5 UTILITIES ELEMENT

I. INTRODUCTION

The Growth Management Act requires this comprehensive plan to include the general location and capacity of all existing and proposed utilities on Mercer Island (RCW 36.70A.070). The following element provides that information for water, sewer, stormwater, solid waste, electricity, natural gas and telecommunications.

One main goal of the Utilities Element is to describe how the policies contained in other elements of this comprehensive plan and various other City plans will be implemented through utility policies and regulations.

The Land Use Element of this Plan allows limited development that will not have a significant impact on utilities over the next 20 years. For that reason, many of the policies in this element go beyond the basic GMA requirements and focus on issues related to reliability rather than capacity.

POLICIES — ALL UTILITIES

1.1 Structure ~~Rates~~ rates and fees for all City-operated utilities ~~shall be structured~~ with the goal of recovering all costs, including overhead, related to the extension of services and the operation and maintenance of those utilities.

1.2 ~~The City shall e~~Encourage, where feasible, the co-location of public and private utility distribution facilities in shared trenches and assist with the coordination of construction to minimize construction-related disruptions and reduce the cost of utility delivery.

1.2 ~~The City shall e~~Encourage, where feasible, the co-location of public and private utility distribution facilities in shared trenches and assist with the coordination of construction to minimize construction-related disruptions, decrease impacts to private property, and reduce the cost of utility delivery. [PC Comment]

1.3 ~~The City shall e~~Encourage economically feasible diversity among the energy sources available on Mercer Island~~, with the goal of~~ to avoid~~ing~~ over-reliance on any single energy source.

1.4 ~~The City shall s~~Support efficient, cost effective and reliable utility service by ensuring that land is available for the location of utility facilities, including within transportation corridors.

1.5 ~~The City shall m~~Maintain effective working relationships with all utility providers to ensure the best possible provision of services.

1.6 Consider natural asset management as a part of utilities management.

II. WATER UTILITY

Mercer Island obtains its water from ~~the~~ Seattle Public Utilities (SPU). The City of Mercer Island purchases and distributes most of the water consumed on the Island under a ~~new~~ long-term contract with SPU that guarantees an adequate supply through the year 2062. In 1997, the City assumed the Mercer Crest Water Association that for many years had been an independent purveyor of SPU. It served a largely residential base with customers residing in the neighborhoods south of the Shorewood Apartments, and east and west of the Mercer Island High School campus areas of the Island. The Mercer Crest system was intertied and consolidated into the City utility during 1998-99. One small independent water association, Shorewood, remains as a direct service customer of SPU. The City is one of 19~~21~~ wholesale customers (Cascade Water Alliance and 18~~20~~ neighboring cities and water districts) of SPU.

The bulk of the Island's water supply originates in the Cedar River watershed and is delivered through the Cedar Eastside supply line to Mercer Island's 30-inch supply line. Mercer Island also is served periodically through the South Fork of the Tolt River supply system.

Water is distributed by the City through 113~~5~~ miles of mains (4-, 6-, and 8-inch) and transmission lines (10- to 30-inch) constructed, operated and maintained by the City. The City's distribution system also includes two four-million-gallon storage reservoirs, two pump stations, and 86 pressure-reducing valve stations.

Minimizing supply interruptions during disasters is a longstanding priority in both planning efforts and the City's capital improvement program. The City completed an Emergency Supply Line project in 1998-99. In 2001 following the Nisqually Earthquake, SPU strengthened sections of the 16-inch pipeline.

The year before the earthquake, the City completed extensive seismic improvements to its two storage reservoirs. As a result, neither was damaged in the earthquake. The improvements were funded through a hazard mitigation grant from the Federal Emergency Management Agency.

In 2004, the City completed a Seismic Vulnerability Assessment that examined how a major seismic event might impact the 30-inch and 16-inch SPU lines that supply water to the Island. The assessment predicted that the Island's water supply would likely be disrupted in a disaster such as a major earthquake. In response to the finding, City officials initiated a Water Supply Alternatives study before applying for a source permit for an emergency well, the first such permit to be issued in Washington State. Construction of the emergency well was completed in spring of 2010. The ~~City also constructed an emergency~~ well ~~, which~~ was designed and permitted to provide five gallons per day for each person on the Island for a period of seven to 90 days.

In 2014, the City took significant action to ensure high water quality standards after two boil water advisory alerts, including additional expanded collection of water quality samples, injection of additional chlorine, research into potential equipment upgrades and improvements, and a thorough review of the City's cross-contamination program, including the best means of overseeing the registration of certification of backflow prevention devices.

In 2021~~13~~, the City's total number of water customers was 7,537~~376~~.

In 2021, the City met the requirements of the 2018 America's Water Infrastructure Act through completion of a Risk and Resilience Assessment (RRA) and update of the Emergency Response Plan. Projects identified in the RRA will be included in future CIPs.

In 2022-2023, the City constructed a booster chlorination station at the reservoir site to boost residual chlorine levels in the reservoirs and throughout the distribution system to prevent coliform growth. Additionally, the Supervisory control and Data Acquisition (SCADA) system was upgraded. Together, they strengthen the water sypply system and improve system operations for water quality control.

FUTURE NEEDS

Both the water supply available to the City and the City's distribution system are adequate to serve growth projected for Mercer Island. ~~From 2014~~07 to 202~~1~~13, the number of water customers increased by ~~130~~31. New development, as anticipated by the Land Use Element of this Plan, will increase the City's total number of ~~water customers by approximately 500~~dwelling units by 1,239 and employment will increase by 1,300 new jobs, by ~~2035~~2044. Water system capacity and future service demand are calculated in the City of Mercer Island Water System Plan (WSP). The most recent update of the WSP was adopted in 2022. The WSP establishes that there is system capacity for 14,234 equivalent residential units (ERU). The WSP projects that there will be demand for 11,596 ERUs by 2036. Some maintenance and capacity improvements to the water system are planned during the planning period (2024-2044). Those projects are detailed in the WSP and have been added to the Capital Facilities Element Capital Facilities Plan (CFP) and Capital Reinvestment Plan (CRP). The capacity maintained and added through CFP and CRP projects is expected to provide sufficient water supply to accommodate the growth planned in this Comprehensive Plan.

~~In 2004, the City completed a Seismic Vulnerability Assessment that examined how a major seismic event might impact the 30-inch and 16-inch SPU lines that supply water to the Island. The assessment predicted that the Island's water supply would likely be disrupted in a disaster such as a major earthquake. In response to the finding, City officials initiated a Water Supply Alternatives study before applying for a source permit for an emergency well, the first such permit to be issued in Washington State. Construction of the emergency well was completed in spring of 2010.~~

The City does not plan to implement an aquifer protection program because there are no known aquifers in the vicinity of Mercer Island that are utilized by the City or any other water supplier.

Although aquifer protection is not a factor for future needs, species protection may be. On March 24, 1999 the National Marine Fisheries Service issued a final determination and listed the Puget Sound Chinook salmon as threatened or endangered under the Endangered Species Act (ESA). Like all communities in the Puget Sound region, Mercer Island will need to address a number of land use, capital improvement and development process issues that affect salmon habitat. However, Mercer Island may be better positioned to respond to the ESA listing than some due to the Island's small, unique environment with a lack of continuous rivers or streams, minimal amounts of vacant land available for new development, progressive critical areas regulations and previous attention to stormwater detention.

WATER UTILITY POLICIES

2.1 ~~The City shall continue to o~~Obtain a cost-effective and reliable water supply that meets all the needs of Mercer Island, including domestic and commercial use, fire-flow protection, emergencies, and all future development consistent with the Land Use Element of this Plan.

2.2 ~~The City shall continue to u~~Upgrade and maintain ~~its~~ the water distribution and storage system as necessary to maximize the useful life of the system. All system improvements shall be carried out in accordance with the City's Comprehensive Water System Plan and Capital Improvement Program.

2.3 ~~The City shall continue to w~~Work cooperatively with the Seattle Public Utilities and its other purveyors on all issues of mutual concern.

2.4 ~~The City shall continue to o~~Obtain Mercer Island's water supply from a supply source that fully complies with the Safe Drinking Water Act. For this reason, future development on Mercer Island will not affect the quality of the Island's potable water.

2.5 ~~The City shall c~~Comply with all water quality testing required of the operators of water distribution systems under the Safe Drinking Water Act.

2.6 ~~The City shall a~~Adopt an action plan to ensure Mercer Island's full participation in regional efforts to recover and restore Puget Sound Chinook salmon.

2.7 ~~The City shall a~~Aggressively promote and support water conservation on Mercer Island and shall participate in regional water conservation activities.

III. SEWER UTILITY

The City owns, operates and maintains the sewage collection system that serves all of Mercer Island. The Island's sewage is delivered to a treatment plant at Renton operated by the Metropolitan King County Government. At the Renton plant, the sewage receives primary and secondary treatment.

The City's system includes a total of 17 pump stations, two flushing pump stations, and more than 113 miles of gravity and pressure pipelines, ranging in diameter from three to 24 inches which ultimately flow into King County Department of Natural Resources & Parks (KCDNR) facilities for treatment and disposal at the South Treatment Plant in Renton. See Figure 1 — Major Sewer Facilities Service Mercer Island.

As of 2021~~2014~~, a total of 7,403~~7,292~~ residential and commercial customers were hooked up to the City sewer system.

FUTURE NEEDS

New development on Mercer Island, as anticipated in the Land Use Element of this Plan, is not expected to add significantly to the wastewater generated daily on Mercer Island. The number of customers ~~hooked up~~connected to the sewer system has increased ~~by 149 since 2004~~slowly and is expected to ~~increase~~ continue according to housing unit projections outlined in the 2021~~2002~~ King County Urban Growth Capacity~~Buildable Lands~~ Report.

Future sewer system needs are determined in the City of Mercer Island General Sewer Plan (2018 General Sewer Plan).

~~A~~The General Sewer Plan was developed in February 2003 ~~as an update to the 1994 Sewer System Comprehensive Plan~~ and ~~then~~ updated in 2018. ~~This Plan is scheduled for updating in late 2016.~~ The 201803~~3~~ General Sewer Plan identified a 20 year Capital Improvement Plan (CIP) which details the capacity improvements necessary for the system to accommodate planned future growth.~~variety of needs that were addressed during the next several years.~~ These included projects in four categories – general, pipeline, pump stations, and lake line. ~~replacing portions of the sewer lake line along the northwest shoreline, making collection system improvements, making pump station improvements, and replacing the pump station telemetry system.~~ A Sewer Lakeline Replacement feasibility study was completed in September 2002 and recommended replacement of a 9,000-foot segment of sewer lake line bordering the northwest shoreline of the Island to replace the rapidly deteriorating sewer and increase pipeline capacity to eliminate impacts to Lake Washington from periodic sewage overflows caused by inadequate capacity and poor system function. The replacement of the 9,000-foot segment was completed in 2010. The 2002 feasibility study also reported that the 9,000-foot segment was more critical than other sections, which were in acceptable condition. The City is scheduled for a ~~feasibility~~ project in 20280~~0~~ to perform a high level evaluatione of the condition of the entire sewer lake line and identify segments for further assessment to guide future lake line rehabilitation and replacement projects. ~~remaining AC main located in Reach 4, and evaluate options for replacement.~~ After the condition is assessed, a determination will be made on the schedule for replacement projects.

In 2002, Mercer Island successfully competed with other local cities for a share of $9 million allocated by King County to investigate and remove groundwater and stormwater commonly known as inflow/infiltration (I/I) from local sewers. The $900,000~~.00~~ pilot project on Mercer Island lined 16,000 feet of sewer in the East Seattle neighborhood (B~~b~~asin 54) in 2003. Post construction flow monitoring and computer modeling showed a 37 percent decrease in peak I/I flows.

The City must serve the sewer needs of its planned growth, much of which will be focused in the Town Center. While most of the Town Center's sewer system is adequate to meet future demand, some pipelines may exceed their capacity during extreme storms due to stormwater inflow/infiltration and will require monitoring to determine if larger diameter pipelines are warranted. The City will use substantive authority under the State Environmental Policy Act (SEPA) to require mitigation for proposed projects that generate flows that exceed sewer system capacity. The CIP includes projects that will increase system capacity.

King County is upgrading three miles of their sewer pipeline across north Mercer Island and their North Mercer Pump Station due to age and long term capacity needs. This three year project will be completed in 2025.

All future improvements to the sewer system will be addressed through a Capital Improvement~~s~~ Plan developed in conjunction with the updated General Sewer Plan and/or CIP budget.

SEWER UTILITY POLICIES

3.1 ~~The City shall r~~Require that all new development be connected to the sewer system.

3.2 ~~Existing single-family homes with septic systems shall be a~~Allowed ~~existing~~ single-family homes with septic systems to continue using these systems so long as there are no health or

environmental problems. If health or environmental problems occur with these systems, the homeowners shall be required to connect to the sewer system.

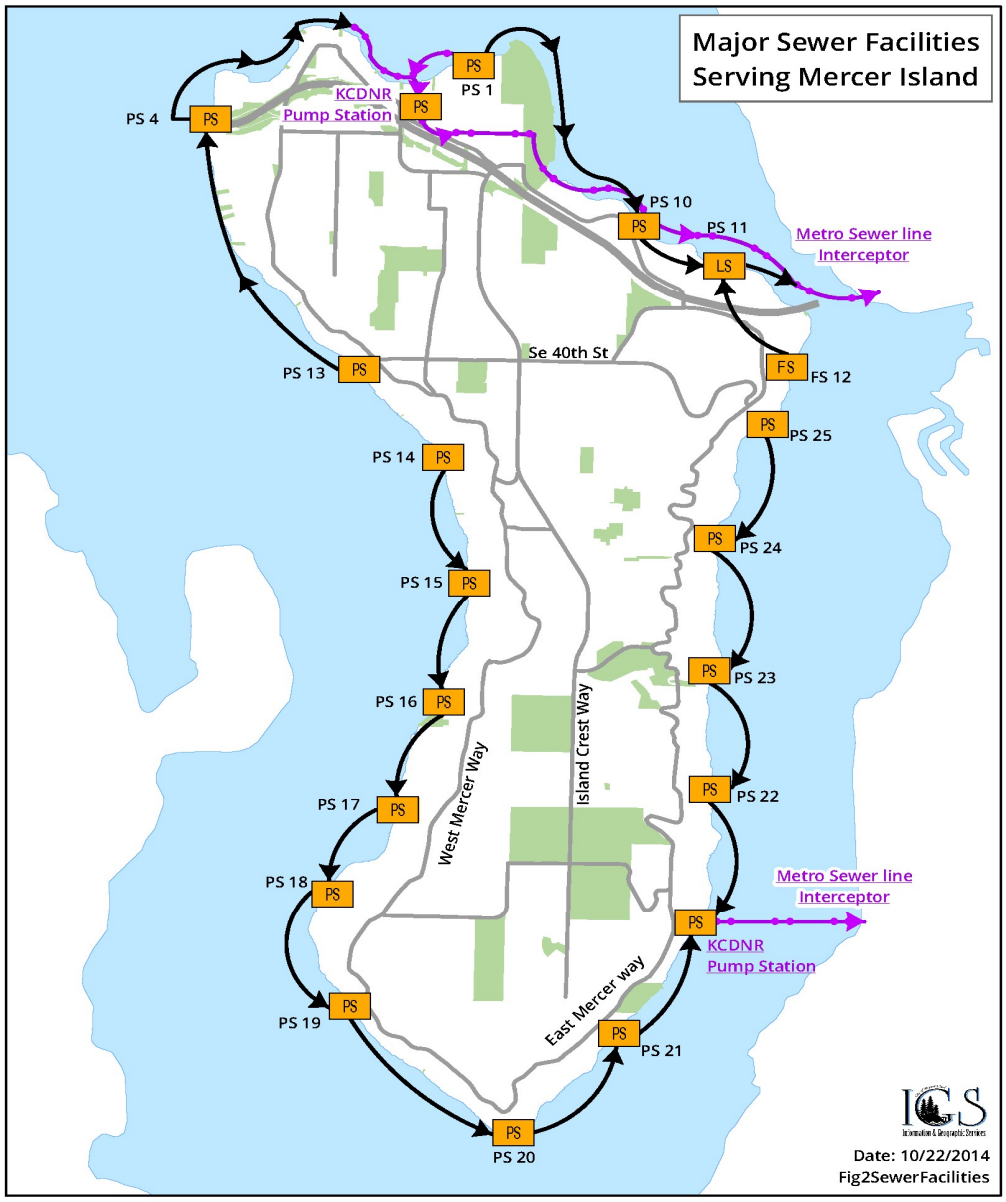
3.3 Require ~~A~~any septic system serving a site being re-developed ~~must~~ be decommissioned according to county and state regulations~~,~~ and that the site must be connected to the sewer system.

3.4 ~~The City shall a~~Actively work with regional and adjoining local jurisdictions to manage, regulate and maintain the regional sewer system.

3.5 ~~The City shall take~~Prevent overflows taking whatever steps are economically feasible ~~to prevent overflows~~.

3.6 ~~The City shall d~~Design and implement programs to reduce infiltration/inflow wherever these programs can be shown to significantly increase the capacity of the sewer system at a lower cost than other types of capacity improvements.

Figure 1. Major Sewer Facilities Service Mercer Island



IV. STORMWATER

Mercer Island's stormwater system serves a complex network of 88 drainage basins. The system relies heavily on "natural" conveyances. There are more than 15 miles of ravine watercourses that carry stormwater~~,~~ and 26 miles of open drainage ditches. ~~40~~ Forty percent of the ravine watercourses are privately owned, while roughly 70 percent of the drainage ditches are on public property. See Figure 2 — Stormwater Drainage Basins.

The artificial components of the system include 58 miles of public storm drains, 59 miles of private storm drains, and more than 5,502~~4,500~~ catch basins.

The public portion of the system is maintained by the City's ~~Maintenance~~ Public Works Department as part of the Stormwater Utility, with funding generated through a Stormwater Utility rate itemized on bimonthly City utility bills.

Mercer Island has no known locations where stormwater recharges an aquifer or feeds any other source used for drinking water.

FUTURE NEEDS

In May 1993, the City began preparing to make significant changes in the way it managed stormwater on Mercer Island. The catalyst for this effort was new regional, state and federal requirements.

During the second half of 1993, two of Mercer Island's drainage basins were studied in detail during a process that actively involved interested basin residents. The studies were designed to gauge public perception of drainage and related water-quality problems, and to evaluate the effectiveness of various education tools.

The information gained from these studies, along with additional work scheduled for mid-1994, was used to develop an Island-wide program of system improvements and enhancements and a financing structure for the program.

In the fall of 1995, the City Council passed two ordinances (95C-118 and 95C-127) that created the legal and financial framework of the Storm and Surface Water Utility and provided the tools to begin achieving the goals of "creating a comprehensive program that integrates the Island's private, public and natural and manmade systems into an effective network for control and, where possible, prevention of runoff quantity and quality problems."

By the end of 1998, the Storm and Surface Water Utility had been fully launched with a full range of contemporary utility issues and needs. Major capital projects, along with operating and maintenance standards, have been established to meet customer service expectations and regulatory compliance.

The City is in compliance with all applicable federal and state stormwater requirements, Western Washington Phase II Municipal (NPDES) Permit issued by the Washington State Dept. of Ecology. In 2005, the City developed a Comprehensive Basin Review that examined the City's storm and surface water programs, focusing on capital needs, capital priorities, and utility policies. The capital priorities are updated regularly in conjunction with the capital budget process. Mercer Island is urban/residential in nature and all of the Island's stormwater eventually ends up in Lake Washington. The prevention of nonpoint pollution is a major priority.

STORMWATER POLICIES

4.1 ~~The City shall continue to i~~Implement programs and projects designed to meet the goals and requirements of the Action Agenda for Puget Sound.

4.2 ~~The City shall a~~Actively promote and support education efforts focusing on all facets of stormwater management.

4.3 The City should collaborate with King County to support implementation of regional water quality planning strategies, such as the Clean Water, Healthy Habitat strategic plan.

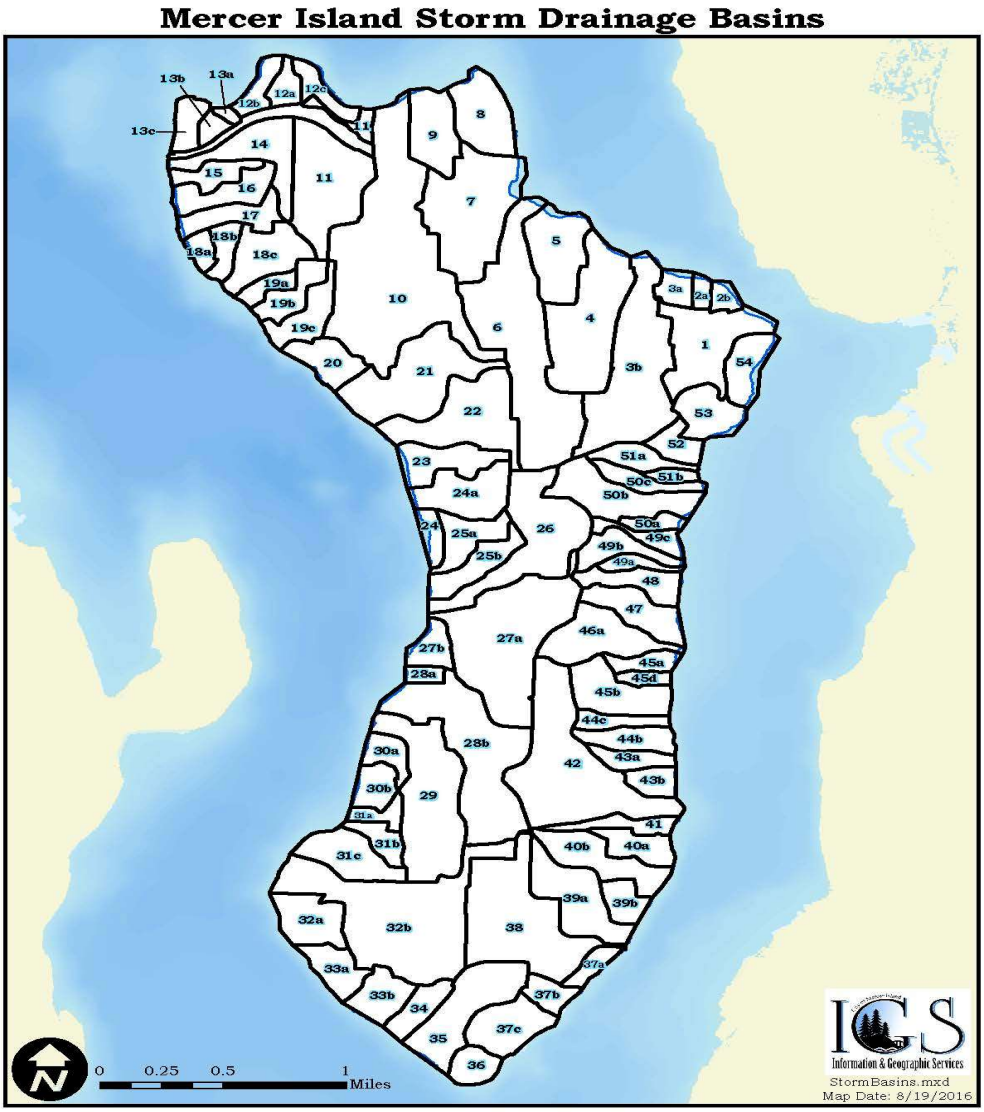
4.~~3~~4 ~~The City shall m~~Maintain and enforce l~~L~~and ~~U~~use plans and ordinances requiring stormwater controls for new development and re-development. The ordinances shall be based on requirements contained in the City's NPDES permit ~~standards developed by the state Department of Ecology~~ and shall be consistent with the policies in the Land Use Element of this Plan and the goals and policies of the City's Community Planning & Development Department~~Services Group~~.

4.5 Consider Implementation of programs and projects to reduce nonpoint source pollution from existing development.

4.4~~6~~ ~~The City shall i~~Incorporate low impact development standards, and any future innovations or technologies that meet or exceed current low impact development standards, into new development and redevelopment. Low impact development standards, such as retaining native vegetation, minimizing stormwater runoff, bioretention, rain gardens, and permeable pavements should be incorporated into new development or redevelopment where feasible and appropriate.

4.~~5~~7 ~~The City shall e~~Encourage and promote development that creates the least disruption of the natural water cycle, returning as much precipitation to groundwater as possible in order to extend the flow of seasonal streams into the dry season and to contribute cooling ground water to surface water features, thereby contributing to healthy fish and wildlife habitat.

Figure 2. Stormwater Drainage Basins



V. SOLID WASTE

The majority of solid waste services on Mercer Island are provided through a private hauler licensed by the City; ~~. The hauler~~ currently this is ~~serving Mercer Island is~~ Recologypublic Services~~.~~ Recologypublic Services~~~~ collects residential and commercial/multi-family garbage, and also collects residential recyclables and residential yard/food waste. Businesses that recycle or compost select their own haulers. As of 2022, Recology ~~In 2014, Republic Services~~ was serving a total of 6,~~7~~9504~~8~~ residential customers, and 215~~and~~ commercial or multi-family locations~~customers~~ on Mercer Island.

A new contract for collection of solid waste was approved by the City Council for a ten year contract starting in October 2019~~2009 to 2016~~. This contract replaces the former license agreement dating back to 2009~~1999~~ with Republic Services. Rates are adjusted each year based on the Seattle-area Consumer Price Index (CPI) and terms identified within the contract. The cost of providing solid waste services on Mercer Island is covered entirely through the rates charged by haulers.

Recologypublic Services transports most garbage from Mercer Island to the Factoria transfer station, after which it is compacted and buried at Cedar Hills Regional Landfill. Recyclables are transported to Recology's ownthe Rabanco processing facility in Seattle, and yard/food waste is transported to taken to Cedar Grove Composting or Lenz Compostingnear Issaquah.

FUTURE NEEDS

In 1988, Mercer Island entered into an interlocal agreement that recognizes King County as its solid waste planning authority (RCW chapter 70.95). The Mercer Island City Council adopted the first King County Comprehensive Solid Waste Management Plan in mid-1989, and in October 1993 the City Council adopted the updated 1992 edition of the Plan.

The King County's 2001 Comprehensive Solid Waste Management Plan established countywide targets for resident and employee disposal rates. As of 2014, King County was working on an update of the Comprehensive Solid Waste Management Plan. As a plan participant, Mercer Island met the original King County goal of 35 percent waste reduction and recycling in 1992. By late 1993, Mercer Island was diverting nearly 50 percent of its waste stream. Subsequent goals called for reducing the waste stream 50 percent in 1995 and 65 percent by the year 2000. Mercer Island has consistently diverted an average of 65 percent of its waste stream annually from 2000 to 2014.

Achieving these goals has helped lengthen the lifespan of the Cedar Hills Regional Landfill and avoid the need to find alternative disposal locations for Mercer Island's garbage.

The overall amount of waste generated on Mercer Island is not expected to increase significantly due to new development anticipated in the Land Use Element of this Plan. However, the amount of recyclables and yard waste being diverted from Mercer Island's waste stream should continue increasing over the next few years. Private facilities (Republic Services and Cedar Grove Composting) have the capacity to absorb this increase. Any additional garbage produced due to growth will be collected through a private hauler licensed by the City. To increase capacity, expansion of the existing Factoria Transfer Station began in late 2014 and is scheduled to open in late 2017. The City's existing solid waste program of offering two special collection events per year is expected to remain adequate. These events, at which yard waste and hard-to-recycle materials are collected by private vendors, are designed to assist households in further reducing the waste stream.

The collection of household hazardous waste on Mercer Island is available once a year over a two-week period through the Household Hazardous Wastemobile, a program of the Seattle-King County Local Hazardous Waste Management Plan. Mercer Island households and businesses help fund the Plan through a surcharge on their garbage bills.

SOLID WASTE POLICIES

5.1 Require Aall new construction, with the exception of single-family homes, shall be required to provide adequate space for on-site storage and collection of recyclables pursuant to City regulationsOrdinance A-99.

5.2 ~~The City shall a~~Actively promote and support recycling, composting and waste reduction techniques among the single-family, multifamily and commercial sectors with the aim of meeting or exceeding King County diversion goals.

5.3 ~~The City shall, whenever practical, p~~Provide convenient opportunities for residents to recycle appliances, tires, bulky yard debris and other hard-to-recycle materials whenever practical.

5.4 ~~The City shall a~~Actively promote and support the proper handling and disposal of hazardous waste produced by households and businesses. The use of alternate products that are less hazardous or produce less waste shall be encouraged.

5.5 City departments and facilities shall actively participate in waste reduction and recycling programs.

5.6 Handle and dispose of ~~A~~all hazardous waste generated by City departments and facilities ~~shall be handled and disposed of~~ in accordance with applicable county, state, regional and federal regulations.

5.7 ~~The City shall a~~Actively enforce ~~the Solid Waste Code and other ordinances and~~ regulations that prohibit the illegal dumping of yard debris and other types of waste.

5.8 The City shall play an active role in regional solid waste planning, with the goal of promoting uniform regional approaches to solid waste management.

5.9 ~~The City shall a~~Actively promote and support the recycling, re-use or composting of construction, demolition and land-clearing debris wherever feasible.

5.10 Ensure that providers of solid waste, recycling, and compost collection services comply with City regulations. Assist residents with concerns about these services, when possible. [PC Comment 17]

VI. ELECTRICITY

All of the electricity consumed on Mercer Island is provided by Puget Sound Energy (PSE) under a franchise agreement with the City of Mercer Island. An agreement was approved in early 1994 that ~~is~~remains valid until a new agreement is reached. PSE's rates are set by the Washington Utilities and Transportation Commission (WUTC).

In 1999, PSE had 9,169 customers on Mercer Island, compared to 8,971 in 1992.

In 2004, PSE served 9,300 customers, and 9,562 customers in 2014. In 2021 it served 9,995 residential and 703 commercial electric customers.

PSE builds, operates and maintains the electrical system serving Mercer Island. The system includes 6.2 miles of transmission lines (115 kV), three substations and two submarine cable termination stations.

FUTURE NEEDS

The demand for electricity on Mercer Island has not grown ~~is not expected to increase~~ significantly during the past 20 years, despite 17% population growth (2000-2020), due to a range of new energy efficiency measures ~~the period covered by this Plan~~. While the Island's total electricity consumption was 164,713,778 KWH in 1998, ~~the Island's total electricity consumed was~~ and 174,352,420~~/~~ KWH~~, or an average of 18,234/KWH per customer, in~~ was consumed in 2013, it was only slightly more in 2021 (174,920,031 KWH). However, as more households transition to electric vehicles, maintain remote or hybrid work environments, and new development moves away from natural gas to electric space heating and cooling, in an effort to reduce personal GHG emissions, total electricity consumption may increase.

PSE's planning analysis has identified five alternative solutions to address transmission capacity deficiency identified in the "Eastside Needs Assessment Report—Transmission System King County" dated October 2013. Each of these five solutions fully satisfies the needs identified in the Eastside Needs Assessment Report and satisfies the solution longevity and ~~constructibility~~constructability requirements established by PSE. These five solutions include two 230 kV transmission sources and three transformer sites, outside of Mercer Island. ~~PSE states construction is anticipated to begin in 2017 and completed in 2018.~~

With one exception (see Policy 6.1), the only significant changes in PSE's Mercer Island facilities will come from efforts aimed at improving system reliability.

The issue of system reliability, which is the subject of a Memorandum of Agreement (MOA) between the City of Mercer Island and PSE, will require considerable attention over the next several years. The MOA sets policies for identifying locations where power lines should be relocated underground and describes strategies for funding undergrounding projects. There is a reoccurring issue of unreliability is unresolved and needs to be addressed.

ELECTRICITY POLICIES

6.1 ~~PSE, or the current provider, shall be e~~Encouraged ~~d~~ PSE or the current provider to upgrade its facilities on Mercer Island where appropriate and incorporate technological changes when they are cost effective and otherwise consistent with the provider's public service obligations. Mercer Island will serve as a test area for projects involving new technologies when appropriate.

6.2 ~~The City shall a~~Annually evaluate the reliability of electric service provided to Mercer Island. Measures of reliability shall include the total number of outages experienced, the duration of each outage, and the number of customers affected.

6.3 Install ~~A~~all new electric transmission and distribution facilities ~~shall be installed~~ in accordance with this Plan, the City's zoning code, the Washington State Department of Labor and Industries electrical code and other applicable laws, and shall be consistent with rates and tariffs on file with the WUTC. The electricity provider will obtain the necessary permits for work in the public right-of-way, except in emergencies.

6.4 ~~The City shall e~~Encourage the undergrounding of all existing and new electric distribution lines where feasible. As required by the City's franchise agreement with PSE (Section 5), any extension of existing distribution lines up to 15,000 volts shall be installed underground and

should be arranged, provided, and accomplished in accordance with applicable schedules and tariffs on file with the WUTC.

6.5 ~~The City shall e~~Encourage the undergrounding of electrical transmission lines where feasible, if and when such action is allowed by, and consistent with rates, regulations, and tariffs on file with the WUTC. Along with PSE, work cooperatively with the WUTC to establish rate schedules that equitably allocate the cost of undergrounding transmission lines among PSE customers.

6.6 The clearing of vegetation from power lines in rights-of-way shall balance the aesthetic standards of the community while enhancing improved system reliability.

6.7 ~~The City shall s~~Support conservation programs undertaken by the electricity provider, and ~~shall~~ encourage the provider to inform residents about these programs.

VII. NATURAL GAS

Natural gas is provided to Mercer Island by Puget Sound Energy (PSE) under a franchise agreement with the City. The current 15-year agreement expires in the year 2028, with the City having the right to grant a five-year extension. The delivery of natural gas is regulated by the Federal Energy Regulation Commission, the National Office of Pipeline Safety, and the Washington Utilities and Transportation Commission (WUTC). These agencies determine service standards, and safety and emergency provisions. The WUTC also sets rates.

Natural gas is delivered to Mercer Island via an interstate pipeline system that is owned and operated by Northwest Pipeline Corp. The pipeline connects to PSE's regional distribution network. Natural gas consumed in the Pacific Northwest comes from a variety of sources in the United States and Canada.

FUTURE NEEDS

While natural gas is not considered a utility that is essential to urban development, it is an ~~important~~ alternative energy source ~~that helps reduce reliance on electricity.~~ currently provided to the majority of homes on Mercer Island. However, as increasing numbers of residents move away from gas to electricity as their energy source for heating/cooling, and hot water, the number of customers is expected to decline. In 2022, in the interests of reducing GHG emissions, the State's Building Code Council has also required that, with a few exceptions, all new commercial and residential construction must use electric heat pumps for heating/cooling and hot water needs.

New natural gas lines on Mercer Island are installed on an as-requested basis. Natural gas lines are in place in virtually all developed areas of the Island, making natural gas available to most households. As of 2021, PSE had 6,936 residential customers, and 187 commercial customers.

No major new facilities would be required to accommodate this number of customers. New development, as anticipated in the Land Use Element of this Plan, is not expected to significantly affect the number of gas customers on Mercer Island.

NATURAL GAS POLICIES

7.1 ~~The City shall p~~Promote and support conservation and emergency preparedness programs undertaken by PSE, or the current provider, and shall encourage PSE to inform residents about these programs.

7.2 ~~The City shall encourage PSE or the current provider to make service available to any location on Mercer Island that wishes to use natural gas~~.

VIII. TELECOMMUNICATIONS

Telecommunication utilities on Mercer Island encompass conventional wireline telephone, wireless communications (Cellular telephone, Personal Communication Services (PCS), and Specialized Mobile Radio (SMR)), internet service, and cable television.

Telecommunication technologies have undergone significant changes in the last several decades. The rapid pace of change in these technologies has been paired with an increasing centrality to the services they provide in people's lives. Telecommunications have come to be a key component of a high quality of life by facilitating the exchange of information, remote work, and community involvement. More workers work from home and an increasing share of commerce takes place online in the wake of the COVID-19 pandemic, driving demand for faster and more reliable telecommunication services. Throughout the planning period, telecommunication technologies are expected to continue to be an important service in the City.

~~On February 8, 1996, the President signed the Telecommunications Act of 1996 into law. Its overall intent is to develop competition in the telecommunications marketplace by allowing local telephone exchange carriers to provide long distance telephone service, as well as, cable television, audio services, video programming services, interactive telecommunications and Internet access. Similarly, long distance providers, cable operators and utilities are now permitted to offer local exchange telephone service. The legislation represents the first major rewrite of the Telecommunications Act of 1934.~~

~~The 1996 Act states that "No State or local statute or regulation or other State or local legal requirement, may prohibit or have the effect of prohibiting the ability of any entity to provide any interstate telecommunications service." It further provides that the Federal Communications Commission (FCC) shall preempt the enforcement of any such statute, regulation or legal requirement. However, the bill protects the authority of local governments to "manage the public rights-of-way or to require fair and reasonable compensation from telecommunications providers, on a competitively neutral and nondiscriminatory basis for use of public rights-of-way on a nondiscriminatory basis, if compensation required is publicly disclosed." Thus, the City can still exercise control over the use of public rights-of-way and generate revenues from the grant of access to such rights-of-way to telecommunications providers.~~

~~CenturyLink Communications provides local exchange telephone service for all of Mercer Island. In early 1999, (then) U S WEST was serving an increasing number of access lines (telephone numbers) in the Mercer Island exchange area. This growth is more fully discussed below in the "Future Needs" section. CenturyLink and its predecessor have served communities in Washington for more than 100 years. CenturyLink is regulated by the Washington Utilities and Transportation Commission and the Federal Communications Commission.~~

~~Mercer Island has seen its wireless communications service providers grow from two in 1995, to an excess of four in 2015. As of the 2014 there are 34 wireless communications facilities installed on the Island. These installations are regulated by the FCC.~~Wireless service on Mercer Island is an important utility, allowing residents and visitors to remain connected wherever they go on-island. Wireless communications are provided by several private companies. The Federal Communications Commission (FCC) and City regulate wireless facilities. Rules enacted in 2019 by the FCC curtailed local jurisdictions' power to regulate wireless facilities. To comply with the 2019 FCC rule change, the City amended its wireless communication facilities regulations in 2021. Between 2015 and 2022, the City processed an annual average of 20 permits for new facilities and improvements to existing facilities. As technology continues to be developed and improved, the existing wireless coverage on Mercer Island is expected to be faster, more available, and more reliable through the planning period.

Cellular communication involves transmitting and receiving radio signals on frequencies reserved for cellular use. Signals to and from cellular phones are routed along a series of low-powered transmitting antennas located at "cell sites."

~~In 1999, AT&T was serving approximately 6,318 customers on Mercer Island through 65.9 distribution miles of overhead lines and 26.2 distribution miles of underground lines. In 2004, Comcast served 6,700 cable customers and 3,530 high-speed internet customers. In 2014, Comcast served 8,900 customers.~~

~~The data services offered by Comcast originate at a primary transmitter site in Bellevue. Comcast's receiving apparatus on Mercer Island is contained in facilities located at 4320 88th Avenue SE.~~

~~The cable industry was deregulated by Congress in 1984, launching an almost ten-year period without local rate regulation. In November 1993, the City received certification from the FCC, pursuant to the 1992 Cable Act, to regulate basic cable service rates.~~

FUTURE NEEDS

As a telecommunications utility, ~~CenturyLink~~ Lumen Technologies is required to provide services on demand. ~~The industry has experienced a tremendous explosion in the demand for telecommunications services. CenturyLink customers, especially customers on Mercer Island, are routinely asking for multiple lines into their homes for computers, separate business lines and separate lines for children.~~

Comcast has sufficient capacity to provide cable communications services to any new development on Mercer Island. During its franchise, Viacom replaced the coaxial cable in its trunk-line system on Mercer Island with fiber-optic cable. This 1993 undertaking was a major step toward meeting customer demand for an expanded number of channels and improved reliability.

The FCC has mandated Enhanced-911 (E-911), which seeks to improve the effectiveness and reliability of wireless 911 service by requiring Automatic Location Identification (ALI). ALI will allow emergency dispatchers to know the precise location of cell phone users to within 50—100 meters.

TELECOMMUNICATIONS POLICIES

8.1 ~~The City shall e~~Encourage the consolidation and shared use of utility and communication facilities where feasible. Examples of shared facilities include towers, poles, antennae, substation sites, cables, trenches and easements.

8.2 ~~The City shall e~~Encourage the undergrounding of all existing and new communication lines where feasible and not a health or safety threat.

8.3 ~~The City shall p~~Periodically review and revise development regulations for telecom facilities to ensure that a balance exists between the public benefit derived from the facilities and their compatibility with the surrounding environment.

8.4 ~~The City shall w~~Work with the cable communications provider to select and implement pilot projects appropriate for Mercer Island that explore the newest advances in cable technology, including interactive cable and public access.

8.5 ~~The City c~~Continue~~s~~ to participate in a consortium of Eastside jurisdictions to collectively analyze rate adjustments proposed by the cable communications provider.

8.6 The City may allow limited well designed Wireless Communication Facilities (WCF) in the rights-of-way adjacent to~~in~~ Clise Park and Island Crest Park, consistent with the requirements and restrictions in the development code.

8.7 ~~The City shall e~~Encourage ~~and work with~~ WCF providers to ~~increase the battery life of large~~optimize cell sites to maintain service during inclement weather and natural disasters.

8.8 Establish WCF regulations to minimize noise and visual impacts and mitigate aesthetic or off-site impacts.