

Existing Conditions

Utilities

Introduction

The Utilities Element of the Redmond Comprehensive Plan provides policy direction for planning for and placing utilities in Redmond to support the community’s vision for planned growth, contribute to a high quality of life for Redmond residents and businesses, and protect Redmond’s natural environment and resources.

The City operates four utilities: water, wastewater, solid waste/recycling and stormwater, which fall under the management and oversight of staff in the Public Works, Planning, Technology and Information Services, and Finance Departments. In addition, the Utilities Element contains policies related to energy, telecommunications, and hazardous liquid pipelines. City staff engage in a variety of daily tasks - from cleaning sewer lines, inspecting hydrants and wells, reviewing utility plans for construction sites, to restoring salmon habitat. This work ensures that City utilities function in a safe, cost-effective, and efficient manner.

Federal, State, and Regional Planning Context

Federal Context

Among federal laws and regulations that affect local utility planning, the 1972 Clean Water Act and federal telecommunications regulations merit a brief discussion.

The 1972 Clean Water Act (CWA) is the primary federal regulation for stormwater management. The CWA establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters.

Under the CWA, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. The Washington State Department of Ecology administers the

Fast Facts

In 2019..

- Redmond’s wells pumped over one billion gallons of water.
- Redmond supplied water to more than 19,500 businesses, houses, and multifamily units.
- Redmond delivered 35-40% of drinking water from groundwater.
- Redmond operated and maintained 333 miles of water main and 12,650 water main valves
- Construction Site inspectors logged more than 5,100 utility inspections at new and redeveloped sites
- Redmond’s Private Drainage Inspection Program visited 265 sites including more than 100 stormwater vaults.
- Redmond’s Business Inspectors offered direct stormwater pollution prevention support to 150 businesses.
- Under the City’s Solid Waste Program, 643 tons of organics (including food waste) were collected from businesses, multifamily residences and schools and converted to compost at an industrial composting facility.
- 1,360 gallons of hazardous materials were removed and properly disposed of by Redmond businesses.
- Wastewater Utility crews “de-ragged” 38 wastewater pumps or valves to clear blockages.
- Development Services engineers and planners reviewed plans for more than 90 development projects in 2019.
- Construction inspectors logged more than 5,100 utility inspections at new and redeveloped sites.

NPDES program in Washington state. The program requires the implementation of local stormwater management programs. Phase I of the NPDES stormwater permit program applied to only six local governments. Phase II of the NPDES rules extended coverage to operators of regulated small municipal separate storm sewer systems (MS4s), including Redmond, serving less than 100,000 people.

In recent years the Federal Communications Commission (FCC) updated 47 CFR Part 1 regarding telecommunication equipment deployment which prompted municipalities, including Redmond, to revise local codes for compliance. The FCC regulates health concerns of RF frequencies and restricts local jurisdictions from setting additional regulations on frequencies. As the telecommunication regulations and technology progress in the upcoming years, the City of Redmond anticipates that further updates will be needed.

State Context

Utility planning in Washington is guided by the Growth Management Act (GMA), adopted in 1990 in response to rapid population growth and concerns with suburban sprawl, environmental protection, quality of life and related issues. The GMA requires the establishment and maintenance of the Urban Growth Areas (UGAs). The land within UGAs is designated for urban uses; the land outside UGAs is set aside for rural uses. This division makes the provision of public facilities and services more efficient by providing for contiguous and compact urban lands, while protecting rural resources, such as farming, logging, and fish and wildlife habitats. The GMA requires jurisdictions that fully plan under the GMA, like Redmond, to include a utilities element in their comprehensive plans ([RCW 36.70A.070\(3\)](#)).

Utility planning and operations are also governed by various state laws and regulations. Among these are:

- [WAC 365-196-420](#), which requires that the utilities element of a comprehensive plan contain the general location, proposed location, and capacity of all existing and proposed utilities, including, but not limited to, electrical lines, telecommunication lines, and natural gas lines.
- [WAC 173-240-050](#) sets minimum requirements for general sewer plans adopted by local governments.
- [Chapter 90.48 RCW](#) addresses water pollution control. RCW 90.47.035 provides the Washington State Department of Ecology rule-making authority to regulate water quality standards; implemented by WAC 173-240-010.
- [Chapter 35.99 RCW](#) addresses Telecommunications and Cable service permitting in right-of ways.
- [Chapter 70A.205 RCW](#) requires that each county, in cooperation with the cities located in the county, prepare a coordinated, comprehensive solid waste management plan. Redmond approved the King County Solid Waste Management Plan on July 2, 2019.

Regional Planning Context

Redmond participation in regional issues simultaneously advances the interests of the Redmond community and works toward regional goals. Some of these collaborative efforts are with:

- Puget Sound Regional Council, the metropolitan planning organization that develops overarching multicounty planning policies for the four-count Seattle metropolitan area. A deeper analysis of specific multicounty planning policies is discussed later in this report.
- Cascade Water Alliance (CWA), a regional water supplier. Redmond’s drinking water aquifer provides roughly 40% of Redmond’s drinking water needs; the remaining 60% comes from the CWA.
- American Public Works Association Stormwater Managers
- Puget Sound Partnership, a state agency leading the region’s collective effort to restore and protect Puget Sound. The Partnership created and now manages the infrastructure needed to enable and encourage partners to come together to develop and implement priority actions needed to accelerate ecosystem recovery.

Puget Sound Regional Council

The Puget Sound Regional Council (PSRC) develops policies and makes decisions about transportation planning, economic development, and growth management throughout the four-county Seattle metropolitan area surrounding Puget Sound.

Puget Sound Regional Council’s VISION 2050 establishes the following goal for public services, including the provision of utilities: “The region supports development with adequate public facilities and services in a timely, coordinated, efficient, and cost-effective manner that supports local and regional growth planning objectives” (PSRC, 2020). Relevant policies from the VISION 2050 Public Services chapter include:

- **PS-2:** Promote affordability and equitable access of public services to all communities, especially the historically underserved. Prioritize investments to address disparities
- **PS-3:** Time and phase services and facilities to guide growth and development in a manner that supports the Regional Growth Strategy.
- **PS-8:** Develop conservation measures to reduce solid waste and increase recycling.
- **PS-9:** Promote improved conservation and more efficient use of water, as well as the increased use of reclaimed water, to reduce wastewater generation and ensure water availability.
- **PS-13:** Promote the use of renewable energy resources to meet the region’s energy needs.
- **PS-16:** Plan for the provision of telecommunication infrastructure to provide access to residents and businesses in all communities, especially underserved areas.
- **PS-22:** Provide residents of the region with access to high quality drinking water that meets or is better than federal and state requirements.

Countywide Planning Policies

King County has created countywide planning policies (CPPs) that provide a framework for utility planning across local jurisdictions. King County and all cities and towns of King County are responsible for ensuring that their respective comprehensive plans are consistent with and implement the CPPs. Utilities include services and infrastructure that provide water supply, sewage

treatment and disposal, solid waste disposal, energy, and telecommunications. Providing these utilities in a cost-effective way is crucial to upholding the health and safety of King County residents and to implementing the Regional Growth Strategy.

Redmond's utility policies must be consistent with King County CPPs. The following provides a high-level, non-comprehensive, summary of key CPP policy directives.

- **PF-4:** Develop plans for long-term water provision to support growth and to address the potential impacts of climate change on regional water resources.
- **PF-6:** Coordinate water supply among local jurisdictions, tribal governments, and water purveyors to provide reliable and cost-effective sources of water for all users, including residents, businesses, fire districts, and aquatic species.
- **PF-11:** Require all development in the Urban Growth Area to be served by a public sewer system except:
 - a. single-family residences on existing individual lots that have no feasible access to sewers may utilize individual septic systems on an interim basis; or
 - b. development served by alternative technology other than septic systems that:
 - Provide equivalent performance to sewers;
 - Provide the capacity to achieve planned densities; and
 - will not create a barrier to the extension of sewer service within the Urban Growth Area.
- **PF-13:** Reduce the solid waste stream and encourage reuse and recycling.
- **PF-15:** Promote the use of renewable and alternative energy resources to help meet the county's long-term energy needs, reduce environmental impacts associated with traditional energy supplies, and increase community sustainability.
- **PF-16:** Plan for the provision of telecommunication infrastructure to serve growth and development in a manner consistent with the regional and countywide vision.

In addition to the countywide planning policies, King County has its own comprehensive plan. The King County Comprehensive Plan is particularly relevant to utility planning because the plan presents other agencies, such as cities and special purpose districts, with King County's position on large-scale matters such as annexation, urban growth areas, environmental protection and others. For instance, Chapter 9 of the King County Comprehensive Plan addresses services, facilities, and utilities, and includes public sewer systems in urban and rural areas. The provisions and policies generally reflect the premise of countywide planning policies that sewer systems will serve urban areas and, in general, that they are not appropriate to serve rural areas.

Utility planning and operations is also guided by the following King County planning documents:

- 2019 King County Hazard Mitigation Plan - Annex. This plan assesses natural and human-caused hazards that can impact our region and develops strategies to reduce risk and build resilience. Nearly 60 planning partners (including school districts, water districts, and cities) participated in the process and developed annexes to this plan. Redmond City Council approved the City's annex to this plan in 2019. The annex includes a hazard risk summary for sixteen hazards, addresses vulnerable populations, and outlines goals and strategies.
- 2019 King County Solid Waste Plan. Redmond participates in a coordinated solid waste management plan with other King County cities. This plan establishes policy guidance for the

King County solid waste system, which includes six urban transfer stations and four rural transfer facilities, the Cedar Hills landfill, and waste prevention and recycling programs

- Snoqualmie Valley/NE King Community Service Area. This subarea plan is currently underway with anticipated adoption in mid-2023. The plan will establish a vision, goals, and policies to guide development decisions and address future King County services, programs, facilities, and capital improvements. This plan will replace the outdated East King County Community Plan.
- Title 13 of the King County Code sets requirements for water and sewer systems, including a requirement that sewer and water comprehensive plans consider opportunities for reclaimed water. Although Redmond does not operate a wastewater treatment plant, reclaimed water is available to the City from the Brightwater Treatment Plant located in Woodinville.

Local Planning & Regulatory Context

The Utilities Element of the Redmond Comprehensive Plan guides the planning and operation of utilities in Redmond. The general policy direction of the Comprehensive Plan is that infrastructure and services should meet the needs of a growing population and promote a safe and healthy community. Private utilities, such as solid waste removal and recycling, gas, electric, telecommunications and cable services are provided under franchise or other agreements. For these utilities, the City ensures that sufficient area is available to locate such facilities and provides a reasonable regulatory climate.

Key Utilities Element policies include:

- **UT-27** Ensure that the City of Redmond is the primary provider of wastewater service within the city limits.
- **UT-28** Require connection to the City wastewater system for all new development and for existing uses when development, such as a short plat, subdivision or other significant land use action, occurs to that property. Extend a waiver in limited circumstances where the economic impact of connection is high and there is no public safety concern.
- **UT-31** Support a regional approach to wastewater treatment by contracting with King County for transmission and treatment of Redmond's wastewater.
- **UT-75** Promote decreased energy consumption and enhanced energy efficiency throughout the City's building stock
- **UT-83** Promote a wide range of telecommunications options. This can include:
 - Making City facilities available for placement of antennas,
 - Treating attached cellular base antennas as other building or rooftop appurtenances, and
 - Support website communication between the City and its residents and customers.
- **UT-88** Maintain Redmond's competitiveness in support of businesses, residents and visitors by promoting access to advanced and affordable communications technology citywide.

Other local planning documents that guide the provision of utilities include:

- Stormwater Comprehensive Plan. This is the City's long-range Stormwater and Natural Resources planning document. The plan provides goals and guidance for managing all

aspects of stormwater management and basin planning within Redmond. The plan update is anticipated in 2023.

- The Stormwater Technical Notebook locally adopts and modifies the Washington State Department of Ecology Stormwater Management Manual for Western Washington, as amended, and contains requirements and design standards for stormwater management systems.
- The Watershed Plan will support and reside in the Stormwater Master Plan. This work is anticipated to begin in 2021. Water System Plan, 2011-2017. Some foundational work was completed in 2020 in preparation for the anticipated in 2023 update. This 2011 Water System Plan (Plan) describes the City's water production and distribution facilities, operations, and compliance with State and federal drinking water regulations. This Plan also identifies capital improvements needed to resolve deficiencies, to support continued system maintenance, and to supply future growth within the water service area.
- 2014 General Sewer Plan. The General Sewer Plan is currently being updated with adoption anticipated in late 2021. The Plan will be consistent with the strategy and policies presented in the 2018 King County Comprehensive Plan and will comply with the adopted Countywide Planning Policies, including separate sections addressing the various required planning elements mandated by the GMA. The current plan includes an evaluation of the existing sewer system and identification of additional facilities needed to accommodate the planned growth to comply with state regulations.

Redmond Regulations

Utility regulations protect Redmond's natural environment and resources. Conservation and protection of existing resources ensures a continued supply of clean water and energy. For example, the City protects the natural environment by developing stormwater systems to prevent or reduce excess stormwater runoff, by designing and upgrading systems and plans to prevent damage to the environment, by fostering conservation operationally and by implementing low-impact development practices. Specific regulations are discussed in the relevant current condition section for each utility.

Redmond Partnerships

Some issues cross jurisdictional boundaries and so require coordination with federal, state, and local governments, non-governmental organizations, business associations, and other potential partners to ensure that Redmond's interests are fully represented in regional, state and national dialogues. Specific partnerships are detailed in each current condition section. Rather than list every partnership for each utility here, relevant partnerships are described under each utility below.

Current Conditions

Water and Stormwater

Utility Infrastructure that keep our water safe, clean and flowing represent a complex mix of pipes, valves, pumps, reservoirs and tanks. Approximately 40% of the City's water supply is provided by groundwater, with the remainder supplied from the Cascade Water Alliance (Cascade). Redmond's Water utility supplies water to more than 19,500 businesses, houses, and multifamily units. City staff operate and maintain:

- 333 miles of water main and 12,650 water main valves (also called isolation valves)

- A groundwater monitoring network of 96 wells throughout the City
- 4,150 hydrants
- Three City-owned pump stations and three pump stations jointly owned with neighboring cities
- Seven City-owned reservoirs three reservoirs jointly owned with neighboring cities.
- Four water service areas: Well Service, Rose Hill, Overlake/Viewpoint, and Novelty Hill, in total containing 22 pressure zones.
- Compliance for 7,395 backflow assemblies to help protect the City's potable water supply (drinking water) from contamination as part of the Cross Connection Control Program.

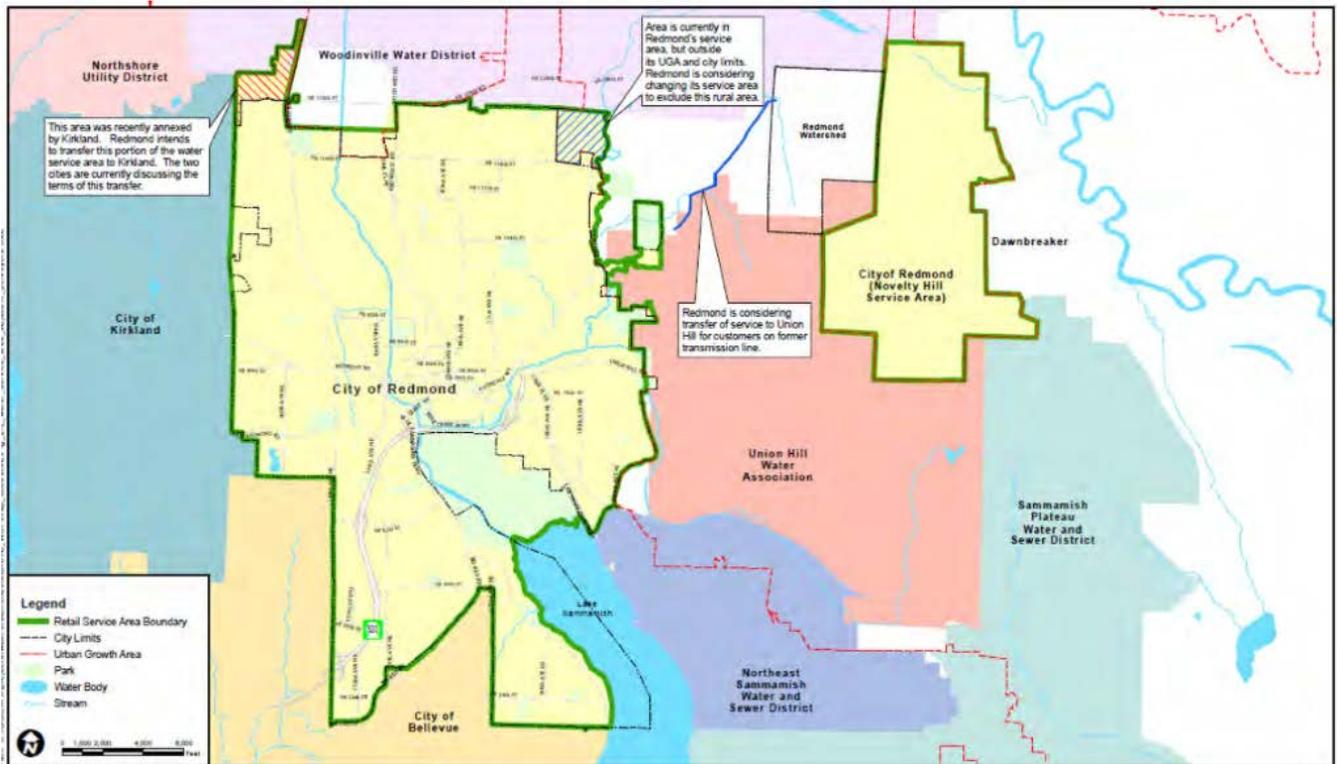
Customers on the west side of Lake Sammamish and the Sammamish River, as well as those who live in Redmond Ridge and Trilogy Urban Planned Developments, are served with water that comes from the Tolt Watershed in the Cascade Mountains. Customers east of Lake Sammamish and the Sammamish River are served by well water from Redmond's aquifer. During the summer, water from the Tolt is blended with the groundwater to help meet peak summer demand. Water delivered to Redmond's customers is produced from a combination of sources, including five wells owned and operated by the City, as well as regional water supply produced from Seattle Public Utilities' (SPU's) Tolt River source. This regional supply is provided through Redmond's membership in the Cascade Water Alliance (Cascade).

A total of nine reservoirs, one shared with the City of Bellevue and two shared with the City of Kirkland, provide storage capacity to meet routine system operational needs, as well as to support fire suppression and emergency standby requirements. Over 320 miles of piping delivers water throughout the City's distribution system.

See Figure 1 for a map of the service area. The 19,500 customers include a residential population of approximately 70,000 that swells to approximately 115,000 during business hours. Major employers receiving water from the Redmond system include the Microsoft and Nintendo headquarters. The 2016 water demand forecast was 8.2 million gallons per day¹.

¹ City of Redmond Water System Plan, 2011.

FIGURE 1 - WATER SERVICE AREA²



The City of Redmond uses a combination of traditional onsite stormwater management facilities, low-impact development techniques and regional stormwater management facilities. Such facilities may include vaults, ponds, and swales for each development where the developer finances the design and construction of these controls. In commercial sites, property owners are responsible for maintaining the facilities. In residential neighborhoods, these may be turned over to the City to maintain.

Stormwater utility staff:

- Ensure that public and private stormwater systems are planned, developed, and maintained to prevent flooding, protect water quality, and preserve natural stormwater systems,
- Monitor water quality and provide leadership and focus for community efforts working toward improved stormwater management,
- Identify needs for capital improvement of the stormwater systems including streams and habitat, and prioritize, select, and construct those improvements,
- Ensure that City construction and maintenance projects are planned and implemented to cause as little, short- and long-term harm as possible to the environment, and
- Are responsible for ensuring proper maintenance and operation of all public and private stormwater systems within the City limits under the City's NPDES permit.

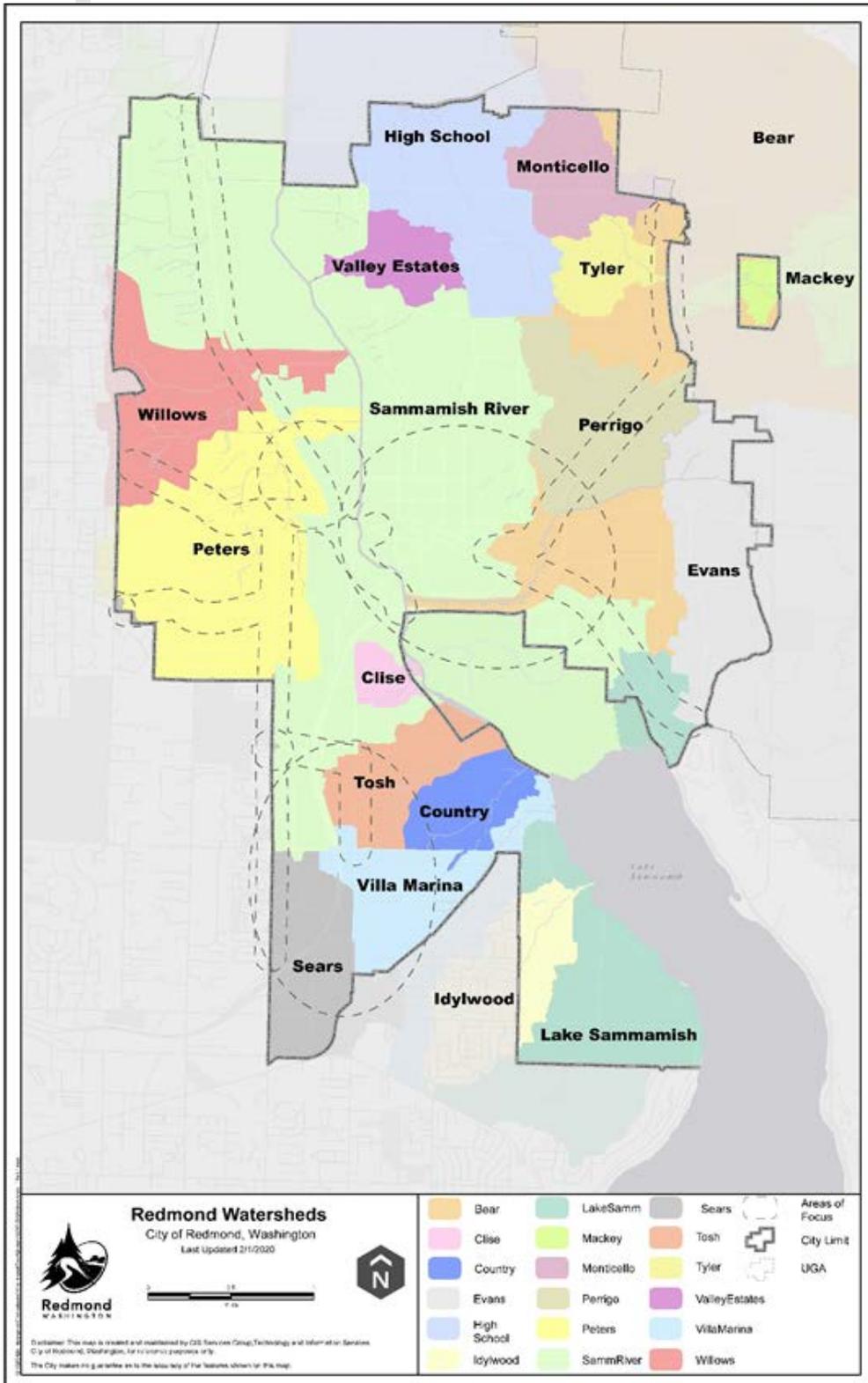
² City of Redmond Water System Plan, 2011

A quick “by the number” overview of the stormwater utility reveals:

- More than 323 miles of City-owned pipes, over 11,000 catch basins, and more than 400 stormwater ponds, vaults, and other stormwater management facilities.
- 11 billion gallons of rain that falls on Redmond in an average year to prevent flooding and protect local streams. (Estimate based on the average of 40 inches of rain per year and the 16-square-mile area encompassed by Redmond.)
- Redmond is home to more than 50 miles of streams, in addition to two major creeks (Bear and Evans), the Sammamish River, and Lake Sammamish. Chinook, sockeye, Coho salmon, and other native fish and wildlife call Redmond home.
- Redmond’s Illicit Discharge Detection and Elimination Program investigates all reports of illegal discharges or connections to the City’s stormwater or receiving water networks. City staff respond to 200+ reports annually.
- There are approximately 19 watersheds that lie at least partially within the city limits.
- City stormwater crews inspected 100% of the 2,733 City-owned catch basins and cleaned 1,423 of those that required cleaning.

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FIGURE 2 - WATERSHEDS³



³ Source: City of Redmond GIS Services, 2020.

Regulations and Programs

Water resources are important City assets that require significant management, capital investment and maintenance. The local regulatory framework that guide the management of these resources includes the following:

- RMC 15.24 contains stormwater management regulations for development and redevelopment; it codifies the Stormwater Technical Notebook as a supplement to the code.
- RMC 13.06 authorizes the Illicit Discharge Detection and Elimination (IDDE) program designed to prevent contamination of groundwater and surface water by monitoring, tracking, and removing non-stormwater discharges into the stormwater drainage system.
- RMC 13.29 requires that the Mayor shall approve a Water Shortage Response Plan that establishes actions and procedures for managing water supply and demand during anticipated or actual water shortages.
- RZC 21.17.010 sets standards for low-impact development, a stormwater management technique that helps preserve the quality of Redmond's groundwater.

Redmond's stormwater management programs focus on stormwater runoff, groundwater recharge, surface waters, and riparian (water-related) habitat. Programs address basic conveyance of runoff, food hazard reduction, water quality issues, riparian habitat protection, and protection of groundwater quality. It is especially important that new development or significant redevelopment effectively manages stormwater with appropriate facilities to ensure the public's protection.

Partnerships

The Cascade Water Alliance (Cascade) is a municipal corporation comprised of five member cities (Bellevue, Issaquah, Kirkland, Redmond, and Tukwila) and two water and sewer districts (Sammamish Plateau Water and Sewer District, and Skyway Water and Sewer District). These cities and districts approach water management collaboratively to provide a safe, clean, and reliable water supply.

Kirkland-Redmond-Bellevue Interlocal Agreements address how portions of a water system are owned and operated. These interlocal agreements describe how several water facilities are shared and operated, including;

- Two water tanks with Bellevue and Kirkland
- One reservoir with Kirkland
- Three pump stations with Bellevue and Kirkland

FIGURE 3 LEASED TELECOM EQUIPMENT MOUNTED ON TOP OF THE ROSE HILL WATER TANK



To effectively perform their work, stormwater staff collaborate with several organizations including:

- American Public Works Association (APWA) Stormwater Managers Group, an interjurisdictional association of regional stormwater practitioners which share regulatory, technical, product and project information to develop and grow effective stormwater programs.
- STORM (Stormwater Outreach for Regional Municipalities), the focus of which is to design and implement regional public awareness and behavior change programs focused on reducing stormwater pollution impacts.
- NPDES Eastside Coordinators Group, an informal consortium of local governments that work together to understand and implement municipal stormwater permit requirements.

Wastewater and Solid Waste

Redmond's wastewater system consists of a network of mains, trunks, force mains, and pump stations that transport the collected sewage to King County Water Treatment Division interceptors. The City does not operate a wastewater treatment plant. Most of Redmond's sewage is ultimately transported to the County's Brightwater Treatment Plant. The exception is sewage collected from the Overlake area, which flows to Bellevue and ultimately to the King County Water Treatment Division Renton Treatment Plant.

- Redmond's Wastewater Utility has more than 16,000 sanitary sewer connections.
- The Wastewater Utility actively inspects and cleans more than 233 miles of pipes every seven years.
- The Wastewater Utility routinely inspects and cleans 7,336 manholes.
- Redmond's Wastewater Utility operates 22 wastewater lift stations. City personnel clean these lift stations on a monthly schedule.
- The wastewater system serves a residential population of 69,900 in 9,600 acres (2020) within the City limits and 3,500 residential households in 2,000 acres in the Novelty Hill area.

Aside from serving the area within the city limits, Redmond also provides water and sewer services to Redmond Ridge and Trilogy Urban Planned Developments within the Novelty Hill area located east of Redmond in unincorporated King County. Novelty Hill has been designated as urban and Redmond has agreed to be the service provider for sewer but for pipes only, not treatment. The City will continue to provide service to new growth within the urban growth area that is consistent with City and County planning and service policies.

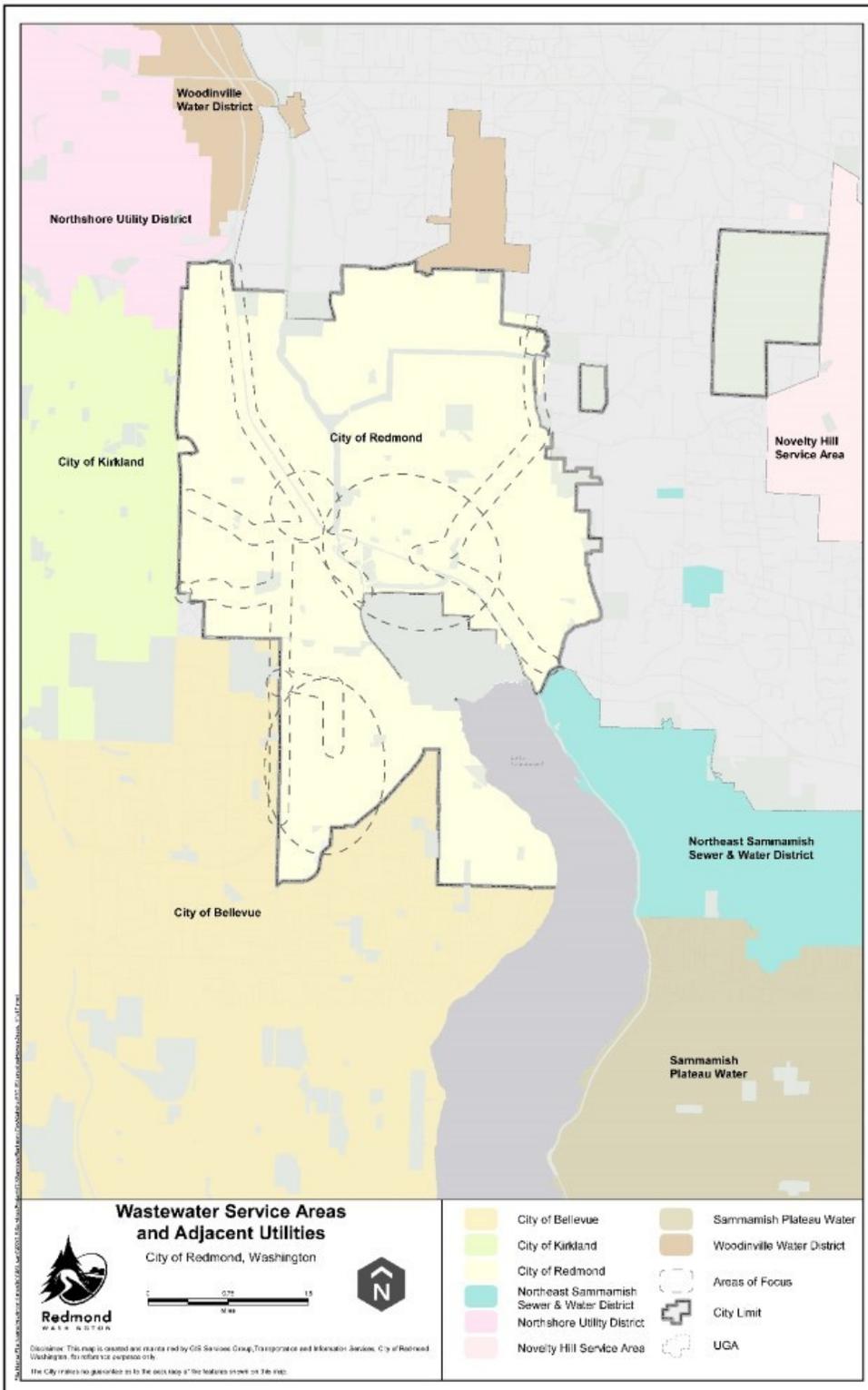
A portion of this area is located north of the Redmond/Woodinville Water District interlocal line. An interlocal agreement with the District allows Redmond to serve Novelty Hill which is now almost completely developed. The single family and multi-family areas have been built out, two schools have been constructed, and only a few undeveloped parcels remain in the business park area, some of which are currently under construction.

While most of Redmond's residents are served by the wastewater utility, some areas still use onsite sewage (OSS) disposal systems. This term typically refers to a system using a septic tank in combination with a drainfield, such as a leachfield or mound. When operating properly, onsite sewage disposal systems are an acceptable means of treating and disposing of sewage on

a small scale. If onsite systems are improperly maintained or constructed in soils with poor percolation rates, OSS disposal systems can fail. Poorly treated septic waste can surface or pond on the site or percolate into the groundwater. Approximately 500 parcels within City of Redmond boundaries are estimated to be on OSS systems.

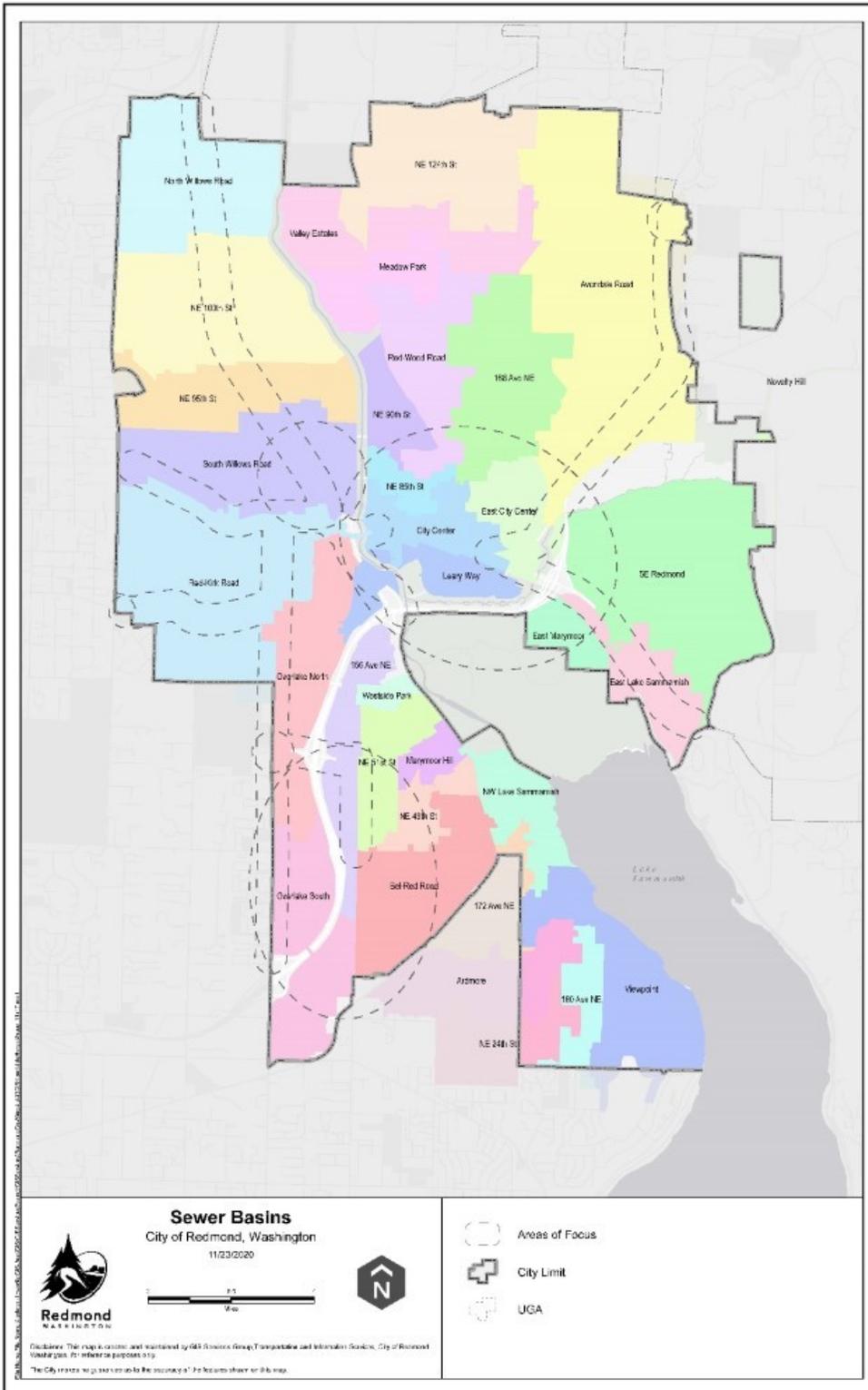
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FIGURE 4 - WASTEWATER SERVICE AREA⁴



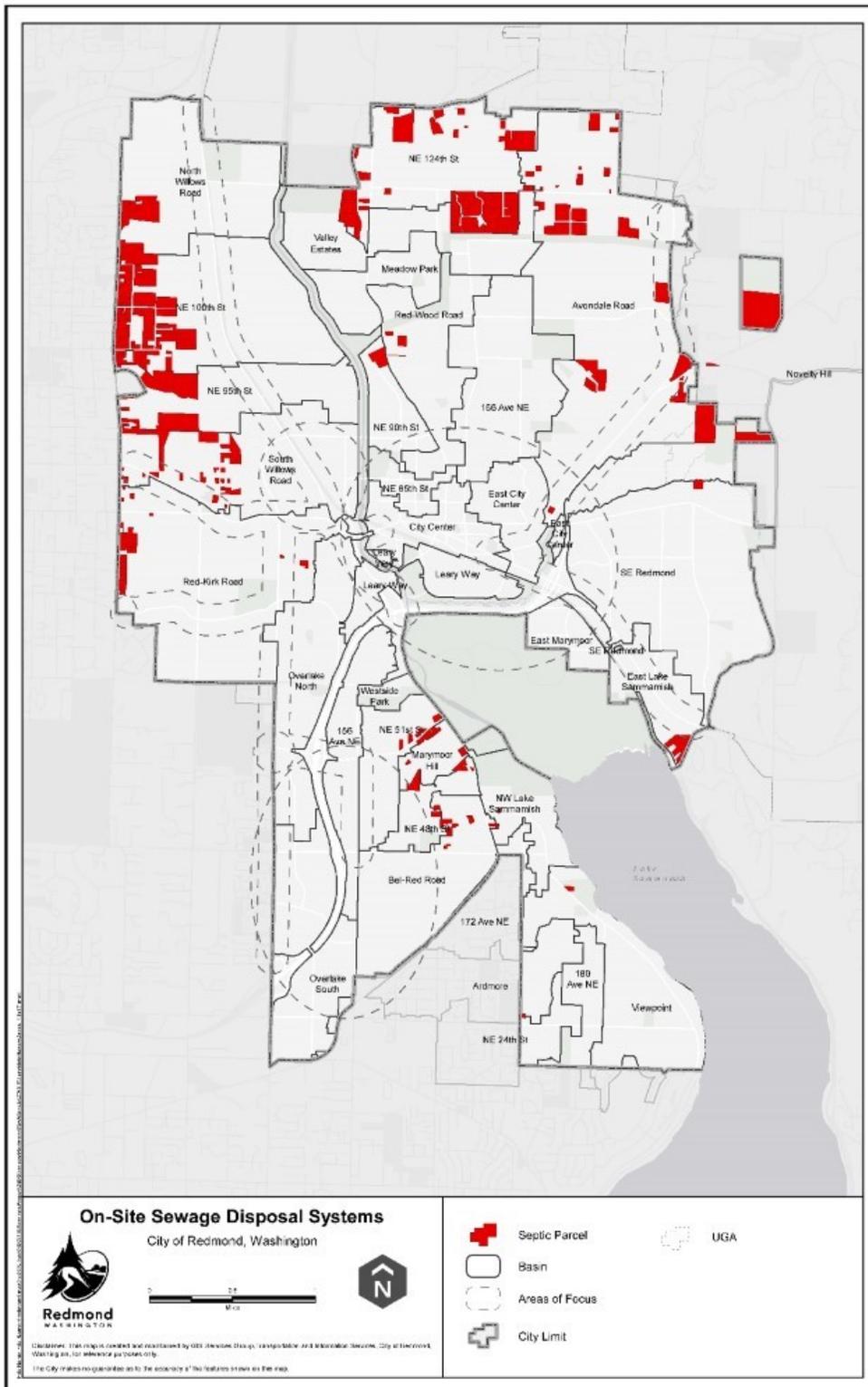
⁴ City of Redmond General Sewer Plan Update, 2019.

FIGURE 5 - SEWER BASINS⁵



⁵ City of Redmond General Sewer Plan Update, 2019

FIGURE 6 - ON-SITE SEWAGE DISPOSAL SYSTEMS⁶



⁶ City of Redmond General Sewer Plan Update, 2019

Regulations and Programs

Current discharge regulations contained in RMC [13.04](#) provide the basis and support for elements of a Source Control Program such as inspections and education. The primary purpose of Redmond's Source Control Program is to limit what materials enter the water supply through wastewater and solid waste pathways.

Partnerships

King County Wastewater Treatment Division (WTD) operates and maintains several interceptors and trunks within Redmond's service area. City of Redmond wastewater facilities include joint-use pipes, which are owned with the City of Bellevue or Northeast Lake Sammamish Sewer and Water District.

King County Department of Health provides standards for the environmentally safe operation of septic systems. In addition, Redmond's sewer treatment services are provided by King County and depending on where a property is in Redmond, there is one of two facilities that will treat its sewage - either the Brightwater Treatment Plant which opened in 2011 or the South Treatment Plant in Renton. King County published a Comprehensive Solid Waste Management Plan in 2019, which guides aspects of regional solid waste management.

The Northeast Lake Sammamish Sewer and Water District is located at the southeastern corner of Redmond and primarily serves the northern portion of the Sammamish Plateau. Redmond and the Northeast Sammamish Sewer and Water District share pipeline facilities to convey the wastewater to King County WTD's system.

Redmond also partners with other partners via interlocal agreements (ILA) to provide utility sewer service.

- The City has partnered with the Woodinville Water District to provide water and sewer service to a portion of the City (ILA Contract 5359).
- The City has previously partnered with the City of Kirkland with two different ILAs to provide various utilities (ILA Contracts 8679 and 6465)

Energy

Electricity and natural gas is provided in Redmond by Puget Sound Energy (PSE). PSE is regulated under various federal and state statutes. PSE operates in Redmond under a franchise agreement with the City that addresses the operation of PSE facilities in public right-of-way, among other topics.

Partnerships

The City is represented on Puget Sound Energy (PSE) advisory groups for new utility line siting, such as the Stakeholder Advisory Group (SAG) for the proposed Sammamish-Juanita line. In the recent past the City developed a good working partnership with PSE with respect to green power and energy efficiency. The City has hosted multiple events at City Hall where PSE offered energy efficient lighting at deep discounts to Redmond citizens. In addition, the City coordinated with PSE to arrange small business energy retrofits in the Downtown and to hold a campaign for the residential Green Power Program. Also, the City executed an agreement with PSE for their Green Direct Program. Lastly, PSE continues to offer many rebates for energy efficiency programs. The City has

qualified for multiple PSE rebates over the years for our Energy Services Company (ESCO) projects with the State Department of Enterprise Services.

Telecommunications

Telecommunication facilities can be located on private land, city land or in the public right-of-way. Examples of city-owned locations are city parks, on top of city water tanks. All requests for telecommunication facilities are reviewed by city plan reviewers as well as staff from relevant departments, such as Parks staff for facilities located at parks or, Public Works staff for facilities located on water tanks, reservoirs, or light poles in the right-of way. Redmond's three major cellular providers are AT&T, T-Mobile and Verizon.

Regulations and Programs

To be compliant with FCC rule updates, in 2018 Redmond substantially revised RMC 1.214, RZC 21.56 (siting and design) and RZC 21.76 (review process) to accommodate small cell technology, enable their deployment within the city, and to address permit review timelines or "shot clocks", minor aesthetic standards, and clarify definitions. Then in 2019, Redmond amended local regulations again to comply with updated FCC rulings which imposed limitations on local municipalities regarding processing and review of all permits associated with the deployment of Fourth Generation (4G) and Fifth Generation (5G) mobile communication system infrastructure. 5G deployments are typically deployed as small cell wireless facilities that feature equipment which is smaller and more densely sited than past generations of equipment. Staff developed a streamlined review process to efficiently administer the review of telecommunication permit applications including additions of new design guidance.

Partnerships

The Federal Communications Commission (FCC) develops and executes policies and procedures for the licensing of wireless services. This ranges from amateur radio to mobile broadband services.

A local telecommunication stakeholder group meets regularly to discuss how neighboring municipalities would change their codes to accommodate the recent FCC rulings.

Trends Analysis

Keeping pace with land use changes is one of the salient trends facing utilities planning. Utility system planning has been particularly important in recent decades to prepare for the City's higher growth areas in the Downtown and Overlake neighborhoods, and will be important going forward in those areas and Marymoor Village, which will transform over time into a small urban village. At the same time, maintaining and replacing infrastructure will be an important trend over the life of the Comprehensive Plan as infrastructure ages. Investing in system replacement is exemplified in the City's capital investment strategy (CIS) approach, which includes on-going investment to replace or upgrade system components when routine maintenance is no longer prudent or when the integration of new technology provides more reliability, allows the City to achieve sustainability goals by becoming more green and efficient.

Since the last Comprehensive Plan update, several land use changes and improvements have occurred within the City's utility service areas, including:

- The North Redmond and North Rose Hill neighborhoods have experienced hundreds of new homes and more construction planned.
- The SE Redmond area has seen significant commercial growth with Costco, Fed Ex, and MV Transportation developing along 188th Ave. NE, and some multi-family growth along East Lake Sammamish Parkway.
- Redmond's downtown and Overlake areas have several mixed-use developments, including the hundreds of units built in Overlake Village, and many others such as Seritage, Esterra Park, Modera Overlake, and Capstone Avalon under construction.
- In late 2017 Microsoft began redeveloping its world headquarters which will add about 3 million additional square feet of office space. Relevant to utility planning, all new office buildings will reuse harvested rainwater in flush fixtures and low-flow systems, which is projected to save more than 5.8 million gallons annually.

Policy Considerations

The following policy considerations are organized by four Redmond 2050 themes of equity and inclusion, sustainability, resilience, and being a technology forward community. They represent broad framing tools that can guide policy review for the various utility topics discussed above.

Sustainability

- Climate change will affect how the City delivers utility services. We expect drier summers and more intense winter storms in the coming decades. These changes will directly impact regional drinking water supply and stormwater management practices. As stewards of the environment, the City also needs to be conscious of how the utilities' actions contribute to climate change.
- Growth allocations for the Redmond 2050 comprehensive plan update require the City to accommodate a significant increase in population and employment. Policies should address keeping pace with planned growth.
- Redmond strives to be a regional leader in all our endeavors and revising the language in UT-6, shown below, could focus City direction

UT-6 Conduct City operations in a manner that leads by example through activities, such as recycling, water conservation, energy conservation and low-impact development processes whenever possible.

Technology Forward

- Technology is changing. The City's asset management program, use of real time systems management tools, adoption of in the field data capture and entry systems, and other innovative technologies offer us new ways to gather information and optimize management of utility systems. Advances in technology could also allow the utilities to use data to respond to

problems more quickly and effectively. UT-3 addresses the use of technology in utilities and is shown below.

UT-3 Encourage the use of innovative technologies to:

- Provide and maintain utility services;
- Reduce the negative impacts of additional utility service demands;
- Improve the existing service; and
- Reduce, where appropriate, the overall demand on utility systems.

Resiliency

- The City is becoming denser and more urban. As Redmond continues to grow, the Utilities will need to adapt design standards and operations to land development patterns.
- The City's infrastructure is aging. Policies should address timely and systematic maintenance and replacement activities and financing across all utility systems.
- Education, employment, and emergency communications all continue to rely more and more upon telecommunications. Effective telecommunications reduce the transaction cost in different sectors of the economy and allow for independent economic agency. A resilient telecommunications network is essential to economic vitality and equitable access to information, goods and services, and opportunities for social connection. Policy UT-83 addresses this topic as shown below.

UT-83 Promote a wide range of telecommunications options. This can include:

- Making City facilities available for placement of antennas,
- Treating attached cellular base antennas as other building or rooftop appurtenances, and
- Support website communication between the City and its residents and customers.

Equity and Inclusion

Policies UT-7 and UT-8 address how utilities are financed and thus have a strong nexus with the theme of equity and inclusion; they are shown below. As part of this update, the City should also be mindful of ensuring a fair distribution of utility service in the community.

UT-7 Require development to pay for or construct the growth-related portion of infrastructure needs.

UT-8 Create equity in financing of capital facilities among city residents and those outside the city by reflecting the full cost of providing service outside city limits; for example, in the Novelty Hill service area.