EXHIBIT A

Seattle Public Utilities

2025-2027

Drainage and Wastewater

Rate Study

Table of Contents

1. EXECUTIVE SUMMARY 4
2. FINANCIAL POLICY OVERVIEW 6
3. REVENUE REQUIREMENT 8
3.1. Operations and Maintenance 8
3.2. Treatment 9
3.3. Capital Financing Expense 9
3.4. Use of Cash Balances 11
3.5. Non-Rate Revenue 12
4. WASTEWATER RATES 13
4.1. Overview and Proposed Wastewater Rates 13
4.2. Wastewater System Rate 14
4.3. Treatment Rate 15
4.4. Wastewater Demand 16
5. DRAINAGE RATES 18
5.1 Drainage Rate Calculation Basis 19
5.2 Proposed General Service Rates 20
5.3 Proposed Small Residential Rates 21
5.4 Other Drainage Credits and Discounts 21
6. UTILITY DISCOUNT PROGRAM 24
APPENDIX A: FINANCIAL SUMMARY 25
APPENDIX B: ALLOCATION DETAIL 26
APPENDIX C: ACCOUNT AND SURFACE RATE SUBCOMPONENT CALCULATIONS 27
Account Rate Calculation 27
Surface Area Type Rate Calculation 27
APPENDIX D: DRAINAGE RATE DESIGN AND TECHNICAL ASSUMPTION UPDATES 29
Expansion of Tiers 30
Low Impact Structure Revision 31
Small Residential Rate Structure Revisions 32
APPENDIX E — GENERAL SERVICE AND SMALL RESIDENTIAL RATE CALCULATIONS 36
General Service Rate Calculations 36
Impacts of Transition to New Rate Design and Technical Assumptions on Tier Rates 37

Small Residential Rate Calculations 37

1. EXECUTIVE SUMMARY

The Drainage and Wastewater Utility (DWF) provides wastewater and stormwater management services to Seattle residences and businesses. The fund is supported by utility fee revenue, enumerated for wastewater customers on SPU combined utility bills based on metered water usage, and for drainage customers on King County property tax bills, reflecting an estimate of each parcel's contribution to stormwater runoff. DWF revenues fund SPU operations and maintenance (O&M) and capital expense required to operate the separated storm drain and sanitary sewer systems as well as the combined stormwater and wastewater system ("Combined System"). The Combined System collects both stormwater and sewer flows and conveys them to SPU's two contracted treatment providers, King County Wastewater Treatment Division (KC WTD) and Southwest Suburban Sewer District (SWSSD).

A significant aspect of the combined system is management of Combined Sewer Overflows (CSOs) which can occur during heavy rains when the volume of stormwater and wastewater exceeds the capacity of the transmission and treatment systems and overflows raw sewage and stormwater into the Puget Sound, Lake Washington, Lake Union, and other nearby water bodies. Management of CSOs is regulated under the City's NPDES Waste Discharge permit with the Washington State Department of Ecology and is a significant component of the DWF Capital Program. Since 2008, a percentage of the costs associated with the Combined System, previously assigned solely to wastewater rates, have been recovered through drainage rates as this is an integral part of the stormwater conveyance system.

SPU has utilized new GIS and AI technologies, and updated stormwater modeling assumptions and methodology to refine the existing drainage rate structure to increase equity and transparency of drainage rates. This rate study recommends updates to how combined sewer system expenses are shared between drainage and sewer customers to increase equity and better reflect the impacts of climate change and the increasing amount of hard surface on system costs.

Wastewater and drainage rates were last increased January 1, 2024. Wastewater revenues increased by 3.8 percent and drainage revenues increased by 6.4 percent. This rate study proposes annual average revenue increases of 5 percent from 2025 to 2027 for both wastewater and drainage.

Drainage and wastewater rates are currently the sum of two components: a system component, which recovers SPU O&M and capital expense, and a treatment component to recover payments for treatment to KC WTD and SWSSD. This rate study removes the drainage treatment component as KC WTD and SWSSD only assess fees on sewer flow volume (based on metered water usage) with no fee on stormwater flow volumes.

The ordinance supported by this document is limited to drainage and wastewater system rates. Treatment rate increases anticipated for 2026 and 2027 are included in the overall 5 percent wastewater rate increase noted above but will be adjusted only as necessary by the automatic passthrough mechanism in SMC 21.28.040 and published on SPU's website. Treatment rate increases for 2025 are incorporated into the 2025 rate increase and the treatment rate portion will be enacted through SMC 21.28.040. More detail on the treatment increases is found in the Wastewater Rates section.

Table 1-1 below summarizes proposed revenue requirements and rates. Wastewater rates for 2026 and 2027 include projected treatment rate increases.

Table 1-1: Proposed DWF Retail Rate Revenue Requirement and Monthly Bill Impacts

	2024	2025		2026		2027	
Revenue Requirement *($m)*							
Wastewater	$369.8	$388.3	+$18.5	$408.1	+$19.8	$428.4	+$20.3
Drainage	$197.9	$207.7	+$9.9	$218.1	+$10.4	$229.1	+$11.00
Total DWF	**$567.7**	**$596.1**	**+$28.4**	**$626.2**	**+$30.1**	**$657.4**	**+$31.3**
Wastewater ($)							
Wastewater Rate per CCF*	$18.30	$19.21	+$0.91	$20.18	+$0.97	$21.19	+$1.01
Residential (4.3 CCF)	$78.69	$82.60	+$3.91	$86.77	+$4.17	$91.12	+$4.34
Drainage ($)							
Townhome (<2,000 sqft)	$19.16	$19.61	+$0.45	$20.59	+$0.98	$21.63	+$1.04
Single-Family (0.15 acres)	$59.36	$56.08	-$3.29	$58.89	+$2.81	$61.86	+$2.97
Park (2.8 acres)	$621	$430	-$191	$384	-$46	$382	-$1
Supermarket (2.5 acres)	$1,801	$1,945	-$143	$2,088	+$144	$2,194	+$105
High School (32 acres)	$9,377	$10,851	+$1,474	$11,228	+$376	$11,795	+$567

2. FINANCIAL POLICY OVERVIEW

SPU is directed through a set of Seattle City Council-adopted[1] financial policies to adopt rates sufficient to satisfy a comprehensive, inter-connected framework of rules for sound financial management in rate setting. These financial policies:

- Shape the financial profile of the Fund to lenders and the financial community.
- Manage exposure to financial risk.
- Provide intergenerational equity.

Each financial policy sets a financial metric target which results, on a planning basis, in a minimum revenue requirement, the highest of which sets a binding constraint on rate setting. SPU may adhere to a more stringent internal planning target when tracking market conditions and peer utility performance expose any financial risk or weakness. The policies are:

1. **Minimum year-end operating cash balance of one month of treatment contract expenses**
   One-month of treatment expense translates to roughly two weeks of operating liquidity. In conversations with financial advisors and bond rating agencies, and comparisons with peer utilizes, SPU is instead holding a target of 100 days of operating expense. The DWF is currently holding more than 300 days of operating expense which SPU aims to reduce to 100 days by the end of the SBP period in 2030. The reduction in accumulated cash balances will be used to increase cash contributions to CIP (capital investments) and to smooth rate increases over the medium term through 2030. See Section 3.4.
2. **Cash finance at least 25% of the capital improvement plan over a four-year average**
   A minimum 'down-payment' on capital expenditures with operating cash prevents a rapid increase in debt service and debt burden. SPU intends to divert the existing surplus of operating cash to the capital program, with cash contribution ratios of 40 percent in 2025 and 2026 and 33 percent in 2027. See Section 3.3.
3. **A debt service coverage ratio of at least 1.5**
   The debt service coverage ratio is the ratio between the operating margin on a cash basis, with taxes paid to the City of Seattle removed, and the debt service obligation. Per the ordinances which authorize the Fund to issue revenue bonds and the covenants between the Fund and bond holders, City taxes are subordinate priority to the debt service obligation. Following a review of peer utilities' financial performance and credit rating practices that indicated the guarantee of priority to bond holders would be insufficient, SPU implemented a target of 2.0 using the existing metric and 1.5 using a more stringent metric that does not provide credit for City taxes. SPU has balanced the spend down in operating cash, rate smoothing, and projected debt service coverage to reduce the ratio from roughly 3.0 currently to the financial policy target of 1.5 in 2027.

[1] Council Resolution 30612, 2003; SLI 13-1-A-1 2012

4. **Net income should be generally positive**
   Net income is projected to be positive in each year. Due to large amounts of capital investment, net income is not a binding constraint.
5. **Debt-to-asset ratio should not exceed 70 percent.**
   The ratio of debt to assets is a metric of debt burden and an indicator of inflexibility to handle financial stress. The ratio is projected to hover around 60 percent.
6. **No more than 15 percent of total debt should be variable rate**
   A cap on variable rate debt limits the Fund's exposure to interest rate volatility. The Fund does not have and does not plan to issue any variable rate debt.

Table 2-1: Projected Drainage & Wastewater Fund Financial Policy Results

Policy (Target)	2023	2024	2025	2026	2027
1. Operating Cash Balance (100 days Op Expense)	$346.9	$345.4	$310.0	$258.8	$216.9
2. Cash Financing of CIP (25% over 4 years)	25%	25%	40%	41%	33%
3. Debt Service Coverage (>2.0)	3.5	3.0	2.6	2.5	2.4
Without Credit for Taxes Paid (>1.5)	2.5	2.0	1.6	1.6	1.5
4. Net Income (generally positive)	$36.6	$53.4	$39.4	$41.6	$40.8
5. Debt-to-Asset Ratio (<70%)	63%	60%	60%	59%	60%
6. Variable Rate Debt (<15%)	0%	0%	0%	0%	0%

3. REVENUE REQUIREMENT

The binding constraint on creating a financial plan and setting rates is satisfying the revenue requirement that the most stringent financial policy requires. The binding constraint is determined by optimizing the capital financing portfolio and the utilization of operating cash to achieve a rate path equitable to all rate payers, current and future. For the rate period, optimization was dictated by the financing needs of the large upcoming capital program in SPU's 2025-2030 Strategic Business Plan. An expansion of capital investment requires the Fund to take on more debt, though because the expansion is temporary, in this case to complete the bulk of the EPA mandated CSO program, SPU intends to utilize the prudent option of a one-time drawdown of operating cash to pay for a one-time expenditure. The drawdown will reduce operating cash to the extent that maintaining the financial policy minimum will be the binding constraint through 2030.

The table below summarizes the revenue requirement for the DWF over the rate period. Tables enumerating the breakdown to wastewater and drainage individually are available in Tables 4-1 and 5-1. Each category, in millions of dollars, is followed by that component's contribution to the change in the revenue requirement. For example, DWF O&M is projected to grow from $164.2 million in 2024 to $187.1 million in 2025, which requires a 2.4 percent increase in revenue to cover the added O&M expense. The sum of percent impacts across categories is the total required revenue increase. Details about each component and how they are allocated to wastewater and drainage rates separately are in the following sections.

Table 3-1: Components of the Revenue Requirement

DWF Rev Req Components ($m)	2024	2025		2026		2027	
Operating							
O&M	$ 164.2	$ 187.1	+3.9%	$ 195.9	+1.4%	$ 206.1	+1.6%
Treatment	202.5	215.0	+2.1%	228.0	+2.1%	243.9	+2.5%
Taxes	77.2	80.5	+0.6%	84.5	+0.7%	88.7	+0.6%
Capital		-		-		-	
Cash Contribution	$ 51.7	$ 71.1	+3.3%	$ 81.9	+1.8%	$ 66.6	-2.4%
Debt Service	74.7	84.8	+1.7%	94.2	+1.5%	101.8	+1.2%
Subtotal Expenditures	**$ 570.2**	**$ 638.5**	**+11.6%**	**$ 684.6**	**+7.5%**	**$ 707.0**	**+3.5%**
Less Non-Rates Revenue	(13.0)	(7.0)	+1.0%	(7.3)	-0.0%	(7.7)	-0.1%
Less Decrease in Cash Balance	10.5	(35.5)	-7.8%	(51.1)	-2.6%	(41.9)	+1.4%
Base Revenue Requirement	**$ 567.7**	**$ 596.1**	**+4.8%**	**$ 626.2**	**+4.9%**	**$ 657.4**	**+4.9%**
UDP	19.0	17.2	-0.3%	18.3	+0.2%	19.4	+0.2%
Rate Revenue Requirement	**$ 586.7**	**$ 613.3**	**+4.5%**	**$ 644.4**	**+5.1%**	**$ 676.8**	**+5.0%**
Wastewater Share (See Table 4-1)	385.6	402.1	4.3%	422.7	5.1%	443.9	5.0%
Drainage Share (See Table 5-1)	201.1	211.2	5.0%	221.8	5.0%	232.9	5.0%

3.1. Operations and Maintenance

SPU projects expenditures for the ongoing operations and maintenance of the Drainage and Wastewater System, including indirect administrative and City central support activities, of $164.2 million in 2024 rising to $206.1 million in 2027.

Total Fund expenditures are allocated between Wastewater and Drainage based on a direct allocation of each project, the most granular programmatic level of the City Budget. Budgetary expense is allocated between drainage and wastewater based on which system it is directed at (drainage, sanitary sewer, Combined System, or the overall DWW system). Table 3-2 presents the final percent allocation share to each LOB for the 2025-2027 rate period, rolled up by BCL.

Table 3-2: DWF O&M Allocation

BCL	To Wastewater	To Drainage	BCL Share of Total O&M
Indirect Costs	48%	52%	48%
N201B-Customer Service	73%	27%	6%
N202B-Drainage System	0%	100%	5%
N203B-DWW Facilities & Equip	44%	56%	1%
N204B-DWW System Operations	37%	63%	21%
N205B-Emergency Response	44%	56%	3%
N206B-Engineering	44%	56%	5%
N207B-Pre-Capital Planning	42%	58%	3%
N210B-Wastewater System	69%	31%	8%
N214B-Water System	42%	58%	0%
Total DWF	**46%**	**54%**	**100%**

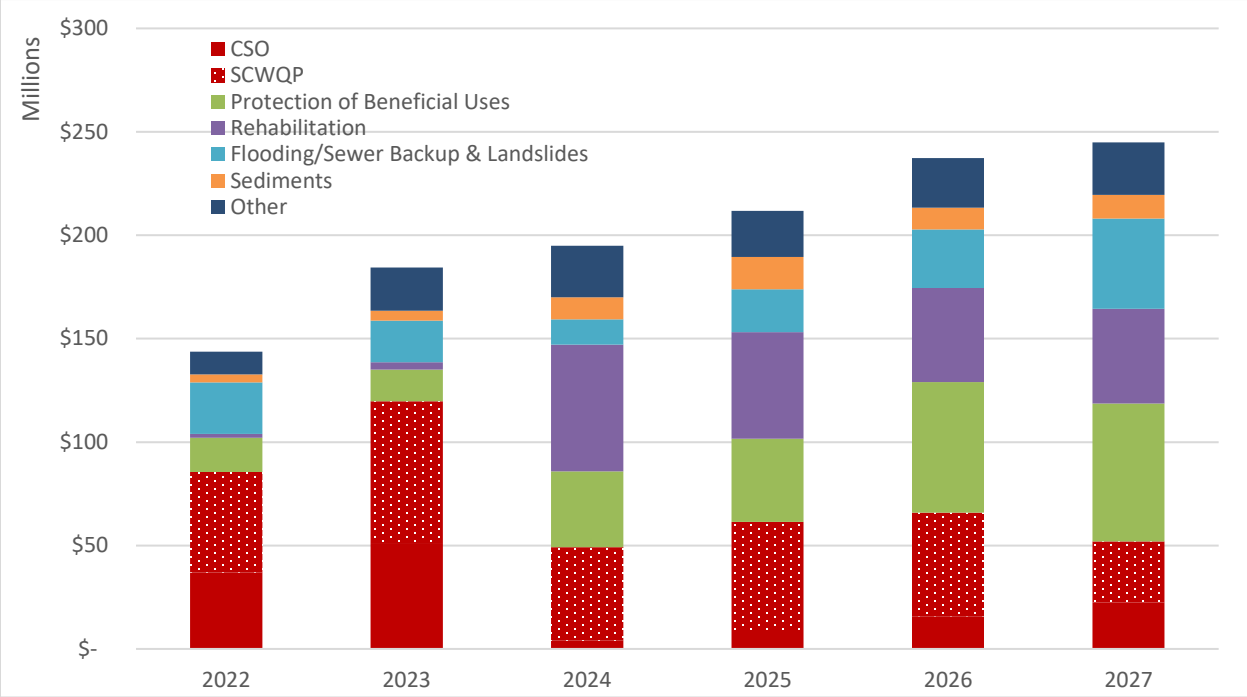
3.2. Treatment

Treatment expenses incurred by Seattle based on metered water flows to treatment providers are projected to increase from $215.0 million in 2025 to $243.9 million in 2027. This increase is driven by projected treatment rate increases necessary to finance KC WTD's capital needs. Seattle residents' and businesses' demand for wastewater services is not expected to change over the rate study period. See Section 4.4 Wastewater Demand.

3.3. Capital Financing Expense

The DWF is planning on completing $693 million of CIP for the upcoming rate period, $170 million more than the current rate period. Spending over the upcoming rate period includes a shift from CSO related projects including the SCWQP ($75 million reduction in CSO spending compared to the current 2022-24 rate period) to Rehabilitation ($76 million increase, purple) and Projection of Beneficial Uses ($102 million, green).

Figure 3-1: Planned CIP Expenditures



SPU plans to finance the DWF CIP portfolio through a combination of operating cash contributions, low-interest loans, revenue bonds, and grants. Per financial policies, a minimum of 25 percent of CIP should be financed by operating cash contributions. SPU is proposing cash funding 38 percent of CIP over the rate period.

Table 3-3: Projected CIP Financing

	2025	2026	2027	Rate Period	Share
Cash and Grants	$71.1	$81.9	$66.6	**$219.7**	38%
Revenue Bonds	$55.7	$67.9	$105.8	**$229.3**	39%
Loans	$53.2	$50.1	$29.5	**$132.8**	23%
Total CIP	**$180.0**	**$199.9**	**$201.8**	**$581.7**	
Cash-Funded %	*40%*	*41%*	*33%*	***38%***	*38%*

A further 23 percent will be financed through a combination of $113 million available through an existing WIFIA loan and $20 million from an anticipated future State SRF loan. Proceeds from both loans will be used for the Ship Canal Water Quality Project. SPU will pursue any additional loans which become available as the interest rate on State and Federally underwritten loans is typically lower than the bond market.

The remaining 38 percent of CIP will be financed through revenue bonds. This rate study assumes bond issues of $65.7 to $133.3 million in each year of the rate period. These three bond issues plus WIFIA and SRF loans will increase debt service to $101.8 million in 2027, up from $70 million in 2024.

Table 3-4: Projected CIP Financing

New Debt	2025	2026	2027
Revenue Bonds	$ 65.7	$ 82.5	$ 133.3
Loans	53.2	50.1	29.5
Cumulative	**$ 118.9**	**$ 251.4**	**$ 414.2**

Debt Service	2025	2026	2027
Existing Debt	$ 78.2	$ 78.0	$ 77.9
New Bonds	1.6	6.3	9.6
New Loan	5.0	9.9	14.3
Total	**84.8**	**94.2**	**101.8**
Wastewater	*32.3*	*36.2*	*39.4*
Drainage	*52.5*	*58.0*	*62.4*

The annual cost of capital financing funded with rates revenues is the sum of annual debt service payments (on revenue bonds and loans) and operating cash (cash financed CIP). The share of capital financing expense allocated to wastewater and drainage respectively is presented in Tables 4-1 and 5-1. For 2025-2027, debt service is assigned 62 percent to drainage and 38 percent to wastewater. This is based on drainage's share of total asset Net Book Value less any differences in estimated historic cash contributions to CIP from wastewater and drainage rates respectively. Appendix B provides more detail on allocators used to assign DWF asset value to each LOB. SPU will true this allocation up with the next and each subsequent rate study based on actual CIP and wastewater and drainage rates' actual individual cash contributions.

This rate study includes updates to the allocation basis for Combined Sewer capital expense (CSO and combined pipe related) based on updated stormwater modeling assumptions, updated land cover data, and other GIS system updates which permit the identification of specific wastewater and stormwater accounts that are directed to CSOs and combined pipes. This new allocation basis shifts additional cost to drainage, primarily due to greater increases in stormwater entering the system as a result of densification and the increase in hard surface in combined areas of the city. The increase in drainage capital financing is offset by the decrease in drainage treatment expense associated with the new allocation recommendations (see Table 5-1). The combination of the treatment and CSO/Combined pipe allocation changes increase equity in the sharing of combined system expense between drainage and wastewater.

3.4. Use of Cash Balances

As of the end of 2023, the DWF had $340 million in operating cash, and is expected to end 2024 with a similar amount. SPU is planning on spending this cash balance down to 100 days of operating expense by the end of the current SBP period in 2030. By 2027, when the proposed rate period ends, this balance is expected to be spent down to 144 days. The reduction in cash will be used to fund cash contributions to capital to reduce future debt burden and to smooth wastewater and drainage rates for consistency and predictability.

Table 3-5: Operating Cash Balance Financial Policy

Cash Balance Target	2025	2026	2027
Financial Policy Minimum	$17.9	$19.0	$20.3
Projected Balance	$310.0	$258.8	$216.9
Days of Operating Expense	230	181	144

($ millions)

3.5. Non-Rate Revenue

Non-rate revenue includes permit fees, operating and capital grants, contributions in aid of construction, interest income, other miscellaneous revenues, and capital contributions. An increase in non-rate revenues has the effect of reducing the revenue requirement that must be recovered through rates. Grants, contributions, miscellaneous revenues, and permit fees are conservatively held flat with a small 2.5 percent annual increase for inflation in this proposal as it is not fiscally prudent to pattern rates on unsecured revenue. Non-rate revenues are mostly split equally between wastewater and drainage.

4. WASTEWATER RATES

4.1. Overview and Proposed Wastewater Rates

The wastewater rate is set to collect enough revenue to cover planned O&M, treatment, taxes, and capital investment. These expenditures are offset by non-rate revenues including permit fees and standard charges among others. Any non-rate revenue collected reduces the amount required to be collected through rate revenues. See Table 4-1 for an enumeration of each of these components. Columns for each year show the total dollar requirement for each component and each component's contribution to the years' rate increase. For example, the increase in O&M expense from 2025 to 2026 will require a 0.8% rate increase on top of 2025 rates.

Table 4-1: Wastewater Rate Revenue Requirement and Rate Components

Wastewater Components ($m)	2024	2025		2026		2027	
Operations							
O&M	$ 78.6	$ 86.1	+ 1.9%	$ 90.1	+ 1.0%	$ 94.8	+ 1.1%
Taxes	23.4	21.5	- 0.5%	22.2	+ 0.2%	22.6	+ 0.1%
Treatment Rate Components							
Treatment	$ 190.4	$ 215.0	+ 6.4%	$ 228.0	+ 3.2%	$ 243.9	+ 3.8%
Taxes	26.2	29.8	+ 0.9%	31.6	+ 0.4%	33.8	+ 0.5%
Capital							
Cash Contribution	$ 24.9	$ 23.5	- 0.4%	$ 29.7	+ 1.5%	$ 20.4	- 2.2%
Debt Service	29.3	32.3	+ 0.8%	36.2	+ 1.0%	39.4	+ 0.7%
Subtotal Expenditures	**$ 372.7**	**$ 408.1**	**+ 9.2%**	**$ 437.8**	**+ 7.4%**	**$ 455.0**	**+ 4.1%**
Less Non-Rates Revenue	(8.2)	(2.0)	+ 1.6%	(2.2)	- 0.0%	(2.4)	- 0.1%
Less Decrease in Cash Balance	5.3	(17.7)	- 6.0%	(27.6)	- 2.4%	(24.2)	+ 0.8%
Base Revenue Requirement	**$ 369.8**	**$ 388.3**	**+ 4.8%**	**$ 408.0**	**+ 4.9%**	**$ 428.4**	**+ 4.8%**
UDP	15.8	13.8	- 0.5%	14.6	+ 0.2%	15.5	+ 0.2%
Final Revenue Requirement	**$ 385.6**	**$ 402.1**	**+ 4.3%**	**$ 422.7**	**+ 5.1%**	**$ 443.9**	**+ 5.0%**
Change in Demand			+ 0.6%		- 0.1%		+ 0.0%
Effective Change in Rate			+ 5.0%		+ 5.0%		+ 5.0%
Projected Demand (CCF)	20.8	20.9		20.9		21.0	

Wastewater Rate	**$ 19.21**	**$ 20.18**	**$ 21.18**

Wastewater customers are charged a flat rate per 100 cubic feet (CCF) of water usage, with a minimum of one CCF per month. This rate includes both a system rate, which covers SPU's internal costs and taxes, and a treatment rate, which covers payments for wastewater treatment and associated taxes. The system rate is updated every three years through a rate study and Council adopted legislation, while the treatment rate is updated through an automatic passthrough mechanism established in SMC 21.48.040 when King County Council adopts new treatment rates. Table 4-2 shows the current system and treatment rates, system rate changes proposed with this rate study, and projected future treatment rates based on assumed increases in KC WTD's treatment rate. Rates for 2024 are as enacted through the 2022-2024 Rate Study and the 2024 automatic treatment passthrough.

This rate study includes a large treatment increase in 2025. Existing rates include a treatment component for both wastewater and drainage rates. As discussed in Section 3.2, this rate study assumes that all treatment expense is funded with wastewater rates starting in 2025. While the wastewater treatment rate increases substantially, there is a moderate decline in the system rate in 2025 due to a lower allocation of system expense.

Table 4-2: Proposed Wastewater Rates (per CCF)

	Enacted* 2024	Proposed 2025	Proposed 2026	Proposed 2027
System Rate	$7.67	$7.10	$7.34	$7.45
Treatment Rate	$10.63	$12.11	$12.11	$12.11
Future Treatment Rate Adjustment			$0.73	$1.63
Total Wastewater Rate	**$18.30**	**$19.21**	**$20.18**	**$21.19**
Rate Increase %		5.0%	5.0%	5.0%

4.2. Wastewater System Rate

The system rate is set to collect enough revenue to cover planned operations, maintenance, and investment expenditures. These expenditures are offset by non-rate revenues including permit fees and standard charges among others. Any non-rate revenue collected reduces the amount required to be collected through rate revenues. Most of these components (operations, maintenance, debt service, and non-rates revenues) tend to be stable, increasing at a rate that is either controlled (debt service) or inflationary (operations and maintenance, treatment, taxes).

Table 4-3: Wastewater System Rate Components

Component of the System Rate ($m)	2024	2025	2026	2027
Operations				
O&M	$78.6	$86.1	$90.1	$94.8
Taxes	23.4	21.5	22.2	22.6
Capital				
Cash Contribution	$24.9	$23.5	$29.7	$20.4
Debt Service	29.3	32.3	36.2	39.4
Subtotal Expenditures	**$156.1**	**$163.3**	**$178.2**	**$177.2**
Less Non-Rates Revenue	(8.2)	(2.0)	(2.2)	(2.4)
Less Decrease in Cash Balance	5.3	(17.7)	(27.6)	(24.2)
Base System Revenue Requirement	**$153.3**	**$143.6**	**$148.5**	**$150.6**
UDP Enrollment	-4.1%	-3.5%	-3.5%	-3.5%
UDP ($)	6.5	5.1	5.3	5.5
Final System Revenue Requirement	**$159.8**	**$148.7**	**$153.8**	**$156.1**
Demand (CCF)	20.8	20.9	20.9	21.0
System Rate ($)	**$7.68**	**$7.10**	**$7.34**	**$7.45**
Rate Increase		-8%	3%	1%

Once the rates revenue requirement has been calculated, required revenue needs to be adjusted upward for any discounts that will be provided through the Utility Discount Program (UDP). In 2023 the DWF rebated $12.3 million to UDP wastewater customers (system and treatment rate revenues combined), or 3.4 percent of gross revenue. This rate study plans for a slight increase to 3.5 percent by 2027. This is lower than the 4.1 percent previously assumed.

4.3. Treatment Rate

The largest component of the wastewater revenue requirement is payments for wastewater treatment. Almost all this expense is paid to KC WTD with less than one percent going to SWSSD. The treatment rate was last updated by the 2024 automatic treatment passthrough. See Table 4-3 for components and derivation of the treatment rate.

Table 4-4: Wastewater Treatment Rate Components

Component of the Treatment Rate ($m)	2024	2025	2026	2027
King County	$203.4	$217.6	$230.8	$246.9
Southwest Suburban	0.9	0.9	1.0	1.1
less Industrial Surcharge*	(1.8)	(3.6)	(3.8)	(4.0)
Total Treatment Expense	**$202.5**	**$215.0**	**$228.0**	**$243.9**
less expense paid by Drainage	(12.2)	-	-	-
Wastewater Treatment Expense	**$190.4**	**$215.0**	**$228.0**	**$243.9**
City Taxes	26.2	29.8	31.6	33.8
State Taxes	-	-	-	-
Subtotal Taxes	**$26.2**	**$29.80**	**$31.60**	**$33.81**
Base Treatment Revenue Requirement	**$216.6**	**$244.8**	**$259.6**	**$277.7**
UDP Enrollment	3.4%	3.4%	3.5%	3.5%
UDP Enrollment ($M)	$9.3	$8.7	$9.3	$10.1
Final Treatment Rate Revenue Requirement	**225.8**	**253.5**	**268.9**	**287.8**
Volume (CCF, Millions)	21.2	20.9	20.9	21.0
Treatment Rate ($)	**$10.63**	**$12.11**	**$12.84**	**$13.74**

Industrial surcharge is a passthrough assessed by WTD on SPU combined utility bills. The revenue passed through to WTD is included in the WTD line while the revenue collected is reduced from expense on the Industrial Surcharge line, as this portion of treatment expense does not need to be collected from metered sewer volumes.

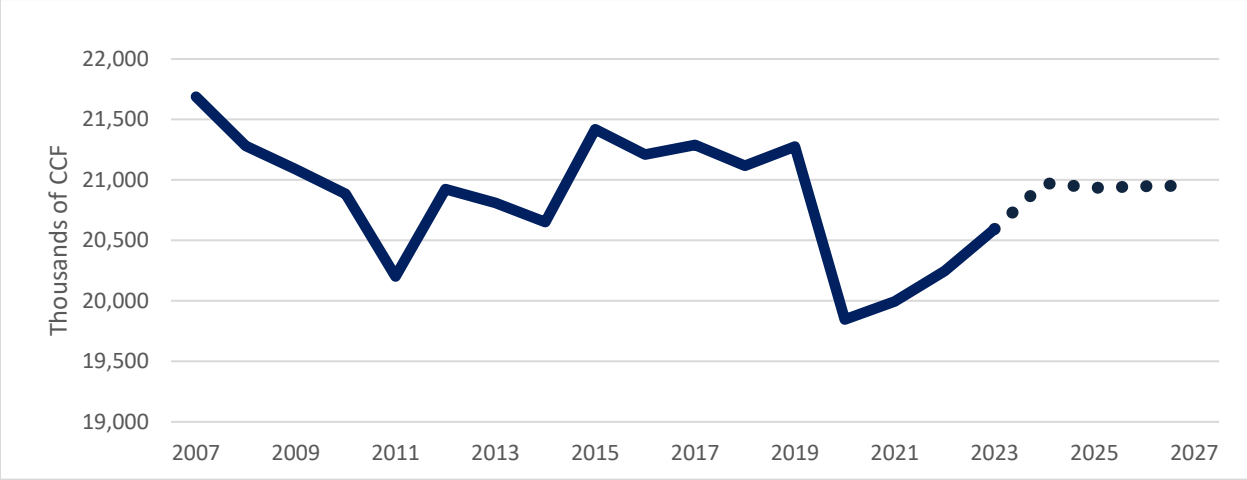
City taxes are assessed on all wastewater revenue, including treatment revenues, at a rate of 12 percent. The State of Washington does not assess taxes on passthrough revenues to other governmental entities including treatment rate revenues.

The final treatment rate is calculated by adding up all these components, grossing up for UDP discounts, and dividing by projected volumes. Projected treatment rates for 2026 and 2027 will be recalculated in Q4 of the preceding year based on updated volume projections and actual adopted WTD rates.

4.4. Wastewater Demand

The fee for wastewater services is assessed on a volumetric basis measured in 100 cubic foot (CCF) units. The rate is derived by dividing the gross revenue requirement of the system by projected billed volumes. The numerator, the revenue requirement, is largely a fixed cost in any given year. The cost to maintain and replace pipe and other utility infrastructure assets that serve customers, whether they have any demand or not, is a function of the size of the system and depreciation over time. The variable portion of expense to serve higher volumes is relatively negligible. With costs being largely fixed, decreases in wastewater demand do not result in compensatory decreases in cost and require instead an increase in rates to cover the predetermined amount of revenue required. Higher wastewater volumes in turn lead to lower rates.

Figure 4-1: Wastewater Demand Forecast



Demand for wastewater services has been in long term slow decline since 2001. This trend has slowed in the recent past, with wastewater volumes hovering around 21 million CCF with a slight downward trend. In 2020 demand dropped 7% due to the pandemic but has been recovering with a one percent annual growth rate since. Demand is projected to recover at the same pace, and level off at 21 million CCF through 2027. Because demand is projected to remain stable, demand is not expected to have any significant impact on wastewater rates.

5. DRAINAGE RATES

The City's stormwater system is financed through drainage rates assessed on property parcels and enumerated as a line item on County property tax bills. Drainage rates are set to recover the Drainage Revenue Requirement presented in Table 5-1. The rate study proposes allocating all wastewater treatment expenses to wastewater rates. Consequently, beginning in 2025 there will no longer be a treatment rate component of the drainage rate.

Table 5-1: Drainage Revenue Requirement and Rate Components

Drainage ($m)	2024	2025		2026		2027	
Operations							
O&M	$ 85.6	$ 101.0	+7.7%	$ 105.8	+2.3%	$ 111.3	+2.5%
Taxes	26.0	29.3	+1.6%	30.7	+0.7%	32.3	+0.7%
Treatment Rate Components							
Treatment	$ 12.2	-	-6.0%	-	+0.0%	-	+0.0%
Taxes	1.6	-	-0.8%	-	+0.0%	-	+0.0%
Capital							
Cash Contribution	$ 26.8	$ 47.6	+10.4%	$ 52.3	+2.2%	$ 46.2	-2.8%
Debt Service	45.4	52.5	+3.5%	58.0	+2.6%	62.4	+2.0%
Subtotal Expenditures	**$ 197.6**	**$ 230.4**	**+16.3%**	**$ 246.8**	**+7.7%**	**$ 252.1**	**+2.4%**
Less Non-Rates Revenue	(4.8)	(5.0)	-0.1%	(5.1)	-0.1%	(5.2)	-0.1%
Less Decrease in Cash Balance	5.1	(17.7)	-11.4%	(23.6)	-2.8%	(17.8)	+2.6%
Base Revenue Requirement	**$ 197.9**	**$ 207.7**	**+4.9%**	**$ 218.1**	**+4.9%**	**$ 229.1**	**+4.9%**
UDP	3.3	3.4	+0.1%	3.6	+0.1%	3.8	+0.1%
Interim Rate Revenue Requirement	**$ 201.1**	**$ 211.2**	**+5.0%**	**$ 221.8**	**+5.0%**	**$ 232.9**	**+5.0%**
Low Impact Discount Programs	4.4	4.6		4.8		5.1	
Final Drainage Revenue Requirement	**$ 205.5**	**$ 215.7**		**$ 226.6**		**$ 238.0**	
Account Based Revenue Requirement	2.0	*2.1*	*+5.0%*	*2.2*	*+5.0%*	*2.3*	*+5.0%*
Flow Based Revenue Requirement	203.5	*213.6*	*+5.0%*	*224.4*	*+5.0%*	*235.7*	*+5.0%*

While wastewater fees are applied to metered water usage, there is no stormwater meter that measures run-off from a land parcel. SPU charges drainage fees based on the estimated stormwater run-off from pervious and hard surface area land cover on a property, which is widely accepted as an appropriate measure of a property's stormwater runoff .

Hard surface includes impervious surface types such as rooftops and pavement. Pervious surface includes other surface types such as lawns, shrubs, forests, and grasslands.

SPU uses aerial photo derived data of land cover surface types to determine the amount of hard and pervious area on a parcel. Parcels are assigned to rate tiers composed of parcels with similar land cover

characteristics and therefore similar run-off. All customers within a given rate tier pay a rate based on the average run-off for the tier.

For rate setting purposes, drainage customer parcels are divided into two broad classifications, each with its own tier structure and rates:

- **General Service (and Large Residential)**
    - Consists of all commercial and industrial parcels and large residential parcels over 10,000 sqft
    - Tier rates are based on specific hard and pervious landcover composition. The rates are per 1,000 square feet of parcel area
- **Small Residential**
    - Consists of residential parcels under 10,000 sqft
    - Tier rates are based on parcel size, with the same flat rate charged to parcels within a tier.

Section 5.1 explains the basis of the calculation that determines the rate for each tier across all customer types. Sections 5.2 (General Service) and 5.3 (Small Residential) provide additional detail on the rate tier basis and proposed rates for 2025 through 2027.

This rate study proposes certain changes to the rate design and cost allocation technical assumptions. Details on the changes are available in Appendix D.

5.1 Drainage Rate Calculation Basis

Drainage rates for all customers are determined using the same basic methodology. Drainage rates are set to recover two types of cost:

Surface Type Rates. These rates are set to recover drainage related expenses and are based on the runoff characteristics of parcel. These rates are set to recover drainage related expenses and are based on the runoff characteristics of any given parcel. Rates are based on two surface types: hard surface and pervious surface.) This rate study, and associated legislation, uses the term “hard surface” in place of “impervious surface". This broader term includes surface types with similar run-off characteristics (as defined in SMC 22.801.090.H and 22.801.100.I) and is consistent with city stormwater code nomenclature.

Account rates. These rates are set to recover customer service and billing expenses and are based on the number of parcels in a tier. Account rates are assigned using the applicable billing units, per parcel for Small Residential and per 1,000 sq ft for General Service.

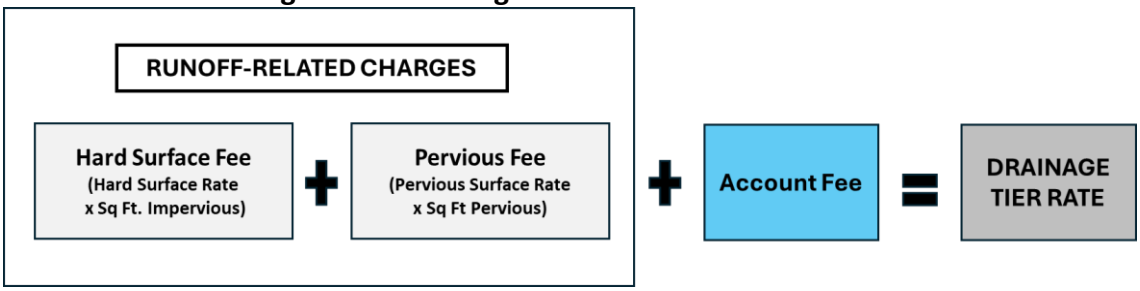
Table 5-2 presents the surface type and account rates used in the calculation of tier rates for 2025. Appendix C provides calculation details.

Table 5-2: Drainage 2025 Base Component Rates

Subcomponent	2025	Units
Surface Area Type Rates		
Hard	$229.83	kSqft
Pervious	$39.75	kSqft
Account Rates		
General Service	$0.48	kSqft
Small Residential	$11.35	Parcel

Figure 5-1 graphically presents the rate tier calculation basis using the surface type and account fees. Sections 5.2 and 5.3 detail examples of rate tier calculations for specific tiers. See Appendix E for additional detail of the data underlying the tier rate calculations for General Service/Large Residential and Small Residential tiers.

Figure 5-1: Drainage Tier Rate Calculation Basis



5.2 Proposed General Service Rates

General service parcels are assigned rate tiers based on a parcel's specific hard and pervious landcover composition as derived from aerial photo data. Each tier's rate is calculated based on the runoff for the tier's average percent hard surface and charged per 1,000 square feet of actual parcel area to account for significant variances in the size of parcels assigned to each tier.

The updates to the rate structure and underlying runoff calculation assumptions described in Appendix D will require a one-time reset of rates. Parcels will be assigned a rate that more closely aligns with their property specific calculated runoff which may be higher or lower than the rate assumed under the prior structure.

SPU has capped the rate increase for any given cohort at 10 percent to prevent undue burden caused from an immediate transition. Consequently, while rates are set to recover an increase of five percent in revenue in each year, customers will see varying increases or decreases in their bills in the 2025 to 2027 rate period. Rates are fully re-aligned under new assumptions by 2027.

Table 5-3 presents 2025-2027 proposed general service rates. The proposed tier structure overlaps the existing tier structure, resulting in varying rate increases both between and across tiers, resulting in

offset rows for 2025. Calculations and a further description of transitioning rates are outlined in Appendix E. Rates for 2024 in Tables 5-3 do not include low impact rates, see Appendix D.

Table 5-3: Proposed General Service Rates

Tier	Impervious Range	2024	2025		2026		2027	
T1	0-10%	60.44	$59.82	-1%	$54.23	-9%	$53.34	-2%
T2	11-20%		$65.11	8%	$70.91	9%	$74.48	5%
T3	21-35%	89.69	$65.11	-27%				
			$94.46	5%	$97.01	3%	$101.90	5%
T4	36-50%	127.08	$123.19	-3%	$129.37	5%	$135.89	5%
T5	51-64%		$138.77	9%	$152.60	10%	$166.88	9%
T6	65-85%	167.91	$183.25	9%	$192.45	5%	$202.15	5%
T7	86-100%	200.23	$216.17	8%	$232.15	7%	$243.84	5%

5.3 Proposed Small Residential Rates

Small residential customers with billable areas less than 10,000 square feet are generally homogenous in terms of landcover types and pay a flat rate which varies depending on the size of the parcel. This approach simplifies billing for the City's 150,000 small residential parcels, offering a clear rate structure.

Like General Service parcels, Small Residential parcels are assigned a rate calculated based on the average surface type cover for parcels assigned to the tier. However, while General Service tiers are based on hard surface percent, Small Residential tiers billed based on parcel sizes, with the land cover composition and resultant runoff calculated based on the average size and runoff characteristics for all parcels within a tier.

See Appendix D for additional details on the small residential rate structure revisions.

Table 5-9 presents proposed 2025-2027 rates by tier.

Table 5-4: Small Residential Rates 2025-2027

Tier Name	Max Parcel Area	2025	2026	2027
S1	1,999	$235.28	$247.09	$259.54
S2	3,499	$447.08	$469.52	$493.18
S3	4,499	$572.64	$601.39	$631.68
S4	5,499	$672.93	$706.71	$742.31
S5	6,499	$764.98	$803.38	$843.85
S6	9,999	$929.48	$976.13	$1,025.31
Increase			5%	5%

5.4 Other Drainage Rate Credits and Discounts

Drainage bill discounts are available for property owners that help reduce the impact of stormwater on the downstream system. Billing exemptions (which reduce the overall drainage bill) are also available for large natural areas that offer systemic benefits greater than those offered by other types of undeveloped lands which do not benefit from or impact the stormwater system.

A. Low Impact Discounts

Low impact discounts are available for General Service parcels with limited hard surface area (T1 and T2) and significant amounts of tree canopy or undeveloped grassland cover (50% or greater). These discounts are applied to the parcel's gross drainage bill and reflect the stormwater reduction benefits associated with these land characteristics. Based on a parcel's hard surface type and tree canopy or undeveloped grassland composition, the following discounts are available:

Table 5-5: Low Impact Discounts

Rate Tier	Tier Hard Surface %	Tree Canopy + Undeveloped Grass %	Bill Discount
T1 (0%-10%)		65% +	55%
		50% - 64%	35%
T2 (11%-20%)		65% +	45%
		50% - 64%	30%

B. Stormwater Facility Credit Program (SFCP)

This program offers credits of up to fifty percent for privately-owned systems that slow down stormwater flow and/or provide water quality treatment for run-off from hard surface areas, thus lessening the impact to the City's stormwater system, creeks, lakes, or the Puget Sound.

Stormwater systems are structures such as vaults, rain gardens, permeable pavements, and filtration systems. SPU offers a 10 percent discount for any new or remodeled commercial building that utilizes a rainwater harvesting system meeting credit requirements. Those systems that involve indoor uses of rainwater must be permitted by Seattle-King County Department of Health to qualify for the rate reduction. Systems must meet the applicable stormwater code requirements for the building and site.

C. Undeveloped Riparian Corridor Exemption

Developed riparian corridors[2] with small buffers and bank armoring increase the risk of flooding and downstream property damage. In contrast, undeveloped riparian corridors with a sufficient buffer act as floodplains which allow creeks to expand during peak periods, mitigating downstream flood damage.

The discount assumes exemption of the entire 100-foot qualifying creek buffer from the parcel's billable area. Qualifying criteria for this exemption are found in SPU Director's Rule FIN-211.2.

D. Wetlands Exemption

Wetlands are natural drainage systems, protecting and improving water quality and storing floodwaters which are slowly released over time. Wetlands also serve as an important habitat

[2] Riparian corridor is defined in SMC 25.09.020.B.5.A.

for fish and wildlife. Only wetlands of at least 1,000 square feet in area and with no development within the wetland area will be considered for this exemption.

An application is required to qualify for this exemption, including the provision of supporting documentation demonstrating that the wetland meets all required criteria, as defined in SPU Director's Rule FIN-211.3

E. Undeveloped Islands Exemption
This credit applies to undeveloped islands with less than 10 percent hard surface area. These islands do not benefit from, nor do they impact, the drainage system or surrounding receiving waters.

6. UTILITY DISCOUNT PROGRAM

The City provides discounted utility services to qualified residential utility customers through the Utility Discount Program (UDP). SPU customers receive a 50 percent credit on their combined SPU utility bill, plus a credit for drainage services billed through property tax statements. Customers who do not receive an SPU bill but pay for water, wastewater, drainage, and solid waste services indirectly through rent may receive either a credit on their SCL bill or baring that, a credit voucher.

For customers who do not receive a wastewater bill, a fixed credit is calculated which is equal to 50 percent of an estimated typical residential bill for the class of customer receiving the credit. See Table 6-1 for proposed discounts. Proposed credits do not include projected changes in the King County treatment rate. Increases in the treatment rate will result in increases to credits through the pass-through mechanism established by SMC 21.28.040.

Table 6-1: Wastewater Utility Discount Program Credit Calculation

	Basis	2025
Wastewater Rate		**$19.21**
Single-Family	50% of 4.3CCF	$41.30
Multi-Family	50% of 3.0CCF	$28.82

Wastewater UDP credits for 2026 and 2027 will be calculated and updated through the pass-through mechanism if and when any treatment rate adjustments need to be made.

Table 6-2: Drainage Utility Discount Program Credits Calculation

		Basis	2025	2026	2027
Drainage	Drainage Rate	5,000 sqft parcel	$672.93	$706.71	$742.31
	Monthly Rate		56.08	58.89	61.86
	Multi-Family	50% of 1/9th	3.12	3.27	3.44
	Single-Family	50%	28.04	29.45	30.93
	Duplex	50% of 1/2	14.02	14.72	15.46

APPENDIX A: FINANCIAL SUMMARY

Table A-1: Drainage and Wastewater Fund Financial Summary

	Actual	Projected	Proposed		
	2023	**2024**	**2025**	**2026**	**2027**
Operating Revenue					
Wastewater	$348.4	$370.8	$388.3	$408.1	$428.4
Drainage	187.8	197.9	207.7	218.1	229.1
Other	6.9	6.7	7.0	7.3	7.7
Total Operating Revenue	**$542.9**	**$575.3**	**$603.1**	**$633.5**	**$665.1**
Operating Expenses					
Treatment	$189.4	$201.0	$215.0	$228.0	$243.9
O&M	157.4	166.4	187.1	195.9	206.1
City Taxes	64.2	68.8	72.6	76.2	80.0
State Taxes	7.5	7.7	8.0	8.3	8.6
Depreciation	45	38.3	43.0	41.3	41.3
Total Operating Expenses	**$463.0**	**$482.2**	**$525.5**	**$549.7**	**$579.9**
Net Operating Income	**$79.9**	**$93.1**	**$77.5**	**$83.7**	**$85.2**
Other Income (Expenses)					
Net Interest Expense	$(13.3)	$(36.3)	$(38.1)	$(42.2)	$(44.3)
Other Non-Operating	(42.5)	-	-	-	-
Total Other Income (Expenses)	**$(55.7)**	**$(36.3)**	**$(38.1)**	**$(42.2)**	**$(44.3)**
Grants and Contributions	$12.3	$-	$-	$-	$-
Net Income (Loss)	**$42.4**	**$56.8**	**$39.4**	**$41.6**	**$40.8**

($ millions)

APPENDIX B: ALLOCATION DETAIL

O&M allocation results shown in Table 3-2 are calculated based on assigning each O&M Project one of the allocators in Table B-1.

Table B-1: O&M Allocators

Allocator	Description	Sample Projects	Allocation to		Share of Total Expenses
			Wastewater	Drainage	
Drainage	Focus on stormwater	Street sweeping, GSI, flooding, habitats	0%	100%	11%
Wastewater	Focus on sewer	Customer sewer billing, sewer capacity	100%	0%	5%
Sewer [& Drainage] Pipe	Drainage vs wastewater share of total pipe	Pump stations, pipe maintenance	28%	72%	8%
Combined	Estimated drainage vs wastewater share of flows in combined system areas	CSOs, NPDES	58%	42%	6%
System Direct	Other utility services and operations that are not specific to drainage or wastewater	Decant, CMOM, indirect costs such as PTO for utility services and operations projects	56%	44%	35%
Indirect	Remaining costs	City central costs, departmental indirect costs	50%	50%	34%

Debt service allocation results shown in Section 3-1 are calculated based on assigning each asset one of the allocators in Table B-2.

Table B-2: Capital Allocators

Allocator	Description	Sample Assets	Allocation to		Share of Total Net Book Value
			Wastewater	Drainage	
Combined	CSOs and combined system assets	Windermere, Genesse, Delridge CSO facilities; combined system pump stations	42%	58%	25%
Drainage	Drainage only assets	NDS, flood control, landslide, stormwater pipes	0%	100%	31%
Wastewater	Sewer only assets	Sewer pumps, customer billing system, wastewater pipe	100%	0%	21%
Combined Pipe	Combined system pipe; allocated based on estimate flow		38%	62%	9%
Pre-2008 Pipe	System uses for pipe assets prior to 2008 are not specifically identified in the asset schedule. A split was developed based on estimated flows.		58%	41%	9%
SPU	Remainder	Capitalized planning, land, misc. buildings, and equipment	42%	58%	5%

APPENDIX C: ACCOUNT AND SURFACE RATE SUBCOMPONENT CALCULATIONS

There are no allocations within the rate study period, so subsequent years' fee is increased with the revenue requirement, see 'Account-Based Revenue Requirement' in Table 5-1.

Account Rate Calculation

The account related revenue requirement covers all costs that are universal across all parcels regardless of size or runoff. These costs are largely billing expenses and are allocated across all parcels. Because small residential parcels are charged on a per parcel basis, each parcel will receive this unit rate. General service parcels are charged on a per square foot basis, so the account related costs assigned to general service parcels is converted to a square foot rate based on each parcel's total number of accounts and total square footage.

Table C-1: Account Rate Calculation

	2025 Revenue Requirement	Units	Account Rate 2025
Single-Family	$1,695,086	149,363 Parcels	$11.35
General Service	$416,523	878,238 kSQFT	$0.47
Account Total	**$2,111,609**		

Surface Area Type Rate Calculation

SPU determines surface area type rates by estimating the total runoff from each respective surface area type. Each surface area type's share of total runoff determines its share of the flow-based revenue requirement. Runoff is determined using flow factors developed through hydrological modeling, which represent the relative difference in stormwater runoff between hard and previous area.

Table C-2 below shows the calculation for the square foot rate. Hard surfaces are assigned 85% of the total revenue requirement (column E) based on area (A) multiplied by flow factor (B). Even though the City's hard surface area is less than half the total (A), its inability to allow for infiltration, represented by flow factor in column B, results in the City's total hard surface area being assigned 85% of total cost.

Table C-2: Surface Area Type Rate Calculation

Surface Area Type	(A) Area (SQFT)	(B) Flow Factor (cfs / SQMI)	(C) Estimated Flow Contribution	(D) Flow Share	(E) Flow Based Rev Req ($m)	kSQFT Rate 2025	2026	2027
Hard	788,284,311	278	219,284,141,434	85%	$181.2	$229.83	$241.37	$253.53
Pervious	816,511,236	48	39,288,071,160	15%	$32.5	$39.75	$41.75	$43.83
Total CIP	**1,604,795,548**		**258,572,212,594**		**$213.6**			

Table C-2: Surface Area Type Rate Calculation

Surface Area Type	(A) Area (SQFT)	(B) Runoff Discharge (cfs / 1,000 SQFT)	(C) Estimated Runoff Contribution *(Unit-less)*	(D) Runoff Share	(E) Flow Based Rev Req ($ millions)	kSQFT Rate 2025	2026	2027
Hard	788,284,311	0.009963	7,853,889	85%	$181.2	$229.83	$241.37	$253.53
Pervious	816,511,236	0.00172	1,405,839	15%	$32.5	$39.75	$41.75	$43.83
Total CIP	**1,604,795,548**		**9,259,728**		**$213.6**			

APPENDIX D: DRAINAGE RATE DESIGN AND TECHNICAL ASSUMPTION UPDATES

This rate study introduces three updates to the existing rate structure to increase equity, transparency, and billing efficiency:

1. **Updates to technical assumptions** for run-off from hard and pervious surface which have not been reviewed since 2008 and included single-event modeling. New assumptions are consistent with current hydrological continuous modeling.
2. **The introduction of additional rate tiers** for all customer types increases equity by billing customer parcels based on a narrower range of land characteristics.
3. **A revised qualification structure for low impact discounts** expands the availability of discounts to a broader range of parcels citywide while focusing eligibility on parcel characteristics (forest and unmanaged grass) that mitigate stormwater more effectively.

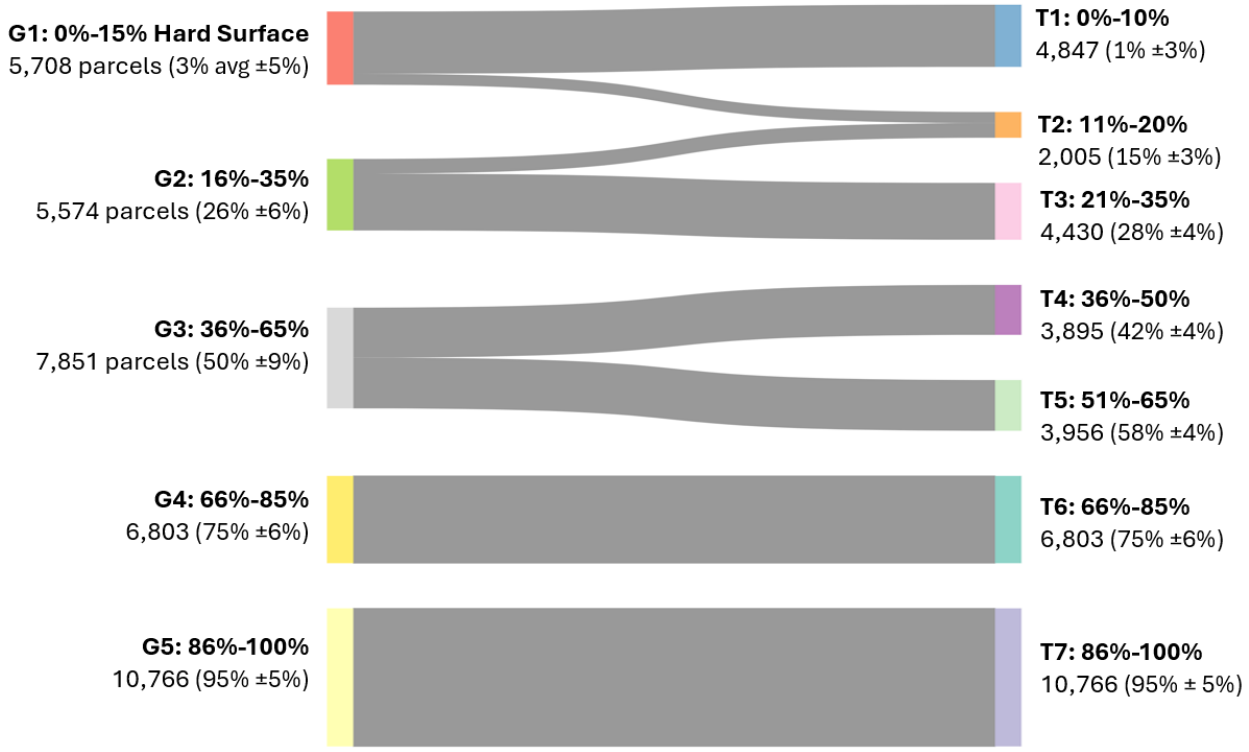
The proposed updates rely on two new data sets procured in 2023, both derived from high resolution aerial photos. This is the first comprehensive update to drainage customer billing data since 2012 and includes:

- **Citywide GIS map of different hard and pervious surface types** which is the basis for rate tier assignment. This data set is derived using Artificial-Intelligence (AI) technology, allowing for a cost-effective and timely method for updating drainage customer billing data on a more frequent basis moving forward. This will allow drainage billing to periodically incorporate citywide development trends such as densification and zoning changes, a process which is exorbitantly costly with prior manual methods.
- **A citywide map of tree canopy area which**, combined with surface type data, is the basis for low impact discount qualification. This data is derived using Light Detection and Ranging (LiDAR) technology.

This rate study also incorporates updates to the run-off assumptions for each surface type used to calculate the hard and pervious surface type rates. The new run-off factors, which include refinements to the methodology as well as updated rainfall inputs, show a larger run off differential between hard and pervious surface area than calculated in prior rate studies. This approach, which shifts additional cost to parcels with higher hard surface percentages, more equitably considers downstream impacts based on parcel-specific characteristics.

Figure D-1 presents the existing (left) and proposed (right) tiers along with the distribution of parcels and how this distribution is changing. Each tier label includes the hard surface percentage ranges for each tier, the number of parcels, and the actual average hard surface percentage and standard deviation. The proposed tier changes attempt to reduce the standard deviation within each tier.

Figure D-1: Change in Parcel Distribution from Existing to Proposed General Service Tiers



Expansion of Tiers

Tiers for parcels up to 65 percent hard surface area are increased from three to five, with no recommend changes to the current two tiers for parcels with more than 65 percent hard surface. This narrowing of tiers results in a tighter nexus between tier average rates and property specific characteristics as can be noted in comparing the average hard surface by tier under current and updated assumptions.

Figure D-2 shows the percent of parcels under the current and updated rate tier structures that are paying an average tier rate within 10 or 15 percent of their property specific calculated impact based on estimated runoff from each parcel's hard and pervious surface area. The ranges show combined impacts for more than one tier to retain an equitable comparison. The 0-35 percent band includes current Tiers 1 and 2 and updated Tiers 1,2, and 3. The 36-65 percent band includes current tier 3 and updated tiers 4 and 5.

Figure D-2: Parcel Specific Bills within 10 percent and 15 percent of Tier Average Bill under Current and Updated Tiers

One of the greatest improvements in rate equity are produced by reducing tier band ranges for lower hard surface tiers to between 10 and 15 percent where small increases in a parcel's hard surface area composition can result in a significant percentage increase in total runoff from that parcel. As noted in the graphics above, there is a marked increase in equity under the updated tiers for parcels up to 65 percent hard surface area with respect to how close tier average rates are in alignment with property specific impacts. There are no recommended changes to the tiers for parcels with 66 percent and greater hard surface area as there is minimal variance between tier averages and property specific impacts.

While surface area data derived from aerial photos is relatively accurate, data resolution is limited by complications such as shadows and the algorithm's estimated five percent margin of error. Therefore, any further reduction in band ranges is hampered by the resolution of available data.

Low Impact Structure Revision

SPU developed low-impact rate tiers in 2008 to more equitably account for the reduced runoff from forested areas and undeveloped grasslands relative to other pervious areas such as managed grass. Assignment to these tiers involved a complex run-off calculation based on Parks GIS data set developed in the late 1990s and early 2000s.

With this rate study SPU re-visited the rate structure of low impact parcels with three key goals in mind:

- Program eligibility should be based on property characteristics and relative stormwater runoff.
- Program criteria should be transparent, understandable, and easily administrable.
- Program assignment should be based on data with a known periodically updatable source.

The new low impact discount structure addresses those three goals as follows:

1. Eligibility requirements. Similar to 2008, technical staff identified two key parcel characteristics that minimize stormwater impacts: low hard surface coverage combined with significant tree canopy and/or undeveloped grassland coverage.
2. Transparency and Administration: The benefits of lower hard surface and tree cover are understandable to most customers. Parcels receiving low impact discounts will no longer be

assigned to separate rate tiers. All properties are assigned to tiers based on their hard surface area composition. Low impact eligible parcels will receive a discount off their gross drainage bill.

3. Data source: There was no ongoing source for the detailed attribute information associated with the data previously used for low impact assignment (referred to as "good forest" and "unmanaged grass"). Due to the reduced cost of AI generated data, SPU expects to update the surface type data set with each rate study. LiDAR tree canopy data is typically updated periodically, although less frequently. However, updates to the standard hard/pervious data set will capture when tree canopy area is developed.

This eligibility criteria are patterned on King County's natural areas discount which requires 65 percent tree canopy coverage and no more than 10 percent hard surface area, or up to 20 percent if certain best management practices are in place.

Table 5-4 compares the current and updated low impact structures.

Table 5-4: Low Impact Parcel Treatment Under Current and Updated Rates

Tier	Percent Hard Surface	Low Impact vs Regular Rate	Tier	Percent Hard Surface	Discount Levels
1	0-15%	42% less	1	0-10%	55% or 35%
2	16-35%	22% less	2	11-20%	45% or 30%
3	36-65%	19% less	3	21-35%	Not eligible
4	66-85%	Not eligible	4	36-50%	
5	86-100%		5	51-65%	
			6	66-85%	
			7	86-100%	

The new tree canopy and hard surface is still under review but based on preliminary analysis, SPU expects an increase in overall parcel eligibility to be about 5,000 parcels citywide. There are 4,258 parcels enrolled in the current program. Some existing low impact customers with over 20 percent hard surface area or insufficient tree coverage will no longer be eligible. However more parcels will be newly eligible for the discount, reflecting an increased City-wide emphasis on tree cover, and across a wider expanse of the City than those losing eligibility.

Small Residential Rate Structure Revisions

For the 2025-27 rate period, SPU has developed a six-tier rate structure that replaces the existing five-tier rate structure. The addition of a new tier aims to minimize the difference between any given parcel's size from its tier average. The new tier boundaries position the most common parcel sizes closer to the mean of their respective tiers, aiming for a more statistically normal distribution within each tier. In contrast, the existing tier structure uses the most common parcel sizes as the start of each tier boundary, resulting in a right skewed distribution within each tier. Figure D-2 presents the existing (left) and proposed (right) tiers along with the distribution of parcels and how this distribution is changing. Each tier label includes the maximum parcel area each tier, the number of parcels, and the average hard surface percentage and standard deviation.

Figure D-2: Change in Parcel Distribution from Existing to Proposed Small Residential Tiers

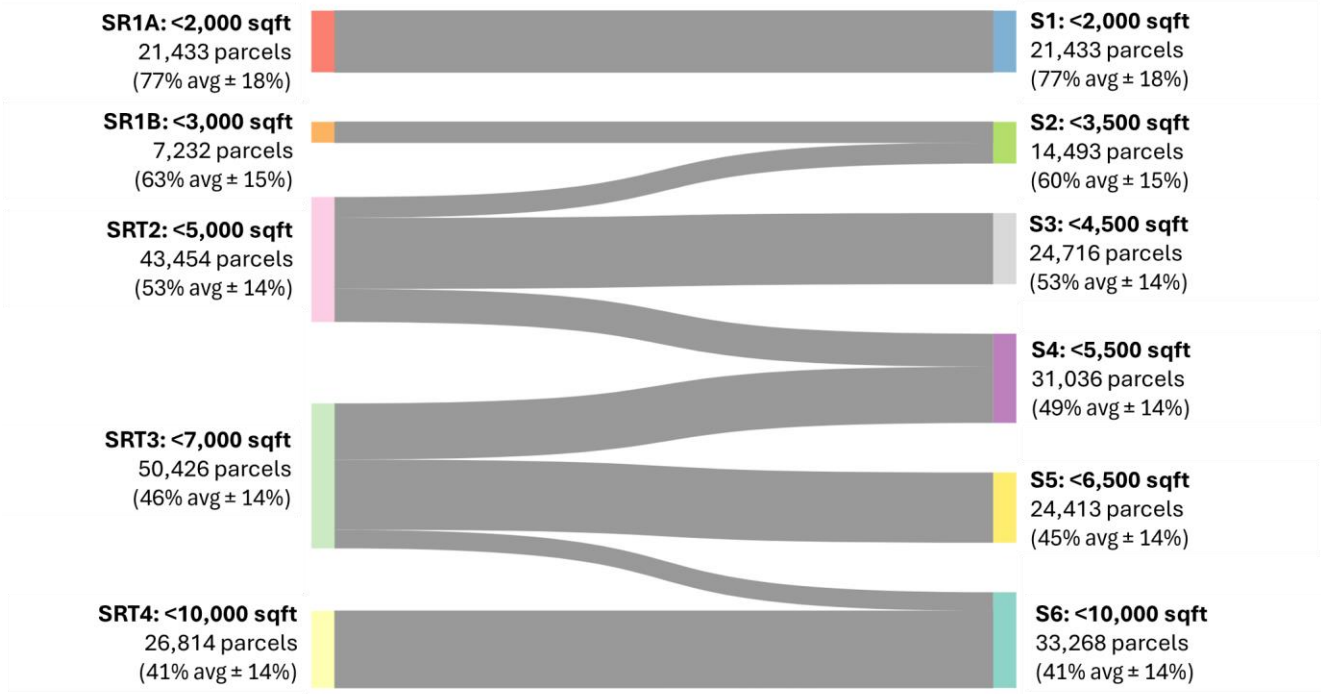


Figure 5-3 shows the current five tier distribution and Figure 5-4 the proposed six tier distribution. The proposed rate tiers aim to achieve a closer to normal distribution within each tier. Colors in each chart correspond to the existing tiers.

Figure 5-3: Distribution of Parcels Divided by Existing Tiers

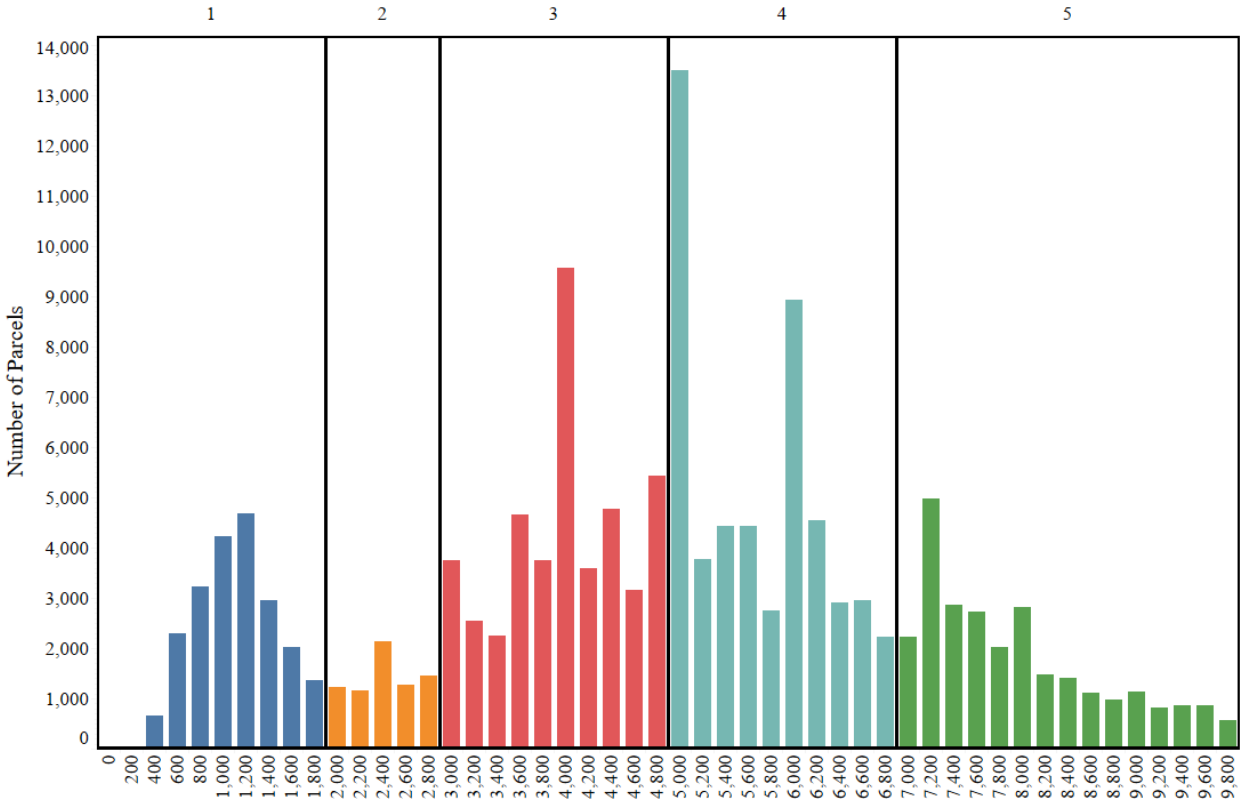
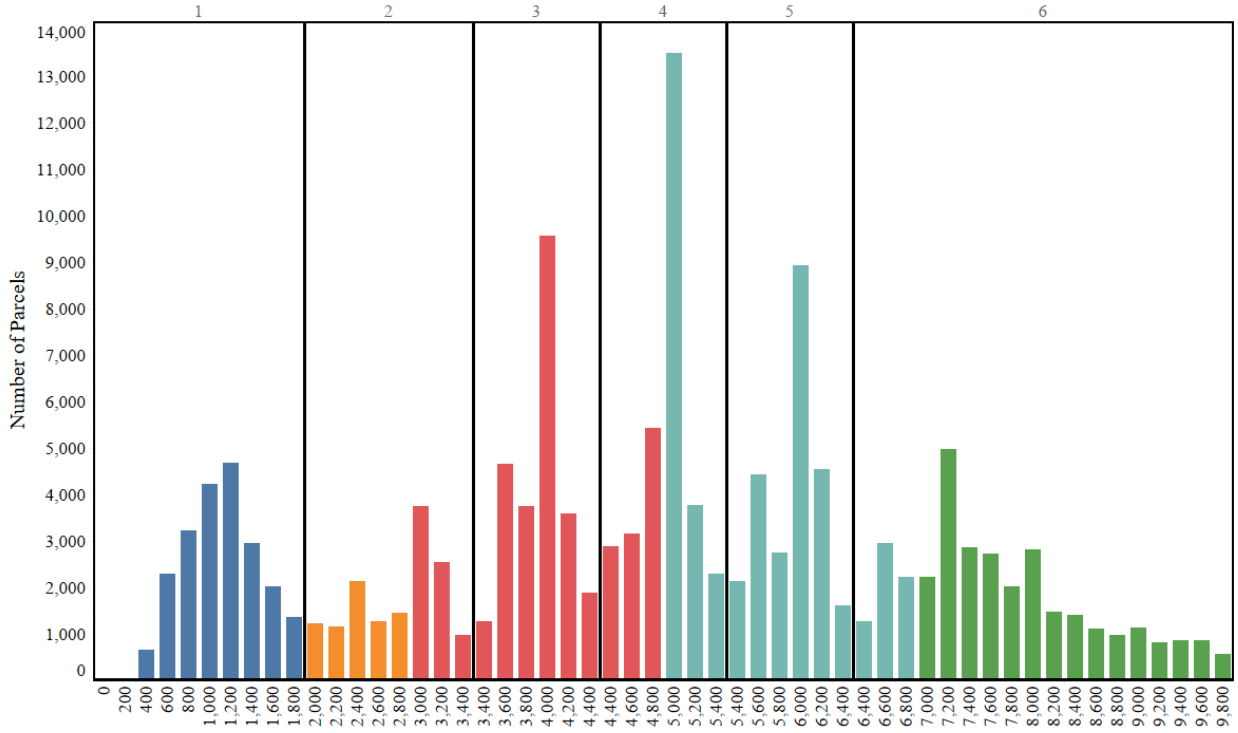


Figure 5-4: Distribution of Parcels Divided by Proposed Tiers



APPENDIX E — GENERAL SERVICE AND SMALL RESIDENTIAL RATE CALCULATIONS

General Service Rate Calculations

Section 5.1 presented the conceptual basis for calculating the rate assigned to each rate tier which includes a charge related to managing the run-off for the average percentage of hard and pervious surface for each tier and a billing related account fee:

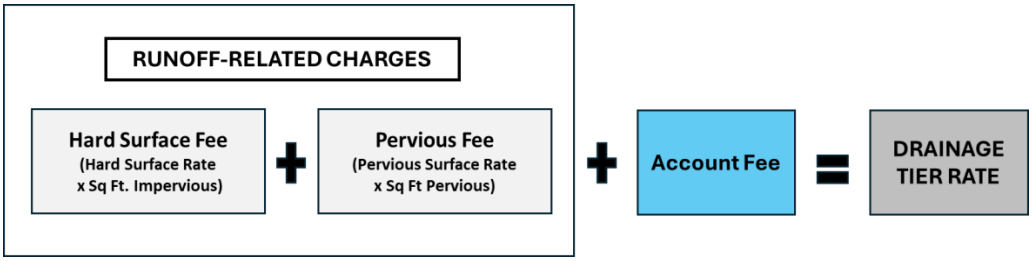


Table E-1 shows the calculation of the 2025 baseline tier rate based on the average hard and pervious areas per 1,000 square feet profile for a single parcel. The average parcel area is multiplied by the hard surface ($230/ksqft) and pervious ($40/ksqft) rates and added to the account fee to determine the tier rate. For example, all parcels in Tier 1 are charged the rate of the average of parcels assigned to that tier, in this case based on 4 percent of hard surface and 96 percent pervious surface.

Table E-1: 2025 Tier Rate Baseline Calculation Based on Parcel Average Land Composition

			Avg Area (per ksqft)		Flow and Account Based Fees			Total
Tier Name	Hard Surface Range	Parcels	Hard	Pervious	Hard	Pervious	Account	kSQFT Rate
T1	0%-10%	4,847	43	957	$9.83	$38.05	$0.47	$48.36
T2	11%-20%	2,005	144	856	$33.00	$34.05	$0.47	$67.52
T3	21%-35%	4,430	274	726	$63.05	$28.85	$0.47	$92.37
T4	36%-50%	3,895	436	564	$100.31	$22.40	$0.47	$123.19
T5	51%-65%	3,956	584	416	$134.28	$16.53	$0.47	$151.28
T6	66%-85%	6,803	752	248	$172.94	$9.84	$0.47	$183.25
T7	86%-100%	10,766	951	49	$218.64	$1.94	$0.47	$221.05

Table E-2 shows the calculation of the tier rate based on the aggregate square feet of each surface type in each tier (for the run-off component) and the aggregate number of parcels in each tier (for the account fee). The final tier rate based on aggregate data is equal to the tier rate build-up in Table E-1 using single parcel data.

The hard and pervious area composition of each tier is multiplied by the surface area type rates and the total area is multiplied by the account fee (surface are type and account rates are calculated in Appendix C). The sum of surface area revenue and account fee revenue is divided by the total square footage to calculate each tier's area rate per 1,000 sqft.

Table E-2: –2025 Tier Rate Baseline Calculation Based on Aggregate Tier Surface Area

		Area (ksqft)			Flow Based Revenue					
Tier	Parcels	Hard	Pervious	Total	Hard Surface ($230/ksqft)	Pervious ($40/ksqft)	Subtotal	Account Fee ($0.47/ksqft)	Total	kSQFT Rate
T1	4,847	7,462	166,991	174,453	$1,715	$6,639	$8,354	$83	$8,436	$48.36
T2	2,005	11,886	70,887	82,772	$2,732	$2,818	$5,550	$39	$5,589	$67.52
T3	4,430	26,330	69,649	95,979	$6,051	$2,769	$8,820	$46	$8,866	$92.37
T4	3,895	41,711	53,861	95,572	$9,587	$2,141	$11,728	$45	$11,773	$123.19
T5	3,956	42,012	29,894	71,906	$9,656	$1,188	$10,844	$34	$10,878	$151.28
T6	6,803	99,499	32,733	132,232	$22,868	$1,301	$24,169	$63	$24,232	$183.25
T7	10,766	214,354	10,971	225,325	$49,266	$436	$49,702	$107	$49,809	$221.05
Total	**36,702**	**443,253**	**434,985**	**878,238**	**$101,874**	**$17,293**	**$119,167**	**$417**	**$119,583**	
					Revenue Requirement Previously Covered by Small Residential		**$94,467**	**$1,695**	**$96,162**	
					Total Revenue Requirement		**$213,633**	**$2,112**	**$215,745**	

Impacts of Transition to New Rate Design and Technical Assumptions on Tier Rates

The 2025 baseline rates presented in the tables above assume the new rate structure parameters presented in Appendix D. The change in these parameters results in a realignment of how parcels are charged, and thus an initial reset of rates with differing levels of increase.

Proposed rates for 2025-2027 are set to mitigate impacts of this change by capping the rate increase applied to any group of parcels at 10 percent in any given year while still fully recovering the five percent annual revenue requirement increase. Therefore, the tier rates presented above do not match the proposed 2025 tier rates.

By 2027, the rates for each tier are fully in alignment with the new calculation assumptions. Table E-3 below shows the impact of applying five percent annual increases, starting with the baseline 2025 rates shown in the table above as compared to the proposed transitioned rates in Section 5.2.

Table E-3: Baseline vs Proposed (Transitioned) General Service Rates

Tier	% Hard Surface	2025		2026		2027	
		Base	Transitioned	Based	Transitioned	Based	Transitioned
T1	0-10%	$48.36	$59.82	$50.79	$54.23	$53.34	$53.34
T3	21-35%	$92.37	$94.46	$97.01	$97.01	$101.90	$101.90
T4	36-50%	$123.19	$123.19	$129.37	$129.37	$135.89	$135.89
T5	51-65%	$151.28	$138.77	$158.88	$152.60	$166.88	$166.88
T6	66-85%	$183.25	$183.25	$192.45	$192.45	$202.15	$202.15
T7	86-100%	$221.05	$216.17	$232.15	$232.15	$243.84	$243.84

Small Residential Rate Calculations

Small residential rates are calculated the same as general service rates. Each tier's total surface area profile is multiplied by the surface area type rates calculated in Appendix C and divided by total area to

derive the total flow-based rate. The account fee calculated in Appendix C is added on for each parcel arriving at the final tier rate. Each subsequent years' rate is increased with the revenue requirement.

Table E-4 outlines the calculation for each tier based on the average hard and pervious surface area compositions for each tier, similar to Table E-1 for General Service tiers.

Table E-4: 2025 Small Residential Rates Based on Parcel Average Land Composition

			Avg Area (per ksqft)		Flow and Account Fees			Equals
Tier	Max Size	Parcels	Hard	Pervious	Hard Surface	Pervious Surface	Account	Parcel Rate
S1	1,999	21,433	760	240	$212.32	11.62	$11.35	$235.28
S2	3,499	14,493	593	407	$389.49	46.25	$11.35	$447.08
S3	4,499	24,716	530	470	$486.74	74.55	$11.35	$572.64
S4	5,499	31,036	488	512	$559.97	101.61	$11.35	$672.93
S5	5,499	24,413	452	548	$622.78	130.86	$11.35	$764.98
S6	9,999	33,272	412	588	$736.07	182.06	$11.35	$929.48

Table E-5 outlines the same calculations but based on aggregate tier composition similar to Table E-2 for General Service. Table E-5 also includes 2026 and 2027 rates, inflated at the revenue requirement increase of five percent annually.

Table E-5: Small Residential Rates 2025-2027

		Area (ksqft)		Flow Based Revenue			Flow Rate	Plus	Equals	Inflated	
Tier	Parcels	Hard	Pervious	Hard ($230/ksqft)	Pervious ($40/ksqft)	Subtotal	Per Parcel	Account Fee	Parcel Rate	2026 Parcel Rate	2027 Parcel Rate
S1	21,433	19,799	6,262	$4,551	$249	$4,800	$223.93	$11.35	$235.28	$247.09	$259.54
S2	14,493	24,561	16,859	$5,645	$670	$6,315	$435.73	$11.35	$447.08	$469.52	$493.18
S3	24,716	52,344	46,351	$12,030	$1,843	$13,873	$561.30	$11.35	$572.64	$601.39	$631.68
S4	31,036	75,617	79,324	$17,379	$3,153	$20,533	$661.58	$11.35	$672.93	$706.71	$742.31
S5	24,413	66,152	80,359	$15,204	$3,195	$18,398	$753.63	$11.35	$764.98	$803.38	$843.85
S6	33,272	106,558	152,370	$24,491	$6,057	$30,548	$918.13	$11.35	$929.48	$976.13	$1,025.31
Total	**149,913**	**345,031**	**381,526**	**$79,300**	**$15,167**	**$94,467**		**$1,695**	**$96,162**		
		Remaining Revenue Requirement for General Service				**$119,167**		**$417**	**$119,583**		
				Total Revenue Requirement		**$213,633**		**$2,112**	**$215,745**		