

Section 1: Program Overview and Evaluation

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Purpose of Utility

The intent of the Bothell Storm and Surface Water Utility (hereafter “Utility”) is addressed in the Bothell Municipal Code (BMC) as follows:

The city council finds that the ordinance codified in this chapter is necessary in order to minimize water quality degradation by preventing the siltation of the city’s creeks, streams, rivers, lakes, and other water bodies; to protect property owners adjacent to developing land from increased runoff rates which could cause flooding and erosion of abutting property; to promote sound development policies which respect and preserve the city’s watercourses; to ensure the safety of city roads and rights-of-way; and to decrease surface water damage to public and private property. Because the most cost effective and beneficial approach to surface and storm water management is through preventative actions and protection of the natural drainage system, the utility shall give priority to methods which provide protection or enhancement of the natural surface water drainage system over means which primarily involve construction of new drainage facilities or systems.

In short, the Utility manages, protects, and regulates the built (stormwater) and natural surface water systems in Bothell by:

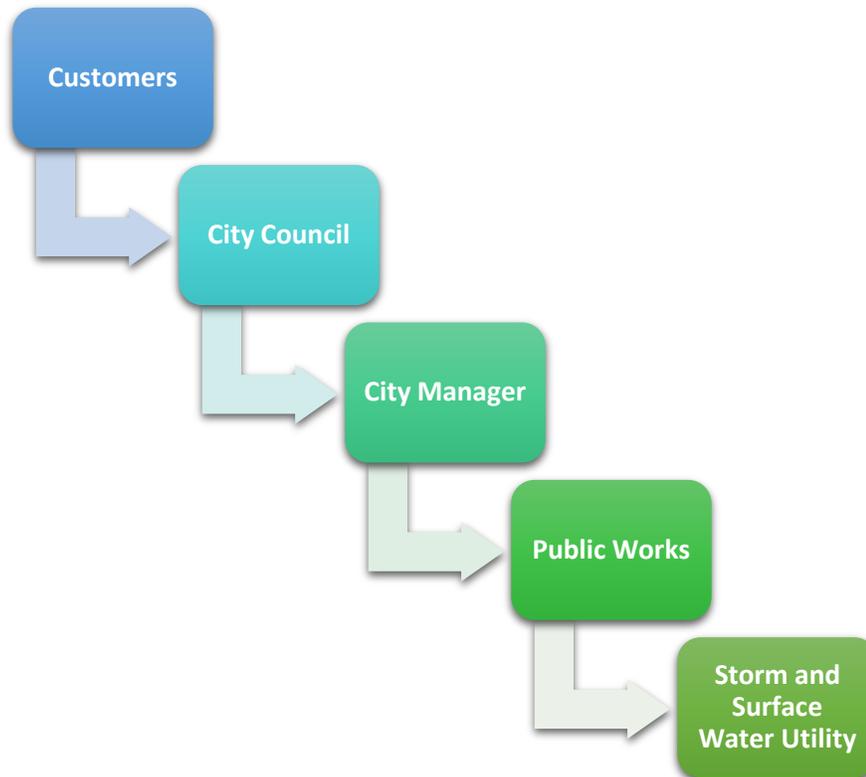
Actively participating in activities (land use, basin plans, and critical areas management) to protect and enhance the natural water system
Assuring that the drainage systems function well to minimize flooding impacts
Building and requiring new systems that protect or enhance the natural environment
Regulating and monitoring streams and the storm drainage system to minimize its impact on the natural systems
Educating and engaging the public to foster positive behavior for the natural environment
Managing the Utility’s efforts in a financially responsible way to achieve the Utility’s goals while minimizing the impacts on ratepayers

The Utility funds and maintains an expanding inventory of stormwater facilities and collection and conveyance systems and helps assure compliance with an increasingly complex regulation environment. The Utility works in concert with other City functions

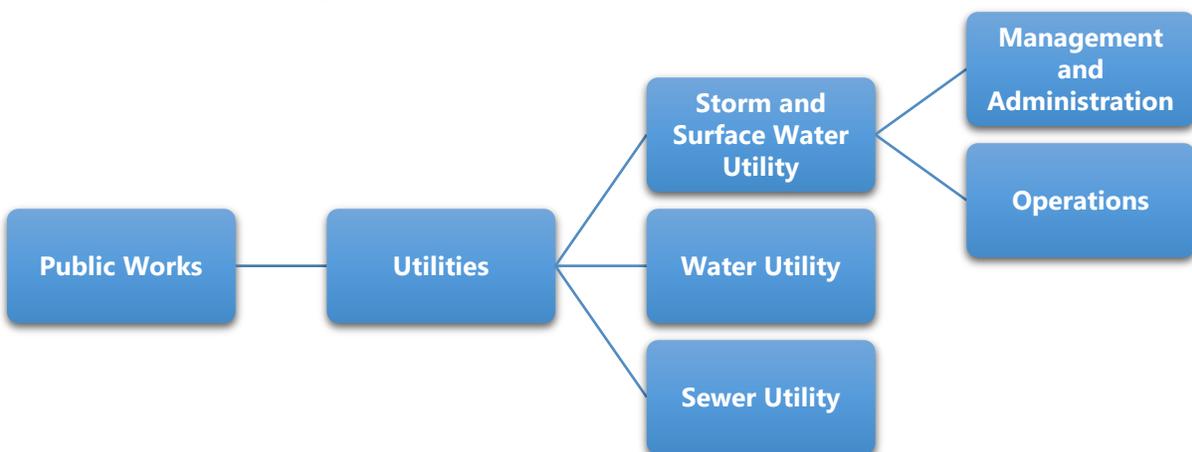
and Departments to manage, restore, and protect the city's surface water natural resources.

Utility Structure

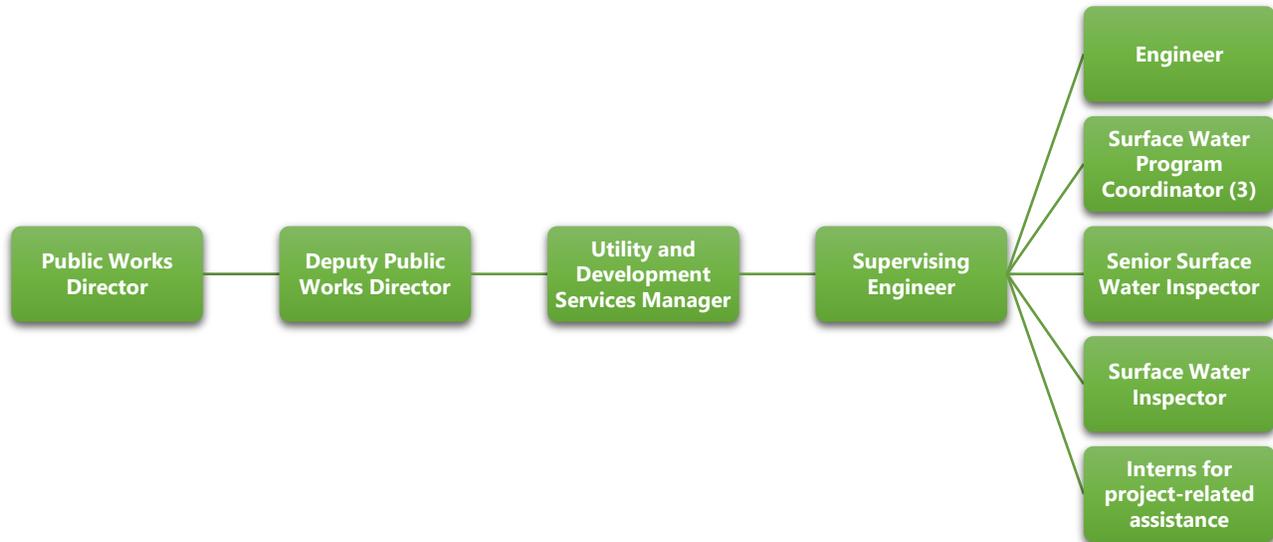
The Storm and Surface Water Utility operates under the general direction of the City Manager. The City Manager proposes and receives policy direction from the City Council who are elected by the residents and businesses of Bothell.



The Utility serves the existing city limits and is primarily funded by all developed properties within the city.



The Utility is included in the Public Works Department and is managed under the direction of the Public Works Director. The Director reports to the City Manager.



There are 17 full-time staff in the Utility. The Utility employs seasonal and intern staff for specific efforts and seasonal work as budget allows. The Utility partially funds additional Public Works staff, primarily in support or management roles, and uses consultant support where specific expertise or short-term capacity is needed.

Under the Director, the Utility's services are divided into two functional areas: Management and Administration, and Operations. These two functional staff groups are supported by other Public Works and City staff (e.g., Legal, Finance).

Management and Administration

The Utility's Management and Administration team includes seven full-time positions who oversee the Utility's protection and enhancement actions, project planning, regulations, outreach and education, water quality monitoring, restoration, reporting, public and private facilities inspection, and financial aspects of the Utility.

The Management and Administration team is supervised by a Supervising Engineer and managed by the Utility and Development Services Manager, who reports to the Deputy Public Works Director.

The supervising engineer oversees six full-time and intern staff, including:

- Engineer
- Surface Water Program Coordinator (3)

- Senior Surface Water Inspector
- Surface Water Inspector
- Intern(s) to complete projects for compliance

Operations

The Utility’s Operations team includes nine full-time positions who monitor and maintain the public storm and surface water system. The team maintains public stormwater flow control and water quality facilities, cleans and repairs catch basins, pipes, and ditches, sweeps streets for water quality, and responds to floods and spills. The operations team is supervised by a Storm Operations Manager and led by the Deputy Public Works Director – Operations, who reports to the Public Works Director.



The Storm Operations Manager oversees nine full-time staff, including:

- Lead Maintenance Worker
- Maintenance Specialist (2)
- Senior Maintenance Worker (3)
- Maintenance Worker (3)

Staff fully funded by Utility include the following (17 FTE) positions:

Management and Administration	Operations
Supervising Engineer	Storm Operations Manager
Engineer	Lead Maintenance Worker
Surface Water Program Coordinator (3)	Maintenance Specialist (2)
Senior Surface Water Inspector	Senior Maintenance Worker (3)
Surface Water Inspector	Maintenance Worker (3)

Staff partially funded by Utility include the following (3.2 FTE equivalent) positions:

Staff	FTE
Public Works Director	0.15 FTE
Deputy Public Works Director / City Engineer	0.25 FTE
Deputy Public Works Director – Operations	0.20 FTE
Capital Division Manager	0.05 FTE
Supervising Engineer – Capital Division	0.05 FTE
Utility and Development Services Manager	0.30 FTE
Associate Engineer	0.20 FTE
Code Compliance Officer	0.50 FTE
Sustainability and Engagement Coordinator	0.10 FTE
Lead Administrative Assistant – Operations	0.10 FTE
Administrative Assistant – Operations	0.25 FTE
Lead Administrative Assistant – Management and Administration	0.15 FTE
Administrative Assistant – Management and Administration	0.20 FTE
Public Records Specialist – Management and Administration	0.20 FTE
Senior Maintenance Worker – Utility Locator	0.50 FTE
Total	3.20 FTE

These partially funded positions provide management oversight, technical, and administrative services to the Utility.

Additional Staff Support

In addition to dedicated staff, the Utility partially funds or relies on staffing and support throughout the City as needed for its operations.

GIS and IT Services

The Utility funds staff support for the development and management of the City’s Geographic Information System (GIS) to track the storm infrastructure and

customer base (\$108,824 in 2019). The Utility funds Information Technology services related to computer-based maintenance, communications, security, and asset management systems.

Financial and Human Resources Services

The Utility funds support for financial services and human resources (\$129,806 in 2019). These services include fund tracking, investing, billing support, and human resources.

Legal Services

The Utility funds legal services that support and advise the Utility as needed (\$27,198 in 2019). The Utility pays directly for any needed outside legal services.

Development Services

The Utility coordinates with two Senior Civil Engineers and two Senior Construction Inspectors in Development Services, who provide stormwater design and construction review and administration through developer fees.

Project Support Staff

Large stormwater capital projects are often supported by the Public Work's Capital Division.

City Management

The Utility funds general management housed in the City Manager's office (\$85,186 in 2019). The City Manager provides the Utility's policy direction and authorization that is made by the City Council.

Utility Contribution to General City Functions

The Utility contributes to general City functions through the transfer of funds to the following:

Insurance

The Utility pays a share of the City's cost for self-insurance (\$40,862 in 2019).

Facilities

The Utility pays for its share of the costs associated with City facilities (\$74,362 in 2019). The Utility will also begin paying for its share of the City Hall lease which has been calculated at an annual rate of \$253,894 beginning in 2020.

Additional External Support

In addition to City staff and services, the Utility relies on services from vendors, private parties, and other agencies, including:

Consultant Services

Engineering and administration often uses consulting services to assist the Utility with design and special studies.

Vendor Services

Both the engineering/administration group and the maintenance/operations group use outside vendors to assist the Utility with specific efforts that require specialized equipment or staff.

Interagency Support

The Utility is also supported by other public agencies and coalitions. These agencies provide services like utility billing, water quality monitoring, flood management, public outreach, and funding. Supporting agencies and coalitions include other cities, King and Snohomish County, King and Snohomish Conservation Districts, Washington Department of Ecology, Water Resource Inventory Area (WRIA) 8, Puget Sound Partnership, and Environmental Protection Agency (EPA).

Systems the Utility Operates and Manages

The Utility manages the system of pipes, ponds, vaults and other built infrastructure that handles stormwater runoff throughout the Utility. The Utility also works in cooperation with other City divisions, property owners, local, regional, state and federal agencies to maintain, restore, and protect the natural surface water system throughout Bothell.

Asset / Facility	Total amount
Streams	49.55
Pipe (public and private) (miles)	329.64
Inlets (public and private)	16,012
Ditches (public) (miles)	40.30
Detention Pipes or Vaults (public and private)	691
Stormwater Ponds (public and private) (#/acres)	173/46.53
Outfalls	465

This storm and surface water system can be grouped into the following categories by function:

Category	Includes
Natural Surface Water Systems	Creeks, rivers, and other aquatic lands
Collection and Conveyance Systems	Inlets, catch basins, pipes, and ditches
Stormwater Flow Control and Treatment Facilities	Created ponds, detention pipes, vaults, and filters

These components of the system are detailed as follows:

Natural Surface Water Systems

The Utility’s natural surface water systems include about 25 small drainage basins that flow into North Creek or the Sammamish River or flow out of the city into Swamp Creek or Juanita Creek. Bothell primarily regulates these natural systems through its Critical Areas and Utility ordinances. Bothell Municipal Code, Section 18.01.010 (20), defines surface waters, of which watercourses are a subset. The natural drainage system includes rivers, streams, watercourses, piped streams, lakes, and wetlands.

Bothell Municipal Code further defines watercourses as follows:

“Watercourse” means any portion of a channel, bed, bank, or bottom waterward of the ordinary high-water line of waters of the state including areas in which fish may spawn, reside, or through which they may pass, and tributary waters with defined beds or banks, which influence the quality of fish habitat downstream. This definition includes watercourses that flow on an intermittent basis or which fluctuate in level during the year and applies to the entire bed of such watercourse whether or not the water is at peak level. This definition does not include irrigation ditches, canals, storm water run-off devices, or other entirely artificial watercourses, except where they exist in a natural watercourse that has been altered by humans.²

The Utility helps private property owners and the City manage these natural systems by performing the following:

- Basin planning
- In-stream maintenance for flood control
- Protection, restoration, enhancement, and management through code enforcement and projects

² Bothell Municipal Code 14.04.005

- Public outreach, education, and awareness
- Pollution control
- Water quality and stream health monitoring

Collection and Conveyance Systems

The system of inlets, pipes and ditches throughout the city collects storm runoff and conveys it to streams and the Sammamish River. This system includes both public and private elements. The Utility funds the maintenance, repair, and replacement of the public portion of the collection and conveyance system. The majority of this system is located in city streets. Private property owners maintain the remainder of the system, generally located on private property.

Public collection and conveyance system

- *Inlets:* The Utility maintains about 8,300 inlets that collect runoff and convey it to the piped system.
- *Public storm pipe:* The Utility maintains about 138 miles of storm pipe, ranging from eight inches to over 48 inches in diameter.
- *Ditches and channels:* The Utility maintains over 40 miles of built ditches and channels that collect and convey runoff.

Private collection and conveyance system

- *Inlets:* Private property owners maintain about 6,900 inlets throughout the city. The Utility periodically observes these inlets for pollutants, blockage, and structural condition where they are connected to stormwater flow control and treatment facilities and notifies the owners when observations indicate that maintenance is needed. However, the private property owners are required to maintain these systems at least semi-annually per the Bothell Municipal Code.
- *Private storm pipe:* There are about 170 miles of private storm drain pipes the Utility has identified. Private owners are required to maintain these pipes. The Utility staff only observes the portion of the pipes that it can see from the inlets and does not assume responsibility for assuring that the system is in good condition and function.
- *Ditches and channels:* Private property owners also maintain ditches and channels that collect and convey stormwater in Bothell. The Utility periodically observes these private systems where they connect to flow control and treatment facilities.

Stormwater Flow Control and Treatment Facilities

There are over 650 flow control and treatment facilities (facilities) throughout Bothell. These facilities have generally been constructed to manage the stormwater flow from developed property and city streets. The facilities may control the rate of release of stormwater to avoid overwhelming downstream systems. They may contain elements that collect, contain, and treat pollutants to protect downstream surface water.

The facilities usually consist of open ponds or underground vaults or large storage pipes with structures that control the outflow from the facility. In some cases, the facilities may include stormwater treatment swales (bioswales), filter vaults or rain gardens (bio-retention cells), or may infiltrate soils into the ground. As new properties develop and new City projects are completed, additional facilities will be added that may include increased infiltration and treatment methods that focus on low impact development standards.

Facilities that are often located on private property are either sited on separate tracts of land (typical in single family developments) or within the private parcels. Public facilities are often located within the street or on a separate private parcel with an easement to the City or a City-owned parcel.

Public flow control and treatment facilities

- *Ponds:* There are 59 Utility-maintained ponds in the city. The Utility inspects these ponds every year and maintains them to the standards that they were built. This maintenance is performed by Utility Operations and includes clearing vegetation, debris, and sediment, and management of the control structure and outlet systems.
- *Detention vaults and pipes:* There are 188 Utility-maintained underground vaults or detention pipes in the city. These detention systems usually consist of concrete structures or large buried pipes and are often located under the city streets. Some vaults contain filters or systems to provide water quality treatment. The Utility inspects these vaults every year and maintains their function. Typical maintenance includes removal of sediment, maintenance of the control structure, and filter maintenance.
- *Bioswales, filters and other treatment:* There are 50 Utility-maintained water quality swales (bioswales) or other stormwater treatment facilities throughout the city. These water quality/treatment systems are inspected annually and receive

maintenance such as vegetation control, sediment removal, and filter treatment material replacement.

Private flow control and treatment facilities

- *Ponds:* There are 77 privately-maintained stormwater ponds in the city. These ponds are maintained by both residential and non-residential property owners. Many of the ponds are located on separate tracts of land in residential subdivisions, but there are several ponds on non-residential properties. Typical maintenance includes removal of sediment, debris, and overgrown vegetation, and cleaning of the control structure.
- *Detention vaults and pipes:* There are 497 privately-maintained detention vaults and pipes in the city. These typically include buried concrete vaults or large diameter pipes with a flow control structure at the outlet. The primary purpose of these vaults and pipes is to control the rate of stormwater release from new development. The private property owners are responsible for maintaining these vaults and pipes. Typical maintenance includes cleaning and structural repairs.
- *Bioswales, filters and other treatment:* There are 157 privately-maintained water quality swales (bioswales) or other stormwater treatment facilities throughout the city.

The designation of a facility as public or private is not consistent throughout the city. Facilities that were permitted and built under Bothell regulations and serve private property are required to be maintained by the property owners. Facilities that were built under jurisdiction of either Snohomish or King County and added to the Utility through annexation may not have been maintained by property owners. For example, facilities in residential developments in unincorporated King County were maintained by King County, so the Utility has continued this practice for these developments. This inconsistency creates a potential inequity among private owners in the city.

Currently, all properties in the city pay a utility fee based on the percent of impervious area of their property. Private properties that have and maintain their own facilities pay the same fee rate as private properties where the Utility maintains the facilities. All stormwater facilities serve to protect the downstream systems and receiving waters of the city's streams and river, regardless of ownership or maintenance responsibility.

Other Systems and Areas Not Directly Managed by the Storm and Surface Water Utility

The Utility works in cooperation with others to help manage many systems and areas that are associated with storm and surface water. The Utility's role is parallel with others in managing these systems or areas.

Most areas are covered under the City's Critical Areas Code, which is administered by the Directors of Community Development and Public Works. These areas include City-Defined Critical Areas, including:

- Designated Wetlands
- Critical Aquifer Recharge Areas
- Frequently Flooded Areas
- Geological Hazard Areas
 - Erosive Hazard Areas
 - Landslide Hazard Areas
 - Seismic Hazard Areas
 - Other Geologic Hazard Areas
- Fish and Wildlife Habitat Areas

Designated Wetlands

The Storm and Surface Water Utility does not currently take an active role in monitoring or enforcing regulations of wetlands in Bothell. Wetland areas include both City and privately-owned property. Because wetlands receive, hold, and treat storm and surface water throughout the city, they are an important element in assuring clean water and providing runoff storage to reduce flooding. The Utility should, as appropriate, recommend, pursue, and fund projects to restore, enhance, or protect wetlands as part of its responsibilities.

Critical Aquifer Recharge Areas

The Utility does not monitor or manage aquifer recharge in Bothell. However, as low impact development projects and efforts expand, the Utility may need to become involved in aquifer recharge management in the future.

Frequently Flooded Areas

The Utility does not manage floodplains and floodways in the city. Bothell participates in the National Flood Insurance Program (NFIP), which requires Bothell to actively monitor and regulate its designated and mapped floodplains. Most of this management is performed by the Public Works Department through development services. The Public Works Director is the City's NFIP Floodplain Administrator. The

City's participation in the National Flood Insurance Program is funded through the City's General Fund and does not include Utility funds.

Geologic Hazard Areas

The Utility does not directly regulate or oversee geologic hazard areas. However, the City's storm drainage code defines Geologically Hazardous Drainage Areas to limit activities that drain through geologically hazardous areas. These areas are often influenced by surface or stormwater, so the Utility often participates with other City and private parties to address specific issues in geologic hazard areas as they arise.

Groundwater

Generally, groundwater collection and conveyance systems are not considered stormwater, and these systems are not directly managed by the Utility. Groundwater, however, does impact surface water and storm systems by adding flow. In some instances, this flow is beneficial as it adds cool, clear water to streams. In other cases, the surfacing of groundwater puts a burden on stormwater collection and conveyance systems.

Contaminated groundwater and soils are also not addressed by the Utility unless the contamination is tied to the Utility's storm system.

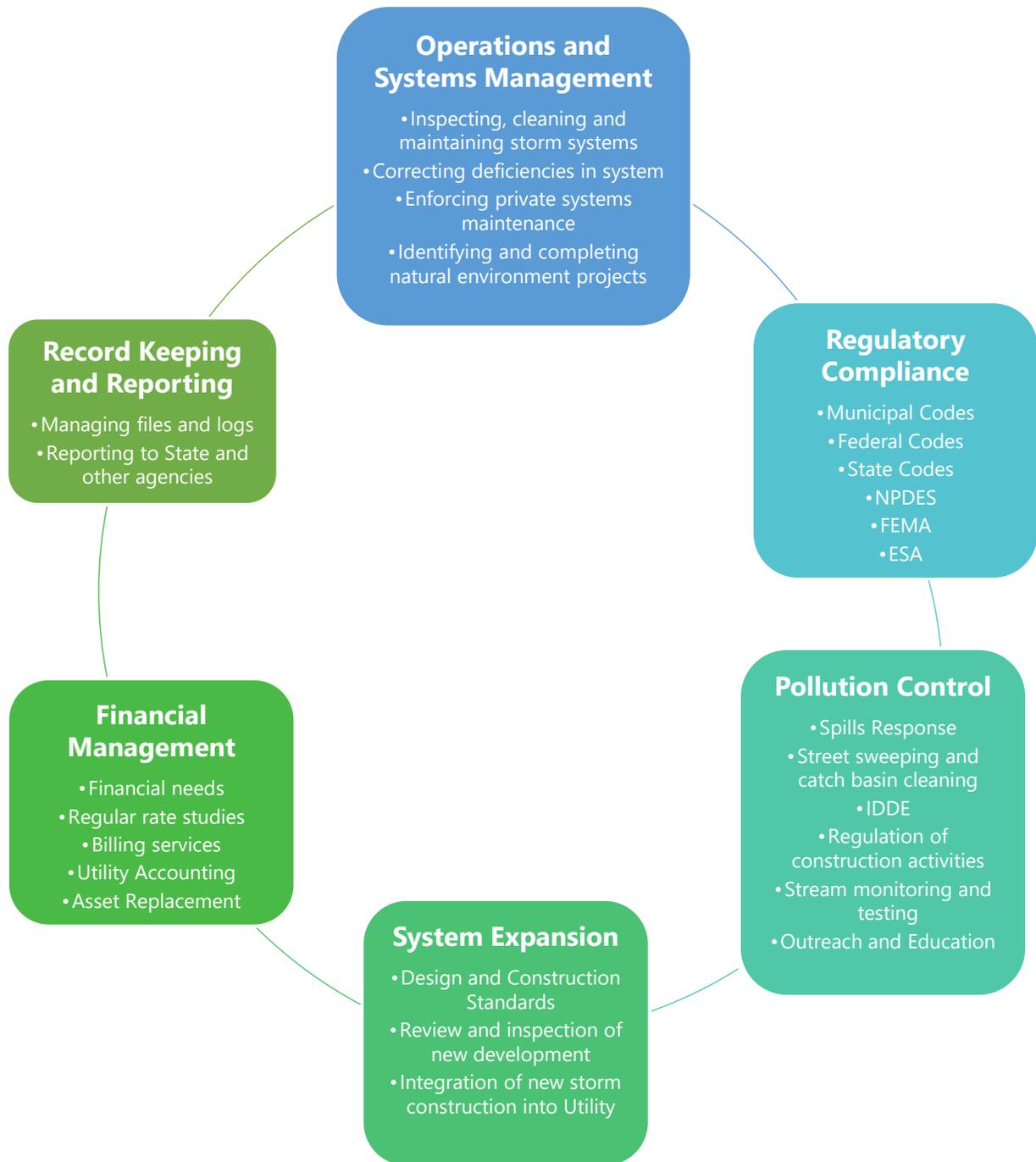
Maintenance and Management of Surface Water Resource Areas

- *On Public Land:* As the Utility identifies and programs natural resource projects like Sammamish River restoration, the Utility will need to address the long-term maintenance and management of these areas. As the financial and management responsibility for these areas is included in the Utility, additional staffing and equipment (and associated funding) will need to be considered.
- *On Private Land:* Management of critical areas on private land can have a dramatic impact on surface water quality. The Utility often meets with property owners regarding issues of erosion, sedimentation, flooding, land movement, and other issues that are often connected to surface water. The Utility provides some limited guidance and assistance to property owners; however, oversight or assistance management of critical areas on private land is not a specifically-funded effort for the Utility.

This Plan Update does not include an analysis of the potential impacts of Utility maintenance and management of added surface water resource areas.

Utility Functions and Program Evaluation

In 2020, the Utility functions are shown on next page's graphic:



These functions are detailed and evaluated as follows:

Operations and Systems Management

A primary function of the Utility is to provide highly effective and efficient built and natural storm and surface water systems.³ This effort includes keeping the existing systems clean and in good repair and health. It also involves planning and completing projects to correct deficiencies in the system.

The Utility addresses these efforts through four elements, with an emphasis on methods which provide protection or enhancement of the natural surface water drainage system over means which primarily involve construction of new drainage facilities or systems.

1. *Inspecting, cleaning, and maintaining the Utility's storm system*
 - Cleaning pipes and inlets
 - Dredging and controlling vegetation in ditches
 - Maintaining stormwater flow control and water quality facilities
 - Completing minor repairs of storm drains and facilities
2. *Identifying and correcting systems deficiencies*
 - Tracking customer complaints and flooding information
 - Conducting studies of portions of the system
 - Identifying and completing projects to correct deficiencies
3. *Enforcing Private Systems Maintenance*
 - Inspecting private facilities
 - Working collaboratively with property owners to keep facilities functional
 - Enforcing compliance with Bothell requirements for facility maintenance
 - Monitoring FEMA certification and management of the private North Creek levee
4. *Identifying and completing natural environment projects that restore/protect surface water related natural environment*

³ Built systems include the storm drainage collection, treatment, detention and conveyance system of inlets, pipes, ponds, vaults ditches and other constructed elements. Natural systems include the streams, wetlands, natural ponds, rivers, and lakes. The line between built and natural systems is sometimes blurred, as is the case for constructed wetlands and restored/daylighted streams.

Assessment of Operations and Management Performance

The following overviews the adequacy of the Utility's performance of the four systems operation and management elements.

1. Inspecting, cleaning and maintaining the Utility's storm system

The efforts that the Utility puts into inspecting the public stormwater facilities are provided by a combination of Operations staff and inspectors in Management and Administration. Cleaning and maintaining the public storm conveyance system is managed by Public Works Operations staff.

The Utility's operations and systems management effectiveness has been evaluated as follows:

A. Meeting NPDES Permit Requirements
B. Stormwater System Performance
C. Efficiency of Operation

A. Meeting NPDES Permit Requirements

The NPDES regulatory system put in place a minimum level of inspection, cleaning and maintenance of storm drain systems to address water quality. NPDES does not address maintenance associated with flood control management.

In 2019 and in prior years, the Utility operations met the minimum requirements of the previous NPDES permit. The 2019-2024 NPDES Permit as issued on September 1, 2019 continued and/or placed the following new requirements on the system maintenance and protection by the Utility:

- i. Implement maintenance standards that are as protective as the 2012 Stormwater Management Manual for Western Washington
- ii. Annually inspect all municipally owned or operated stormwater treatment and flow control facilities in accordance with adopted maintenance standards
- iii. Annually inspect and enforce adopted maintenance standards for all private stormwater treatment and flow control facilities approved after the 2009 Stormwater Management Manual for Western Washington
- iv. Spot check potentially damaged facilities after major storm events

- v. Inspect all catch basins and inlets owned or operated by the Permittee at least once by August 1, 2017 and every two years thereafter
- vi. Implement practices, policies and procedures to reduce stormwater impacts from lands owned or maintained by the City, including streets, parking lots, highways, buildings, parks, open space, road rights-of-way, maintenance yards, and stormwater treatment and flow control facilities
- vii. Train employees whose functions might affect stormwater quality about the importance, procedures, and ways to protect stormwater
- viii. Implement a Stormwater Pollution Prevention Plan for all heavy equipment maintenance or storage yards/facilities
- ix. Maintain records of inspections and maintenance or repair activities

Operations is anticipated to meet the requirements listed above within the existing 2021-2022 Utility budget and staffing levels.

B. Stormwater System Performance

The ability of the existing stormwater system to handle stormwater is controlled by both adequate system design and maintenance of inlets, pipes, and facilities.

**Top 10 Wettest Days in Seattle,
1948 – 2020**

Rank	Date	Precipitation (inches)
1	Oct. 20, 2003	5.02
2	Dec. 3, 2007	3.77
3	Nov. 20, 1959	3.41
4	Nov. 6, 2006	3.29
5	Dec. 20, 2019	3.25
6	Feb. 8, 1996	3.06
7	Nov. 25, 1998	3.04
8 (tie)	Jan. 18, 1986	2.98
8 (tie)	Feb. 9, 1951	2.98
10	Nov. 9, 1990	2.95

Four of the top ten wettest days occurred from 2003 - present.

Unlike sewer and water utilities, which receive a relatively steady demand, stormwater systems are highly affected by relatively unpredictable storm events. To account for these events, systems are generally designed to a certain level of storm. These system designs assume that the inlets, pipes and facilities are clean and fully functional during these design storm events.

One measure of the adequacy of the system is to look at its performance during actual major storm events. Such an event occurred on December 3, 2007.

This event, which followed two days of heavy rain, caused flooding at numerous locations throughout Bothell. Many of the known locations of flooding were evaluated and assessed as to whether the problem was related to the system capacity or a need for maintenance.

Following the 2007 storm event, numerous maintenance issues were addressed and Operations refined its program to check on specific problem areas and respond during storm events.

Since 2007, the Utility has not experienced another significant storm event of equal intensity to test its system. We have seen seasonal flooding due to consecutive rain events within a short period, such as February 2020, but there have not been significant tests of the systems by a big single storm event since 2007. For this reason, the Utility should not assume that the system is in adequate condition without continued investigation.

A thorough analysis of the adequacy of the Utility's storm system would typically include a detailed hydrology and hydraulic model study. This type of study would predict the amount of stormwater that each pipe in the system would need to handle. Although no comprehensive hydrology and hydraulic study of the Utility's storm systems has been performed, many local studies have been done as part of developments and design of repairs to known problem areas.

Absent a major storm test of the system, the Utility could perform a detailed hydrology (storm runoff) and hydraulic (pipe and system flow capacity) study to theoretically evaluate the system. These types of studies have been performed on portions of the system, but not on a systemwide basis.

Another way to assure system performance is to regularly inspect the system to make sure that it is free of issues that might affect its capacity. Utility staff currently inspect the system routinely and conduct spot-checks of the system after major storm events. The Utility worked in conjunction with Sewer and Water Utilities to establish a maintenance management system, Lucity, to assist in tracking and addressing maintenance needs for the system.

While performance of the storm system's ability to handle events has not been tested in the extreme since 2007, improvements have been completed and problem areas have been maintained. The system should regularly be evaluated to assure that it is reasonably adequate to handle storm events. Climate change modeling should also be

considered to determine additional flow and capacity needs for new and redevelopment.

C. Efficiency of Operation

A third measure of the adequacy of the Utility's operations and management is an assessment of how efficiently it is performing. An analysis of efficiency could begin by benchmarking the Utility with comparable other stormwater utilities. It would then evaluate the efficiency of operations by looking at:

- Performance Measures
- Staffing Levels
- Equipment Needs
- Funding
- Recommendations

The Utility's system management efforts are analyzed and reaffirmed with each City budget approval process and each rate review. However, these reviews are generally based on the incremental changes that are anticipated each time the budget or rate reviews are presented. These analyses assume a fixed baseline of activities based on prior years.

The impacts of growth in the Utility-managed systems and impacts of regulation have generally been addressed by adding staff, equipment, and funds for outside services. These increases have been added to the Utility's baseline budget.

To assure that the Utility is operating efficiently, a thorough benchmarked review needs analysis should be performed. This analysis would compare staffing levels and efforts with other similar utilities and would assess the efficiencies of key Utility activities. This analysis will be performed with the next full rate assessment.

2. Identifying and Correcting Deficiencies in Utility-Maintained Stormwater System

Deficiencies in the Utility's systems, such as undersized pipes or inadequate inlets, can contribute to flooding of properties and damage to the natural environment. Finding and correcting deficiencies before damage occurs has been an ongoing challenge for the Utility. Past master planning and the 2007 flood event provide some measure of system performance. In addition, studies of North Creek and the Sammamish River and monitoring of small streams throughout the city provide indications of natural environment needs.

A current exercise to identify and prioritize storm and surface water projects was needed and has been conducted as part of this Plan Update. The effort relies on past master plan work, the 2008 Flood Action Plan, and staff and public input to identify potential standalone and combined projects with other utilities and transportation needs.

The majority of funding for correcting deficiencies is planned to come from Utility funds and private properties. Grants through organizations like King County Flood Control District, the Washington State Department of Ecology, and FEMA are additional potential sources that can help keep Utility rates down. The Utility should develop and use a system to track and manage potential grant opportunities.

The results of the project planning are contained in Section 2 of this Master Plan Update.

3. Enforcing Private Systems Maintenance

An important component of the Utility's storm and surface water system is the network of stormwater flow control and treatment facilities in the city. These facilities have generally been constructed to mitigate for development of property and roadways. Depending on where and when the facilities were installed, they might be managed and maintained by either the Utility or by private property owners.

Utility-managed facilities include about 59 ponds, 188 detention vaults/pipes, and 50 swales. These are included in the section on inspecting, cleaning and maintaining the Utility system. Privately-maintained facilities include about 77 ponds, 497 detention vaults/pipes, and 157 swales.

The Utility has an active program of inspecting all flow control and water quality facilities. The Utility employs two full-time storm inspectors, who visit over 1,000 Utility and private facilities and evaluate their conditions. Inspecting and enforcing maintenance of private systems is an active part of the current inspection program.

Enforcement was a challenge in the past. However, with the addition of a full-time code compliance officer within Public Works in 2019, the Utility is now in the process of implementing a new enforcement program to address facilities that are not in compliance with the inspector's correction notice. So far, private facility owners have been responsive to the program which is focused on assistance and support in order to achieve compliance.

Evolving Requirements

Design requirements and purposes of stormwater facilities have evolved significantly since the City was formed. Older systems were built primarily to provide flow control and were designed using different storm design and performance metrics. Newer systems provide both flow control and water quality benefits. Engineering design continues to evolve as more is learned about modeling storms. As the climate changes, design standards will likely continue to be revised.

The Utility's inspection of privately-operated facilities currently considers the design standards with which the facility was built. The oldest developments in the city typically have no facilities to maintain. Where older facilities do exist, the maintenance requirements are often less stringent and expensive than newer systems. This inconsistency creates a perceived inequity among property owners. This perceived inequity is further exacerbated by the fact that the Utility maintains some facilities that service private properties.

Limited Incentive Tools

When the Utility inspects private facilities and finds that maintenance or repair is needed, it issues a correction notice to the responsible party. The notice identifies the issue(s) and requires them to contact the City with a schedule to correct the issue(s). This correction notice can be followed up with further notices and fines for non-compliance, as enforced by the Utility's code compliance officer. If necessary, the Utility can enter the facility and correct the issues if they are deemed to create a public nuisance or hazard.

This system of inspection and enforcement sometimes creates a potentially adversarial situation for privately-maintained facilities. Facility owners/operators, especially those who manage residential facilities, are often not equipped to maintain the storm facilities and are not prepared for the cost of maintenance. Proactive education and compliance assistance for private facility owners will reduce long-term costs and environmental impacts.

Credits and Fee Reductions

Utility fee credits can, when crafted and implemented well, provide a useful system of incentives and inequity correction tools for the Utility. When the Utility was established, it included rate reductions and credits for certain customers. Some of these reductions became outdated, were not universally accessed, or proved a challenge to effectively and fairly administer. Credits and reductions included:

- *Undeveloped Parcels* – Properties that have not been developed are exempt from rates and charges of the storm and surface water utility.
- *Non-Single Family Properties* – Non-single family properties could receive a reduction in their fee if they maintained drainage facilities that mitigated runoff contribution from their property. A 25 to 50 percent reduction in Utility charge was available for these properties. This credit was eliminated in 2014.
- *Senior/Disabled Low Income Discount* – Parcels owned by persons qualifying for senior or disabled property tax exemption are exempt from storm and surface water service charges.
- *Parcels Served by Privately-Maintained Facilities* – Parcel owners who maintained and operated retention/detention facilities could request a reduction in fees based on their costs to maintain and operate required retention/detention facilities. Non-residential properties could request a fee reduction under another section of the Bothell Municipal Code. This credit was eliminated in 2014.
- *School Districts* – School districts that provided education provisions were permitted a credit until January 1, 1997, when this credit opportunity sunsetted.

Beginning in 2014, the fee reductions and credits for maintenance of private systems were eliminated based on the idea that the operations and maintenance of these systems is now standard practice required by City and State requirements.⁴ The Utility incurs substantial costs associated with inspecting and enforcing these operations and maintenance requirements. Elimination of the credit system simplified some stormwater bills, increased Utility revenues, and improved the equity of the fee system.

Evaluation of Management Options for Private Facility Maintenance

The Utility previously considered alternatives to the requirement that private property owners maintain their systems. A differentiation is often made between facilities that are maintained by single family homeowners and other owners because non-single family properties often have professional maintenance systems in place to address storm facilities.

Many different approaches to private facilities maintenance are possible. Each option, in addition to the current configuration, involves issues associated with administration, cost recovery, consistency, and fairness.

⁴ The Credit system was modified by City Ordinance 2130.

The first option is a continuation of the existing private facility maintenance program. Under this option, all private facilities are inspected at the rate and frequency according to the standards in place at the time of development. Any deficiencies are sent to the private order as an Order to Maintain and assistance is provided to achieve compliance.

A second option could include the Utility taking over all private facilities. This would involve the Utility assuming maintenance responsibility for the cleaning, repair, and function of the 731 systems on private property that are currently maintained by commercial and residential property owners. The cost to the Utility for this approach would be significant and would require an increase in Utility rates. This approach would allow the Utility to consistently maintain facilities throughout the city.

A third option would involve the Utility taking the responsibility only for private facilities that are currently being managed by single family residential properties and their associations. Facilities located on non-single family residential properties would continue to be maintained by the owners of these properties. This approach assumes that non-single family properties are more likely to have professional management systems in place to maintain their facilities. This option would not require as extensive a rate increase as taking over all the facilities in option two, but would result in increased annual inspection and maintenance frequencies and would not resolve fairness of costs to property owners without a system of credits.

Monitoring of FEMA certification and management of the North Creek Levee System

The North Creek levee system is a privately installed and maintained levee system designed to protect the adjacent business park from flooding associated with the North Creek flood plain. The levee is one of only two FEMA-certified levee systems in King County (the other is associated with the Green River) and a unique private system that protects a significant economic and employment area of the city.

The Utility will take on the task of annually monitoring the private certification and management of this system as part of its flood management services to ensure functionality.

4. Identifying and Completing Natural Environment Projects

The Utility does not directly or solely manage the natural environment in the city, but works with other City divisions, private properties, and other agencies to protect, preserve and restore the environment related to storm and surface water.

The Utility should work in concert with the Community Development and Parks & Recreation Departments to identify, prioritize and seek funding for natural environment projects that address storm and surface waters in Bothell.

Natural environment projects address different needs than built storm systems projects. They may be pursued to restore habitat, improve water quality, address fish passage, or protect resources. These needs are typically prioritized differently from stormwater flooding issues. Funding for natural environment projects often relies heavily on grants because these projects often address regional resources. The Utility can be a source of matching funds for these grants.

For the development of this Plan Update, Utility staff reviewed existing watershed management documents, including:

- North Creek Watershed Management Plan, September 6, 1994, Snohomish County Public Works
- Surface Water Quality Plan, City of Bothell, 1996, CH2M-Hill
- North Creek Drainage Needs Study, December 2002, Snohomish County
- Sammamish River Corridor Action Plan, 2002, Tetra Tech
- Swamp Creek Drainage Needs Report, 2002, Snohomish County
- Restoration Plan for the City of Bothell Shorelines, May 2012, The Watershed Company
- Lake Washington/Cedar/Sammamish Watershed (WRIA 8) Chinook Salmon Conservation Plan, 2017, WRIA 8
- Stream Health Assessment Reports, City of Bothell Staff, 2010 through 2020

Based on available information and input from staff, businesses, and residents, the Utility included identified projects into the previous and current Capital Facilities Plan.

The Utility has not developed a list of smaller natural environment projects, so a list will be created during this planning period.

Overall Operations and Systems Management Recommendations

- Drainage and environmental project completion will continue to be a priority for the Utility. The lists of projects will be regularly reviewed and revised as appropriate.

- The Utility will perform a comprehensive assessment of its long-term staffing and equipment needs, including a benchmarking against similar utilities.
- The Utility will evaluate options to its current approach for private facilities maintenance.
- A list of small environmental projects will be developed and projects will be prioritized and completed as funding allows.

Climate Change

The Utility must continually adapt to variations in storm intensity and duration to effectively manage the Utility's storm and surface water system. This presents an ongoing challenge because the storm events in and around Bothell are highly variable. Long-term trends for Bothell associated with regional and global climate change are uncertain. It is recommended that the City perform a sensitivity study of the impact of climate change to its surface water system.

A [report](#) by the University of Washington suggests that storm intensity and duration will increase, but there is some uncertainty as to how significant the change would be for Bothell.⁵ Larger, more frequent storms may not be accommodated by portions of the Utility's storm infrastructure, causing flooding. We will need to consider adaptive management, which might include upgrading the infrastructure to accommodate larger storms, adding new infrastructure, and adjusting maintenance by season which will be a significant effort that is currently not planned by the Utility.

The report also indicates that stream flows and water quality (primary temperature) will be negatively affected, with summer flows declining and water temperature increasing. The Utility may need to adapt its approach to storm runoff management to address these changes. Adaptation could include increased use of infiltration, changes in stormwater detention and treatment, and modification to stream buffers and channels.

⁵ State of Knowledge Report – Climate Change Impacts and Adaptation in Washington State: Technical Summaries for Decision Makers (2013)

Stormwater Element	Predicted Response to Climate Change
Storm intensity	<ul style="list-style-type: none"> • Increased magnitude and frequency of peak flows
Annual precipitation amount and seasonal distribution	<ul style="list-style-type: none"> • Moderate increase in winter precipitation
	<ul style="list-style-type: none"> • Moderate decrease in summer precipitation
	<ul style="list-style-type: none"> • Increased average runoff in winter and spring
	<ul style="list-style-type: none"> • Decreased summer base flow
Flood risk	<ul style="list-style-type: none"> • Increased flood risk from increased peak flow magnitudes
	<ul style="list-style-type: none"> • Increased flood risk from channel migration
Water quality	<ul style="list-style-type: none"> • Increased average and summer water temperature
	<ul style="list-style-type: none"> • Lower dissolved oxygen
	<ul style="list-style-type: none"> • Increased algal blooms
Water movement	<ul style="list-style-type: none"> • Increased evapotranspiration
	<ul style="list-style-type: none"> • Lower soil moisture
	<ul style="list-style-type: none"> • Reduced summer base flow in creeks
	<ul style="list-style-type: none"> • Reduced groundwater recharge
	<ul style="list-style-type: none"> • Wetland conversion from perennial to seasonal

Regulatory Compliance

The Utility seeks to assure that Bothell is compliant, to the extent feasible, with all local, state, and federal regulations and agreements related to storm and surface water management.

These regulations and requirements include:

- Federal Clean Water Act - NPDES Municipal Stormwater Permits and Section 410
- Endangered Species Act
- Washington State Regulations, including:
 - Washington State Water Pollution Control Act,
 - Water Quality Standards for Ground Waters,
 - Water Quality Standards for Surface Waters,
 - Sediment Management Standards,
 - Growth Management Act,
 - Shoreline Management Act,
 - Critical Areas requirements,
 - Comprehensive Environment Recovery and Compliance Act,
 - Boldt Decision
- City Comprehensive Plan
- Bothell Municipal Code
- FEMA flood management
- WRIA 8 interagency agreement

Much of the regulatory environment was established, in large part, to address deficiencies in the management of storm and surface water. These deficiencies have been identified as creating safety and public health problems and threatening the existence of native species.

Assessment of Existing Regulatory Compliance Level of Effort

As of 2020, the Utility is currently compliant with local, state, and federal permit requirements.

Over the next few years some known specific additional efforts will be needed to stay compliant. These known requirements can be accommodated in the Utility's plan and projected rates.

Additional regulations related to storm and surface water may arise during the timeframe of this Plan. As additional regulations arise, the Utility may need to adjust

staffing and spending to accommodate changes. The Utility may recommend reprogramming existing activities within existing funding levels to accommodate unforeseen changes or it might seek to increase rates to expand its program.

Regulatory Compliance Recommendation

The Utility should proactively review new regulations to assure that it stays compliant.

Pollution Control

The Utility performs a wide range of activities focused on protecting Bothell's streams and river, and ultimately Puget Sound, from pollution.

Per the Clean Water Act:

The term "pollutant" means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.

Pollution control activities that the Utility performs include systems management and city practices as discussed earlier. In addition to these operations activities, the Utility performs the following activities specifically to address surface water pollution:

➤ Spill response

When a material spill happens in the city, Utility staff reviews the incident to determine if the spill may affect the Utility's managed storm and surface water system. Operations responds to spills with equipment and staff when the spills occur on public property. For private property spills, Management and Administration regulates and observes the private property owner's spill response efforts.

➤ Street sweeping

The Utility funds 100 percent of citywide street sweeping on the assumption that street sweeping provides water quality and flood reduction benefits. The sweeping is managed and performed by Operations staff.

➤ Detection and elimination of illicit connections to the storm system

Identification of illicit connections and discharges to the Utility's system is performed by both Operations and Management and Administration staff in conjunction with routine maintenance and inspection duties.

➤ Regulation of construction activities

The Utility manages the regulations that are applied to both City projects and private development to minimize surface water impacts during and after construction. These regulations include system design requirements, sediment and erosion control, and pollution prevention measures during construction.

Enforcement of the construction standards is provided by the City's Capital and Development Services personnel and is funded through project and developer funds.

➤ **Stream and system monitoring and testing**

Surface Water staff monitor ambient monitoring locations, randomized watershed health monitoring, and project specific sites throughout the city for pollution. The monitoring locations are based in a combination of staff understanding of potential problem areas and State-managed TMDL locations. Watershed health monitoring locations are derived from a probabilistic sampling design using R (statistics software) to develop random sites for more robust statistical analysis following EPA and Department of Ecology protocols. In addition to staff monitoring, the Utility contracts with other agencies for pollution source control tracking and monitoring. The Utility has chosen to participate in the NPDES Phase II permit required monitoring of effectiveness with option of paying into a general fund with other cities to fund a regional approach to monitoring.

➤ **Education and outreach**

Education and outreach staff in Management and Administration address non-point source pollution through awareness, engagement, and technical assistance to alter public perceptions and behaviors that cause or contribute to stormwater pollution. Staff focus on pollution-preventing activities like picking up pet waste, using a commercial car wash, fixing vehicle leaks, practicing natural yard care, and reporting spills. The Utility conducts education and outreach by using a combination of existing staff, volunteers, consultants, conservation districts, and regional partnerships.

➤ **Business Source Control**

Surface Water staff conduct inspections at publicly and privately owned commercial and industrial facilities that are considered high priority small quantity generators (SQGs) of dangerous waste. Staff are responsible for actively requiring best management practices and regulatory assistance for pollution generating sources on-site. The City also implements enforcement through local ordinances for facilities failing to meet standards.

➤ Local Source Control

Through a contract with Ecology, the Utility began a new program in 2012 called the Local Source Control (LSC) Program. In 2019, because of added requirements for Utility staff under the NPDES permit, the Utility transferred management and oversight of the LSC program to the City's Management and Administration staff. Outreach and technical assistance visits for this grant-funded program are now provided by a consultant, who focuses on best management practices specifically for indoor hazardous waste, storage, and disposal. The goal of these visits is to reduce negative impacts to the environment and to keep businesses in compliance through education and outreach rather than enforcement. The City is under contract on a biennial cycle with Ecology using grant funding from the EPA National Estuary Program.

Utility staff also provide regular education and outreach efforts directed at various target audiences such as businesses, residents, and the general public.

The next page shows a table of outreach and education activities planned during the current NPDES permit cycle:

Residents

- Natural yard care
- Pet waste
- Septic system maintenance
- Hazardous chemical use, storage, and disposal
- Home maintenance (carpet cleaning, pressure washing, painting, construction, etc.)
- Vehicle maintenance (car washing, auto repair and maintenance)
- Low impact development principles and techniques

Businesses

- Impacts from pollution on impervious surfaces
- How to prevent and report spills to minimize damage
- Impacts from pollution on local rivers, lakes, and streams
- Dumpster and equipment maintenance
- Dangerous waste requirements for SQGs
- Proper landscaping maintenance practices
- Low impact development principles and techniques
- How to properly inspect and maintain their stormwater facilities

General Public

- Youth education on stormwater pollution prevention
- Impacts of stormwater on surface waters
- Impacts from impervious surfaces
- Hazardous chemical use, storage, and disposal
- Stewardship opportunities
- Impacts from outdoor spills and how to report them
- Low impact development principles and techniques
- City's plans to improve local water conditions

Further details about these activities are available in the Utility's annual Education and Outreach Summary at www.bothellwa.gov/stormdocs.

Assessment of Existing Pollution Control Level of Effort

Measuring the adequacy of the Utility's pollution prevention effort is a challenge. The Utility is meeting its current NPDES Permit performance expectations regarding spill response, street sweeping, IDDE, education and outreach, and stream and system monitoring.

As is the case with many stormwater management approaches, the Utility's approach to effectiveness could assume that following and achieving compliance with certain practices like spill response and street sweeping will result in adequate pollution prevention.

Another approach to assessing the adequacy of the Utility's pollution protection efforts is to consider the results of testing and monitoring over time. The Utility staff have been

collecting data on Bothell watersheds and continue to assess this data. The data generally shows a decline in water quality within the basins. Whether this decline is attributable to inadequate pollution prevention efforts or other factors has not been conclusively determined due to multiple variables.

Pollution Control Recommendation

The Utility should continue routinely evaluating the effectiveness of its programs based on their outcomes toward water quality. These evaluations, along with the Utility's stream monitoring data, should be used to inform actions within each Surface Water Management Area (see Section 3 of this Update).

System Expansion

The Utility participates in both private development and City capital project oversight to assure that these projects have minimal reasonable impact on the surface water system and to assure that the Utility has adequate resources to address additions to the system.

This participation includes:

- **Design and Construction Standards**

Management and Administration assures that the Utility has current design standards for new construction and land use activities. Application of these design and construction standards is carried out by Development Services in collaboration with the Community Development Department.

- **Review and inspection of new developments and projects**

The City's Development Services and Utility staff assure that new developments follow appropriate and current design standards and construction practices and consults with Utility Management and Administration as needed, primarily to ensure downstream analyses include all relevant local drainage information.

- **Integrating newly constructed storm infrastructure into the Utility's system**

Management and Administration assures that newly completed storm and surface water infrastructure is integrated into the Utility's system for routine inspections, maintenance, and asset management. Operations plans for new additions to the system by reviewing and planning for the added workload.

Assessment of System Expansion Level of Effort

Surface Water Design Manual

The Utility's Surface Water Design Manual was last updated in January 2019. Another manual update is anticipated for Phase 2 jurisdictions in the next permit cycle.

Interaction with Development Services

The Utility has some involvement in development review, stormwater system design review, and construction inspection. It provides clarification to questions regarding construction practices, drainage issues, and the Design Manual.

Integrating Completed Infrastructure into the Utility

The process of integrating newly built infrastructure into the Utility's oversight, maintenance, and operations is currently relatively informal. This has resulted in gaps where Utility staff has not adjusted to the City's acceptance of developer or contractor-completed infrastructure.

Increasing Capacity to Manage Added Infrastructure

Operations is particularly impacted by the addition of infrastructure, especially where the new infrastructure requires Utility maintenance and operation. This expansion in infrastructure can occur through annexations, new development, and Bothell's capital projects. The expansion often requires increased Operations efforts and equipment.

System Expansion Recommendations

The Utility should:

- Regularly review the impacts on the Utility of expansion of infrastructure from both development and City projects.
- Periodically review staffing and equipment levels to assure that appropriate levels of resources are matched to the Utility's goals.

Financial Management

The Utility tracks its financial needs, recommends rates, and manages Utility spending.

This effort involves:

➤ Financial Needs

Operations and Management and Administration separately track and manage their spending throughout the current budget cycles and recommend financial needs for upcoming budgets. These financial needs include regular expenses, capital project needs, and one-time needs. The Utility generally does not budget for extraordinary costs, such as natural disasters, spills, or major storms.

Capital project costs can create a challenge for the Utility, as demonstrated by the 35th Ave SE Drainage Improvement project. The cost of this project is significantly higher than was initially estimated due to the fish passable culvert requirement. This increase will have a significant impact on both Utility rates and short-term cash flow.

In addition to managing spending, the Utility predicts the receipt of developer-generated revenue (facilities charges). This revenue source is only to be used for capital projects that typically add system capacity necessary to accommodate growth or address system deficiencies.

The Utility also applies for and manages grants to fund projects and operations. These grants range from annual non-competitive grants that can be used for a wide range of efforts to competitive, project-related grants.

➤ Regular Rate Studies

Management and Administration prepares an annual review of Utility rates for Council consideration to assure that rate revenues are sufficient. This annual review is based on a combination of historical information and prediction of anticipated upcoming expenses and revenues.

The Utility prepares a rate model-based analysis every few years to help predict future rates. This model was last prepared in 2018 by FCS Group. The Utility plans to update this rate model in 2021.

➤ Billing Services

Management and Administration coordinates and performs billing services. Most property owners are currently billed by King or Snohomish County through the

property tax billing systems. These bills are based on rate structures that Bothell established when it created the Utility in 1994.

The Utility directly bills federal properties because these properties do not receive property tax statements from King or Snohomish County.

➤ Utility Accounting

Management and Administration coordinates with Bothell's Finance Department to monitor the Utility's finances throughout the budget cycle. Utility Management and Operations staff track spending and revenues by using a worksheet that is updated from data received by the Finance Department.

➤ Asset Replacement Funding

To assure that the Utility has adequate funding to maintain and operate its system, the Utility expenses funds each year for the system's depreciation. This depreciation expense, if not used for replacement, is to be rolled back into the Utility's total cash balance to be used for asset replacement in future years.

Assessment of Existing Financial Management Level of Effort

Although current projects will burden the Utility's cash flow, it is expected to have adequate cash to cover expenses. The cash flow limitations are expected to peak in the beginning of 2024.

The Utility is diligent and thorough at managing its rates and financial accounting. Rate studies are consistently performed and presented to the City Council for consideration each year. In addition to annual rate analyses, the Utility periodically updates its rate model. The Utility's self-audit of billing improved accuracy and fairness of its fee collection.

The Utility has not formally evaluated its billing system and rate structure since the Utility was formed in 1994. The billing of Utility fees through the Counties' tax billing offers convenience, limited flexibility, and a potential lack of transparency. The Counties charge the Utility for billing and send bills to property owners twice per year. Since billing is included alongside property tax billings that are often paid through mortgage companies as part of escrow, many property owners are likely not aware of the stormwater bill.

The Utility's billing structure is based on a tiered system with increasing rates for each tier of impervious area. This tiered structure means that properties may be nearly

identical but fall into different tiers and therefore pay significantly different fees. This tiered structure was likely created for convenience in calculating fees at a time when accurate calculations of impervious area were difficult. The structure may have also been used to match what the Counties use for their calculations. Current Geographic Information System (GIS) tools make accurate calculations for each property possible and practical. Also, County billing systems may allow the Utility to use actual impervious area.

The Utility depreciates its infrastructure, but does not have a separate asset replacement fund and does not have a prioritized plan to replace aged assets. However, the Utility has performed several significant storm projects that have replaced aged assets. The asset replacement value of these projects is currently tracked in Bothell's financial management system.

Financial Management Recommendations

- The Utility will review its billing and rate systems on a regular basis to assure fairness, adequacy, transparency, and efficiency. In 2021, the Utility is conducting an analysis of billing and revisions to its tiered rate structure.
- The Utility will continue to review its rates annually and update its rate model approximately every four years, with the next rate model update in 2021.

Record Keeping and Reporting

The Utility creates and uses records to assist its decision-making, confirm its regulatory compliance, and inform the public of its activities.

This record keeping and reporting includes, but is not limited to:

- Annual Reports to Ecology
- Billing Files
- Communication Files
- Condition Assessments
- Customer Complaints
- Enforcement Files
- Equipment Logs
- Financial Files
- GIS Data Management
- Grants
- Inspection Reports
- Levee Files
- Maintenance Records
- Miscellaneous Files
- Monitoring Data
- Permit Files
- Personnel Files
- Project Files
- Reference Materials
- Spill Reports
- Studies and Report
- System Mapping
- Work Orders

Public Works created a Records Specialist position in 2019. This position assists Utility staff with proper access, management, and retention of Utility records.