UTILITIES ELEMENT

Introduction

The Utilities Element guides future utility service within Renton's planning area and ensures that adequate utility services will be available to support existing and future development in the city. The goals and policies included in the Utilities Element are designed to promote efficient, cost-effective utility service while meeting community needs and protecting both existing neighborhoods and the natural environment.

The City of Renton provides water, wastewater, and surface water utility services to Renton residents, as well as some areas outside City boundaries. The City contracts with a private hauler for solid waste and recycling collection and coordinates with King County for use of regional solid waste disposal facilities. Several non-City utility providers also operate within Renton, providing water and sewer service for developed areas that have been annexed relatively recently. Other non-City utilities include electric, natural gas, and telecommunications (cable television, internet, wired telephone, and cellular telephone/data services).

Under the Growth Management Act, planned land use patterns and growth must be supported by adequate levels of utility service. The Utilities Element must therefore ensure that adequate levels of utility service are available to serve the levels of growth that are discussed in the Land Use Element of the Comprehensive Plan. Functional plans for each utility system must also accommodate projected growth in their respective service areas, based on these adopted growth allocations. A detailed discussion of City utility system capacity and the City's adopted growth allocations is contained in Technical Appendix UT-1.

The relationship of the Land Use Element, Utilities Element, and City utility functional plans is shown in Figure UT-1.

Major challenges related to provision of utility services include the following:

- Recent annexations have created large areas of the City, mostly in southeastern Renton, where water and/or sewer service is provided by non-City providers.
- Much of the City's existing wastewater infrastructure is approaching the end of its useful life and will require replacement in the near future.
- New requirements for implementation of Low Impact Development (LID) are included in the NPDES Phase II Municipal Stormwater Permit for Western Washington, issued by the Department of Ecology in 2012. These requirements may affect development patterns in Renton and may result in new methods for handling stormwater runoff. Increased use of on-site infiltration may affect aquifer recharge and groundwater quality.

Framework Goal Statement

Facilitate the development and maintenance of all utilities at levels of service appropriate to accommodate future anticipated growth while protecting natural ecosystems and environmental quality.

General Goals and Policies

The following general goals and policies are intended to promote safe and efficient utility service, regardless of whether they are City-owned or delivered by a non-City provider. These policies also focus on coordination between utility providers, both within the City and with adjacent jurisdictions.

Goals

U-A: Provide an adequate level of public utilities consistent with land use, protection of the environment, and annexation goals and policies.

U-B: Ensure the long-term protection of the quality and quantity of the groundwater resources of the

City of Renton in order to maintain a safe and adequate potable water supply for the City.

Policies

Policy U-1: All utility services and systems should be consistent with the growth projections and development concepts established in this Comprehensive Plan.

Policy U-2: Protect the health and safety of Renton citizens from environmental hazards associated with utility systems through the proper design and siting of utility facilities.

Policy U-3: Promote the co-location of new utility infrastructure within rights-of-way and utility corridors and coordinate construction and replacement of utility systems with other public infrastructure projects to minimize construction-related costs and disruptions.

Policy U-4: Coordinate with adjacent jurisdictions and non-City service providers within Renton to cooperatively plan for regional growth.

Policy U-5: Approval of development should be conditioned on the availability of adequate utility service and should not result in decreases in local levels of service for existing development. All new development should be required to pay their fair share of construction costs for necessary utility system improvements.

Policy U-6: Encourage the use of water and energy conservation technologies to provide utility services in an environmentally responsible manner.

Policy U-7: Non-City utility systems should be constructed in a manner that minimizes negative impacts to existing development and should not interfere with operation of City utilities. City development regulations should otherwise not impair the ability of utility providers to adequately serve customers.

Policy U-8: Encourage the use of new technology to increase the quality and efficiency of utility service and utility system management.

City-Managed Utilities

Water

The Renton Water System is a publicly owned water system operated by the City of Renton as a self-supporting enterprise utility. Operations and system planning are guided by the *City of Renton Comprehensive Water System Plan (2012)* and the provisions of Chapter 246-290 of the Washington Administrative Code (WAC), Group A Public Water Supplies. The City provides water service to an area of approximately 16 square miles, generally coincident with City boundaries, though portions of northeastern and southeastern Renton (East Renton Plateau and Benson Hill) are currently served by non-city water providers. Figure UT-2 shows the boundaries of the City's water service area and those of adjacent water purveyors.

Water Supply and System Capacity

The City's water supply is obtained from a combination of groundwater wells, Springbrook Watershed, and a partial contract with Seattle Public Utilities (SPU) for Boeing facilities. City water sources represent 95% of the City's supplies and the SPU agreement represents 5%. There are also emergency interties with adjacent cities. The current capacity of the City's active supply wells is 19,450 gallons per minute (gpm), or 27.29 million gallons per day (mgd). Emergency wells and interties with adjacent water systems can provide an additional 14,695 gpm (21.16 mgd). The City also maintains two interties with Seattle Public Utilities dedicated to supplying water to the Boeing's Renton Plant and an intertie with the Skyway Water and Sewer District, which purchases water wholesale from Renton. The City also operates a series of storage reservoirs with a gross storage volume of 22.88 million gallons.

Figure UT-1. Utilities Plannning Relationships

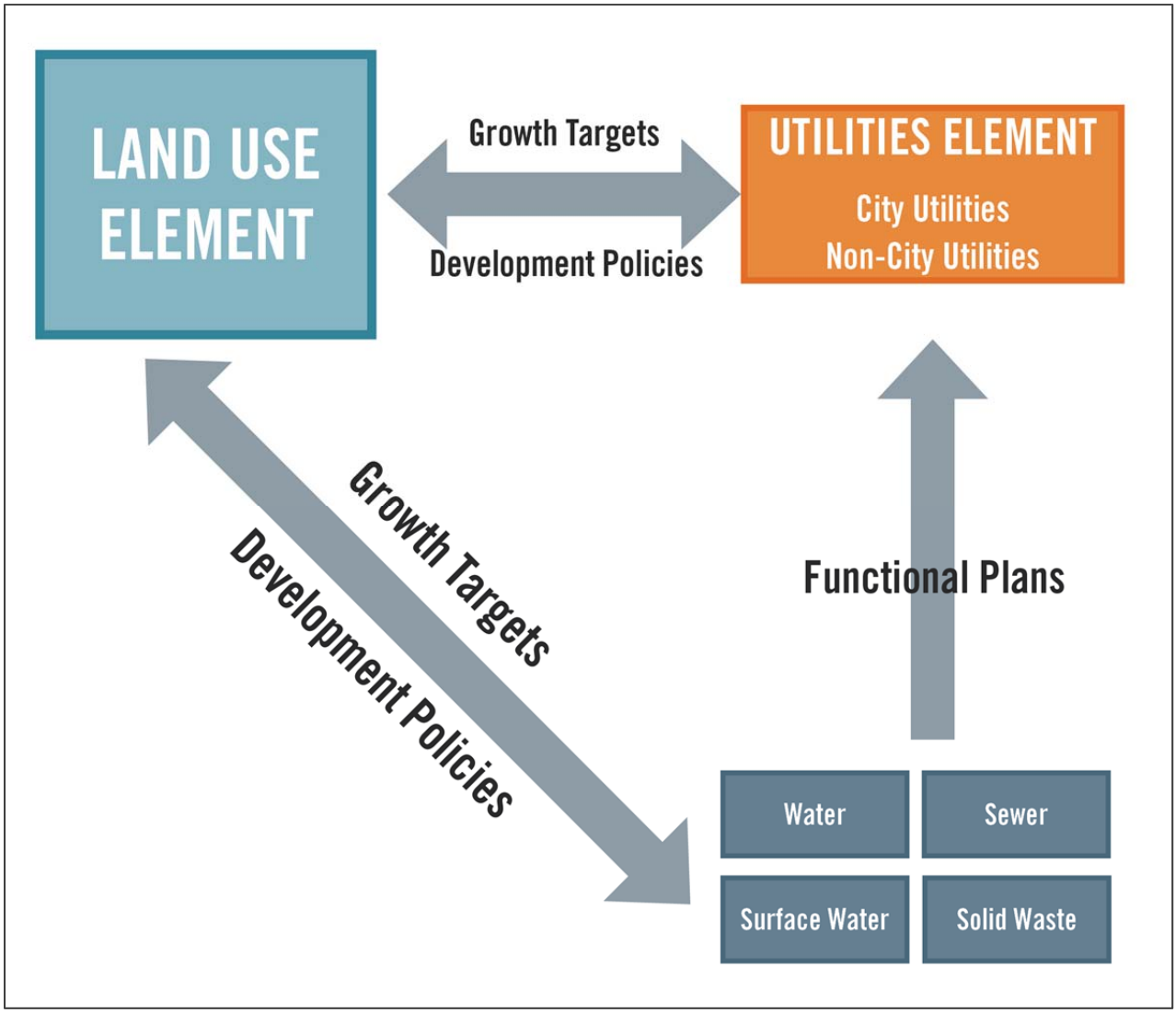
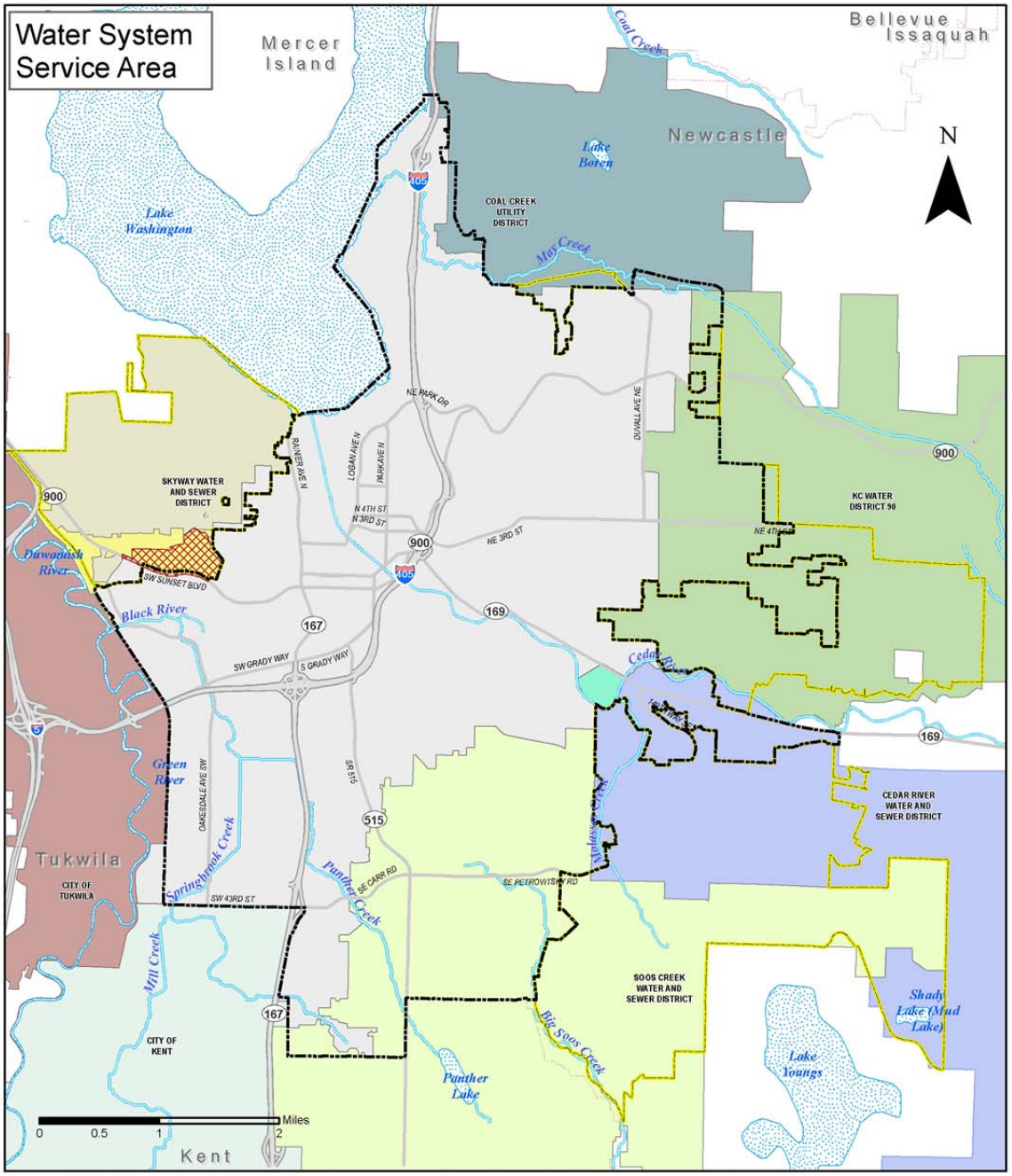


Figure UT-2. City of Renton Water System Service Area



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Community & Economic Development

C. E. "Chip" Vincent
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Adriana Abramovich
GIS Analyst

City of Renton

- Renton City Limits
- PAA Boundary
- Future Renton Water Service Area
- Renton Retail Water Service Area

Water Service Areas

- Cedar River Water and Sewer District
- Coal Creek Utility District
- City of Kent
- King County
- City of Newcastle
- Seattle Public Utilities
- Skyway Water and Sewer District
- Soos Creek Water and Sewer District
- City of Tukwila
- KC Water District 90
- Washington State Dept of Transportation
- Wasmeta Park Water System

A detailed description of the City's supply wells, storage reservoirs, and all interties with other systems is included in the Comprehensive Water System Plan.

Goals

U-C: Provide and maintain a consistent, ample, and safe water supply for the City and future service areas through system planning consistent with anticipated development.

U-D: Protect water supply resources and ensure that groundwater quality is not negatively impacted by future development.

Policies

Water Supply and Service

Policy U-9: Provide and maintain water supply, infrastructure, and service consistent with projected population growth within the City's service area, as established in the Land Use Element of this Comprehensive Plan and the Water System Comprehensive Plan.

Policy U-10: Extend water service within the City's water service area in an orderly manner to serve anticipated growth and development in accordance with the Land Use Element of this Comprehensive Plan.

Policy U-11: Ensure adequate water supply to meet both average and maximum daily demand. Employ monitoring of water supply sources and withdrawal limits as necessary to comply with State issued water rights certificates and permits.

Policy U-12: Maintain and upgrade the water system to deliver adequate water flow and storage for fire protection to all customers and facilities connected to the City water system.

Policy U-13: Continue maintenance and upgrades to the water system to ensure water quality that meets or exceeds all health requirements.

Policy U-14: Coordinate with non-City water providers operating within Renton and neighboring jurisdictions where the City has extended water service to accommodate road construction and other public works projects.

Policy U-15: Adopt by reference the *City of Renton Comprehensive Water System Plan* and all subsequent updates and amendments.

Water Resource Protection

Policy U-16: Practice and support water resource management that achieves a maximum net benefit for all citizens and promotes enhancement of the natural environment.

Policy U-17: Actively promote voluntary water conservation and coordinate with Seattle Public Utilities to meet regional water conservation goals.

Policy U-18: Implement the City's Wellhead Protection Plan and Aquifer Protection Program to preserve groundwater quality.

Policy U-19: Emphasize the use of stormwater management techniques that maximize water quality and infiltration where appropriate and which will not endanger groundwater quality.

Policy U-20: Promote the use of interlocal agreements with other agencies to restrict land use in sensitive aquifer recharge areas to minimize possible sources of pollution and the potential for erosion, and to increase infiltration.

Wastewater

The Renton Sewer System is a publicly owned wastewater system operated by the City of Renton as a self-supporting enterprise utility. Operations and system planning are guided by the *City of Renton Long-Range Wastewater Management Plan (2010).* The City collects wastewater from a service area of approximately 21.68 square miles, with approximately 3.91 square miles located outside City limits. Primary collection of wastewater is achieved through gravity sewer lines, though the City maintains a series of lift stations and force mains to overcome changes in topography. Collected wastewater is discharged to King County wastewater facilities, where it is ultimately transmitted to the King County South Treatment Reclamation Plant for treatment.

Some portions of the city are not served by City sewer and are instead connected to non-City sewer districts. Most notably, Soos Creek Water and Sewer District serves a large portion of southeastern Renton annexed in 2008. Figure UT-3 shows the boundaries of the City's sewer service area and those of adjacent service providers.

System Capacity

Sewer system capacity is dependent on a number of factors, including adequately sized pipes to collect wastewater, properly sloped pipes to allow adequate gravity flow, the capacity of downstream treatment facilities to accept wastewater, and the level of inflow and infiltration into the system. An updated hydraulic computer model of the City's wastewater system was completed in 2006, and the City uses this model to evaluate the effects of changes to the sewer system resulting from new development, changes to the existing system, or future population growth. Hydraulic modeling does not show any current capacity deficiencies in the City's system, but capacity is projected to become an issue at various locations as the City nears the "ultimate build-out" year of 2030.

King County's handling of wastewater flows from the Renton system also contributes to potential capacity issues. During peak flows, King County interceptor lines are sometimes used to store wastewater while the South Treatment Plant is temporarily over-capacity or when flows to the treatment plant need to be limited for other reasons. When these interceptor lines cannot flow freely, they may cause back-ups in connected systems, including Renton. During such conditions, the City system has experienced sewer surcharging in low-lying areas, resulting in wastewater overflowing through manhole covers and side sewer connections.

Infrastructure Replacement

Much of Renton's existing sewer infrastructure dates from the 1940's and 1950's, installed as part of federal programs to provide housing for workers at the Renton Boeing Plant. Sewer infrastructure in the Central Business District is even older, much of it dating from the 1920's and 1930's. These facilities have reached the end of their useful life, and many are in need of replacement. The Long-Range Wastewater Management Plan establishes a list of recommended capital improvements to the sewer system, ranked in priority order, which includes extensive replacement of wastewater collection pipes, elimination or replacement of lift stations, rehabilitation or improvement of aging interceptor lines.

A complete list of proposed capital improvements is included in Chapter 6 of the Long-Range Wastewater Management Plan.

Inflow/Infiltration Management

Inflow results from storm water flowing into the sewer system, either during a storm incident or from an illegal connection. Infiltration results from groundwater entering the sewer system through leaking pipe joints, cracks, or other defects in the sewer system. While some level of Inflow/Infiltration (I/I) is unavoidable, excessive I/I volumes can place a strain on the system, taking up valuable conveyance and treatment capacity with relatively clean water.

The City participates in King County's regional I/I management program by implementing I/I reduction techniques, such as minimizing vent holes, sealing manholes in wet areas, and conducting video inspections of sewer lines to check for leaks. Older sewer infrastructure is more susceptible to I/I, and the City has identified priority areas for investigation and replacement. A complete discussion of the City's I/I monitoring efforts is contained in the Long-Term Wastewater Management Plan.

Goals

U-E: Ensure the availability of an adequate level of sanitary sewer service through system planning that is consistent with land use, environmental protection, and annexation goals and policies.

U-F: Provide and maintain a sanitary sewer collection system that is consistent with the public health and water quality objectives of the State of Washington and the City of Renton.

Policies

Sewer Service Capacity and Availability

Policy U-21: Sewer facilities and services should be consistent with the growth and development concepts expressed in the Land Use Element of the Comprehensive Plan. Extension of sewer service should be coordinated with expected growth and development.

Policy U-22: All new development should be required to connect to the sanitary sewer system, except properties zoned for low density single family residential development that are located away from environmentally sensitive areas, outside Aquifer Protection Areas, and having adequate soils to support on-site septic systems.

Policy U-23: Projected sewage flows from development should be calculated based on adopted land use plans and policies. These projections should be used as a guide in developing the wastewater Capital Improvement Program (CIP). The CIP should be updated as land use plans and policies are revised.

Policy U-24: Ensure that wastewater utility staffing is sufficient to maintain the sewer system and provide adequate service to Renton residents. Staffing levels should be commensurate with the physical extent of the sewer system and the number of residents served.

Policy U-25: Coordinate with non-City sewer providers operating within Renton and neighboring jurisdictions where the City has extended sewer service to accommodate road construction and other public works projects.

Policy U-26: Adopt by reference the *City of Renton Long-Range Wastewater Management Plan* and all subsequent updates and amendments.

Water Quality and Public Health

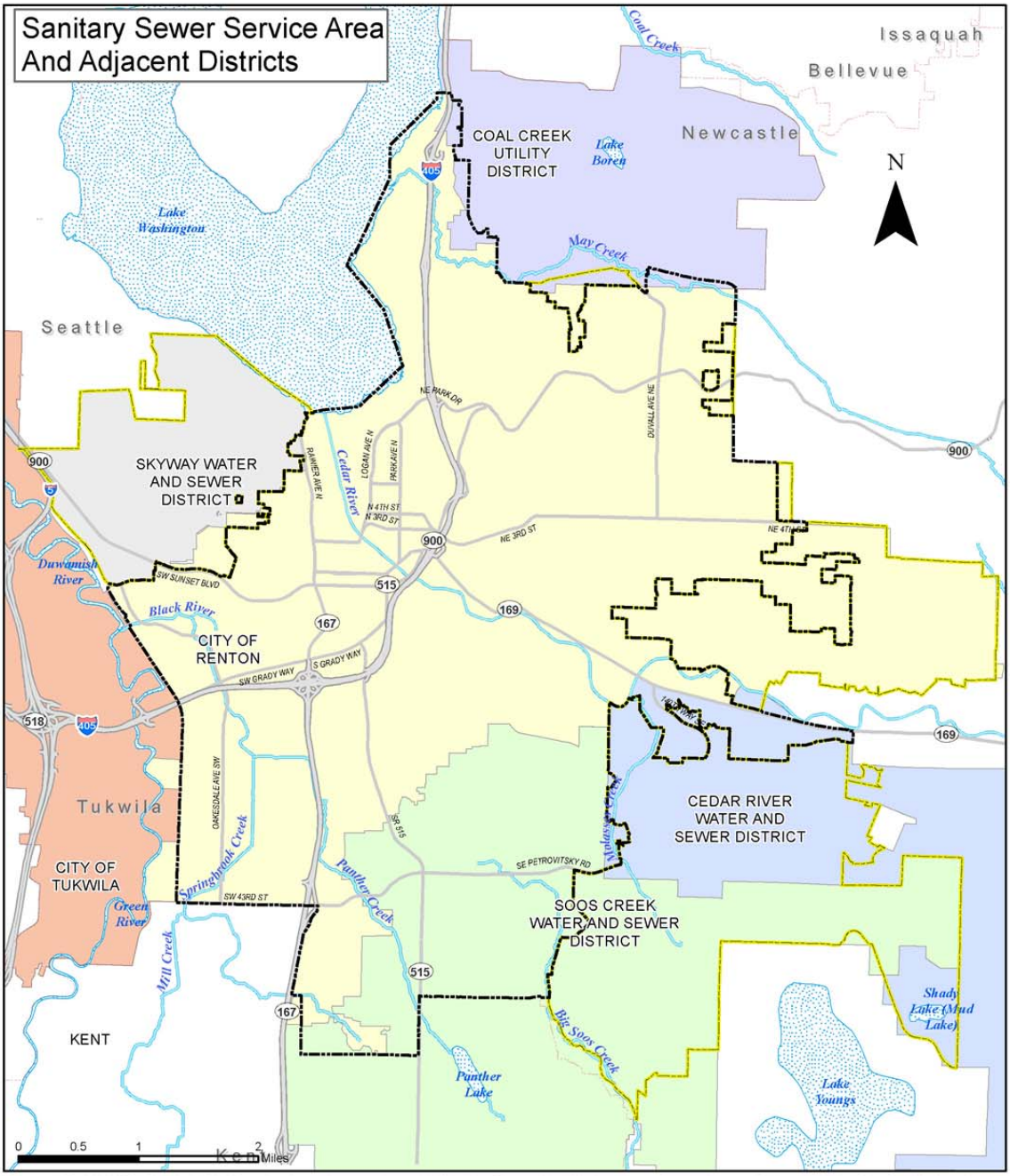
Policy U-27: Timely and orderly extension of the sewer system should be provided within the City's existing and future service areas to meet public health requirements.

Policy U-28: Sewer system improvements supporting areas of the City projected to experience high levels of growth should be prioritized to ensure that sewer service is concurrent with anticipated growth.

Policy U-29: Protect surface and groundwater quality through coordination with King County to reduce surcharging conditions that may cause wastewater overflows.

Policy U-30: Continue coordination with King County Wastewater Division regarding Inflow/Infiltration reduction initiatives, system improvements, and interconnections between City and County sewer infrastructure.

Figure UT-3. City of Renton Sewer System Service Area



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Community & Economic Development

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City of Renton

- Renton City Limits
- Potential Annexaton Area Boundary

Water and Sewer Service Areas

- Cedar River Water and Sewer District
- City of Renton
- City of Tukwila
- Coal Creek Utility District
- King County
- Skyway Water and Sewer District
- Soos Creek Water and Sewer District

Surface Water

The Surface Water System

Renton's surface water system consists of natural streams, rivers, wetlands, and lakes, and constructed systems that manage drainage, provide flood protection, and water quality treatment. Surface water management is important to meet social, economic, and ecological needs including flood protection, erosion control, water supply, groundwater recharge, fish and wildlife habitat, and recreation.

Challenges and Opportunities

Impervious surfaces in an urban, growing community such as Renton can affect surface and groundwater quality through stormwater runoff containing pollutants from roads and parking lots and landscaping. Impervious surfaces can also decrease groundwater recharge and increase the quantity of peak flows of runoff, causing stream channel scouring, sedimentation and loss of habitat.

The existing surface water drainage system is meeting capacity requirements under normal conditions. However, in some areas of the City, the system has become inadequate to serve present needs during large, infrequent storm events. In more developed areas of the city within the Lower Cedar River and Lake Washington East Basins, problems include flooding and ponding caused by inadequately sized pipes, ditches and detention facilities. In other areas of the city such as the Black River Basin, loss of wetlands and fish passage are concerns as well as development occurring within the watershed, both inside and outside the city.

In areas where redevelopment is likely such as the Renton Urban Center, Sunset Area, and other centers, redeveloped properties would be required to provide water quality treatment, which could improve water quality over present conditions.

Additionally, as new development and redevelopment occur, Low Impact Development (LID) practices would be implemented to conserve native soils and vegetation, protect hydrologic processes (e.g. infiltration), and reduce and treat overland stormwater flow to more closely match native forest or prairie conditions. Selected examples of LID techniques include bioretention planters, rain gardens, and permeable sidewalks to provide water quality treatment and reduce stormwater flow.

Surface Water Utility

Renton's Surface Water Utility manages stormwater and surface water in Renton's city limits which has grown from about 17 square miles in the year 2000 to 24 square miles in 2013. Figure UT-4 illustrates the Surface Water Utility service area and its component drainage basins.

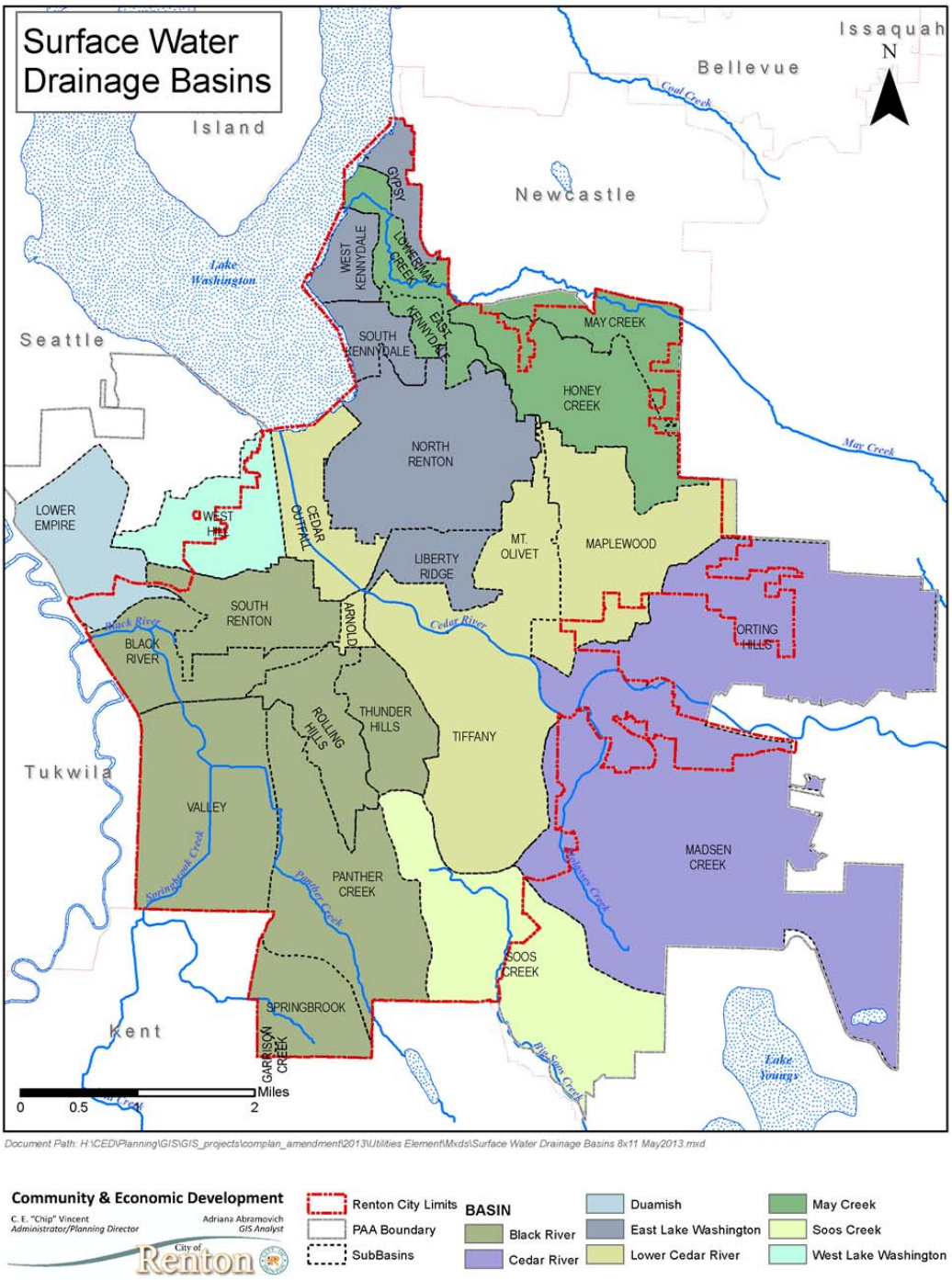
> The Surface Water Utility develops policies, design standards, and capital projects to maintain and restore the quality of Renton's lakes, wetlands, streams, and rivers, improve drainage, and reduce flooding.

The Utility develops policies, basin plans, development design standards, and capital improvement projects in order to maintain and restore the quality of Renton's lakes and rivers, improve drainage, and reduce flooding.

The Utility coordinates with the Federal Emergency Management Agency regarding flood hazard management. The Utility also coordinates with multiple state, county, and city agencies to conduct watershed planning for the Green River/Duwamish and Cedar River/Lake Washington Watersheds.

The City currently operates a storm system maintenance program that includes cleaning catch basins, pipes and other facilities, along with a street vacuum sweeping program. The maintenance programs remove sediment and pollutants from City-owned and operated storm systems and streets, which reduces flooding and non-point source pollution from being discharged into water bodies in the City.

Figure UT-4. City of Renton Surface Water Service Area and Drainage Basins



The Utility also provides public education on how homeowners and businesses can help minimize impacts to surface waters such as by using natural lawn care, and avoiding discharges or spills entering drains or waterways.

As the City redevelops and annexes territory, greater demand is placed on the Utility to provide planning, regulatory oversight, capital project implementation, and maintenance services it provides today.

State and Federal Requirements

The Utility is responsible for meeting federal and state stormwater requirements. A significant effort for the Utility is compliance with the National Pollutant Discharge Elimination System (NPDES) Phase II Stormwater Permit. This permit requires the Utility to control discharge of pollutants to protect surface water and to develop and implement a stormwater management program addressing:

1. Public education and outreach
2. Public involvement and participation
3. Illicit discharge detection and elimination (IDDE)
4. Controlling runoff from new development, redevelopment, and construction sites
5. Pollution prevention good housekeeping, and municipal operation and maintenance
6. Post construction stormwater management for new development & redevelopment, including LID.
7. Monitoring.
8. Annual reporting and record keeping of compliance with NPDES permit requirements.

Aquifer protection Coordination

Approximately 87 percent of Renton's water is supplied by the Cedar Valley Aquifer, with the rest coming from Springbrook Springs. As Renton's primary water source, the Cedar Valley Aquifer has been designated a "sole source" by the U.S. Environmental Protection Agency; no federal financial assistance can be given to a project which might contaminate the aquifer. The City has identified aquifer protection area (APA) zones. Development projects located in either Zone 1, Zone 1 Modified, or Zone 2 of the Aquifer Protection Area (APA) are required to pass additional City review to ensure the projects do not produce water quantity and/or quality impacts that may affect the aquifer. Areas of particular concern include areas subject to vehicular traffic or the storage of chemicals. In some areas, infiltration systems are not allowed and could increase runoff, requiring new facilities to be larger.

If the new NPDES Phase II requirements result in changes to quality or quantity of runoff and infiltration, the City's aquifer protection regulations could require review and amendments.

Goals

U-G: Provide and maintain surface water management systems to minimize impacts of land use development and storm water runoff on natural systems, fish and wildlife habitat, water supply, public health, and safety.

U-H: Implement a stormwater management program which optimizes Renton's water resources and promotes low impact development that combines engineering with the preservation of natural systems.

U-I: Preserve and protect fish and wildlife habitat, riparian corridors, and wetlands for overall surface water system functioning.

U-J: Protect the natural functions of 100 year floodplains and floodways to prevent threats to life, property, and public safety associated with flooding hazards.

U-K: Increase the participation by the City of Renton in resolution of regional surface water and ecological issues that may impact Renton residents.

Policies

Stormwater Management System

Policy U-31: Design storm drainage systems to minimize potential erosion and sedimentation

problems, and to preserve natural drainage, watercourses, and ravines.

Policy U-32: Control runoff from new development, redevelopment, and construction sites through the implementation of development design standards and construction techniques that promote the use of best management practices to maintain and improve storm water quality and manage stormwater flow.

Policy U-33: Provide incentives and regulations appropriate to an urban environment that reduce impervious surfaces, promote natural and distributed stormwater techniques, and incorporate native and naturalized vegetation.

Policy U-34: Maintain, protect, and enhance natural drainage systems and natural surface water storage sites to protect water quality, reduce public costs, and prevent environmental degradation.

Policy U-35: Work towards protecting surface water resources and groundwater resources from pollutants entering via the storm drainage system.

Natural System Protection

Policy U-36: Manage water resources for multiple uses including recreation, fish and wildlife, flood protection, erosion control, water supply, recreation, and open space.

Policy U-37: Through public programs and new development, naturalize degraded channels, streams, creeks, and banks.

Policy U-38: Prohibit filling, culverting, and piping of natural watercourses that are classified as streams, except as needed for a public works project where no other option is feasible and mitigation is provided to replace lost functions.

Policy U-39: Where feasible, promote the return of precipitation to the soil at natural rates near where it falls through development design which minimizes impermeable surface coverage and maximizing infiltration through the exposure of natural surfaces through tree retention and the use of LID techniques, such as flow dispersion, bioretention (rain garden) facilities, and permeable pavements.

Policy U-40: Preserve and protect wetlands for overall system functioning.

Policy U-41: Protect buffers along wetlands, streams, rivers and other water bodies to facilitate infiltration and maintain stable water temperatures, provide for biological diversity, reduce amount and velocity of run-off, and provide for fish and wildlife habitat.

Policy U-42: Ensure water level fluctuations in wetlands used as part of storm water detention systems are similar to the fluctuations under natural conditions. The utilization, maintenance, and storage capacity provided in existing wetlands should be encouraged.

Policy U-43: Minimize erosion and sedimentation by requiring appropriate construction techniques and resource practices.

Policy U-44: Limit discharges of pollutants such as chemicals, insecticides, pesticides, and other hazardous wastes to surface waters.

Policy U-45: Reduce the impact of new development on the environment by encouraging the use of sustainable design techniques in public and private development, through LID and other sustainable development methods.

Public Health and Safety

Policy U-46: Prohibit permanent structures from developing in floodways and manage development within the 100 year floodplain. Where development is permitted in the floodplain, ensure compliance with FEMA floodplain development regulations and the National Marine Fisheries Biological Opinion regarding the National Flood Insurance Program.

Policy U-47: Emphasize non-structural methods in planning for flood prevention and damages reduction.

Policy U-48: Continue to maintain levees and floodwalls and perform maintenance dredging of the Army Corps of Engineers constructed Lower Cedar River Flood Hazard Reduction Project to protect the Renton Municipal Airport and other essential public facilities; industrial and residential areas and the Renton Urban Center; educational and recreation investments; and other facilities.

Regional Coordination

Policy U-49: Actively participate in regional efforts to improve fish habitat and water quality that also contribute to the recovery of Endangered Species Act listed salmon in WRIA 8 and WRIA 9, which include the May Creek, Cedar River, and Green River Basins.

Policy U-50: Actively participate in the King County Flood Control District regional efforts to implement flood hazard reduction projects and programs on the major river basins in King County, including the Green River and Cedar River basins.

Policy U-51: Coordinate with adjacent cities, counties, and state and federal agencies in the development and implementation of the National Pollutant Discharge Elimination System (NPDES) Phase II Stormwater Permit, flood hazard management plans, and storm and surface water management programs.

Utility Management

Policy U-52: Provide high quality surface water utility services. Continue to develop policies, design standards, basin plans, and capital projects to maintain and restore the quality of Renton's lakes, wetlands, streams, and rivers, improve drainage, protect fish and wildlife habitat, and reduce flood hazards to protect people and property.

Policy U-53: Protect, restore and enhance environmental quality through land use plans and patterns, surface water management programs, park master programs, urban forestry programs, transportation planning, development reviews, incentive programs and work with citizens, land owners, and public and private agencies.

Policy U-54: Establish regulatory standards for sustainably developed public and private projects, to include standards for site design and layout, construction, and on-going maintenance and operation.

Policy U-55: Continue to assume maintenance of stormwater facilities in subdivisions that manage runoff from public streets.

Policy U-56: Continue to implement a program to detect and remove illicit connections and contaminated discharges.

Policy U-57: Continue to implement public education and outreach activities to inform residents, businesses and developers about ways they can prevent stormwater pollution.

Policy U-58: Monitor Surface Water Utility levels of service and adjust staffing and equipment as appropriate due to new annexations and due to the growth of infrastructure and customers that results from new development within the City.

Solid Waste

While solid waste collection is managed by the City, Renton maintains an interlocal agreement with King County for disposal of collected solid waste. This interlocal agreement also authorizes King County to include Renton in its Comprehensive Solid Waste Management Plan. Renton's Solid Waste Utility administers the City's solid waste, recycling, and yard/food waste collection for all residents and businesses through a contract with Waste Management of Washington, Inc. for the majority of the City and Republic Services, Inc. for the City's annexation area. The City's Solid Waste Utility also develops and manages Renton's Recycling Program, waste reduction, hazardous waste education and special collection events.

Collection Process and Solid Waste Facilities in Renton

Solid waste and recycling are collected every other week, while food/yard waste is collected weekly. The majority of collected waste is brought to King County's Renton Transfer Station located in the Renton Highlands. Residents of unincorporated King

County, as well as City residents are also allowed to use this facility for self-haul disposal. Also within city limits is the Black River Construction, Demolition, and Land Clearing Transfer Station (CDL), overseen by Republic Services, Inc. Under a contract with King County, this facility accepts construction, demolition, and land clearing waste from waste hauling companies and private residents.

Following the city-administered collection process, all solid waste produced in Renton is brought to the King County Solid Waste Division's Cedar Hills Regional Landfill, located Southeast of Renton. All recyclables collected from single-family, duplex, and multi-family residents are brought to Waste Management Inc.'s Cascade Recycling Center in Woodinville, WA, while all food/yard waste from single-family and duplex residents is taken to Cedar Grove Recycling in Maple Valley.

Estimated Capacity of Facilities

As of 2012, the remaining airspace capacity (with anticipated settling) at the Cedar Hills Regional Landfill is 9 million cubic yards. However, an additional waste disposal area that is currently in planning will add another 8.6 million cubic yards by 2017, bringing the total estimated airspace capacity to 17.7 million cubic yards. Under current planning assumptions, the landfill has a remaining operating life of nearly 15 years.

The Cascade Recycling Center processes approximately 144,000 tons of commingled recyclables and 48,000 tons of construction and demolition materials every year, while the Cedar Grove Recycling Center has a yearly capacity of 195,000 tons of organic material.

At this time, the capacities of the Renton Transfer Station, the Cedar Hills Landfill, the Cascade Recycling Center, and Cedar Grove Recycling are sufficient to meet the City's needs.

King County Solid Waste Division

The King County Solid Waste Division serves unincorporated King County and 37 of the 39 cities in the County, including Renton. It manages a complex network of collections, transportation, and processing for garbage, recyclables, organics, and construction and demolition debris. The services and infrastructure of the public and private sectors are included in the County's integrated network to establish long-term capacity for the management of solid waste in the County.

Goals

U-L: Provide a responsible, comprehensive solid waste management program that provides cost-effective, environmentally sensitive service to the community.

Policies

Policy U-59: Actively promote recycling, as well as overall reduction of both the residential and commercial solid waste streams through public education programs and incentive programs.

Policy U-60: Work closely with King County Solid Waste Division to plan for regional solid waste collection and disposal, including siting of facilities.

Policy U-61: Coordinate with King County's Local Hazardous Waste Management Program to provide opportunities for residents to dispose of commercial and household hazardous materials in a safe, environmentally sound manner.

Policy U-62: Administer the City's contracts with private waste haulers to ensure capacity for collection of solid waste, recycling, and food waste that is adequate to serve both existing and future population and that solid waste is handled in a manner that minimizes the potential for land, air, and water contamination.

Policy U-63: Adopt by reference the *King County Comprehensive Solid Waste Management Plan* and all subsequent updates and amendments.

Non-City Managed Utilities

Non-City managed utilities operating within Renton conduct their own planning processes and maintain their own systems with limited involvement from the City, and expansion of these systems is often driven by consumer demand and not solely on regional growth forecasts, though those are considered. An overview of the major non-City utility providers offering service within Renton is provided in this section, as well as policies to ensure that Renton is aware of non-City utility upgrades and that utility providers are aware of City needs.

Water

While the majority of Renton is served by the City's publicly owned water system, portions of northeastern and southeastern Renton (East Renton Plateau and Benson Hill) are currently served by various non-City water providers. The two largest are Soos Creek Water & Sewer District and King County Water District #90.

Soos Creek Water & Sewer District

Soos Creek is a municipal corporation of King County that operates across multiple incorporated cities and unincorporated King County. Its retail water service area covers approximately 16 square miles (with the majority located within the Cities of Renton and Kent) and serves more than 23,400 equivalent residential units (ERUs).

While only one pump station and one reservoir are located within Renton city limits, city residents are served by the broader system which utilizes the District's entire infrastructure. In 1997, the City of Renton and Soos Creek signed an interlocal agreement for the establishment of water and sewer service area boundaries. An addendum to the agreement occurred in 2004 which included a transfer of facilities and a re-establishment of service boundaries.

Water Supply, System Capacity, and Projected Demand

Soos Creek's water supply is provided exclusively by Seattle Public Utilities (SPU), with flow occurring from four locations. The current contract with SPU guarantees a total of 7,000 gallons per minute, which is less than the current projected maximum daily demand (MDD) of 7,500 gallons per minute and the projected MDD of 9,458 gallons per minute in 20 years. Increased water supply could become available in the future if the District revises its contract with Seattle Public Utilities.

Planned System Improvements

The District's capital facility plan identifies capital improvements to be built over the next 20 years, including short- and long-term projects aimed at improving the District's existing system to meet its policies and criteria and respond to projected growth. The types of projects planned include: supply and source projects, pressure zone projects, storage facility projects, intertie projects, and distribution and transmission projects.

King County Water District #90

King County Water District 90 is a Special Purpose District located in the Renton Highlands area of unincorporated King County, directly east of and adjacent to the City of Renton. It serves just under 6,000 direct service connections in a service area of approximately 15 square miles (9,770 acres). Because it provides water service to some areas inside the City of Renton, the District maintains an interlocal agreement that details the conditions of the District's operations, infrastructure, and service within the City.

Water Supply and System Capacity

Seattle Public Utility (SPU) currently supplies 70% of the District's water. The District provides the other 30% of its water supply from a groundwater well and treatment facility, located off Jones Road, that it operates and maintains. In total, the District's water supply capacity is 3,450 gpm.

Planned System Improvements

The District's Capital Improvement Plan presents recommended improvements over a 20-year period. It addresses construction of new facilities and upgrades to existing facilities to provide for projected growth. The District is planning to focus on improved system reliability through astute upsizing of critical pipes and additional looping of water mains. Another major project that will be

addressed in phases is the expansion of one of the major pressure zones to address areas of low pressure and improve the utilization of the two main storage reservoirs.

Goals

U-M: Ensure that water service from non-City providers is available to support development that is consistent with City land use plans and policies, as well as the policies of the service provider.

Policies

Policy U-64: Maintain coordination with non-City water providers to ensure that they have adequate capacity to serve planned development within the City of Renton.

Policy U-65: Work collaboratively with non-City water providers to identify opportunities for joint projects to minimize potential impacts to neighborhoods and the environment.

Policy U-66: Coordinate with non-City water providers to ensure that all water systems operating in Renton have access to sufficient emergency water flow for fire protection.

Policy U-67: Before issuing building permits to new development in areas not served by the City of Renton Water Utility, require applicants to provide a certificate of water availability stating that sufficient water supply is available to meet both regular and fire flow requirements.

Wastewater

While most of Renton is served by the City wastewater utility, portions of the city are served by other wastewater providers, most notably in areas of southeastern Renton annexed in 2008. The largest non-City provider of sewer service is Soos Creek Water & Sewer District.

Soos Creek is a municipal corporation of King County that operates across multiple incorporated cities and unincorporated King County. The District covers portions of multiple cities and provides sewer service to approximately 92,500 customers within its 35-square mile service area. Primary collection of wastewater is through gravity mains and trunks that drain to interceptors or lift stations. Wastewater leaves the District at a total of 19 locations, with three discharge connections to the City of Renton. Collected wastewater is treated at King County's Renton treatment facility.

System Capacity

The District utilizes hydraulic modeling, forecasted population growth, and a range of assumptions to prepare existing, 10-year, 20-year, and ultimate build-out scenario analyses that identify potential deficiencies within the system. These analyses identified relatively few capacity deficiencies in the portion of the District's Renton service area. Currently, capacity issues exist in two gravity lines that discharge to the City of Renton sewer system. Additional capacity issues are projected to develop in southeastern Renton as development continues.

Capital Facilities Plan

Based on the system analyses described above, a range of necessary improvements have been identified to meet the District's future sewerage needs. Improvements have been classified as either short-term (within the next 10 years) or long-term (through ultimate build-out) and fall under one of two categories: pipe replacements/upgrades or lift station replacement/upgrades. Funding has also been allocated to conduct general facilities upgrades and maintenance.

Goals

U-N: Ensure that sewer service from non-City providers is available to support development that is consistent with City land use plans and policies, as well as the policies of the service provider.

Policies

Policy U-68: Maintain coordination with non-City sewer providers to ensure that they have adequate capacity to serve planned development within the City of Renton.

Policy U-69: Work collaboratively with non-City sewer providers to identify opportunities for joint projects to minimize potential impacts to neighborhoods and the environment.

Policy U-70: Ensure that wastewater flows from areas served by non-City providers do not create capacity deficiencies where non-City sewer lines discharge to the City of Renton system. Coordinate with both sewer providers and City development services staff to ensure such areas have adequate sewer capacity before development is approved.

Policy U-71: Before issuing building permits to new development in areas not served by the City of Renton Wastewater Utility, require applicants to provide a certificate of sewer availability stating that sufficient capacity is available to meet both regular and peak demand.

Electricity

Electricity is distributed in Renton by a combination of three purveyors, which are part of an integrated transmission grid that connects production and consumption locations across the Pacific Northwest. Bonneville Power Administration (BPA), the regional administrative entity of the U.S. Department of Energy, operates major transmission lines that transmit power from generation facilities to retailers across the state, who then sell power to local customers. Most electricity customers in Renton are served by Puget Sound Energy (PSE), while Seattle City Light (SCL) provides power to the Bryn Mawr and Skyway areas, including some customers within current Renton city limits.

Electric Facilities

The electric transmission grid consists of high-voltage transmission lines (115 kilovolts (kV) or above) and distribution lines (55 kV and lower). Distribution substations transform high-voltage current into lower voltages suitable for distribution on local lines. Local transformers further reduce voltage to levels suitable for use by customers.

Bonneville Power Administration Facilities

BPA Transmission lines at voltages of 500 kV, 345 kV, and 230 kV enter the Renton Planning Area from the east and south, terminating at the Maple Valley Substation in southeastern Renton. The Maple Valley Substation provides power to Puget Sound Energy's adjacent Talbot Hill Substation, which distributes electricity to local PSE customers.

Puget Sound Energy Facilities

As the primary electric retailer in Renton, Puget Sound Energy maintains a variety of transmission lines, distribution lines, and substations in the area for provision of power to local customers. Locally, PSE distributes power from its Talbot Hill Substation, located adjacent to BPA's Maple Valley Substation in southeastern Renton.

Seattle City Light Facilities

Seattle City Light maintains distribution lines and two minor distribution substations in a small portion of the Renton Planning Area. Power is provided to these substations by Seattle's Creston distribution substation, located outside Renton's planning area.

Growth and Capacity

As population in Renton continues to grow, demand for electricity will increase. BPA, PSE, and SCL all conduct ongoing system planning efforts to ensure adequate energy supply is available for their customers and that transmission and distribution infrastructure can accommodate anticipated demand. PSE has planned additional transmission lines and upgrades to existing infrastructure to increase system reliability and capacity in response to growth, as well as construction of a new substation. Seattle City Light has likewise planned for the replacement of existing aging infrastructure in the Skyway and Bryn Mawr areas with new, higher-voltage distribution lines.

Goals

U-O: Promote the availability of safe, adequate, and efficient electrical service with the City and its planning area, consistent with the regulatory obligation of the utility to serve customers.

Policies

Policy U-72: Coordinate with local and regional electric providers to ensure that the siting and location of transmission and distribution facilities is accomplished in a manner that minimizes adverse impacts on the environment and adjacent land uses.

Policy U-73: Encourage electricity purveyors to make facility improvements and additions within existing utility corridors wherever possible.

Policy U-74: Require underground electric infrastructure installation to be coordinated with the City of Renton Public Works Department to prevent cross-boring through existing water, sewer, or natural gas lines.

Natural Gas

Natural gas service in Renton is provided by Puget Sound Energy under a franchise agreement with the City. The gas distribution system consists of a network of pressurized mains and distribution lines that convey natural gas throughout PSE's service area. PSE receives natural gas from the Northwest Pipeline Corporation, which operates large, interstate natural gas pipelines. Two pipelines cross the Renton Planning Area and terminate at the South Seattle Gate Station. PSE mains extend from the gate station, distributing the gas to pressure regulators and smaller lines, which provide natural gas to customers.

Growth and Facility Capacity

Natural gas system capacity is primarily a function of the volume of gas flowing from the Northwest Pipeline Corporation pipelines, and demand fluctuates based on power consumption. Natural gas is used primarily as fuel for home heating, so demand is highest during winter months and peaks during extremely cold weather. PSE maintains storage tanks that provide a reserve against such periods of high demand. In the event of supply shortfalls from extreme demand, residential customers are granted first priority for service.

Because it is clean-burning and less expensive than other energy sources, the popularity of natural gas has risen in recent years, and this trend is expected to continue. Population growth within PSE's service area will also increase demand for natural gas. Puget Sound Energy conducts ongoing system planning to ensure that adequate supply is available to customers. Improvements to regional infrastructure, including the South Seattle Gate Station, and construction of additional high-pressure mains, have been planned. Precise timing and location of infrastructure improvements will be determined based on right-of-way permitting, environmental analysis, and coordination with the City of Renton.

Goals

U-P: Promote the safe transport and delivery of natural gas and other fuels within the planning area.

Policies

Policy U-75: Coordinate with local and regional purveyors of natural gas for the siting of transmission and distribution infrastructure within the Renton Planning Area.

Policy U-76: Support voluntary energy conservation and efficiency programs, including the supplementation of natural gas supplies through new technologies.

Policy U-77: Allow extension of natural gas distribution infrastructure within the Renton Planning Area, provided such facilities are consistent with development assumptions in the Land Use Element of the Comprehensive Plan.

Policy U-78: Require underground natural gas infrastructure installation to be coordinated with the City of Renton Public Works Department to prevent cross-boring through existing utility lines.

Telecommunications

Telecommunications services in the City of Renton consist of conventional telephone, cellular telephone and data, cable and satellite television, and internet service. All telecommunications services are provided by private companies.

TELEPHONE

Conventional telephone service in Renton is provided by CenturyLink (formerly Qwest Communications). CenturyLink is an investor-owned corporation and one of the largest telecommunications companies in the United States, serving millions of customers nationwide. CenturyLink also provides broadband internet

service and satellite television service through DirecTV.

Digital phone service is also provided by Comcast in conjunction with their cable television and internet services.

Telephone Facilities

Conventional telephone facilities consist of switching station, trunk lines, and distribution lines located throughout Renton. Switching stations direct calls from one line exchange to another, trunk lines connect switching stations to one another, and distribution lines provide phone connections to individual customers.

Growth and Facility Capacity

The capacity of conventional telephone switching stations is determined by the type of switch employed. Use of modern digital switches allow for straightforward increases in switch capacity to accommodate growth. Regulations governing telecommunications service require that telephone purveyors provide adequate service on demand. CenturyLink installs new lines and upgrades facilities as required to accommodate customer demand.

Cellular Telephone and Data

Cellular phone and data service providers are licensed by the Federal Communication Commission (FCC) for a particular band of radio frequencies. Major cellular service providers operating in Renton include AT&T, Verizon Wireless, T-Mobile, and Sprint.

Cellular Telephone and Data Facilities

Cellular telephone systems consist of a series of wireless antennae, each located at the center of a single "cell" of the overall system. The cellular transmitters themselves are generally located where topography and features of the built environment will have the least effect on signal quality, such as existing broadcast communication towers, water towers, high-rise buildings, or vacant open land.

Growth and Facility Capacity

The significant growth in wireless phone and data usage over the past few years is anticipated to continue, placing additional demand on existing cellular networks. The capacity of a cellular transmission cell is limited by the number of radio frequencies available for use; the carrier's FCC license defines what frequency spectrum is allowed. To increase system capacity, carriers often install additional transmitters, thereby creating multiple smaller cells that cover less area than the original, larger cell and serve fewer customers each, increasing overall system capacity.

Cable and Satellite Television

Cable television service in Renton is currently provided by Comcast, and satellite television service is currently provided by DirecTV through an agreement with CenturyLink, allowing customers to bundle their phone, internet, and television services. Satellite television is also available from Dish Network.

Cable Television Facilities

Cable television facilities include broadcast receivers, a headend, a trunk system, and a feeder system. After receiving and processing broadcast signals, the trunk and feeder system distribute television signal to individual customers. Cable trunk and feeder lines generally follow existing street rights-of-way.

Satellite television facilities generally consist only of receiver dishes installed at individual customer locations, which receive signal directly from orbiting communications satellites. While uplink transmitters are necessary at the origin of the broadcast, no additional local infrastructure is needed to receive satellite television signal.

Growth and Facility Capacity

Because Comcast currently holds the cable television franchise for the City of Renton, the company must continue to make cable television service available upon request. Comcast offers telecommunications service over a large portion of Western Washington in addition to Renton and

reviews population growth as part of its ongoing system planning operations.

Satellite television services are provided in response to customer requests. Capacity planning occurs at a regional or national scale due to the substantial investment required to use communications satellites.

INTERNET

Broadband internet service is provided in Renton by a variety of private providers. The two largest are Comcast and CenturyLink, who provide internet services in addition to phone and television. Wireless internet service is also provided by Clearwire through Sprint's network of cellular communication towers.

Internet Facilities

Internet service is provided via cable television infrastructure, telephone lines, or wirelessly.

Growth and Facility Capacity

Internet service is not considered an essential public utility and is provided in response to customer requests. Individual providers conduct system planning in response to population growth and increased demands for service. Given the increasing rate of internet adoption in American homes in recent years, it is likely that demand for internet service will continue to increase, and it will be necessary for providers to continue to increase capacity and connection speeds to satisfy demand.

Goals

U-Q: Promote the timely and orderly expansion of all forms of telecommunications service within the City and its planning area.

Policies

Policy U-79: Require that the siting and location of telecommunications facilities be accomplished in a manner that minimizes adverse impacts on the environment and adjacent land uses.

Policy U-80: Require wireless communication structures and towers to be designed and sited to minimize aesthetic impacts and to be co-located on existing structures and towers wherever possible.

Policy U-81: Encourage healthy competition among telecommunication service providers in the City to promote high-quality, cost-effective service for Renton residents.

Policy U-82: Require underground telecommunication infrastructure installation to be coordinated with the City of Renton Public Works Department to prevent cross-boring through existing water, sewer, or natural gas lines.

TECHNICAL APPENDIX

LAND USE ASSUMPTIONS AND UTILITY PLANS

INTRODUCTION

The Growth Management Act (GMA) requires that cities and counties develop land use plans that accommodate 20 years of growth. The land use pattern and growth is to be supported by utilities and capital facilities. The purpose of this technical appendix is to establish and compare the growth assumptions in the City's Comprehensive Plan and Countywide Planning Policies with the assumptions in the City's "Water System Plan Update: A Comprehensive Water System Plan, 2012" and the "Long-Range Wastewater Management Plan, A Comprehensive Sewer System Plan, Final 2010." Results show the system plans can support the land use plan and growth assumptions for the horizon year of 2031 matching the growth allocations in the Countywide Planning Policies.

GROWTH TARGETS AND CAPACITY

The City of Renton and its Potential Annexation Area have been allocated housing and employment growth targets in the King County Countywide Planning Policies. The City's Comprehensive Plan needs to reflect the growth targets and provide land use capacity sufficient to meet the targets for lands in the city limits; King County must do likewise for the Potential Annexation Area. Currently, the growth targets extend to the year 2031.[1] At the time of the 2007 Buildable Lands Report, the City had sufficient capacity to meet its growth targets. See Table 1.

Table 1. Growth Targets 2006-2013 and Buildable Land Capacity 2007

Location	Net New Units	Net New Jobs
City Growth Target 2006-2031	14,835	29,000
City Capacity 2007 (inc Benson Hill)	16,250	29,550
Excess Capacity - City 2007	*1,415*	*550*
PAA Target	3,895	470

Source: King County Buildable Lands Report 2007, Pers Com, Felt, June 27, 2013, "Buildable Lands: instructions for measuring updated capacity." BERK 2013

Based on the 2007 Buildable Lands results the City has sufficient capacity for planned growth under both housing and employment.

After the publication of the 2007 Buildable Lands Report, the City has studied future growth capacity in the Sunset Area Planned Action, and found additional capacity was likely, up to 850 more housing units than the prior

[1] While the growth targets extend to the year 2031, the new 20-year planning horizon for local governments with a Comprehensive Plan Update deadline of June 30, 2015, such as Renton, is actually 2035. However, King County has no plans to formally update growth targets to the year 2035. Given the GMA requirement to plan for 20 years (RCW 36.70A.115), King County and an inter-jurisdictional team of planning directors recommends that local governments start with the 2031 growth target and use either a straight-line projection or otherwise "bend the trend" towards Vision 2040 in order to derive a 20 year growth number. The City is considering the extension of the growth target to the year 2035, but has not yet made a determination of the numbers.

assumed growth under the Comprehensive Plan and up to 2,278 more jobs than the prior assumed growth under the Comprehensive Plan (Preferred Alternative assumptions; Final EIS, April 2011). This would further bolster the City's land capacity.

The City's Transportation Model growth assumptions represent the allocation of growth to sub geographies across the City (transportation analysis zones across the city limits). The City's traffic model shows the City's anticipated growth of 15,787 housing units and 31,440 jobs between 2006 and 2030; both estimates are greater than the assigned growth targets. For the purposes of this analysis, the traffic model analysis zone growth estimates are compared to the water service area and sewer service area (city limits portion).

Water System Plan

Household growth is projected in the Renton Water System Plan for the years 2010 to 2071 for the water system service area which is smaller than the city limits. The plan considered growth based on Puget Sound Regional Council growth projections (similar to those in the Countywide Planning Policies and the City traffic model) and a "growth cap" that considered infill capacity plus redevelopment in the Renton Urban Center and Renton Sunset Area Planned Action Area. Based on the analysis the net growth from 2010-2031 is less than City growth targets, but the growth from 2010-2071 is consistent with those targets. The analysis shows the Water System Plan can accommodate the growth targets, but the growth cap approach allows the City to see what the improvements would be if growth occurred in a more phased manner. See Table 2.

Table 2. Water System Growth Projections Compared to Targets

Water System Plan			Traffic Model - Water Service Area			Countywide Planning Policies
Year	Total Households	Net Households	Year	Total Households	Net Households	Net Households
2010	23,704		2006	23,544		
2031	30,770	7,066	2030	38,346	14,802	14,835
2071	38,587	14,883				

City of Renton, 2012; BERK, 2013

Wastewater System Plan

Population and job growth is projected in the Renton Wastewater System Plan for the years 2001 and 2030. The wastewater service area extends further east than the city limits but not fully to the southeast, where other districts are the service providers. Nevertheless, comparisons of growth assumptions show more than sufficient planned growth in the Wastewater System Plan beyond the city's growth targets. See Table 3.

Table 3. Wastewater System Growth Projections Compared to Targets
a. Sewer System Assumptions

Sewer System Plan						
Year	Total Population	Net Population	Total Households	Net Households	Total Jobs	Net Jobs
2000	44,504		19,479		49,128	
2030 + 25%	102,901	58,397	45,186	25,707	103,357	54,229

b. Comparison to Growth Targets

Traffic Model - Sewer Service Area (within city limits)					Countywide Planning Policies	
Year	Total Households	Net Households	Total Jobs	Net Jobs	Net Households	Net Jobs
2006	24,203		56,918			
2030	39,990	15,787	88,358	31,440	14,835	29,000

Source: City of Renton, 2010; BERK, 2013