Seattle Public Utilities

Financial Forecast Overview &

2018-2023 Financial Baseline

June 2017

Section I: EXECUTIVE SUMMARY

Seattle Public Utilities (SPU) provides City residents and businesses with safe **drinking water**; operates the City **drainage** system (which collects stormwater run-off from the streets, driveways, roofs and parking lots), and the **sewer** conveyance system; and oversees operation of the **solid waste** system—garbage, recycling, yard waste, and disposal[1]. The City utilities are *publicly owned*, and fully paid for by those who use these systems: residents and businesses in Seattle. [2]

In August 2014, the City Council adopted SPU's 2015-2020 Strategic Business Plan via Resolution 31534. This resolution also directed SPU to update the Strategic Business Plan and the six-year rate path every three years. This document outlines the financial assumptions and rate impacts underlying SPU's proposed 2018-2023 Strategic Business Plan Update.

During the period of the Strategic Business Plan Update, rates will need to go up by an **average of 5.5 percent per year**, across the four lines of business compared to a 4.6 percent average increase assumed for the 2015-2020 Plan.

Table I-1 provides the projected rate increases by business line by year as well as the combined average.

Table I-1
2018-2023 Rate Increases and Typical Single Family Monthly Bill Impacts by Line of Business[3]

Average Rate Increase	2018	2019	2020	2021	2022	2023	2018-23 Avg
Water	3.5%	4.1%	5.2%	5.3%	4.1%	5.6%	4.6%
Wastewater	1.2%	12.2%	12.6%	3.2%	4.0%	2.7%	5.9%
Drainage	7.5%	14.2%	15.9%	6.1%	2.8%	7.1%	8.8%
Solid Waste	3.1%	3.3%	4.6%	2.8%	3.7%	2.9%	3.4%
Combined	**3.2%**	**8.2%**	**9.5%**	**4.1%**	**3.7%**	**4.2%**	**5.5%**

Typical SFR Monthly Bill	2018	2019	2020	2021	2022	2023
Water	$42.57	$44.32	$46.64	$49.11	$51.13	$54.01
Wastewater	$56.27	$63.13	$71.09	$73.36	$76.30	$78.36
Drainage	$38.89	$44.43	$51.51	$54.66	$56.17	$60.14
Solid Waste	$48.78	$50.46	$52.89	$54.42	$56.56	$58.25
Combined	$186.51	$202.34	$222.14	$231.56	$240.16	$250.76
Annual Change	$6.27	$15.84	$19.79	$9.42	$8.60	$10.61

[1] Services primarily carried out by private firms under contract with the City.

[2] The City also supplies water to retail and wholesale customers in many surrounding communities. The revenues paid by those communities help to fund the City water system and reduce the amount of revenue that must be paid by Seattle retail customers.

[3] Shaded cells represent adopted rate increases. Solid Waste bill path represents average increase assuming new rates are effective April 1 of each year.

A combination of direct service rates revenues and revenues from other funding sources (non-rates revenues, operating cash and rate stabilization fund (RSF) withdrawals) are used to meet the Utility's TOTAL REVENUE REQUIREMENT. The total revenue requirement is the sum of revenues required for spending on Operations and Maintenance (O&M) and Capital Improvement Program (CIP) financing expense together with any additional revenues required to meet financial policy requirements.

RATE INCREASES are required to fund increases in the RATES REVENUE REQUIREMENT from one rate setting period to the next. Rate increases may be smaller or greater than the actual change in the rates revenue requirement depending on demand and other revenue adjustments such as Utility Discount Program (UDP) credits. Table I-2 shows the breakdown between these components to arrive at the average 5.5 percent projected rate increase.

Table I-2
Components of Average Rate Increase

	2018-2023 Avg Rate Impact
Spending	**5.8%**
Plus: Other Financial Policies	0.1%
TOTAL REVENUE REQUIREMENT	5.9%
Less: Other Funding	-0.4%
RATES REVENUE REQUIREMENT	5.5%
Demand/UDP adjustments	0.0%
RATE INCREASE	5.5%

Increased spending is the dominant driver of the rate increase. Increases in other funding sources reduces the total rate revenue requirement while small increases in demand fully offset increased UDP credits. Figure I-1 shows the components of increased spending department wide.

Figure I-1
2018 to 2023 Increases to SPU Spending Requirement

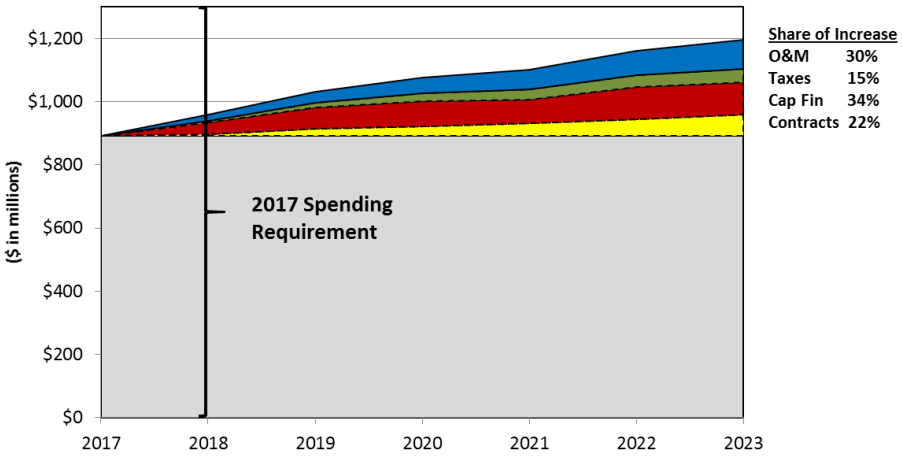
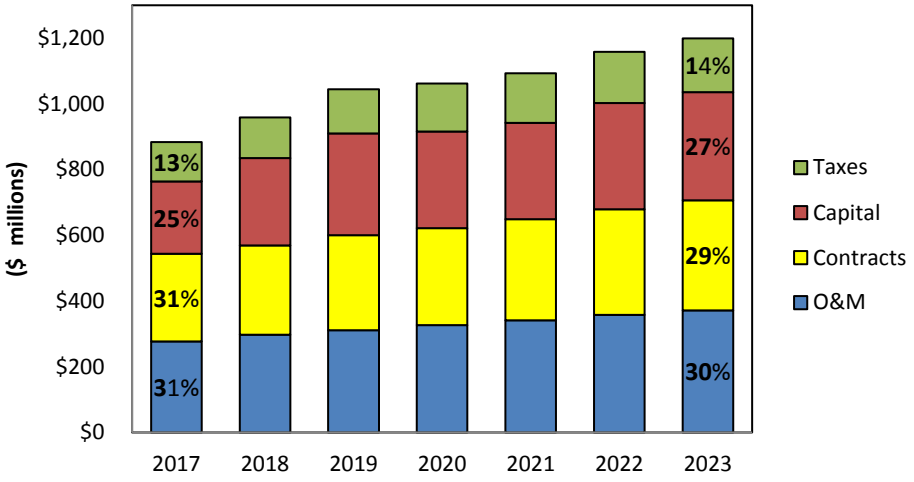


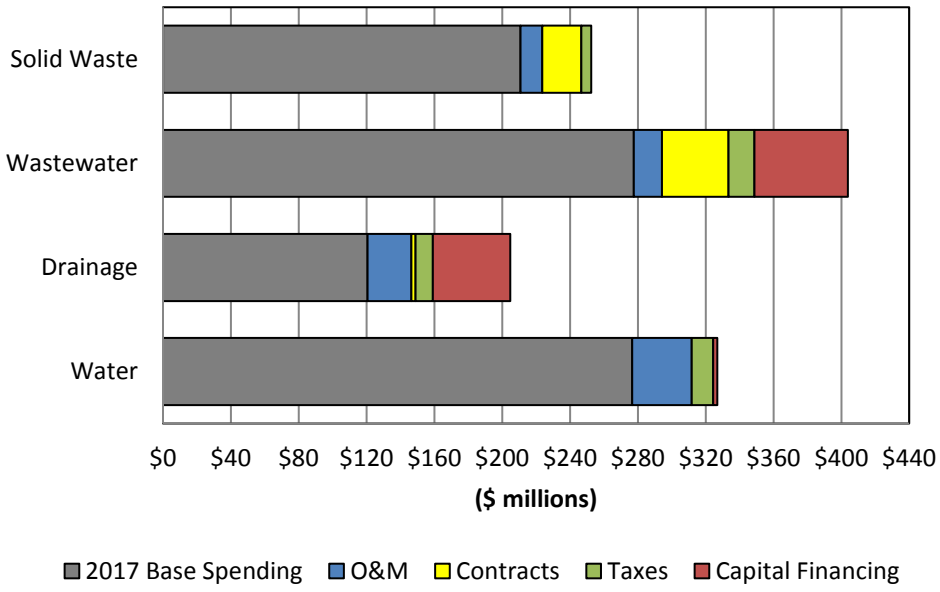
Figure I-2 provides a different look at planned SPU spending, showing the components of TOTAL expense, by year, between 2017 and 2023. This figure also shows the percentage each component represents of the base (2017) and in 2023.

Figure I-2
Components of the SPU Spending Requirement, 2017-2023



The components of growth in spending vary widely between lines of business as noted in Figure 1-3 below.

Figure I-3
Components of Base and Increased Spending by Line of Business



Capital financing represents a significant portion of growth for Drainage and Wastewater lines of business. Growth in contract expense is a major factor for both wastewater and solid waste. O&M experiences the largest increases for the Water line of business.

All components of SPU 2018-2023 costs are rising more quickly than the Seattle average inflation rate of 2.4 percent, as shown in Table I-3 below.

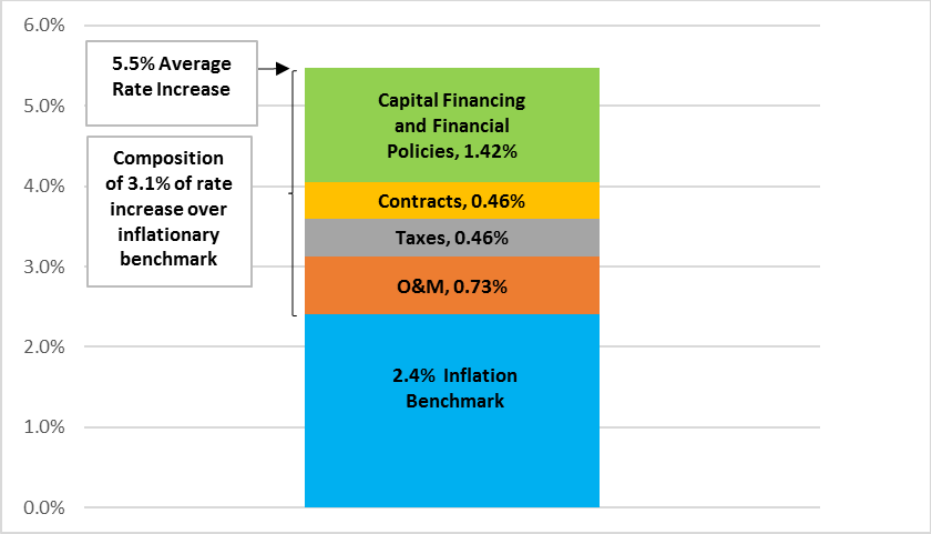
Table I-3
Spending and Inflationary Increases by Component ($ millions)

	2017	2023	2018-23 Increase	Avg Annual % Increase	Over Inflation
Taxes	$120	$164	$44	5.4%	3.0%
Capital	$223	$326	$102	6.5%	4.1%
Contracts	$277	$344	$66	3.6%	1.2%
O&M	$272	$362	$90	4.9%	2.5%
Total	**$892**	**$1,195**	**$303**		

* Average Seattle inflation assumed at 2.4 percent.

Capital financing expense[4] will experience the highest rate of growth (6.5 percent per year or 4.1 percent over the rate of inflation) and contracts the slowest growth (3.6 percent per year or 1.2 percent over the rate of inflation). Figure 1-4 presents the impact of spending in excess of inflation on the average rate increase.

Figure I-4
Composition of Rate Increase in Excess of Inflationary Benchmark



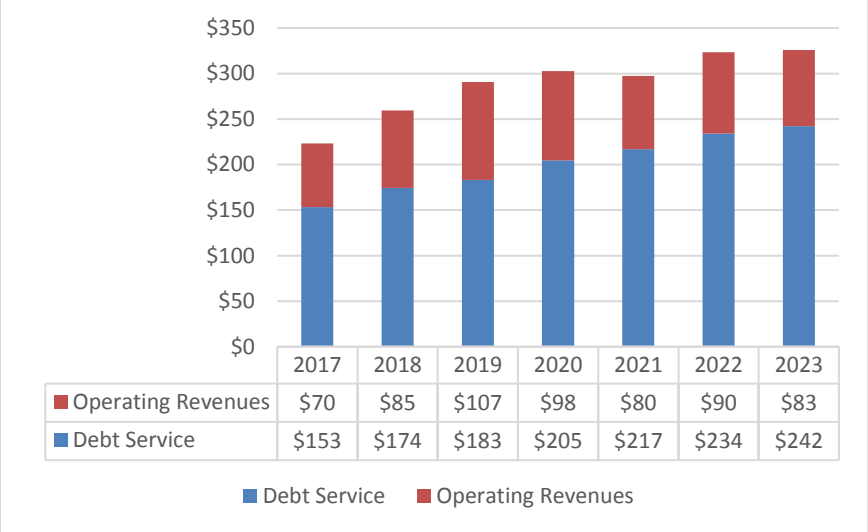
[4] Capital financing expense includes excess cash generated to meet financial policy requirements that is used as cash-financed CIP.

Overview of Cost Drivers

Capital Financing

Annual capital financing expense (debt payments plus cash-financed capital) is the largest driver of expense between 2018 and 2023, averaging 6.5 percent annual growth. It increases from $223 million in 2017 to $326 million in 2023, adding $102 million, or 34 percent of total increases. Figure 1-5 below shows the growth in capital financing expenses from 2018 to 2023, broken out by operating revenues and debt service costs.

Figure I-5
2017-2023 Capital Financing Expense for All Lines of Business



	2017	2018	2019	2020	2021	2022	2023
Operating Revenues	$70	$85	$107	$98	$80	$90	$83
Debt Service	$153	$174	$183	$205	$217	$234	$242

This financing supports $1.8 billion in planned capital spending over six years. Drainage and wastewater projects account for the largest share (64 percent), followed by water (32 percent). Solid waste only accounts for a small share of spending (4 percent) as the construction of new Solid Waste facilities will be largely completed by 2018. Major capital projects include:

Water:

- Replacement of the Bitter Lake Reservoir cover
- New tap installations and Water service renewals to meet development needs
- Tolt Slide improvements to protect a major water pipe from landslide issues
- Utility relocation requirements as well as opportunity projects related to SDOT-led projects funded by the Move Seattle Levy

Drainage & Wastewater:

- Ship Canal Water Quality project to fulfill Combined Sewer Overflow (CSO) Consent Decree requirements
- Pipe rehabilitation program to meet Sanitary Sewer Overflow (SSO) standards
- Green stormwater infrastructure to address drainage and CSO issues through green technology
- New Drainage and Wastewater operations facilities in the south and north ends of the City

- Utility relocation requirements related to SDOT led projects funded by Move Seattle Levy

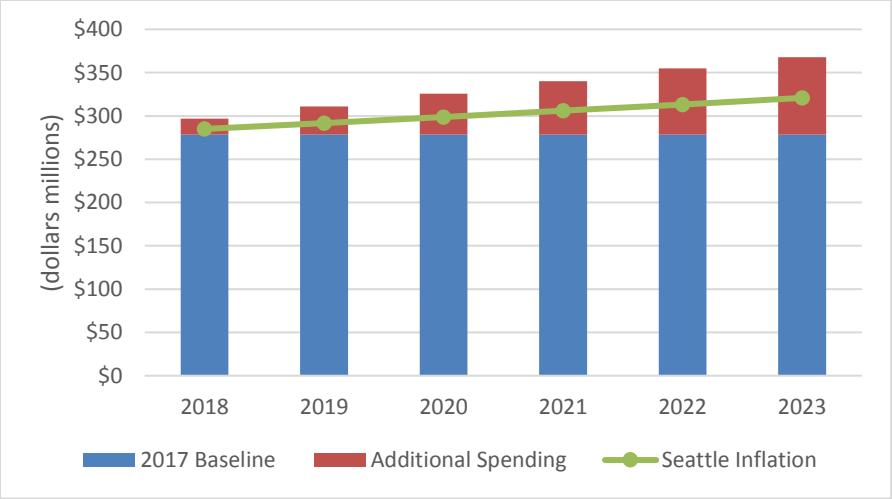
Solid Waste Fund:

- South Transfer Station Phase 2 project – Redevelopment of the old South Transfer Station

O&M

Increases to O&M average 4.9 percent annually, adding $90 million in expense over the six-year period and accounting for 30 percent of increased spending. O&M spending also remains the largest component of total spending, at 30 percent across the period, increasing from $272 million in 2017 to $362 million in 2023. Figure I-6 shows these increases below.

Figure I-6
2018-2023 O&M Expense



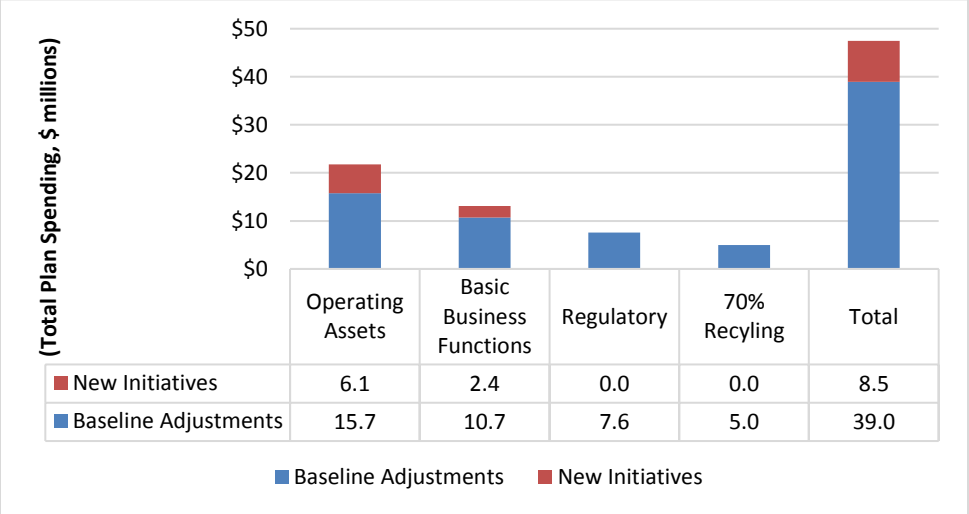
Eighty-six percent of increased spending is due to inflationary increase, with 43 percent of this inflation in excess of average Seattle inflation of 2.4 percent. While SPU salary and salary-related benefits track closely with Seattle inflation, other large components of O&M expense significantly outpace local inflation. Key inflation categories are noted below in Table 1-4 with a complete list of inflation assumptions by type found in Appendix A.

Table I-4
Key Inflationary Assumptions

Category	Average Annual Inflation
SPU salary, overtime, FICA, Medicare	2.5%
Other SPU benefits	6.0-6.3%
Central cost allocations	6-11%
Most non-labor expenses	2-5%

Non-inflationary increases to O&M total $47.5 million over the six-year plan and include new strategic initiatives as well as adjustments required to continue to offer the existing level of service and meet regulatory requirements. Figure I-7 breaks out these increases below. Eighty-two (82) percent ($39.0 million) of increased spending is directed towards meeting existing operating requirements while $8.5 million goes towards new strategic operating initiatives. Forty-six percent ($21.4 million) of increased spending supports the maintenance of operating assets. The second largest category of non-inflationary O&M increases (28 percent or $13.2 million) focuses on basic business functions such as water modeling, support for CIP project delivery and IT maintenance, project support and various workforce and community initiatives. The final $13 million in spending increases provides operating support required to comply with regulatory requirements and programs designed to help Seattle meet its 70 percent recycling goal.

Figure I-7
Total Non-Inflationary O&M Increases, 2018-2023 ($ Millions-6 year)



Contract Expense

Although growth in contract expense is slower than growth in some other categories, it remains the second largest component of total expense, increasing by $66.5 million from $277.1 million in 2017 to $343.6 million in 2023. Table I-5 shows projected spending on major contracts for each LOB.

Table I-5
2017-2023 Projected Spending: Major Contracts

	2017	2018	2019	2020	2021	2022	2023	Avg. Annual
Water	$6.2	$6.4	$6.8	$7.2	$7.4	$7.6	$7.8	4.1%
DWF	$161.7	$163.6	$176.3	$178.6	$186.6	$194.4	$203.4	3.9%
SWF	$109.3	$112.1	$116.8	$120.6	$123.8	$128.2	$132.4	3.2%
	$277.1	**$282.1**	**$300.0**	**$306.4**	**$317.7**	**$330.2**	**$343.6**	**3.6%**

Some highlights of contract spending:

- **Water Design-Build-Operate (DBO) contracts** for the Cedar and Tolt treatment facilities represent the smallest in terms of total dollar value, but are projected to experience the most significant increase due to major maintenance projects at the Tolt facility.
- **King County wastewater treatment contract** costs rise due to expected King County rate increases of 6.4 percent in 2019, and 3.0 percent in 2021-2023. Expense increases in 2018 and 2020 (when there is no treatment rate increase) are due to projected increases in the number of residential accounts served.[5]
- **Solid Waste collection contracts** increase due to a new composting contract effective in 2019. The expense increases are partially offset with savings from a re-negotiated disposal contract with one of the City's haulers.

Taxes

Taxes rise on average 5.4 percent per year, from $119.5 million in 2017 to $163.5 million to 2023, in line with the increase in revenues.

Document Overview

The balance of this Overview is structured as follows:

- **Section II** provides additional detail on the composition and impacts of spending proposed under the 2018-2023 Strategic Business Plan Update
- **Section III** provides an overview of line of business rate impacts and proposed spending
- **Appendix A** documents assumptions underlying projections in the financial baseline
- **Appendix B** provides additional detail on the drivers and composition of capital financing expense which is the single largest driver of rate increases
- **Appendix C** presents an overview of financial changes from the original 2015-2020 Strategic Business Plan

[5] SPU pays King County a flat rate for each residential account. Treatment expense for commercial accounts is based on metered water usage.

The Strategic Business Plan is composed of three distinct elements:

- The **baseline starting point**, which are the costs, and related financial customer impact, of doing business at current service levels and complying with regulatory mandates;
- Minus **cost savings**, through efficiencies and prioritization; and
- Plus **strategic investments** to improve and expand services to our customers, to maintain our infrastructure for future generations, and to become more effective in how we do our work.

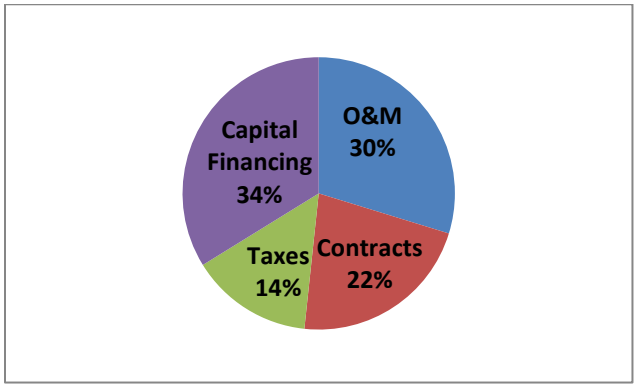
Table II-1 summarizes the impact of each of these elements on the average annual department-wide rate increase of 5.5 percent.

Table II-1
Elements of Average Rate Increase

Element	Avg. Rate Increase
Current baseline operations	5.4%
Minus additional savings	(0.3%)
Plus action plan investments	0.4%
Average Annual Rate Increase	5.5%

Figure II-1 shows the drivers of cost increases. Capital Financing is the largest driver of the proposed increase (34 percent), followed by O&M (30 percent) and Contracts (22 percent) spending increases.

Figure II-1
Drivers of Proposed Increases



The increase relative to the base varies widely between lines of business, mirroring the variance in the level of rate increases, as shown in Table II-2.

Table II-2
Composition of Additions to 2018-2023 Spending by Fund

	Water	Drainage	Wastewater	Solid Waste	SPU-Total
	2017 Base Spending				
2017 Base Spending	$283	$121	$278	$211	$892
	2018-2023 Additions				
O&M	$35	$26	$17	$13	$90
Contracts	$2	$3	$39	$23	$66
Taxes	$13	$10	$15	$6	$44
Capital Financing	$3	$46	$55	-$1	$102
Total Additions	**$52**	**$84**	**$126**	**$41**	**$303**
Additions as % of Base	**18%**	**70%**	**45%**	**19%**	**34%**

Note: Sum of individual components may appear different from totals due to rounding.

II.A. O&M EXPENSE

In the 2018-2023 Strategic Business Plan Update, O&M spending is projected to increase by an average of 4.9 percent annually, from $272 million in 2017 to $362 million in 2023. This increase represents a combination of inflation, savings, adjustments to baseline operations, and strategic investments.

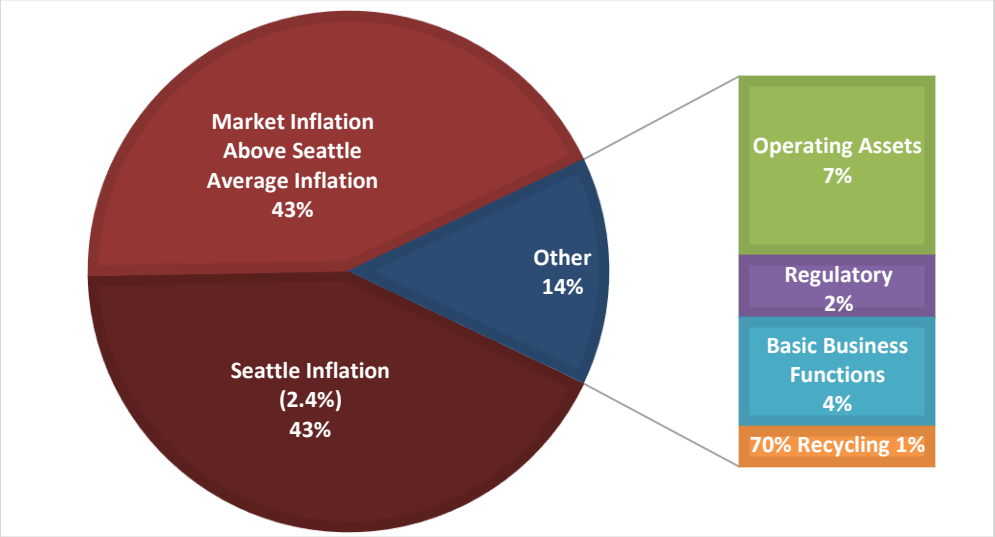
Table II-3 presents spending by general component. **Baseline operations** includes inflationary increases. **Savings** includes efficiencies and prioritizations to spending supporting current (2017) operations. **Adjustments** represent increased spending required to continue to meet baseline operations service levels and comply with regulatory requirements. **Action Plans** represent new strategic investments.

Table II-3
2018-2023 O&M Spending by Component ($ Millions)

	2018	2019	2020	2021	2022	2023	Avg Ann Change
Baseline Operations	$290.2	$302.8	$317.0	$331.0	$344.9	$357.4	
Savings	($4.1)	($3.8)	($3.8)	($3.8)	($3.7)	($3.8)	
Adjustments	$5.4	$6.1	$6.6	$6.7	$7.0	$7.2	
Action Plans	$1.6	$1.3	$1.4	$1.3	$1.5	$1.4	
Total	$293.1	$306.4	$321.1	$335.2	$349.6	$362.3	4.9%

Overall, inflation on baseline operations accounts for the bulk (86 percent) of increases, with adjustments to the baseline and strategic investments accounting for the balance. Increases in these last two categories are generally related to operating assets, complying with regulatory requirements, meeting ongoing basic business requirements, and achieving Seattle's 70 percent recycling goal. Figure II-2 shows the relative composition of increased spending.

Figure II-2
Inflation and Other O&M Spending Increases, 2018-2023



Several spending categories are projected to increase at higher rates than Seattle area inflation. Table II-4 below presents average annual 2018-2023 inflation assumed for major categories of spending. Complete inflation assumptions by year are found in Appendix A.

Table II-4
Key Inflationary Assumptions

Category	Avg Annual Inflation
Labor	
SPU salaries, overtime, FICA, Medicare	2.5%
Health care & fringe benefits	6.0-6.3%
Other labor-related expenses	2.7-9.1%
Non-Labor	
Central cost allocation	6.0-11.0%
Other non-labor expenses	2.0-5.0%

II.A.1. Baseline Operations (Pre-Adjustment)

Table II-5 presents the inflationary and savings components of changes in spending supporting current (2017) operations as well as labor and non-labor components.

Table II-5
Changes to Baseline Operations Spending (Pre Adjustments; $ Millions)

	2018	2019	2020	2021	2022	2023	Change
Baseline (Pre-Savings)	$290.2	$302.8	$317.0	$331.0	$344.9	$357.4	4.7%
Baseline, Net	**$286.1**	**$299.0**	**$313.1**	**$327.3**	**$341.2**	**$353.6**	4.5%
Labor	*$122.1*	*$126.5*	*$130.4*	*$135.5*	*$139.4*	*$144.1*	*3.4%*
Non-Labor	*$163.4*	*$171.6*	*$181.8*	*$190.8*	*$200.8*	*$208.5*	*5.1%*
Annual Change	**$14.0**	**$12.9**	**$14.1**	**$14.1**	**$13.9**	**$12.4**	
Inflation	*$18.1*	*$16.7*	*$18.0*	*$17.9*	*$17.7*	*$16.3*	
Savings	*-$4.1*	*-$3.8*	*-$3.8*	*-$3.8*	*-$3.7*	*-$3.8*	

Overall increases to baseline spending average 4.5 percent per year but would increase to 4.7 percent per year in the absence of projected savings.

Savings, presented by Budget Control Level (BCL) in Table II-6, total $23.1 million over six years and are concentrated in Drainage and Wastewater and Water Operations.

Table II-6
O&M Savings 2018-2023 ($ Millions)

	2018	2019	2020	2021	2022	2023	% of total
General Expense	($0.3)	($0.2)	($0.2)	($0.3)	($0.2)	($0.2)	6%
Administration [1]	($0.3)	($0.3)	($0.3)	($0.1)	($0.1)	($0.1)	5%
Customer Services	($0.2)	($0.2)	($0.2)	($0.2)	($0.2)	($0.2)	5%
Other Operating [2]	($3.4)	($3.1)	($3.1)	($3.2)	($3.3)	($3.3)	84%
TOTAL SAVINGS	($4.1)	($3.8)	($3.8)	($3.8)	($3.7)	($3.8)	($23.1)

Notes:
1) Includes Finance and Administration (F&A) and Director's Office
2) Savings in Drainage and Wastewater and Water lines of business

Labor expense accounts for about 42 percent and non-labor 58 percent of total projected baseline spending, pre-adjustments. This same ratio holds true for total projected O&M spending including adjustments and action plans.

Labor spending has lower average annual increases (3.4 percent) relative to non-labor (5.1 percent). In general, increases for salary and salary-related benefits track closely with average Seattle inflation. However, higher rates of increase for benefits push the annual labor rate up. Also, the largest single component of non-labor expense, city central expense (36 percent of total non-labor) is projected to significantly outstrip Seattle inflation.

II.A.2. O&M Baseline Adjustments

Baseline adjustments are non-inflationary increases required to meet current service levels and regulatory obligations. These adjustments, presented in Table II-7, total $39 million over the six-year plan and are concentrated in four areas:

- Maintenance of operating assets (40 percent)
- Supporting required business programs and operations (27 percent)
- Complying with regulatory requirements (19 percent)
- Achieving SPU's 70 percent recycling goal (13 percent)

Table II-7
2018-2023 O&M Baseline Adjustments by Category ($ Millions)

	2018	2019	2020	2021	2022	2023	Total
Operating Assets	$1.8	$1.9	$2.9	$2.9	$3.1	$3.2	$15.7
Basic Business Functions	$1.4	$1.7	$1.7	$1.8	$2.0	$2.1	$10.7
Regulations	$1.4	$1.7	$1.2	$1.1	$1.1	$1.1	$7.6
70% Recycling Goal	$0.8	$0.8	$0.8	$0.8	$0.8	$0.9	$5.0
Total	**$5.4**	**$6.1**	**$6.6**	**$6.7**	**$7.0**	**$7.2**	**$39.0**

Over half (56 percent) of all adjustment spending is in the Drainage and Wastewater line of business, with 31 percent for Solid Waste and 13 percent for Water. Figure II-3 presents the breakdown in adjustment spending by Fund and category.

Specific examples of adjustments accounting for the bulk of each category are presented in Table II-8. Entries are color coded to indicate the line of business associated with the adjustment. In some cases, mostly "basic business functions" expenses are shared across multiple lines of business. Shared expense only accounts for about 13 percent of total adjustment expense but is the largest component of water adjustment expense (63 percent), but only 22 percent of drainage and wastewater and 9 percent of solid waste adjustment expense.

Figure II-3
O&M Baseline Adjustments by Category, 2018-2023

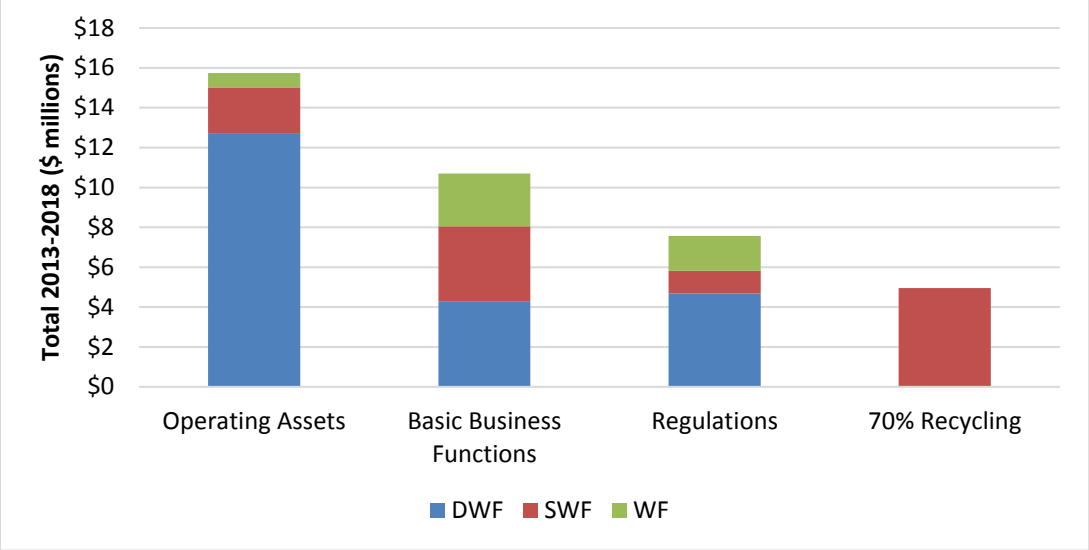


Table II-8
O&M Baseline Adjustments Principal Additions ($ Millions)

OPERATING ASSETS: $15.7M	BASIC BUSINESS FUNCTIONS: $10.7M
• GSI Maintenance - $2.5M	• IT Maintenance - $2.2M
• DWW Control Center - $2.2M	• Move Seattle - $2.5M
• DWW Dewatering Facility - $1.8M	• Change Management - $0.9M
• DWW Grounds Maintenance - $1.7M	• Water Modeling - $0.8M
• DWW New South Operations Complex - $1.7M	• Organics Hauling - $1.3M
• DWW Pond Maintenance - $0.9M	
• Financial System Operations - $1.9M	REGULATIONS: $7.6M
• Landfill Staff - $0.9M	• Source Control Duwamish - $2.7M
• South & North Transfer Station Recycling Payments - $0.7M	• Add'l Wastewater Outfall Sampling - $0.8M
	• Side Sewer Enforcement 0 $0.8M
70% RECYCLING GOAL: $5.0M	• 2018 Stormwater Code Permit - $0.7M
• South Transfer Station C&D Recycling - $7.4M	• Source WW Inspector - $0.7M
• Waste Prevention, including measurement tools - $1.0M	• Landfill Monitoring - $0.8M
	• SF Tolt FERC Relicensing - $0.6M

Note on color-coding:

DWF Drainage and Wastewater
SWF Solid Waste
Water
Shared

II.A.3. O&M Action Plans

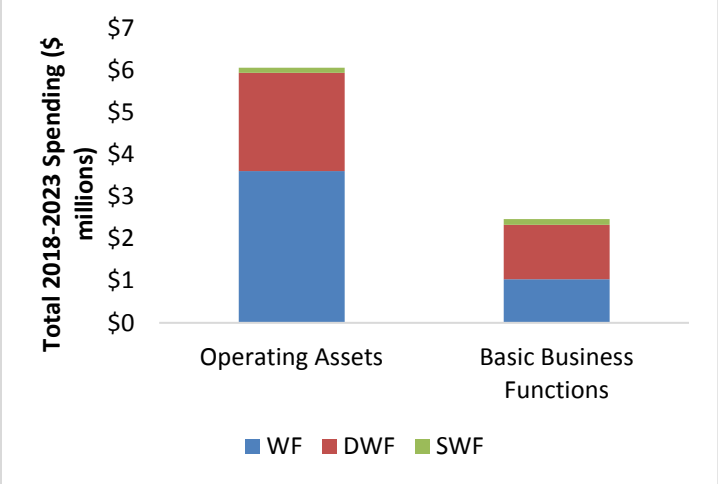
Proposed strategic investments total $8.5 million across the six-year Plan Update. Table II-9 presents the specific action plan investments included in the Plan.

Table II-9
2018-2023 O&M Action Plans ($ Millions)

	2018	2019	2020	2021	2022	2023	Total
OPERATING ASSETS	**$1.1**	**$1.0**	**$0.9**	**$1.0**	**$1.0**	**$1.0**	**$6.1**
Maintenance of the Water Distribution System	$0.7	$0.5	$0.5	$0.5	$0.5	$0.5	$3.2
Expanded Security Monitoring	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.8
Sewer Repair Crews	$0.2	$0.2	$0.3	$0.3	$0.3	$0.3	$1.6
Green Stormwater Infrastructure	$0.1	$0.1	$0.0	$0.0	$0.1	$0.1	$0.4
BASIC BUSINESS FUNCTIONS	**$0.5**	**$0.3**	**$0.5**	**$0.4**	**$0.5**	**$0.3**	**$2.5**
Apprenticeship Program	$0.3	$0.2	$0.3	$0.2	$0.3	$0.2	$1.6
IT Portfolio Strategy and Management	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.9
Total	**$1.6**	**$1.3**	**$1.4**	**$1.3**	**$1.5**	**$1.4**	**$8.5**

Increased spending on the maintenance of Water and Drainage and Wastewater assets accounts for the bulk of spending ($6.1 million). Workforce and technology initiatives to enhance operational efficiency account for $2.5 million of total spending.

Figure II-4
O&M Action Plans by Category, 2018-2023



II.B. CAPITAL FINANCING EXPENSE

SPU is replacing worn out infrastructure, building new infrastructure to meet regulatory requirements, and integrating utility infrastructure into city-wide initiatives. SPU pays for these capital investments through a combination of borrowing and cash. The primary source of borrowed funds are revenue bonds issued by each enterprise Fund.

Table II-10 shows the projected breakdown in funds used to pay for $1.8 billion in capital expenditures from 2018-2023, with about 69 percent of this total paid out of revenue bond proceeds and 31 percent paid with operating revenues.

Table II-10
SPU CIP Funding Sources 2018-2023 ($ Millions)

	2018	2019	2020	2021	2022	2023	2018-23	% Total
Revenue Bond Proceeds	$207	$240	$228	$203	$179	$171	$1,228	69%
Operating Revenues (Cash-financed)	$85	$107	$98	$80	$90	$83	$544	31%
	$292	**$348**	**$326**	**$283**	**$268**	**$255**	$1,772	100%

Table II-10 shows the cash flow used to pay for capital expenditures. The **annual financing expense paid out of operating revenues** includes both the cash financed portion noted above as well as principal and interest payments on borrowed funds (debt service)[6]. Table II-11 presents projected annual spending for these two financing components.

Table II-11
SPU Annual Capital Financing Expense 2018-2023 ($ Millions)

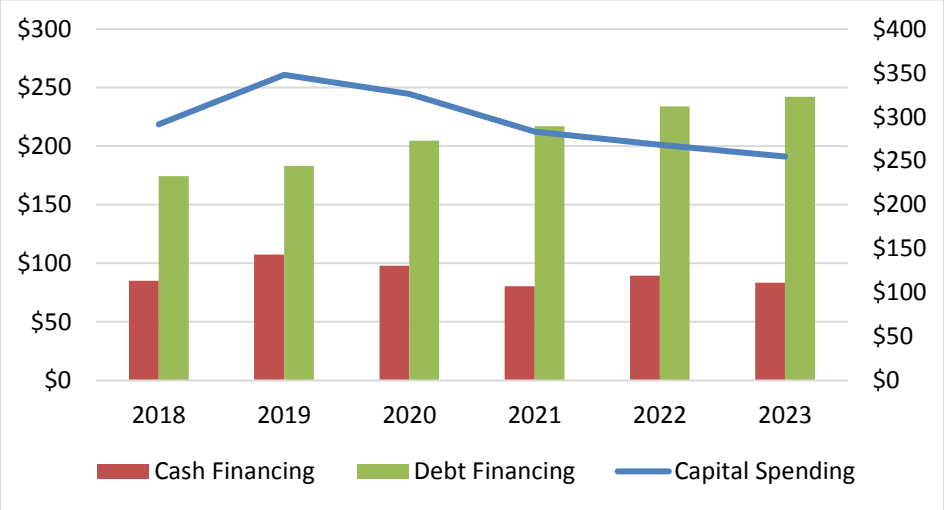
	2018	2019	2020	2021	2022	2023	2018-23	% Total
Operating Revenues	$85	$107	$98	$80	$90	$83	$544	30%
Debt Service	$174	$183	$205	$217	$234	$242	$1,255	70%
Existing Debt	*$153*	*$153*	*$153*	*$153*	*$153*	*$153*	*$920*	*51%*
Debt on 2018-2023 Plan	*$21*	*$30*	*$51*	*$64*	*$81*	*$89*	*$335*	*19%*
Total Expense	**$260**	**$291**	**$303**	**$298**	**$324**	**$326**	**$1,800**	**100%**

Capital financing expense is projected to total $1.8 billion between 2018 and 2023, with 30 percent of annual financing for direct cash financing from operating revenues and 70 percent for debt service payments. Although these numbers appear remarkably similar to the TOTAL capital spending presented in Table II-10, about 51 percent of annual financing expense is for debt service on capital spending PRIOR to 2018. Only 49 percent of annual financing expense (19 percent debt; 30 percent cash) is related to the 2018-2023 capital plan.

[6] See Appendix B for more information on the components of SPU capital financing and their impacts on expense and rates.

Annual capital financing expense is the fastest growth component of the spending requirement, projected to average 6.5 percent per year between 2018 and 2023. The primary driver of this rate of growth is increased debt service. SPU will pay debt service on NEW debt issued to pay for projects constructed during this period as well as continue to pay on EXISTING debt for historical investments. Hence, debt service will increase, even when capital spending is declining, as demonstrated in Figure II-5 below.

Figure II-5
SPU Capital Financing Profile 2018-2023 ($ Millions)



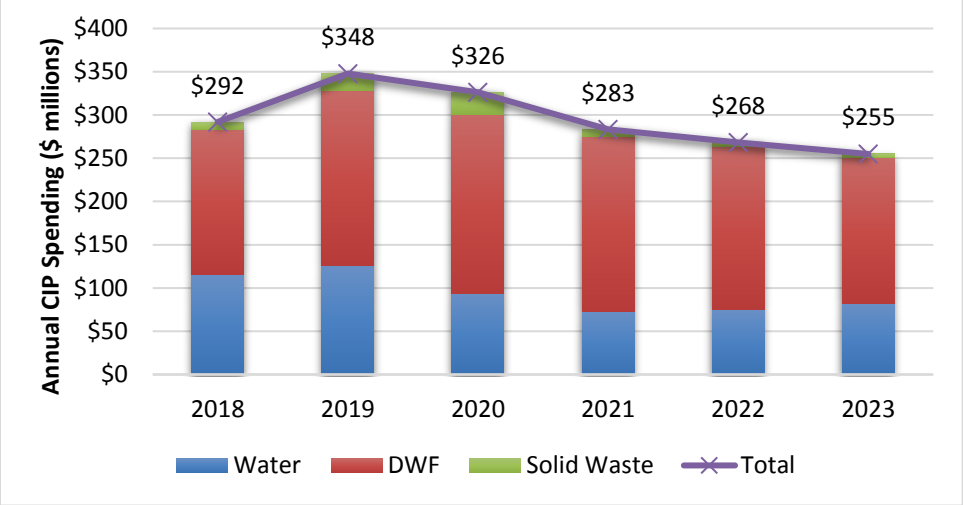
		2018	2019	2020	2021	2022	2023	Avg Annual Growth
CIP Spending		$292	$348	$326	$283	$268	$255	
Average Annual Change		28.5%	19.3%	-6.3%	-13.1%	-5.3%	-5.0%	
Capital Financing		$260	$291	$303	$298	$324	$326	6.5%
	Cash	*$85*	*$107*	*$98*	*$80*	*$90*	*$83*	
	Debt	*$174*	*$183*	*$205*	*$217*	*$234*	*$242*	7.9%
		$71.58	$73.29	$75.05	$76.85	$78.70	$80.59	

Growth in debt service across 2018-2023 significantly exceeds the rate of inflation, with an average annual increase of 7.9 percent. Cash financing generally fluctuates with capital spending, rising with increases in spending and falling with declines. The decline in cash spending at the end of the period partially offsets the rise in debt service, reducing the overall annual growth to 6.5 percent per year.

II.C. CAPITAL SPENDING (BUDGETARY)

The capital financing expense presented in Section II.B supports $1.8 billion in projected 2018-2023 SPU capital spending. Spending on Drainage and Wastewater projects account for 64 percent of total plan spending, followed by 32 percent for Water and only four percent for Solid Waste.

Figure II-6
SPU Annual Capital Financing Expense 2018-2023 ($ Millions)

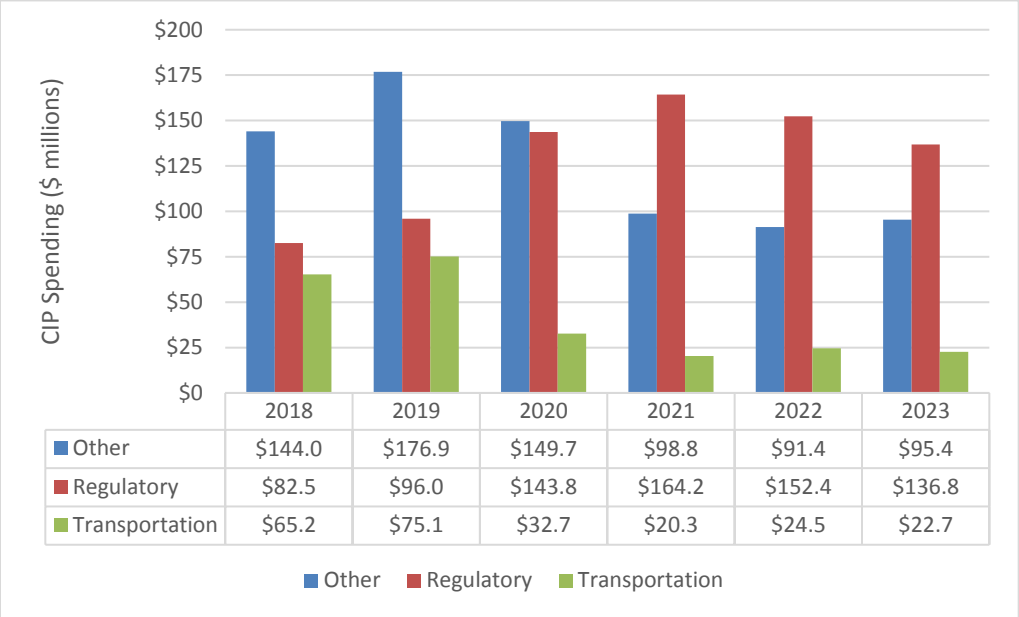


	2018	2019	2020	2021	2022	2023	Plan Total	% Total
Water	116.1	125.5	94.2	73.1	74.7	82.1	$566	32%
DWF	166.6	202.2	206.8	201.9	189.0	168.3	$1,135	64%
Solid Waste	9.0	20.2	25.1	8.4	4.6	4.5	$72	4%
Total	291.7	347.9	326.1	283.4	268.3	254.9	$1,772	

Over half of proposed spending is directed towards two areas:

- Compliance with Drainage and Wastewater regulatory requirements, and
- Utility relocation and/or infrastructure improvements associated with various City transportation initiatives.

Figure II-7
SPU Annual Capital Spending by Major Grouping, 2018-2023 ($ Millions)



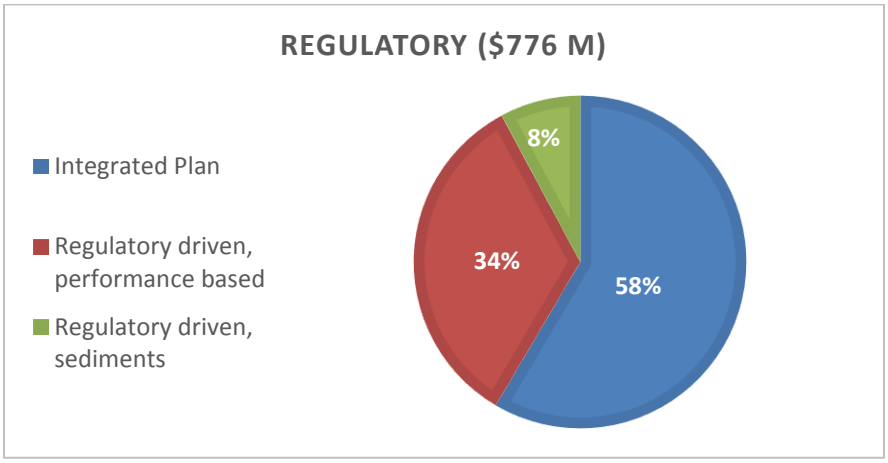
	2018	2019	2020	2021	2022	2023
Other	$144.0	$176.9	$149.7	$98.8	$91.4	$95.4
Regulatory	$82.5	$96.0	$143.8	$164.2	$152.4	$136.8
Transportation	$65.2	$75.1	$32.7	$20.3	$24.5	$22.7

Regulatory CIP spending doubles between 2018 and 2021 with the implementation of the Integrated Plan and while declining after 2021, remains high throughout 2023.

The Integrated Plan consists of a combination of stormwater and wastewater programs and infrastructure investments designed to improve local water quality and bring SPU's combined sewer system into compliance with the requirements of its federal Combined Sewer Consent Decree. The target date for meeting key regulatory targets is 2025. The increase in spending over the six-year period is predominately due to the Ship Canal for Water Quality project moving into construction.

Figure II-8 shows the breakdown between the major categories of regulatory driven capital spending across the 2017-2023 Plan Update period for the Drainage and Wastewater Fund.

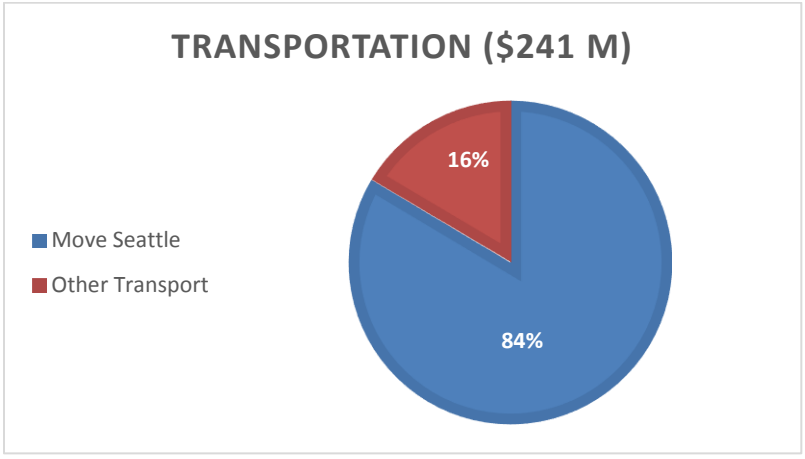
Figure II-8
Composition of Proposed 2018-2023 Regulatory CIP Expense for the Drainage and Wastewater Fund



Drainage and Wastewater capital regulatory requirements total $776 million over the six -year plan. Fifty-eight percent of proposed regulatory spending ($454 million) is related to SPU's Integrated Plan. Thirty-four percent of proposed regulatory spending ($261 million) is for Drainage and Wastewater performance-based projects such as rehabilitating old pipes either through replacement or relining with new technologies. This work is critical to meet the regulatory performance goal of no more than four sewer overflows per 100 miles of pipe. The remaining eight percent supports requirements associated with the investigation and clean-up of contaminated sediments at federal Superfund sites.

Transportation-related requirements total $241 million over the six-year plan update, with 52 percent of spending for Water projects and 48 percent for Drainage and Wastewater projects.

Figure II-9
Composition of Proposed 2018-2023 Transportation CIP Expense



Eighty-four percent of proposed transportation spending is related to the City's Move Seattle project, with the remaining 16 percent related to other transportation initiatives including Alaska Way Viaduct projects and the City Center streetcar.

A portion of proposed spending is required utility relocation associated with other transportation projects in the street. The plan also proposes "opportunity" spending, which essentially allows the utility to replace aging infrastructure at a much lower cost when streets are already opened for other projects.

Table II-12 shows proposed capital baseline spending, savings, and action plan investments.

Table II-12
SPU Proposed Capital Spending, Baseline and Action Plan ($ Millions)

	2018	2019	2020	2021	2022	2023	Total
Baseline	$285	$305	$273	$265	$269	$236	$1,634
Savings	($26)	($16)	$4	($16)	($25)	($4)	($82)
Baseline, Net	***$259***	***$290***	***$278***	***$249***	***$244***	***$233***	***$1,552***
Action Plans	$33	$58	$49	$35	$24	$22	$221
Total	**$292**	**$348**	**$326**	**$283**	**$268**	**$255**	**$1,772**

Nearly half ($95.0 million) of the proposed action plans are related to investing in SPU facilities. This investment was informed by the Facilities Master Plan that was completed as part of the 2015-2020 Plan. The Drainage and Wastewater Fund is proposing investment of $50.1 million in aging infrastructure such as rehabilitation of pipes and pump stations, as well as $20.0 million in new green stormwater infrastructure. Water Fund opportunity-driven Infrastructure replacement associated with transportation projects accounts for about $49.4 million of proposed strategic action plans. Lastly, there is a proposed action plan for $6.5 million to invest in the infrastructure for expanding SPU's green fleet.

A combination of direct service rates revenues and revenues from other funding sources are used to meet a utilities TOTAL REVENUE REQUIREMENT. The total revenue requirement is the sum of revenues required for spending on O&M and CIP financing expense together with any additional revenues required to meet financial policy requirements.

RATE INCREASES are required to fund increases in the RATES REVENUE REQUIREMENT from one rate setting period to the next. Rates increases may be smaller or greater than the actual change in the rates revenue requirement depending on demand and other revenue adjustments such as UDP credits.

Sections I and II of this summary discuss rate drivers for the department as a whole. This section looks at the impacts of the proposed Strategic Business Plan Update on each individual line of business, including:

- An overview of the impact of spending, financial policies, other non-rates funding sources, and demand/UDP on the average rate increase. Changes are relative to assumptions used to set 2017 rates, not current 2017 projections
- A summary of the components of the spending increase
- Projected debt issuance and debt service assumptions for the period, and
- Composition of projected capital spending

III.A WATER FUND

Water rates are projected to increase by an average of 4.6 percent per year across the 2018-2023 Plan Update period. The components of this increase are presented in Table III-1. Note that all increases are relative to assumptions used to set 2017 rates, not current 2017 projections.

Table III-1
Components of 2018-2023 Average Water Rate Increase

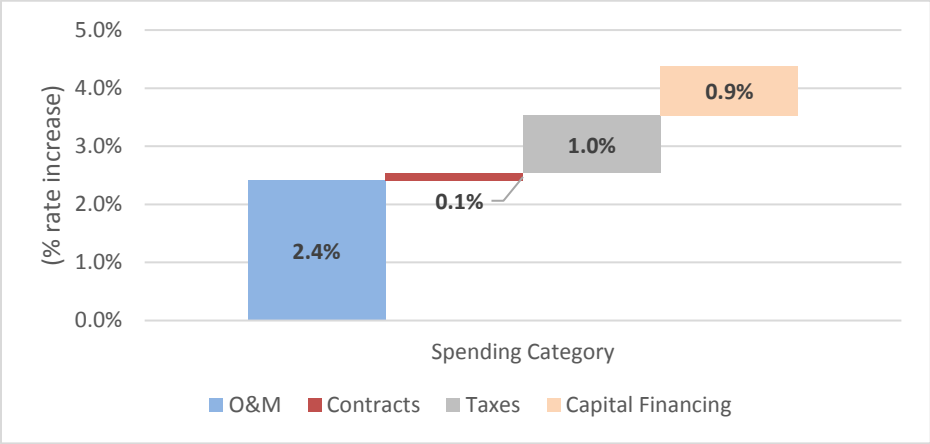
	2018-2023 Avg Rate Impact
Spending	**4.4%**
Plus: Other Financial Policies	0.4%
TOTAL REVENUE REQUIREMENT	4.8%
Less: Other Funding	0.0%
RATES REVENUE REQUIREMENT	4.8%
Demand/UDP adjustments	-0.2%
RATE INCREASE	4.6%

Increased **spending** accounts for 4.4 percent of this increase, with increases to spending presented in Figure II-8 below.

Financial policy requirements add an average of 0.4 percent per year to the rate. The Water Fund must generate revenues beyond cash expense to meet debt service coverage requirements. Nearly all the excess revenue is used for cash-financing of capital projects.

Net changes to demand and UDP further reduce the rate by 0.2 percent per year. While demand is projected to decline slightly between 2018 and 2023 (See Financial Assumptions in Appendix B), 2023 demand is higher than what was assumed when rates were set for 2017. This increased demand more than offsets the impact of increased UDP.

Figure III-1
Composition of Projected Average 4.4 percent Water SPENDING Increase, 2018-2023



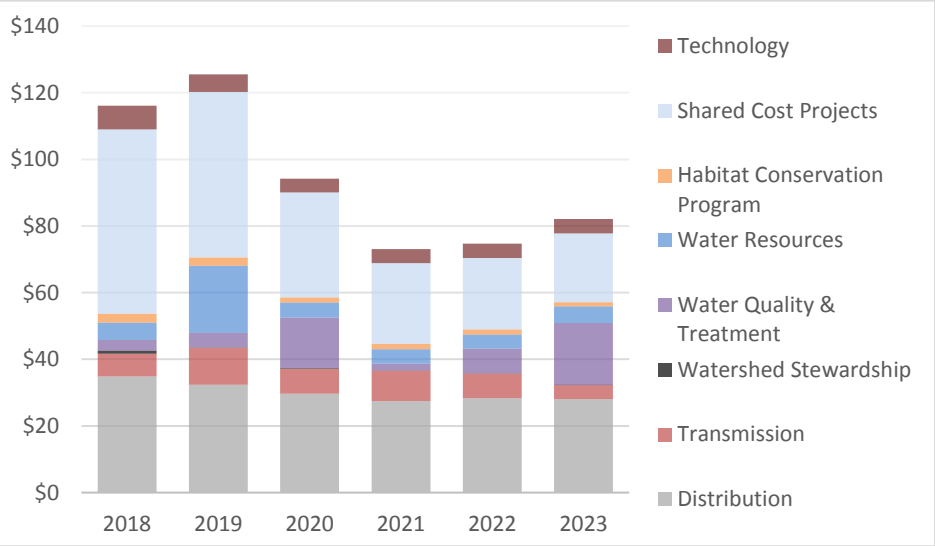
O&M is the largest category of increased spending, adding 2.4 percent on average annually to the rate. These increases are generally driven by inflation. Capital financing, which includes debt and cash financed CIP, is the second largest driver, adding 0.9 percent on average to the rate. The Water Fund is expected to issue $229 million in new debt during the period (see Table III-2 below). Increases in tax expense due to increased revenues add 1 percent per year and a small increase in the Tolt DBO contract adds another 0.1 percent per year.

Table III-2
Water Fund Projected Debt Issues and Debt Service, 2018-2023

Year	Bond Amount	2018	2019	2020	2021	2022	2023
		Existing Revenue Bond Debt Service					
		$81.3	$81.3	$81.7	$80.1	$80.3	$80.0
		New Revenue Bond Debt Service					
2018	$0.0						
2019	$92.0		$3.8	$6.3	$6.3	$6.3	$6.3
2020	$72.6			$2.3	$5.0	$5.0	$5.0
2021	$64.8				$2.7	$4.5	$4.5
2022	$61.3						$4.2
2023	$60.7						
Total New Debt	**$229.4**	**Debt Service on Other Loans**					
		$2.3	$2.3	$2.2	$2.2	$2.2	$2.2
		Total Debt Service					
		$83.6	**$87.4**	**$92.6**	**$96.3**	**$98.3**	**$102.2**
DSC (1.7x)		**1.94**	**1.89**	**1.70**	**1.70**	**1.70**	**1.70**

Water Fund capital spending is projected to total $566 million across the period. The two largest categories of spending, shared cost projects and distribution, account for about 68 percent of total projected spending. Transportation projects drive the significant spending in shared cost projects at the beginning of the period while reservoir covering projects bump up spending in Water Quality & Treatment in 2020 (Lake Forest Park) and 2023 (Bitter Lake).

Figure III-2
Water Fund Projected CIP Spending by BCL, 2018-2023 ($ Millions)



	2018	2019	2020	2021	2022	2023	Total
Distribution	34.9	32.4	29.7	27.5	28.3	28.1	180.8
Transmission	6.8	11.1	7.5	9.1	7.4	4.2	46.1
Watershed Stewardship	1.0	0.1	0.2	0.1	0.1	0.0	1.4
Water Quality & Treatment	3.2	4.4	15.2	2.0	7.5	18.7	50.8
Water Resources	5.1	20.2	4.5	4.4	4.2	5.0	43.4
Habitat Conservation Program	2.7	2.4	1.5	1.6	1.5	1.3	11.0
Shared Cost Projects	55.3	49.7	31.5	24.2	21.5	20.7	202.9
Technology	7.1	5.3	4.2	4.2	4.2	4.2	29.2
Grand Total	**$116.1**	**$125.5**	**$94.2**	**$73.1**	**$74.7**	**$82.1**	**$565.6**

III.B DRAINAGE AND WASTEWATER FUND

III.B.1. Wastewater Rates

Wastewater rates are projected to increase by an average of 5.9 percent per year across the 2018-2023 Strategic Business Plan Update period. The components of this increase are presented in Table III-3. Note that all increases are relative to assumptions used to set 2017 rates, not current 2017 projections.

Table III-3
Components of 2018-2023 Average Wastewater Rate Increase

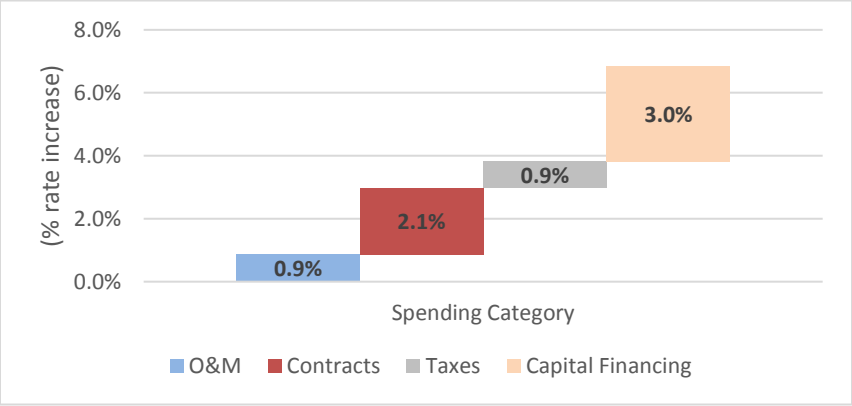
	2018-2023 Avg Rate Impact
Spending	**6.8%**
Plus: Other Financial Policies	0.0%
TOTAL REVENUE REQUIREMENT	6.8%
Less: Other Funding	-0.7%
RATES REVENUE REQUIREMENT	6.1%
Demand/UDP adjustments	-0.2%
RATE INCREASE	5.9%

Increased **spending** accounts for 6.8 percent of this increase, with increases to spending presented in Figure III-4 below.

Other funding sources reduce the required rate increase by an average of 0.7 percent per year. These funding sources are a combination of expense recoveries for various services (Engineering/GIS) that SPU provides to other City departments as well as increased use of cash balances.

Net changes to demand and UDP further reduce the rate by 0.2 percent per year. While demand is projected to remain relatively constant between 2018 and 2023 (See Financial Assumptions in Appendix B), 2023 demand is higher than what was assumed when rates were set for 2017. This increased demand more than offsets the impact of increased UDP.

Figure III-3
Composition of Projected Average 6.8 percent Wastewater SPENDING Increase, 2018-2023



Capital financing, which includes debt and cash financed CIP, is the largest category of increased spending, adding 3.0 percent on average annually to the rate. The Drainage and Wastewater Fund projects to issue $669 million in new debt during the period, (see Table III-5 below), with wastewater rates funding about 37 percent of new debt service. The second largest driver, Wastewater Treatment Contract Expense, adds 2.1 percent to the rate, primarily due to increases in the King County wastewater treatment rate (See Appendix A, Financial Assumptions). Both O&M and tax expense each add 0.9 percent per year to the rate.

III.B.2. Drainage Rates

Drainage rates are projected to increase by an average of 8.8 percent per year across the 2018-2023 Plan Update period. The components of this increase are presented in Table III-4. Note that all increases are relative to assumptions used to set 2017 rates, not current 2017 projections.

Table III-4
Components of 2018-2023 Average Drainage Rate Increase

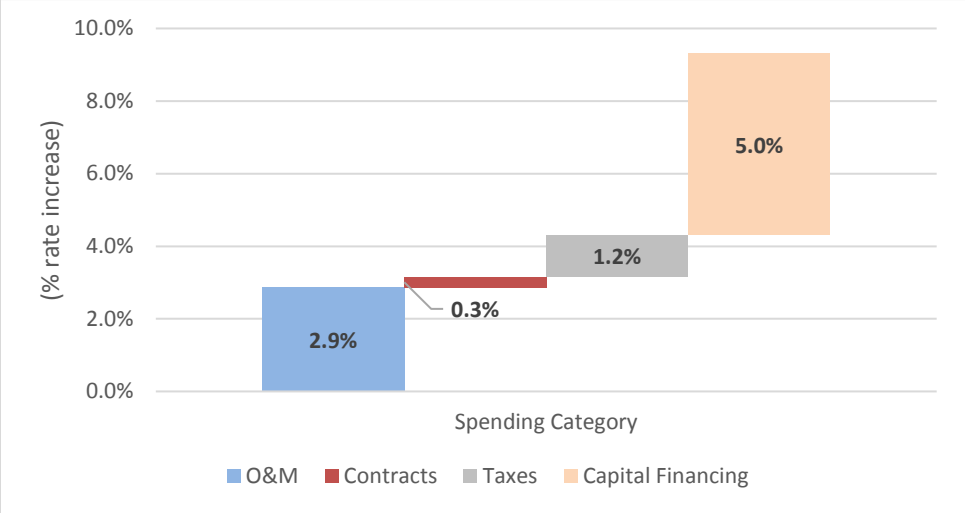
	2018-2023 Avg Rate Impact
Spending	**9.3%**
Plus: Other Financial Policies	0.0%
TOTAL REVENUE REQUIREMENT	9.3%
Less: Other Funding	-0.4%
RATES REVENUE REQUIREMENT	8.9%
Demand/UDP adjustments	-0.1%
RATE INCREASE	8.8%

Increased **spending** accounts for 9.3 percent of this increase, with increases to spending presented in Figure III-5 below.

Other funding sources reduce the required rate increase by an average of 0.4 percent per year. As with Wastewater, these funding sources are a combination of expense recoveries for various services (Engineering/GIS) that SPU provides to other City departments as well as increased use of cash balances.

Net changes to demand and UDP further reduce the rate by 0.1 percent per year.

Figure III-4
Composition of Projected Average 9.3 percent Drainage SPENDING Increase, 2018-2023



Capital financing, which includes debt and cash financed CIP, is the largest category of increased spending, adding 5.0 percent on average annually to the rate. The Drainage and Wastewater Fund projects to issue $669 million in new debt during the period, (see Table II-5 below), with drainage rates funding about 63 percent of new debt service. The second largest driver, O&M expense, adds 2.9 percent to the rate. Drainage is allocated a larger share of Drainage and Wastewater O&M expense as there are more drainage specific projects and related administrative support. Taxes add 1.2 percent to the rate and Contract Expense adds 0.3 percent as drainage is allocated only about six percent of total wastewater treatment expense.

III.B.3. Drainage and Wastewater Capital Spending and Financing

The drainage and wastewater lines of business issue debt jointly under the Drainage and Wastewater Fund. Debt service is then allocated between the two rate bases using the net book value of assets associated with each line of business. Table III-5 presents projected bond amounts and debt service for jointly issued debt between 2018 and 2023. As noted earlier, wastewater rates fund about 37 percent of new debt service and drainage rates fund 63 percent. The larger drainage share is due to generally newer assets (so a higher net book value) and its larger allocation (55 percent) of combined system expense, the largest DWF capital expense driver.

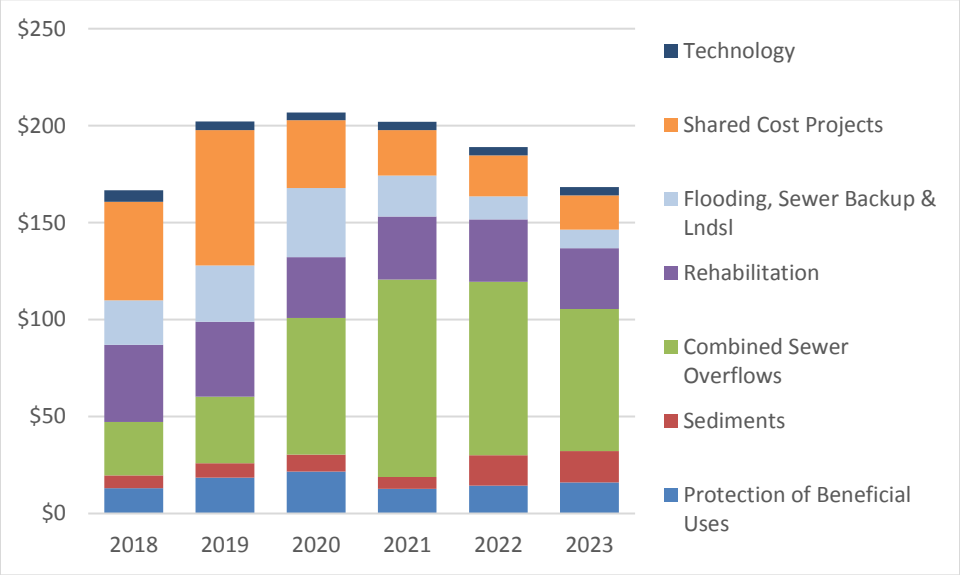
Table III-5
Drainage and Wastewater Fund Projected Debt Issues and Debt Service, 2018-2023

Year	Bond Amount	2018	2019	2020	2021	2022	2023
		Existing Revenue Bond Debt Service					
		$66.0	$65.9	$65.7	$64.2	$58.4	$54.3
		New Revenue Bond Debt Service					
2018	$0.0						
2019	$211.0		$6.0	$14.8	$14.8	$14.8	$14.8
2020	$244.1		$0.0	$7.0	$17.2	$17.2	$17.2
2021	$213.6		$0.0	$0.0	$0.0	$15.0	$15.0
2022	$0.0		$0.0	$0.0	$0.0	$0.0	$0.0
2023	$201.0		$0.0	$0.0	$0.0	$5.7	$14.1
Total New Debt	**$668.7**	**Debt Service on Other Loans**					
		$8.9	$8.9	$8.9	$8.9	$8.9	$8.9
		Total Debt Service					
		$74.9	**$80.8**	**$96.4**	**$105.1**	**$120.1**	**$124.4**
DSC (2.0x)		**1.85**	**2.20**	**2.42**	**2.26**	**2.00**	**2.00**

Drainage and Wastewater Fund capital spending is projected to total $1.1 billion across the period. Spending on Combined Sewer Overflow projects account for 35 percent of total spending, largely due to the King County Ship Canal and other projects related to meeting the requirements of the Combined Sewer Consent Decree (See Section II.C for more details). Spending in this area is primarily concentrated in the 2020-2023 period.

Transportation projects (Shared Cost Projects) also account for a significant share of capital spending (19 percent), as does rehabilitation of sewer pipes (18 percent). Spending on rehabilitation is relatively constant while, similar to the Water Fund, transportation spending peaks in 2019 and then gradually declines.

Figure III-5
Drainage and Wastewater Fund Projected CIP Spending by BCL, 2018-2023 ($ Millions)



	2018	2019	2020	2021	2022	2023	Total
Protection of Beneficial Uses	13.1	18.5	21.6	12.6	14.4	16.0	96.3
Sediments	6.5	7.3	8.8	6.2	15.7	16.2	60.7
Combined Sewer Overflows	27.6	34.4	70.6	101.8	89.4	73.2	397.0
Rehabilitation	39.8	38.6	31.2	32.6	32.2	31.3	205.6
Flooding, Sewer Backup & Lndsl	22.8	29.0	35.7	21.1	11.9	9.6	130.2
Shared Cost Projects	51.0	69.8	35.0	23.4	21.1	17.7	217.9
Technology	5.8	4.5	3.9	4.3	4.3	4.3	27.2
Grand Total	**$166.6**	**$202.2**	**$206.8**	**$201.9**	**$189.0**	**$168.3**	**$1,134.9**

III.C SOLID WASTE

Solid Waste rates are projected to increase by an average of 3.4 percent per year across the 2018-2023 Strategic Business Plan Update period. The components of this increase are presented in Table III-6. Note that all increases are relative to assumptions used to set 2017 rates, not current 2017 projections.

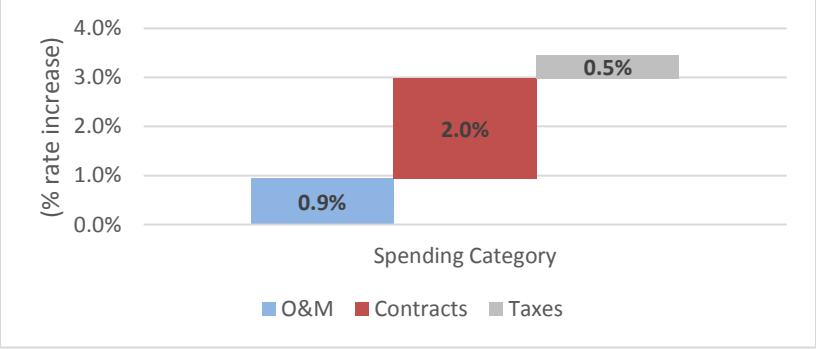
Table III-6
Components of 2018-2023 Average Solid Waste Rate Increase

	2018-2023 Avg Rate Impact
Spending	**3.5%**
Plus: Other Financial Policies	-0.1%
TOTAL REVENUE REQUIREMENT	3.4%
Less: Other Funding	-0.4%
RATES REVENUE REQUIREMENT	3.0%
Demand/UDP adjustments	0.4%
RATE INCREASE	3.4%

Increased **spending** accounts for 3.5 percent of this increase, with increases to spending presented in Figure III-7 below. Financial policy requirements reduce the average rate increase by 0.1 percent per year.

Net changes to demand and UDP increase the rate by 0.4 percent per year. There are multiple demand drivers (see Appendix B, Financial Assumptions) for solid waste that, on net, remain relatively constant with 2017 rate study assumptions. Consequently, unlike with the other funds, changes to demand do not offset increases to the solid waste rate associated with projected increases to UDP enrollment (all found in Appendix B, Financial Assumptions).

Figure III-6
Composition of Projected Average 3.5 percent Solid Waste SPENDING Increase, 2018-2023



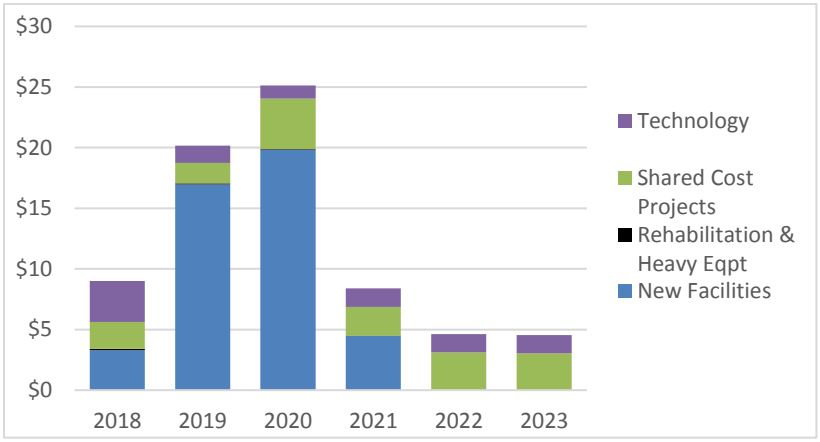
Contracts account for about 60 percent of increased spending, adding 2.0 percent on average annually to the rate, primarily due to a new composting contract which is effective in 2019. O&M and taxes add 0.9 percent and 0.5 percent respectively to the rate. While a small bond issue ($13.8 million) is projected during the plan period, total capital financing expense does not materially increase the rate.

Table III-7
Drainage and Wastewater Fund Projected Debt Issues and Debt Service, 2018-2023

Year	Bond Amount	2018	2019	2020	2021	2022	2023
		Existing Debt Service					
	-	$15.9	$15.9	$15.4	$15.4	$15.4	$15.4
		New Debt Service					
2018	$0.0						
2019	$13.8			$1.1	$1.1	$1.1	$1.1
2020	$0.0						
2021	$0.0						
2022	$0.0						
2023	$0.0						
Total Debt	**$13.8**	Total Debt Service					
		$15.9	**$15.9**	**$16.6**	**$16.6**	**$16.6**	**$16.6**
DSC - 1 (1.7x)		**3.05**	**3.10**	**4.11**	**3.13**	**3.17**	**3.21**
DSC - 2 (1.7x)		**1.50**	**1.51**	**2.52**	**1.50**	**1.50**	**1.50**

Solid Waste Fund capital spending is projected to total $72 million across the period. Approximately, 62 percent of this spending is for the completion of the South Transfer Station Phase II projects. Shared cost projects and technology account for the balance of spending.

Figure III-7
Solid Waste Fund Projected CIP Spending by BCL, 2018-2023 ($ Millions)



	2018	2019	2020	2021	2022	2023	Total
New Facilities	3.3	17.0	19.8	4.5	-	-	44.6
Rehabilitation & Heavy Eqpt	0.1	0.1	0.0	0.0	0.0	-	0.3
Shared Cost Projects	2.2	1.7	4.2	2.4	3.1	3.0	16.5
Technology	3.4	1.4	1.1	1.5	1.5	1.5	10.5
Grand Total	**$9.0**	**$20.2**	**$25.1**	**$8.4**	**$4.6**	**$4.5**	**$71.9**

Appendix A: ASSUMPTIONS

Inflation Assumptions

Descriptor	2018	2019	2020-2023
Salaries and overtime	**2.8%**	**2.4%**	**2.4%**
Salary sensitive fringe benefits - FICA, Medicare	**2.8%**	**2.4%**	**2.4%**
Health and dental insurance	**6.3%**	**6.3%**	**6.3%**
Hourly fringe benefits - Orca cards, life insurance, etc.	**6.0%**	**6.0%**	**6.0%**
City pension costs	**1.1%**	**5.7%**	**2.4%**
Unemployment	**45.3%**	**3.0%**	**3.0%**
Worker's Compensation	**3.0%**	**3.0%**	**3.0%**
Labor overhead charges	**3.0%**	**3.0%**	**3.0%**
Central Cost Allocations - including rent, FAS, and Seattle DoIT charges	**6.0%**	**6.0%**	**6.0%**
Central Cost - Fleet Allocation and Fleet Fuel Allocation	**7.0%**	**11.0%**	**7.0%/11% alternating years**
Central Cost - Fleet rentals and motor pool	**11.0%**	**11.0%**	**11.0%**
Central Cost 0 Fleet maintenance	**4.0%**	**11.0%**	**4.0%/11% alternating years**
Professional service contracts	**3.0%**	**3.0%**	**3.0%**
Equipment purchases	**2.0%**	**2.0%**	**2.0%**
Training and travel for SPU employees to attend meetings or conferences	**2.0%**	**2.0%**	**2.0%**
Utilities	**5.0%**	**5.0%**	**5.0%**
All other costs not included in any account above.	**3.0%**	**3.0%**	**3.0%**

Other Financial Assumptions

	2018	2019	2020	2021	2022	2023
Bond Interest Rates						
Water		5.50%	5.50%	5.50%	5.50%	5.50%
Drainage & Wastewater[1]	-	5.70%	5.70%	-	5.70%	5.70%
Solid Waste	-	5.50%	-	-	-	-
Demand Assumptions						
Water Demand (annual ccf)[2]	26,750	26,560	26,480	26,400	26,360	26,290
Sewer Demand [3]	21,550	21,543	21,603	21,571	21,565	21,569
Solid Waste Customers (SFR)[4]	164,375	164,146	163,916	163,687	163,458	163,229
Solid Waste Volume (CY, all garbage & organics)[4]	523,341	524,339	524,544	524,639	524,733	524,828
Solid Waste Tons (all garbage & organics)[4]	339,092	342,155	343,500	344,497	345,865	346,895
Other Assumptions						
CIP Accomplishment Rate (All LOBs)	100%	100%	100%	100%	100%	100%
King County Wastewater Treatment Rate Increase[5]	0.0%	6.4%	0.0%	3.0%	3.0%	3.0%
RSF Assumptions ($ thousands)[6]						
Water	-$3,000	-$14,000	-$2,000			
Solid Waste	-$879	-$1,187	-$17,297	-$330	$204	$179
LIRA						
Enrollees						
Water	29,198	30,867	32,535	34,204	35,872	37,541
Wastewater	27,276	28,834	30,393	31,951	33,510	35,069
Drainage	27,197	28,751	30,306	31,860	33,414	34,968
Solid Waste	24,577	25,981	27,386	28,790	30,195	31,599
Revenue Reductions ($ thousands)						
Water	$5,129	$5,472	$6,083	$6,771	$7,461	$8,329
Wastewater	$8,018	$9,713	$11,753	$12,505	$13,547	$14,404
Drainage	$2,457	$3,004	$3,643	$3,991	$4,397	$4,845
Solid Waste	$6,104	$6,667	$7,230	$7,921	$8,662	$9,320

Financial Policy Assumptions

	WF	DWF	SWF
Net Income	positive	positive	positive
Cash to CIP	20% over rate study period	25% 4 yr avg.	> $3.3M or 10% of CIP
YE Cash	1/12 annual operating expense	45 day operating revenue [7]	20 days contract cost
DSC	1.7x	2.0x[8]	1.7x w/tax; 1.5x less tax
Debt to assets ratio		<70%	

Notes:

1) The assumed bond interest rate for the Drainage and Wastewater Fund is higher than Water and Solid Waste because we are anticipating a possible negative outlook assignment as a result of the large capital program combined with King County debt assignment placing pressure on the Fund's cash balances and Debt Service Coverage(DSC).

2) 2017 Rate Study assumed 25,878 one hundred cubic feet (ccf), so increased in demand between 2017 and 2023 for rate-setting purposes.

3) 2017 Rate Study assumed 20,796 ccf, so increased in demand between 2017 and 2023 for rate-setting purposes.

4) 2017 Rate Study assumed 164,982 SFR accounts, 130,220 cy, and 338,452 tons. Demand trends are mixed for rate-setting purposes.

5) Based on King County's June 2016 rate letter.

6) Negative indicates withdrawal; positive indicates deposit. Solid Waste Fund (SWF) financials assumed that operating cash (rather than an RSF withdrawal) will be used to fund Bill in Advance in 2018. The large 2020 SWF RSF withdrawal is to fund significant capital expense that year after proceeds from the 2019 bonds are exhausted.

7) Rate-setting target. Adopted target is 1 month wastewater treatment expense.

8) 1.8x adopted target.

Capital expense is paid for through a combination of current year revenues (cash-financed CIP) and proceeds from periodic revenue bond issues. Annual debt service payments of principal and interest represent the annual cost to the Fund of issuing revenue bonds. This process is similar to home financing:

- Cash-financed CIP equates to a down payment,
- Revenue bond proceeds equate to funds that the mortgage lender uses to pay for the cost of the home in excess of the down payment, and
- Annual debt service payments equate to annual mortgage payments to the lender.

Both the cash and debt financed portions of capital financing expense are paid out of operating revenues, much as a homeowner uses annual income to pay for the initial down payment and subsequent mortgage payments on a home purchase.

While a typical homeowner only purchases one home over the course of a multi-year period, utilities typically "purchase" new infrastructure every year over multi-year periods. Consequently, each year there is a new "down payment" which is a percentage of capital spending in that year. Revenue bond issues are typically sized to fund about two years of capital expenditures. Every few years, new bonds must be issued to pay for the portion of ongoing capital expenditures not paid for with current revenues. Debt payments are typically spread over 30 years, so a utility may be paying debt service payments on MULTIPLE bond issues in any one annual period. This equates to paying multiple mortgages on multiple homes purchased over several years.

Impact of Capital Financing on Rates

Assuming constant demand and no change in other funding sources, a rate increase will be required to fund **incremental** annual increases to a utility's revenue requirement. Growth in operating spending impacts the revenue requirement in a different manner from growth in CIP spending. Incremental increases to operating expense will drive a linear dollar for dollar increase to the revenue requirement. Thus, if operating spending in Year 1 is $50 million and in Year 2 is $55 million, the revenue requirement will increase by $5 million[7].

The relationship between changes in capital spending and changes to the revenue requirement varies between the two financing options of cash and debt.

Cash-Financed CIP. Increases in capital spending will result in incremental increases to cash-financed CIP, assuming a constant percentage funded from year to year. However, there is not a 1:1 relationship between increases in capital spending and the resultant increase in the revenue requirement. For example, if 20 percent of total annual capital spending is financed each year with cash, then a $1.00 increase in capital spending will result in a $0.20 increase to the revenue requirement. If there is no

[7] This is a simple example that does not take into account revenue tax impacts. Additional revenue generated to fund increased spending must fund both the spending and increased taxes on the additional revenue. Assuming a 10 percent tax rate, in the example above, rates must be set to generate an additional $5,555,556 in revenue, with $5,000,000 used to pay for increased spending, and $555,556 used to pay for increased taxes on the higher revenues.

change in CIP spending from year to year (and no change in the percentage financed), there will be no change in total cash financing and thus no change in the revenue requirement.

Debt Payments. Revenue bond proceeds are used to finance the total annual debt-financed portion of capital spending not just the incremental change in capital spending from the prior year. Therefore, any capital spending, even if it is less or the same as the prior year, will generate an increase in debt service. How large this increase is will depend on the amount financed and other financing terms (variable/fixed structure, current market interest rates, term of debt), not the rate of inflation.

Table B-1 below presents a numerical example of the relationship between capital spending and capital financing expense.

Table B-1[8]
Impact of Capital Spending on Capital Financing Expense

Current Year Capital Spending	**Year 1**	**Year 2**	
Total Capital Spending	$50,000,000	$50,000,000	
Cash-Financed CIP (20 percent)	*$10,000,000*	*$10,000,000*	
Debt-Financed CIP (80 percent)	*$40,000,000*	*$40,000,000*	
Total Annual Capital Financing Expense			**Change ($$)**
Cash	$10,000,000	$10,000,000	$0
Debt Payments[9]	$2,752,200	$5,504,000	$2,752,000
Payment on Year 1 spending	*$2,752,200*	*$2,752,200*	
Payment on Year 2 spending		*$2,752,200*	

In the above example, capital spending remains constant from year one to year two, as does the percentage of spending financed with cash and debt. Under this constant spending assumption, the cash financed portion of annual capital financing expense does not change. However, annual debt service payments increase, thus increasing the revenue requirement (and rates). In fact, as annual debt service

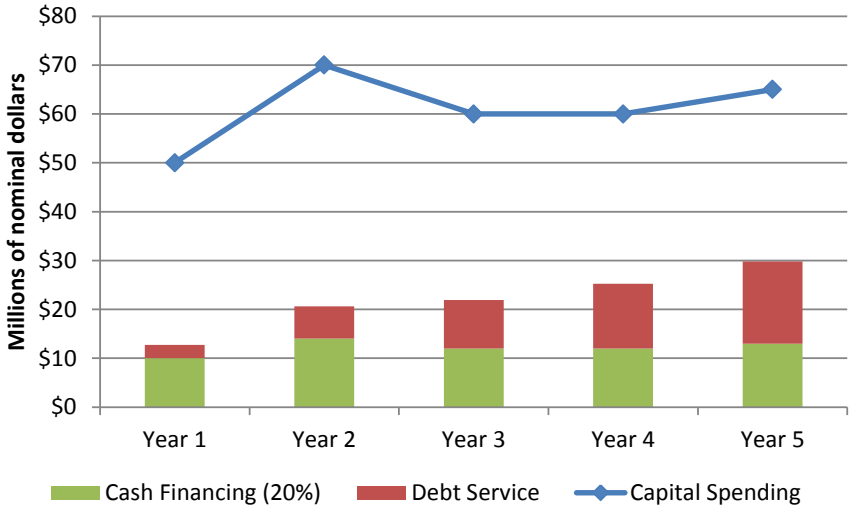
[8] To isolate the relationship between capital spending and debt service, this table assumes a new bond issue in each year which is sized to fully fund the debt-financed portion of capital spending in each year. In practice, debt issues are typically sized to finance 18 to 24 months of capital spending.

[9] Annual principal and interest payment assuming 5.5 percent annual interest on 30 year fixed debt.

is cumulative, i.e. the sum of payments related to all prior outstanding issues[10], debt service will increase with new bond issues even when capital spending declines.

Figure B-1 presents the relationship between capital spending and the two capital financing components.

Figure B-1
Relationship between Capital Spending and Capital Financing Expense[11]



The figure above presents capital spending and financing expense across a five-year period. The line represents annual capital expense which fluctuates across the period. Cash financing held at a constant 20 percent of spending fluctuates in the same direction as capital spending, increasing when spending increases and declining when expense declines. Debt service, on the other hand, continues to increase regardless of the direction in capital spending.

[10] As debt is retired (after 30 years), decreases in base debt service will help to offset any increases associated with new debt issues.

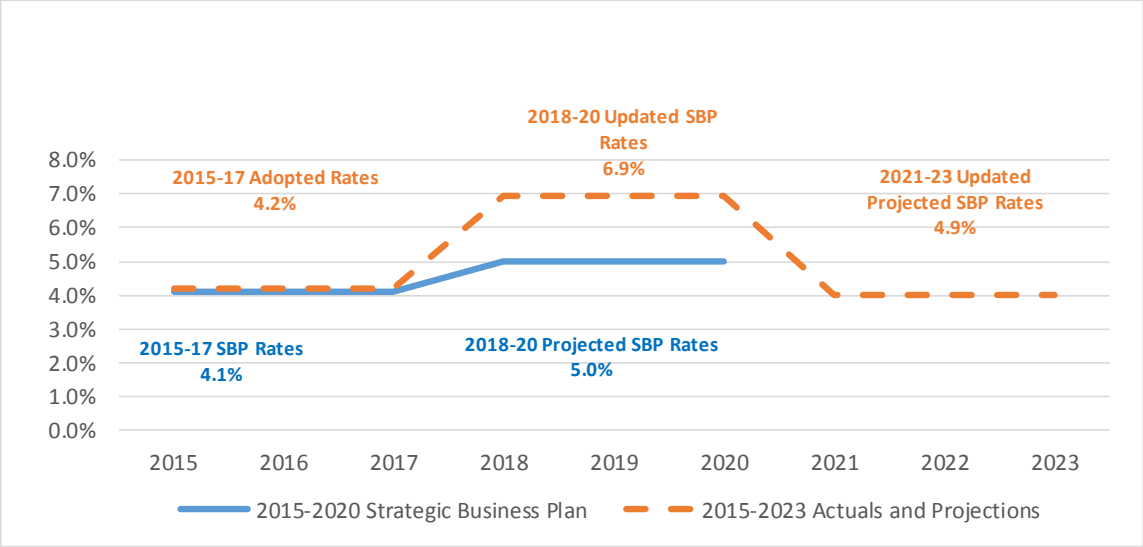
[11] Assumes 20 percent constant cash financing; 5.5 percent annual interest rate on debt service and a 30-year fixed term.

Appendix C: Updated Baseline Assumptions

In August 2014, the Council adopted SPU's 2015-2020 Strategic Business Plan via Resolution 31534. That Business Plan included an annual average rate increase of 4.6 percent for the 2015-2020 period. This resolution also directed SPU to update the Strategic Business Plan and the six-year rate path every three years. The overall projected rate path for the 2018-2023 Plan Update is 5.5 percent, 0.9 percent higher than the average rate increase adopted for the 2015-2020 six-year plan.

Figure C-1 compares the three-year averages of the 2015-2020 Strategic Business Plan to the 2015-2023 Actual and Projected rate paths.

Figure C-1
2015-2020 Strategic Business Plan vs 2015-2023 Actuals & Projections



Two key takeaways from the chart above:

1. In the 2015-2020 Plan, the last three years were higher than the first three years, creating a challenge in keeping the next six years (2018-2013) at a 4.6 percent average, and
2. The 2018-2020 average rate path under the 2018-2023 plan (6.9 percent) is considerably higher than the average for the same years (5.0 percent) under the 2015-2020 Strategic Business Plan.

While average adopted rate increases for the first three years of the 2015-2020 plan tracked closely with the plan average for the same period (4.2 percent actual vs. 4.1 percent plan), significant changes to the revenue base combined with changes in timing and level of costs put upward pressure on 2018-2020 rates.

2015-2016 Changes. During the first few years of the plan, key actions added expense through the entire six-year period, most notably:

- Loss of major drainage customer, the Port of Seattle, resulting in $4 million less in revenue per year.
- Acceleration of Ship Canal project to meet regulatory requirement timelines.

- New requirements for privacy controls and payment card industry changes.
- Cost to operate the SPU/SCL new billing and customer information system were higher than planned.

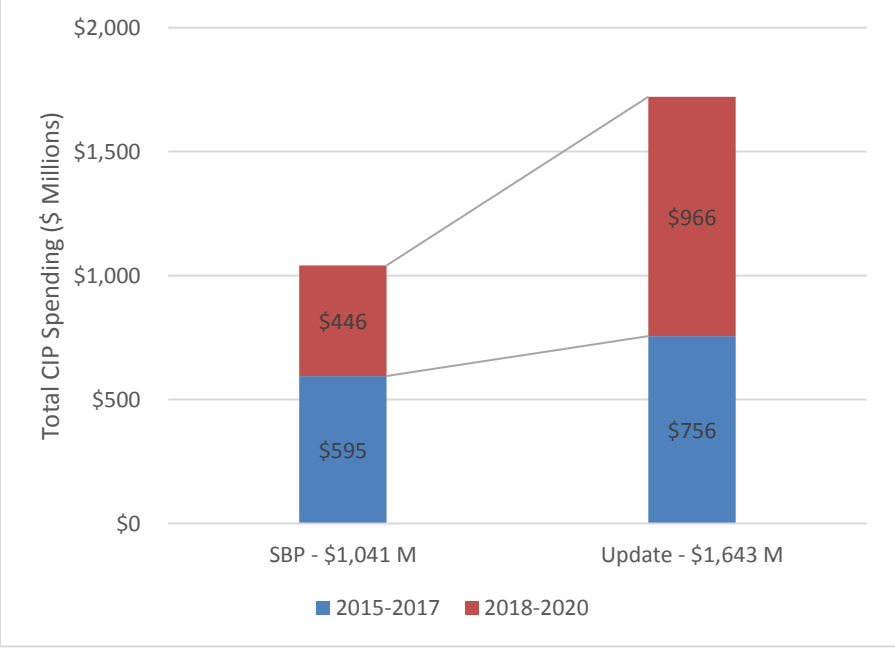
SPU managed to stay within endorsed rates those years through a combination of utility management and fortunate circumstance, specifically:

- Operations and capital management -deferral of capital projects and curbing of operations and maintenance spending, and
- Higher than planned water revenues due to hot summers, and
- Lower than expected debt financing expense (lower revenue bond interest rates and receipt of several large, low-interest rate loans).

Larger Capital Program. Increased capital requirements are a primary driver of the higher average rate increases between 2018 and 2020 under the Plan Update versus the 2015-2020 Plan. As discussed in Section II-C of this document, Drainage and Wastewater regulatory requirements as well as major transportation projects are the largest drivers of these cost increases. Not only are the total costs higher under the projected plan but they are also happening earlier than originally planned, moving more expense into the 2018-2020 period.

Figure C-2 show total projected capital spending during the first (2015-2017) and second (2018-2020) three years under the Plan and the Plan Update. Total spending increases by about $600million, with most of these increases shifting to the 2018-2020 period.

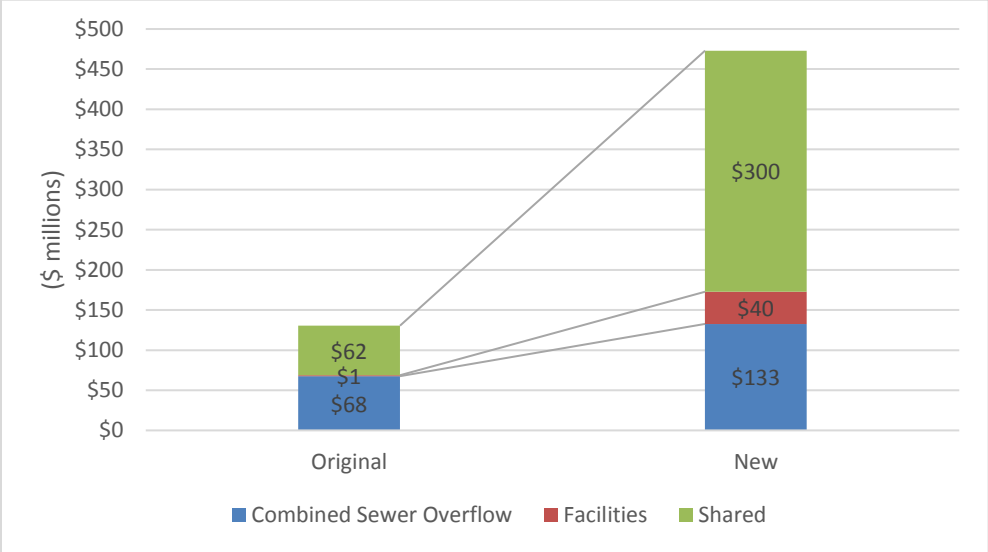
Figure C-2
2015-2020 Strategic Business Plan vs 2015-2023 Actuals & Projections



The areas with the largest increases in spending in 2018-2020 are:

- Combined Sewer Overflow-regulatory requirements and shifting in from later years.
- Facilities – completion of the Facilities Master Plan (2015-2020 action plan) resulted in identification of significant deficiencies that are larger than planned and needed earlier than anticipated.
- Shared Projects – utility work to support transportation projects are large and more concentrated in the first few years.

Figure C-3
Largest Cost Drivers of Capital Spending Increase in 2018-2020



Higher Operating Costs. Beyond general inflation, the higher cost of operating and maintaining new assets as well as the need for additional staffing resources yields higher expected O&M costs under the Plan Update compared with the Plan.

Many of the new Drainage and Wastewater assets such as combined sewer overflow structures, require sophisticated operation. Other assets, such as green stormwater infrastructure, require significant maintenance. As these assets have begun to go-live, better estimates of maintenance costs are available and have been incorporated into the Plan Update.