Element 5 – Utilities

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 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 anticipates additional residential and employment growth over the planning period, including increased development capacity in and around the Town Center and Transit Center. Utility planning must account for this growth and ensure that water, sewer, stormwater, and other utility systems are monitored, maintained, and improved as needed to support adopted land use assumptions and maintain adopted levels of service.~~of this Plan allows limited development that will not significantly impact 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 and fees for all City-operated utilities 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 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 on private property, and reduce the cost of utility delivery.

1.3 Encourage economically feasible diversity among the energy sources available on Mercer Island to avoid over-reliance on any single energy source.

1.4 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 Maintain effective working relationships with all utility providers to ensure the best possible provision of services.

II. WATER UTILITY

Mercer Island obtains its water from Seattle Public Utilities (SPU). The City of Mercer Island purchases and distributes most of the water consumed on the Island under a long-term contract with SPU that guarantees an adequate supply through 2062. In 1997, the City assumed the Mercer Crest Water Association, which 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 in 1998 and 1999. One small independent water association, Shorewood, remains a direct service customer of SPU. The City is one of 19 wholesale customers (Cascade Water Alliance and 18 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 24-inch supply line. Mercer Island is also periodically served through the South Fork of the Tolt River supply system.

The City distributes water through 113 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 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 planning efforts and the City's capital improvement program. The City completed an Emergency Supply Line project in 1999. 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 Federal Emergency Management Agency hazard mitigation grant.

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 by 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 the spring of 2010. The well 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, the City's total number of water customers was 7,537.

In 2021, the City met the requirements of the 2018 America’s Water Infrastructure Act by completing a Risk and Resilience Assessment (RRA) and updating 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 strengthened the water supply system and improved system operations for water quality control.

In 2024, the City responded to a significant failure of the 24-inch water supply pipeline serving Mercer Island after Seattle Public Utilities identified a leak in the pipeline near SE 40th Street. During the outage, the City relied on a smaller backup supply pipeline and implemented emergency water conservation measures while repairs were completed. In response to the pipeline failure and aging infrastructure concerns, the City Council authorized design and construction of a new water supply pipeline as part of the 2025–2030 Capital Improvement Plan to improve long-term system reliability and resiliency. The project also includes new water service connections for Shorewood Apartments, which will transition from a direct SPU customer to a wholesale customer of the City.

In 2025, the City upgraded the Reservoir Booster Pump Station by replacing the five existing 100-hp pumps with high-efficiency split-case pumps and adding two smaller jockey pumps to serve low-flow conditions. The pump capacities were selected based on 2042 demand projections for the 492 Zone and 492 Sub-Zones. Key project results include greater system capacity and operational reliability, removal of mercury-containing equipment, improved hydraulic efficiency, and reduced long-term energy use.

Also in 2025, the City replaced Reservoir site's original 1975-era 235-kilowatt standby generator, which had exceeded its useful life, with a new 500-kilowatt generator installed outside the building. The project added a new automatic transfer switch, manual transfer switch, portable generator connection port, and a replacement diesel fuel tank to ensure dependable full facility emergency operation.

From 2025 to 2026 the Reservoir Improvement Project replaced the aged interior and exterior protective coatings on both 4-million-gallon reservoir tanks, which were installed in 1962 and 1975 and last recoated in 2001. Structural tank repairs and safety upgrades including new exterior stair access and roof guardrails were also completed.

FUTURE NEEDS

Both the water supply available to the City and the City's distribution system are ~~adequate~~ generally adequate to serve the growth projected for Mercer Island; however, ongoing analyses associated with the 2026 Water System Plan (WSP) update indicate that additional infrastructure improvements and continued coordination with Seattle Public Utilities ~~may~~will be necessary to maintain long-term system reliability, emergency preparedness, fire flow capacity, and adopted levels of service. As ~~anticipated by~~outlined in the Land Use Element of this Plan, ~~new growth will increase~~ the City's ~~total number~~ 2044 growth targets, as established in the King County Countywide Planning Policies, include a housing growth target of 1,239 dwelling units ~~by 1,239~~ and an employment growth target of ~~will increase by~~ 1,300 ~~new~~ jobs ~~by 2044~~. Based on the 2026 Land Capacity Analysis (Appendix XX), Mercer Island has an estimated residential capacity of 3,164 units, with most of this potential located within the Town Center.

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 and another update is underway and anticipated ~~,~~ to be adopted by the end of 2026.~~.~~ The 2022 WSP establishes that there is ~~a~~ system capacity for 14,234 equivalent residential units (ERUs). The 2022 WSP projects that there will be demand for 11,596 ERUs by 2036. The ongoing 2026 WSP update is evaluating future water demand, supply reliability, pump stations, storage, fire flow requirements, and hydraulic capacity associated with updated growth assumptions and changing development patterns.

Some maintenance and capacity ~~i~~improvements to the water system are planned during the planning period (2024-2044). Those projects are detailed in the 2022 WSP and have been ~~added~~ incorporated into~~to~~ the Capital Facilities Element Capital Facilities Plan (CFP) and Capital Reinvestment Plan (CRP). Projects that will be identified ~~through~~during the ongoing 2026 WSP update have not yet been incorporated into the CFP or CRP, as the update remains in progress and additional infrastructure needs and recommendations are still being evaluated.

The capacity maintained and added through CFP and CRP projects is expected to ~~provide~~ support the growth planned ~~sufficient water supply to accommodate the growth planned~~ in this Comprehensive Plan. Planned projects include improvements to ~~transmission facilities,~~ the supply pipeline, reservoirs, pump stations, and distribution system components intended to maintain reliable water service, improve resiliency, and support future growth. Existing reservoirs are also approaching the end of their useful life, with the North Reservoir anticipated to require replacement near the end of the planning horizon.

The Station Subarea Plan includes planning and policies related to increasing development capacity in the Station Area in two phases. The first phase is accounted for in this Comprehensive Plan and includes increases to development capacity in and around the Town Center as a part of the adoption of the Station Subarea Plan. Water system capacity associated with Phase 1 development has been evaluated as part of the ongoing 2026 WSP update~~has been analyzed as a part of the development of the 2026 WSP~~. The Station Subarea Plan anticipates that in Phase 2 additional changes to the land capacity and future infrastructure needs will be required as part of the Phase 2 planning process, and additional system improvements may need to be considered to support implementation of Phase 2~~will be implemented to maintain compliance with the Growth Management Act. Further analysis of water system capacity will be required as a part of the Phase 2 planning process and additional capacity improvements will likely need to be considered to support the implementation of Phase 2.~~

~~Although aquifer protection is not a factor for future non-emergency 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 Obtain a cost-effective and reliable water supply that meets Mercer Island's needs, including domestic and commercial use, fire-flow protection, emergencies, and all future development consistent with the Land Use Element of this Plan.

2.2 Upgrade ~~and,~~ maintain, and replace ~~the~~ water system infrastructure, including ~~transmission~~ supply pipeline infrastructure, reservoirs, pump stations, pressure zones, and distribution system components, ~~water distribution and storage system~~ as necessary to maximize its useful life and maintainability. All system improvements shall be carried out in accordance with the City's Comprehensive Water System Plan and Capital Improvement Program.

2.3 Work cooperatively with ~~the~~ Seattle Public Utilities and its other purveyors on all issues related to water supply reliability, contractual capacity, hydraulic capacity, emergency preparedness, conservation, and long-term infrastructure planning.~~of mutual concern.~~

2.4 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 Island's potable water quality.~~

2.5 ~~Comply with all water quality testing required of the operators of water distribution systems under the Safe Drinking Water Act.~~ Ensure compliance with regulatory requirements under the Safe Drinking Water Act for water quality testing of the distribution system by certified/licensed operators.

2.6 ~~Adopt an action plan to ensure Mercer Island's full participation in regional efforts to recover and restore Puget Sound Chinook salmon~~Support Puget Sound salmon recovery and watershed-based habitat recovery efforts through participation in WRIA 8.

2.7 Aggressively promote and support water conservation on Mercer Island and ~~shall~~ participate in regional water conservation activities to improve long-term water supply reliability and reduce stress on the water system during high-demand periods.

2.8 Continue evaluating and implementing water system supply redundancy, emergency preparedness, and resiliency improvements, including backup supply infrastructure, emergency well improvements, ~~transmission system~~ supply pipeline upgrades, seismic improvements, and operational strategies intended to improve system reliability during disasters or supply disruptions~~Explore options for water system supply redundancy, such as (a) creating a backup supply line or (b) installing necessary systems to make the emergency well water potable~~.

2.9 Adopt the Water System Plan and its successors by reference.

2.10 Monitor water system capacity and coordinate water system planning and capital improvements with projected land use, housing, employment growth, and future Phase 2 growth planning efforts identified in the Comprehensive Plan to maintain adopted levels of service and support planned growth consistent with the Growth Management Act.

2.12 Plan and operate the water system to maintain adequate hydraulic capacity, pressure, storage, and fire flow protection under normal, peak demand, and emergency conditions.

2.13 Prioritize reinvestment in aging, deficient, or capacity-constrained water system infrastructure to maintain long-term reliability, resiliency, and operational efficiency.

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 majority of

the system was originally constructed by the Mercer Island Sewer District through three Utility Local Improvement Districts (ULIDs) in the late 1950s and early 1960s. The City has operated its sewer system since 1975, when the Mercer Island Sewer District was dissolved. The City's system does not include a small privately owned sewer system serving the Shorewood Apartment Complex and Covenant Shores Development. The City owns, operates, and maintains the remainder of the Island's sewage collection system, which conveys wastewater to the Metropolitan King County treatment plant in Renton for primary and secondary treatment.

~~The City's system includes 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~~These ~~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.~~ The City's sewer system includes 17 pump stations, one flushing pump station, and more than 113 miles of gravity and pressure pipelines ranging from 3 to 24 inches in diameter. Included in the pipeline total is 12.9 miles of sewer lakeline, which is divided into five hydraulically distinct segments, or reaches, consisting of low-pressure sewer mains located 5 to 100 feet from shore that convey wastewater around the perimeter of the Island before connecting to regional conveyance facilities.

Beginning in 1988, each pump station was equipped with its own diesel generator to provide emergency power during outages, as required by Ecology.

Between 1990 and 1993, the City upgraded pumps across its sewer pump stations to Cornell pumps and completed minor electrical, mechanical, and telemetry improvements. Aside from these limited upgrades, the stations have not received any other major improvements since their original construction.

In 2002, the City completed a Sewer Lakeline Replacement feasibility study of portions of Reaches 3 and 4 of the City's mid-1950s sewer lakeline along the northwest shoreline of the Island. The study found deteriorated asbestos cement pipe, undersized 10-inch and 12-inch segments, and pump stations that no longer met capacity needs.

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 pilot project on Mercer Island lined 16,000 feet of sewer in the East Seattle neighborhood (Basin 54) in 2003. Post- construction flow monitoring and computer modeling showed a 37 percent decrease in peak I/I flows.

In September of 2002, the City adopted a fat waste, oil and grease (FOG) ordinance.

In 2003, the City adopted the 2003 General Sewer Plan, the third sewer plan following the 1987 Sewer System Comprehensive Plan and the 1995 Comprehensive Sewer Plan Update. The plan's goals were to present the results of the updated Town Center hydraulic model, evaluate pump station odor control, assess three to four lakeline pump stations, and outline a capital improvement program implementation strategy.

In 2010, the City completed replacement of the Reach 3 sewer lakeline. The project constructed 7,000 feet of new lakeline alongside the existing alignment and reconfigured thirty-seven private lakefront side sewer connections between SE 32nd Street and Roanoke Landing. It also decommissioned Sewer Pump Stations 4 and 5 and constructed a new Sewer Pump Station 4 beneath I-90 westbound on-ramp. Completion of the project significantly reduced the risk of sanitary sewer overflows into Lake Washington.

In 2014, the City completed replacement of sewer pump station 14 which had obsolete and unreliable pumps and controls. The station was modernized, similar to pump station 4, to include ~~submermisible~~submersible pumps, variable frequency drives, and above grade control panels.

In 2015, City staff completed a pump station condition assessment which identified the five stations most in need of rehabilitation.

In 2018, the City adopted its fourth General Sewer Plan. The plan highlighted several key efforts, including a lakeline access evaluation, pump station access evaluation, updated Town Center hydraulic modeling, a system capacity evaluation, a pipeline repair and replacement program, and guidelines for planning and budgeting a 20-year capital improvement program.

Between 2019 and 2026, the City completed a comprehensive upgrade of its sewer SCADA system as part of a broader effort to modernize aging automation and telemetry infrastructure. The project replaced obsolete equipment and unified the previously separate water and sewer SCADA systems into a single, secure, standards-based platform that improves reliability, operational efficiency, and system monitoring.

As of 2021, a total of 7,403 residential and commercial customers were connected to the City sewer system.

Between 2023 and 2024, the City rehabilitated approximately 1,600 feet of sewer main in Basin 40 using cured-in-place pipe (CIPP) lining, a trenchless and cost-effective method that reduces inflow and infiltration (I/I) while restoring structural integrity. These mains were targeted due to their ~~age~~age, and the widespread cracks, active infiltration, staining, and joint defects identified throughout the basin. Reducing I/I increases system capacity and lowers wastewater treatment costs. The effectiveness of the lining will be confirmed through the 2028 hydraulic modeling effort.

In 2024, a sewer pump station condition assessment ranked, prioritized improvements, and developed cost estimates for the five stations identified as needing rehabilitation in the 2015 assessment.

In 2026, King County completed its North Mercer Island/Enatai Sewer Upgrade Project, which included upgrading the North Mercer regional pump station, upgrading the City's Pump Station 11, and constructing a new regional sewer interceptor to convey wastewater off-Island. Completion of the project provides long-term capacity for the regional conveyance system.

~~As of 2021, a total of 7,403 residential and commercial customers were connected 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 connected to the sewer system has increased slowly and is expected to continue according to housing unit projections outlined in the ~~2021 King County Urban Growth Capacity Report~~2026 Land Capacity Report (Appendix XX).

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

~~The General Sewer Plan was developed in February 2003, and updated in 2018, and will be updated again in 2028. The 2018 General Sewer Plan identified a 20-year Capital Improvement Plan (CIP) that details the capacity improvements necessary for the system to accommodate planned future growth. These include projects in four categories – general, pipeline, pump stations, and lake line.~~

~~A Sewer Lakeline Replacement feasibility study was completed in September 2002 and recommended the 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 project in 2028 to perform a high-level evaluation of the condition of the entire sewer lake line and identify segments for further assessment to guide future lake line rehabilitation and replacement projects. 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 pilot project on Mercer Island lined 16,000 feet of sewer in the East Seattle neighborhood (Basin 54) in 2003. Post- construction flow monitoring and computer modeling showed a 37 percent decrease in peak I/I flows.~~

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

The City must serve the sewer needs of its planned growth, much of which will be focused on the Town Center. While most of the Town Center's sewer system is adequate to meet future demand, several pipeline segments require upsizing to prevent surcharging caused by increasing population density and stormwater inflow and infiltration. ~~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.

The Station Subarea Plan includes planning and polices related to increasing development capacity in the Station Area in two phases. The first phase is accounted for in this Comprehensive Plan and includes increases to development capacity in and around the Town Center as a part of the adoption of the Station Subarea Plan. Sewer system capacity has been analyzed as a part of the development of the 2028 General Sewer Plan. The Station Subarea Plan anticipates that in Phase 2 additional changes to the land capacity will be implemented to maintain compliance with the Growth Management Act. Further analysis of sewer system capacity will be required as a part of the Phase 2 planning process and additional capacity improvements will likely need to be considered to support the implementation of Phase 2.

While Sewer Pump Stations 4, 11, and 14 have received major upgrades within the last two decades, the remaining fourteen stations are largely original. These stations have degraded structures and obsolete mechanical and electrical equipment that increase the risk for failure and sanitary sewer

overflow into Lake Washington. The City has prioritized replacing one station in each upcoming biennial budget cycle, beginning with the five stations identified in the 2015 and 2024 condition assessments.

Recent sanitary sewer overflows due to capacity deficiencies in Lakeline Reach 1 and a blockage in Reach 5 ~~highlight~~highlights the need for capital improvements to the lakeline system. Although past General Sewer Plans identified the need for assessment and rehabilitation, no formal evaluations are known to have ~~occurred, and~~occurred and only Reach 3 has been improved since the lakeline was installed in 1966. Limited access points have prevented routine inspection, maintenance, and upgrades. As of March 2026, a comprehensive survey of the 2.5-mile Reach 1 is underway. Standard access-point designs, hydraulic analysis, and a full condition assessment are planned through 2027, with targeted capacity improvement projects planned for 2028. The methods and access-point standards developed during the Reach 1 effort will be applied to the remaining reaches.

The City is currently expanding its localized Town Center hydraulic model into a comprehensive Island-wide model. This upgraded model, expected to be completed by mid-2026, will provide a much clearer understanding of systemwide capacity constraints, inflow and infiltration (I/I) impacts, and future demand needs. The enhanced modeling will directly inform upcoming pipeline replacement and rehabilitation projects and will serve as a key tool in prioritizing and shaping the City's Capital Improvements Plan.

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

A Capital Improvements~~s~~ Plan, developed in conjunction with the updated General Sewer Plan and/or CIP budget, will address all future improvements to the sewer system.

SEWER UTILITY POLICIES

3.1 Require that all new developments be connected to the sewer system.

3.2 Allow 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 Any septic system serving a site being re-developed must be decommissioned according to county and state regulations~~,~~ and the site must be connected to the sewer system.

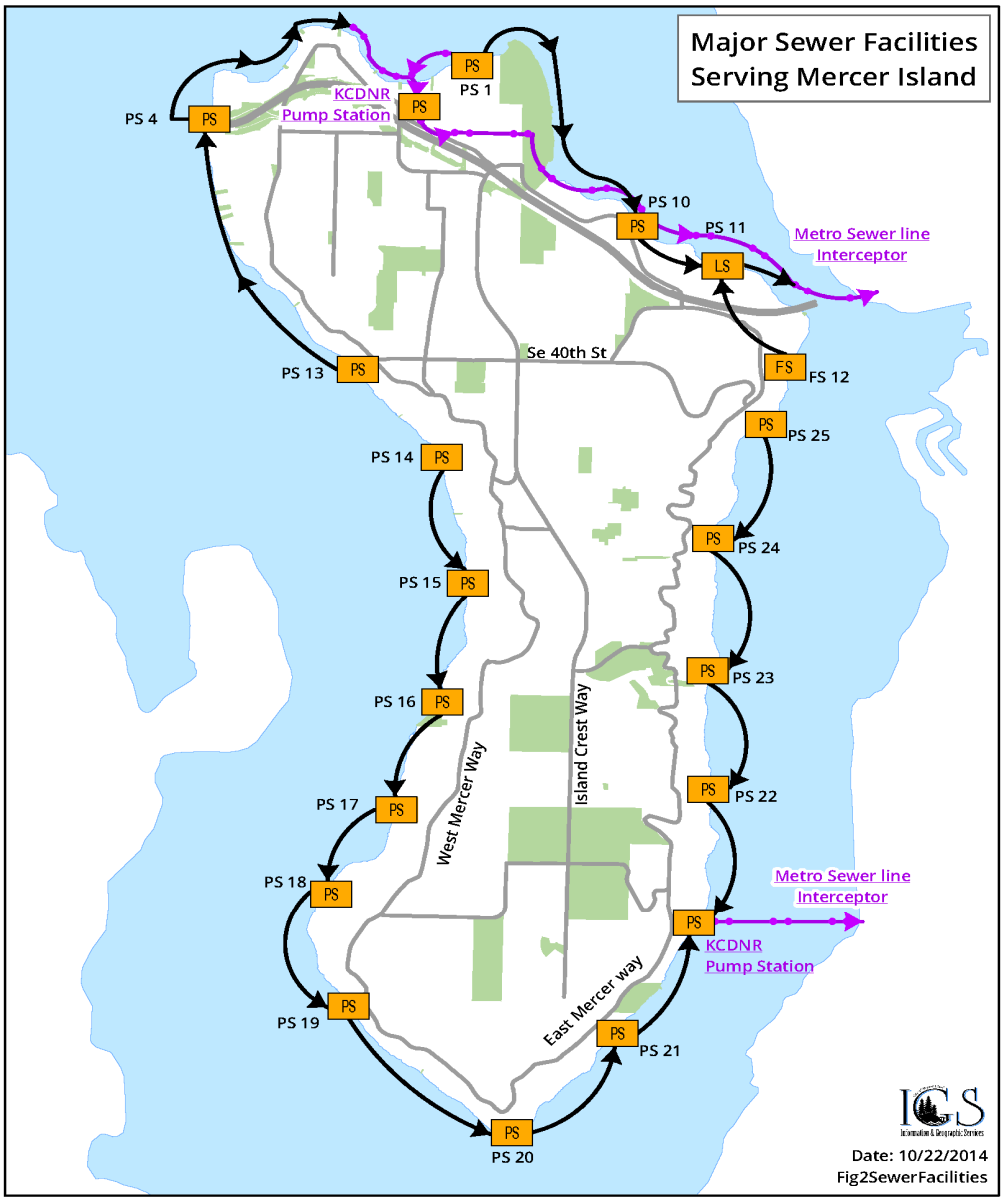
3.4 Actively work with regional and adjoining local jurisdictions to manage, regulate, and maintain the regional sewer system.

3.5 Prevent overflows by taking whatever steps are economically feasible.

3.6 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.

3.7 Adopt the General Sewer Plan and its successors by reference.

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. Over 15 miles of ravine watercourses carry stormwater, and 26 miles of open drainage ditches. 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 catch basins.

The public portion of the system is maintained by the City's Public Works Department as part of the Stormwater Utility, which generates funding 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.

In May 1993, the City began preparing to make significant changes in managing stormwater on Mercer Island. New regional, state, and federal requirements triggered this effort.

During the second half of 1993, two of Mercer Island's drainage basins were studied in detail, and interested basin residents were actively involved in the process. The studies were designed to gauge public perception of drainage and related water-quality problems, and 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 complies with all applicable federal and state stormwater requirements, according to the 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, 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.

Subsequent Basin Reviews were completed in 2006, 2008, 2010, 2012, 2014, 2018, and 2020 each adding new investigation sites and identifying targeted improvements with associated cost estimates. In total, 115 sites have been ~~assessed~~assessed, and 71 improvement projects have been identified. To date, 35 of these problem sites have been constructed to address erosion-related issues.

In 2020, the City completed mapping of approximately 40 miles of open and piped watercourses as part of the Watercourse ~~Invetory~~Inventory and Typing and GIS Wetland Modeling project. This effort produced a single GIS watercourse dataset and GIS-based wetland prediction model ~~both of which~~both support planning and operations across multiple City departments.

In 2022, with most major ravine-related erosion issues from the Basin Reviews corrected, the City shifted its focus from basin-level assessments to analysis and modeling of the piped stormwater system. The City also began concentrating on smaller project areas (typically 100 to 350 feet) and combining multiple watercourse improvements to achieve better economy of scale.

FUTURE NEEDS

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Increased redevelopment and additional development capacity within the Town Center and future Phase 2 planning areas may require additional stormwater system analysis and infrastructure improvements to address drainage constraints, downstream capacity limitations, onsite detention requirements, and regulatory compliance. In some drainage basins, onsite stormwater management may be necessary where regional stormwater facilities or fee-in-lieu alternatives are not feasible or appropriate.

Our capital program will continue to develop strategies for inspecting and maintaining the existing storm drain network. Future projects may include but are not limited ~~to,~~to erosion mitigation in open channels, repairs of culverts and sections of damaged pipe, and monitoring of existing flows to inform future development.

STORMWATER POLICIES

4.1 Implement programs and projects designed to meet the goals and requirements of the Action Agenda for Puget Sound.

4.2 Actively promote and support education efforts focusing on all facets of stormwater management.

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

4.4 Maintain and enforce land 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. They 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 and Development Department.

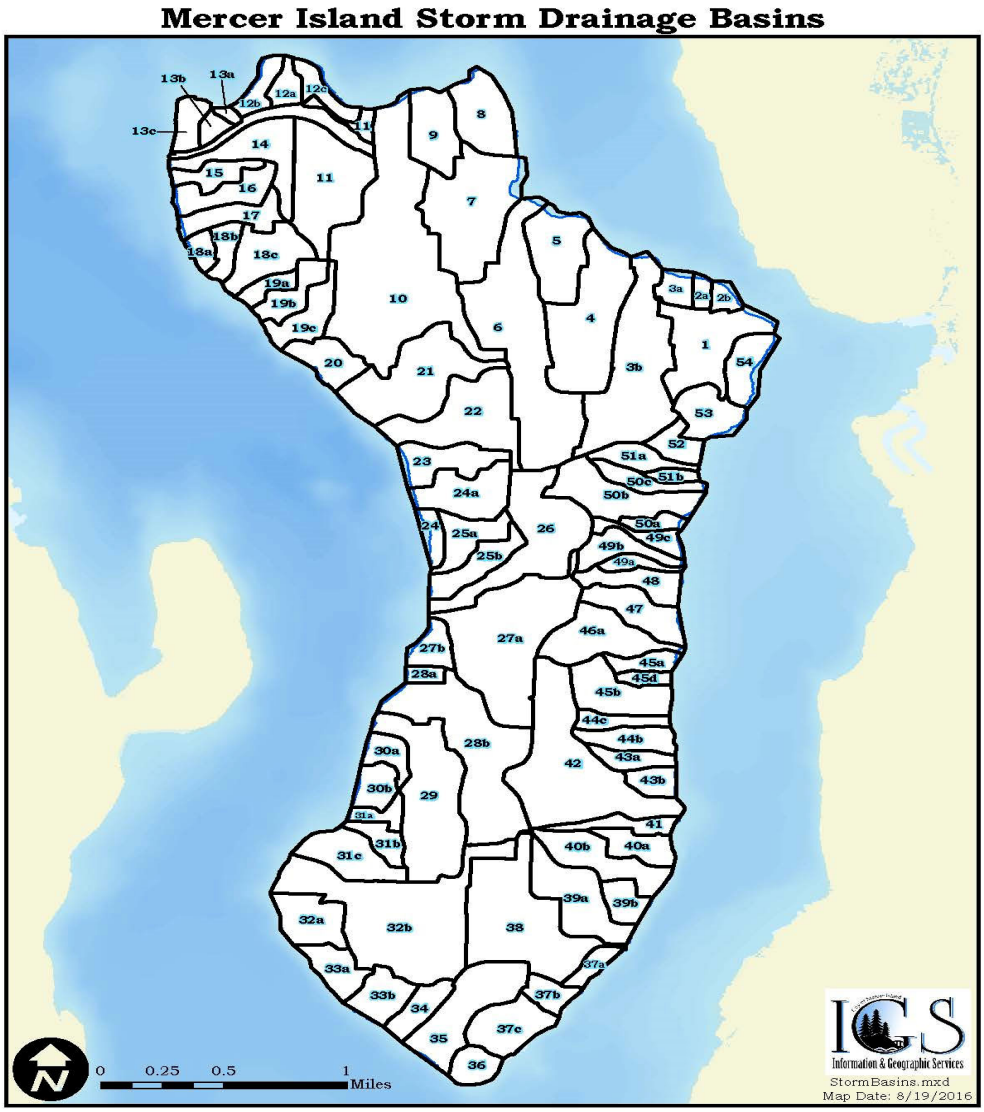
4.5 Consider incorporating low- impact development standards, and any future innovations or technologies that meet or exceed current low- impact development standards, into new development and re-development where feasible. Examples may include native vegetation, minimizing stormwater runoff, bioretention, rain gardens, and permeable pavements.

4.6 Encourage and promote development that creates the least disruption of the natural water cycle. Return 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.

4.7 The City shall require redevelopment within the Town Center and other identified constrained drainage basins to provide onsite stormwater management, detention, and water quality treatment where necessary to prevent downstream drainage, flooding, erosion, and water quality impacts

4.8 Perform conveyance analysis associated with future Phase 2 growth planning and identify additional stormwater infrastructure improvements that may be necessary to support planned redevelopment and maintain compliance with stormwater regulations.

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; currently, this is Recology. Recology collects residential and commercial/multi-family garbage, as well as residential recyclables and residential yard/food waste. Businesses that recycle or compost select their own haulers. As of 2022, Recology was serving a total of 6,950 residential customers, and 215 commercial or multi-family locations on Mercer Island.

A new contract for the collection of solid waste was approved by the City Council for ten years starting in October 2019. This contract replaces the former license agreement dating back to 2009 with Republic Services. Rates are adjusted yearly 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.

Recology 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 processing facility in Seattle, and yard/food waste is transported to Cedar Grove Composting or Lenz Composting.

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.

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 the Comprehensive Solid Waste Management Plan update. 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 by 50 percent in 1995 and 65 percent by 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 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. The City's existing solid waste program, which offers 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 all new construction, with the exception of single-family homes, to provide adequate space for on-site storage and collection of recyclables pursuant to City regulations.

5.2 Actively promote and support recycling, composting, and waste reduction techniques among the single-family, multi-family, and commercial sectors to meet or exceed King County diversion goals.

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

5.4 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 all hazardous waste generated by City departments and facilities in accordance with applicable county, state, regional, and federal regulations.

5.7 Actively enforce 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, to promote uniform regional approaches to solid waste management.

5.9 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 and assist residents with concerns about these services when possible.

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. The agreement was approved in early 1994 and remains valid until a new agreement is reached. PSE's rates are set by the Washington Utilities and Transportation Commission (WUTC).

In 2021 PSE served 9,995 residential and 703 commercial electric customers.

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

As of 2024, approximately 274 known solar installations on homes Mercer Island, generating around 2,643 kilowatts of electricity.

FUTURE NEEDS

The demand for electricity on Mercer Island has not grown significantly during the past 20 years, despite 17% population growth (2000-2020), due to a range of new energy efficiency measures. While the Island's total electricity consumption was 164,713,778 KWH in 1998 and 174,352,420 KWH 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 constructability requirements established by PSE. These five solutions include two 230 kV transmission sources and three transformer sites, outside of Mercer Island.

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 underground projects. The unresolved recurring issue of system unreliability needs to be addressed.

ELECTRICITY POLICIES

6.1 Encourage 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 Annually evaluate the reliability of electric service provided to Mercer Island. Reliability measures shall include the total number of outages experienced, the duration of each outage, and the number of customers affected.

6.3 Install all new electric transmission and distribution facilities in accordance with this Plan, the City's zoning code, the Washington State Department of Labor and Industries electrical code,-other applicable laws, 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 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 Encourage undergrounding 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 clearing vegetation from power lines in rights-of-way shall balance the aesthetic standards of the community while enhancing improved system reliability.

6.7 Support conservation programs undertaken by the electricity provider and encourage the provider to inform residents about these programs.

VII. NATURAL GAS

Puget Sound Energy (PSE) provides natural gas to Mercer Island under a franchise agreement with the City. The current 15-year agreement expires in 2028, with the City having the right to grant a five-year extension. The Federal Energy Regulation Commission, the National Office of Pipeline Safety, and the Washington Utilities and Transportation Commission (WUTC) regulates the delivery of natural gas. 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 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 essential to urban development, it is an alternative energy source 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, to reduce GHG emissions, the State's Building Code Council 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 Promote and support conservation and emergency preparedness programs undertaken by PSE, or the current provider, and 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 become a key component of a high quality of life by facilitating the exchange of information, remote work, and community involvement. More people work from home and an increasing share of commerce takes place online in the wake of the 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.

Wireless service on Mercer Island is an important utility, allowing residents and visitors to remain connected throughout Mercer 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."

FUTURE NEEDS

Demand for reliable high-speed telecommunications serving new development is expected to be high throughout the planning period as communications technology is increasingly woven into daily life. As a telecommunications utility, Lumen Technologies is required to provide services on demand where facilities exist and to those applicants reasonably entitled thereto. Comcast has sufficient capacity to provide cable communications services to any new development on Mercer Island. Where possible, the City will plan to support stronger, faster, and more reliable telecommunications connections throughout the Island.

TELECOMMUNICATIONS POLICIES

8.1 Encourage the consolidation and shared use of utility and communication facilities where feasible. Examples of shared facilities include towers, poles, antennas, substation sites, cables, trenches, and easements.

8.2 Encourage undergrounding all existing and new communication lines where feasible and not a health or safety threat.

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

8.4 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 Continues to participate in a consortium of Eastside jurisdictions to collectively analyze rate adjustments proposed by the cable communications provider.

8.6 Encourage wireless communications facilities providers to optimize cell sites to maintain service during inclement weather and natural disasters.

8.7 Consider updating and maintaining wireless communications facilities consistent with FCC regulations to minimize noise and visual impacts.

8.8 Work with service providers to plan for the provisions of telecommunication infrastructure to provide access to residents and businesses in all communities, especially underserved areas.