Utility Review Summary

RAFTELIS

MEMO

To: Julie Underwood, Director of Public Works, City of Kirkland
From: Michelle Ferguson, Rebekka Hosken, and Rachel Weinberg of Raftelis
Date: October 24, 2022
Re: Surface Water Utility Assessment and Review

Raftelis is pleased to assist the City of Kirkland with an assessment and review of its Surface Water Utility. The outcomes of our review, with recommendations for improvement, are provided below.

Background and Methodology

In May 2022, the City of Kirkland engaged Raftelis to conduct an assessment and review of the Surface Water Utility within the Public Works Department. The purpose of the assessment was to review the current Surface Water Utility's organizational structure, staffing levels, and operations to strengthen service to the public and improve efficiency and effectiveness, particularly at a time when the utility's workload continues to increase due to expanding levels of service and growth in the City of Kirkland.

The first step in the assessment process was to engage Public Works Department employees in order for Raftelis to understand their workload, operations, structure, staffing levels, and available resources. The project team conducted interviews with 26 staff members from the capital project, development, streets and grounds, and utility operations divisions, as well as with the Public Works Director and City Manager. These interviews included engineers, utility maintenance workers, planners, water quality specialists, educators, and utility and City leadership. The employee interviews provided the project team with a better understanding of how work is performed and specific challenges pertaining to staff capacity, organizational structure, and communications between divisions.

Additionally, the project team reviewed and analyzed numerous documents provided by the City, including position descriptions, staffing task distribution, previous benchmarking data, surface water budget and rate model, capital project data, and National Pollutant Discharge Elimination System (NPDES) permit and Master Plan documents. The City also provided the draft *Surface Water Master Plan Staffing Analysis,* which was reviewed and compared with information from staff interviews.

The recommendations and analysis detailed in this memo were developed to help the City enhance the organizational structure, staffing capacity, and coordination between divisions to allow the Utility to continue to provide a high level of service as the City continues to grow. Table 1 lists the recommendations discussed in more detail throughout this memo.

Table 1: List of Recommendations

Number	Recommendations
Staffing	
1	Create a Surface Water Program Manager position to oversee the Surface Water Program section.
2	Restructure the Surface Water Program into two groups led by the Manager and two Supervisors.
3	Add one additional Operations and Maintenance (O&M) lead position and restructure O&M staff into two crews.
4	Restructure education and outreach staff in the long-term.
Operations and Maintenance	
5	Develop a definition of preventative maintenance that guides the work of one O&M crew.
6	Define which projects are capital and which are operations and maintenance.
7	Evaluate opportunities to contract out certain O&M work.
8	Re-evaluate maintenance of stormwater facilities on private developments.
9	Relocate responsibility for natural stormwater infrastructure maintenance to the Stormwater O&M division.
Engineering	
10	Formalize the City's development review process through the creation of thresholds for review by each specialty, development of standards for engineers, review process timelines for the customer, and the use of project management software.
11	Define responsibilities and create a formal workflow between Surface Water Engineers and CIP engineers when designing surface water capital projects.
Infrastructure	
12	Improve utilization of Lucity™ for asset management and communication between Stormwater O&M and Surface Water Programs.
13	Increase City investment in capital projects.
Illicit Discharge and Spill Program	
14	Add one additional Water Quality Coordinator to create and manage the new Source Control Program and support the Illicit Discharge Detection and Elimination (IDDE) and Spill Response programs.
15	Transition first response to the Surface Water Program section.
16	Dedicate an O&M crew for immediate spill response and to provide flexible backup/assistance to other crews.

Surface Water Utility Overview

Located on the eastern shore of Lake Washington, the City of Kirkland is a suburban city in King County, Washington. At the time of incorporation in 1905, the City of Kirkland's population was approximately 530 and has grown to an estimated 92,175.[1] Since incorporation, the City has also grown in area due to consolidation of Houghton and Kirkland in 1968, and annexations of neighboring communities of Rose Hill and Juanita in 1988, and North Juanita, Finn Hill, and Kingsgate in 2011. The City is now 18 square miles, approximately 20 times its original size. The City of Kirkland developed a Surface Water Utility in 1998. With the growth in population and area, there has been a growth in Surface Water Utility program and operational needs.

Management of the Surface Water Utility is the responsibility of the Public Works Department, which oversees planning, design, construction, and stewardship of the City's infrastructure and natural resources. Public Works consists of six divisions, which work in close coordination with each other, other City departments, the public, and other agencies to ensure the effective development and ongoing management of public infrastructure, including systems for water distribution and fire protection, wastewater collection, surface water management, the urban forest, motorized and non-motorized transportation, solid waste disposal and recycling, public grounds maintenance, and City fleet services.

The Surface Water Utility is split across two sections within the Public Works Department: 1) the Surface Water Program section, and 2) the Stormwater Operations and Maintenance section.

The Surface Water Program Supervisor oversees a variety of staff including engineers, planners, water quality, and education specialists. The Surface Water Program section provides surface water engineering services and inspections for surface water infrastructure, development review, and capital projects design and construction. Additionally, Surface Water Program staff conduct education and outreach programs, water quality monitoring and improvements, spill response, and regulatory compliance.

The Stormwater O&M Supervisor manages O&M crews providing maintenance of assets in the field. Stormwater O&M staff provide daily maintenance and repair activities and assist with long-term planning and efficient operation of the City's surface water system. O&M crews inspect, clean, rehab, and repair surface water infrastructure including pipes, inlets, vaults, and natural systems consisting of streams, ditches, and bodies of water. The Surface Water Utility has 17,000 catch basins, each of which must be inspected and cleaned every two years, and crews conduct between 150-200 field inspections on days focused on inspection. Stormwater O&M staff are responsible for catch basin or manhole repairs from top to bottom and pipe repairs up to 14 feet deep. Crews also inspect and maintain ditches, but Grounds O&M is responsible for maintenance of detention ponds and other above ground features of low impact development. When Stormwater O&M replace curb and gutter, they enter service requests for the Streets Division to conduct the paving work. Additionally, Stormwater O&M and Surface Water Program engineering and water quality staff collaborate on emergency response through the Spill Program, which receives an estimated 300 calls per year.

Table 2 below provides an overview of core services provided by the Surface Water Utility. This is not intended to be all-inclusive; rather, it is meant to illustrate the significant activities performed by staff across the Utility's functions.

[1] Kirkland City, Washington - Census Bureau Profile

Table 2: Surface Water Utility Core Services

Surface Water Utility	Program Area	Activities / Responsibilities
Programs Section	Surface Water Engineering	• Review development plans for impacts on stormwater • Review CIP project plans for impacts on stormwater • Manage aging and failing infrastructure and asset management data • Respond to resident's drainage complaints • Inspect issues logged by O&M • Capital project design and coordination with CIP engineers • Assist with spill program, code enforcement, and field work for NPDES permit compliance • Map, assign ownership, and develop inspection schedule for all developments • Update impervious area in Geographic Information Systems (GIS) for stormwater billing • Coordinate NPDES compliance • Respond to customers calls related to bills and public records requests
	Surface Water Program Planning	• Coordinate NPDES permit compliance • Coordinate Master Plan development and updates • Manage pollution prevention program • Help private land and homeowners get necessary permits • Help O&M get necessary permits for work • Conduct additional environmental projects related to noxious weeds, climate change, and integrated pest management
	Surface Water Program Environment and Water Quality	• Regular monitoring of water quality, bacteria, water level, and stream habitat • Monitor seven City-owned mitigation sites • Respond to drainage complaints and questions • Review CIP project designs and answer planning questions related to streams and wetlands • Delineate wetlands when necessary • Inspect construction sites for appropriate tree fencing • Manage IDDE Spill Program • Prepare reports and documentation for surface water code enforcement • Inspect privately owned drainage systems and send notices and reports to property owners • Map private stormwater facilities using GIS
	Surface Water Program Education and Outreach	• Implement behavior change program for NPDES permit compliance • Coordinate and collaborate with regional partners on education and outreach campaigns • Conduct outreach to residents through yard smart rebate program, pet waste outreach, spill response, retrofits, and pollution prevention program • Develop communications materials for surface water • Assist with grant management and writing for education and outreach funding • Assist as needed with education and outreach related to water and sewer
Operations and Maintenance Section		• Inspect, clean, and rehab stormwater system • CCTV inspections for development, CIP, spills • Map assets based on CCTV inspections • Respond to spill calls • Respond to emergency drainage or flooding calls • Maintain stormwater facilities • Review development and CIP plans for stormwater O&M requirements • Responsible for O&M of stormwater system from catch basins and below

Structure

The Surface Water Program Supervisor manages 11 staff, while the Stormwater O&M Supervisor supervises 16.5 FTEs. The Surface Water Program has been the responsibility of the Development and Environment Services Manager since the program began in 1998.

Figure 1 illustrates the FY22 Public Works Department organizational structure as it relates to surface water engineering and operations; shaded boxes indicate the location of the two Surface Water Utility sections. The Surface Water Program section in blue reports to the Development and Environmental Services Manager, and the Stormwater O&M section in green reports to the Utility Manager who also oversees Water and Wastewater.

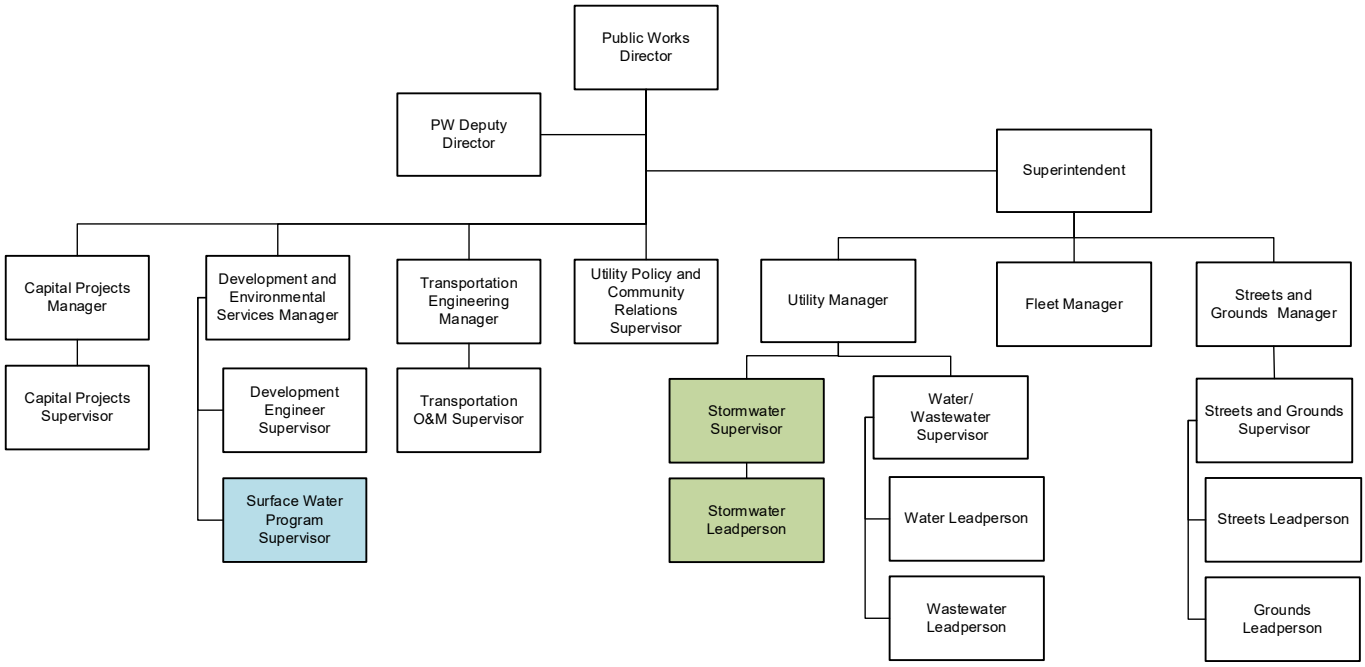

Figure 1: FY22 Public Works Department Organizational Structure for Surface Water Engineering and Operations, FY22

Staffing

As outlined in Table 3, the Surface Water Utility funded 41.75 FTEs in FY21 and FY22, including 11.5 FTEs in Surface Water Programs and 17.5 FTEs in Stormwater O&M. Stormwater O&M has experienced several vacancies in FY21 and FY22, so staffing has not been at the budgeted levels.

Table 3: Surface Water Funded FTEs

Position Title	FY2021 Budget[2]	FY2022 Budget[3]
Surface Water Programs	11.5	11.5
Stormwater O&M[4]	17.5	17.5
Streets and Grounds O&M	8.05	8.05
Utility Craft Person	0.15	0.15
Public Works Leadership	1.46	1.46
Admin	1.59	1.59
Other Departments	1.5	1.5
Total FTEs	**41.75**	**41.75**

Figure 2 is from the *Surface Water Master Plan Staffing Analysis* and shows the change in surface water funded positions from 2014 through 2022.

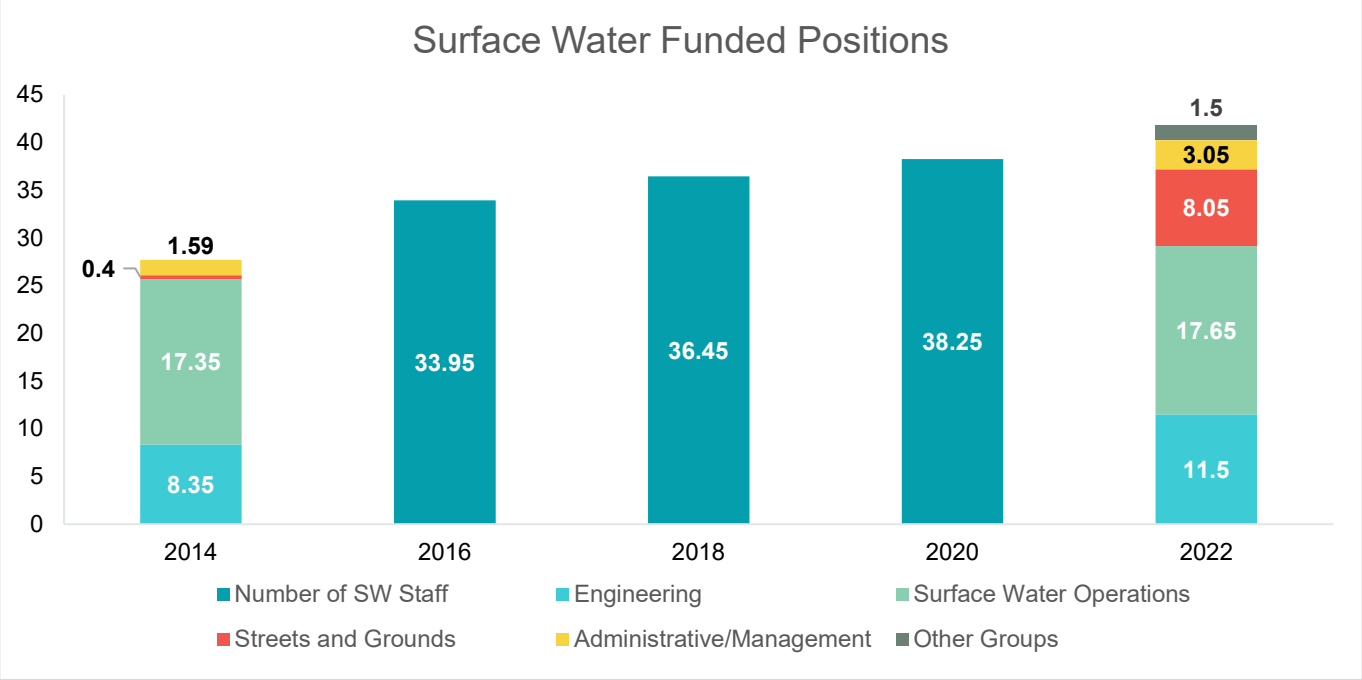

Figure 2: Surface Water Staff Changes from 2014 - 2022

While the total staff has increased, the Stormwater O&M staff ("Operations") has increased by less than one full-time equivalent (FTE) employee. O&M resources have rather been invested in Streets and Grounds.

[2] FTE numbers for FY21 are from Surface Water Master Plan Staffing Analysis – August 2022

[3] FTE numbers for FY22 are based on the Feb 2022 Organizational Chart for Public Works Staff and FTE numbers from Surface Water Master Plan Staffing Analysis – August 2022 for other department staff

[4] Allocated, several current vacancies

Budget

According to the City's bi-annual budgets, total expenditures, including both operating and capital, for the Surface Water Utility have grown by 16.6%, from $44.1 million in the FY 2017-18 Budget, to $51.5 million in the FY 2021-22 Budget. Table 4 summarizes the Utility's budget from FY 2017-18 to FY 2021-22.

Table 4: Surface Water Operating and Capital Projects Budgets, FY 2018-2022

Category		FY 2017-18 Budget	FY 2019-20 Projected	FY 2021-22 Budget	% Change FY 2017-18 to FY 2021-22
Surface Water Operating Fund					
	Salaries and Wages	$4,572,902	$5,351,431	$6,694,763	46.4%
	Benefits	$1,839,780	$2,471,870	$3,630,582	97.3%
	Supplies	$568,654	$475,502	$671,702	18.1%
	Other Services	$6,149,812	$5,786,328	$5,724,351	-6.9%
	Intergovernmental Services	$2,224,430	$2,332,727	$2,401,457	8.0%
	Capital Outlay	$17,011	$16,611	$33,000	94.0%
	Interfund Transfers	$5,238,031	$5,907,320	$5,778,200	10.3%
	Reserves	$5,437,497	$5,009,225	$4,913,804	-9.6%
Subtotal – Operating Fund		**$26,048,117**	**$27,351,014**	**$29,847,859**	**14.6%**
	Capital Projects	$18,086,380	$23,362,555	$21,608,111	19.5%
Total Surface Water Fund		**$44,134,497**	**$50,713,569**	**$51,455,970**	**16.6%**

The Surface Water Utility has added staff to accommodate the community's rapid growth which is reflected in increasing salaries and benefits expenditures. There has also been a 19.5% increase in capital projects during this period. Total expenditures, including contributions to reserves, are over $51 million in FY 2021-22.

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Analysis and Recommendations

The Surface Water Program is responsible for managing the City's stormwater runoff and flooding in compliance with the Western Washington Phase II Municipal Stormwater Permit (NPDES permit). The Washington Phase II Municipal Stormwater Permit is part of the Clean Water Act National Pollutant Discharge Elimination System nationwide permitting for cities with municipal separate storm sewer systems (MS4). The City of Kirkland is governed under the 1999 Phase II regulations because it is considered a "small" MS4 system in Washington.

In order to be in compliance with its NPDES permit, the City of Kirkland must conduct programs in nine core areas:

- Stormwater Planning
- Public Education and Outreach
- Public Involvement and Participation
- Stormwater System (MS4) Mapping and Documentation
- Illicit Discharge Detection and Elimination (IDDE)
- Controlling Runoff from New Development, Redevelopment, and Construction Sites
- Municipal O&M
- Source Control for Existing Development
- Monitoring and Assessment

Responsibilities for activities and programs in the core areas are divided among the Surface Water Program staff and the Stormwater O&M staff. Growth in regulatory requirements, as well as growth in the City, is leading to an increasing amount of work related to NPDES permit compliance. The Surface Water Utility has a successful history of high compliance with all NPDES permit requirements and has met and/or exceeded all permit requirements on an annual basis.

In addition to successful permit compliance, the City provides a high level of customer service, including quick and comprehensive response to customer calls; quick response times to illicit discharges, spills, and other emergencies; and maintenance of stormwater facilities on private property. The City made a policy decision to assist customers by taking ownership of surface water infrastructure installed on single family residential developments and taking responsibility for its ongoing maintenance. In most other cities, the city would regularly inspect the infrastructure and hold the property owner responsible for its maintenance. In addition to inspecting and maintaining stormwater facilities on private property, the majority of O&M is done in-house by the surface water crews in coordination with streets and grounds, including some pipe repair and replacement and all necessary curb and gutter for stormwater related projects. According to staff, very little is contracted out. Staff are proud of their ability to address a wide variety of issues themselves.

While the NPDES permit has a variety of requirements to improve the quality of stormwater discharge entering waterways, the City conducts additional programs to improve water quality and protect and restore aquatic habitat in local streams and lakes, which goes beyond permit compliance.[5] Based on interviews with staff, it is clear that there is a strong commitment to water quality efforts on the surface water team as well as

[5] 2022 NPDES Stormwater Management Program Plan. Prepared November 2021, Finalized March 2022.

from Public Works and City leadership. In addition to the staff, the residents of Kirkland support and prioritize the utility's water quality and conservation efforts.

The Surface Water Utility has committed and high-performing staff in both the Engineering and O&M sections who work hard to provide a high level of services to customers. Due to the growth in the City of Kirkland through annexation and continued development, the daily responsibilities of the Surface Water Utility to meet NPDES permit compliance and broader City stormwater management and water quality goals have increased substantially. This has come at the expense of long-term and strategic planning, coordination within the Surface Water group and with other Public Works units such as Development and CIP, and the ability to renew and replace aging infrastructure. According to numerous Utility staff, the condition of the area annexed from King County in 2011 is more substandard than had originally been thought and will require investment to bring to appropriate levels. The City needs to invest in more staff for the Surface Water program to keep up with growth in stormwater management responsibilities and to prioritize future planning and investment.

Another strength of the Surface Water Utility and Public Works Department as a whole, which was highlighted in multiple staff interviews, is that the staff within each area and across areas work well together. The success of the coordination between O&M and Engineering relies on the strong relationship and communication between the current supervisors in each area, but should staffing change, there are not systems in place to maintain such communication and coordination. Areas across the Public Works Department —surface water, capital, and development program areas and streets, grounds, and stormwater O&M— need to utilize formal standard operating procedures (SOPs) and communication methods in order to rely less on people and more on systems and processes to formalize coordination and collaboration throughout the Department.

The analysis and recommendations detailed below define the staffing and resource needs required to equip the Surface Water Utility to meet the growth demands of the City and establish practices to facilitate strategic planning and coordination to set up the stormwater management efforts for future success. These recommendations are organized into the following categories: Staffing, O&M, Engineering, Infrastructure, and the Illicit Discharge and Spill Program.

Staffing

The primary desired outcome of this review was to identify staffing needs and organizational structure improvements for the Utility. There are no "right answers" with regard to structure and staffing but the project team has reviewed operations in Kirkland's utility, as well as structures in other nearby utilities, to provide insights. The Appendix includes organizational charts showing how surface water utilities are structured in the Cities of Bellingham, Bellevue, and Redmond. The recommendations below highlight key staffing and organizational needs for the City of Kirkland's Surface Water Utility.

Recommendation 1: Create a Surface Water Program Manager position to oversee the Surface Water Program section.

The Surface Water Utility has strong leadership but management of the utility is organizationally bifurcated within the Public Works structure. When the utility was formed in 1998, the surface water engineers were placed under the Development and Environmental Services Manager. However, as the program has grown, it has taken on less development review work and substantially expanded its scope to focus on surface water infrastructure, capital projects, water quality, education and outreach, and permit compliance.

As the City of Kirkland has grown and continued to provide a high level of service through its Surface Water Utility, it has become a major contributor to regional policy and collaboration efforts. The Education and Outreach Specialist represents the City on the Puget Sound Regional Council and is a leader in the dumpster outreach program, which is a regional effort to meet the behavior change requirement of the NPDES permit. The Surface Water Planner and Supervisor also collaborate with utilities throughout the region on planning, permit compliance, and appeals. The Public Works Department has demonstrated its commitment to being a strong regional partner through the recent reclassification of the Solid Waste Supervisor position, which was under the Development and Environmental Services Manager, to the new Utility Policy and Community Relations Supervisor, directly reporting to the Public Works Director. The Utility Policy and Community Relations Supervisor has been directed to work closely with the Surface Water Program and O&M Supervisors and Utility Manager on regional utility policy and coordination.

Public Works and Surface Water staff are extremely mission driven, with a strong desire to improve flooding issues and water quality in Kirkland and to provide quick response times and a high level of service to their customers. While the staff is committed to the mission, there has been a lack of capacity for comprehensive strategic planning and coordination within the Surface Water Utility and between other divisions in the Public Works Department. It has been challenging to integrate the priorities of the Surface Water Master Plan, NPDES permit requirements, O&M goals, and the overall City's CIP plan. Additionally, there is a need for updated policies and standard operating procedures due to City growth, aging infrastructure, and changing development. The informal communication processes across divisions and departments used in the past when the City was smaller are no longer applicable in a larger organization.

Currently, in the absence of policies and procedures, surface water engineers and O&M staff must review many decisions with their supervisors, which, as the Utility has grown, continues to take up more of the supervisors' time and results in almost case-by-case decision making. The development of clear policies and procedures related to development review, capital project planning, and asset management would empower staff to make decisions without relying as much on supervisors. While supervisors expressed a desire for policies and procedures, they did not feel they had capacity to devote to their development.

Given these capacity concerns, it is recommended that the City create a Surface Water Program Manager position. This position, directly supervised by the Public Works Director, would bolster the development of utility policies and strategic planning and coordination between the Program and O&M sections. The Surface Water Program Manager would have capacity to evaluate current surface water engineering work and collaborate with the Stormwater O&M Division to develop standard operating procedures and policies to guide staff in development review, capital project planning, and asset management. The Manager can also help to guide the supervisors when there is a decision that has to be made outside of the standard utility policy, which is occurring more frequently due to growth and development in the City.

Creating a Surface Water Program Manager position would also allow more direct collaboration with the Capital Projects Manager and the Development and Environmental Services Manager to ensure coordination of priorities between each division. Both the Surface Water Program and Capital Project Division have master plans that outline future capital projects to meet overall system and City goals. In the past, these plans have not been developed in a collaborative manner, which has sometimes resulted in competing priorities. Stormwater projects are often deprioritized in large scale CIP planning, which has led to a lot of investment in stormwater projects that are not a high priority for the Utility but address other City projects or priorities.

Having a manager-level position to advocate for stormwater needs will elevate the Surface Water Utility to be equal with Transportation and Development.

While the surface water engineers collaborate on development reviews, the program, as a whole, no longer fits under the Development and Environmental Services Manager, whose workload is mostly focused on development. The Surface Water Program Manager will have a more direct line of communication with the Utility Manager and the Stormwater Supervisor in O&M in order to formalize the involvement of O&M in strategic planning and capital project and development review. Additionally, the Manager can collaborate with the new Utility Policy and Community Relations Supervisor to help shape utility policy and maintain the City of Kirkland's role in regional stormwater management.

Recommendation 2: Restructure the Surface Water Program into two groups led by the Manager and two Supervisors.

The Surface Water Program has grown significantly since the Surface Water Utility was formed in 1998. Due to the growth in level of service provided by the utility and annexations, Surface Water Utility staff has grown to 11.5 FTEs in the Surface Water Program section and 17.5 FTEs in Stormwater O&M. The Surface Water Program Supervisor's span of control is 11 direct reports with a wide range of functions including engineering, planning, water quality, spill response, regulatory compliance, and education. Eleven direct reports is considered to be a large span of control for technical positions, which has led the supervisor to spend a substantial amount of time in meetings, taking away capacity for strategic planning and policy making. The wide range of job functions requires the supervisor to make decisions ranging from engineering to regulatory compliance to education and outreach efforts on a daily basis, while also leading strategic direction and planning for the Surface Water Utility.

In the near-term (FY 2023), the span of control can be addressed by having the Surface Water Program Manager supervise planning, water quality, and education staff (7 FTEs), and the Surface Water Program Supervisor to provide mid-level supervision of all of the engineers (5 FTEs), as shown in Figure 3 below. Those positions shaded in blue denote new positions. This near-term suggestion alleviates span of control issues of 11 direct reports to one supervisor but, as discussed below, in the long-term it is recommended to have two supervisors so that half of the program does not report directly to the manager while the other half reports to the supervisor. The division between positions reporting to the supervisor and those reporting to the manager is intentional to group all engineering staff under one supervisor and have positions that are involved in larger utility policy and program, such as NPDES permit compliance, report directly to the manager who would oversee the NPDES permit.

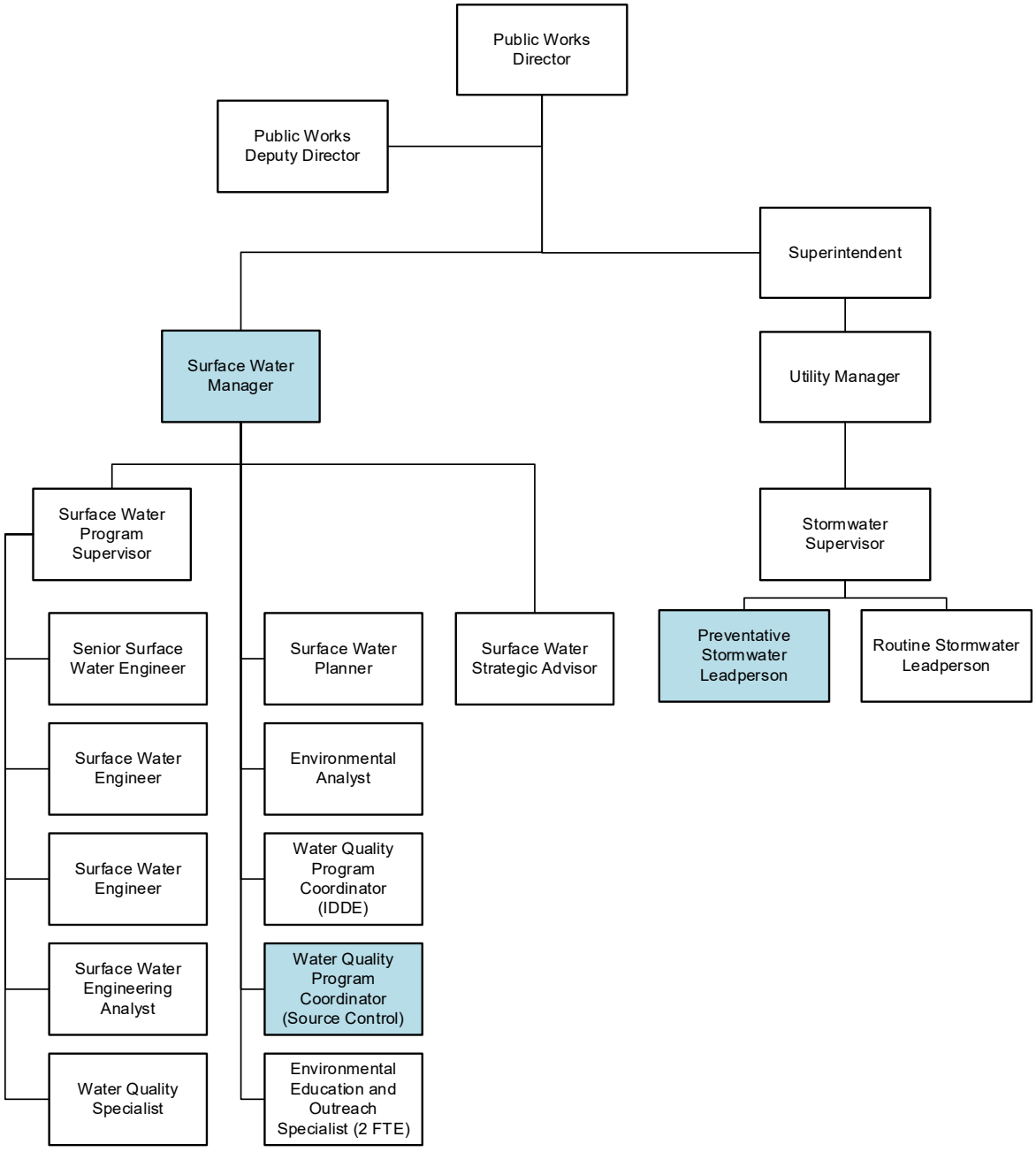


Figure 3: Proposed Surface Water Utility Structure – Near-Term

In order to ensure the proposed Surface Water Program Manager position has capacity for strategic planning and policy, the long-term goal for the Surface Water Program should be to have two supervisors, one to oversee engineering and the other to oversee water quality and planning. The current Surface Water Program Supervisor can be retitled as Surface Water Engineering Supervisor and be responsible for overseeing engineering. A new Surface Water Planning Supervisor position can be developed to oversee water quality, planning, and education and outreach as shown in Figure 4 below. Positions in blue denote new positions and positions in green denote new titles/classifications.

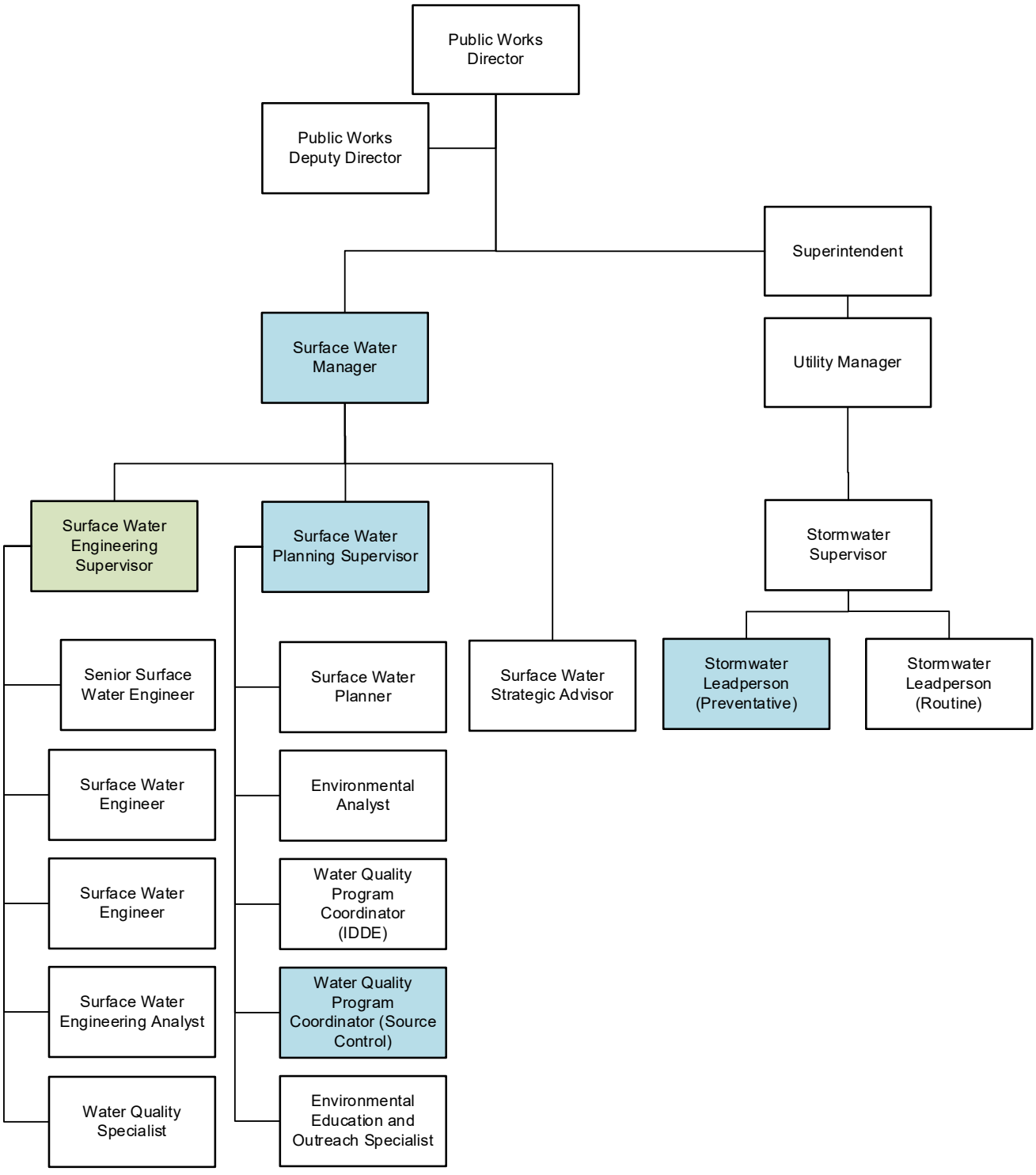


Figure 4: Proposed Surface Water Utility Structure – Long-Term

Adding mid-level supervision will also allow for career growth and progression within the Surface Water Program, which can help to retain staff and provide sufficient supervision to new staff. While there are currently a wide variety of job responsibilities under the Surface Water Program Supervisor, the staff

highlighted how well the team works together and assists in each other's job responsibilities as needed. Therefore, having more supervisors who report to the proposed Surface Water Program Manager can alleviate the span of control issues while allowing for ongoing coordination between the different groups.

Recommendation 3: Add one additional Operations and Maintenance (O&M) lead position and restructure O&M staff into two crews.

As noted above, the Surface Water Utility provides a high level of O&M service, which includes inspecting, cleaning, and repairing catch basins, manholes, ditches, pipes, tanks, canisters, and vaults and maintaining stormwater facilities on short-plats, tracts, parcels, sites or divisions. Additionally, O&M coordinates with Capital to address stormwater infrastructure needs before new roads are put down and will replace curbs and gutters when they are taken out for stormwater projects. At full capacity, this work is conducted by 15.5 surface water maintenance FTEs who all report to one Leadperson. This large span of control impedes the Leadperson's ability to assist O&M crews in the field. In addition to organizing and scheduling crews, the Leadperson is also responsible for ordering all materials for O&M, watches CCTV footage to identify if projects are O&M or capital improvement projects, and responds to standby calls.

In the short-term, it is recommended that an additional Leadperson position be added to Stormwater O&M to divide up the responsibilities and alleviate the span of control issues. By adding a second Leadperson position, crew work can be divided between preventative maintenance and routine/emergency response O&M. This will help O&M more effectively prioritize preventative maintenance and be prepared for emergency and spill response needs. The preventative maintenance Leadperson can take on responsibilities for watching CCTV footage, which will allow the routine O&M Leadperson to assist the O&M Supervisor with development review to ensure developments are installing effective and maintainable stormwater controls. While each Leadperson would have different O&M responsibilities and crews would specialize in preventative maintenance or routine/emergency O&M, staff could be given the opportunity to rotate between crews in order to expand skills, and to flexibly staff between the two crews. Having an additional Leadperson will also allow for more progression for O&M staff, which could help with employee retention.

Analysis of Lucity data shows the Streets and Ground crews conducted on average 4.13 FTEs worth of activities related to surface water from 2018 through 2021, even though Surface Water is funding about 8.05 FTEs. An average of about 3,413 hours (2.13 FTEs) per year was also spent on detention pond maintenance, which is the responsibility of Streets and Grounds, but sometimes taken on by Stormwater O&M crews. Additionally, from 2016 to 2020, 1,754 new City-owned assets were added, increasing the workload of O&M by the equivalent of 0.3 FTEs in four years. The majority of the new assets are catch basins and manholes, which must be regularly inspected and maintained in compliance with the NPDES permit requirements.

In the long-term, there needs to be additional O&M staff added to both crews to account for the increase in development and growth demands of the annexed area. Some Surface Water Funding that is going to Streets and Grounds can be reallocated to Stormwater O&M to fund additional crew positions.

Recommendation 4: Restructure education and outreach staff in the long-term.

The Surface Water Program currently has two Education and Outreach Specialists, supervised by the Surface Water Program Supervisor. Education and outreach are integral to any stormwater program because of the public involvement, participation, behavior change, and education requirements of the NPDES permit. As discussed previously, the Public Works Department now has a new position, Utility Policy and Community Relations Supervisor, that is working with solid waste, water, sewer, and stormwater. This new position

oversees the solid waste Education and Outreach Specialist. The Public Works Department is also planning to expand water and sewer education and outreach, a capacity that does not currently exist.

The new Utility Policy and Community Relations Supervisor provides an opportunity to streamline utility education and outreach efforts through one supervisor and develop a unified approach. While there is a benefit to unifying education and outreach efforts between the utilities because they are all reaching the same audience, there is also a risk of losing the deep understanding of the work of each utility. Additionally, the NPDES permit requirements for public education and outreach make it important for the Surface Water Program Manager, who would oversee permit compliance, to supervise the education and outreach efforts that are required by the permit.

The City must balance the benefits of a unified education and outreach strategy between the utilities against the benefits of education and outreach being within the Surface Water Program. In the near-term, the two education and outreach positions will remain in the Surface Water Program, but a potential long-term option is to reorganize in order to improve collaboration with the water, sewer, and solid waste divisions across Public Works. In order to do so, it is recommended that one Education and Outreach Specialist position remain in the Surface Water Program and one Education and Outreach Specialist position (which at the time of this writing was vacant) be converted to a Coordinator position supervised by the Utility Policy and Community Relations Supervisor. The Education and Outreach Coordinator should divide their time among water, sewer, solid waste, and surface water, with a focus on unifying communication efforts. The Education and Outreach Specialist within the Surface Water Program should focus on permit-related efforts such as the regional dumpster behavior change campaign, yard smart program, pollution prevention assistance, general awareness efforts, and assisting with IDDE outreach. The Education and Outreach Coordinator will need to work closely with the Surface Water Education and Outreach Specialist to support their efforts and unify efforts for water, sewer, solid waste, and surface water.

Operations and Maintenance

The following recommendations address the needs of the O&M crews for the Surface Water Utility.

Recommendation 5: Develop a definition of preventative maintenance that guides the work of one O&M crew.

Stormwater O&M provides a high level of customer service, which includes quick response times for illicit discharge, spill emergencies, construction inspections, and customer calls. Due to this high level of service, O&M does not have a backlog of emergencies, which should be considered a major success; conversely, they do have a backlog of preventative maintenance. While O&M crews do some preventative maintenance, it is insufficient to maintain the City's assets in the manner consistent with best practices. The Division has detailed performance standards with work methods, best management practices (BMPs), and frequency of maintenance as well as a time standard for how long a task should take; unfortunately, staff are unable to keep up with these standards. For example, ideally the City should televise all lines within a five-year cycle; staff estimate the City is on a 10-year plus cycle now with a single CCTV truck. The Utility has identified a list of 500-600 "aging and failing" assets but has no plan nor funding to address them.

As part of NPDES permit compliance, the O&M crews are also required to meet certain service levels for O&M, such as inspecting and cleaning each catch basin every two years. Because there is not a dedicated crew for preventative maintenance, it is often considered a lower priority than emergency or reactive maintenance and the crews are pulled to address those issues. Additionally, it has been difficult to determine

how to prioritize preventative maintenance because the utility does not have a clear definition of what is considered preventative maintenance.

Preventative maintenance should be defined as an operational investment in the stormwater infrastructure that is generated internally, typically on a regularly schedule, and intended to extend the life of assets. Preventative maintenance, for example, would be regularly scheduled cleaning of a specific stretch of pipe rather than waiting for CCTV footage or flooding to show there is a clog. Asset management and preventative maintenance work should be coordindated; the O&M and Surface Water Program can work together to identify the capacity, condition, and criticality of assets, which can then guide O&M's prioritization of preventative maintenance efforts.

The City should develop levels of desired service, e.g., a five-year cycle for televising of lines, and then staff and fund that effort. Without this, existing assets will fail and the City will be required to invest even greater funding to replace (rather than maintain) its assets.

Recommendation 6: Define which projects are capital and which are operations and maintenance.

As discussed earlier, the City maintains a high level of in-house capabilities among their O&M crews and conducts certain repairs and replacements as operations and maintenance instead of capital projects. Repairs and replacements that are done as O&M are conducted by the Stormwater O&M crews, whereas capital projects are sent to surface water and capital engineers for design and implementation. Stormwater O&M has crews running through the week with capabilities to repair and replace a variety of stormwater infrastructure elements, but large infrastructure projects can take them away from other important O&M tasks, such as cleaning and repairs.

Because of the high level of in-house capabilities, some work that is considered capital in other utilities is done as O&M in Kirkland. In addition to inspection, cleaning, rehab, and repairs, O&M crews also install new pipes, catch basins, and other elements of the stormwater infrastructure. Currently, decisions for whether to designate a project as O&M or capital are not based on standard operating procedures. Rather, the Stormwater O&M Leadperson and Supervisor review CCTV footage and asset reports from the CCTV crew and then determine if O&M has the capability and capacity to address the issue or if the issue will impact other divisions such as paving; if O&M does not have capability and capacity or the project would have impacts on other divisions, the report is sent to Surface Water Engineering for consideration as a future capital project.

It is common for utilities to have standards such as depth of pipe, yards of fill to be removed/replaced, length of pipe to be repaired/replaced, or proximity to other utilities which helps to determine O&M vs. capital. Some utilities consider capital to be anything that is extending the life of the pipe, which would include repairs such as lining. It is reasonable for O&M to do some replacements; simple replacements of broken pipes with similar size (some upsizing okay) and same material pipe could be considered O&M but replacement with significantly bigger or different pipes and infrastructure that would require design input from engineers would be considered capital.

The Surface Water engineering and O&M leadership collaborate and have an informal practice in place to determine if a project is O&M or capital, but a formalized process with clear metrics would improve efficiency and require fewer decisions to be made on a case by case basis. The Stormwater O&M leadership should

work with the surface water engineers and the Capital Projects Manager to develop standard operating procedures and metrics to use to determine if a project is O&M or capital. Standard operating procedures could utilize the metrics discussed above, which could be incorporated into an automated scoring system. For example, if CCTV footage determines a pipe has a low score for cleaning, that work order could be sent to a cleaning crew, whereas, if footage shows a low structural score it could be sent to the surface water engineers for review. Software that the City currently uses, such as Lucity, could be utilized to track work orders and inspection reports and develop an automated process to code issues that are input into the system as in-house O&M, contract O&M, or capital projects.

Recommendation 7: Evaluate opportunities to contract out certain O&M work.

Preventative O&M is an important priority for the Utility, which is often hindered by increased and competing demands from the high level of service provided through the IDDE program and maintenance of stormwater facilities on private developments. In order to increase capacity for preventative maintenance, O&M will need additional resources. It can be inefficient to attempt to do all work in-house and a careful balance between in-house and contracted specialty work will maximize staff capacity and budget.

Stormwater O&M staff perform virtually all tasks in-house. While reflective of their broad capabilities and ability to work flexibly, it can be an inefficient use of staff capacity. The City should not be staffed nor resourced to perform every required task but should leverage its crews' strengths and contract out for other specialty or high-volume tasks.

One such task, should it continue to be within the scope of the Utility operations, would be the maintenance of stormwater facilities on private developments. Additionally, inspections or preventative maintenance of infrastructure could be another opportunity to contract out in the short-term to increase efficiency by contracting for a "surge" of maintenance tasks or televising work and then, in the long-term, this work could be done in-house once there is a better understanding of the condition of infrastructure. Collaboration with Streets to replace curbs and gutters could allow for more capacity for the surface water crews to focus specifically on the stormwater infrastructure. Staff note that an additional "small" vactor truck would be helpful in reaching difficult/tight areas of the City such as Goat Hill; this could be purchased in-house or potentially such specialized work could be contracted out.

Recommendation 8: Re-evaluate maintenance of stormwater facilities on private developments.

While the City is required to inspect stormwater facilities on private developments for NPDES permit compliance, they have also taken on maintenance of stormwater facilities on private property. This policy is justified by putting a catch basin in the right of way and then sending water to the detention or retention pond on private property before the water is returned to the public stormwater system. Because the water is coming from the public right of way, the City has assumed inspection and maintenance of such facilities.

Additionally, some suggest that it is more efficient for the City to maintain private facilities in order to ensure they are maintained to City and permit standards rather than leaving maintenance of private facilities to the property owners. Due to the annexation and growth in development in the City of Kirkland, the number of City-maintained stormwater facilities on private property has grown significantly in recent years. O&M is faced with maintaining a swelling inventory of stormwater facilities, many of which are in hard-to-access locations on residential parcels. By taking on maintenance of private facilities, the City also is assuming the associated risk and liability.

Maintenance of private stormwater facilities is a regional issue, and recently cities have started to move away from full maintenance towards doing inspections only to ensure maintenance by the property owner. According to the *Benchmarking Comparison for City of Kirkland Surface Water Master Plan* dated February 2022, Bellevue does not take ownership for maintenance of stormwater facilities on short plats. Our experience with utilities nationwide is that the vast majority inspect, rather than maintain, infrastructure on private property.

This issue has significant staff capacity and risk impacts to the City. While staff would be required for the ongoing inspection program, it is less than staff capacity required for ongoing maintenance and also requires less equipment and materials. Kirkland should reevaluate the benefit of maintaining stormwater facilities on private property. Making new developments and redevelopment property owners responsible for stormwater facility maintenance allows for expectations to be set during the development process and will be an easier transition than trying to give back maintenance responsibility of facilities that the City is already maintaining. The sooner this change is made, the fewer assets the City will be required to maintain in future years.

Recommendation 9: Relocate responsibility for natural stormwater infrastructure maintenance to the Stormwater O&M division.

The Surface Water Utility currently funds 8.05 FTEs in the Streets and Grounds Division for street sweeping and natural stormwater infrastructure maintenance. Natural stormwater infrastructure includes ponds, wetlands, filterra, swales, rain gardens and other vegetation planted to filter and convey stormwater. Grounds is responsible for everything growing in the right of way and on City property and helps to maintain stormwater filterra and detention ponds. Additionally, Surface Water contacts Grounds to remove trees and vegetation when needed. Streets conducts street cleaning and sweeping, roadside mowing, snow and ice removal, sweeping after spills, and maintenance of berms.

The Surface Water Utility should continue to fund Streets and some Grounds work. However, due to expanding workload, Grounds O&M has not had the capacity to conduct natural stormwater infrastructure maintenance. Surface water crews report the need to supplement pond mowing, as Grounds staff are unable to maintain them to meet King County Design Manual Appendix A Maintenance Standards . Therefore, the responsibility of maintaining natural infrastructure should be moved to the Stormwater O&M Division. With this reallocation of responsibility, the Surface Water Utility can reduce the number of FTEs funded in Grounds by 2.0 FTEs, which is approximately equivalent to the average amount of hours (3,413) spent annually on detention pond maintenance from 2017 – 2021 in the *Surface Water Master Plan Staffing Analysis*. This funding could be used to supplement O&M staff by 2.0 FTEs to take on this maintenance.

Engineering

The following recommendations address the surface water engineering function within the Surface Water Program section.

Recommendation 10: Formalize the City's development review process through the creation of thresholds for review by each specialty, development of standards for engineers, review process timelines for the customer, and the use of project management software.

The volume of applications through the City's development review process has increased due to the growth in development throughout the City of Kirkland. This in turn has increased the workload for Surface Water Engineers and Development Engineers in Public Works.

The current process involves informal outreach from development engineers to surface water engineers, which has led to inefficiencies in the review process, including not consulting surface water engineers or O&M about matters that impact the stormwater system. Development engineers only contact surface water engineers when they have a question related to surface water. Small questions are answered via Microsoft® Teams messages and email, which can trigger a formal stormwater review process. Currently there are no standards for what types of developments or conditions require a surface water engineer or O&M staff to review and, as a result, plans are only reviewed when a development engineer faces a stormwater related question and chooses to reach out to a colleague in surface water. Surface water engineers have no means to predict when surface water related reviews will be sent to them and, therefore, cannot plan workload. There were no clear turnaround time requirements provided by staff during interviews. Stormwater O&M is not always consulted on plans to ensure they are able to access and provide long-term maintenance for facilities on private property. The City continues to operate with an informal review workflow and process, despite significant growth, and this is negatively impacting the quality of the end product when all stakeholders are not included and creates an inefficient review process.

An influx of development, irregular lots, and the lack of policies and standards has made it challenging for surface water engineers to make decisions when reviewing development plans without involving the Senior Surface Water Engineer or Surface Water Program Supervisor. The development of formalized City standards and processes for stormwater related review of new developments would empower surface water engineers to review developments without requiring additional consultation with the Senior Surface Water Engineer or Surface Water Program Supervisor.

The City is already using project manager software, Energov, which could facilitate a formal review process and workflow. Thresholds such as the amount of impervious area, types of stormwater facilities, location in the watershed, or proximity to critical assets, would help to standardize the development review process and ensure all appropriate reviewers are included for each application. Using checklists that accompany a submittal, Energov could be used to identify if developments are above one or more of the thresholds and automate a workflow and communication between design engineer and surface water engineers. Automating the workflow in Energov could allow for surface water engineers to receive notification in advance of the need for their input and provide a timeline for the review process. Timelines should be set for when surface water engineering comments are requested and when responses are required. A formalized system can automatically send reminders leading up to the deadline for each step of the process.

Standards and policies would allow for engineers to approve or deny facilities based on O&M capacity, passing through only complicated developments to the Stormwater O&M Supervisor. The Director should consider a long-term goal of having the Development Engineers review the plans in such a manner to ensure O&M maintenance activities can be performed regardless of who is responsible for maintenance, but not until standards have been developed and implemented over a satisfactory period of time.

Because we believe there will be staff capacity efficiencies with a formalized development review process, we do not recommend adding additional engineering staff at this time, until engineering staff capacity and workload can be analyzed. Presently, there is no recordkeeping or log of hours spent by project and analysis of engineering staff capacity is difficult.

Recommendation 11: Define responsibilities and create a formal workflow between Surface Water Engineers and CIP engineers when designing surface water capital projects.

The Capital Project Division and Surface Water Program work in coordination to develop capital projects related to stormwater and water quality, as well as review City-wide capital projects for their impacts on the stormwater system and NPDES permit compliance. This two-fold relationship can be challenging because at times, the surface water program is acting as regulators for City-wide capital projects and, at other times acting as the owner for surface water related capital projects.

When the Surface Water Program and Capital Projects Division are collaborating on a stormwater capital project, there is not a clear delineation of responsibilities between the two divisions. This lack of clarity of roles has led to duplicated work and missed opportunities for collaboration during the planning and design process. Staff noted times when CIP engineers were not involved in surface water projects until too late in the process, requiring rework and additional collaboration. Alternatively, when surface water engineers are not included in the entire design process, capital projects might not meet the needs of the stormwater system.

Another key element of stormwater projects is their ability to be operated and maintained at the necessary level. This requires input from O&M to ensure they have proper access, materials, and tools to inspect and maintain the infrastructure. The O&M supervisor has been getting involved in more capital project planning recently, but as with development review, there is not a formalized process as to thresholds when O&M should review project plans.

The CIP and surface water engineering workgroups should create thresholds and a formalized workflow for communicating early in the planning process to ensure surface water project designs fit within the overall City's CIP plan and meet surface water program needs. Additionally, design specifications and limitations must be discussed up front (e.g., during a pre-submittal meeting), regardless of whether design is being started by surface water engineers or CIP engineers. It is common for surface water engineers to begin the design process for surface water related capital projects to ensure they meet the needs of the surface water system. This process only works if initial designs receive input from CIP engineers so they do not have to significantly revise designs based on other City priorities and parameters. The City should determine a standard guidance for the amount of project design done by surface engineers before being passed off to CIP engineers for completion.

The O&M Supervisor and Utility Manager need to be formal owners in the stormwater capital project process. The City needs to develop a formalized plan review process that includes all stakeholders early on; this can be a monthly or bi-weekly meeting to gather feedback with all players in the room. The Parks department has a standard operating procedure for involvement as owners in capital project planning, which could be adapted for surface water plan review as well.

Infrastructure

A fundamental activity for utilities is the planning, maintenance, and renewal of infrastructure and assets. Recommendations in this section relate to this issue.

Recommendation 12: Improve utilization of Lucity for asset management and communication between Stormwater O&M and Surface Water Programs.

Asset management — the management of critical assets by tracking age, usage, maintenance, and other variables — is broken up between the surface engineers and O&M crews. Previously, coordination and

tracking of asset maintenance and prioritization was done through emails between the Surface Water Program Supervisor and Stormwater O&M Supervisor. The City began using Lucity for asset management about four years ago. Currently, maintenance issues are logged into Lucity, which is checked by the Surface Water Program Supervisor daily and assigned out to engineers for inspection. Engineers log findings in Lucity, but in many cases there is no funding to fix the issues when they are not critical or urgent. Recently, the Surface Water Engineer developed a process to manage assets using a Microsoft® Excel spreadsheet and geographic information system (GIS) map. Footage from CCTV inspections are reviewed by O&M staff, who then complete an asset report which is sent to the surface water engineer, who converts the information into the stormwater infrastructure GIS layer. Development is able to utilize this GIS layer when reviewing development plans, which is helpful for them to understand the status of the stormwater infrastructure that would be receiving runoff from a new development. While this process is a step in the right direction, one challenge is that the GIS layer is organized by assets and the Excel sheet is organized by project, which could include multiple assets. This can make it challenging to compare data between GIS and Excel. Additionally, as part of the master planning process, an outside consultant built a tool to evaluate the risk and impact of pipe failure with an overlay of maintenance issues identified in the field.

Research should be performed to determine if asset management (Excel spreadsheet) and mapping (GIS) data, as well as the outputs from the pipe criticality tool, could be integrated into Lucity to facilitate strategic planning and collaboration for asset management and preventative maintenance. If not, other solutions should be considered to streamline the process so that funding and staff capacity can be better directed to address failing assets.

Recommendation 13: Increase City investment in capital projects.

O&M is an important component of a well-run infrastructure program, but a stormwater system also requires periodic replacement and repair of failing infrastructure. Typically, replacement and repair of failing systems are most often categorized as capital spending, rather than O&M. As the City begins to more clearly differentiate O&M versus capital projects, as outlined earlier in this memorandum, funding for projects that were previously in the operations budget will move into capital, providing some additional O&M staff capacity.

There are two current drivers that indicate a need to increase capital spending. First, the aging and failing infrastructure list — assets that have reached the end of their useful life or are causing a system failure — has been growing due to the prioritization of other capital projects over aging and failing stormwater infrastructure repair and replacement. The aging and failing list currently contains over 500 assets that require attention. Stormwater projects are being selected due to their ease of integration into another capital project instead of the project's criticality to operating and maintaining a properly functioning stormwater system. Second, when the City of Kirkland annexed neighboring county property, it inherited aging and failing infrastructure. There is now a whole section of the system that has not been maintained over time and is going to need to be repaired and replaced due to aging.

Stormwater programs differ between utilities, but when comparing Kirkland's capital spending with nearby jurisdictions, we did note a higher absolute level of capital spending in other utilities. As shown in Table 5 below, a benchmarking comparison included in the *Surface Water Master Plan* showed that the City of Kirkland's capital budget of $5.1 million is substantially lower than that of nearby communities of Bellevue, Bellingham, and Redmond. We also noted that the proportion of spending on capital in comparison to O&M is lower in Kirkland than in nearby cities. In conjunction with the factors described above regarding the

growing list of aging and failing infrastructure and the annexed area, the benchmarking data further supports the need to increase investment in capital infrastructure.

At this point, total necessary capital investment is unknown, but the City can begin addressing stormwater capital needs by allocating a higher level of investment to capital in the coming years as the City determines what is the long-term optimal level of capital investment. This will allow the Surface Water Utility to begin addressing aging and failing infrastructure while figuring out the optimal capital investment. Operationalizing an increased investment in capital spending requires the prioritization of projects and allocation of time and resources to complete projects and spend capital funds. A short-term (5-10 year) surge of investing in stormwater aging and failing infrastructure projects might be especially appropriate for the annexed area. A surge can be a quick mechanism to address existing issues without committing to spend a high level of funding on capital every year going forward. Contractors could be hired to construct capital projects over a specified 2-3 year timeline without the need to hire and then potentially layoff/reallocate City staff should there be a downturn in activity. During the surge, the Surface Water Utility leaders can determine the optimal level of capital funding for the future to continue to address infrastructure. A long-term approach could be to determine a set level of spending for capital each year and determine the number and types of projects based on the prioritization ranking. Funding needs to be adequate to ensure stormwater projects that are critical to the system are funded.

Table 5: Comparison of Capital and Operating Budgets with Nearby Communities

CHARACTERISTIC	KIRKLAND	BELLEVUE	BELLINGHAM	REDMOND
Geographic Size (Square Miles)	22	37.5	30.5	17.2
Population (2019)	89,500	144,400	88,700	65,600
BUDGET ELEMENTS (IN MILLIONS)				
Revenue	$29.8	$55.5	$28.4	$39.6
Capital Budget	$5.10	$14.0	$15.6	$13.6
Operating Budget	$25.5	Not included	$12.8	$27.5

Illicit Discharge and Spill Program

The City's spill program to clean up and address illicit discharges is an important factor for Kirkland's surface water staffing and operations. The following recommendations address this function.

Recommendation 14: Add one additional Water Quality Coordinator to create and manage the new Source Control Program and support the Illicit Discharge Detection and Elimination (IDDE) and Spill Response programs.

The clean-up and treatment of illicit discharges in the City is a key part of any surface water program and required for the IDDE components of the NPDES permit. Through these programs, residents are taught to report illicit discharges in order to minimize contamination of surface water and those responsible, ideally, are held accountable.

The IDDE or "spill" program has been a major education and outreach success in Kirkland, which has led to an increase in calls from about 50 to over 300 per year. According to the *Surface Water Master Plan Staffing Analysis,* on average, calls have increased 32% per year since 2009. The Water Quality Coordinator began to

build the IDDE Spill program for NPDES permit compliance about 10 years ago and has developed a comprehensive and efficient spill response framework.

Due to the volume of calls and the high level of service provided through quick response times, the IDDE and spill response program consumes a substantial amount of staff capacity. The workload for the spill program goes beyond field response to include the determination of fines, cost recovery, documentation, and reporting. In its current state, this requires a significant amount of coordination between O&M and Programs staff, which takes the majority of at least one O&M staff and one Programs staff member's time.

Figure 5, from the *Surface Water Master Plan Staffing Analysis*, shows the increase in staff time needed to respond to growing demand.

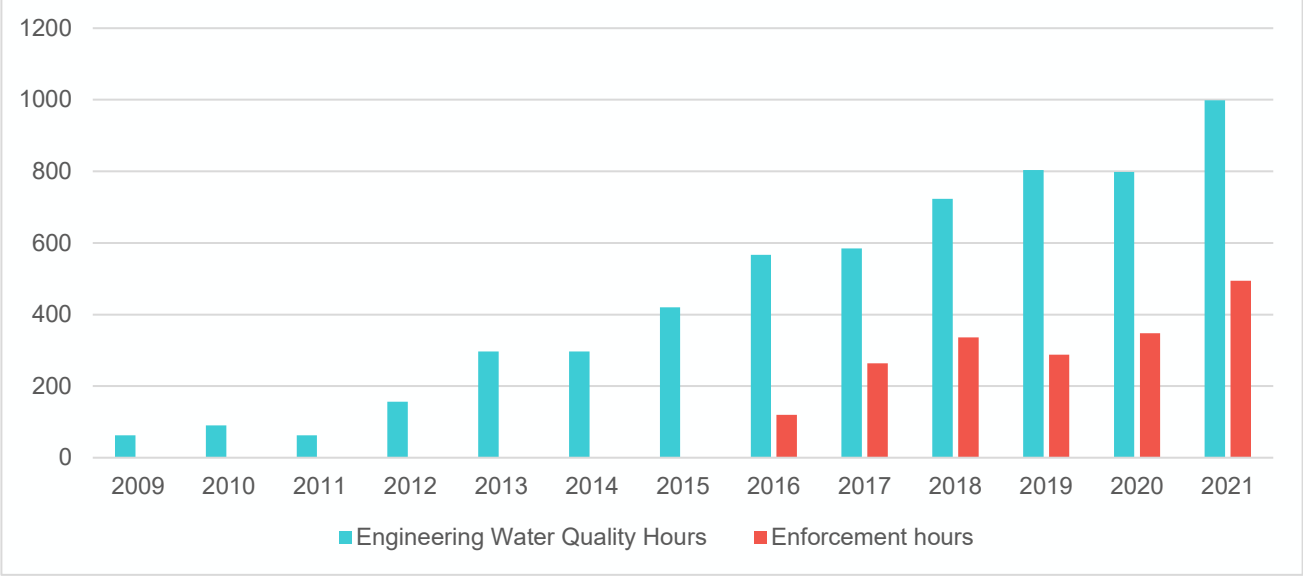


Figure 5: Surface Water Program Staff hours for IDDE from 2009-2021

Additionally, demands for code enforcement have grown due to NPDES permit requirements and increased development in Kirkland. The Water Quality Coordinator currently manages code enforcement and the IDDE program, both of which are growing and will need additional staff in the near future. During this upcoming NPDES permit cycle, the City is beginning to implement a new source control program. The source control program will require additional staff time to conduct business outreach and inspections approximately 180 business inspection annually. According to the *Surface Water Master Plan Staffing Analysis,* these inspections are estimated to take an additional 1,440 hours and will likely result in identification of more water quality issues and spills that will require additional time from water quality and O&M staff.

In order to support the growing demand of the IDDE program and code enforcement, and the additional inspections for the new source control program, the City will need a second Water Quality Coordinator position. The two Water Quality Coordinators can each specialize in their responsibilities, one focused on the IDDE program and the other focused on implementing the new source control program. Additional water quality and code enforcement workload can be divided amongst them.

In order to reduce the burden of emergency spill response, the Water Quality Coordinator who is focused on the source control program and the Water Quality Specialist can each be responsible for emergency calls one day per week which allows the IDDE-focused Water Quality Coordinator to have two days a week dedicated to code enforcement, bacteria screening, regional collaboration, and other job responsibilities.

Recommendation 15: Transition first response to the Surface Water Program section.

At the time of this review, the Stormwater O&M crews were the first to respond to illicit discharge and spill calls in order to begin the clean-up process. If investigation was required, the Water Quality Coordinator or another Surface Water Program staff member was called to interact with the property owner where the discharge is occurring. Many spills are connected to construction sites and new developments, which then involves the Development division because construction inspectors perform the investigation. At the time of this review, O&M field crews documented information related to the spill and their response in Lucity, which the Water Quality Coordinator includes in IDDE reporting, cost recovery, and code enforcement. In order to meet cost recovery requirements, documentation was needed including pictures of the spill, exact notes on what was observed, and exact costs of clean up. In addition to the reporting for cost recovery, O&M staff who respond to the spill were needed as expert witnesses and required to attend hearings to help explain the work completed to maintain the public infrastructure. These administrative responsibilities may not best align to the skillset of O&M crew members. O&M staff expressed capacity constraints which limit their ability to take on this piece of the spill program.

The Surface Water Program currently conducts the coordination of illicit discharge and spill response, reporting, and cost recovery. In addition, any further spill response work responsibilities that needed to occur after initial response such as education, outreach, technical assistance, source tracing and sampling, and code enforcement, was handled by the Water Quality Coordinator. To help alleviate O&M capacity constraints, it is recommended the Surface Water Program section take back over initial response from the hotline call. The Surface Water Program staff expressed capacity constraints with first response without some give in other pieces of the program (such as the implementing first forgiveness suggested below).

When recommended staffing changes are implemented, the additional Water Quality Coordinator or the Water Quality Specialist, as outlined in Recommendation 14, can respond to spills and then contact O&M with the information and probable resources needed for the spill clean-up. O&M crews should be responsible for all field clean-up efforts and logging of costs in Lucity (information necessary for reporting), while Water Quality staff should be responsible for documenting the scene and conducting the follow up steps for cost recovery, as well as further investigation, if needed.

In addition, the City could consider using a “first forgiveness” approach to spills with a focus on education and prevention rather than enforcement. This approach is more palatable to the public and has the added benefit of requiring less staff capacity than the pursuit of lengthy enforcement cases and fine processes.

Prior to finalization of this memorandum, the City had already implemented this recommendation and the Water Quality Program Coordinator is now the first responder for spills and responsible for reporting. This change should be monitored to determine if it effectively addresses O&M capacity constraints and streamlines the investigation, clean-up, and reporting process. Additionally, the City has implemented the “first forgiveness” approach which should be monitored to determine if it is an effective method of education and frees up time that was previously spent on reporting and enforcement.

Recommendation 16: Dedicate an O&M crew for immediate spill response and to provide flexible backup/assistance to other crews.

Spills cause disruptions in the O&M workflow because when a spill occurs — which is almost daily — at least one O&M crew with at least one vactor truck must leave their current worksite to respond. An additional crew and vactor truck that are focused exclusively on emergency response would help to reduce the workflow impact of spills and can provide additional assistance to other crews when not needed for emergency response. Figure 6 shows data from the Surface Water Master Plan Staffing Analysis. There is an increase in O&M labor hours for spill response since 2017 due to education and outreach, the new source control program, and growth in new developments. Labor hours in Figure 6 are based on O&M being the first responders to spills and illicit discharge. Since this has been changed to be the responsibility of the Water Quality Coordinator, it is expected that O&M crew labor hours for spill response should decrease due to this change in responsibility. Even without first responder and reporting responsibilities, the growth in number of spills per year is still likely to require a dedicated O&M crew to prevent interruption from routine O&M. One option is to monitor the number of labor hours that O&M crews are spending on spill response under the new division of responsibilities and assess if a full-time dedicated crew is still necessary.

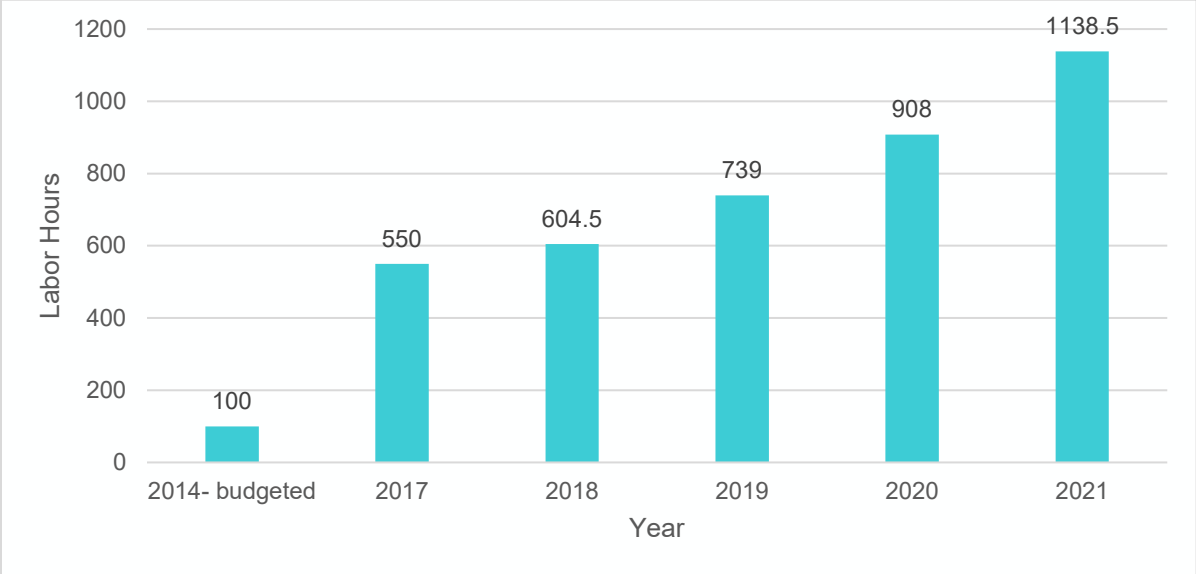


Figure 6: O&M Crew Labor Hours for Spill Response from 2017 - 2021

By dedicating a subset of O&M staff to spill response, the remaining crew members can focus upon their daily duties without interruption. If the labor hours decrease due to the change in first responder responsibilities, the spill crew can be assigned to the regular crews on a daily basis but leave when a spill should occur. If desired, staff could be rotated on and off the spill crew assignment to provide opportunities for all staff to do regular and spill-response work.

Conclusion

The City of Kirkland has a thriving Surface Water Utility operation with many dedicated and passionate staff, committed to exceptional customer service and environmental stewardship. Workload has been significantly impacted by several factors: annexation, added regulations, high public and policymaker expectations, and a period of exceptional growth and development in the community.

This review recommends the addition of three key positions for FY23 or as soon as possible: a new Surface Water Program Manager position, a second Water Quality Coordinator position, and a second Operations & Maintenance Leadperson. These three positions are critical to provide the supervision and proactive oversight of the utility that is necessary. In coming years, we recommend also adding a Surface Water Planning Supervisor position to oversee non-engineering programs and outreach.

In addition, we recommend the City work to fill the 2.0 FTEs in O&M vacancies for FY23 and move 2.0 FTEs of surface water funding and/or staff from Grounds to Stormwater O&M for detention pond maintenance, adding 2.0 FTEs to Stormwater O&M for this purpose.

The history and proposed FTEs for the Surface Water Utility are summarized in Table 6 below.

Table 6: Current and Proposed FTEs funded by the Surface Water Utility

Position Title	FY2021 Budget[6]	FY2022 Budget[7]	FY2023 Proposed	FY2025 Proposed
Surface Water Program	**11.5**	**11.5**	**13.5**	**13.83**
Surface Water Program Manager	0	0	1	1
Surface Water Program Supervisor	1	1	1	2
Senior Surface Water Engineer	1	1	1	1
Surface Water Engineer	2	2	2	2
Surface Water Planner	1	1	1	1
Surface Water Engineering Analyst	1	1	1	1
Surface Water Strategic Advisor	0.5	0.5	0.5	0.5
Environmental Analyst	1	1	1	1
Water Quality Programs Coordinator	1	1	2	2
Water Quality Specialist	1	1	1	1
Environmental Education and Outreach Specialist	2	2	2	1.33
Stormwater O&M[8]	**17.5**	**17.5**	**18.5**	**22.5**
Surface Water Operations Supervisor	1	1	1	1

[6] FTE numbers for FY21 are from Surface Water Master Plan Staffing Analysis – August 2022

[7] FTE numbers for FY22 are based on the Feb 2022 Organizational Chart for Public Works Staff and FTE numbers from Surface Water Master Plan Staffing Analysis – August 2022 for other department staff

[8] Allocated, several current vacancies

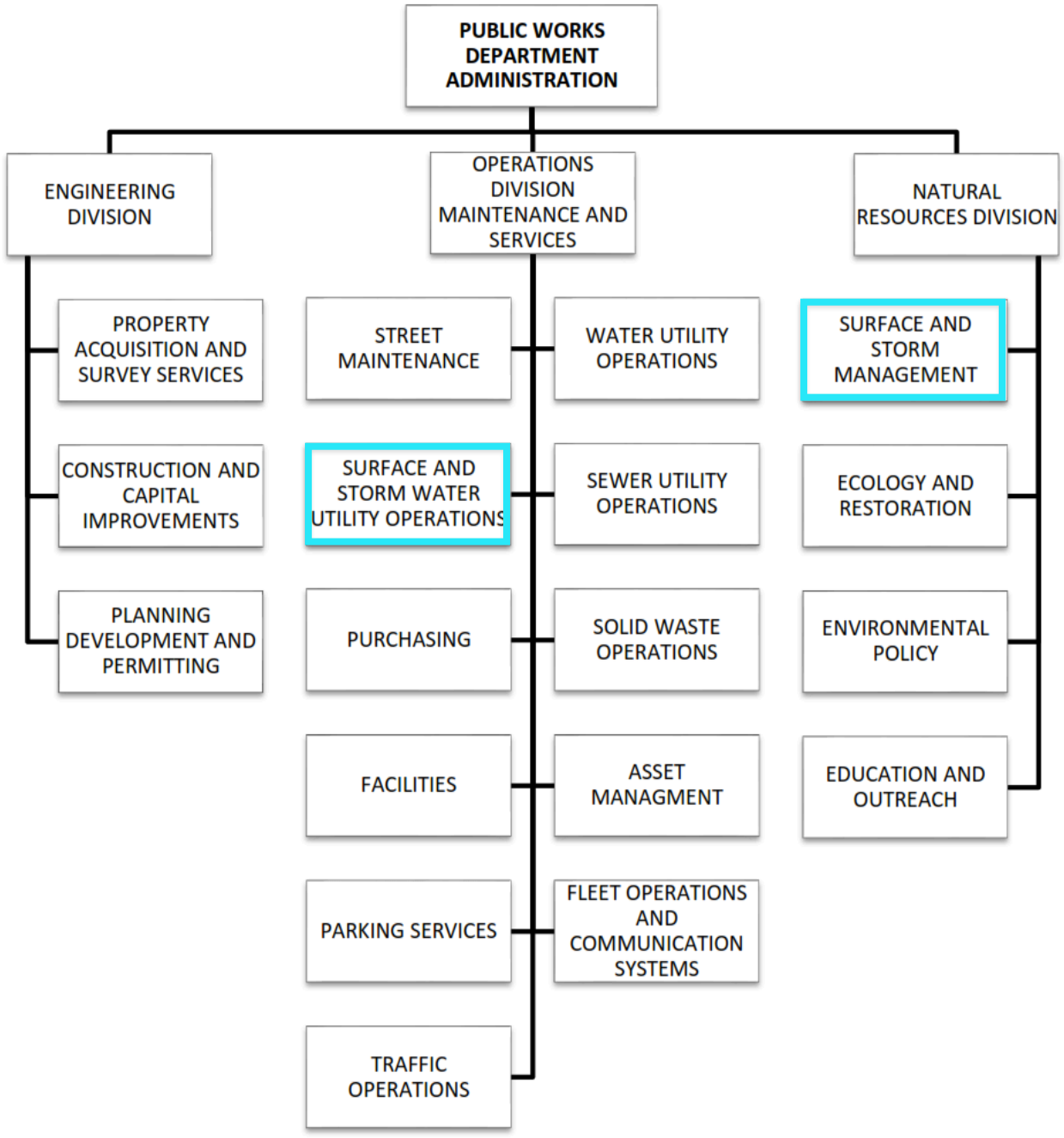
Position Title	FY2021 Budget[6]	FY2022 Budget[7]	FY2023 Proposed	FY2025 Proposed
Surface Water Leadperson	1	1	2	2
Surface Water Maintenance	15.5	13	15.5	19.5
Streets and Grounds O&M	**8.05**	**8.05**	**8.05**	**6**
Streets and Grounds Maintenance	8.05	8.05	8.05	6
Public Works Leadership	**1.46**	**1.46**	**1.21**	**1.21**
Utility Manager	0.6	0.6	0.6	0.6
Development and Environmental Service Manager	0.25	0.25	0	0
Deputy Public Works Director	0.41	0.41	0.41	0.41
Superintendent	0.2	0.2	0.2	0.2
Admin	**1.59**	**1.59**	**1.59**	**1.59**
Administrative	1.59	1.59	1.59	1.59
Other Departments	**1.65**	**1.65**	**1.65**	**1.65**
Utility Craft Person	**0.15**	**0.15**	**0.15**	**0.15**
Green Kirkland Partnership	0.5	0.5	0.5	0.5
Urban Forester	0.5	0.5	0.5	0.5
Environmental Program Analyst	0.5	0.5	0.5	0.5
Total FTEs	**41.75**	**41.75**	**44.5**	**46.78**

With thoughtful, phased implementation of these recommendations, we are confident the City's Surface Water Utility will have the ability to move forward in a proactive and strategic manner to address the City's needs now and into the future.

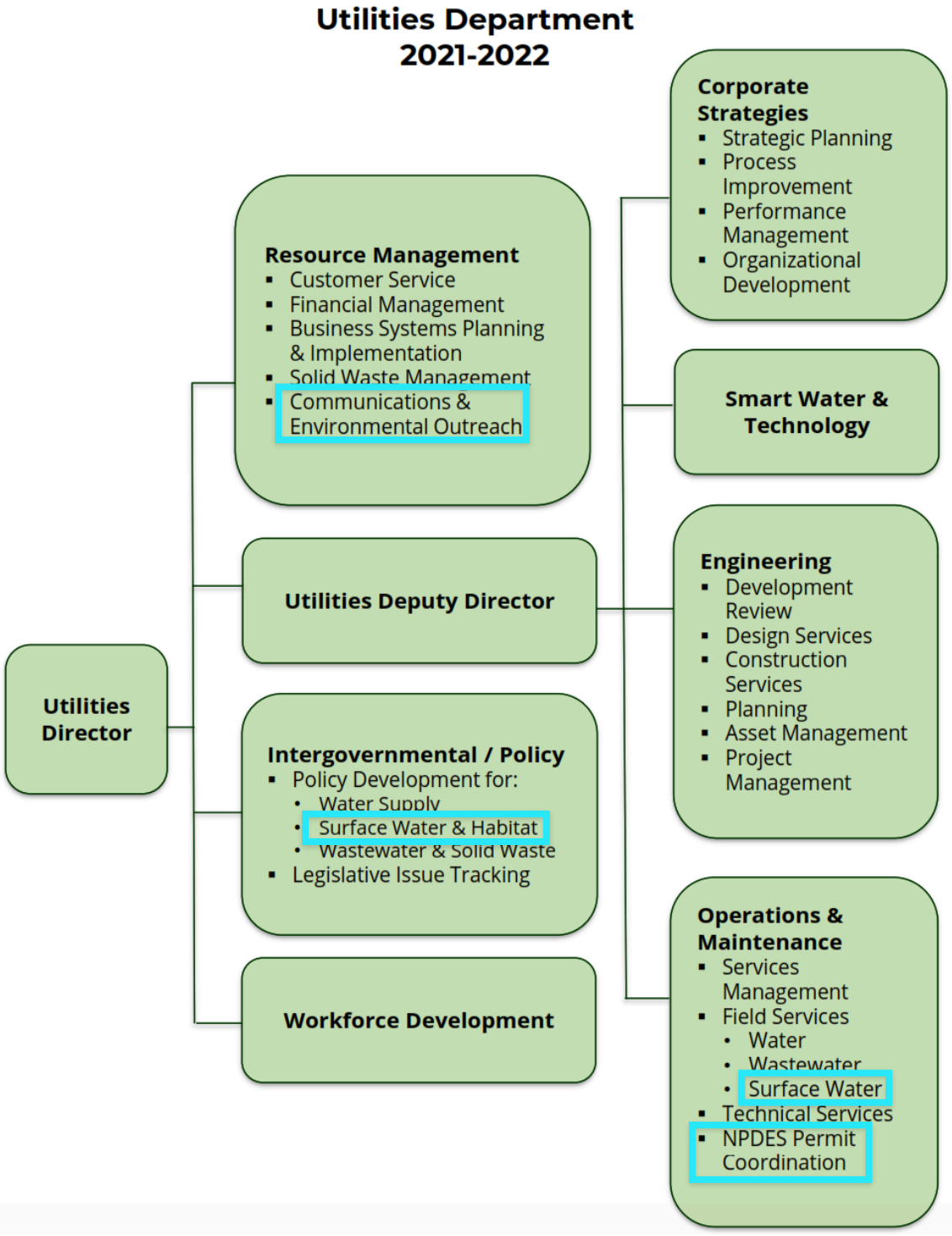
Appendix

The following organization charts from other reginal utilities and City departments show the location of surface water operations highlighted in blue.

Bellingham Public Works Department Organizational Chart



Bellevue Utilities Department Organizational Chart



Redmond Public Works Department Organizational Chart