NOTES TO THIS DRAINAGE AND WASTEWATER RATE STUDY DOCUMENT:

Date updated: 10/8/07

A. Revenue Requirement File Names:

Council Submittal:

DWF Rate Model 071107 SAVE Final Rate Proposal.xls

Final with Council Changes:

DWF Rate Model 100107 SAVE Council Adopted.xls

DWF Rate Model 100107 SAVE Council Adopted FLOW FACTOR.xls (used for weighted flow factor calculation)

Changes from Council Submittal:

1. Call Center 2008 add of $101,970 eliminated ("O&M Adds" tab). This was part of the "Corporate Costs" in the rate model.
2. Additional $455,000 in O&M adds eliminated ("O&M Adds" tab). This was part of the "Impact of Deferral Write-Offs" in the rate model.
3. Technology CIP - $250,000 moved from 2008 to 2009 for TIO ("CIP" tab)

B. Drainage Rate Design File Names:

Council Submittal:

DWF FA Model 071107 FINAL SAVE.xls

Final with Council Changes:

DWF FA Model 100707 SAVE Council Adopted.xls

DWF FA Model 100707 SAVE Council Adopted FLOW FACTORS.xls (used for weighted flow factor calculation)

Changes from Council Submittal:

1. 50% rate cap applied with unrecovered revenue requirement spread within Small Residential and General Service/Large Residential customer groups.
2. Pervious-Unmanaged Grass weighted flow factor changed from 15.0% to 15.1%

UPDATED FOR FINAL COUNCIL ADOPTED CHANGES

Seattle Public Utilities
2008-2009
Drainage/Wastewater Rate Study

JULY 2007

Attachment 1 to Fiscal Note

Contents

I. EXECUTIVE SUMMARY

The Drainage and Wastewater Utility provides wastewater and stormwater management services to residences and businesses in the City of Seattle. It is supported almost entirely by utility fee revenue. For drainage, Seattle Public Utilities ("SPU") charges City of Seattle property owners fees based on property characteristics contributing to stormwater runoff. The drainage fee appears as a line item on King County property tax bills. For wastewater, SPU collects charges based on metered water usage via the SPU combined utility bill. The wastewater rate consists of a system component, set to recover SPU expenses, and a treatment component, set to recover payments to King County and Southwest Suburban Sewer District, whose facilities treat the wastewater conveyed by SPU's system.

Drainage and wastewater rates were last increased on January 1, 2007, when drainage rates were increased by 5.7 percent and wastewater rates were increased by 10.2 percent. The wastewater rate increase was the result of an increase in the King County wastewater treatment rate for 2007.

Beginning in 2008, a percentage of the costs associated with the combined stormwater and wastewater system ("Combined System"), previously assigned solely to wastewater, will be recovered through drainage rates in order to recognize that a portion of these costs support the drainage system. This change results in drainage rates being split into a system rate and a treatment rate.

Rate increases for both drainage and wastewater will be necessary in 2008 *and* 2009 for the Drainage/Wastewater Fund (DWF) to fund increasing operating and capital expenses, which are required to address significant needs for both systems. Cash and debt financing of new capital projects is a major driver of rates for both drainage and wastewater. Some of the major capital programs proposed for 2008 and 2009 are:

- Madison Valley (Long Term Solution);
- South Park Storm Drainage/Water Quality Study;
- Thornton Creek Water Quality Channel;
- Windermere & South Henderson CSO;
- MLK/Norfolk Storm Improvement/Water Quality Study; and
- Utility relocation and replacement necessitated by the Alaskan Way Viaduct and Seawall Replacement Project.

Another major factor impacting both drainage and wastewater rates is the implementation of the new drainage rate design methodology, conceptually approved by Mayor and Council in 2006. The new rate design, which will increase equity among SPU drainage and wastewater customers, will affect expense and rates in two ways:

1. The Combined System cost shift will result in an increase to drainage expense and a decrease to wastewater expense.
2. Several changes to the drainage rate structure will impact the relative amount paid by different classes of drainage customers but will not increase overall drainage expense.

Further details on the components of the new rate design and their impact on rates are found in Section IV, Drainage Cost Allocation/Rate Design.

The total projected DWF direct service rate revenue requirement is $217.5 million in 2008 and $229.5 million in 2009. In order to satisfy these revenue requirements, the average monthly residential drainage bill will need to increase by $2.09 in 2008 and $2.01 in 2009. Also, the average monthly residential wastewater bill will require an increase of $1.56 in 2008 and $1.82 in 2009. See Appendix B for a comparison of nominal and real rates for drainage and wastewater from 1989 to 2007.

The proposed rate increases will result in DWF meeting or exceeding all DWF financial policy targets in 2008 and 2009. Table I-1 presents the annual revenue requirements and the monthly impact of the proposed fees for different drainage customers and the average residential wastewater customer.

Table I-1
Proposed 2008/2009 Revenue Requirement and Impact on Typical Bills

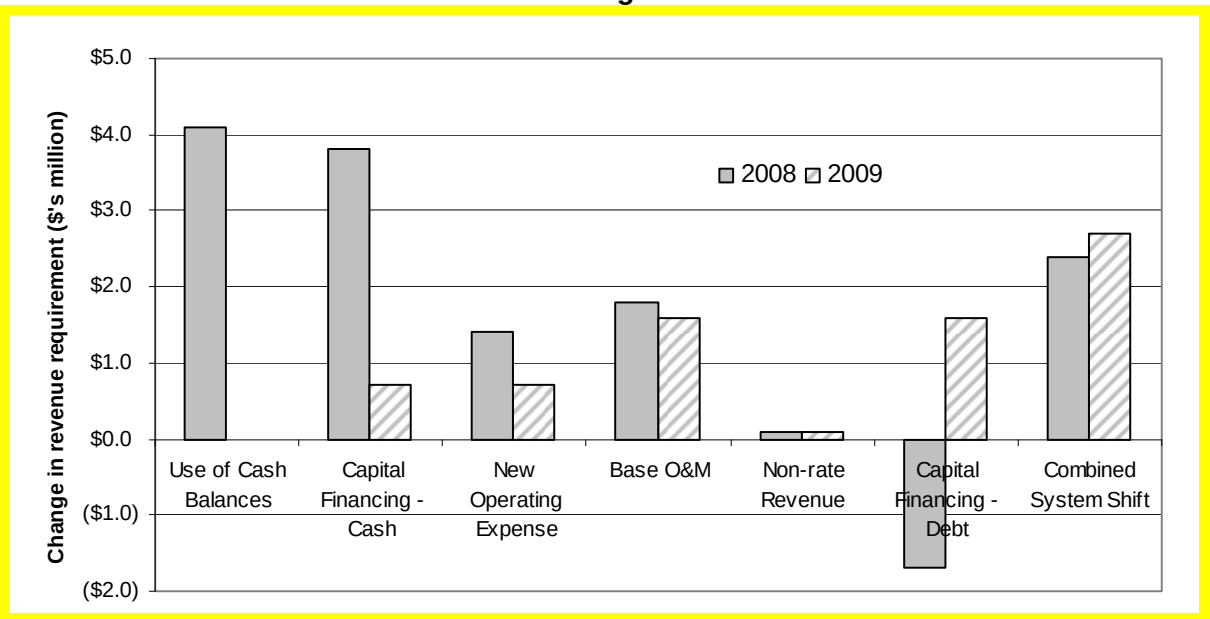
	2007 Projected	*2008 Adopted*		*2009 Adopted*	
			Change from 2007		Change from 2008
Revenue Requirement					
Drainage	$39,205,512	$51,042,325	$11,836,813	$58,512,036	$7,469,711
Wastewater	$159,976,874	$166,441,590	$6,464,716	$171,020,557	$4,578,967
Total DWF	$199,182,386	$217,483,915	$18,301,529	$229,532,593	$12,048,678
Typical Monthly Drainage Bills					
Average Residential	$11.83	$13.92	$2.09	$15.93	$2.01
Convenience Store (8,700 sq. ft.)	$26.42	$36.68	$10.26	$40.61	$3.93
Supermarket (125,000 sq. ft)	$379.06	$526.43	$147.37	$582.79	$56.36
Wastewater					
Rate per CCF					
Treatment	$5.41	$5.22	($0.19)	$5.24	$0.02
System	$2.04	$2.53	$0.49	$2.86	$0.33
Total	**$7.45**	**$7.75**	**$0.30**	**$8.10**	**$0.35**
Average Monthly Residential Bill	$38.74	$40.30	$1.56	$42.12	$1.82
Percentage of MHI					
Median Drainage Bill	0.28%	0.34%		0.37%	
Median Wastewater Bill	0.79%	0.79%		0.81%	

Table I-1 Notes:
1) Wastewater and drainage revenue requirements, rates, and bill impacts assume no change in the King County treatment rate; however, King County is projecting an 18 percent increase in its 2009 treatment rate.
2) Wastewater revenue includes industrial surcharge.
3) The drainage treatment rate component represents 2.3 percent of the typical bill amounts in 2008 and 3.9 percent in 2009.
4) Average monthly Residential wastewater bill based on 5.2 ccf per month. Median wastewater bill based on 4.5 ccf per month.
5) Percentage of MHI represents the median annual Residential bill divided by the Seattle annual median household income. This represents a measure of affordability for residential customers.

DRAINAGE RATE DRIVERS

Figure I-1 summarizes the changes in 2008 and 2009 drainage revenue requirement by rate driver. The 2009 amounts represent incremental changes to 2008.

Figure I-1
2008-2009 Drainage Rate Drivers



The following is a brief description of the drainage rate drivers:

- **Use of Cash Balances.** The proposed 2008 drainage rates produce higher net cash revenue in order to restore drainage cash balances, expected to be drawn down in 2007, to the targeted level in 2008[1]. This results in an increase to the revenue requirement of $4.1 million. The 2009 change in net cash revenue is zero.
- **Capital Financing - Cash.** The proposed 2008 drainage rates assume a $3.8 million increase in drainage cash financing of CIP from 2007 to 2008. This is being driven by an increase in the 2008 drainage CIP. In 2009 further increases in the CIP result in an increase in cash financing of CIP of $0.7 million.
- **New Operating Expense.** SPU is proposing a $1.4 million increase in the 2008 drainage revenue requirement to fund expanded and/or new operations programs and meet regulatory requirements. An incremental $0.7 million increase is projected for 2009. See Tables III-5 and III-6 for additional detail.
- **Base Operations and Maintenance (O&M) Expense.** 2008 Operations and Maintenance expense for current programs increases by $1.8 million with about $0.9 million of this increase due to cost allocation updates which shift costs from wastewater to drainage. The remaining increase is largely due to additional baseline adjustments and inflation. In 2009, O&M for current programs increases by $1.6

[1] Net cash revenue is equal to total cash revenue less total cash expense. Positive net cash revenue will increase year end cash balances. Negative net revenue will reduce cash balances. A change in net cash revenue from one rate period to the next will cause a corresponding change in the revenue requirement.

million, due primarily to inflation and the impact on DWF of dissolving the Engineering Services Fund.[2]

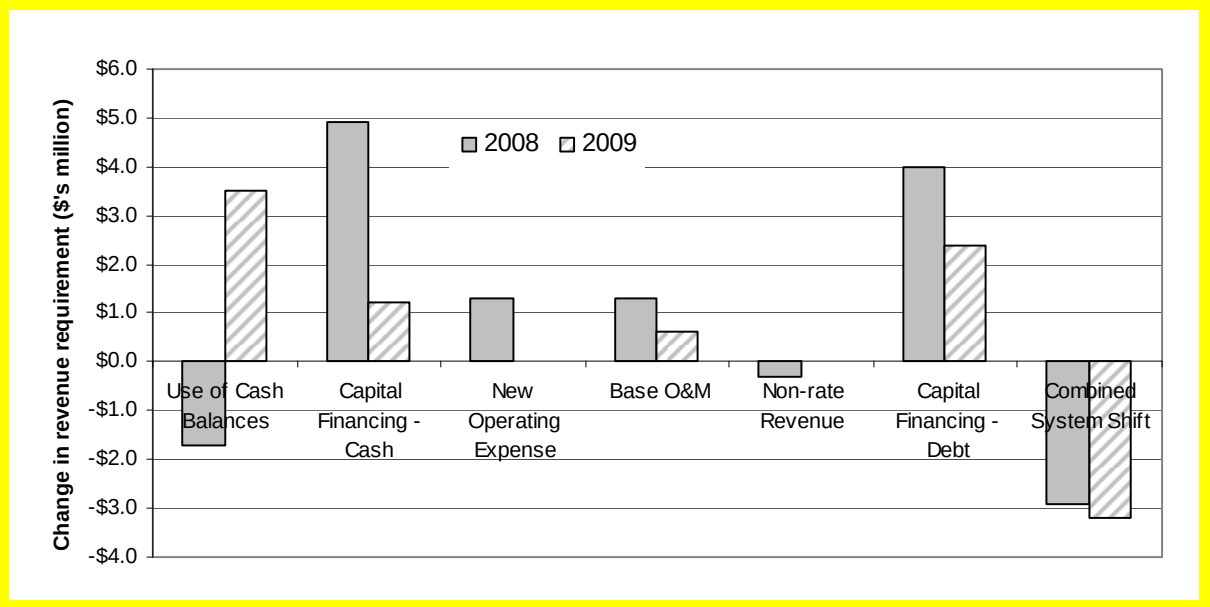
- **Non-Rates Revenue.** The net impact of non-rates revenue items is an increase of $0.1 million in both 2008 and 2009.
- **Capital Financing – Debt.** Drainage debt service decreases by $1.7 million in 2008 which is the net impact of a $2.8 million decrease in the drainage share of existing DWF debt service and $1.1 million increase in drainage debt service as a result of a projected April 2008 revenue bond issue**.** The decrease in the drainage share of existing DWF debt service is due to a change in methodology for assigning debt service between drainage and wastewater (see "Capital Financing Expense" in Section III of this study for details). Drainage debt service increases by $1.6 million in 2009, primarily due to the projected 2008 and 2009 bond issues.
- **Combined System Cost Shift**. A portion of the combined system (combined sewer overflow structures and sewer pipes in combined areas) supports the drainage system. These costs, as well as treatment costs for wastewater/stormwater flows originating from the combined system, previously were assigned entirely to wastewater. This rate proposal initiates the sharing of Combined System costs (operation and maintenance, wastewater treatment, and capital) by phasing in one-sixth of the allocation of these costs in 2008. This shift from wastewater increases the 2008 drainage revenue requirement by $2.4 million. The 2009 drainage revenue requirement continues the phase-in of Combined System cost allocation by assuming an additional one-sixth (for a total of two-sixths) shift from wastewater to drainage, increasing the 2009 revenue requirement by $2.7 million.

[2] SPU is proposing to dissolve the Engineering Services Fund (ESF) within the next two years. ESF continues to carry a deficit, projected to be -$2.5M at the end of 2007. DWF's estimated share of this deficit is about one-third. The 2009 revenue requirement includes DWF repaying its share of the ESF deficit.

WASTEWATER RATE DRIVERS

Figure I-2 summarizes the changes in 2008 and 2009 wastewater revenue requirement by rate driver. The 2009 amounts represent incremental changes to 2008.

Figure I-2
2008-2009 Wastewater Rate Drivers



The following is a brief description of the wastewater rate drivers:

- **Use of Cash Balances.** The 2007 wastewater year-end cash balance is projected to be above the targeted cash balance. This excess cash will be used to fund 2008 expenses, thus decreasing required rates funding of the 2008 wastewater revenue requirement by $1.7 million. In 2009, wastewater revenues must increase by $3.5 million to generate net cash revenue sufficient to fund expenses and build cash balances back up to meet year-end cash targets[3].
- **Capital Financing - Cash.** As a result of a $9.0 million increase in the wastewater CIP and an increase in the percentage of CIP cash financed from 34.0 to 36.5 percent, wastewater cash financing increases by $5.0 million from 2007 to 2008. In 2009, additional CIP spending and a slightly higher percentage of CIP cash financing results in a $1.2 million increase in the wastewater revenue requirement.
- **New Operating Expense.** SPU is proposing a $1.3 million increase in the 2008 wastewater revenue requirement to fund critical programs to address wastewater system maintenance and monitoring needs. In 2009 additional 2009 field resource needs are offset by lower I-SCADA system costs. See Tables III-5 and III-6 for more detail.
- **Base Operations and Maintenance (O&M) Expense.** 2008 O&M for current programs increases due to inflation and baseline adjustments. These increases are partially offset by decrease in base O&M due to the cost allocation shift from wastewater to drainage. The net effect is an increase of $1.3 million in revenue

[3] Net cash revenue is equal to total cash revenue less total cash expense. Positive net cash revenue will increase year end cash balances. Negative net revenue will reduce cash balances. A change in net cash revenue from one rate period to the next will cause a corresponding change in the revenue requirement.

requirement. In 2009 the net change in revenue requirement is an increase of $0.8 million. This increase is primarily due to inflation and the impact of dissolving the Engineering Services Fund[4], offset partially by lower expensed CIP.

- **Non-Rates Revenue.** A one-time 2007 item decreases the rates revenue requirement by $0.3 million in 2008. The 2009 net change in non-rates revenue is zero.
- **Capital Financing – Debt.** The wastewater revenue requirement increases by $4.0 million due to the combined effect of a $1.2 million increase in overall debt service (as a result of the April 2008 bond issue) and a $2.8 million increase in the wastewater portion of debt service due to a revision in the methodology for assigning debt service between drainage and wastewater (see "Capital Financing Expense" in Section III of this study for details). In late 2009 SPU expects to issue new DWF revenue bonds, which combined with a full year impact of the 2008 bond issue, increases the 2009 wastewater revenue requirement by $2.4 million.
- **Combined System Cost Shift**. Shifting one-sixth of the allocation of combined system costs to drainage decreases the 2008 wastewater revenue requirement by $2.9 million. The 2009 wastewater revenue requirement continues the phase-in of combined system cost allocation by assuming a two-sixths shift from wastewater to drainage. The impact of an additional one-sixth shift in 2009 decreases the wastewater revenue requirement by $3.2 million.

[4] SPU is proposing to dissolve the Engineering Services Fund (ESF) within the next two years. ESF continues to carry a deficit, projected to be -$2.5M at the end of 2007. DWF's estimated share of this deficit is about one-third. The 2009 revenue requirement includes DWF repaying its share of the ESF deficit.

Table I-2 shows projected DWF financial performance under this rate proposal. The financial policy objectives for DWF are discussed in Section II (Financial Policies).

Table I-2
Drainage and Wastewater Fund Financial Summary

	2006 Actual	2007 Projected	2008 Adopted	2009 Adopted
Operating Revenue				
Wastewater Service				
Wastewater Rate Revenue	$146,354,067	$158,420,066	$164,898,290	$169,498,710
High Strength Industrial Surcharge	$1,177,532	$1,556,808	$1,543,300	$1,521,847
Drainage Rate Revenue	$36,988,217	$39,205,512	$51,042,325	$58,512,036
Other Charges				
Permit Fees	$1,473,722	$1,547,408	$1,547,408	$1,547,408
Other	$838,874	$852,096	$883,624	$916,318
Total Operating Revenue:	$186,832,412	$201,581,890	$219,914,947	$231,996,319
Operating Expenses				
Operating and Maintenance Expenses				
Wastewater Treatment	$89,838,976	$98,565,065	$98,109,932	$97,834,654
Other Operating Expenses	$56,391,300	$50,290,800	$55,818,424	$58,644,203
Taxes Other Than City Taxes	$2,253,946	$2,398,302	$2,835,506	$3,093,727
Other Expenses				
City Taxes	$21,918,828	$23,721,618	$25,859,201	$27,268,296
Depreciation	$16,140,687	$17,607,691	$18,507,691	$19,007,691
Total Operating Expenses:	$186,543,737	$192,583,476	$201,130,755	$205,848,571
Net Operating Income:	$288,675	$8,998,414	$18,784,193	$26,147,748
Other Income (Expenses)				
Investment and Interest Income	$1,832,876	$2,241,673	$3,068,382	$2,070,073
Interest Expenses and Amortization of Debt Issue Costs and Net Discount	($13,651,988)	($13,631,700)	($17,845,308)	($19,444,028)
Other Income, Net	$64,810	$0	$0	$0
Total Other Income (Expenses):	($11,754,302)	($11,390,027)	($14,776,926)	($17,373,956)
Capital and Operating fees, Contributions, and Grants	$12,437,780	$3,752,579	$2,231,569	$2,231,569
Net Income (Loss)	$972,153	$1,360,966	$6,238,835	$11,005,361
Revenue Available for Debt Service	$44,966,071	$52,569,396	$66,219,466	$74,493,808
Debt Service	$18,843,059	$18,672,763	$23,678,781	$28,248,485
Debt Service Coverage	2.39	2.82	2.80	2.64

II. FINANCIAL POLICIES

The City of Seattle operates an integrated storm and sanitary sewerage system. Although funded through separate rate structures, the City's stormwater ("drainage") and sanitary sewer ("wastewater") systems share common infrastructure, administrative and maintenance services, debt financing, and financial budgeting and reporting systems.

SPU finances the acquisition, operation, and maintenance of Seattle's drainage and wastewater system through the Drainage and Wastewater Enterprise Fund (DWF). An enterprise fund functions like a self-supporting business which must generate operating revenues, predominantly through user charges (or "rates"), which are sufficient to cover all operating costs and meet financial policy targets. Separate drainage and wastewater service charges, or rates, are the source of most DWF revenues. Non-rate revenues include permit fee revenue**,** operating grants, capital grants, and contributions in aid of construction (CIAC). These non-rate revenues reduce the amount of revenue that must be recovered through rates.

Financial policies provide a guiding framework for DWF finances. The policies help determine how much revenue DWF must collect from its customers each year to remain financially healthy while meeting its financial obligations. In addition, financial policies:

- Shape the financial profile that DWF presents to lenders and other members of the financial community;
- Establish DWF's exposure to financial risk; and
- Allocate DWF's costs between current and future ratepayers.

DWF financial policies were adopted by City Council in 2003 by Resolution 30612. To mitigate the impact of these requirements on rates, the resolution provided for a gradual increase in the achievement of cash-related targets by identifying interim targets, with the expectation that all targets would be met by 2007. For purposes of this rate study, the interim targets no longer apply and the full financial policy targets are in effect.

Table II-1 summarizes DWF's financial policies, discusses their importance, and identifies the financial policy targets.

Table II-1
Summary of DWF Financial Policies

Parameter	Importance	DWF Target
Debt Service Coverage	A higher debt service coverage ratio means that more "excess" revenue is available after debt payments are made. This reduces financial risk and provides more flexibility to respond to unanticipated needs or revenue shortfalls.	1.80 times
Debt-to-Asset Ratio	This ratio provides an indicator of how reliant an organization is on debt in order to finance its infrastructure. A high ratio suggests less flexibility, as a greater portion of each year's revenues is used to repay debt.	No more than 70%
Cash-Financing of CIP	This policy 1) helps to prevent a rapid increase in debt levels, and 2) limits the escalation in the debt-to-assets ratio.	Minimum of 25% by 2007 (four year rolling average)

Parameter	Importance	DWF Target
Year-End Cash Balance	Cash reserves are important to ensure bills are paid on time, and they can be used to respond to unanticipated needs or revenue shortfalls.	One month wastewater treatment expense
Net Income	Positive net income is a contingency against projection errors and uncertainties regarding revenues. It is also a signal to bond rating agencies that the City is committed to establishing drainage fees that cover costs.	Generally Positive
Variable Rate Debt	A cap on variable rate debt balances the advantages of lower interest costs with the risk of unexpected increases in interest rates.	No more than 15% of total debt

Table II-2 presents DWF actual and projected performance of financial policy targets from 2005 to 2009.

Table II-2
DWF Financial Policy Performance 2005-2009

Policy	Target	2005 Actual	2006 Actual	2007 Projected	2008 Adopted	2009 Adopted
Net Income	Generally Positive	$1.0 M	$1.0 M	$1.4 M	$6.2 M	$11.0 M
Debt Service Coverage	1.8x	2.71 x	2.39 x	2.82 x	2.80 x	2.64 x
Cash Balance Year End	1 Month Treatment	$8.9 M	$16.6 M	$11.3 M	$8.2 M	$8.2 M
Cash Financing of CIP	25%	24.6 %	17.7 %	25.0 %	25.0 %	25.0 %
Debt-to-Asset Ratio	<=70%	54 %	56 %	56 %	62 %	65 %
Variable Rate Debt	<=15%	0 %	0 %	0 %	0 %	0 %

DWF met or exceeded all interim targets in 2005 and 2006 and expects to meet 2007-2009 adopted financial policy targets. The next DWF revenue bond issue is projected for April 2008.

Financial policy targets are directed toward overall DWF financial performance. No formal, separate policy targets have been adopted for the drainage program or for the wastewater program. In theory, each line of business would contribute equally to meeting the DWF financial targets. That is, both drainage and wastewater would: a) finance 25 percent (or the applicable interim target) of its respective CIP program with cash; and b) pay a share of the DWF year end cash balance target equal to its proportional share of total DWF operating expenses. In practice, however, SPU may meet financial targets by balancing revenue requirements and rate changes between wastewater and drainage. Table II-3 provides a look at each line of business' cash balance and cash financing of the CIP under the current rate proposal assumptions. 2007 wastewater cash in excess of the target is projected to be utilized in 2008 via an increase in the percent cash financing of CIP. Given the increased drainage CIP requirements, SPU has assumed different cash financing of CIP percents for drainage and wastewater in order to help mitigate overall drainage rate increases.

Table II-3
DWF Cash Financing and Cash Balance Summary
By Line of Business

(in 1,000's)	2006 Actual	2007 Projected	2008 Adopted	2009 Adopted
Drainage				
Year End Cash Balance	$4.6	$1.0	$1.0	$1.0
Cash Financing of CIP $	$3.7	$3.3	$6.8	$7.7
% of Drainage CIP	20%	16%	17%	17%
Wastewater				
Year End Cash Balance	$11.9	$10.3	$7.2	$7.2
Cash Financing of CIP $	$3.3	$7.3	$11.0	$11.4
% of WW CIP	16%	34%	37%	38%
Fund				
Year End Cash Balance	$16.6	$11.3	$8.2	$8.2
Cash Financing of CIP $	$7.0	$10.6	$17.8	$19.1
DWF CIP	$39.4	$42.3	$71.1	$76.4
% of DWF CIP	18%	25%	25%	25%

Table II-3 Notes:
1) Year End Cash balance is forecasted by line of business for financial planning purposes. The Drainage and Wastewater Operating Fund does not separate cash transactions by line of business. Therefore, line of business "actual" year-end cash is estimated based on service revenues and expense allocations.
2) Cash Financing of CIP amounts do not include associated taxes.
3) Percent of CIP includes financing from rate revenue, capital grants, and other contributions in aid of construction.

III. REVENUE REQUIREMENTS

The revenue requirement is the minimum amount of operating revenue required to simultaneously meet cash funding requirements and financial policy targets related to net income, cash balances, cash financing of the CIP, and debt service coverage. The component requiring the greatest amount of revenue generation (cash expenses or one of the financial policy requirements) is termed the "binding constraint." For this 2008 and 2009 rate proposal, the binding constraint was the sum of cash required to meet year-end cash balance and CIP cash financing targets. In addition, cash financing of CIP is projected to meet the DWF fund target of 25 percent in 2008 and 2009. The rates revenue requirement is equal to the total revenue requirement necessary to meet the binding constraint, less any non-rates revenues. Drainage and wastewater service fees (or "rates revenues") typically account for over 95 percent of drainage and wastewater revenues. Non-rate drainage revenues include permit fees, miscellaneous operating revenues, interest income, operating grants, capital grants, and contributions in aid of construction (CIAC). Assuming constant demand, rate increases are required to fund increases in the revenue requirement from one rate setting period to the next.

Tables III-1 and III-2 summarize the components of change in the drainage and wastewater revenue requirement from 2007 to 2009. The top sections of these tables present the components of expense which make up the total revenue requirement. The bottom section of the table presents other sources of funding which reduce the amount of expense which must be recovered through direct service rates.

Table III-1
Components of the Change in the Drainage Revenue Requirement

($ millions)	2007 Rev Req	2008 Rev Req	2008 $ Change	2009 Rev Req	2009 $ Change
Expense					
O&M					
Base O&M	$28.2	$30.0	$1.8	$31.6	$1.6
New Operating Expense	$0.0	$1.4	$1.4	$2.1	$0.7
Total	$28.2	$31.4	$3.2	$33.7	$2.3
Capital Financing					
Cash	$3.8	$7.6	$3.8	$8.3	$0.7
Debt Service	$13.9	$12.2	($1.7)	$13.8	$1.6
Total	$17.7	$19.8	$2.1	$22.1	$2.3
Total Revenue Requirement	**$45.9**	**$51.2**	**$5.3**	**$55.8**	**$4.6**
Other Funding Sources					
Non-Rates Revenue	($2.6)	($2.5)	$0.1	($2.4)	$0.1
Cash Balance	($4.1)	$0.0	$4.1	$0.0	$0.0
Total	($6.7)	($2.5)	$4.2	($2.4)	$0.1
Net Rates Rev Req Before Combined System Shift	**$39.2**	**$48.7**	**$9.5**	**$53.4**	**$4.7**
Combined System	$0.0	$2.4	$2.4	$5.1	$2.7
Net Rates Rev Req After Combined System Shift	**$39.2**	**$51.1**	**$11.9**	**$58.5**	**$7.4**

Table III-1 Notes:
All line items include the tax impact associated with increasing or reducing the revenue requirement. For example, the 2008 projected pre-tax change in new operating expense is $1.2 million while the change in the new operating expense revenue requirement presented in the Table III-1 is $1.4 million. The difference of $0.2 million is equal to the revenue taxes which must be paid on the additional revenue required to fund an additional $1.4 million in operating expense.

Table III-2
Components of the Change in the Wastewater Revenue Requirement

($ millions)	2007 Rev Req	2008 Rev Req	2008 $ Change	2009 Rev Req	2009 $ Change
Expense					
O&M					
Base O&M	$143.6	$144.9	$1.3	$145.5	$0.6
New Operating Expense	$0.0	$1.3	$1.3	$1.4	$0.0
Total	$143.6	$146.2	$2.6	$146.9	$0.6
Capital Financing					
Cash	$8.4	$13.3	$4.9	$14.5	$1.2
Debt Service	$14.0	$18.0	$4.0	$20.4	$2.4
Total	$22.4	$31.3	$8.9	$34.9	$3.6
Total Revenue Requirement	**$166.0**	**$177.5**	**$11.5**	**$181.8**	**$4.2**
Other Funding Sources					
Non-Rates Revenue	($5.2)	($5.5)	($0.3)	($5.5)	$0.0
Cash Balance	($2.4)	($4.1)	($1.7)	($0.6)	$3.5
Total	($7.6)	($9.6)	($2.0)	($6.1)	$3.5
Net Rates Rev Req Before Combined System Shift	**$158.4**	**$167.9**	**$9.5**	**$175.7**	**$7.7**
Combined System	$0.0	($2.9)	($2.9)	($6.1)	($3.2)
Net Rates Rev Req After Combined System Shift	**$158.4**	**$165.0**	**$6.6**	**$169.6**	**$4.5**

Table III-2 Notes:
1) All line items include the tax impact associated with increasing or reducing the revenue requirement. For example, the 2008 projected pre-tax change in new operating expense is $1.1 million while the change in the new operating expense revenue requirement presented in the Table III-1 is $1.3 million. The difference of $0.2 million is equal to the revenue taxes which must be paid on the additional revenue required to fund an additional $1.3 million in operating expense.
2) Total Net Rates revenue requirement does not include industrial surcharge.

The following is a more detailed description of the components of change in the revenue requirement.

OPERATIONS AND MAINTENANCE (O&M)

The drainage and wastewater O&M revenue requirement includes a portion of DWF shared administrative expense, as well as direct operating expense associated with managing sanitary sewer and stormwater programs (i.e., regulatory oversight, community outreach and education) and aggressive maintenance of system infrastructure. As operating expenses are budgeted for the DWF as a whole and not by line of business (drainage or wastewater), operating expenses must be assigned to each line of business in order to establish separate revenue requirements

for rate-setting purposes. The factors used to assign expense between the two lines of business are periodically updated which can result in changes in the share of expense paid by either drainage or wastewater.

Base O&M Expense

The base O&M for 2008 is assumed to equal the spending required to support operations and maintenance functions budgeted under the 2008 Endorsed Budget, including any adjustments identified to date. Base O&M does not include debt service which is discussed under capital financing.

Drainage

In this rate proposal, base drainage O&M increases in 2008 by $1.8 million due to the following factors:

- An increase of $0.9 million in drainage's allocation of shared drainage and wastewater expense due to changes made to cost allocation factors to more accurately reflect recent staff effort (see "Allocation Revision in Detail" below).
- An increase of $0.9 million for general inflation.
- An increase in G&A credit of $0.6 million (which decreases the revenue requirement).
- An increase of $0.4 million for baseline adjustments and other costs. (See Table III-5).
- An increase of $0.2 million in taxes associated with the overall change in base O&M.

The 2009 base drainage O&M increases by $1.3 million, due primarily to inflation and the impact of dissolving the Engineering Services Fund.

Wastewater

The 2008 wastewater O&M expenses for current programs increases by $1.3 million due to the following factors:

- A decrease of $0.9 million due to the changes made to labor-based allocation factors (see "Allocation Revision in Detail" below).
- An increase of $0.9 million for general inflation.
- An increase in G&A credit of $0.2 million (which decreases the revenue requirement).
- An increase of $0.7 million for baseline adjustments and other costs. (See Table III-5).
- An increase of $0.4 million in taxes associated with the overall change in base O&M.

The 2009 base wastewater O&M increases $0.6 million. This is primarily due to inflation increases and the impact of dissolving the Engineering Services Fund. These increases are partially offset by a decrease in expensed CIP.

Allocation Revision in Detail

Operating expenses are budgeted for the DWF as a whole and not by line of business (drainage or wastewater). Consequently, operating expenses must be assigned to each line of business in order to establish separate revenue requirements for rate-setting purposes.

SPU has developed a series of factors to assign cost, by budget activity, to drainage and to wastewater.

The DWF budgeted O&M expenses include both line-of-business-specific expenses (e.g., water quality monitoring or wastewater treatment), as well as shared administrative and business support expense. Shared expenses are assigned to each line of business based on prior period actual direct labor expense or on management estimate (where labor expense is not appropriate).

As part of the current rate study, SPU reviewed the existing labor-based cost assignment factors and adjusted them based on 2006 actual spending. While some branches saw increases in the drainage share, the net cost shift as a result of this update was from drainage to wastewater.

Table III-3 presents a summary of 2008 cost assignment changes by branch.

Table III-3
Change in Drainage Share of DWF Base O&M Spending
($1,000s)

		2008 Drainage		
Program	**Total DWF**	**(2005 Base)**	**(2006 Base)**	**Change**
Customer Service	$7,132	$1,316	$1,329	$13
Director's Office	$1,531	$706	$677	($29)
Engineering Services	$2,707	$2,499	$2,254	($245)
Field Operations	$13,163	$5,856	$6,058	$202
Finance & Administration	$5,894	$2,708	$2,597	($111)
G&A Credit	($4,372)	($2,227)	($2,364)	($137)
Science,Sustainability & Wshed	$4,141	$3,594	$3,720	$126
SPU General Expenses	$8,999	$4,189	$3,907	($282)
Utility Systems Mgmt	$6,385	$2,715	$2,819	$104
Total Drainage	**$45,582**	**$21,356**	**$20,997**	**($359)**

The change in allocation based on 2006 actual data shifts $0.4 million from drainage to wastewater.

In the 2007 drainage rate study, a similar update in allocation resulted in a $2.3 million shift from wastewater to drainage. SPU policy caps intra-fund changes at $1 million per fund per year. Any change in excess of this amount is carried forward to the next year(s). This policy assists in smoothing budgetary impacts of significant cost assignment shifts which may be the result of temporary spending anomalies. In the 2007 drainage rate study SPU applied this same policy to revisions in cost assignment between drainage and wastewater and assumed that $1.0 million of the total $2.3 million shift from wastewater to drainage was applied in 2007. The remaining $1.3 million shift to drainage was targeted to be netted against other cost allocation revisions in 2008.

The net effect of the current allocation shift of $0.4 million from drainage to wastewater and the 2007 $1.3 million cost allocation carryover from wastewater to drainage is a $0.9 million cost shift to drainage which is reflected in 2008 drainage and wastewater revenue requirements. As a result, the entire $1.3 million carryover from the 2007 study has been accounted for in the development of the 2008 revenue requirements.

Appendix C provides more detailed information on the cost assignment process.

Table III-4 presents proposed 2008 and 2009 O&M spending increases by source.

Table III-4
Proposed Changes in Base O&M Expenditures
($ in millions)

	2008 Drainage Increase	2008 WW Increase	2009 Incremental Drainage Increase	2009 Incremental WW Increase
Base O&M				
Drainage/Wastewater Allocation Revisions	$0.9	($0.9)	$0.0	$0.0
Inflation	$0.9	$0.9	$1.0	$1.1
Change in G&A Credit	($0.6)	$0.2	($0.2)	$0.2
Baseline Adjustments/Miscellaneous	$0.4	$0.7	$0.7	($0.9)
Taxes	$0.2	$0.3	$0.2	$0.2
Total Change in Revenue Requirement	**$1.8**	**$1.3**	**$1.6**	**$0.6**

Table III-5 summarizes 2008 DWF O&M baseline adjustments.

Table III-5
Proposed 2008 Baseline Adjustments
Operations and Maintenance Expense
($1,000s)

Item	Description	Total DWF
Customer Service	Additional funds consistent with the Memorandum of Agreement with Seattle City Light for CCSS. Also includes additional funds for 5.0 new FTEs in the Call Center and increased postage costs for customer bills.	$234
Diversity/RSJ/ Environmental Justice	Funds to provide Race & Social Justice training to all SPU employees, to support various diversity efforts in the department, and to support environmental justice activities in the community.	$56
Information Technology	Funds to cover increasing software compliance costs, maintenance of new applications, and after-hours support for critical IT infrastructure (network, servers) and critical applications (Maximo, GIS).	$75
Financial Audit	Additional funds for the increased contract amount with SPU's external auditor. On an annual basis, an outside firm conducts an audit of SPU's financial statements and purveyor statements.	$16
West Nile Virus	This funds SPU's Catch Basin Mosquito Control program, which is designed to reduce the risks of transmission of mosquito-borne diseases such as West Nile Virus.	$955
Total		**$1,336**

New Operations and Maintenance Expense

The proposed 2008 and 2009 drainage and wastewater O&M additions support several new programs, along with addressing current regulatory requirements.

SPU is proposing a $2.4 million increase (plus $0.3 for associated taxes) in the 2008 DWF revenue requirement to fund expanded and/or new operations programs, including National Pollutant Discharge Elimination System (NPDES) requirements, flow monitoring for capacity-deficient areas, transitioning to the Integrated Supervisory Control and Data Acquisition (I-SCADA) system, Maximo support staff and additional field resource needs.

For 2009, SPU is proposing an additional $0.6 million increase (plus $0.1 for associated taxes) in the 2009 DWF revenue requirement for expenses associated primarily with NPDES requirements, field resource needs, and drainage billing inspection.

Tables III-6 and III-7 summarize proposed new expenses by line item.

Table III-6
Proposed 2008 New Drainage/Wastewater Operations and Maintenance Expense ($1,000s)

Item	Description	Drainage	WW	Total
Field Crews	Additional funds needed to meet field resource needs for O&M backlogs and new NPDES requirements (e.g. catch basin cleaning).	$290	$290	$581
Creek/ Ponds Maintenance	Additional costs for dredging and general creek maintenance work to address flooding concerns at creeks and detention ponds.	$21	$0	$21
Surface Water NPDES Program	Requirements per the new permit in the areas of source control, illicit connections, monitoring, inspections, and education and outreach.	$669	$0	$669
Nine Minimum Controls Compliance	Document compliance with the CSO NPDES permit, which requires that the utility comply with the Nine Minimum Controls. 3-year effort (2008-2010) of documenting O&M activities, identifying gaps in compliance, and implementing recommendations to fill gaps.	$78	$78	$156
Capacity Monitoring	Address capacity deficiencies in the wastewater conveyance system. Implement the recommendations of the Wastewater Systems Plan for 19 wastewater "capacity at-risk" priority areas.	$0	$311	$311
SW Suburban Sewer Area Capacity Analysis	Participation with SW Suburban Sewer District in an inflow and infiltration study to determine if there is excessive stormwater entering the sewer system from Seattle's portion of the system and determine the amount of treatment capacity that SPU is using relative to the amount purchased.	$0	$104	$104
I-SCADA Implementation	Transition to the I-SCADA system. New staffing to maintain SCADA equipment, monitor data, and perform data QA/QC. Additional funding will allow for staff training & development and a short period where the old and new systems will run in parallel.	$62	$249	$311
Maximo Support	Additional funds for Maximo, SPU's work management system, which will allow SPU to adequately schedule work for crews, analyze data, and prepare reports.	$88	$88	$176
DWW Education/Outreach	Provide information to customers, key business groups, and special interest groups regarding side sewers, FOG Abatement, source control, and stormwater management.	$39	$39	$78
High Point NDS Project	Reduction due to completion of grant and match for education and outreach required.	($43)	$0	($43)
TOTAL		**$1,204**	**$1,159**	**$2,363**

Table III-6 Notes: All amounts are before taxes.

Table III-7
Proposed Incremental 2009 New Drainage/Wastewater
Operations and Maintenance Expense
($1,000s)

Item	Description	Drainage	WW	Total
Field Crews	Additional funds needed to meet field resource needs for O&M backlogs and new NPDES requirements (e.g. catch basin cleaning).	$151	$151	$301
Surface Water NPDES Program	Requirements per the new permit in the areas of source control, illicit connections, monitoring, inspections, and education and outreach.	$290	$0	$290
I-SCADA Implementation	Transition to the I-SCADA system. New staffing to maintain SCADA equipment, monitor data, and perform data QA/QC. Additional funding will allow for staff training & development and a short period where the old and new systems will run in parallel.	($43)	($172)	($215)
Maximo Support	Additional funds for Maximo, SPU's work management system, which will allow SPU to adequately schedule work for crews, analyze data, and prepare reports.	$45	$45	$90
Drainage Billing System Inspection	Inspectors to verify pervious and impervious areas on parcels for drainage rate charges. Admin to support inspectors and handle documentation.	$215	$0	$215
TOTAL		**$658**	**$24**	**$682**

Table III-7 Notes: All amounts are before taxes.

CAPITAL FINANCING EXPENSE

DWF funds capital projects through a combination of cash (from direct service and non-rates revenue) and debt financing (revenue bonds). Major drainage capital programs to be funded in 2008 and 2009 include:

- Madison Valley (Long Term Solution);
- South Park Storm Drainage/Water Quality Study;
- Thornton Creek Water Quality Channel;
- Windermere & South Henderson CSO;
- MLK/Norfolk Storm Improvement/Water Quality Study; and
- Preliminary Alaska Way Viaduct Replacement Work.

Debt Service

SPU is projected to issue approximately $83.2 million in new DWF revenue bonds in April 2008. These bonds are expected to fund a portion[5] of drainage and wastewater capital improvements between April 2008 and November 2009. In November 2009 SPU projects another revenue bond issue in the amount of $81.9 million.

[5] Current revenues (cash) fund the balance of capital improvements.

This rate study implements a change in methodology on assigning debt service between drainage and wastewater. Prior to 2008, debt service was allocated between drainage and wastewater based on the projected use of revenue bond proceeds by each line of business ("cash basis") Beginning in 2008, annual debt service is proportioned between drainage and wastewater based on the net book value of current fixed assets ("asset basis"). This revised methodology, which is similar to that used by SPU's Water and Solid Waste funds, provides a tighter correlation between financing expense and the assets actually financed. . The change from a cash to asset based allocation methodology results in less debt service being assigned to drainage.

Drainage

The methodology change on assigning debt service between drainage and wastewater decreases the drainage revenue requirement by $2.8 million. The 2008 revenue bonds will increase the drainage revenue requirement by $1.1 million. The combined impact of these two factors is a net decrease of $1.7 million in the drainage revenue requirement.

In 2009, a $1.6 million increase in drainage revenue requirement is primarily due to increased debt service associated with the 2008 and 2009 bond issues.

Wastewater

The 2008 wastewater revenue requirement increases by $4.0 million due to the combined effect of a $1.2 million increase in overall debt service (as a result of the April 2008 bond issue) and a $2.8 million increase in the wastewater portion of debt service due to the revision in debt service allocation methodology.

The 2009 wastewater revenue requirement will increase by a total of $2.4 million as a result of the new bond issues.

CIP Cash Financing

In 2003 Council established, via resolution, a 25 percent minimum CIP cash financing target for the Drainage and Wastewater Fund beginning in 2007.

As previously discussed in "Section II - Financial Overview," financial policy targets are set at overall DWF financial performance. The drainage and wastewater programs do not have separate targets. SPU may meet these financial targets by balancing revenue requirements and rate changes between wastewater and drainage.

Specifically, in 2008 the drainage rates will finance 16.6 percent of Drainage CIP while wastewater rates will finance 36.5 percent of wastewater CIP. The combined result to the Drainage and Wastewater Fund (DWF) as a whole will be 25 percent, meeting the fund policy target.

Drainage

The proposed 2008 drainage rate increase assumes a $3.8 million increase in drainage cash financing of the CIP from 2007 due primarily to a $20 million increase in the 2008 CIP.

For 2009, the proposed drainage rates assume a $0.7 million increase in the drainage cash financing of the CIP from 2008 to 2009 due to a higher CIP.

Wastewater

The proposed 2008 wastewater rate increase assumes a $4.9 million increase in wastewater cash financing of the CIP from 2007 to 2008. This is the due to an increase in wastewater CIP in 2008, plus a lesser impact of an increase in the cash finance CIP from 34.1 percent to 36.5 percent in 2008.

For 2009, the proposed wastewater rates assume a $1.2 million increase in the wastewater cash financing of the CIP due to higher CIP and a slight increase in the cash financing of the CIP.

In order to help mitigate overall drainage rate increases, under this proposal wastewater relies on cash balances funding a higher percentage of CIP. The fund as a whole is projected to meet the financial target of 25 percent in both 2008 and 2009.

Table III-7 summarizes the drivers underlying these changes.

Table III-7
Change in Drainage/Wastewater Cash Financing of the CIP
($1,000s)

	Drainage		Wastewater	
	2008	**2009**	**2008**	**2009**
Change in Cash Financing due to:				
Increase in CIP	$3,090	$640	$3,729	$519
Change in % Cash Contribution	$174	($21)	$522	$566
Revenue Taxes	$487	$92	$657	$168
Total Change from Previous Year	**$3,752**	**$711**	**$4,908**	**$1,254**

Table III-7 Notes:
1) For 2008 and 2009 a 90 percent accomplishment of the DWF CIP is assumed.
2) The cash financing of CIP change due to the Combined System shift is incorporated under "Combined System Cost Allocation."

USE OF CASH BALANCES

Revenue generated by rates is used to fund current operating expenses, maintain a cash balance as a safeguard against unexpected expense, and to fund a portion of the current capital program. Net cash revenue is equal to total cash revenue less total cash expense and for a given year net cash revenue may be positive or negative. This differs from net income which includes non-cash items such as depreciation and amortization and excludes cash expenses such as debt service principal payments. A change in net cash revenue from one rate period to the next will impact the revenue requirement. An increase in total net cash revenue will drive a revenue requirement increase while a decrease will reduce the revenue requirement.

Drainage

Cash in excess of the 2006 target is projected to be utilized to fund 2007 operating expenses in excess of those projected when 2007 rates were set. In order to meet the 2008 year-end cash target, the proposed 2008 drainage rates are set to produce higher net cash revenue than 2007, which translates to a $4.1 million increase to the 2008 revenue requirement.

The 2009 net cash revenue change from 2008 is zero, thus there is no impact on the 2009 revenue requirement.

Wastewater

Cash in excess of the 2007 target will be used to fund 2008 expenses, thus decreasing the amount that must be funded from a wastewater rate increase. As a result, 2008 net cash revenue is lower than in 2007, which decreases by $1.7 million the amount that rates revenues must fund of the 2008 wastewater revenue requirement.

In 2009, wastewater revenues must increase by $3.5 million to generate net cash revenue sufficient to fund expenses and build cash balances back up to meet year-end cash targets.

Table III-8 summarizes the revenue requirement impacts as a result of changes in cash balances.

Table III-8
Change in Net Cash Revenue
($1,000s)

Drainage

	2007	2008	2009
Beginning Cash Balance	$4,606	$1,000	$1,000
Ending Cash Balance	$1,000	$1,000	$1,000
Net Cash Revenue minus Beginning Balance	($3,606)	$0	($0)
Change in Net Cash Revenue		$3,606	($0)
Change in Revenue Taxes		$537	$0
Net Change to Revenue Requirement		$4,143	($0)

Wastewater

	2007	2008	2009
Beginning Cash Balance	$11,944	$10,314	$7,176
Ending Cash Balance	$10,314	$7,176	$7,153
Net Cash Revenue minus Beginning Balance	($1,630)	($3,138)	($23)
Change in Net Cash Revenue		($1,508)	$3,115
Change in Revenue Taxes		($236)	$427
Net Change to Revenue Requirement		($1,743)	$3,542

The fund as a whole is projected to meet the financial year end cash balance target of one month of the wastewater treatment expense in both 2008 and 2009. Table III-9 compares the DWF year-ending cash balance to the fund target.

Table III-9
DWF Cash Balance
($1,000s)

	2007	2008	2009
Ending Cash Balance	**$11,314**	**$8,176**	**$8,153**
Financial Policy Target (1/12th of treatment expense)	**$8,214**	**$8,176**	**$8,153**

Table III-9 Notes:
Projected and targeted cash balances assume no change in the King County treatment rate; however King County is projecting an 18 percent increase in its 2009 treatment rate.

NON-RATE REVENUES

Non-rate revenue includes permit fees, operating and capital grants, contributions in aid of construction (CIAC), interest income and 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.

Drainage

Changes in non-operating revenues result in revenue requirement increases of $0.1 million for both 2008 and 2009.

Wastewater

An increase in other operating revenues primarily due to a one-time 2007 adjustment decreases the 2008 revenue requirement by $0.3 million. The non-rate revenue change for 2009 is zero.

COMBINED SYSTEM COST ALLOCATION

The new drainage rate design methodology recommends that drainage rates fund a share of the expense associated with the combined portions of the drainage and wastewater system. Historically, these costs have been assigned entirely to the wastewater line of business. In reality, a portion of combined sewer pipes and combined sewer overflow (CSO) structures support the drainage system. In order to avoid the impact of a one-time significant cost shift to drainage, this rate study includes a phased-in sharing of combined system costs between wastewater and drainage beginning in 2008, when one-sixth of the appropriate share of Combined System costs will be allocated to drainage. In 2009, another one-sixth (for a total of two-sixths) will be allocated to drainage rates.

Drainage

Phasing in one-sixth of the allocation of combined system costs increases the 2008 drainage revenue requirement by $2.4 million. This increase consists of drainage receiving a share of the following combined system costs: 1) cash financing of combined pipe and CSO structure capital expense; 2) wastewater treatment expense; 3) debt service related to combined system (pipes and CSOs) infrastructure; and 4) O&M expense related to the combined system such as combined pipe cleaning and maintenance. In 2009 the impact of an additional one-sixth cost shift increases the revenue requirement by an incremental $2.7 million.

Wastewater

Phasing-in one-sixth of the allocation of combined system costs decreases the 2008 wastewater revenue requirement by $2.9 million as these costs shift to the drainage revenue requirement. In 2009 the impact of an additional one-sixth cost shift decreases the wastewater revenue requirement by $3.2 million.

IV. DRAINAGE COST ALLOCATION / RATE DESIGN

GENERAL

Once the revenue requirement is set, it must be apportioned between different customer classes. The process of determining the cost of service for each customer class is termed "cost allocation." The rate structure used to recover a rate class' cost of service from customers within that class is termed "rate design" This section of the rate study reviews the major changes proposed under the revised rate design and cost allocation methodology, describes the cost allocation process, and finally proposes 2008 and 2009 drainage rates by class under the new rate design.

CURRENT RATE DESIGN/COST ALLOCATION

All properties in Seattle, except city streets and state highways, are charged a drainage service fee. Docks and other similar properties, which rest over natural water bodies, are also exempt from drainage fees. Currently, all single-family homes and duplexes are assumed to be moderately impervious and pay a flat fee per parcel. All other properties are assigned to one of six rate groups and are charged based on percent impervious area and actual parcel size. The exception is the current Open Space rate category, which is reserved for parcels included on the Mayor's Open Space Map (primarily City greenbelts). Costs are assigned to different customer classes based on the percentage of total parcels and total stormwater flow for each class.

King County administers billing and collections of the drainage fee for the City of Seattle. The drainage fee appears as a line item ("SWM" or Surface Water Management fee) on semi-annual King County property tax statements.

REVISED RATE DESIGN/COST ALLOCATION

Resolution 30886, approved by the City Council in February 2007, provided policy direction for the development of the 2008-2009 drainage rates and this rate study implements the recommended rate design changes which are highlighted as follows:

- Implements revised stormwater flow factor methodology determining the allocation of costs between customer classes.
- Implements a new residential rate structure which creates four rate tiers for parcels less than 10,000 square feet based on parcel size:

Sub-Tier A	Less than 3,000 SF
Sub-Tier B	3,000 to less than 5,000 SF
Sub-Tier C	5,000 to less than 7,000 SF
Sub-Tier D	7,000 to 10,000 SF

- Treats residential parcels at or above 10,000 square feet in the same manner as General Service parcels.
- Splits the three General Service rate tiers of Undeveloped, Light and Medium into "Low-Impact" and residual "Regular" sub-tiers based on calculated runoff rates for these parcels. A customer qualifies for a Low Impact rate if their parcel includes a significant amount of highly infiltrative pervious surface (good forest or unmanaged grass) which results in their average stormwater runoff being below the parcel runoff threshold for each tier.

- Eliminates General Service Tier 7 ("Open Space") and incorporate current parcels into the tier assignment rules for other General Service tiers.

DRAINAGE FLOW FACTORS

SPU's costs for constructing, maintaining and administering the drainage system consist of operations and maintenance (O&M) costs, capital and other costs, and taxes. The costs-of-service imposed on the system by a given customer (or parcel) are determined primarily by two factors: 1) an estimate of the total flow of stormwater that runs off into SPU's drainage system; and 2) the size of a customer's parcel. For the purposes of cost allocation, the amount of stormwater reaching SPU's system, for a customer class, is calculated by the following equation:

$$Total\ Flow_i = Flow\ Factor_i\ x\ Area_i$$

A flow factor is an estimate of how much rainfall enters the storm drainage system for a given storm event. For purposes of this drainage rate study, flow factors are determined by two factors: 1) the type of surface; and 2) the intensity of the storm. Surface type characterizes how absorptive the cover type of a given surface is. Impervious surface absorbs less runoff than pervious, or porous surface, and therefore generates more stormwater runoff during a given storm event. Likewise, pervious surface with significant ground and tree cover will generate less runoff than highly managed pervious surface such as a lawn The more intense the storm, the greater the runoff for all surface types.

Previously, SPU recognized only two surface types for cost allocation: impervious and pervious surfaces. The runoff factors for these two surface types were estimated to be 95 percent for impervious surfaces, such as asphalt, and 10 percent for pervious surfaces, such as vacant land or parks. Flow factors for each customer class were based on the proportion of pervious and impervious surface area for each class. This approach did not explicitly account for differences in runoff due to different storm events and differing pervious cover types.

Following an extensive review, SPU was able to update these runoff factors to more accurately reflect: 1) the stormwater runoff generated by storm events of differing intensities; and 2) runoff factors for four, rather than two, surface types. SPU's cost allocation now utilizes four different types of storm events, each with its own runoff factor for each of the four new surface types. The four types of storm events are:

- 25 Year;
- 2 Year;
- 6 Month; and
- Average Storm.

The new rate design also breaks pervious surfaces into three subtypes: managed grass, unmanaged grass and good forest. Each of these surface types has different runoff factors for the different storm events. The availability of new aerial photo and other data allows SPU to assign properties to the new pervious surface categories and therefore create more accurate flow estimates from individual properties and customer rate classes. The revised flow factors indicate that there is less runoff from impervious surfaces and more runoff from pervious surfaces than SPU's drainage rates have historically assumed, particularly during high intensity storm events.

Table IV-1 summarizes the revised flow factors by surface type and storm event.

Table IV-1
Expanded Storm-Specific, Surface-Specific Flow Factors

Surface Type	Average storm	6-month storm	2-year storm	25-year Storm
Impervious- All Types	61.3%	84.8%	89.0%	92.5%
Pervious – All Other	2.2%	31.4%	43.3%	56.4%
Pervious – Unmanaged Grass	2.1%	11.4%	21.4%	34.9%
Pervious – Good Forest	2.0%	4.8%	12.7%	24.9%

These four factors, for each surface type, are reduced to a single runoff factor for a given surface type by weighting the storm events based on an analysis of drainage cost of service. The development of the weightings by storm event is described in the section, "Cost Classifications and Allocation Factors, with the weightings summarized in Table IV-5." Table IV-2 shows the results of the weighting by surface type:

Table IV-2
Weighted Flow Factors by Surface Type

Surface Type	**Weighted Flow Factor**
Impervious - All Types	78.1%
Pervious - Managed Grass	27.9%
Pervious - Unmanaged Grass	15.1%
Pervious - Good Forest	9.8%

The weighted flow factors are applied to customer level data by surface type in order to estimate the total stormwater runoff, which determines if a parcel qualifies for a Low-Impact sub-tier.

COST CLASSIFICATIONS AND ALLOCATION FACTORS

Drainage costs are grouped into three cost classifications, along with a fourth category for certain credits and allowances:

1) Operations & Maintenance (O&M) Costs;
2) Capital & Other Costs;
3) Taxes; and
4) Low Income Credits / Non Payments / Drainage Rate Credits

The first three items above are allocated between customer classes based on parcel count or stormwater flow. Costs allocated based on flow are assigned to different storm events in order to determine a weighted cost of service by storm event. Most capital expense and O&M infrastructure maintenance expense are allocated to the storm event(s) which the associated infrastructure is designed to manage, with the exception of pipe expense which is allocated between storm events using an incremental cost approach. Flow allocated expenses not directly related to a specific type of infrastructure are typically assigned to the average storm event.

Operations & Maintenance (O&M) Costs

O&M costs are associated with managing stormwater runoff volumes and their impact on the aquatic environment. These costs include infrastructure maintenance and repair (pipes, culverts, detention systems, etc.), regulatory oversight, water quality monitoring, and support services. In addition, beginning in 2008 a portion of the sewer treatment expense is assigned to drainage as part of the Combined System cost shift. In 2008 proposed drainage O&M totals $24.9 million, or 48 percent of total drainage rates revenue requirement. Total 2009 drainage O&M is $28.8 million, or 49 percent of the total rates revenue requirement.

O&M costs are broken down into three cost groups:

- Billing;
- King County Treatment; and
- Other O&M.

Billing costs are assigned to a "Parcel" cost group and are eventually allocated to customer rate groups based on parcel counts. The drainage portion of King County Treatment costs is assigned 100 percent to a 2 Year storm event. "Other O&M" costs are allocated between four types of storm events based on an analysis of 2006 actual O&M and the types of assets these costs support. The storm events are:

- 25 Year;
- 2 Year;
- 6 Month; and
- Average Storm.

For example, cost associated with drainage cleaning and inspection are split 50/50 percent to 25-year storm events and 50 percent to six-month storms. This is an example of costs that would fall under the "Other O&M" cost group.

Table IV-3 shows a summary of the percents allocation of drainage O&M costs by storm event.

Table IV-3
Summary of O&M Allocation by Storm Event

	25 Year	2 Year	6 MO	Average Storm	Parcel	Total
O&M-KC CSO's	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
O&M Billing	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%
Other O&M	9.3%	0.4%	10.0%	78.0%	2.3%	100.0%

Capital & Other Costs

Capital & Other Costs includes debt service payments and any other cash requirements necessary to support current operations and financial policy targets, such as cash financing of the CIP. Capital & Other drainage expenses total $19.6 million in 2008, or 38 percent of the total rates revenue requirement. Total Capital & Other drainage expenses for 2009 are $21.9 million, or 37 percent of total rates revenue requirement. Capital & Other costs are

allocated to the following five asset groups based on an analysis of the net book value of existing drainage assets as of December 31, 2006:

- Pipe;
- CSO;
- Billing System;
- Water Quality Facility; and
- Other Assets.

Similar to O&M, each of the assets groups, except Billing System, are further allocated between four types of storm events based on the types of assets in each group and the types of storm events each is intended to support:

- 25 Year;
- 2 Year;
- 6 Month; and
- Average Storm.

For example, the net book value of a sewer pipe addition would be assigned to the "Pipe" asset group, which would further be split to assign 50 percent to the 25-year storm event and the other 50 percent to the 6-month storm event.

Table IV-4 summarizes the asset group allocations by storm event:

Table IV-4
Summary of Asset Allocation by Storm Event

	25 Year	2 Year	6 MO	Average Storm	Parcel	Total
CSO	0.0%	100.0%	0.0%	0.0%	0.0%	100.0%
Pipe	50.0%	0.0%	50.0%	0.0%	0.0%	100.0%
WQ Facility	0.0%	0.0%	100.0%	0.0%	0.0%	100.0%
Total Other Assets	46.2%	12.9%	13.2%	27.7%	0.0%	100.0%
Billing System	0.0%	0.0%	0.0%	0.0%	100.0%	100.0%

Taxes

Assuming the proposed rate increases, taxes on drainage revenue (City B&O and State and other taxes) are projected to total $6.6 million in 2008 and $7.6 million in 2009. This represents approximately 13 percent of total drainage rate expenses. Taxes are allocated among the storm events based on each event's respective share of total O&M and Capital & Other cost.

Low Income Credits / Non Payments / Drainage Rate Credits

Drainage rates must be set at a sufficient level to allow for the fact that certain customers receive a low income credit equal to one-half of their drainage rates and SPU will not receive payment for a small portion of drainage bills. In addition, SPU plans to offer a

drainage rate credit program beginning in 2009. These allowances and rate credit impacts are incorporated in order that the total received drainage revenues will match the total drainage revenue requirement.

Once each of the cost categories are allocated to the four storm events, the total cost is summarized and used to develop an overall cost weighting by storm event, which is used to calculate the weighted flow factors by surface type in Table IV-2. Tables IV-5 summarizes the allocations by storm event.

Table IV-5
Cost Weighting by Storm Event

	Avg Storm	6 Month	2 Year	25 Year	Total
Weighting by Storm Event	39.4%	17.6%	20.7%	22.3%	100.0%

Table IV-5 Notes:
For purposes of developing the weightings by storm event, costs impacted by the Combined System cost shift assumed the complete cost allocation shift from wastewater to drainage.

LOW IMPACT THRESHOLD

General Service/Large Residential Customers in the Undeveloped, Light or Medium rate tiers may qualify for a Low Impact rate if their estimated stormwater runoff is below the parcel runoff threshold. Table IV-6 below illustrates how the threshold value for a parcel's runoff is calculated for each tier. For example, for the Light rate tier, the impervious flow factor (from Table IV-2) above receives a 16 percent weight in the calculation, while the Other Pervious Flow Factor receives a weighting of 84 percent. Consequently, the Light rate tier Low Impact threshold equals 35.9% ((78.1% * 16%) + (27.9% * 84%)).

Table IV-6
Thresholds for Low Impact Rates

	Impervious Flow Factor	Weighting	Other Pervious Flow Factor	Weighting	Parcel Runoff Threshold for Low Impact
Undeveloped	78.1%	0%	27.9%	100%	**27.9%**
Light	78.1%	16%	27.9%	84%	**35.9%**
Medium	78.1%	36%	27.9%	64%	**46.0%**

Table IV-6 Notes:
The weight for the impervious flow factor is the lower end of each tier's impervious range, which requires a parcel to have some Unmanaged Grass and/or Good Forest pervious surface to qualify for the Low Impact rate.

CUSTOMER CLASS ASSIGNMENT PROCESS

Residential parcels less than 10,000 square feet are assigned to one of four sub-tiers based on parcel size. General Service/Large Residential parcels are assigned to individual customer classes using the weighted flow factors and Low Impact thresholds. The following steps summarize the customer class assignment process for a General Service/Large Residential parcel:

1. Determine the percent impervious for a parcel based on its impervious area as a percent of its total billable area.
2. Assign the parcel to one of five General Service/Large Residential rate tiers based on its percent impervious.
3. If a parcel is in the Undeveloped, Light or Medium rate tier, calculate the parcel runoff by multiplying each of the weighted flow factors in Table IV-2 times each of the parcel's areas by surface type.
4. Total the calculated runoff by surface type to determine the total runoff for a parcel and divide by the total billable area to determine the percent runoff.
5. If the percent runoff for a parcel is less than its rate tier's Low Impact Threshold, then the parcel qualifies for the Low Impact rate.

Table IV-7 summarizes information for each customer class.

Table IV-7
Drainage Customer Characteristics by Class

Customer Class		Percent Impervious	Parcel Count	Acres	Total Flow in Acres	Avg Runoff Factor
Small Residential						
Sub-Tier A	<3k sq. ft.		8,764	426	277	0.65
Sub-Tier B	3k to <5k sq. ft.		43,378	4,042	2,134	0.53
Sub-Tier C	5k to <7k sq. ft.		51,175	6,760	3,460	0.51
Sub-Tier D	7k to <10k sq. ft.		27,225	5,021	2,396	0.48
			130,542	**16,249**	**8,267**	
General Service/Large Residential						
Undeveloped	Low Impact	0-15%	1,968	2,520	455	0.18
	Regular	0-15%	5,262	2,544	773	0.30
Light	Low Impact	16-35%	474	681	205	0.30
	Regular	16-35%	5,930	2,662	1,075	0.40
Moderate	Low Impact	36-65%	360	580	254	0.44
	Regular	36-65%	10,167	3,642	1,940	0.53
Heavy		66-85%	6,543	3,312	2,168	0.65
Very Heavy		86-100%	10,373	5,997	4,554	0.76
			41,077	**21,937**	**11,425**	
Total			**171,619**	**38,186**	**19,691**	

Table IV-7 Notes:
Parcel and acreage data is from drainage billing system records as of May 2007.

Percent Impervious: The percentage of the parcel area that is covered by impervious surface (any hard or impermeable surface that is not green, grassy, growing vegetation or landscaped). Examples of impervious surfaces are pavement, blacktop, rooftops, parking lots, or patios. Impervious surface is used to determine the customer class assignment for General Service/Large Residential parcels.

Parcel Count: The Number of Parcels is the number of King County tax parcels within Seattle city limits.

Acres: The total parcel area and is used in the calculation of the total flow by customer class.

Total Flow in Acres: Equal to total estimated runoff for each customer class. This calculation approximates stormwater runoff that flows off the property into the public drainage system. Total flow is used to allocate the majority of drainage costs among the customer classes.

Average Runoff Factor: The average percentage of precipitation falling on parcels within a customer class that is expected to enter the drainage system as runoff. The overall runoff factor is calculated based on the total flow by customer class divided by total square footage.

COST OF SERVICE BY CUSTOMER CLASS

The total drainage cost of service is assigned to customer classes based primarily on an estimate of the stormwater runoff for each customer class. The development of the cost of service for each customer class can be summarized by the following steps:

1. The flow factors from Table IV-2 are applied to total acreage by surface type to arrive at an estimate of total runoff by surface type for each storm event. These estimates are used to determine the weighted cost allocation by surface type.
2. The weighted allocation factor for each surface type is split among customer classes based on acreage for each class. An exception is the parcel component of the revenue requirement which is allocated among customer classes based on parcel units.
3. The allocations for each customer class are summed to determine total cost allocation factor by customer class.
4. The total drainage revenue requirement is allocated to each customer class using the total cost allocation factors.

Table IV-8 shows a summary of proposed 2008 and 2009 drainage costs by cost classification.

Table IV-8
Drainage Cost of Service Summary

Customer Class		Total 2008 Cost	Percent of 2008 Cost	Total 2009 Cost	Percent of 2009 Cost
Small Residential		**$21,527,956**	**41.7%**	**$24,825,840**	**41.9%**
	Sub-Tier A	$786,749	1.5%	$897,400	1.5%
	Sub-Tier B	$5,652,353	10.9%	$6,456,471	10.9%
	Sub-Tier C	$9,012,205	17.5%	$10,296,532	17.4%
	Sub-Tier D	$6,076,649	11.8%	$6,946,813	11.7%
General Service/Large Residential		**$30,113,087**	**58.3%**	**$34,372,512**	**58.1%**
Undeveloped	Low Impact	$969,786	1.9%	$1,113,292	1.9%
	Regular	$1,615,813	3.1%	$1,858,180	3.1%
Light	Low Impact	$489,616	0.9%	$560,293	0.9%
	Regular	$2,539,101	4.9%	$2,908,116	4.9%
Moderate	Low Impact	$654,050	1.3%	$746,913	1.3%
	Regular	$5,060,977	9.8%	$5,779,186	9.8%
Heavy		$5,959,376	11.5%	$6,794,595	11.5%
Very Heavy		$12,824,367	24.8%	$14,611,936	24.7%
Total		**$51,641,042**	**100.0%**	**$59,198,352**	**100.0%**

Based on the above cost-of-service analysis, Residential rates will fund approximately 42 percent of the 2008 and 2009 revenue requirements, with General Service/Large Residential rates funding the remaining 58 percent.

PROPOSED DRAINAGE RATES

The cost of service by customer class and the billable units (parcels for Small Residential and thousand-square-foot units for General Service/Large Residential) are used to develop the proposed drainage rates. Table IV-9 presents proposed annual Small Residential drainage rates by sub-tier for 2008 and 2009.

Table IV-9
2008-2009 Proposed Annual Drainage Rates
Small Residential Per Parcel

Class (% impervious)		2007 Adopted	2008 Adopted System	2008 Adopted Treatment	2008 Adopted Total	2008 Change from '07	2009 Adopted System	2009 Adopted Treatment	2009 Adopted Total	2009 Change from '08
Small Residential, per parcel										
Sub-Tier A	<3k	$142.00	$89.38	$2.00	$91.38	-$50.62	$98.42	$3.98	$102.40	$11.01
Sub-Tier B	3k to <5k	$142.00	$129.75	$2.90	$132.65	-$9.35	$143.06	$5.78	$148.84	$16.20
Sub-Tier C	5k to <7k	$142.00	$175.35	$3.92	$179.27	$37.27	$193.39	$7.81	$201.20	$21.93
Sub-Tier D	7k to <10k	$142.00	$208.04	$4.96	$213.00	$71.00	$245.25	$9.91	$255.16	$42.16

Table IV-9 Notes:
All rates represent annual charges. Actual billing is on a bi-annual cycle.

Table IV-10 presents proposed annual General Service/Large Residential drainage rates by customer class for 2008 and 2009.

Table IV-10
2008-2009 Proposed Annual Drainage Rates
General Service/Large Residential Per 1,000 Square Feet

Class (% impervious)		2007 Adopted	2008 Adopted System	2008 Adopted Treatment	2008 Adopted Total	2008 Change from '07	2009 Adopted System	2009 Adopted Treatment	2009 Adopted Total	2009 Change from '08
General Service/ Large Residential, per 1000 sq. ft.										
Open Space (0-2%)		$4.30	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Undeveloped (0-15%)	Low Impact	$7.47	$8.89	$0.20	$9.09	$1.62	$9.75	$0.39	$10.14	$1.05
	Regular	$7.47	$10.89	$0.32	$11.21	$3.74	$16.12	$0.65	$16.77	$5.56
Light (16-35%)	Low Impact	$12.38	$16.62	$0.37	$16.99	$4.61	$18.16	$0.73	$18.89	$1.90
	Regular	$12.38	$18.09	$0.49	$18.58	$6.19	$24.11	$0.97	$25.08	$6.50
Moderate (36-65%)	Low Impact	$22.47	$26.05	$0.58	$26.63	$4.16	$28.41	$1.14	$29.55	$2.92
	Regular	$22.47	$32.12	$0.71	$32.83	$10.36	$35.02	$1.41	$36.43	$3.59
Heavy (66-85%)		$29.28	$41.60	$0.92	$42.52	$13.24	$45.28	$1.82	$47.10	$4.58
Very Heavy (86-100%)		$36.38	$49.44	$1.09	$50.53	$14.15	$53.78	$2.16	$55.94	$5.41

Table IV-10 Notes:
1) All rates represent annual charges. Actual billing is on a bi-annual cycle.
2) 2007 per-acre General Service rates have been converted to rates per-1,000 square feet for comparison purposes.

Table IV-11 presents sample bills for different types of drainage customers, using the proposed rates.

Table IV-11
2007-2009 Monthly Drainage Bills

	2007	2008	2009
Single Family Residence	$11.83	$13.74 Avg Range ($7.62 - $17.75)	$15.85 Avg Range ($8.53 - $21.26)
Convenience Store (8,700 sq. ft.)	$26.42	$36.63	$40.56
Supermarket (125,000 sq. ft.)	$379.06	$526.36	$582.69

Table IV-11 Notes:
Monthly bill amounts include the drainage treatment rate, which represents 2.3 percent of the total bill in 2008 and 3.9 percent in 2009.

DRAINAGE FEE DISCOUNTS AND CREDITS

Rainwater Harvesting Discount

SPU offers a 10 percent reduction in the drainage rates for any new or remodeled commercial building that utilizes a qualifying rainwater harvesting system. The rainwater harvesting system must be sized to use or infiltrate the amount of rain that falls on the roof of the building during a one-year, 24-hour storm event in order to qualify for the 10 percent discount. Those systems that involve indoor uses of rainwater must be permitted by Seattle-King County Department of Health in order to qualify for the rate reduction. Systems that rely solely on the capture and indoor use of rainwater will qualify for the reduction provided the system is sized to meet the performance requirement. Qualifying for the 10 percent reduction does not relieve the property owner of having to meet the applicable stormwater and drainage code requirements for the building and site. SPU is not proposing to change this program.

Low Income Utility Credit

The City assists qualified low-income customers with their drainage bills by providing a 50 percent credit. Qualified low-income customers receive this credit on their combined utility bill or, when no combined utility bill is received, on their City Light Bill or as a credit voucher. The latter options are typically applicable to renters who pay drainage, wastewater, and water utility fees indirectly as part of their rental payment.

For 2008 and 2009, SPU is proposing to adjust the amount of the credit consistent with the change in the median small residential drainage fee. Table IV-12 summarized the Low Income Utility Credits.

Table IV-12
Drainage Low Income Utility Credit (Monthly)

	2007 Adopted	2008 Adopted	2009 Adopted
Single Family	$5.92	$7.47	$8.38
Duplex	$2.96	$3.73	$4.19
Multifamily	$0.64	$0.80	$0.90

Table IV-12 Notes:
Monthly credits include impacts of the drainage treatment rate, which represents 2.3 percent of the total bill in 2008 and 3.9 percent in 2009.

Drainage Fee and Cost Allocation Structure Alternatives

Resolution 30886, adopted by the Council on February 27, 2007, directed SPU to implement a drainage rate credit program and in 2007 deliver a report to Council that "evaluates options for making rate credits more easily accessible to all customer, including options and technologies that provide Residential customers with practicable access to credits." The resolution also requested that SPU expand existing non-rate incentive programs.

Efforts are underway for SPU to rollout the rate credit program in late 2007 and be prepared to accept applications in the second quarter of 2008, with the credits to be effective January 1, 2009. The estimated 2009 impact of the rate credit program is $200,000, which has been factored into the proposed drainage rates.

V. PROJECTED WASTEWATER RATE

OVERVIEW

City of Seattle residents pay a single fee per one hundred cubic feet (ccf) of wastewater based on water consumption. This single fee is composed of two components, a system rate and a treatment rate, which are adopted through two distinct processes. The combined system cost shift from wastewater to drainage impacts both of these rates.

PROPOSED 2008/2009 WASTEWATER RATES

Table V-1 presents the proposed 2008 and 2009 Wastewater rates.

Table V-1
Proposed 2008/2009 Wastewater Rate (per CCF)

	2007 Adopted	2008 Adopted	2009 Adopted
System Rate (SPU)	$2.04	$2.53	$2.86
Treatment Rate	$5.41	$5.22	$5.24
Total Wastewater Rate	**$7.45**	**$7.75**	**$8.10**

Table V-1 Notes:
Rates assume no change in the King County treatment rate; however King County is projecting an 18 percent increase in its 2009 treatment rate.

TREATMENT RATE

Payments to King County[6] for wastewater treatment are the single largest component of both wastewater and total DWF operating expense. The inability to fully recover this expense through the wastewater rate can seriously impact DWF financial performance. To mitigate this risk the Council adopted Ordinance 122292, providing for an annual adjustment to the treatment rate when there is a change in the underlying cost drivers. The formula for this adjustment is defined in the ordinance, allowing for the treatment rate to be adopted outside of a normal rates process. The formula is as follows:

Projected wastewater treatment expense / Projected annual wastewater volumes

X

A 16.7 percent multiplier (to recover revenue reductions and revenue taxes)

Projected treatment expense includes an adjustment for cash lags in the full recovery of treatment expense in years in which there is a rate increase.[7] For the purposes of this calculation, treatment expense excludes the portion of budgeted treatment expense associated with King County's High Strength Industrial and Contaminated Stormwater Surcharges. These

[6] King County treats over 99 percent of the City's sewage. The Southwest Suburban Sewer District treats the remainder.

[7] Revenues billed in December are typically collected in January. So, if we assume that wastewater rates increase on January 1, 2007, 2007 revenue will include 1 month of cash receipts at the 2006 rate (in January) and 11 months of cash receipts at the new 2007 rate. The adjustment increases revenue enough to account for this cash shortfall.

expenses are recovered directly from applicable customers and not through the wastewater direct service rate.

The City recovers wastewater expense exclusively through a volume based fee. However, the County charges a fixed rate per residential premise and a volume rate per unit of commercial sewage flow treated. Residential flows account for about 37 percent of total volumes (and therefore total City revenues). Charges for residential premises account for about 47 percent of total treatment expense paid to the County. Consequently, if the County treatment rate is held constant but Seattle wastewater volumes decline, the resulting decline in treatment expense will be less than the decrease in the City's wastewater revenues. Therefore, the annual pass-through mechanism provides for an increase in the treatment rate when volumes decline, even in the absence of a King County rate increase.

The 16.7 percent multiplier provides for the payment of revenue taxes on increased revenues generated to pay additional treatment expense. It also includes an allowance for customers paying less than the full rate (i.e. low income credits) and non payments/delinquencies.

This rate study assumes no change in the King County treatment rate for 2008 and 2009; however it is projected that the treatment rate will increase 18 percent in 2009 and any rate impact to wastewater rates will be accomplished via the pass-through mechanism. Wastewater volumes are projected to decrease 1.2 percent in 2008 and 1.6 percent in 2009. Therefore, even though no change in the King County treatment rate is assumed, the SPU treatment rate component is projected to change in both 2008 and 2009.

Table V-2 presents the inputs underlying the calculation of the 2008 and 2009 treatment rate.

Table V-2

2008/2009 SPU Treatment Rate Calculation
($1,000's)

	2008	2009
Treatment Expense (rates based) (1)	$95,577	$94,340
Revenue lags/leads (2)	(3)	16
Net Cash Treatment Expense	$95,574	$94,356
Multiplier (3)	16.7%	16.7%
Total Treatment Expense	$111,535	$110,114
Projected Volumes (100 ccf in 000's)	$21,360	$21,020
Treatment Rate per ccf (4)	$5.22	$5.24

Table V-2 Notes:

1) Excludes high strength industrial surcharge component of King County treatment expense. This expense is charged directly to the applicable customers and not recovered through rates. Also excludes portion of treatment expense shifted to drainage as a result of the combined system cost shift.
2) December revenues collected in January. When there is a rate increase, assumes one month cash at old rate, 11 months at new rate.
3) The treatment multiplier recovers taxes and revenue lost to credits/non payment. The projected SPU treatment rates assume no change in the treatment multiplier of 16.7 percent.
4) Per resolution, treatment rate equals treatment expense divided by projected volumes.

SPU SYSTEM RATE

The system component of the SPU wastewater rate is proposed by the Executive via rate studies and adopted through a normal Council process. The system rate recovers all other operating expense, including operations and maintenance expense, capital financing expense (debt service and cash), and related revenue taxes. This component of the rate is also set to ensure that financial policy targets are met in the case that the revenue required to meet the targets exceeds the revenue required to recover operating expense (see Section II of this proposal for more detail).

The current proposal assumes an increase in wastewater system expense of $5.8 million in 2008 and a decrease of $1.9 million in 2009. The components of these increases are presented in Table V-3.

Table V-3

2008/2009 Change in Wastewater System Expense
($1,000's)

	2008	2009
Base O&M (1)	$1,346	$625
Proposed Adds	$1,159	$24
Debt Service	$2,708	$1,117
Cash to CIP (2)	$271	($3,611)
Total Expense Increase	$5,483	($1,846)

Table V-3 Notes:

1) $0.9 million inflationary increase and reduction in G&A credit due to smaller CIP offset $0.9 million expense decrease (cost allocation from wastewater to drainage).

2) Increase required to meet 25 percent cash financing target.

The 2008 system rate will require a 25 percent increase to fund the 2008 system expense and meet financial policy targets. Tables V-4 and V-5 present the 2008 and 2009 Sources and Uses of system and treatment revenue/expense, assuming proposed rates and spending.

Table V-4
2008 Change in Wastewater System Expense
($1,000's)

	System	Treatment	Total Wastewater
SOURCES			
Direct Service			
Gross Revenue	$54,494	$112,339	$166,833
Less: Credit/Non Payment	($632)	($1,302)	($1,934)
Net Revenue	$53,862	$111,036	$164,898
Less: leads/lags	($292)	$3	($289)
Net Direct Service Cash Revenue	$53,571	$111,039	$164,610
Other Revenue			
Other Operating	$3,441		$3,441
Other Non-Operating	$2,065		$2,065
SCL Reimbursement	$1,180		$1,180
Total Sources	**$60,257**	**$111,039**	**$171,296**
USES			
O&M	$27,887	$97,350	$125,237
Taxes	$7,210	$14,864	$22,074
Debt Service	$14,886		$14,886
Cash Financing of CIP (25%)	$7,545		$7,545
Total Uses	**$57,528**	**$112,214**	**$169,742**
SOURCES NET OF USES	**$2,729**	**($1,174)**	**$1,554**

Table V-4 Notes:
1) Assumes treatment rate of $5.22 and system rate of $2.55 in 2008 multiplied by projected volumes.
2) Cash financing represents 25 percent of wastewater CIP. In 2008 the wastewater contribution is projected to exceed 25 percent level.

Table V-5
2009 Change in Wastewater System Expense
($1,000's)

	System	Treatment	Total Wastewater
SOURCES			
Direct Service			
Gross Revenue	$60,487	$110,985	$171,472
Less: Credit/Non Payment	($696)	($1,277)	($1,973)
Net Revenue	$59,791	$109,708	$169,499
Less: leads/lags	($293)	($16)	($310)
Net Direct Service Cash Revenue	$59,498	$109,692	$169,189
Other Revenue			
Other Operating	$3,452		$3,452
Other Non-Operating	$1,808		$1,808
SCL Reimbursement	$1,224		$1,224
Total Sources	**$65,981**	**$109,692**	**$175,673**
USES			
O&M	$28,536	$96,104	$124,640
Taxes	$8,033	$14,739	$22,771
Debt Service	$16,003		$16,003
Cash Financing of CIP (25%)	$7,413		$7,413
Total Uses	**$59,985**	**$110,843**	**$170,828**
SOURCES NET OF USES	**$5,997**	**($1,151)**	**$4,845**

Table V-5 Notes:
1) Assumes treatment rate of $5.24 and system rate of $2.87 in 2009 multiplied by projected volumes.
2) Cash financing represents 25 percent of wastewater CIP. In 2009 the wastewater contribution is projected to exceed 25 percent level.

Wastewater cash in excess of the target as of the end of 2007 will be used for additional CIP financing resulting in a total wastewater cash contribution to CIP of 36.5 percent in 2007. The wastewater percent cash financing of the CIP is projected at 38.3 percent in 2009. The DWF as a whole is projected to cash finance 25 percent of the CIP in both 2008 and 2009.

Table V-6
2008/2009 Wastewater Cash Balance
($1,000's)

	2008	2009
Beginning	$10,314	$7,176
Source net of use	$1,554	$4,845
Other Adjustments	($1,212)	($920)
Cash Subtotal	$10,656	$11,102
Cash to CIP (1)	($3,480)	($3,949)
Ending Cash	$7,176	$7,153

Table V-6 Notes:
(1) Use of excess cash (over targeted ending balance) used to provide additional financing to CIP. Total wastewater financing of CIP equals 36.5 percent in 2008 and 38.3 percent in 2009.

LOW INCOME UTILITY CREDIT

The City subsidizes qualified low-income customers by giving them discounts on their utility services.

Low income assistance customers may receive their discount in one of three ways: 1) as a credit to their SPU wastewater bill; or 2) where no wastewater bill is received, as a credit to the customer's City Light Bill; or 3) in the form of a credit voucher. The latter two options are typically applicable to renters who pay drainage, wastewater, and water utility fees indirectly as part of their rental payment.

For customers who do not receive a wastewater bill, a fixed credit is calculated which is equal to 50 percent of a typical residential bill for the class of customer receiving the credit[8]. The discounts are shown in Table V-7.

Table V-7
Wastewater Low Income Utility Credit

Customer Type	2008	2009
Receives SPU Bill	50% discount	50% discount
Does not receive sewer bill		
Single family & duplex	$20.15 per month	$21.06 per month
Multi-family	$13.95 per month	$14.58 per month

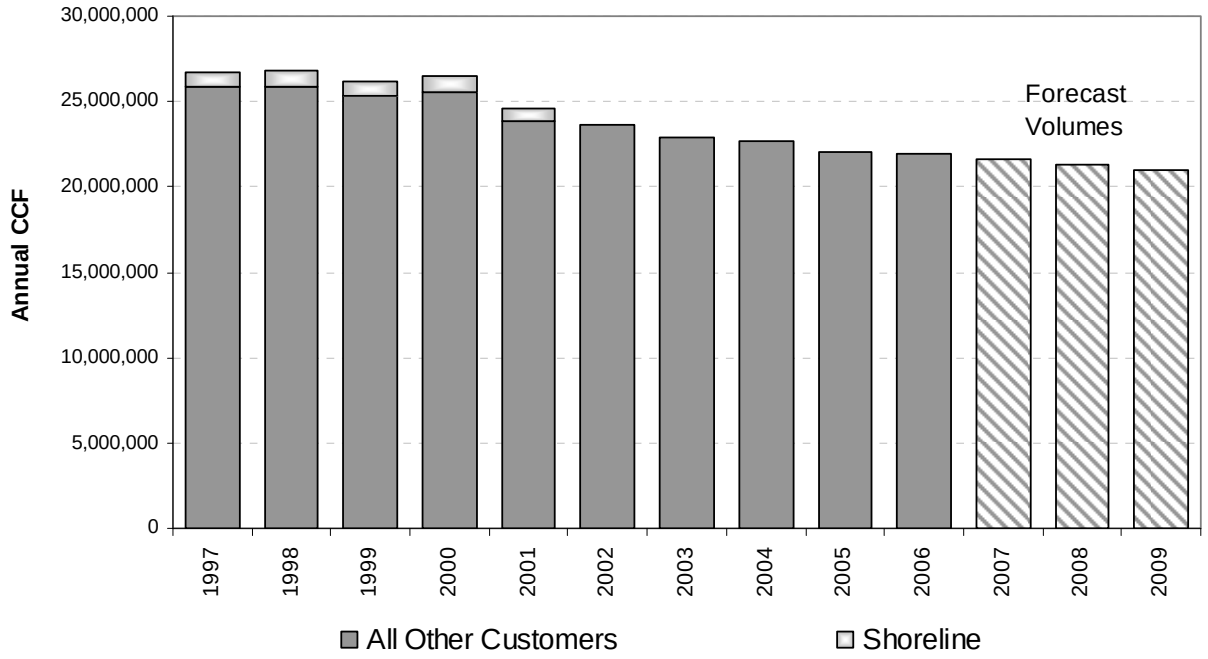
[8] The typical residential bill is calculated by multiplying the rate per ccf by average monthly consumption The discounts assume an average monthly usage of 5.2 ccf for a single family and 3.6 ccf for multi-family.

WASTEWATER DEMAND

The volume of wastewater conveyed from retail customers is expected to decline (year by year) by about 1.5 percent in 2007, 1.2 percent in 2008 and 1.6 percent in 2009. These declines continue a downward trend that started in the 1980s. Figure V-1 below presents total annual Seattle wastewater volumes (in ccf) between 1997 and 2009 (2007-2009 are the forecast values). During this period, total demand declined by approximately 15 percent. About 3 percent of this decline was due to the October 2001 transfer of approximately 8,100 Shoreline customers from Seattle to the Ronald Wastewater District.

Figure V-1

Historical and Forecast Wastewater Volumes (1997-2009)

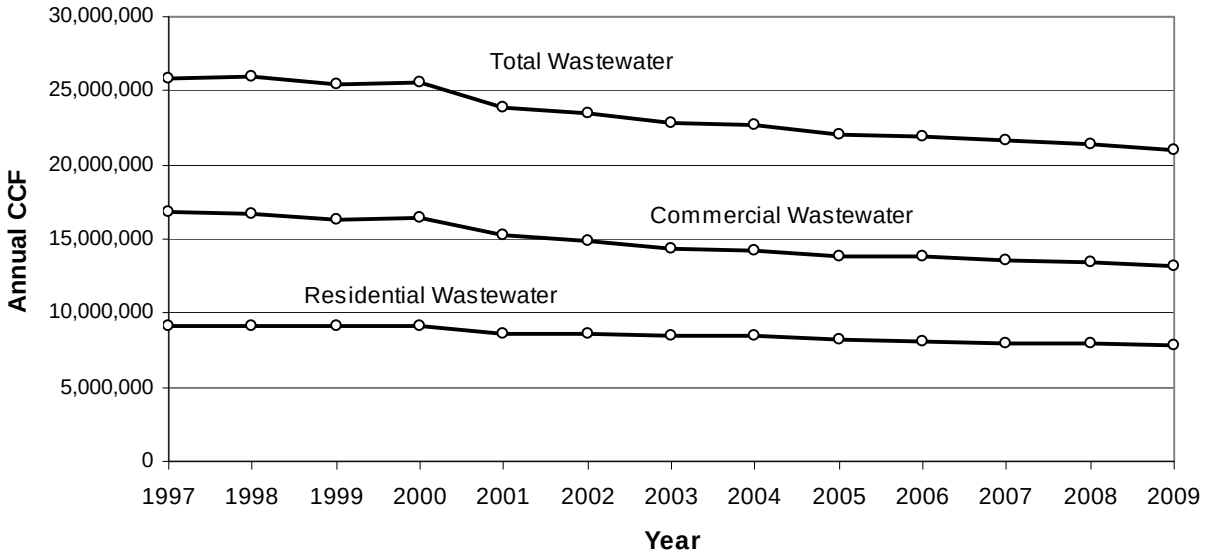


Prior to 2000, Residential wastewater volumes declined modestly (approximately 0.4 percent per year from 1989-2000) with little variation from year to year. Commercial wastewater volumes fell faster (by about 1.4 percent per year between 1989 and 2000). The total decline in demand averaged 1.0 percent per year during this period. Demand fell sharply in 2001 declining a total of 7.1 percent. About 3 percent of this change was due to the Shoreline customer transfer mentioned previously. The balance of the decline was due almost entirely to reductions in commercial volumes as a result of the regional recession. As the economy has rebounded, the decline in commercial volumes has slowed, averaging 2.0 percent per year between 2002 and 2006.

Wastewater volumes of commercial customers are generally declining faster (2.0 percent per year) than residential customer volumes which are declining about 1.6 percent per year (for 2002 through 2006). Figure V-2 below indicates wastewater volumes for both residential and commercial customers (along with total volumes).

Figure V-2

Historical and Forecast Wastewater Volumes (1997-2009)



The short-term residential forecasting model utilizes trend for forecasting volumes. The trend captures impacts of the drivers of residential wastewater volumes such as overall decreasing water use (which is used to calculate sewer volumes) and shifts between peak and off-peak period water use. The short-term commercial model utilizes employment to capture economic fluctuations and an underlying trend in consumption associated with increased efficiency in water use. From 2001 to 2003 the local economic climate was such that employment fell, magnifying the decline in commercial volumes. From 2004 to 2006, an increase in employment reduced the rate of decrease in commercial wastewater volumes.[9]

The demand model also takes into account expected water conservation impacts on peak-period wastewater volumes. Because a significant quantity of water is used for irrigation purposes during the summer, water volumes depend on summer weather. Although the effect on wastewater volumes is moderated by use of average winter sewer bills for determining residential volumes, there is some impact from early or late summer weather on commercial volumes since they are based on actual year-around water consumption. The model used to forecast demand for this rate study assumes the weather of a "normal" year in which summer weather is not particularly wet, dry, hot or cool. Actual demand will vary from forecast partly because summer weather varies.

[9] The forecast used the March, 2007 economic forecast provided by Conway Pederson Economics, Inc.

The results of the short term wastewater demand model for residential and commercial customers are shown in Table V-7 below.

Table V-7
Short Term Annual Forecast of Wastewater Volume

Year	Residential		Commercial		Total	
	Volume (CCF)	Percentage Change	Volume (CCF)	Percentage Change	Volume (CCF)	Percentage Change
			Actual			
2005	8,181,348		13,821,098		22,002,446	
2006	8,136,151		13,829,782		21,965,933	
			Short-Term Demand Model Results			
2007	8,020,000		13,610,000		21,630,000	
2008	7,920,000	-1.2%	13,440,000	-1.2%	21,360,000	-1.2%
2009	7,850,000	-0.8%	13,170,000	-2.0%	21,020,000	-1.6%

In order to obtain required revenues, sewer rates have to rise to offset this reduction in demand since many costs do not vary with volume. The impact of decreasing wastewater volumes on rates can be seen by analyzing past rate increases, with the greatest impact between 2000 and 2004 where it accounted for almost half of the average rate increase, and the smallest impact between 1990 and 1999, during the period of slowest decline. There is very little expense elasticity relative to changes in wastewater volumes for several reasons, including:

- SPU system operating expenses are typically not capacity-driven, with maintenance focused on the existing network;
- SPU customer service expense is account, not demand driven;
- A large component of the rate base, existing debt service, is entirely fixed (with the exception of re-financing opportunities);
- New capital investment are typically not capacity-driven, with the exception of combined sewer overall expense which is driven more by stormwater than wastewater volumes; and
- The King County treatment bill is volume based for commercial customers but premise based for residential customers. Therefore, only about 53 percent of the total treatment bill (commercial portion) is volume-based.