltration rain gardens and swales, or wetvaults. The Phase II Western Washington Municipal Stormwater Permit requires that the City at a minimum follows the Department of Ecology's stormwater management design standards.

Policy U-4.3: Adopt and implement standards for control of runoff and erosion from construction sites.

In order to reduce construction related erosion and delivery of sediment to our waterways, use of sediment and erosion control techniques should be required at all sites where significant clearing and grading will take place.

Policy U-4.34 Encourage or require use of "low impact development" principles and practices to minimize the surface water impacts of development.

Kirkland encourages the use of low impact development practices and should identify incentives and evaluate potential changes to land use development regulations and building codes to support and promote low impact development.

Low impact development (LID) is a set of practices that mimic natural watershed hydrology by slowing, evaporating/transpiring, and filtering water before it reaches a stream channel. LID contrasts with past drainage techniques that collect and convey water to streams quickly – damaging stream channels and degrading water quality.

This approach uses various land planning and design practices to conserve and protect natural resources and reduce infrastructure costs. LID techniques seek to minimize the amount of stormwater runoff; LID facilities use soils and vegetation to treat and slow the stormwater runoff that is produced on the site. LID allows land to be developed cost-effectively, which helps reduce potential environmental impacts.

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Low impact development principles include the following:

- Minimize creation of impervious surfaces;
- Preserve Native Vegetation
- Cluster housing to allow for preservation of open space
- Use site soils and vegetation to soak up and filter stormwater runoff;

Low Impact Best Management Practices include the following:

- Amend soils with compost to improve water retention;
- Construct bio-retention swales or cells, which are natural areas that have specifically chosen plants and engineered soils that slow, filter and absorb water;
- Use permeable pavement for roadways, driveways and walkways;
- Use green roofs to minimize runoff from impervious surfaces; and
- Collect and store water for landscaping or other nonpotable water uses.

When combined, such principles and practices can greatly reduce the amount of stormwater runoff from developed sites and improve water quality.

Policy U-4.5: Require businesses and residents to take steps to prevent stormwater pollution.

It is much easier to prevent pollution than to clean up polluted waters. Businesses and residents should be required to use both nonstructural and structural “best management practices” (BMPs) to prevent discharge of pollutants from everyday activities. BMPs range from covering materials stored outdoors, sweeping rather than using water to clean parking lots, and installation of oil/water separators to connecting car washing areas to sanitary sewers.

Policy U-4.6: Minimize environmental damage from spilling and/or dumping of pollutants into the storm drainage system.

The City should respond to instances of spilling and dumping of materials into the storm drainage system through activities such as the following:

- Identify and where appropriate take enforcement action against those responsible for nonstormwater discharges, including requiring cleanup or conducting abatement;
- Maintain and periodically update inter-City and intraagency spill coordination and response training and procedures; and
- Conduct surveys and inspections to identify and eliminate illicit connections to the storm drainage system.
- Maintain maps of the drainage system that allow pollutants to be quickly traced to their source.

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Policy U-4.7: Assess the quality of water and habitat in local streams and lakes to evaluate the effectiveness of utility standards and programs and to focus future efforts.

Identification of specific water quality and habitat concerns and the tracking of changes over time should help to improve the efficiency and cost-effectiveness of programs and projects. Such assessment is a recommended element of several State and federal programs.

Policy U-4.8: Ensure that privately owned stormwater facilities are operated and maintained in a manner that maximizes their quantity and quality control benefits.

When well-maintained detention and water quality facilities on private property serve to protect downstream resources, City programs should be continued to ensure that privately owned stormwater facilities are operated and maintained so that downstream systems are not affected.

Policy U-4.9: Educate the public on protecting and enhancing the quality of our water resources.

The City should strive to raise awareness of the impact that everyday business and residential activities can have on water quality and fish habitat and populations, and to provide information on practices, such as natural yard care, proper storage of materials, and washing practices, that can prevent the discharge of pollutants. Citizen volunteers should be involved in activities that increase stewardship of our water resources. The City should also explore new techniques for engaging the public and effecting positive changes in behavior.

Policy U-4.10: Explore the potential for regional stormwater facilities.

In some cases, particularly where there is significant redevelopment, providing regional facilities for flow control and water quality treatment may provide efficient and effective means of management of stormwater.

Policy U-4.11: Take steps to remove fish passage barriers and to protect and enhance fish habitat.

The Muckleshoot Indian Tribe has Treaty fishing rights in Kirkland. The City should work closely with the Muckleshoot Tribe to prioritize fish passage barriers and other habitat enhancement projects to maximize the habitat benefits with available funding.

Policy U-4.12: Conduct municipal operations in a manner that protects water quality.

Use erosion control and pollution prevention practices in City operations including but not limited to parks, streets, wastewater, stormwater, and water in order to minimize the discharge of pollutants to the stormwater system.

Policy U-4.13: Coordinate basin planning, pollution prevention, and restoration activities with neighboring jurisdictions.

Watersheds do not stop at jurisdictional boundaries, and must be analyzed and restored as whole entities. The City should coordinate activities with King County, Bellevue and Redmond and other jurisdictions as appropriate to maximize the positive impact of projects and programs.

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Policy U-4.14: Participate in regional surface water resources and fish resource conservation planning efforts.

The City should continue in the participation of the WRIA 8 salmon conservation planning effort and the Puget Sound Shared Strategy. The purpose of this project is to develop a plan for recovery of salmon habitat functions of the greater Lake Washington Watershed. Habitat is the only one of the four "H's," Habitat, Hydropower, Hatcheries, and Harvest, which is under local government control. Recovery of salmon stocks listed as threatened under the Federal Endangered Species Act would reduce the regulatory and liability burden for local jurisdictions, help to protect a vital part of our regional economy, and protect a species that has great cultural significance in the Pacific Northwest.

Policy U-4.15: Ensure compliance with State and federal regulations related to surface water quality and fisheries resources.

The City should coordinate surface water management requirements and programs with a variety of State and federal programs and regulations, including but not limited to the following:

- National Pollutant Discharge Elimination System, Phase II;
- Puget Sound Partnership Action Agenda for Puget Sound; and
- Federal Endangered Species Act listing of Chinook salmon as a threatened species.

This policy is intended to acknowledge and accommodate future regulatory changes.

Policy U-4.16: Investigate and plan for the impacts of climate change on operation, maintenance and construction of the stormwater system.

Changes in precipitation patterns and climate may impact flooding and the need to store and reuse rainwater. Investigate and plan for sizing of the conveyance system, provision of additional areas for storage of flood waters, and potential for rainwater reuse. Evaluate construction methods used for stormwater system to insure that they minimize the production of greenhouse gases to the degree possible.

Policy U-4.17: Conduct asset management and planning to insure uninterrupted and efficient operation of the stormwater system.

Assessment of the condition, and ranking of assets according to their criticality and likelihood of failure, should be done to help prioritize replacement and rehabilitation of the system.

Policy U-4.18: Consider acquisition of open space, stream corridors and/or wetlands in cases where this would further goals of reducing flooding, improving water quality and improving fish habitat.

There are cases where preservation and /or restoration of stream corridors and wetlands may benefit City functions, and where this may not happen despite critical areas regulations. In addition, there may be cases where restoration of streams or wetlands would have significant benefits for water quality and habitat, and this work would likely not happen if the property were not under City ownership.

Telecommunications

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Goal U-5: Ensure adequate and competitively priced telecommunication infrastructure, facilities and services for residents and businesses.

Policy U-5.1: Manage the City's existing and planned telecommunication improvements to optimize service delivery opportunities in Kirkland.

The City should plan and install sufficient capacity into its telecommunication system to meet future City needs.

Policy U-5.2: Partner with public agencies and private sector organizations to achieve cooperation and cost-sharing in building telecommunication systems and providing service.

The City should establish partnerships with public agencies and private sector organizations and encourage collocation of telecommunication space on towers and buildings and in fiber-optic lines.

Policy U-5.3: Review and update City policies, procedures and regulations to facilitate the installation and maintenance of telecommunication systems.

The City should review and update its policies, procedures and practices to ensure that they facilitate the installation of new telecommunication systems and support existing systems. In addition, the City's development regulations need to be flexible or revised on a regular basis to respond to changes in technology and consumer needs.

Policy U-5.4: Seek opportunities to enhance the number of service providers in the community to increase choice and fair access and encourage competitive pricing and high quality customer service.

Choice, availability and price are important factors to telecommunication consumers. The City should look for opportunities to increase the number of high quality service providers to have competitively priced and high quality telecommunication systems in Kirkland.

Policy U-5.5: Involve community stakeholders and service providers in telecommunication decisions.

The City should involve consumers, service providers and other public entities with telecommunication systems in Kirkland when reviewing its policies, practices and development regulations to ensure that consumer needs are being met and that providers and other public entities can install the facilities.

Policy U-5.6: Mitigate impacts of wireless services, facilities on adjacent land uses through careful siting and design. Facilitate the approval of wireless service facilities to balance the need for community connectivity with aesthetic standards. Stay up-to-date with changing technologies and rules.

In order to minimize potential impacts, personal wireless services facilities should be located to the extent possible in nonresidential areas. There should be a preference for facilities co-located on existing towers, and located on existing structures such as building or equipment structure facades, transmission towers or utility poles, to avoid unnecessary proliferation. When new facilities are required or existing facilities are expanded, providers should be required to use techniques to screen or conceal the wireless service facilities to be compatible with the surroundings.

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In recognition of the important role wireless services plays in facilitating business and personal communication, the City should enable carriers to quickly and efficiently site and configure facilities in ways that meet our standards. One of the best ways is to provide faster permit review for the locations and types of facilities the City wants to encourage.

Also, in recognition of the changing technology and industry, the City should ensure that property owners or providers remove abandoned facilities promptly. In addition, federal regulations covering wireless service facilities change frequently and the city should monitor and amend regulations accordingly.

Policy U-5.7: Allow new aerial telephone and cable lines in the right-of-way, provided that they are designed and installed to minimize aesthetic impacts and are subsequently required to be placed underground at the time of undergrounding electrical distribution lines..

Communication lines (telephone and cable) are often located on electrical utility poles. However electrical lines are typically the determinate for when communication lines are undergrounded. When electrical distribution lines are placed underground communication facilities must also be undergrounded.

Policy U-5.8: Ensure that franchise and right of way agreements with telecommunication service providers require collaborative undergrounding of facilities when electrical distribution lines are placed underground.

The City's objective for undergrounding is to minimize aesthetic impacts and create more resilient infrastructure. Collaborative undergrounding creates economies of scale for all parties and minimizes traffic disruption.

Policy U-5.9: Screen ground mounted cabinets associated with telephone and cable telecommunication equipment so that they fit in with their surroundings.

Landscaping, proper placement and camouflaging techniques should be used to soften the appearance of the structures. Recognize that the provider must have access to the facilities in order to service and maintain them.

NON-CITY-MANAGED UTILITIES

The Washington Utilities and Transportation Commission (WUTC) has traditionally been the primary regulatory agency for private utilities. The WUTC has the authority to define the costs that a regulated utility can recover, and consequently provides oversight to ensure that the utility acts prudently and responsibly. Under the Growth Management Act, local jurisdictions have the obligation and requirement to plan for utilities including the identification of utility corridors. Kirkland will need to consider the obligations of the utilities to WUTC regulation when considering policies and regulation affecting their operations.

Hazardous Liquid Pipelines

Goal U-6: Reduce the risk to public safety and the environment in the event of a hazardous liquid pipeline failure.

This goal addresses safety concerns. Damage from external forces such as construction equipment can produce an immediate fuel release or a scratch on a coated-steel pipeline can lead to accelerated corrosion and failure at a later time. Other safety concerns are location of land uses with high on-site populations that are difficult to evacuate, and location of emergency facilities and other land uses where the consequence of the loss in the event of a pipeline failure is high.

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Actions that can be taken to ensure a higher degree of safety include early detection of potential pipeline damage or failures through adequate maintenance of the hazardous liquid pipeline corridor, neighborhood education, and working with other governments and industry representatives to seek improvements in safety measures for hazardous liquid pipelines. These provisions are intended to protect the health, safety and welfare of the general public.

During development review and construction of projects in the vicinity of the pipeline, setting requirements for avoidance of damage and coordination between Kirkland and the pipeline operator, Olympic Pipeline Company, or its successor can help avoid problems. The following actions can reduce the chance of an incident:

Identifying the location of the pipeline corridor on site plans, plats or other construction drawings;

Using the one-call locator service, particularly during construction on adjacent properties;

Physically verifying pipeline locations as needed to minimize the likelihood of damage;

Establishing and maintaining setback requirements from the hazardous liquid pipelines for new or expanded structures and other significant land disturbance; and

Monitoring land disturbance close to the pipeline by the pipeline operator or its representative.

Policy U-6.1: Establish standards to minimize pipeline damage.

Require development activity near pipelines to provide the following information in order to evaluate the proposal:

- Location of the liquid pipeline corridor in relation to proposed structures, utilities, or clearing and grading activities.
- Proposed techniques to minimize the potential disturbance to the pipeline prior to and during construction.
- Potential stormwater discharge impacts to the pipeline, and mitigation measures to prevent erosion.
- Setbacks and other site design techniques to minimize the potential hazard.
- Emergency plans as appropriate.

Policy U-6.2: Coordinate with the pipeline operator when developments are proposed near the hazardous liquid pipeline corridor to reduce the potential for problems.

The City and operator should communicate and coordinate their review. Methods include the following:

- Notifying the pipeline operator of proposed development projects located near the pipeline corridor.
- Receiving verification that the pipeline operator has received and reviewed the proposal, and provided comments prior to City review of development activity.
- Seeking the pipeline operator's participation in preconstruction meetings if warranted.
- Seeking monitoring by the pipeline operator of development that involves land disturbance or other significant work within or near the pipeline corridor.

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Policy U-6.3: Prohibit new high consequence land uses from locating near a hazardous liquid pipeline corridor. Design proposed expansions of high consequence land uses to avoid increasing the level of risk in the event of a pipeline failure, and where feasible, to reduce the risk.

Kirkland can help reduce the risk of injury in the event of a pipeline failure by not allowing certain land uses to locate near hazardous liquid pipelines. Land uses with high-density on-site populations that cannot be readily evacuated or protected in the event of a pipeline failure are considered "high consequence land uses." Examples are schools and multifamily housing exclusively for the elderly or the handicapped. Uses such as these carry a relatively higher risk and have higher potential consequences in the event of a pipeline failure and therefore are not as appropriate as other uses near pipelines. Facilities that serve critical "lifeline" or emergency functions, such as fire and police facilities or utilities that provide regional service, are also considered "high consequence land uses."

John Muir Elementary School is located near the pipeline corridor in the Kingsgate neighborhood. Future expansions can use measures such as site planning that reflect anticipated flow paths for leaking hazardous materials and emergency response.

Policy U-6.4: Require maintenance of the hazardous liquid pipeline corridor through a franchise agreement or other mechanisms.

The pipeline operator can help reduce the likelihood of accidental damage by adequately maintaining the pipeline corridor. Dense vegetation such as blackberry bushes can impede visibility and access. Instead, the pipeline corridor can be properly maintained with grass or other low-growing vegetation that enables easy inspection while preventing erosion. Ensuring that the pipeline locations are marked and that missing markers are replaced is also important, as is periodic aerial inspection of the pipeline corridor to detect potential problems. Kirkland can assist this effort when permits are necessary for inspections or repair with prompt permit processing. The pipeline operator should maintain the pipeline corridor on a continual basis by:

- Maintaining vegetation to enable visibility and access for inspection while ensuring that such maintenance does not contribute to soil erosion;
- Using plant species and plantings that prevent erosion;
- Ensuring that above and below grade pipeline markers containing information, such as operator name and number and facility type, are in place; and
- Conducting periodic visual inspections of the corridor.

Policy U-6.5: Expedite permits for the hazardous liquid pipeline company necessary for inspections and repairs.

Policy U-6.6: Continue to work with other jurisdictions, state and federal governments, and the pipeline operator to seek improvements in safety measures for hazardous liquid pipelines.

Working with other jurisdictions and agencies as part of a unified approach to addressing pipeline safety issues is important. This unified approach can address issues such as maintaining a model franchise agreement, periodic review of the pipeline operator's safety action plan to identify any deficiencies, and advocacy of City concerns regarding pipeline safety regulations.

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Policy U-6.7: Encourage the pipeline operator to maintain a neighborhood education program for those who live and work within one-quarter mile of the hazardous liquid pipeline to educate them and the general public about pipeline safety.

People who live on property or work near the pipelines can also play an important part in avoiding pipeline damage and identifying potential problems early on. The Olympic Pipe Line Company or its successor can promote public safety through periodic neighborhood mailings and meetings. Important information should include facts about the pipelines, how to avoid damage, potential problems to watch out for, such as unusual smells or suspicious construction activities, and how to respond in the event of a failure or other problem.

Energy

Goal U-7: Promote energy infrastructure that is energy efficient, addresses climate change, and protects the community character.

Policy U-7.1: Encourage the public to conserve energy through public education.

Utilizing renewable energy sources, conserving energy, and employing new energy technologies and efficiency's further Kirkland's sustainability goals.

Policy U-7.2: Participate in regional efforts to increase the use of renewable energy sources

Kirkland must advocate for the transition from carbon based energy to renewables in coordination with the King County Climate Change Collaborative (K4C) at the state level. As a founding member of the K4C, Kirkland leads in its commitment to advance legislation to reduce greenhouse gas emissions. Renewables include solar, wind and other sustainable energy sources.

Policy U-7.3: Encourage and collaborate in regional efforts to strengthen codes in order to reduce energy consumption and greenhouse gas production.

Kirkland's collaboration with regional efforts to reduce barriers and establish standards, such as participation in the update of the Washington State Energy Code Residential Provisions, for the effective use and conservation of energy over the useful life of buildings, supports our efforts for a sustainable community.

Policy U-7.4: Work with and encourage Puget Sound Energy to plan, site, build and maintain an electrical system that increases the use of renewable energy and co-generation to meet the needs of existing and future development, and provides sustainable, highly reliable and energy efficient service for Kirkland customers.

Kirkland requires highly reliable service for public health and safety and to meet the needs of our residents and businesses. As PSE increases its renewable energy portfolio and use of co-generation, energy is conserved, efficiency is increased, and the carbon footprint is reduced. Cogeneration uses an otherwise unused byproduct of fossil fuel electricity generation to become a useful commodity by capturing heat that is generated while producing electricity to supply hot water, steam, space heating and cooling.

Policy U-7.5: Promote the use of small to large scale renewable energy production facilities.

The City should promote solar energy to generate electricity and heating for residential and commercial development. Wind turbines and other types of emerging technologies, such as digesters that divert and break down horse manure and fats, oils

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and grease to produce energy should also be encouraged. The City must balance the goal of increasing renewable energy with aesthetic concerns and tree preservation objectives.

Policy U-7.6: Require new and, where feasible, existing electrical distribution lines in the right of way to be underground.

Electrical distribution lines, often located in the public rights-of way, carry electricity to homes and businesses throughout Kirkland. Electrical service is provided to private property by service lines connecting to these power lines. Electric transmission lines are located both above and below ground throughout Kirkland. In more recent development areas systems are typically underground.

Undergrounding of electrical distribution lines can reduce the potential for power outages associated with wind damage, eliminate reduce the need for pruning vegetation, and enhance views.

Kirkland should acknowledge the disproportionate costs of undergrounding existing lines for smaller developments by allowing owners to defer until undergrounding occurs as part of a larger project where economies of scale can be realized.

Policy U-7.7: Screen above ground equipment cabinets and other structures associated with electrical distribution without hindering access as required by the provider.

Landscaping or other techniques to screen these structures will generally soften their appearance so that they fit in with the surroundings.

Policy U-7.8: Require siting analysis in the development review process for new and expanded electrical transmission and substation facilities to address land use and sensitive areas and provide mitigation to minimize visual and environmental impacts.

Electrical transmission lines are located within corridors in public rights of way or within utility easements on private property. Existing transmission lines in Kirkland are above ground. Electric substations are located on private property owned by the utility. The additional cost to underground PSE's electrical transmission lines is regulated by the WUTC and borne by the entity requesting the undergrounding. New or expanded aerial transmission lines should be sited and designed to avoid critical areas and minimize visual impacts, especially where views of Lake Washington and view corridors are affected.

Coordination

Goal U-8: Facilitate the development and maintenance of non-City-managed utilities at the appropriate levels of service.

Policy U-8.1: Work with non-City-managed utilities and review facility plans to ensure that they reflect and support Kirkland's land use plan. Likewise, the City should work with providers to ensure that utilities are available to support land uses and to maintain appropriate levels of service.

This policy is intended to ensure that non-City providers are in compliance with the City's Comprehensive Plan as mandated by the Growth Management Act. This systematic planning allows the City to make accurate land use projections based on utility plans and allows utility providers to plan for utilities in a manner that reflects expected land use patterns and densities.

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Policy U-8.2: Coordinate with non-City providers of water and sewer on a joint program for maintaining adopted levels of service, concurrency requirements, funding, and construction of shared public facilities.

Under the provisions of this Comprehensive Plan, the City is establishing specific utility requirements for itself and utilities serving the Kirkland area consistent with the requirements of the Growth Management Act.

Policy U-8.3 Coordinate with the appropriate utility provider when considering land use decisions in the vicinity of proposed facility locations to ensure land use compatibility.

Working with utilities in advance of key land use decisions has the potential to eliminate potential conflicts and ensure that utility considerations are factored into the development review process.

Policy U-8.4: Provide timely and effective notice to utilities of the construction, maintenance, or repair of streets, roads, or other facilities and coordinate such work with the serving utilities.

Timely information about capital improvement plans provides utilities the opportunity to coordinate construction projects with City projects. This has two distinct advantages: it could save the utility money by reducing construction expenditures and it can help the City to avoid multiple roadcuts for various utility installations.

Policy U-8.5: Encourage the consolidation of special districts.

Obtaining urban services from cities and encouraging special service districts, including sewer, water, and fire districts, to consolidate or dissolve as a result, advances the Growth Management, regional and county wide vision for municipalities to be the primary providers of urban services. Services should be provided in an efficient, environmentally sensitive, timely, and cost-effective manner.

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~~◆ RELATIONSHIP TO THE FRAMEWORK GOALS ◆~~

The ~~Public Services Element~~ highlights the following Framework Goals:

- ~~FG-1 Maintain and enhance Kirkland's unique character.~~
- ~~FG-2 Support a strong sense of community.~~
- ~~FG-3 Maintain vibrant and stable residential neighborhoods and mixed-use development, with housing for diverse incomes, ages, and lifestyles.~~
- ~~FG-4 Promote a strong and diverse economy.~~
- ~~FG-5 Protect and preserve environmentally sensitive areas and reduce greenhouse gas emissions to ensure a healthy environment.~~
- ~~FG-6 Identify, protect and preserve the City's historic resources, and enhance the identity of those areas and neighborhoods in which they exist.~~
- ~~FG-7 Encourage a sustainable community.~~
- ~~FG-8 Maintain and enhance Kirkland's strong physical, visual, and perceptual linkages to Lake Washington.~~

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- ~~FG-9 Provide safety and accessibility for those who use alternative modes of transportation within and between neighborhoods, public spaces, and business districts and to regional facilities.~~
- ~~FG-10 Create a transportation system which allows the mobility of people and goods by providing a variety of transportation options.~~
- ~~FG-11 Maintain existing park facilities, while seeking opportunities to expand and enhance the current range and quality of facilities.~~
- ✓ **FG-12 Ensure public safety.**
- ✓ **FG-13 Maintain existing adopted levels of service for important public facilities.**
- ~~FG-14 Plan for a fair share of regional growth, consistent with State and regional goals to minimize low density sprawl and direct growth to urban areas.~~
- ✓ **FG-15 Solve regional problems that affect Kirkland through regional coordination and partnerships.**
- ~~FG-16 Promote active citizen involvement and outreach education in development decisions and planning for Kirkland's future.~~
- ~~FG-17 Establish development regulations that are fair and predictable.~~

XII.A. PUBLIC SERVICES

A. INTRODUCTION

The Public Services Element addresses fire and emergency medical services, emergency management, police protection, solid waste collection and transfer, schools and libraries.

PROBLEM STATEMENT

~~As an urban area, Kirkland has an established infrastructure for the efficient provision of public services. Kirkland's level of public services has generally been adequate over time as new growth and development have occurred. Deficiencies may still exist in some services but these can be addressed through appropriate planning, adequate funding and coordination with the appropriate service providers. Deficiencies that have occurred in the past have been due to growth, both in population and business activity and as the result of annexations. These deficiencies can be avoided by incorporating planning for specific services more completely into the general planning process.~~

~~Historically, individual service providers have prepared master plans based on assumptions of growth from a variety of sources. The intent of the Public Services Element is to serve as an umbrella for these individual master plans and help establish a consistent set of growth assumptions based on~~ the Land Use and Housing Elements of the Comprehensive Plan.

Each provider ~~will still~~ faces unique challenges in meeting the expected demands. For fire, emergency management and police services, the primary challenge is in maintaining an appropriate level of service as growth occurs and the demand for services increases. For solid waste garbage and recycling, the challenges are to reduce waste, encourage recycling and reduce solid waste disposal to lessen the capacity problems of the transfer stations and landfills. The County must find demand management solutions to address tonnage and transaction capacity problems ~~with in its transfer station system existing and new transfer stations~~. For the Lake Washington School District, a major challenge is in finding ways to be flexible and responsive to fluctuating demand for services.

~~As an urban area, Kirkland has an established infrastructure for the efficient provision of public services. The policies of the Public Services Element anticipate no changes in appropriate service providers and no new districts.~~

EXISTING CONDITIONS

~~The City currently provides the following public~~ services:

Fire Protection and Emergency Medical Services – The City provides emergency response to fire and medical emergencies, fire prevention, and public education and participates in regional specialized response for hazardous materials, technical rescue and paramedic services. The City has County, other cities and State mutual aid agreements for emergency response. Fire station locations and emergency fire response times are shown in Figure PS-1. Response times for emergency medical services are shown in Figure PS-2.

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Some areas of the City do not meet the level of service standards for fire and emergency medical services. Specific capital projects to address these deficiencies are addressed in the City of Kirkland Fire and Building Department's Strategic Plan and Fire Department Standards of Coverage and Deployment Plan. These include a new planned single or dual fire station to serve the northern areas of the City to be completed by 2017.

Emergency Management – The City provides readiness, response, and recovery services based on an all-hazards approach to disasters. It-Kirkland participates in regional and statewide response operations. It has mutual aid agreements with other Cities, Counties, and the State, as well as private-sector partners and voluntary agencies for management and response support in disasters.

Police Protection – The City provides traffic investigation, enforcement, and education; parking enforcement; patrol response to citizen calls for service; criminal enforcement; K9; special response teams; crisis negotiation team; investigations; crime analysis; explorers; crime prevention; school resource officers; record keeping; jail services; internal and external training; and contacts for 911 communication services that serve as the public safety answering point for police, fire, and medical emergencies. The department also has mutual aid agreements with every law enforcement agency in the State. A new Justice Center in the Totem Lake area combines police, jail and municipal court services in one complex.

Solid Waste and Recycling Collection – The City contracts with Waste Management, Inc., to provide curbside solid waste and recycling collection to all single-family and multifamily residents and commercial customers. The Draft King County Comprehensive Solid Waste Management Plan sets specific goals for the City to achieve. The County and the City have committed to achieve a combined residential and commercial recycling diversion rate goals of a-55 percent curbside recycling diversion rate by 2015, and 70 percent by 2020 and a waste prevention goal of 20.4 pounds per household per week by 2020. In 2013, the City achieved a combined recycling diversion rate of 44.6 percent. The City started one of the first single family residential food waste recycling programs followed by commercial and multifamily organics recycling and business programs to encourage environmentally sound practices. The City will continue to work with its collection contractor to provide a-comprehensive curbside recycling program for Kirkland residents and businesses.

Moved this section::The following non-City-managed public services are also addressed in the element:

Schools—In Kirkland, the Lake Washington School District has elementary schools, junior and senior high schools, and a combination junior and senior high school under the international school program. The school district serves 76 square miles and includes all of Kirkland, Redmond and unincorporated portions of King County. In addition, Kirkland has the Lake Washington Technical College. School locations are shown in Figure PS-3.

The school district's 2003—2008 LOS standards are as follows: 19 students for grades K-2, 24 students for grade 3, 25 students for grade 4, 27 students for grades 5—6, 30 students for grades 7—9 and 32 students for grades 10—12. Based on these LOS standards, enrollment forecasts and planned facilities, the district has sufficient capacity to house students through 2008. In fact, the district forecasts enrollment to decrease. No new schools are planned for Kirkland. A vacant school site is held in reserve in Redmond on Kirkland's border. The district uses portable classrooms to provide the flexibility to accommodate immediate needs of school sites without building costly new facilities. By 2008, several of the Kirkland schools will be modernized and additional permanent school capacity will replace the portables.

Solid Waste Transfer – The King County Solid Waste Division (KCSWD) owns and operates the Houghton Transfer Station (HTS) in Kirkland where 98 percent of Kirkland's solid waste is collected and transferred to the Cedar Hills landfill. The station currently processes an inordinate amount of more waste relative to most other

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King County transfer stations and accepts waste from surrounding communities such as Redmond and Bellevue. In ~~2007~~13, the HTS processed 18 percent (~~182,000 tons~~) of the waste or the second most in the entire King County transfer system.

In October 2005, the City of Kirkland and the KCSWD negotiated a Memorandum of Understanding (MOU) intended to mitigate some of the negative effects the HTS station was having upon the surrounding residential community. The MOU agreement included mitigation measures to be implemented or constructed by King County and included commitments to prohibit the overnight parking of full or partially full trailers; to construct a pedestrian pathway and sound barrier; to install landscaping; and to provide other mitigation amenities. The City also worked closely with the KCSWD and local haulers to route trucks exiting the station exclusively to the west so as to protect the adjacent school zone and to restrict them from entering residential neighborhoods to the east. The MOU also included a proviso recommending that the KCSWD reduce the amount of waste processed at the HTS to a maximum annual tonnage of 135,000 tons/year over a 10-year period. The proviso was supported by the City of Kirkland and the surrounding neighborhood. The KCSWD agreed only to abide by the King County Solid Waste Transfer and Export System Plan (2006) (Transfer Plan) as adopted by the King County Council. The reduction in tonnage recommended in the proviso has not been implemented.

In developing the ~~King County Solid Waste Transfer and Export Plan (September 2006) Transfer Plan~~, King County consulted with commercial haulers and other industry experts to develop a set of criteria to be used to evaluate the current urban transfer facility system's ability to meet the service needs of its users over the next few decades. The criteria applied to each station included level-of-service criteria, station capacity, and the effects upon the surrounding community. Based upon the evaluation, the ~~Transfer and Export~~ Plan recommended the permanent closure of the Houghton and Algona Transfer Stations pending the siting and construction of the new Bow Lake, Northeast Washington and South County stations which at the time were ~~are~~ expected to be completed in or about 2016. ~~In accordance with the Transfer and Export Plan, the 2009 draft update to the King County Solid Waste Management Plan also recommends the closure of the Houghton Transfer Station.~~

After Bellevue opted out of a Solid Waste Interlocal Agreement with King County in 2013, which had the effect of removing ten percent of the solid waste from the transfer system after 2028, a review of the 2006 Transfer Plan was undertaken by King County and stakeholders to ensure that all of the capital improvements to the transfer system identified in 2006 were still needed.

During the review of the Transfer Plan, the Kirkland City Council adopted two resolutions ~~R-5001 and R-5031~~ which expressed their desire that the County honor its agreement in its 2005 Memorandum of Understanding with Kirkland and as recommended in the Transfer Plan that the HTS be closed.

The review of the Transfer Plan recommended that the number of transfer stations in the system being considered for replacement be reduced from six to four, and continues to recommend closure of the HTS but in 2021 rather than in 2016. The County committed to studying and implementing a demand management strategy to manage daily customer transactions and tonnage capacity with two less transfer stations. The siting and construction of a new Northeast Transfer Station was put on hold pending the viability and success of demand management.

Non City Managed Public Services:

Schools – In Kirkland, the Lake Washington School District has elementary schools, junior and senior high schools, and a combination junior and senior high school under the international school program. The school district serves 76 square miles and includes all of Kirkland; and Redmond, and portions of Sammamish and

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unincorporated ~~portions of~~ King County. In addition, Kirkland has the Lake Washington Technical College. School locations are shown in Figure PS-3.

The school district's ~~2003—2008~~ 2014 - 2019 Six Year Capital Facilities Plan LOS standards are as follows: ~~19~~ 20 students for grades K – ~~1, 2, 24~~ 25 students for grade ~~2-3, 25-27~~ 2-3, 25-27 students for grade ~~4-5, 27~~ 30 students for grades ~~5– 6-8, 30 students for grades 7–9~~ and 32 students for grades ~~10 9– 12~~. Based on these LOS standards, enrollment forecasts and planned facilities, the district has insufficient capacity to house students through ~~2008~~ 2019. In fact, the district forecasts enrollment to ~~decrease~~ increase by over 10% during this period. ~~No new schools are planned for Kirkland. A vacant school site is held in reserve in Redmond on Kirkland's border. The district uses portable classrooms to provide the flexibility to accommodate immediate needs of school sites without building costly new facilities. By 2008, several of the Kirkland schools will be modernized and additional permanent school capacity will replace the portables. Subject to bond approval, the district plans several facilities/expansions in Kirkland to meet this demand including a new elementary school and expansion of Lake Washington High School and the rebuilding and expansion of Juanita High School. Construction of a new elementary school in Kirkland will require the District to locate and acquire an adequate site for the school.~~

Library – The King County Library System provides library services to Kirkland. ~~with a resource library. As a resource library, this library serves as a secondary resource to smaller libraries in the region by providing~~ The Kirkland library, located downtown, and the Kingsgate Library provide extensive reference and user services, and special collections. Library locations are shown in Figure PS-3. (ADD LIBRARY LOCATIONS TO EXISTING SCHOOL MAP)

RELATIONSHIP TO OTHER ELEMENTS

The Public Services Element supports the Land Use Element by establishing policies to ensure that public services are adequate to support anticipated growth. In addition, this element establishes policies for the coordination of funding, concurrency, and level of service requirements set forth in the Capital Facilities Element. The Capital Facilities Element contains further explanation regarding the analysis of need for capital projects to meet the level of service standards for public services.

RELATIONSHIP TO OTHER PLANS

In preparing this Element, the City has reviewed and considered the following documents that are adopted by reference:

- ◆ City of Kirkland Fire and Building Department's Strategic Plan (2013);
- Fire Department Standards of Coverage and Deployment Strategic Plan (2014)
- Comprehensive Emergency Management Plan (2014);
- King County Hazard Mitigation Plan (2014);
- Police Department Crime Analysis, Crime Prevention, Resource Deployment and Community Outreach Plans (2014);
- ◆ Lake Washington School District's Capital Facilities Plan;

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- ◆ Draft King County Solid Waste Division Solid Waste Management Comprehensive Plan (2013);
- Solid Waste Transfer and Waste Export System Plan (2006);
- Solid Waste Transfer and Waste Export System Plan Review (2014);
- Lake Washington School District's Capital Facilities Plan 2014-2019
- ◆ King County's Library System ~~Plan~~ Strategic Guidelines for Library Improvement Modifications (2014).

(UPDATE THE FOLLOWING THREE MAPS:)

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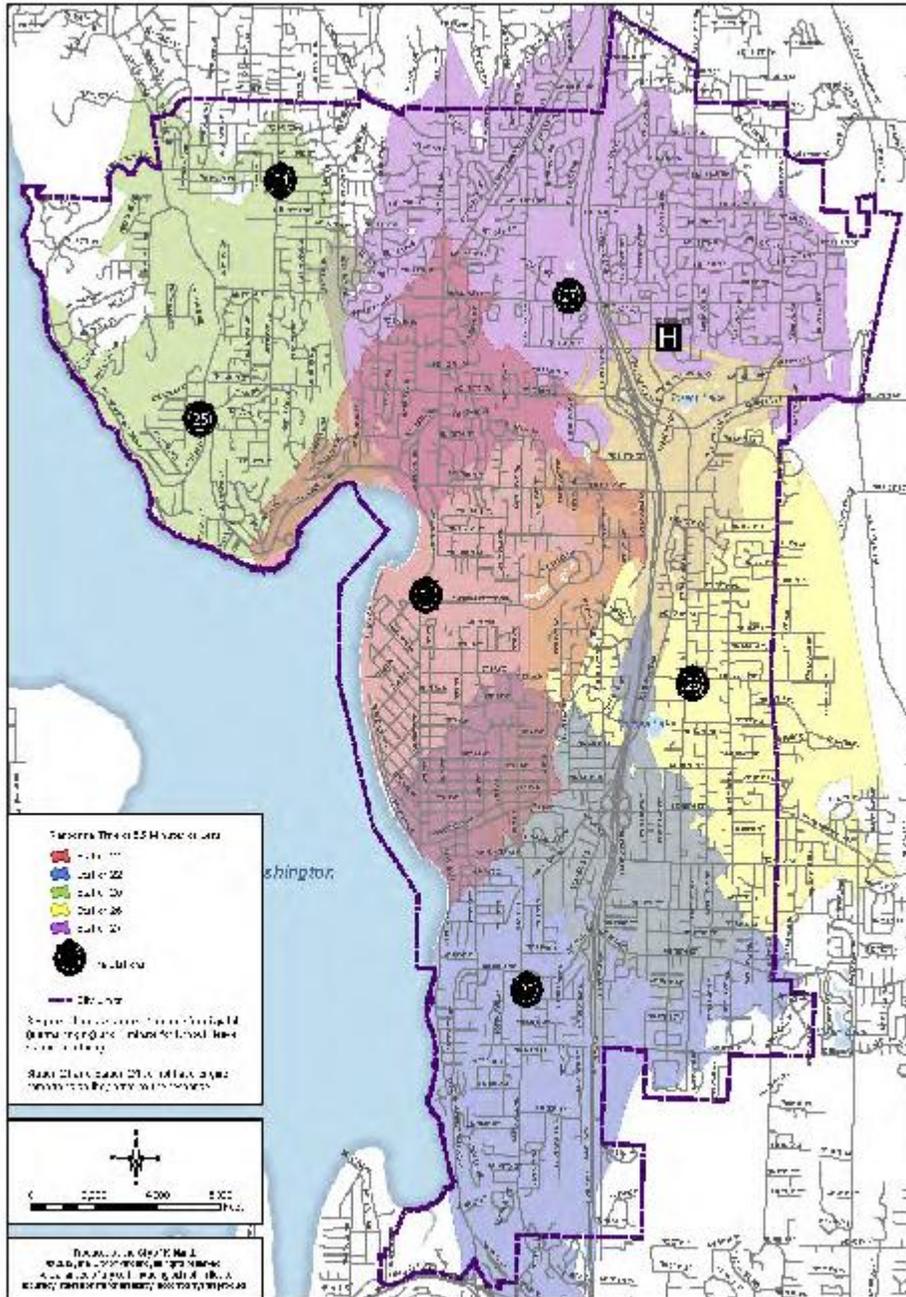


Figure PS-1: Fire Response Times within 5.5 minutes

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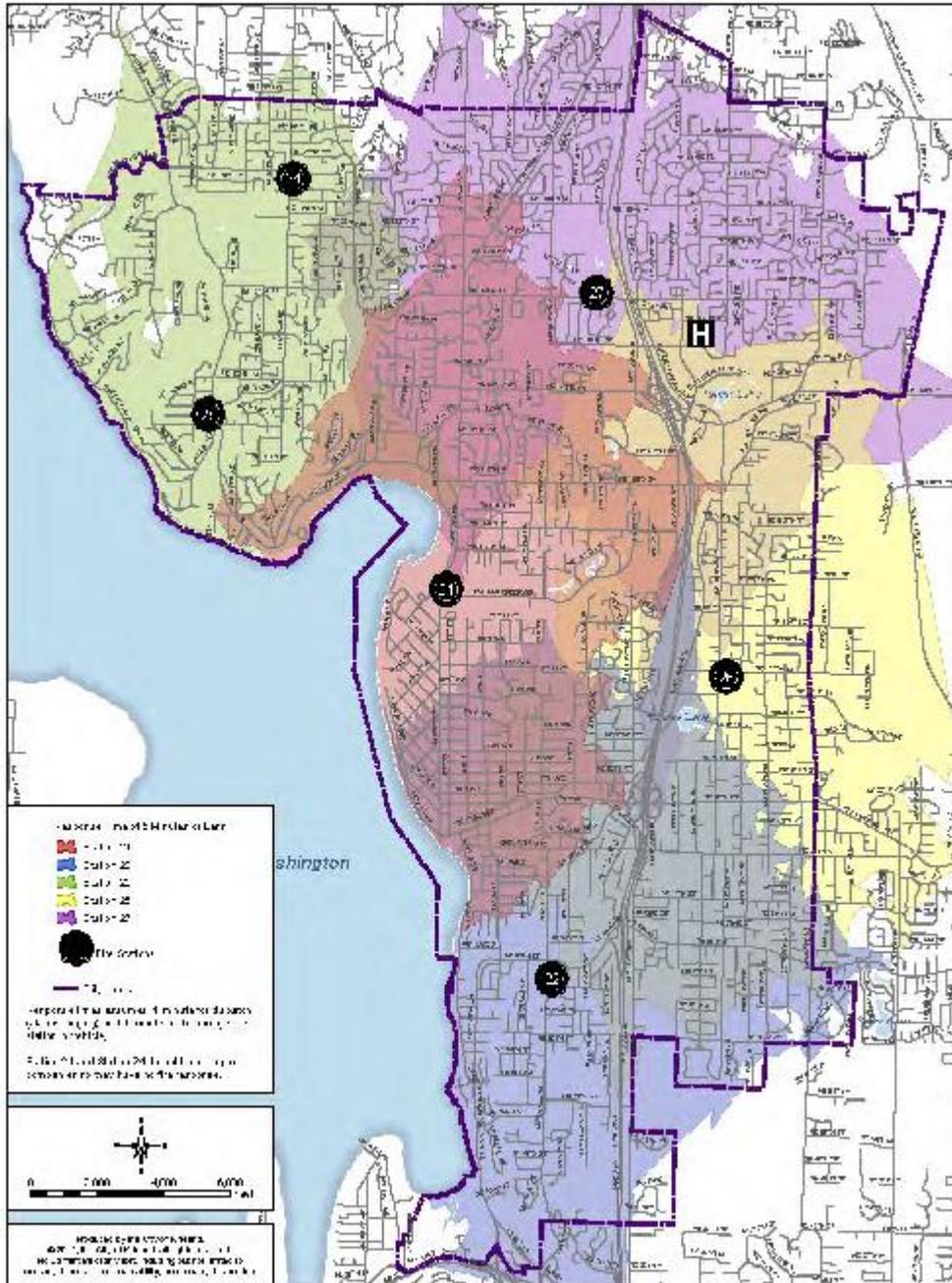


Figure PS-2: Emergency Medical Services Response Times within 5 minutes

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B. PUBLIC SERVICES CONCEPT

The Public Services Element supports ~~the continued~~ provision of adequate public services to support existing and future development and the correction and prevention of any existing deficiencies ~~in public services to ensure a sense of community and high quality of life.~~

~~Schools and libraries will be held to design standards to uphold the community character while shared use of such facilities will ensure efficiency of services.~~

C. PUBLIC SERVICES GOALS AND POLICIES

Goal PS-1: Provide fire protection, emergency medical services, **emergency management**, and police service to the community through a cost-effective and efficient delivery system to maintain a safe environment for the public.

Goal PS-2: Provide efficient and convenient solid waste and recycling services to the community through coordination with service providers and the local solid waste management agency.

Goal PS-3: Maintain the quality of life in Kirkland through the planned provision of regional services in coordination with other public service providers.

CITY-MANAGED PUBLIC SERVICES

*FIRE, POLICE, **EMERGENCY MEDICAL SERVICES** AND ~~EMERGENCY MANAGEMENT AND SOLID WASTE~~*

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COLLECTION

One of the advantages of living in an urban setting such as Kirkland is a level of emergency service and solid waste collection that exceeds the level of service commonly found in rural areas. To maintain the emergency services, Kirkland must be prepared for new expenditures while finding additional system efficiencies. To maintain the solid waste and recycling collection services levels, Kirkland must coordinate with collection service pickup providers and the King County Solid Waste Management Division.

Goal PS-1: Provide fire protection, emergency medical services, emergency management, and police service to the community through a cost-effective and efficient delivery system to maintain a safe environment for the public.

Fire Station in North Rose Hill Neighborhood (Replace with picture of new public service building.)



Policy PS-1.1: Provide fire ~~and~~ emergency medical services and police services to the public which maintain accepted standards as new development ~~and annexations~~ occurs.

Basic public safety service should keep pace with growth. Kirkland should anticipate new growth to avoid deficiencies in accepted levels of service.

Policy PS-1.2: The adopted levels of service for fire and emergency medical services are as follows:

- ◆ *Emergency medical: response time of five minutes to 90 percent of emergency incidents.*
- ◆ ~~*Nonemergency medical: response time of 10 minutes to 90 percent of nonemergency incidents.*~~
- ◆ *Fire suppression: response time of 5.5 minutes to 90 percent of all fire incidents.*

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The emergency medical and fire suppression response times are ~~nationally~~ accepted standards for two principal reasons. For fire response times, it sets a threshold to minimize property loss and reduce the level of risk to response teams. For emergency medical service, the response time has a direct link to human physiology and resuscitation.

Response times are influenced by various factors such as locations of resources, accessibility, and available personnel. Kirkland must balance all of these factors in prioritizing the commitment of resources. ~~The e~~Establishing levels of service for response times in underserved portions of the City will lead to require funding a variety of street improvements, either an increase of the number of or relocation of fire stations facilities needed to attain acceptable response times and consideration of increased response personnel.

Policy PS-1.3: Provide a system of streets that facilitates improved emergency response times.

This policy suggests a philosophy of through-street connections allowing for multiple emergency access routes. Where feasible, dead-end streets and cul-de-sacs should be avoided. For the most part, Kirkland is served by interconnected streets but there are exceptions. Interstate 405 presents a significant barrier to east-west travel. New access routes should be explored to areas of the City that have poor emergency access and inferior emergency response times. Traffic calming programs and devices should be ~~managed effectively so there are no negative impacts~~ designed to balance the needs of the neighborhood and the need to maintain on emergency response time levels of service.

Figures PS-1 and PS-2 indicate where there are deficiencies. The City should consider opportunities for street improvements as funding becomes available.

Policy PS-1.4: Develop and maintain a water system that provides adequate fire flow for anticipated development based on land use designations of the Comprehensive Plan.

This policy is intended to ensure that an adequate water supply and pressure is available for new and existing development. Kirkland should periodically review the system to identify existing and potential fire flow deficiencies and continue to employ a variety of methods to correct those deficiencies.

Policy PS-1.5: Provide a robust training and exercise program in emergency management response operations for city employees.

City employees are responsible for moving from their everyday positions into similar emergency management response operations positions at the onset of an incident. As such, this policy ensures Kirkland will provide updated training that is exercised at least twice a year; maintaining a high quality skill base for response operations during a disaster.

Policy PS-1.6: Maintain accessible disaster plans that incorporate a Whole Community approach to emergency management for all-hazards.

This approach to emergency management identifies that planning must incorporate the Whole Community to be effective including: individuals, families, businesses, community-based organizations, faith-based organizations,

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voluntary organizations, neighborhood associations, people with access and functional needs, children, school systems, elders, and private-sector partnerships.

Policy PS-1.7: Sustain a disaster response system that incorporates local, state, tribal, and federal partners to facilitate enhanced disaster readiness, response, recovery, and resilience.

This policy acknowledges that emergency management and disaster response is regionally based because incidents do not respect **culturally-artificially** imposed borders. Maintaining strong relationships through planning, training, exercise partnerships with all disaster related government agencies will help the Kirkland community respond and recover from a disaster.

Policy PS-1.58: Ensure that safety and security considerations are factored into the review of development proposals.

Kirkland has a history of thorough review of new development proposals at an early stage to ensure that fire, emergency management, police and building safety concerns are factored in.

Policy PS-1.69: Ensure compatibility in scale and design with surrounding uses by reviewing new public facilities for compliance with adopted urban design principles.



Kirkland City Hall

The design of City facilities should accurately reflect the City's philosophy. For example, City Hall has been designed to reflect the scale of the residential neighborhood to the north, while providing territorial views from within. The Justice Center, completed in 2014, reused an existing building, and incorporated many green building techniques and public art in its remodel. Other facilities, like fire stations, should be responsive to the scale and other qualities of the residential neighborhoods in which they are located. Public art should be incorporated to improve the aesthetics, whether as an integral part of the architecture, through landscaping or by applying other techniques.

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Policy PS-1.710: Update Fire, Emergency Management, and Police functional plans at appropriate intervals to incorporate and remain consistent with the goals, policies, and land use projections of the Comprehensive Plan.

All of the City's planning documents should be based on consistent and accurate assumptions. The Comprehensive Plan should be updated as necessary to reflect any changes in those assumptions.

SOLID WASTE.

Goal PS-2: Provide efficient and convenient solid waste and recycling services to the community through coordination with service providers and the local solid waste management agency.

Policy PS-2.1: Coordinate with the City's solid waste and recycling collection contractors and King County Solid Waste Division to ensure that the existing level of service standards are maintained or improved and waste reduction and recycling goals and targets are in compliance with the ~~2010~~ Draft 2013 King County Comprehensive Solid Waste Management Plan (SWMP) update.

The SWMP establishes waste reduction and recycling goals for single family residential, multifamily residential and commercial sectors to be achieved by 2015 to 2020 over the course of the next decade. Cities adopting the Comprehensive Plan commit to implementing and/or maintaining waste reduction and recycling programs and collection standards to support the overall goals and targets identified in the SWMP.

The SWMP level of service goals for solid waste collection and recycling are summarized below.

Waste Prevention Goal – This goal addresses all types of waste: yard waste, recycling and garbage. By looking at overall waste generation of all kinds (tons of material disposed plus tons recycled), trends in waste prevention activity can be identified. A decline means that the overall amount of materials alone or combined has been reduced. Waste generation rates to be achieved by 2020 are: 20.4 pounds/week per person from single-family and multifamily homes; and 58 pounds/week per employee from the non-residential sector.

Waste Disposal Goal – This goal addresses only garbage disposed in landfills. Reductions in disposal over time indicate an increase in waste prevention and/or recycling. Waste disposal rates to be achieved by 2020 are 14.2 pounds/week per person from single and multifamily homes and 22.9 pounds/week per employee from the nonresidential sector.

Recycling Goal – Recycling will continue to be an important strategy to reduce the disposal of solid waste. The recycling goal combines single-family, multifamily, non-residential and self-haul recycling activity. The overall recycling rate goal by 2015 is 55 percent. The overall recycling goal by 2020 is 70 percent.

Reducing waste and achieving a high recycling diversion rate reduces the amount of garbage going to the Cedar Hills Landfill, which in turn extends the time before the landfill reaches capacity and other solutions must be found for disposing of King County's solid waste. Waste reduction and recycling programs throughout King

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County have extended the life of the Cedar Hills Landfill through at least 2026. In addition, recycling reduces the need to produce more raw materials for certain plastics, paper and aluminum.

Policy PS-2.2: Encourage reduction, reuse and recycling of building construction materials in order to reduce waste, increase diversion, and save energy.

Encouraging the construction industry to salvage, reuse and/or recycle construction, demolition, and land clearing debris supports the City's role as an environmental steward. Various City incentives to meet this objective are geared toward the development community by encouraging the practice of salvaging and reusing building materials, separating recyclable from non-recyclable materials on the jobsite and construction techniques that use fewer materials than conventional methods. The City's Green Building Program uses several certification programs that ensure that the building construction material waste stream is reduced.

City projects and private development should provide a plan with their permit applications that describe how the building materials will be salvaged, reused or recycled. The City's participation in regional collaborations to help create the local infrastructure for salvaging, reuse and recycling of these valuable resources will be essential to making this transition a success. Over time these techniques or programs may become mandatory.

*Policy PS-3.1 2.3: Coordinate with King County Solid Waste Division to ensure that **the Houghton Transfer Station is closed by 2021 and in the interim that established levels of service for solid waste disposal and transfer are established and followed along with mitigation of the Houghton Transfer Station's and impacts are mitigated.***

The City should work with King County to ensure the station is closed in or before 2021 and that the County implementation and/or maintenance of mitigation measures to improve pedestrian and hauler safety and to reduce impacts of noise, odor and number of large trucks coming to the site until the transfer station is eventually closed. Per the 2005 Memorandum of Understanding, the 2013 2040 Draft King County Comprehensive Solid Waste Management Plan update, and the 2014 Solid Waste Transfer and Waste Export System Plan Review, the Houghton Transfer Station will be closed in or before 2017 2021 if demand management strategies can be successfully implemented or if a new Northeast Transfer Station is constructed. As a result of the scheduled reevaluation of the 2013 draft King County Solid Waste Management Comprehensive Plan and its expected ratification in 2016, new waste prevention, disposal, and recycling goals, along with a new closure target date for the Houghton Transfer Station may be adopted.

NON-CITY-MANAGED PUBLIC SERVICES

SCHOOLS AND LIBRARIES

The provision of quality public facilities and services has traditionally been a tangible measure of a community's quality of life. Good Excellent schools, and libraries, and solid waste disposal facilities with convenient access, are indicative of a community that cares about its future.

Although the City does not operate these services, the City does have an influence on facility planning and development by its authority to regulate land uses and the requirement to adopt a comprehensive plan. In addition, the Growth Management Act requires Kirkland to demonstrate that all capital facilities serving the City have been considered and that planning is done in a coordinated and comprehensive fashion.

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Moved to Solid Waste Policy PS-2.2 ~~Policy PS-2.2: Encourage reduction, reuse and recycling of building construction materials in order to reduce waste, increase diversion, and save energy.~~

~~Encouraging the construction industry to salvage, reuse and/or recycle construction, demolition, and land clearing debris supports the City's role as an environmental steward. Various City incentives to meet this objective are geared toward the development community by encouraging the practice of salvaging and reusing building materials, separating recyclable from non-recyclable materials on the jobsite and construction techniques that use fewer materials than conventional methods. The City's Green Building Program uses several certification programs that ensure that the building construction material waste stream is reduced. Over time these techniques or programs may become mandatory.~~

Goal PS-3: Maintain the quality of life in Kirkland through the planned provision of regional services in coordination with other public service providers.

Moved to Solid Waste Policy PS-2.3 ~~Policy PS-3.1: Coordinate with King County Solid Waste Division to ensure that levels of service for solid waste disposal and transfer are established and followed along with mitigation of the Houghton Transfer Station's impacts.~~

~~The City should work with King County to ensure the implementation and/or maintenance of mitigation measures to improve pedestrian and hauler safety and to reduce impacts of noise, odor and number of large trucks coming to the site until the transfer station is eventually closed. Per the 2010 King County Comprehensive Solid Waste Management Plan update the Houghton Transfer Station will be closed in 2017.~~

Policy PS-3.21: *Coordinate with regional service providers to maintain appropriate levels of service, review funding alternatives, and coordinate construction of shared public facilities.*

This policy contemplates a channel of communication between the City and the service providers to ensure shared responsibility for meeting the needs of Kirkland residents. As required by Growth Management the City shares its growth forecasts, targets and capacity information with regional service providers.

Policy PS-3.32: *Ensure compatibility in scale and design of the new facilities with surrounding uses by reviewing for compliance with adopted urban design principles.*

Facilities are spread throughout the community in residential and commercial areas. The Kirkland resource library is located ~~in the Central Business District~~ downtown and the design and scale is appropriate for that environment. The Kingsgate Library remodel also reflects the community character of that neighborhood. Most school facilities are located in residential areas and the design and scale should likewise reflect a residential environment.

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Policy PS-3.43: Coordinate with neighboring cities, King County, the Lake Washington School District, special districts and other agencies in the planning, provision, and use of joint activities and facilities.

The City should look for these types of opportunities in order to make efficient use of existing facilities and save on the costs of building new facilities or funding new programs. ~~Additionally, the City should continue to work with the school district in reviewing public property, such as the area south of the Lake Washington School District Administration Building, for future park potential and joint use of facilities. Joint use and maintenance of school athletic fields and facilities for community programs is one such are examples.~~

Policy PS-3.4: Assess appropriate school impact fees to help offset the cost of financing new school public services infrastructure serving new development.

~~State law permits cities to assess impact fees on new residential development for facilities provided by the Lake Washington School District. Impact fees may be collected and spent only on specific publicly owned capital facilities. These capital improvements are identified in the Lake Washington School District's Capital Facilities Plan and are designed to provide facility capacity and service to areas within the community at large.~~

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~~The City and Lake Washington School District should work together on planning for school facilities consistent with the City's Comprehensive Plan. This could mean using consistent data on population and demographics based on the City's growth projections. The City and School District should confer on the siting and development of school facilities as well as the City's development regulations and impacts to other public services and facilities. The City and School District should explore opportunities for jointly developing and maintaining school sites to maximize community use. The School District should provide safe pedestrian and bicycle access to connect schools to the surrounding neighborhood when new or expanded schools are proposed. The City should establish a system of school walk routes. With the development of new or expanded schools, the District should ensure appropriate public involvement.~~

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XII.A. PUBLIC SERVICES

A. INTRODUCTION

The Public Services Element addresses fire and emergency medical services, emergency management, police protection, solid waste collection and transfer, schools and libraries.

PROBLEM STATEMENT

As an urban area, Kirkland has an established infrastructure for the efficient provision of public services. Kirkland's level of public services has generally been adequate over time as new growth and development have occurred. Deficiencies may still exist in some services but these can be addressed through appropriate planning, adequate funding and coordination with the appropriate service providers.

Individual service providers prepare master plans based on assumptions of growth from the Land Use and Housing Elements of the Comprehensive Plan.

Each provider faces unique challenges in meeting the expected demands. For fire, emergency management and police services, the primary challenge is in maintaining an appropriate level of service as growth occurs and the demand for services increases. For solid waste garbage and recycling, the challenges are to reduce waste, encourage recycling and reduce solid waste disposal to lessen the capacity problems of the transfer stations and landfills. The County must find demand management solutions to address tonnage and transaction capacity problems within its transfer station system. For the Lake Washington School District, a major challenge is in finding ways to be flexible and responsive to fluctuating demand for services.

EXISTING CONDITIONS

City Public Services:

Fire Protection and Emergency Medical Services – The City provides emergency response to fire and medical emergencies, fire prevention, and public education and participates in regional specialized response for hazardous materials, technical rescue and paramedic services. The City has County, other cities and State mutual aid agreements for emergency response. Fire station locations and emergency fire response times are shown in Figure PS-1. Response times for emergency medical services are shown in Figure PS-2.

Some areas of the City do not meet the level of service standards for fire and emergency medical services. Specific capital projects to address these deficiencies are addressed in the City of Kirkland Fire and Building Department's Strategic Plan. These include a new planned single or dual fire station to serve the northern areas of the City to be completed by 2017.

Emergency Management – The City provides readiness, response, and recovery services based on an all-hazards approach to disasters. Kirkland participates in regional and statewide response operations. It has mutual aid agreements with other Cities, Counties, and the State, as well as private-sector partners and voluntary agencies for management and response support in disasters.

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Police Protection – The City provides traffic investigation, enforcement, and education; parking enforcement; patrol response to citizen calls for service; criminal enforcement; K9; special response teams; crisis negotiation team; investigations; crime analysis; explorers; crime prevention; school resource officers; record keeping; jail services; internal and external training; and contacts for 911 communication services that serve as the public safety answering point for police, fire, and medical emergencies. The department also has mutual aid agreements with every law enforcement agency in the State. A new Justice Center in the Totem Lake area combines police, jail and municipal court services in one complex.

Solid Waste and Recycling Collection – The City contracts with Waste Management, Inc., to provide curbside solid waste and recycling collection to all single-family and multifamily residents and commercial customers. The Draft King County Comprehensive Solid Waste Management Plan sets specific goals for the City to achieve. The County and the City have committed to achieve a combined residential and commercial recycling diversion rate goal of 55 percent by 2015, and 70 percent by 2020 and a waste prevention goal of 20.4 pounds per household per week by 2020. In 2013, the City achieved a combined recycling diversion rate of 44.6 percent. The City started one of the first single family residential food waste recycling programs followed by commercial and multifamily organics and business programs to encourage environmentally sound practices. The City will continue to work with its collection contractor to provide comprehensive recycling program for Kirkland residents and businesses.

Solid Waste Transfer – The King County Solid Waste Division (KCSWD) owns and operates the Houghton Transfer Station (HTS) in Kirkland where 98 percent of Kirkland’s solid waste is collected and transferred to the Cedar Hills landfill. The station currently processes more waste relative to most other King County transfer stations and accepts waste from surrounding communities such as Redmond and Bellevue. In 2013, the HTS processed 18 percent of the waste or the second most in the entire King County transfer system.

In October 2005, the City of Kirkland and the KCSWD negotiated a Memorandum of Understanding (MOU) intended to mitigate some of the negative effects the HTS was having upon the surrounding residential community. The MOU agreement included mitigation measures to be implemented or constructed by King County and included commitments to prohibit the overnight parking of full or partially full trailers; to construct a pedestrian pathway and sound barrier; to install landscaping; and to provide other mitigation amenities. The City also worked closely with the KCSWD and local haulers to route trucks exiting the station exclusively to the west so as to protect the adjacent school zone and to restrict them from entering residential neighborhoods to the east. The MOU also included a proviso recommending that the KCSWD reduce the amount of waste processed at the HTS to a maximum annual tonnage of 135,000 tons/year over a 10-year period. The proviso was supported by the City of Kirkland and the surrounding neighborhood. The KCSWD agreed only to abide by the King County Solid Waste Transfer and Export System Plan (2006) (Transfer Plan) as adopted by the King County Council. The reduction in tonnage recommended in the proviso has not been implemented.

In developing the Transfer Plan, King County consulted with commercial haulers and other industry experts to develop a set of criteria to be used to evaluate the current urban transfer facility system’s ability to meet the service needs of its users over the next few decades. The criteria applied to each station included level-of-service criteria, station capacity, and the effects upon the surrounding community. Based upon the evaluation, the Transfer Plan recommended the permanent closure of the Houghton and Algona Transfer Stations pending the siting and construction of the new Bow Lake, Northeast Washington and South County stations which at the time were ~~are~~ expected to be completed in or about 2016.

After Bellevue opted out of a Solid Waste Interlocal Agreement with King County in 2013, which had the effect of removing ten percent of the solid waste from the transfer system after 2028, a review of the 2006 Transfer Plan was undertaken by King County and stakeholders to ensure that all of the capital improvements to the

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transfer system identified in 2006 were still needed.

During the review of the Transfer Plan, the Kirkland City Council adopted two resolutions ~~R-5001 and R-5031~~ which expressed their desire that the County honor its agreement in its 2005 Memorandum of Understanding with Kirkland and as recommended in the Transfer Plan that the HTS be closed.

The review of the Transfer Plan recommended that the number of transfer stations in the system being considered for replacement be reduced from six to four, and continues to recommend closure of the HTS but in 2021 rather than in 2016. The County committed to studying and implementing a demand management strategy to manage daily customer transactions and tonnage capacity with two less transfer stations. The siting and construction of a new Northeast Transfer Station was put on hold pending the viability and success of demand management.

Non City Managed Public Services:

Schools – In Kirkland, the Lake Washington School District has elementary schools, junior and senior high schools, and a combination junior and senior high school under the international school program. The school district serves 76 square miles and includes all of Kirkland and Redmond, and portions of Sammamish and unincorporated King County. In addition, Kirkland has the Lake Washington Technical College. School locations are shown in Figure PS-3.

The school district's 2014 - 2019 Six Year Capital Facilities Plan LOS standards are as follows: 20 students for grades K – 1,—25 students for grade 2-3, 27 students for grade 4-5, 30 students for grades 6-8, and 32 students for grades 9– 12. Based on these LOS standards, enrollment forecasts and planned facilities, the district has insufficient capacity to house students through 2019. In fact, the district forecasts enrollment to increase by over 10% during this period. Subject to bond approval, the district plans several facilities/expansions in Kirkland to meet this demand including a new elementary school and expansion of Lake Washington High School and the rebuilding and expansion of Juanita High School. Construction of a new elementary school in Kirkland will require the District to locate and acquire an adequate site for the school.

Library – The King County Library System provides library services to Kirkland. The Kirkland library, located downtown, and the Kingsgate Library provide extensive reference and user services, and special collections. Library locations are shown in Figure PS-3. (ADD LIBRARY LOCATIONS TO EXISTING SCHOOL MAP)

RELATIONSHIP TO OTHER ELEMENTS

The Public Services Element supports the Land Use Element by establishing policies to ensure that public services are adequate to support anticipated growth. In addition, this element establishes policies for the coordination of funding, concurrency, and level of service requirements set forth in the Capital Facilities Element. The Capital Facilities Element contains further explanation regarding the analysis of need for capital projects to meet the level of service standards for public services.

RELATIONSHIP TO OTHER PLANS

In preparing this Element, the City has reviewed and considered the following documents that are adopted by reference:

- ◆ City of Kirkland Fire and Building Department's Strategic Plan (2013);

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- Comprehensive Emergency Management Plan (2014);
- King County Hazard Mitigation Plan (2014);
- Police Department Crime Analysis, Crime Prevention, Resource Deployment and Community Outreach Plans (2014);
- ◆ Draft King County Solid Waste Division Solid Waste Management Comprehensive Plan (2013);
- Solid Waste Transfer and Waste Export System Plan (2006);
- Solid Waste Transfer and Waste Export System Plan Review (2014);
- Lake Washington School District's Capital Facilities Plan 2014-2019
- ◆ King County Library System Strategic Guidelines for Library Improvement Modifications (2014).

(UPDATE THE FOLLOWING THREE MAPS:)

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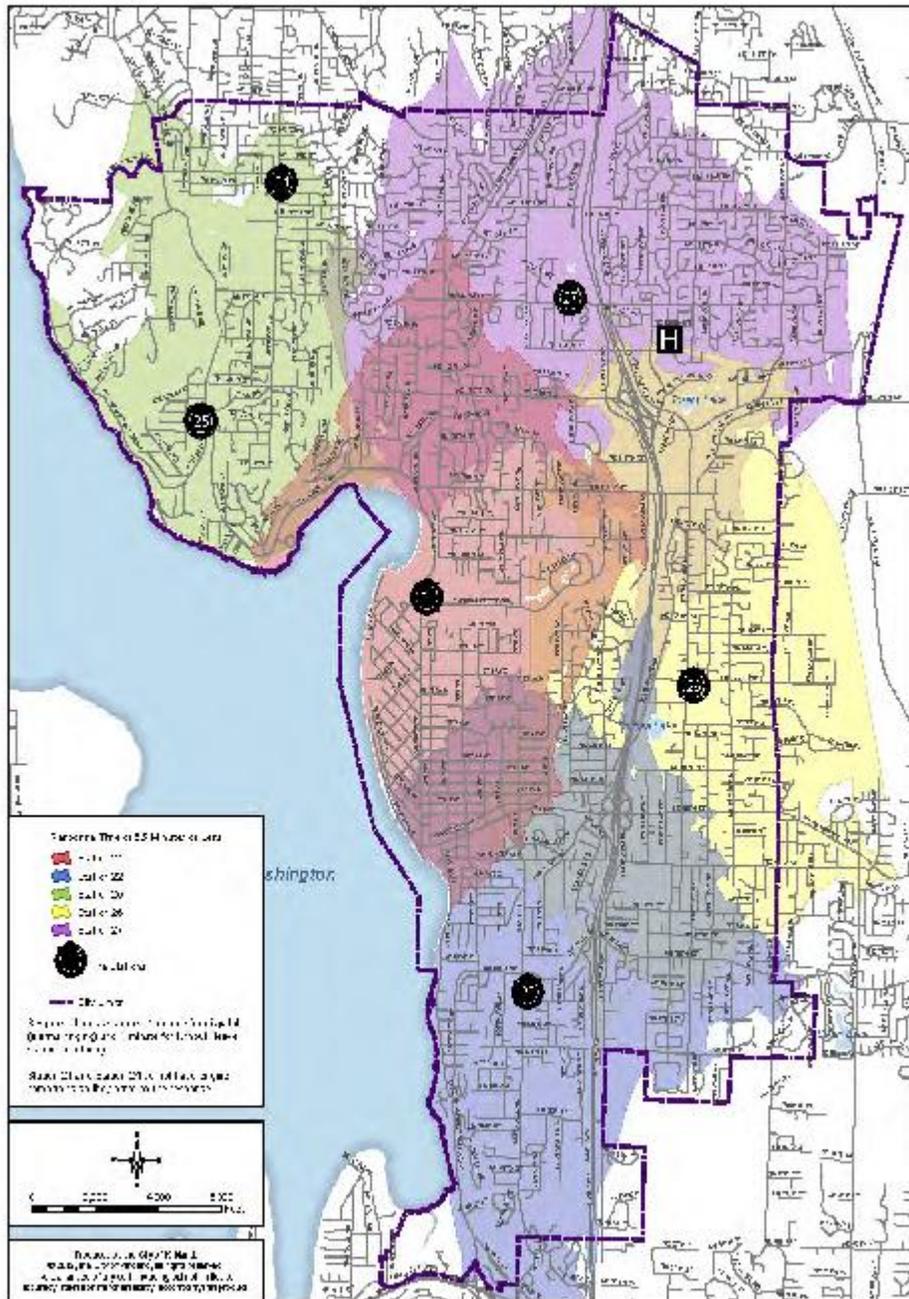


Figure PS-1: Fire Response Times within 5.5 minutes

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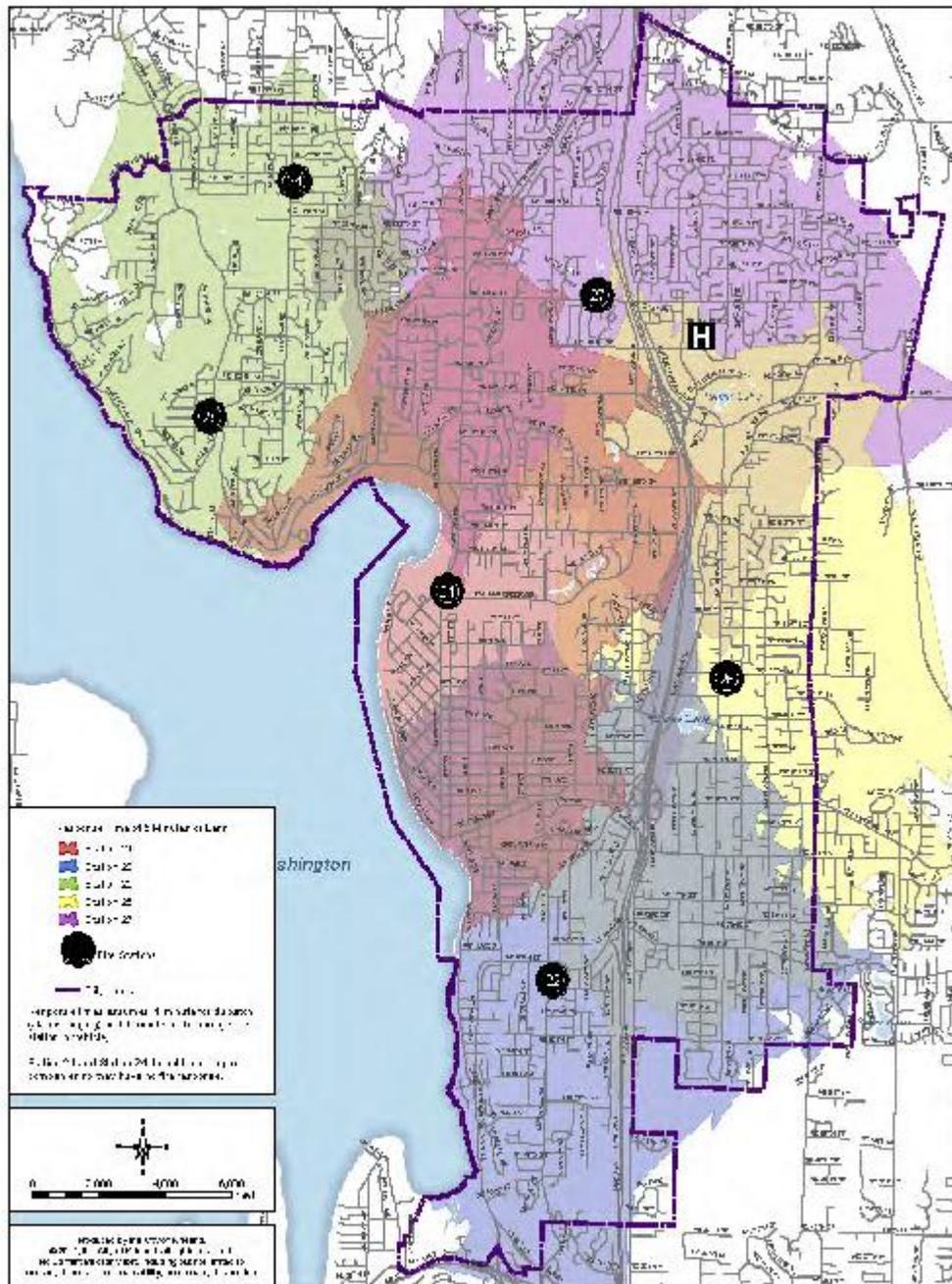


Figure PS-2: Emergency Medical Services Response Times within 5 minutes

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B. PUBLIC SERVICES CONCEPT

The Public Services Element supports provision of adequate public services to support existing and future development and the correction and prevention of any existing deficiencies to ensure a sense of community and high quality of life.

C. PUBLIC SERVICES GOALS AND POLICIES

Goal PS-1: Provide fire protection, emergency medical services, emergency management, and police service to the community through a cost-effective and efficient delivery system to maintain a safe environment for the public.

Goal PS-2: Provide efficient and convenient solid waste and recycling services to the community through coordination with service providers and the local solid waste management agency.

Goal PS-3: Maintain the quality of life in Kirkland through the planned provision of regional services in coordination with other public service providers.

CITY-MANAGED PUBLIC SERVICES

FIRE, POLICE, EMERGENCY MEDICAL SERVICES AND EMERGENCY MANAGEMENT

One of the advantages of living in an urban setting such as Kirkland is a level of emergency service and solid waste collection that exceeds the level of service commonly found in rural areas. To maintain the emergency services, Kirkland must be prepared for new expenditures while finding additional system efficiencies. To

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maintain the solid waste and recycling collection services levels, Kirkland must coordinate with collection service providers and the King County Solid Waste Management Division.

Goal PS-1: Provide fire protection, emergency medical services, emergency management, and police service to the community through a cost-effective and efficient delivery system to maintain a safe environment for the public.



(Replace with picture of new public service building.)

Policy PS-1.1: Provide fire, emergency medical services and police services to the public which maintain accepted standards as new development occurs.

Basic public safety service should keep pace with growth. Kirkland should anticipate new growth to avoid deficiencies in accepted levels of service.

Policy PS-1.2: The adopted levels of service for fire and emergency medical services are as follows:

- ◆ *Emergency medical: response time of five minutes to 90 percent of emergency incidents.*
- ◆ ◆ *Fire suppression: response time of 5.2 minutes to 90 percent of all fire incidents.*

The emergency medical and fire suppression response times are accepted standards for two principal reasons. For fire response times, it sets a threshold to minimize property loss and reduce the level of risk to response teams. For emergency medical service, the response time has a direct link to human physiology and resuscitation.

Response times are influenced by various factors such as locations of resources, accessibility, and available personnel. Kirkland must balance all of these factors in prioritizing the commitment of resources. The established levels of service for response times in underserved portions of the City will require funding a variety of street improvements, either an increase of the number or relocation of fire stations and consideration of increased

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response personnel. Figures PS-1 and PS-2 indicate where there are deficiencies. The City is currently studying improvement opportunities that can be implemented as funding becomes available.

Policy PS-1.3: Provide a system of streets that facilitates improved emergency response times.

This policy suggests a philosophy of through-street connections allowing for multiple emergency access routes. Where feasible, dead-end streets and cul-de-sacs should be avoided. For the most part, Kirkland is served by interconnected streets but there are exceptions. Interstate 405 presents a significant barrier to east-west travel. New access routes should be explored to areas of the City that have poor emergency access and inferior emergency response times. Traffic calming programs and devices should be designed to balance the needs of the neighborhood and the need to maintain emergency response time levels of service.

Figures PS-1 and PS-2 indicate where there are deficiencies. The City should consider opportunities for street improvements as funding becomes available.

Policy PS-1.4: Develop and maintain a water system that provides adequate fire flow for anticipated development based on land use designations of the Comprehensive Plan.

This policy is intended to ensure that an adequate water supply and pressure is available for new and existing development. Kirkland should periodically review the system to identify existing and potential fire flow deficiencies and continue to employ a variety of methods to correct those deficiencies.

Policy PS-1.5: Provide a robust training and exercise program in emergency management response operations for city employees.

City employees are responsible for moving from their everyday positions into similar emergency management response operations positions at the onset of an incident. As such, this policy ensures Kirkland will provide updated training that is exercised at least twice a year; maintaining a high quality skill base for response operations during a disaster.

Policy PS-1.6: Maintain accessible disaster plans that incorporate a Whole Community approach to emergency management for all-hazards.

This approach to emergency management identifies that planning must incorporate the Whole Community to be effective including: individuals, families, businesses, community-based organizations, faith-based organizations, voluntary organizations, neighborhood associations, people with access and functional needs, children, school systems, elders, and private-sector partnerships.

Policy PS-1.7: Sustain a disaster response system that incorporates local, state, tribal, and federal partners to facilitate enhanced disaster readiness, response, recovery, and resilience.

This policy acknowledges that emergency management and disaster response is regionally based because incidents do not respect artificially imposed borders. Maintaining strong relationships through planning, training, exercise

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partnerships with all disaster related government agencies will help the Kirkland community respond and recover from a disaster.

Policy PS-1.8: Ensure that safety and security considerations are factored into the review of development proposals.

Kirkland has a history of thorough review of new development proposals at an early stage to ensure that fire, emergency management, police and building safety concerns are factored in.

Policy PS-1.9: Ensure compatibility in scale and design with surrounding uses by reviewing new public facilities for compliance with adopted urban design principles.



Kirkland City Hall

The design of City facilities should accurately reflect the City's philosophy. For example, City Hall has been designed to reflect the scale of the residential neighborhood to the north, while providing territorial views from within. The Justice Center, completed in 2014, reused an existing building, and incorporated many green building techniques and public art in its remodel. Other facilities, like fire stations, should be responsive to the scale and other qualities of the residential neighborhoods in which they are located. Public art should be incorporated to improve the aesthetics, whether as an integral part of the architecture, through landscaping or by applying other techniques.

Policy PS-1.10: Update Fire, Emergency Management, and Police functional plans at appropriate intervals to incorporate and remain consistent with the goals, policies, and land use projections of the Comprehensive Plan.

All of the City's planning documents should be based on consistent and accurate assumptions. The Comprehensive Plan should be updated as necessary to reflect any changes in those assumptions.

SOLID WASTE

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Goal PS-2: Provide efficient and convenient solid waste and recycling services to the community through coordination with service providers and the local solid waste management agency.

Policy PS-2.1: Coordinate with the City's solid waste and recycling collection contractors and King County Solid Waste Division to ensure that the existing level of service standards are maintained or improved and waste reduction and recycling goals and targets are in compliance with the Draft 2013 King County Comprehensive Solid Waste Management Plan (SWMP) update.

The SWMP establishes waste reduction and recycling goals for single family residential, multifamily residential and commercial sectors to be achieved by 2015 to 2020. Cities adopting the Comprehensive Plan commit to implementing and/or maintaining waste reduction and recycling programs and collection standards to support the overall goals and targets identified in the SWMP.

The SWMP level of service goals for solid waste collection and recycling are summarized below.

Waste Prevention – This goal addresses all types of waste: yard waste, recycling and garbage. By looking at overall waste generation of all kinds (tons of material disposed plus tons recycled), trends in waste prevention activity can be identified. A decline means that the overall amount of materials alone or combined has been reduced. Waste generation rates to be achieved by 2020 are: 20.4 pounds/week per person from single-family and multifamily homes; and 58 pounds/week per employee from the non-residential sector.

Waste Disposal – This goal addresses only garbage disposed in landfills. Reductions in disposal over time indicate an increase in waste prevention and/or recycling. Waste disposal rates to be achieved by 2020 are 14.2 pounds/week per person from single and multifamily homes and 22.9 pounds/week per employee from the nonresidential sector.

Recycling – Recycling will continue to be an important strategy to reduce the disposal of solid waste. The recycling goal combines single-family, multifamily, non-residential and self-haul recycling activity. The overall recycling rate goal by 2015 is 55 percent. The overall recycling goal by 2020 is 70 percent.

Reducing waste and achieving a high recycling diversion rate reduces the amount of garbage going to the Cedar Hills Landfill, which in turn extends the time before the landfill reaches capacity and other solutions must be found for disposing of King County's solid waste. Waste reduction and recycling programs throughout King County have extended the life of the Cedar Hills Landfill through at least 2026. In addition, recycling reduces the need to produce more raw materials for certain plastics, paper and aluminum.

Policy PS-2.2: Encourage reduction, reuse and recycling of building construction materials in order to reduce waste, increase diversion, and save energy.

Encouraging the construction industry to salvage, reuse and/or recycle construction, demolition, and land clearing debris supports the City's role as an environmental steward. Various City incentives to meet this objective are geared toward the development community by encouraging the practice of salvaging and reusing building materials, separating recyclable from non-recyclable materials on the jobsite and construction techniques that use

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fewer materials than conventional methods. The City's Green Building Program uses several certification programs that ensure that the building construction material waste stream is reduced.

City projects and private development should provide a plan with their permit applications that describe how the building materials will be salvaged, reused or recycled. The City's participation in regional collaborations to help create the local infrastructure for salvaging, reuse and recycling of these valuable resources will be essential to making this transition a success. Over time these techniques or programs may become mandatory.

Policy PS-2.3: Coordinate with King County Solid Waste Division to ensure that the Houghton Transfer Station is closed by 2021 and in the interim that established levels of service for solid waste disposal and transfer are followed and impacts are mitigated.

The City should work with King County to ensure the station is closed in or before 2021 and that the County implement and/or maintain mitigation measures to improve pedestrian and hauler safety and to reduce impacts of noise, odor and number of large trucks coming to the site until the transfer station is eventually closed. Per the 2005 Memorandum of Understanding, the 2013 Draft King County Comprehensive Solid Waste Management Plan update, and the 2014 Solid Waste Transfer and Waste Export System Plan Review, the Houghton Transfer Station will be closed in or before 2021 if demand management strategies can be successfully implemented or if a new Northeast Transfer Station is constructed. As a result of the scheduled reevaluation of the 2013 draft King County Solid Waste Management Comprehensive Plan and its expected ratification in 2016, new waste prevention, disposal, and recycling goals, along with a new closure target date for the Houghton Transfer Station may be adopted.

NON-CITY-MANAGED PUBLIC SERVICES

SCHOOLS AND LIBRARIES

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