

# Office of City Auditor

**SEATTLE PUBLIC UTILITIES  
REVENUE CYCLE AUDIT – WASTEWATER  
Internal Controls Review**

**April 11, 2011**

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## City of Seattle Office of City Auditor

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To help the City of Seattle achieve honest, efficient management and full accountability throughout City government. We serve the public interest by providing the Mayor, the City Council, and City department heads with accurate information, unbiased analysis, and objective recommendations on how best to use public resources in support of the well-being of the citizens of Seattle.

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City of Seattle  
Office of City Auditor

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April 11, 2011

The Honorable Mike McGinn  
Seattle City Councilmembers  
City of Seattle  
Seattle, Washington 98104

Dear Mayor McGinn and City Councilmembers:

Attached is our report, *Seattle Public Utilities Revenue Cycle Audit – Wastewater*. The audit's primary objectives were to determine whether internal controls surrounding the billing and collection of fees for Seattle Public Utilities' (SPU) wastewater services were adequate. This report is one part of an audit of the revenue cycle of all of the SPU primary utility services - Drainage, Solid Waste, Water, and Wastewater. The report for the Drainage Revenue Cycle audit was issued on February 8, 2007; a report on SPU's Transfer Stations was issued on February 14, 2008; the Commercial Solid Waste report was issued on April 9, 2008; and the Water report was issued on March 1, 2010. The reports for the remaining modules of the audit (i.e., Residential Solid Waste and SPU Combined Billing Processes) will be issued as the work is completed. We selected the SPU utility services revenue cycle for audit due to the magnitude of its revenue stream, which is over \$400 million annually.

We appreciate the excellent cooperation of SPU management and staff during the review process, and that of other City departments. SPU's response to our review is included under the "Actions Planned" section for each issue listed in the report.

Sincerely,

A handwritten signature in black ink that reads "David Jones".

David Jones  
City Auditor

DJ:rh

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## CHAPTER 1: INTRODUCTION AND BACKGROUND

Seattle Public Utilities (SPU) provides wastewater (i.e., sewer) services to residential and commercial customers. SPU customer wastewater consumption is measured by SPU's system of water meters. SPU bills customers for their wastewater consumption at current wastewater rates, which are established by City ordinance. In 2009, SPU received about \$187 million for the wastewater services it provided to its customers. (See Appendix 1 for data on wastewater revenues for the past 5 years.) While SPU collects and conveys customer wastewater, King County actually processes the City's wastewater at the County's treatment plants.

Our office evaluated the internal controls governing the charging and collecting of fees for SPU's wastewater services. The audit's scope also included internal controls governing the wastewater processing services provided by King County, including the areas of contracts, rates, and invoicing for services. We also evaluated the policies, procedures, and operations for these processes.

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## RESULTS IN BRIEF

Overall, we found that SPU had adequate internal controls for charging and collecting wastewater services fees. However, controls are not adequate over outsourced wastewater processing functions, specifically for vendor contracts and rates. SPU's wastewater rates are high compared to similar municipalities and this is primarily due to King County's rates for outsourced sewer processing services. In addition, King County's methodology for calculating sewer processing rates does not consistently align with the King County Code's Wastewater Financial Policies, and a prior, but nonbinding, regional agreement. This results in somewhat higher rates for the majority of Seattle ratepayers. Significant control improvements are needed in construction site dewatering<sup>1</sup> billing and volume tracking, sewer submeter monitoring and accuracy verification, and collection of delinquent inactive tenant accounts. We also found issues with the policies and procedures for sewer contract remittances, self-read meters, industrial waste volumes reporting, construction site late payments, and sewer processing invoice review and approval.

See Appendix 2 for a color-coded risk level chart for the audit's major areas and the individual findings within these areas.

Rates and Sewer Contracts: Overall, we found there are significant issues with wastewater rates. While we found that SPU calculates wastewater rates logically and accurately, SPU's wastewater rates are higher than those of many other large municipalities. It is important to note that about 2/3 to 3/4 of SPU's wastewater rate goes directly to King County to pay for sewer processing performed by the County, so this is the primary driver of SPU's high wastewater rates. We concluded that King County's rates for sewer processing are high and are not calculated

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<sup>1</sup> According to a Department of Planning and Development (DPD) Client Assistance Memo #506, dewatering operations are practices that manage the collection and discharge of surface and subsurface water that must be removed from a work location so that construction work can be accomplished.

consistently in accordance with the King County Code's Wastewater Financial Policies, and a prior non-binding regional agreement. This results in somewhat higher wastewater charges for the majority of Seattle's 186,000 customers. The County's current rate calculation methodology results in higher charges for SPU's wastewater customers who connected to the system before 2003, and a lower capacity charge for SPU's customers who obtained new sewer connections after 2003. The total cost impact of King County's rate calculation methodology may be \$150 million or more over the 2003-2030 financial planning period for Seattle wastewater ratepayers. We estimate this results in an additional cost of about \$34 per year for each pre-2003 SPU customer or about \$900 over the 27-year planning period. However, given all the variables involved in the current situation, it appears doubtful that new customers will be asked to completely pay for their share of wastewater costs, because this would require the capacity charge to be significantly higher than the current charge. We also noted two issues related to the County's Brightwater treatment plant project that could result in the capacity charge for new sewer customers being higher than it should be. While we found that controls are generally adequate over SPU's three small wholesale sewer services contracts, we noted that the Ronald Sewer District is not remitting half of the sewer charges collected from eight customers served by SPU's sewer system, as its contract with SPU stipulates.

Utility Usage Tracking: Overall, we found that controls are generally adequate to ensure customer wastewater consumption is measured accurately, timely, and efficiently. However, there are certain situations where controls are not adequate and require significant improvements. Specifically, controls do not ensure that all contractors with construction site dewatering waste permits are properly set up for billing for this discharge, and discharge volumes are self-reported by contractors with almost no verification by SPU or King County. We found that SPU needs to improve monitoring of submeter usage and verification of submeter accuracy, and could also improve submeter tracking in the billing system. There are some issues with self-read sewer submeters, such as self-reporting of wastewater consumption and that they are not all verified annually. We also found that for billing purposes commercial customers self-report volumes for both industrial waste and contaminated stormwater discharge, and there is little verification of these volumes by either SPU or King County.

Billing and Payments: Overall, we found that controls are adequate over wastewater billing and payment functions. We did note, however, that many construction site dewatering customers make late payments and the current late penalties do not appear to be sufficient to motivate timely payment.

Fund Accounting – Revenues and Receivables: Overall, we found that controls are adequate over accounting for wastewater revenues and receivables. Revenues and receivables are posted accurately and timely, accounts are properly reconciled, and reserves for bad debt comply with SPU policy. There are issues with delinquent inactive SPU accounts, particularly delinquent inactive tenant accounts. SPU's current procedures for establishing and handling tenant accounts have contributed to the current situation with over \$1 million in uncollectible accounts.

Outsourced Operations - Contracts, Rates, and Invoicing: We found that the City's contract with King County for sewer processing services does not adequately protect the interests of Seattle ratepayers. Specific contract weaknesses include the lack of contract renegotiation

periods for a contract in effect for 45 years, contract terms that do not define how King County will calculate the rate charged to SPU for wastewater processing services, the absence of an audit clause, and no requirement for annual “true-ups” of estimated and actual wastewater costs. We concluded that the invoices King County sends to SPU for wastewater processing are accurate and comply with the terms and conditions for billing, but noted that SPU’s procedures for invoice review and approval need some improvement.

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## **BACKGROUND**

SPU provides wastewater services to about 159,000 residential and 27,000 commercial customers. Customer wastewater consumption is measured by SPU’s system of water meters, which are read by SPU water meter reading staff each billing period. SPU uses water consumption as the basis for measuring wastewater usage by generally assuming that all customer water consumption will eventually result in the equivalent amount of wastewater discharge. Water meter reading data is recorded in SPU’s Itron meter system and uploaded to the Consolidated Customer Service System (CCSS) system for account update and billing. SPU is responsible for monitoring the accuracy of water meters and repairing or replacing any malfunctioning meters.

Some SPU customers whose sewer use is sufficiently different from their water consumption (predominately related to irrigation and certain industrial uses) have submeters that measure actual sewer use. SPU requires that all new customer-owned submeters have Itron radio frequency reading modules installed to enable meter readers to acquire accurate reads remotely; this requirement has resulted in time-savings and safety improvements. SPU inspects all new meters and modules to ensure that they are installed properly and recording accurately.

Customer charges are based on metered water consumption or water consumption plus or minus sewer submeter volumes and SPU’s current wastewater rate, which is set by City ordinance. There are reduced rates available for low income and disabled SPU customers through a program administered by the Mayor’s Office for Senior Citizens.

SPU bills customers monthly or bi-monthly using its CCSS customer billing system. Wastewater charges are listed on the customer’s combined SPU utility statement, which includes charges for water, wastewater, and solid waste. In 2009, SPU collected over \$186 million from customers for total wastewater services; \$76.5 million of this was for residential wastewater services, and \$110.1 million for commercial. Customers may pay by mailing checks to the City’s Treasury division, as most customers do, or through other payment options, including the internet, checking account transfers, or walk-in payments at several City locations. SPU monitors any delinquent accounts, applies interest charges, and takes a series of steps that lead up to the eventual disconnection of water service if debts are not paid.

While SPU collects and conveys customer wastewater through the City’s wastewater pipes and infrastructure, King County actually processes the City’s wastewater at its two treatment plants. The City has a documented agreement/contract with King County for these wastewater treatment services and the City pays King County based on the volume of sewage it sends to the treatment

plants. The charges for these outsourced sewer processing services represent 2/3 to 3/4 of SPU's total costs for providing wastewater services to its customers.

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## **SCOPE AND METHODOLOGY**

During this review, we focused on internal controls that affect SPU's and the City of Seattle's (City) wastewater revenues and expenses. In addition to reviewing control procedures, we tested compliance with them whenever possible. Specifically, we reviewed internal controls related to the following areas:

- Wastewater rates and sewer contracts
- Utility usage tracking
- Billing and payments
- Fund accounting - revenues and receivables
- Outsourced operations - contracts, invoicing, and performance

It is important to note that the scope of this review did not include all internal controls over the combined billing functions for the customer's consolidated SPU utility bill (i.e., water, wastewater, and solid waste). Our office is planning to cover these controls in a comprehensive manner in a future revenue cycle audit of SPU's combined billing processes. In addition, controls related to water meter reading, meter accuracy and repair, and all other controls related to measuring and tracking customer water consumption, were covered in our SPU Water Revenue Cycle audit, published on March 1, 2010.

We based our conclusions on interviews with City and King County officials, testing of data found in reports and computerized systems, and review and analyses of procedures, policies, and available documentation and electronic data. We observed operations related to the scope of this review, including several field observations of SPU functions and visits to many customer sites.

We used sampling techniques based on a risk-based approach, which is a cost-effective way to review significant controls. Our review, therefore, would not necessarily disclose all significant weaknesses and irregularities.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

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## CHAPTER 2: SEATTLE PUBLIC UTILITIES REVENUE CYCLE AUDIT – WASTEWATER - INTERNAL CONTROLS REVIEW

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The Office of City Auditor conducted this review to assess the condition of internal controls for the Seattle Public Utilities (SPU) wastewater revenue cycle. Overall, we found that internal controls were adequate for charging and collecting wastewater fees. However, we found that controls are not adequate over rates and outsourced wastewater processing functions. We found that improved controls are needed in several areas, including construction site billing setup and discharge reporting, sewer submeter monitoring and accuracy verification, and delinquent inactive accounts. Further, we identified potential improvements in policies and procedures over sewer contract remittances, self-read meters, industrial waste volumes reporting, construction site late payments, and sewer processing invoice review and approval.

### **I. RATES AND SEWER CONTRACTS - *Controls require significant improvements***

#### Background

##### Rates

SPU's wastewater rate is formally adopted by the Seattle City Council with an ordinance. A new rate is the result of either a SPU rate study conducted by the Rates unit within SPU's Finance division and/or an increase in King County's sewer processing rate. The City has an ordinance in place that allows it to raise the SPU wastewater rate whenever King County raises the sewer processing rate.<sup>2</sup> It should be noted that the King County sewer processing rate represents 2/3 to 3/4 of the SPU wastewater rate, and the remainder of the rate covers SPU's costs to provide wastewater services. In recent years, the City has adopted a new wastewater rate every year, because King County has been increasing its rate regularly. SPU sets its wastewater rate by analyzing current and projected wastewater costs, including operations and capital project costs, and sets the rate at the level needed to cover expected costs. SPU strives to keep the rate as low as possible but high enough to cover costs. The wastewater rate is also set with the objective of meeting SPU and City policy goals, such as assisting low-income customers. SPU has one wastewater rate that applies to all customer classes (i.e., residential and commercial), which was \$8.98 per ccf (one ccf equals 100 cubic feet or 748 gallons of water<sup>3</sup>) of consumption in 2010. SPU customers generally pay wastewater charges for all of the delivered water they receive from SPU, except that water consumption during the summer months that is over the customer's average winter-month consumption is not included as wastewater consumption because this incremental water usage is assumed to be for watering lawns and gardens. SPU refers to this as the "sewer max" rate policy. In addition, eligible low income customers can receive a 50%

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<sup>2</sup> Almost all of SPU's wastewater is processed by King County at their wastewater treatment plants. The City's contract with the County is discussed in Section V of this report.

<sup>3</sup> [http://www.seattle.gov/util/Services/Water/Rates/THIRDTIER\\_200312020910308.asp](http://www.seattle.gov/util/Services/Water/Rates/THIRDTIER_200312020910308.asp)

credit on their wastewater bill. The chart below shows SPU’s wastewater rate and King County’s sewer processing rates for 2006 through 2010:

<b>Year</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>
King County Treatment Rate/ERU*	\$25.60	\$27.95	\$27.95	\$31.90	\$31.90
SPU Wastewater Rate/CCF	\$6.76	\$7.45	\$7.75	\$8.89	\$8.98

\*Note: ERU = equivalent residential unit.

Sewer Processing and Sewer Services Contracts

SPU has three small contracts with neighboring sewer districts for various wholesale sewer services - Southwest Suburban Sewer District, Ronald (Shoreline) Sewer District, and Valley View (Val Vue) Sewer District. SPU contracts with the Southwest Suburban Sewer District (SWSSD) for sewer processing services for a small region of West Seattle, due to the drainage patterns of this area, but the vast majority of SPU’s wastewater is processed by King County. SWSSD charges SPU a fee per customer equivalent (i.e., 7.5 ccf per month, which is the figure the County uses for average household consumption) for these services and in 2009 the annual charges amounted to about \$457,000. SPU has a “wheeling agreement” with the Val Vue Sewer District because Val Vue uses some of SPU’s wastewater pipes (referred to as “lines”) to convey their wastewater. The contract terms specify how the maintenance and Capital Improvement Program (CIP) costs for the use of the SPU lines are allocated. SPU also has a contract with the Ronald Sewer District (SD) because there are some sewer pipes used by Shoreline that cross jurisdictional boundaries between Shoreline and Seattle. These pipes used to be owned by SPU but were sold to the Ronald SD in 2001. The contract specifies the allocation of operations and maintenance and future capital improvement costs on these lines. In addition, there are eight customers of the Ronald SD who are directly connected to SPU’s wastewater lines and the Ronald SD is required to remit 50% of the service fees ( i.e., roughly \$1,200 a year), collected from these customers to SPU.

Scope and Methodology of Audit Work

We reviewed the processes and functions related to wastewater rate setting to determine whether internal controls were adequate to: 1) result in rates that are accurate, equitable, and reasonable in comparison with other large cities; 2) set at a level to recover only the costs of providing wastewater services as required by Seattle’s Municipal Code; and 3) calculated in a logical manner. We conducted this review for both SPU’s wastewater rate and for King County’s sewer processing rate because the County’s rate largely drives SPU’s wastewater rate. Our analysis of SPU’s rate-setting functions involved reviewing internal controls and rate setting methodology. This included reviewing the details of the SPU 2008-2009 Drainage/Wastewater Rate Study. We also assessed several benchmarking surveys and analyses, three of which were conducted by independent parties that compared SPU’s wastewater rates to those of other large municipalities. We verified that SPU’s wastewater rates were properly reflected in SPU’s CCSS billing system. For King County’s sewer processing rate, we reviewed County wastewater infrastructure cost data used in rate calculations and we met with SPU management and two County officials and

discussed the County's rate-setting functions. (Note: we reviewed the terms of the agreement between the County and the City for sewer processing services in section V of this report – Outsourced Operations - Contracts, Performance, and Invoicing.)

To evaluate SPU's three small wholesale sewer services contracts, we did the following: reviewed the contracts; verified the rate and invoiced charges for sewer processing services from the Southwest Suburban Sewer District for 2009; verified the calculation of a Val Vue Sewer District quarterly charge for the use of SPU sewer lines; and reviewed the remittances of the Ronald Sewer District for their customers who are connected directly to SPU's sewer system.

### Conclusion

Overall, we found that significant improvements are needed in these areas, primarily related to wastewater rates. Based on our review of SPU's rate setting processes and calculations, we concluded that the wastewater rate is established in a logical and equitable manner, and is calculated accurately. We also found SPU's Rate Study to be comprehensive and easy to understand. However, SPU's wastewater rate is high compared to other large municipalities. One of the primary causes for SPU's high wastewater rate is King County's sewer processing rate. We concluded there are issues with King County's wastewater rate calculation methodology that result in wastewater costs that are somewhat higher than they would be for the majority of Seattle ratepayers if the "growth pays for growth" principle was strictly applied.

We found that controls over SPU's three small wholesale sewer contracts are adequate except for the remission of payments for Ronald Sewer District customers directly connected to SPU's sewer system. Details on these issues are discussed below.

**Wastewater Rates – Conclusion 1: SPU's wastewater rates are high compared to similar municipalities and this is largely driven by King County's sewer processing rate. High risk**

### Background

SPU customers are charged for wastewater services based on their water consumption, on the theory that all water delivered to the residence or business will eventually be discharged into SPU's wastewater system. (There are exceptions to this for sewer submeters, which are covered in detail in section II of this report.) In 2010, customers paid \$8.98 per ccf (100 cubic feet, or 748 gallons) for wastewater fees based on their water consumption. Residential customers are billed bi-monthly and commercial customers monthly for water and wastewater based on water meter readings taken by the SPU Meter Reading unit.

SPU sets their wastewater rate by conducting and documenting a detailed rate study, generally every two or three years. The City Council sets SPU's wastewater rates through the adoption of a City ordinance. Rates are set at a level to recover the estimated costs for providing wastewater services to City residents. It should be noted that the largest cost in providing wastewater services is the fee for sewer processing services provided by King County. SPU collects City wastewater and delivers/conveys it to King County's two large sewer processing treatment plants – West Point in Magnolia, and the South Treatment Plant in Renton. King County processes and

handles the wastewater from the point of delivery. King County's sewer processing charges represent 2/3 to 3/4 of SPU's rates to customers for wastewater services.

### Issue, Impact, and Recommendation

Wastewater rates should be maintained at a reasonable level for Seattle's citizens.

Benchmarking studies that SPU participated in indicate that SPU's wastewater rates are high in comparison with those of other large cities. To arrive at this conclusion, we reviewed SPU's Wastewater rate study for 2008 and 2009, interviewed SPU personnel, and reviewed the following studies and benchmarking efforts in which SPU participated:

- Black & Veatch 2009/2010 50 Largest Cities – Water/Wastewater Rate Survey<sup>4</sup>
- Affordability Study, 2007<sup>5</sup> – SPU study undertaken to respond to City Council Resolutions 30863 and 30928
- QualServe Benchmarking Survey, 2007<sup>6</sup> – benchmarking survey of municipal water and wastewater utilities throughout the U.S. and Canada
- Raftelis Benchmarking Survey, 2006<sup>7</sup> – benchmarking survey of water and wastewater utilities throughout the U.S., sponsored by the American Water Works Association (AWWA)

The Black & Veatch Survey, which is the most recent benchmarking effort we reviewed, was a survey of the cost of a given volume of water/wastewater considered to be an average amount for a residential, commercial, and industrial customer in 50 of the largest U.S. cities. This survey found that Seattle's wastewater rates were the second or third highest, depending on the customer class (i.e., residential, commercial) with only Honolulu and Atlanta having higher residential wastewater charges.

The QualServe Survey, which provided the most detailed comparison of wastewater rates for different cities, involved 180 participants, with 106 of those being combined water and wastewater utilities similar to SPU. This survey indicated that:

- SPU's median residential wastewater monthly bill was:
  - 51% higher than the median for other participating utilities,
  - 8% higher than the “bottom quartile” (i.e., worst performing in terms of highest average bills) of the surveyed utilities,
  - And, 91% higher than the “top quartile” (i.e., best performing in terms of lowest average bills) of the surveyed utilities

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<sup>4</sup> 2009/2010 50 Largest Cities – Water/Wastewater Rate Survey, Black & Veatch Management Consulting firm.

<sup>5</sup> SPU Response to Council Resolutions 30863 and 30928 – Utility Affordability Study, June 2007.

<sup>6</sup> Seattle Public Utilities QualServe Performance Indicators Water and Wastewater Utilities Survey Benchmarking Summary December 2007, prepared by APQC. APQC is a member-based nonprofit specializing in benchmarking and best practices research.

<sup>7</sup> 2006 Water and Wastewater Rate Survey, prepared by American Water Works Association (AWWA) and Raftelis Financial Consultants, Inc.

- SPU’s operations and maintenance costs to process a million gallons of wastewater were:
  - 118% higher than the median for other participating utilities,
  - 45% higher than the bottom quartile,
  - And, 267% higher than the top quartile

The QualServe survey highlighted a few other conditions at SPU that would result in higher costs of operations:

- Very high sick leave usage,
- Lower efficiency per employee measured as the number of utility accounts divided by the number of employees, and
- High debt ratios

We also reviewed SPU’s Affordability Study, which looked at utility rates as a percentage of median household income (% MHI). This study involved eight large cities from across the U.S.<sup>8</sup> and three cities within King County (i.e., Seattle, Bellevue, and Kirkland). The study indicated that Seattle’s wastewater rate was higher than the eight cities outside of King County, but that Seattle’s % MHI was lower than two cities located outside of the County. The study also showed that SPU’s 2007 wastewater charges scored a .91percent % MHI for the median Seattle customer and median income earner, which was below the 2% affordability standard used by the U.S. Environmental Protection Agency (EPA) and the AWWA. Because incomes in Seattle are fairly high on average, these wastewater rates are relatively affordable for Seattle customers (i.e., the higher incomes reduce the % MHI for utility charges). The study points out that SPU’s wastewater rates have experienced an average growth rate of over 7% annually from 1989 to 2007 and attributes this to a 2% inflation rate, increasing King County sewer processing charges, increasing SPU expenses, and a 25% drop in wastewater services demand.

We reviewed the SPU Rate Study for 2008 and 2009 and confirmed that the primary driver of SPU’s wastewater rate is the King County rate for sewer processing services. The King County rate represents the bulk of SPU’s wastewater operations and maintenance costs at about \$100 million annually. See the chart below on King County’s charges:

<u>Year</u>	<u>King County Sewer Processing Charges</u>	<u>% Change</u>
2005	\$90,129,397	
2006	\$89,376,958	-1%
2007	\$98,064,365	10%
2008	\$97,916,391	0%
2009	<u>\$110,950,343</u>	<u>13%</u>
Total:	\$486,437,454	23%

<sup>8</sup> Non-King County jurisdictions used for waste water rate comparisons: Richmond, Portland, Tacoma, Dayton, Orlando, Orange County, Albuquerque, and Wichita.

We recommend that SPU review its wastewater costs to determine if anything can be done to reduce them and thereby reduce wastewater rates. Our concerns with respect to King County's sewer processing costs are covered below in Conclusion 2.

**ACTIONS PLANNED OR TAKEN – SPU Response:**

SPU recognizes that its wastewater charges are high relative to its peers and actively seeks ways to reduce project and personnel costs when developing the budget and underlying rates. For example, we are working with the EPA and Department of Ecology to utilize more cost efficient 'green infrastructure,' such as the Ballard Rain Gardens, to address increasingly stringent regulatory requirements that are a major driver of wastewater costs. Over the past decade, the City has taken an aggressive approach to resolving its environmental liabilities and combined sewer overflows, which many cities have not taken on until very recently.

As noted in the audit review, increasing wastewater treatment rates are a major driver of Seattle's rates. SPU is involved in active, continuing negotiations with King County to resolve perceived contractual issues raised by both parties.

Also contributing to higher wastewater rates are Seattle's state and city utility tax rates, which are high compared with other jurisdictions, as cited in the State Auditor's Performance report issued in 2009. These taxes are imbedded in our rate base while other jurisdictions often apply taxes to the end bill, resulting in a perceived lower rate. Finally, several municipalities have created additional revenue streams to offset the traditional wastewater rate.

**King County Sewer Processing Rates – Conclusion 2: There are issues with King County's sewer processing rates that are resulting in somewhat higher wastewater charges for the majority of SPU's customers. High risk**

Background

King County provides sewer processing services for most of the municipalities and sewer districts (wholesale customers) within the County, including the City of Seattle. The County charges the same rate to each wholesale sewer customer to process a ccf of sewage and this is referred to as the MSR rate (i.e., monthly sewer rate). SPU reports the total wastewater volumes for all SPU customers to King County, and then the County charges SPU for sewer processing services based on the wastewater volume reported. It should be noted that the King County MSR rate represents 2/3 to 3/4 of SPU's total costs to provide wastewater services to SPU customers, which means that it is a significant and direct driver of the City's wastewater rate charged to each SPU customer. As noted in Conclusion 1, SPU has the authority, by City ordinance, to adjust its wastewater rate any time King County increases the MSR rate. In 2009, SPU paid the County about \$111 million for sewer processing services, or an average of about \$9.2 million per month.

The Finance group within the King County Wastewater Treatment Division calculates the MSR rate. County Code<sup>9</sup> states that the MSR rate must be set at a level necessary to cover only the costs of providing wastewater treatment services. The County adopts the MSR rate by June 30<sup>th</sup> of each year, but tries to adopt a rate that will be applicable for two years.

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<sup>9</sup> County Code 28.86.160 – Wastewater Treatment - Financial Policies (FP).

In addition to the MSR rate, the County charges a separate capacity charge to individual customers who joined the County wastewater system with a new sewer connection in 2003 or later. Customers who are assessed the capacity charge are referred to as “new customers” and those who connected to the wastewater system before 2003 are called “existing customers.”<sup>10</sup> The capacity charge applies to SPU customers who obtained a new sewer connection, generally due to construction of a new house/townhome/condominium. It does not apply to someone who purchased a house/townhome/condominium that already had an existing sewer connection. The County bills the customer directly for the monthly capacity charge on a quarterly basis for fifteen years. Or, new customers may opt to pay the full amount of the capacity charge assessment in a lump sum. The Finance group within the King County Wastewater Treatment Division currently calculates a new capacity charge usually every three years, though a capacity charge is formally adopted annually. It should be noted that the capacity charge was quite low at \$7 per month when it was initiated in 1990 but it has grown to about \$49.07 per month in 2010. The capacity charge remained quite low until 2001, at not more than \$10.50 monthly, but then began to increase rapidly. See a chart below of the County’s wastewater capacity charge over time:

<b>Year(s)</b>	<b>Monthly Capacity Charge</b>
1990 through 1997	\$7.00
1998 through 2001	\$10.50
2002	\$17.20
2003	\$17.60
2004	\$18.00
2005 and 2006	\$34.05
2007	\$42.00
2008	\$46.25
2009 and 2010	\$49.07

It is important to note that the capacity charge was initiated so the costs of an expanding wastewater system would be paid for by the new customers so that “growth pays for growth.” This concept is expressed in the Robinswood Agreement of 1998 and the King County Code’s Wastewater Financial Policies. The Robinswood Agreement refers to a memo to Ron Sims, the County Executive at the time, from the Regional Water Quality Committee, documenting the agreements made about financing regional wastewater infrastructure during a meeting of the County’s wholesale sewer customers (i.e., municipalities and sewer districts in the region). Specifically, the Robinswood Agreement states:

*The principle of growth pays for growth is best implemented at this time through specific policies whereby existing customers pay for existing capacity and new customers pay for excess existing capacity and new capacity.*

and

*Costs allocated to existing customers will include current treatment plant conveyance and solids capacity, Inflow/Infiltration (I/I) assessment and reduction, and new*

<sup>10</sup> In 2030, the definition of “new” and “existing” customers will be reset.

*conveyance for existing customers. Costs allocated to new customers include new treatment, conveyance and solids capacity, and existing excess capacity. Costs allocated proportionally to existing and new customers include CSO control, operations, maintenance and administration for the entire system.*

And, section 26.86.160, FP-15, 1. of the County Code on Wastewater Treatment states:

- 1. Existing and new sewer customers shall each contribute to the cost of the wastewater system as follows:
  - a. Existing customers shall pay through the monthly sewer rate for the portion of the existing and expanded conveyance and treatment system that serves existing customers.*
  - b. New customers shall pay costs associated with the portion of the existing wastewater conveyance and treatment system that serves new customers and costs associated with expanding the system to serve new customers. New customers shall pay these costs through a combination of the monthly sewer rate and the capacity charge. Such rates and charges shall be designed to have growth pay for growth.**

It should be noted that one of the results of the financing plan agreed to at the Robinswood meeting led to the decision to construct the County's new Brightwater sewage treatment plant. The Brightwater plant is located in the Woodinville/Maltby area and is intended to serve north King County customers. The plant is currently under construction and it is important to note that the Brightwater treatment plant had an estimated cost of about \$800 million in 1999 shortly after the Robinswood meeting, was budgeted at \$1.48 billion in King County's baseline budget for the project in 2004, and was most recently estimated at \$1.82 billion to \$1.86 billion by King County. Cost overruns have been caused by project delays and unexpected difficulties building the 14-mile long, deep tunnels, which will convey the treated wastewater to Puget Sound.<sup>11</sup> It is also important to note that King County's decision to build this new third treatment plant was based on the County's forecast of a regional development rate of 90% by 2030, meaning that 90% of King County acreage would be developed by that time. To date, actual regional development has been below this forecasted level, resulting in system-wide wastewater volumes considerably below the forecasted volumes.

The King County Wastewater Treatment Division calculates both the MSR rate and the capacity charge, and while they have made presentations on their rate calculation methodology to the Municipal Water Pollution Abatement Committee (MWPACC), to which SPU belongs, neither SPU nor any of the other wholesale sewer customers have performed a detailed review of the County's rate calculation model. It is important to note that the County formed a subcommittee with eight members called the Financial Policy Work Group in October 2009 and this group is tasked with developing recommendations for improvements to the County's wastewater rate calculation methodology by spring 2011. SPU holds one of the eight positions in this group.

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<sup>11</sup> Brightwater is expected to process about 33 million gallons of sewage (mgd) per day once it is operational. In contrast, the County's other plants - Westpoint and Renton - each currently process about 133 mgd of sewage per day.

### Issue, Impact, and Recommendation

Wastewater rates are a significant utility expense for the citizens of Seattle, and as such, it is important that rates are reasonable and calculated accurately and equitably. Currently, there are issues with King County's sewer processing rate, which is a direct driver of SPU's wastewater rate, that have led to somewhat higher than expected wastewater costs for the majority of SPU's customers. Our research indicates that King County is not consistently applying the practice of "growth pays for growth" in its wastewater rate calculations, as agreed to in the non-binding regional Robinswood Agreement, and as incorporated into the King County Code's Wastewater Financial Policies. This has resulted in somewhat higher wastewater costs for pre-2003 wastewater customers (i.e., the MSR rate) and lower costs for post-2003 customers (i.e., the capacity charge) than would be the case if the growth pays for growth principle was consistently followed. Since the majority of SPU/Seattle ratepayers obtained their sewer connections before 2003, this situation results in somewhat higher sewer rates for most Seattle ratepayers. The total impact could be \$150 million or more over the current wastewater financial planning period of 27 years (i.e., 2003-2030) for existing Seattle wastewater ratepayers. We estimate this results in an additional cost of about \$34 per year for each SPU customer or about \$900 over the 27-year planning period. However, given all the variables involved in the current situation, it appears doubtful that growth will be asked to fully pay for growth at this time, because SPU's analysis indicates this would require the capacity charge to be significantly higher than the current charge. In addition, we noted a few other concerns related to the County's wastewater rate calculation methodologies that affect the capacity charge paid by new customers.

### **Cost Allocation**

SPU conducted a detailed analysis of King County's wastewater cost allocation practices in 2007 and 2008 and produced a report with their conclusions. The primary conclusion of SPU's cost allocation analysis was that growth is not consistently paying for growth. SPU's analysis concluded that the capacity charge would need to be basically doubled in order for growth to fully fund growth. We reviewed this report and met with the analyst and management team members that produced it. This report was provided to King County Wastewater Treatment officials for their review and comment, and we reviewed a copy of the County's comments on the report. It should be noted that a Seattle City Council Central Staff analyst also reviewed this report and summarized the report conclusions in a February 2009 memo to the City Council's Environment, Emergency Management and Utilities Committee. We met with the Central Staff analyst and SPU senior management to discuss the conclusions in the cost allocation analysis report and we noted that all parties were in agreement with the report's primary conclusions.

In addition, our office requested King County to provide data demonstrating how the MSR rate and capacity charge are calculated so that we could perform an independent review of these calculations. We reviewed the County's data, compared this data to the analysis performed by SPU, and met with County Wastewater Finance staff to discuss the County's rate calculation process. However, we did not perform a detailed review of the County's wastewater rate calculations or wastewater rate model.

The following is a summary of a few of the cost allocation practices that we believe are not in alignment with the Robinswood Agreement:

- **Conveyance, CSO (Controlled Sewer Overflow), and Other Excess Capacity**

The Robinswood Agreement states that the costs of the excess capacity in existing wastewater infrastructure assets are supposed to be assigned to new customers. Currently, the County does not assign the cost of all excess capacity to new customers for conveyance, CSO, and other types of wastewater assets; instead, it assigns only the portion of excess capacity that is expected to be used by the new customers by 2030. No portion of the unused excess existing capacity is assigned to new customers. State law (RCW 35.58.570) states that new customers shall pay for the portion of the existing capacity they utilize through the capacity charge. According to the King County Code's Wastewater Financial Policies, the cost of remaining unused excess capacity should be shared between existing and new customers as a component of operations and maintenance (O&M) costs.

- **Costs incurred before 2003 for new wastewater infrastructure**

This refers to the debt service for costs incurred before 2003 for new wastewater infrastructure projects intended to serve new customers, such as the Brightwater treatment plant. These costs were allocated solely to existing customers, though they were incurred for projects that are supposed to be paid for by growth (i.e., new customers).

- **Costs of new projects allocated 100% to existing customers**

King County allocates a number of new projects 100% to existing customers and these are projects in the categories of General Treatment, Central Administration, and Asset Management. Many of these projects are directed towards maintaining the existing wastewater system versus expanding the capacity of the system, which is the logic the County has used in allocating 100% of the costs to existing customers. However, the County's Financial Policy FP-15, 3.j. states that "operations and maintenance costs shall be paid by existing and new customers in the uniform monthly rate based on their annual proportionate share of total customers." This indicates these project costs should be allocated on a shared basis.

### **Other Issues**

In addition to the County's cost allocation practices that currently affect the MSR rate, we noted other issues that impact the capacity charge or will impact the MSR rate in the future:

- **Brightwater - Financing Costs**

The Brightwater treatment plant is being financed by 40-year bonds issued between 2007 and 2011. This means that only a portion of the debt related to these bonds will be repaid during the current financial planning period of 2003-2030. The debt repayment for the portion due after 2030, estimated to be about \$400-\$500 million, will be paid by the then existing customers since it is forecast that there will be no excess capacity for the plant at that time. This will result in current existing customers paying about \$300-\$375 million of

this debt service cost for a project built to serve the needs of growth. The impact to Seattle ratepayers would be an additional \$126-\$158 million. It should be noted that all of King County's wholesale wastewater treatment customers are currently obligated for these costs through the entire Brightwater debt repayment period.

- **Brightwater - Reclaimed Water**

Part of the Brightwater plant project involves the development of capacity for "manufacturing" reclaimed water from wastewater, so that this reclaimed water could be sold. These costs, which are being charged to the Brightwater project, are allocated to the County's capacity charge. Two of King County's wholesale sewer customers brought a lawsuit against the County, with this issue as one of the items in the lawsuit; the lawsuit noted that selling reclaimed water would represent a separate line of business for King County rather than a cost of providing wastewater handling services. In addition, it is not clear whether there is a potential market for this reclaimed water. Currently, this component of the Brightwater project results in \$25 million in costs that are allocated to new customers in the capacity charge, and it is planned that about another \$100 million will be allocated once Phase II of the reclaimed water project is underway.

- **Brightwater – Community Mitigation Payments**

A current lawsuit brought by two of King County's wholesale sewer customers claims that King County has allocated approximately \$140 million of mitigation costs to the Brightwater project, including about \$70 million for community mitigation payments to Snohomish County. These two sewer districts believe these mitigation costs are excessive. Costs allocated to the Brightwater project increase the capacity charge for all new King County sewer customers.

Wastewater infrastructure costs appear not to have been a significant issue for King County until after 2001, when the County began to increase the capacity charge substantially and fairly rapidly. This growth in the capacity charge appears to coincide with the inception of Brightwater Treatment plant expenses. The capacity charge can be viewed as a "price of development" because it applies to all new construction. If the capacity charge were set at a higher level, as SPU analysis indicates it should be for growth to completely pay for growth, this level might be uncomfortably high and discourage development. It is important to note that many of the County's other wholesale sewer customers strongly favor keeping the capacity charge as low as possible or eliminating it altogether because their cities/areas are less developed than Seattle and consequently are more growth-oriented. It should also be noted that actual development since 2001 has been considerably below forecasted levels, and the Brightwater project costs have continued to exceed original estimates. These factors have increased the pressure on the capacity charge and put the County in a difficult position. Given all the variables involved in the current situation, it appears doubtful that growth could actually afford to completely pay for growth at this time, because SPU's analysis indicates this would require the capacity charge to be significantly higher than the current charge.

We recommend that SPU officials meet with King County officials to address the wastewater cost allocation issues noted in this audit conclusion. In our opinion, it would be most beneficial

if these discussions included representatives of the County's other wholesale wastewater customers because these are wastewater system-wide issues that affect all municipalities and sewer districts within the system. In addition, we strongly believe that the County's wastewater rate calculations should be audited or reviewed in detail by an independent party on a regular basis on behalf of all of the County's wholesale sewer customers.

**ACTIONS PLANNED OR TAKEN – SPU Response:**

The City is engaged in active, continuing negotiations with King County to resolve perceived contractual issues raised by both parties.

**Sewer Contract Remittances – Conclusion 3: The Ronald Sewer District<sup>12</sup> is not remitting half of the sewer charges collected from eight customers connected to SPU's sewer system as required by its agreement with SPU. Low risk**

Background

There are sewer pipes located in the Shoreline/Lake Forest Park area that cross jurisdictional boundaries between the City of Shoreline and the City of Seattle. These sewer pipes used to be owned by SPU but SPU sold them in 2001 to the Ronald Sewer District (SD). SPU and Ronald SD have an agreement - called the Wastewater Facilities Use Agreement - that specifies that SPU and Ronald SD will share the operations and maintenance (O&M) expenses for these sewer pipes. The exact details of this cost-sharing arrangement are specified in the agreement. In addition, there are nine customers of Ronald SD whose wastewater lines tie directly into SPU's sewer system. The agreement states that Ronald SD will send 50% of the annual sewer charges billed to these customers, excluding King County treatment charges, to SPU by February 15<sup>th</sup> of the following year. However, it should be noted that the charges that should be remitted from Ronald are no more than \$1,200 annually.

Issue, Impact, and Recommendation

Ronald SD should remit 50% of the sewer charges collected from its customers who tie directly in to SPU's sewer system accurately and timely, as stated in their agreement with the City of Seattle. We found that Ronald is remitting sewer charges accurately for one customer, the Seattle Golf Club, for which it remitted \$499 to SPU for 2009. However, we noted that no funds were remitted for the other eight customers who are connected to SPU's system. Two of these eight customers are commercial customers, including the Lake City Elks Club, and six are residential customers. This situation results in a small amount of lost revenues for SPU. We also noted that while the Ronald SD monthly charges were quite low for Seattle Golf Club up to the latter part of 2009, and that they increased significantly in September 2009, at which time it appears that the Ronald SD may have increased their sewer charges. We recommend that SPU work with the Ronald SD to ensure they receive 50% of the sewer charges collected for all Ronald SD customer's connected to SPU's wastewater system, as stated in the agreement.

**ACTIONS PLANNED OR TAKEN**

In 2003, Ronald Wastewater District (Ronald) transferred eight of the nine properties and facilities to Lake Forest Park that SPU had transferred to Ronald in 2001. At that time, Lake

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<sup>12</sup> Formed in 1951, the Ronald Sewer District is located within the corporate limits of the City of Shoreline and parts of unincorporated Snohomish County.

Forest Park assumed responsibility for wastewater service within its city limits. SPU has been in contact with Lake Forest Park and expects to have a Wastewater Facilities Use Agreement signed by both parties and retro-active payment for the eight transferred properties by the end of first quarter, 2011.

## **II. UTILITY USAGE TRACKING - *Controls need improvement***

### Background

Wastewater consumption or customer usage is measured primarily by water meter readings. Wastewater consumption is based on “delivered water” to the customer because it is assumed that all delivered water eventually ends up in SPU’s sewer system when the water goes down the drains in the sinks/tubs/etc. or is flushed down toilets on customer premises. However, water consumption during the summer months that is greater than the customer’s average winter-months consumption is not treated as wastewater consumption as SPU assumes that this incremental water usage is for watering lawns and gardens. SPU meter readers read the water meters on a bi-monthly (for most residential customers) or monthly (for most commercial customers) cycle. Residential customers generally only have one water meter but commercial customers often have several. The details of the water meter reading process, the associated processes for uploading meter reading data to the CCSS billing system, and the review of potential meter reading exceptions were audited as part of our recent SPU Water Revenue Cycle audit, published on March 1, 2010.

In addition to billing customers for wastewater charges for all delivered water, SPU bills other wastewater charges in the following situations:

- Sewer Deduct and Chargeable Meters (i.e., Submeters). Some commercial customers engage in activities or manufacturing processes that require water that does not end up in SPU’s sewer system – for example, making beer or soda pop, or cooling office buildings. These customers may elect to have “sewer deduct” meters so wastewater charges are not applied to the water delivered for these purposes. On the other hand, there are customers who discharge sewage to SPU’s sewer system that is not associated with SPU “delivered water” – for example, a port facility that offloads sewer bilge from ships. These customers must have “sewer chargeable” meters to measure these wastewater volumes. (See further discussion of sewer submeters at Conclusions 5, 6, and 7 below.)
- Evaporation Allowances. The Seattle Municipal Code<sup>13</sup> allows “evaporation loss allowances” of eleven percent (11%) for industrial laundries and three percent (3%) for laundromats. These percentages are applied to reduce the wastewater charges of approved commercial customers.
- HSIW and Contaminated Stormwater. Some commercial customers discharge HSIW (i.e., high-strength industrial waste) and/or “contaminated stormwater” to SPU’s sewer system and they are charged separate and additional wastewater fees for this waste. (See further

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<sup>13</sup> SMC 21.28.090

discussion of HSIW and contaminated stormwater discharge at Conclusions 8 and 9 below.)

- Construction Site Dewatering. Some construction sites discharge runoff to SPU's sewer system and these customers pay separate wastewater charges for this type of discharge, which is called construction site dewatering. (See further discussion of construction site dewatering at Conclusions 10, 11 and 12.)

#### Scope of Audit Work

We reviewed the processes and functions related to usage tracking of SPU's wastewater services for SPU's residential and commercial customers. We reviewed service usage tracking at a detailed level, which included reviewing the controls over these processes and testing them to verify that they were functioning properly. Specifically, we evaluated whether controls would ensure wastewater consumption is measured accurately, timely, and efficiently for residential and commercial customers. Achieving this audit objective included evaluating controls over the meter reading process, meter reliability, testing and repair processes, and meter exception review processes. (Note that all controls related to water meter reading and water consumption measurement were reviewed and reported on as part of the SPU Water Revenue Cycle audit, which was published on March 1, 2010.) We also reviewed controls over self-read meter reporting and verification, sewer submeter accuracy for billing purposes, evaporation allowance billing, HSIW and contaminated stormwater volume reporting and billing; and construction site dewatering set-up, volume reporting, and billing.

Our audit work involved field observations of the meter reading process, meter shop functions, Itron system functions, a field observation with a SPU Water Inspector, and field visits to twenty commercial customers with sewer submeters during which we were accompanied by SPU Utilities Services Teams (UST) staff members. We also observed the SPU Customer Audit units reviewing potential meter reading exceptions on several occasions. We worked with the SPU Key Services and SPU Accounts Receivable units to review the processes involved with setting up accounts, tracking wastewater consumption/volumes, and billing contractors for construction dewatering services. We spoke with both SPU and King County Wastewater Enforcement officials regarding control procedures related to HSIW and contaminated stormwater. We worked with SPU UST staff to gain a thorough understanding of the sewer submeters in SPU's system and the various ways in which customers use them. We sampled data and transactions and performed detailed testing in order to make conclusions on each control objective involved in this scope of work. This data sampling included: work orders in the Maximo system for meter repairs and testing; self-read sewer meter billing and annual verifications; evaporation allowances; the set-up and invoicing for construction dewatering services; tracking volumes and billing for HSIW and contaminated stormwater charges; and sewer submeter usage and billing. We also reviewed and analyzed various wastewater consumption data.

#### Conclusion

We concluded that controls in some of these areas need improvements. We found that controls generally ensure wastewater consumption is measured accurately, timely, and efficiently for consumption based on delivered water to "regular" water meters. However, we noted opportunities for improvement with self-read meters, sewer submeter monitoring, testing, and tracking, reporting of volumes of HSIW and contaminated stormwater discharge, and

construction site dewatering billing set-up and reporting of discharge volumes. We found controls to be adequate over evaporation allowances. Details on these issues are discussed below.

**Self-Read Sewer Meters – Conclusion 4: There are issues with self-read sewer submeters.**  
*Medium risk*

Background

Some of the sewer submeters in SPU's system have been set up for self-reading by the customer instead of the normal situation, in which meters are read by SPU meter readers. These submeters are all inside of customer buildings or grounds where it would be difficult and/or dangerous for the meter readers to access. These customers fax in their submeter readings to the SPU Commercial Customer Audit unit every month, which then enters the meter readings into the customers' CCSS accounts. It is SPU's policy for the Meter Reading unit to verify each self-read submeter once a year. To perform this verification, a senior meter reader physically accesses the submeter to take the reading. After the meter reader verifies the submeter, they are supposed to enter a note in the CCSS 'Comment' field that they verified the meter, record the meter reading, and add any other information that might be relevant. SPU's Customer Audit unit will review the submeter readings, consumption and information and make any adjustments to the read or consumption, as needed. If reads are not consistent with those having been obtained and presented to SPU by the customer, the UST Account Executive (AE) will then be notified. They can then follow up with the customer to determine if it is a meter reading issue, equipment issue, etc. and have any updates or repairs completed as necessary.

SPU's Meter Reading unit generally conducts these verification readings during the summer. It should be noted that the customers set up with self-read submeters were "grandfathered" in with this setup and new customers are required to install ERTS devices (i.e., electronically-read transmitting signal) so SPU can read the meters electronically without requiring direct access. In addition, SPU is moving towards having the customers replace self-read submeters with ERTS devices to eliminate the need for customer self-reporting.

The SPU Commercial Customer Audit unit tracks all self-read submeters on a spreadsheet, but at the time of our audit fieldwork, they were not using this spreadsheet as a tracking mechanism to ensure that all self-read meters were verified by Meter Reading. However, beginning with the 2009 annual Customer Read Verification of the sewer meters, the SPU Customer Audit group resumed using a spreadsheet to track SPU read verifications of all self-read meters. The spreadsheet is generated by July each year and read verifications occur in July and August during the regular read cycles. In September, those meters that have not been verified are identified and a service order is issued to obtain the remaining reads.

Issue, Impact, and Recommendation

Controls should ensure that all self-read sewer submeters are properly verified by SPU Meter Reading annually, in accordance with SPU's policy. Control procedures were not adequate at the time of our audit fieldwork:

- There was no control procedure in place to ensure each self-read submeter was verified annually by SPU. While there are not that many self-read meters, they all belong to large

organizations/companies that generally have high water/wastewater usage, so it is important to ensure that these meters are accurate. Since the time of our fieldwork, SPU has implemented controls as described above. (For more discussion on submeter accuracy, see Conclusion 6 on page 26.)

- We selected a sample of 15 SPU accounts with a total of 45 self-read submeters and reviewed CCSS to see whether the meters had been properly verified by SPU's Meter Reading unit. We found that 3 out of 45 (or 7 percent) of the submeters in our sample had not been properly verified. One meter had not been verified for two years and two had not been verified since they were installed eight years ago. SPU management indicated that SPU had only begun within the last one or two years consistently documenting the verification of self-read meters so it is possible that these submeters were verified but the verifications weren't documented.
- We noted that 4 out of 45 (or 9 percent) of the self-read submeters in our sample had been removed by the customers with no explanation provided. This situation underscores our concerns expressed at Conclusion 5 on page 23 - monitoring submeter usage for accurate billing setup. If customers remove chargeable or deduct submeters without notifying SPU, the meter setup may no longer result in accurate billing.

#### **ACTIONS PLANNED OR TAKEN – SPU Response:**

SPU is actively working to improve its sewer submetering program. Some of the measures being taken starting in 2011 that will address this finding include:

- The Customer Billing Services Division will verify customer read meters in the 4<sup>th</sup> quarter of each year.
- The Utility Services Teams (UST) are requiring that customer read meters be updated to include Automated Meter Reading technology; this requirement will begin in 2011 and is anticipated to be phased in over the next several years. Beginning in 2011, SPU will conduct a comprehensive review of each property receiving sewer deductions. Customers with chargeable meters will be required to change their systems to utilize deduct meters. Customers using an evaporation allowance will be required to adopt deduct meter technology to reflect non-sewer usage.

#### **Submeter Usage Monitoring – Conclusion 5: SPU does not have a program to ensure consistent and ongoing monitoring of the accuracy of customer sewer submeter and water meter setups. High risk**

##### Background

SPU's regular business practice is to charge wastewater based on all of a customer's metered water consumption, as measured and recorded by the SPU Meter Reading unit, which reads customer water meters every billing cycle. However, there are some SPU commercial customers who utilize submeters to deduct or add wastewater charges. Below are several examples of authorized submeter and "water-only" service usages:

- A soda-pop factory or a cement factory has a deduct meter for the water that goes into their products. They do not pay wastewater charges for the water consumption on these meters because none of this water will enter the City’s sewer system.
- A business or school with a large amount of landscaping or forested grounds has a water-only meter for the water it uses to water/irrigate their grounds. Again, this water will not enter the City’s sewer system.
- A port facility/terminal has a deduct meter for the water it loads onto ships, because this water also will not enter the City’s sewer system. This same facility has a “chargeable meter” to account for the water used for an office building at the terminal, because that water will enter the sewer system.
- A port facility has a chargeable meter for ships that dock and pump out their bilge holds into the City’s sewer system. This is called an effluent chargeable meter.
- Other valid and authorized uses for deduct meters include building cooling towers, since the water entering these towers evaporates, and fountains or swimming pools. However, if the cooling towers, fountains, or swimming pools are drained, there should be chargeable meters in place to measure this flow into the sewer system.

SPU commercial customers are billed for sewer submeters and water-only meters on their SPU combined utility bills. Charges are based on metered consumption and the SPU Meter Reading unit reads all submeters and water-only meters, just like they read all “ordinary” water meters. Seattle Municipal Code, section 21.28.090, explains the authorized uses of sewer submeters and water-only meters. SPU also has a Client Assistance Memo on the policies and procedures for sewer submeters and water-only meters. A SPU customer must complete an application for a sewer submeter or water-only meter, and work with an Account Executive (AE) in SPU’s Key Accounts or Commercial Accounts Utilities Services Teams (UST) division to ensure that meter usage is appropriate for their business operation and SPU’s water and wastewater services. The AE also works with the customer to ensure the meters are properly installed and work properly.

In 2008, the amount of wastewater fees charged based on sewer chargeable meter consumption was about \$830,000 and the amount of wastewater fees that were not charged based on sewer deduct meter consumption was just under \$6 million.

#### Issue, Impact, and Recommendation

Controls should be adequate to ensure sewer submeters and water-only meters are used appropriately based on the customer’s business operation and water/sewer usage, and to ensure customers are billed accurately for their SPU water and wastewater consumption. The accuracy of submeter usage and billing setups is very important, due to the potential revenues involved. It is especially important to the City that SPU customers do not have deduct meters in place for water that actually enters the wastewater system, lack chargeable meters for water/effluent that enters the wastewater system, or have a water-only service for water that enters the wastewater system. We found that controls over SPU sewer submeters and water-only meters require improvements. While SPU has a process in place to ensure that only authorized and appropriate submeters and water-only services are established, SPU does not have a consistent and ongoing

program to monitor the accuracy of submeter usage. Commercial businesses tend to change their facilities and operations over time, and these changes do not always get communicated adequately to SPU. Consequently, a business that was set up with accurate metering and billing ten or twenty years ago may no longer have a metering set-up that is appropriate for their current operation and water/wastewater usage. The risk with this situation is that customers could be under-billed for wastewater if they have an inappropriate metering and billing setup. On the other hand, customers could be over-billed for wastewater, as well. (However, it is up to the customer in this scenario to ensure they have the proper metering setup to minimize their wastewater charges.) In addition, if SPU customers do not have the proper metering set-up, it could also result in SPU reporting wastewater consumption inaccurately to King County, and consequently, inaccurate invoicing of SPU for King County sewer processing charges.<sup>14</sup>

As part of our audit fieldwork, we sampled 20 SPU commercial and “key customers” (i.e., the largest and/or most unique SPU commercial and governmental customers) with deduct, chargeable, and/or water-only services to verify the accuracy of their metering and billing setups. To conduct this work, we visited the customer’s business site, toured the site with the facilities manager or the plant manager, visually reviewed their operation and metering setup, and discussed the same with company representatives. We conducted these site visits along with two SPU UST AE’s and asked for their opinions on the information provided by the customers. In advance of the site visits, we reviewed meter maps for the customer facilities that were prepared by the AE’s. We visited a variety of commercial customers, including office buildings, factories, a hotel, a port facility, and a cold storage plant. During these 20 site visits, we found that one industrial customer lacked a required chargeable meter for a portion of its truck wash station discharge but was working on getting it installed; one customer that lacked a chargeable meter for draining their cooling tower, and one customer that lacked a deduct meter for part of their plant. These situations would result in under-billing of the customer with the truck wash station, a very slight under-billing of the customer with the cooling tower, because cooling towers are generally only drained once a year and usually involve very little outflow of water, and the customer without the deduct meter being unnecessarily billed for wastewater consumption that the plant did not actually produce. Overall, our audit fieldwork indicated that SPU’s sewer submeter and water-only service setups were generally accurate. The only situation that caused us concern was the lack of a chargeable meter for the factory truck wash station because it was the only situation that could be resulting in the loss of any appreciable wastewater revenues for SPU.

During our audit fieldwork, we became aware that there are SPU commercial customers with cooling towers, fountains, and/or swimming pools with deduct meters for the water feeding them that lack a chargeable meter to measure the outflow for when they are drained. However, SPU management indicated to us that these customers generally drain these items only annually or quite infrequently, and there usually is not a lot of water involved. We also noted that there are many office building cooling towers in SPU’s system that have chargeable meters installed.

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<sup>14</sup> It should be noted that King County recently hired a Certified Public Accounting firm to conduct agreed-upon-procedures engagements relating to SPU’s sewer submeters and wastewater consumption reporting and SPU is working on addressing matters related to this work with King County.

It is important to note that SPU has been working on reviewing customer submeter setups for the last few years, but these reviews have not been formalized, nor have any policies been established as to which customers are reviewed, how customers are reviewed, etc. SPU has hundreds of commercial customers with sewer submeters and water-only services and lacks the staff to review each and every one of them, even if a review were conducted only every 3-5 years. Nor would this type of comprehensive review program be cost-beneficial for the utility. However, a program could be implemented to review all key customers and/or all customers with a significant annual consumption on their sewer submeters and water-only services. We recommend that SPU Key Accounts and Commercial UST evaluate submeter review program options and implement something that is operationally feasible and cost-beneficial for the utility.

#### **ACTIONS PLANNED OR TAKEN – SPU Response:**

SPU has initiated changes to the process for water and sewer meter setup to establish greater assurance of accurate billing. These changes include conducting site visits to each sewer submeter installation to ensure the accuracy and appropriateness of sewer deductions. We will also establish a program of periodic re-inspections to ensure that deductions continue to be appropriate.

#### **Submeter Accuracy Testing – Conclusion 6: SPU does not have a program to verify the accuracy of sewer submeters. High risk**

##### Background

Sewer submeters, as described above at Conclusion 5, are owned by SPU customers, whereas all of the “regular” water meters in SPU’s system are owned by SPU. The SPU Water Meter Reading unit reads most meters, including the customer-owned submeters<sup>15</sup>. Customers are responsible for maintaining the submeters and ensuring their accuracy. SPU is responsible for maintaining the water meters, and performs periodic testing on commercial meters to help ensure their accuracy. The Seattle Municipal Code states that customers with submeters must ensure they are accurate, but does not provide any details on how this should be done.

##### Issue, Impact, and Recommendation

Controls should be adequate to ensure customer-owned sewer submeters are accurate because wastewater charges are based on these meters. Currently, controls are not adequate to achieve this objective. SPU does not have a program in place to verify that customers comply with the requirement to maintain accurate submeters. However, it should be noted that SPU has a procedure to review meter readings that appear to be “potential exceptions,” based on consumption patterns that appear to be abnormally high or low compared to the customer’s normal consumption, or if consumption is zero, or unusual in some way. The parameters that will generate a potential exception review are pre-programmed into the CCSS billing system. The review of potential exceptions is performed by the SPU Customer Audit units and is an ongoing monitoring control that covers all meter readings, including submeter readings.

During the site visits we made to conduct audit fieldwork on submeters as discussed above at Conclusion 5, we asked customers if they ever tested their submeters. Every customer responded

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<sup>15</sup> Some customers have submeters that are set up on a self-read basis and this is discussed in detail at Conclusion 4 on page 22.

that they did not. Since failing meters are most likely to slow down rather than speed up, this situation is especially concerning for chargeable meters. If a chargeable meter has slowed down, the customer would be under-billed for wastewater services. SPU meter experts indicated that while most water meters “run to failure” or function accurately until they completely stop working, some meters slow down with age and “fail” slowly. They indicated this is more likely to occur with the larger and more complex meters and would be the most likely to occur with chargeable effluent meters due to the type of use they receive. It is likely that the SPU Customer Audit potential exception review process would not identify a slowing meter, because if the meter slows down over time, the consumption patterns would not vary rapidly enough to meet the exception parameter threshold. Consequently, it is our opinion that the biggest risk to SPU of under-billed wastewater consumption due to meter accuracy issues lies with the larger chargeable meters, particularly the chargeable effluent meters that register high consumption. On the other hand, if a customer’s deduct meter has slowed down, it would result in over-billed water charges for that customer.

We recommend that SPU consider the options available for establishing a process for verifying the accuracy of customer-owned sewer submeters. For example, customers with chargeable meters over a certain size or that register a certain level of consumption could be required to have their submeters independently tested annually and to provide documentation of this testing to SPU. Or, SPU could consider using the in-house SPU Meter Crew to test customer submeters. There are a number of factors to consider for any option for submeter verification, but we would stress that any program should be evaluated against the cost and benefits it will provide to the utility. For example, it would not be feasible or cost-justified to require that all submeters within SPU’s wastewater system be tested annually.

#### **ACTIONS PLANNED OR TAKEN – SPU Response:**

SPU agrees that the sewer submetering program would benefit from improved meter accuracy. We will evaluate options for what meter owners can do and how to assure SPU that their meters are accurate; we believe this assessment can be completed by the 1<sup>st</sup> Quarter of 2012.

#### **Submeters and CCSS – Conclusion 7: There are issues with the way sewer submeters are set up in the CCSS billing system. *Medium risk***

##### Background

There are over 13,000 sewer submeters in SPU’s wastewater system, though only a fraction of these are currently registering usage. Every SPU water meter and sewer submeter is recorded in the CCSS billing system and identified with a meter number. There is a ‘Comment’ field in this meter listing where information about the meter usage or type may be recorded (e.g., used for irrigation, etc.). A commercial customer may have multiple SPU utility accounts, and even multiple accounts for the same business facility/location. This is quite common for larger business operations. The CCSS system evaluates meter and submeter readings against pre-programmed parameters and the consumption history for that specific meter and identifies those that may be exceptions for review. The Commercial Customer Audit group reviews these potential exceptions and considers the meter readings for any other meters under the same account during this review. Consumption on the other meters at the same facility will often

provide information about what is occurring with the meter reading identified as a possible exception. We found that the meter information recorded in CCSS was utilized by both the Commercial Customer Audit and Commercial UST groups.

#### Issue, Impact, and Recommendation

Sufficient water meter and submeter information should be available in CCSS to enable the Commercial Customer Audit and Commercial UST groups to perform their work effectively and efficiently. We concluded that the following improvements are needed in this area:

- The various water and sewer meters for the same customer facility are not linked in the CCSS billing system, which can make it difficult for Commercial Customer Audit to identify potential exceptions. If a customer has multiple accounts in CCSS, which is common for the larger business operations, the Commercial Customer Audit staff reviewing the potential exceptions will not have a good view of what is going on with the customer's water/wastewater usage unless they look at consumption for all of the meters for the same facility. Because Customer Audit does not know which accounts belong to the same customer, they only review meter readings at the account-level when reviewing potential exceptions and this gives them an incomplete view.
- While there is helpful, explanatory information recorded in the 'Comment' field in CCSS for some submeters as to their usage and meter type, there is no similar information recorded for many of the submeters. This type of information is very important in that it helps Commercial Customer Audit review potential meter reading exceptions in an informed manner and it is also helpful for the Commercial UST AE's.
- CCSS is programmed to identify water and submeter readings for review if the meter's consumption was significantly higher or lower than the average prior consumption (comparisons are based on the average consumption of the same period the previous year plus the immediate preceding period), or if it was a zero or negative reading. Currently, the parameters programmed into CCSS are the same for submeters and water-only meters as they are for regular water meters. The exception parameter for what may be either 'low' or 'high' consumption for a commercial meter with a single register and in the first consumption tier is currently set at 75%. This means that the consumption on the meter would have to be higher or lower by 75% or more than the meter's average prior consumption before it would be identified as a potential exception for Commercial Customer Audit to review. The exception parameters are set more tightly for the commercial meters with multiple registers. In the case of submeters and water-only services, SPU's greatest concerns would be with deduct meters that are over-recording, chargeable meters that are under-recording, and water-only meters that are over-recording. To account for the different situations possible with sewer submeters and water-only meters, SPU may want to review their pre-programmed exception parameters and consider whether they should be set differently than they are for regular water meters.

#### **ACTIONS PLANNED OR TAKEN – SPU Response:**

- a) While we understand the concern identified by the auditor regarding looped sewer configurations (i.e., multiple accounts for the same facility), SPU believes that the current

system of tracking these 16 accounts is sufficiently well documented and understood by staff to prevent any problems that might arise. Incorporating changes to the CCSS system for the few accounts where this issue arises is not cost-effective. We will however, continue to ensure that staff are trained to understand the system that has been developed and that it is uniformly available to all staff working with these submeter accounts.

- b) SPU will review standardizing the inclusion of notes on sewer submeter accounts with the review to be completed no later than end of first quarter, 2011.
- c) SPU reviewed this issue with staff in the Commercial Billing Team and believes that many of the measures in place today provide a level of assurance that exceptions are being appropriately called out. We are open however to having further discussion with the auditor on ways of improving the exception reporting and monitoring system.

**High Strength Industrial Waste (HSIW) Volumes – Conclusion 8: HSIW discharge volumes used by SPU for billing purposes are self-reported by industrial commercial customers to King County, and there is little verification of these volumes. Medium risk**

Background

Some SPU commercial customers discharge wastewater to SPU’s sewer system containing substances that require extra processing at King County’s wastewater treatment plants. This type of wastewater is called HSIW (i.e., high-strength industrial waste) and a special permit for it must be obtained from King County. The King County Industrial Waste unit determines what constitutes HSIW and they also determine which SPU customers are discharging HSIW and how much they should pay for it. King County Wastewater Enforcement samples HSIW discharge for the strength of discharge and the water content at the time of permitting and re-permitting. The SPU Commercial Customer Audit unit acts as the billing agent for these charges. Commercial Customer Audit bills the appropriate SPU customers for HSIW, and in turn, King County bills SPU for the HSIW processing. So, in effect, the HSIW charges are direct pass-thru charges for SPU.

King County Industrial Waste sends quarterly reports to SPU with the HSIW volumes or “chargeable flow” and the associated charges for each customer with HSIW. These reports are based on customers’ self-reported HSIW volumes to King County. SPU’s Commercial Customer Audit uses these quarterly reports to bill the customers monthly.<sup>16</sup> HSIW charges are added to the customer’s SPU combined utility account in CCSS using the ‘customer adjustment’ function. SPU does apply a small administrative charge to the customer account, as well, to account for the cost of these billing operations, and they also apply the normal amount for the wastewater utility tax (i.e., which was 12% of the customer’s HSIW bill during audit fieldwork). SPU officials told us that they did not know how King County calculates the HSIW charges.

The King County Wastewater Enforcement official we spoke with indicated that the County generally does not monitor or verify HSIW volumes, other than at the time of permitting or re-permitting.

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<sup>16</sup> The quarterly HSIW charges provided by King County are simply divided by three to arrive at a monthly billing amount.

### Issue, Impact, and Recommendation

Controls should be adequate to ensure industrial customers discharging HSIW waste to SPU's sewer system are billed for the accurate amount of waste. Current controls are less than adequate in that they primarily rely on self-reported HSIW volumes, with very little verification conducted by King County and none conducted by SPU. Since HSIW charges are a direct pass-thru for SPU, there is no impact to SPU revenues if HSIW volumes are under-reported. Nevertheless, there would be a negative impact to King County's wastewater revenues and SPU is acting as the County's billing agent for these charges. It is unlikely that with the current procedures that customer under-reporting of HSIW wastewater would be detected.

While controls are not adequate to ensure customers are billed for the correct volume of HSIW, we found that billing was occurring accurately and timely based on the HSIW volumes provided by King County to SPU. We sampled 25 customer accounts with HSIW charges and found that all were billed accurately according to the information provided to SPU by King County.

We recommend that SPU work with King County to identify possible solutions for implementing a cost-effective approach to periodically verifying SPU customer HSIW wastewater volumes.

### **ACTIONS PLANNED OR TAKEN – SPU Response:**

SPU will work with King County to discuss the development of cost-effective verification techniques for HSIW flow monitoring.

### **Contaminated Stormwater Volumes – Conclusion 9: Contaminated stormwater volumes used by SPU for billing purposes are for the most part self-reported by industrial commercial customers to King County, and verification of these volumes is limited.**

#### *Medium risk*

#### Background

SPU has 17 commercial customers who discharge “contaminated stormwater” into the City's stormwater drainage system. Due to the layout of these companies' grounds and the nature of their business processes, this waste cannot go into SPU's sewer system, but instead runs into the stormwater drainage system. Customers must obtain a special permit from King County to discharge contaminated stormwater. Similar to the process for HSIW wastewater, the King County Industrial Waste unit determines which SPU customers generate contaminated stormwater wastewater and how much to bill them for it. King County reviews contaminated stormwater discharge strength and estimated volumes at the times of permitting.

King County Industrial Waste provides a list to SPU Commercial Customer Audit of the annual contaminated stormwater charges for each customer. SPU indicated that King County calculates the charges based on the customer's surface area of their grounds (i.e., square footage), average rainfall, and actual discharge (as self-reported by the customer). According to a King County Wastewater Enforcement official, while some customers meter this discharge and some estimate it based on square footage and average rainfall, in general, King County relies on customer self-reporting of contaminated stormwater volumes.

The SPU Commercial Customer Audit unit acts as the billing agent for these charges. Commercial Customer Audit bills the appropriate SPU customers for contaminated stormwater, and in turn, King County bills SPU for it, so the charges are a direct pass-through for SPU. Commercial Customer Audit applies one-fourth of the annual charges to the customer's account every quarter, using the 'customer adjustment' function in CCSS. The prior year's contaminated stormwater charges are applied in the subsequent year, so for example, the charges for 2009 will be applied in 2010.

King County Wastewater Enforcement receives monthly data on contaminated stormwater by customer and reviews this data for reasonableness, but otherwise does not attempt to conduct any other verification of self-reported volumes.

#### Issue, Impact, and Recommendation

Controls should be adequate to ensure industrial customers discharging contaminated stormwater into SPU's stormwater system are billed for the accurate amount of waste. Current controls are not ideal in that they primarily rely on self-reported volumes, with very little verification conducted by King County and none conducted by SPU. Since contaminated stormwater charges are a direct pass-through for SPU, there is no impact to SPU revenues if volumes are under-reported. Nevertheless, there would be a negative impact to King County's wastewater revenues and SPU is acting as the County's billing agent for these charges. It is likely with the current procedures that customer under-reporting of contaminated stormwater would not be detected.

While we do not believe that controls are adequate to ensure customers are billed for the correct volume of contaminated stormwater, we found that billing was occurring accurately and timely for the list of charges provided by King County to SPU. We reviewed all 17 SPU customer accounts with contaminated stormwater charges and found that they were billed accurately and timely in accordance with the information provided to SPU by King County

We recommend that SPU discuss with King County options for conducting periodic verification/review of SPU customer contaminated stormwater volumes.

#### **ACTIONS PLANNED OR TAKEN – SPU Response:**

SPU will work with King County to review roles and responsibilities and evaluate cost-effective means of monitoring and verifying contaminated stormwater introduction to the combined sewer system. The initial meeting shall take place by second quarter 2011.

**Billing Construction Sites for Dewatering – Conclusion 10: There is no procedure to ensure that all contractors are billed by SPU for construction site discharge to the sewer system.**

***High risk***

Background

Construction sites that discharge liquid runoff to SPU’s sewer system (i.e., dewatering) must pay wastewater charges.<sup>17</sup> In 2009, SPU received about \$658,000 in revenue from construction site dewatering charges. As part of the building/development permitting process, contractors are directed by the City’s Department of Planning & Development (DPD) to get a Wastewater Discharge Permit from King County if there will be a need for site dewatering. King County requires a Dewatering Permit because they are concerned with the volume of wastewater that will be discharged and the chemical makeup of that discharge since they will be processing the waste through their sewer plants. King County decides whether the contractor will be required to get a Dewatering Permit and they note on the permit if the contractor should be billed. The contractor’s City DPD building permit is held up until they get the permit, if it is required. When the permit is required, King County instructs the contractor to contact SPU to get set up for dewatering billing, since it is SPU who bills the contractor for these wastewater charges if the construction site is located within the City.

The contractor should contact the SPU Key Services unit and provide a copy of their King County Wastewater Discharge Permit. A Key Services staff person sets the contractor up for billing, and also asks them to contact a staff person in SPU Engineering Services to review the technical details of their dewatering plans. In order to set up the contractor for billing, Key Services has the contractor complete a Discharge Information Sheet, which includes the number of total gallons they plan to discharge, how many gallons per minute, etc. The contractor may choose to be billed monthly, quarterly, or at the end of the project and this is also noted on the Discharge Information Sheet. Key Services creates a customer number and enters each construction customer into a tracking spreadsheet.

When it is time for the contractor to be billed, based on the billing period they selected, either the contractor contacts SPU Key Services or Key Services contacts the contractor to report the gallons of wastewater discharged. Some contractors just send an email with the volume listed and some send a packet of information with details on the volume dumped, when it was dumped, and the chemical makeup of the discharge. Key Services initiates the billing process by preparing a Sewer Discharge Form that states the amount the customer should be billed based on their self-reported volume. To calculate the dewatering charges, Key Services converts the gallons of sewerage dumped into ccf’s, then multiplies this by the current wastewater rate per ccf (i.e., \$8.98 ). Key Services forwards the Sewer Discharge Form to SPU Accounts Receivable (AR), who bills the contractor through the Summit AR module.

Issue, Impact, and Recommendation

All contractors with construction sites discharging to SPU’s sewer system should be billed accurately and timely. While there is a control procedure to ensure contractors obtain the King County Wastewater Discharge Permit when required, there is no control to ensure these

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<sup>17</sup> It is important to note that dewatering charges are only allowed if the construction runoff is discharged to SPU’s pipes that carry sewer only, not if the discharge is made to SPU’s combined stormwater/sewer pipes.

contractors get set up by SPU for billing. Contractors are asked to contact SPU Key Services to get set up for billing but there is no procedure that would identify a contractor who obtained a Wastewater Discharge Permit from the County but did not contact SPU to get set up for billing. Key Services indicated to us that they believed King County was monitoring for this, but when we spoke with a King County Industrial Waste official, he said they were not. In fact, the King County official speculated that the proper sewer dewatering and billing process might only be followed in the City for larger projects and that possibly 50% of the construction sites in the City were not being billed that should be. The King County official told us that some other municipalities in the County do not bill any construction sites for dewatering and that King County itself is not billing a lot of sites for dewatering. He indicated to us that he is currently tasked with working on a program to bring consistency across the County on this issue.

This control weakness could be resulting in lost wastewater revenues for SPU, as well as for King County as King County sewer processing charges are based on SPU's reported wastewater consumption. While controls are not adequate to ensure contractors are set up for construction site dewatering billing, we found that billing occurs accurately and timely for those contractors that do contact SPU. We sampled 15 Discharge Information Sheets from Key Service's records and verified with Key Services and SPU AR that charges were calculated and billed accurately to the contractors, contractors were billed timely, adequate documentation from the contractor on the volume of discharge was maintained, and account documentation was properly maintained.

We recommend SPU Key Services work with either DPD and/or King County Industrial Waste to develop and implement a control procedure to ensure all contractors that will be discharging to SPU's wastewater system are properly set up for billing. For example, if a report were provided by DPD or the County on all new Wastewater Discharge Permits, then Key Services could reconcile this monthly to their tracking spreadsheet.

#### **ACTIONS PLANNED OR TAKEN – SPU Response:**

SPU will work with King County and DPD to assess cost effective verification techniques for construction site dewatering. An initial meeting is anticipated for second quarter 2011.

#### **Construction Site Dewatering Volumes – Conclusion 11: Contractors self-report construction site wastewater discharge volumes to SPU for billing purposes and there is almost no verification of these volumes. High risk**

##### Background

As discussed above at Conclusion 10, when it is time for SPU to bill construction sites for wastewater discharge based on the selected billing period, either the contractor contacts SPU Key Services or SPU contacts the contractor to obtain the gallons of wastewater discharged. Contractors may either email or mail in this volume information. We spoke with two King County officials (i.e., one from Industrial Waste and one from Wastewater Enforcement) and were told that some construction sites track their volume of dewatering waste with a metered outflow to the sewer system, some do a "batch discharge" (i.e., save up the sewage in tanks and then dump a batch of it), but most just estimate the volume. For very large permitted construction projects, King County inspects them once a year and reads the meter flow for that day. King County also samples the discharge for permitted projects twice a year to review the

content of the discharge. We were told by a King County official that the County generally requires construction sites to install a discharge meter, except for smaller construction projects, and that the County is moving towards requiring discharge meters. So, whether the construction site is metering sewage discharge or not, they self-report their dewatering volume to SPU for billing purposes. If a contractor misreports construction site discharge volumes, King County indicated it would constitute a federal offense in violation of the Clean Water Act for giving false data, with penalties including jail time.

#### Issue, Impact, and Recommendation

Controls should be adequate to ensure contractors are billed accurately for their construction site dewatering volumes. Currently, controls are not adequate in that most contractors self-report these volumes, without any verification conducted by either SPU or King County. King County only periodically verifies dewatering volumes for the largest construction projects in the City and SPU performs no verification of volumes. This control weakness could be resulting in lost wastewater revenues for SPU as well as for King County, since customers could under-report dewatering discharge with little chance of detection except for the very largest construction projects. We recommend that SPU work with King County to establish and implement a cost-effective program to periodically verify construction site discharge volumes.

#### **ACTIONS PLANNED OR TAKEN – SPU Response:**

SPU will work with King County to determine appropriate roles and responsibilities for evaluating construction wastewater discharge quantity verification. We anticipate beginning this work in second Quarter 2011.

### **III. BILLING AND PAYMENTS – *We noted one opportunity for improvement to controls***

#### Background

Customer wastewater accounts are tracked and billed using SPU's CCSS system, which is the same system Seattle City Light (SCL) uses for billing electricity services. The only exception to this is the construction site dewatering accounts, which are billed using SPU's Summit Accounts Receivable system. Wastewater services are billed to customers based primarily on metered water consumption (plus metered consumption on any sewer submeters) for residential and commercial accounts.<sup>18</sup> Residential customers are billed bi-monthly, and commercial customers are billed monthly and the billing process is highly automated. After the Itron system has uploaded water meter reading data to CCSS, the accounts are ready to be billed on their scheduled billing dates. SCL has the responsibility for maintaining the CCSS system and a percentage of this cost is allocated to SPU.

In addition to the charges for metered wastewater consumption, some commercial customers pay separate fees for high-strength industrial waste (HSIW) and/or contaminated stormwater. (See further details on these charges discussed in Conclusions 8 and 9.) As noted above, SPU bills customers separately for construction site dewatering discharge. These customers self-report

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<sup>18</sup> SPU residential customers receive consolidated utility bills for water, wastewater, and solid waste. Charges for all three types of utility services are tracked and billed in the CCSS system. Commercial solid waste charges are billed separately.

discharge volumes to the SPU Key Services unit, which handles the set-up and tracking of these accounts, and SPU Accounts Receivable actually bills the customers for these charges. (See further details on construction site dewatering charges and procedures discussed in Conclusions 10 and 11 on pages 32 and 33.)

SPU allows residential and commercial customers 30 days to pay their combined SPU utility bills and their construction site dewatering accounts. The City Treasury division handles these highly automated payment processing functions. If customers are past due on wastewater charges on their combined SPU accounts, they are automatically assessed interest at the annual rate of 8% of the balance (or .67% monthly), which is the rate authorized by the Seattle Municipal Code (section 21.28.260). Customers may pay by mail, internet, phone, bank transfer, or in-person. Payments for construction site dewatering charges must be mailed to the SPU Finance Administration unit, which receives and processes many types of SPU payments. SPU Finance processes, posts, and records these payments using manual procedures.

The SPU Utilities Services Teams monitor residential and commercial customer accounts for any delinquencies, based on pre-set parameters. A set course of actions are executed for delinquent accounts, in accordance with SPU policies and procedures, including shut-off of water service. Several of the procedures leading up to water shut-off are automated by the CCSS billing and customer accounting system, including mailing a series of late notices to the customer.

#### Scope of Audit Work

We reviewed the processes and functions related to billing customers for SPU wastewater services to determine whether internal controls are adequate to ensure charges are billed accurately and timely. This included reviewing controls to ensure HSIW, contaminated stormwater, and construction site dewatering charges are billed accurately. It also included reviewing controls over procedures for billing customers with self-read sewer submeters. We reviewed the functions related to processing payments and managing accounts receivable for construction site dewatering customers. Specifically, we reviewed controls related to ensuring these payments are processed and posted accurately, timely, and securely. We reviewed controls over monitoring and managing delinquent construction dewatering accounts and we reviewed the payment terms granted and penalties for late payment. It is important to note that the scope of this audit work did not include payment processing, accounts receivable management, or delinquent account handling for regular residential and commercial wastewater charges billed on the customer's combined SPU utility statement. Our office will audit these areas for wastewater accounts in our Combined CCSS Billing Processes Audit, which will be published later as the last of our series of SPU Revenue Cycle audits.

Our fieldwork involved sampling residential and commercial accounts to verify wastewater charges were billed accurately and timely, including ensuring wastewater charges were calculated accurately during the summer months to reflect SPU's "sewer max" policy for incremental water consumption. We worked with SPU Accounts Receivable and SPU Customer Billing Services to perform these tests. We reviewed a sample of commercial accounts with HSIW and contaminated stormwater charges to verify the charges were billed accurately and timely in accordance with the consumption volumes self-reported by customers to King County Wastewater Enforcement. We worked with the SPU Commercial Customer Audit unit to

conduct this audit work. We reviewed a sample of customers with self-read sewer submeters to verify these accounts were billed accurately based on the customers' self-reported consumption volumes. We reviewed a sample of construction site customers to verify accounts were set-up properly, and dewatering charges were billed accurately and timely based on the customers' self-reported volumes. We also reviewed this sample of construction accounts to verify customer payments were processed and posted accurately and timely, and customers paid in a timely manner. We worked with SPU Key Services, SPU Accounts Receivable, and SPU Finance Administration to conduct this audit work.

### Conclusion

In our opinion, controls are adequate overall to ensure charges for wastewater services are billed accurately and timely, based on metered consumption, and self-reported volumes for HSIW, contaminated stormwater, construction site dewatering, and self-read sewer submeters. We also found that payments for construction site dewatering charges are processed and posted accurately, timely, and securely. However, we noted that there is an issue with the timeliness of construction site dewatering payments and SPU's handling of these accounts when they are delinquent. The details on this issue are discussed below.

### **Construction Site Dewatering Late Payments - Conclusion 12: Many contractors make late payments on SPU's construction site wastewater charges. *Medium risk***

#### Background

Conclusions 10 and 11 provide a detailed description of construction site dewatering and how the billing is set up and the charges are determined. The SPU Accounts Receivable (AR) unit bills the customers for this wastewater service. In 2009, SPU received about \$658,000 from construction site dewatering charges. SPU AR creates invoices in the Summit AR system monthly for all construction site customers who are ready to be billed, based on their pre-selected billing period (i.e., monthly, quarterly, or at the end of the project). The amount that should be billed is calculated by SPU Key Services and recorded on the customer's Sewer Discharge form. A copy of this form is attached to the customer's statement/invoice and mailed to the customer. Dewatering customers receive a monthly statement as long as they have a balance due. When an account is 30 days or more delinquent, interest is charged at the rate of 8% per year, or .67% per month.

SPU AR reviews the monthly Aging Report from Summit AR to monitor delinquent accounts. When customers are 30 days delinquent, SPU AR will call the customer or more often they will contact SPU Key Services and ask them to follow up with the customer. In addition, at 30 days delinquent, the customer receives a "dunning letter" along with their statement. There are two versions of the dunning letter, a "soft" letter when the customer reaches the 30 day delinquent point, and a stronger letter when the customer is more seriously delinquent. When accounts are 90 days delinquent or more, they are sent to the City Attorney's Office if they have a balance of \$2,500 or greater, and otherwise they are sent to the Treasury division of the Department of Finance and Administrative Services (FAS) to be forwarded to the City's collection agency.

### Issue, Impact, and Recommendation

Financial penalties should be set at a level to provide sufficient incentive for most construction site customers to pay for dewatering services in a timely manner. Based on our audit fieldwork results, we concluded that SPU's practices related to penalties are not sufficiently effective incentives for timely payment. We selected a sample of 15 dewatering customers and found that within this sample only 40% (i.e., 6) of the customers paid within 30 days after the invoice date. We also noted that SPU AR does not charge interest on delinquent dewatering accounts until they are 30 days or more past due, though there is no written policy on this. SPU is authorized to charge interest on accounts as soon as they are delinquent and the high frequency of late-payers found in our sample (i.e., 60% or 9 customers) indicates customers are not sufficiently motivated to pay in a timely manner. However, we noted that while many customers paid late, they did indeed pay, and SPU AR indicated that these construction site customers normally pay because they are generally ongoing customers who will continue to do construction work within the City. We also found that SPU generally billed the dewatering customers in our audit sample in a timely manner.

We recommend that SPU charge interest to delinquent construction site dewatering accounts as soon as they are 30 days delinquent, as is allowed by law. If late payment continues to be a frequent occurrence, SPU could consider establishing a separate late penalty fee, as well, as this is allowable under State law.

### **ACTIONS PLANNED OR TAKEN – SPU Response:**

SPU agrees with the recommendation to charge interest to delinquent accounts as soon as they are over 30 days past the invoice date. We will work with the Summit Team to modify past due calculations in the Summit Accounts Receivable. If late payments continue to be a frequent occurrence, we will consider establishing a separate late penalty fee.

## **IV. FUND ACCOUNTING – REVENUES AND RECEIVABLES – *We noted one opportunity for improved controls***

### Background

When customers are billed through the CCSS system for SPU wastewater services, these charges are posted daily as accounts receivable to CCSS, the subsidiary ledger. Wastewater charges are broken down into rate codes for different wastewater service levels (e.g., residential, commercial, sewer chargeable meter, etc.), and customer adjustments (including HSIW and contaminated stormwater charges), etc. The Supervisor of the SPU Residential Audit and Accounting unit reconciles CCSS accounts receivable monthly and provides this information to the SPU Drainage and Wastewater Fund Accountant. The Fund Accountant then posts the billed wastewater charges monthly to the Drainage and Wastewater fund in Summit, the City's general ledger, as a debit to Accounts Receivable (AR) and a credit to Revenues.

When customer payments are received, they are posted daily to CCSS as a reduction in accounts receivable and they are also booked daily to Summit as a debit to Cash and a credit to AR.<sup>19</sup>

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<sup>19</sup> Customer payments relate to multiple utility funds due to the fact that the utility bill is combined for water, wastewater, and solid waste services. The total amount of the payments are initially deposited to the Utility Clearing Fund in the General Ledger

This means that while charges, payments, and account adjustments are posted daily to CCSS, only payments are posted daily to Summit while revenues are posted monthly.

Construction site dewatering charges are also posted as wastewater revenues and receivables to the Drainage and Wastewater fund. These charges are billed through SPU's Summit AR module and these journal entries are made by the SPU Accounts Receivable unit to separate revenue and receivable accounts in the fund.

### Scope of Audit Work

We reviewed the processes and functions related to accounting for revenues and receivables for SPU's wastewater services. Specifically, we reviewed controls related to posting wastewater payments and transactions to the Drainage and Wastewater fund, reconciling Wastewater Accounts Receivable in both the subsidiary ledger (i.e., CCSS) and the general ledger (i.e., Summit), monitoring revenues and receivables, and reserving for bad debts. We conducted detailed audit work and reviewed a few reconciliations for both CCSS and the Summit Drainage and Wastewater fund Accounts Receivable, reviewed the calculations for the bad debt reserve to ensure the reserve was accurate in accordance with SPU's current policy, and reviewed the status and nature of wastewater accounts recently written off and those other accounts deemed to be uncollectible. We worked with SPU Residential Customer Audit and Accounting, SPU General Accounting, and the SPU Utilities Services Teams (UST) groups to perform this work.

### Conclusion

Overall, we concluded that revenues and receivables are posted accurately and timely, and reserves for bad debt are made in accordance with SPU policy. We found that CCSS accounts receivable is reconciled accurately and timely to the General Ledger. While SPU is reserving accurately for wastewater bad debts, in accordance with current policy, we noted an issue relating to delinquent inactive accounts. Details on this issue are discussed below.

### **Inactive Tenant Accounts - Conclusion 13: SPU has problems with delinquent inactive accounts that result in uncollectible accounts of over \$1 million from wastewater, water, and residential solid waste fees. High risk**

#### Background

SPU combined utility customer accounts (i.e., wastewater, water, and residential solid waste) change from an "active" status to an "inactive" status when water/wastewater services are no longer being provided to the customer. This situation occurs most frequently when the SPU bill is in the name of a tenant, versus the property owner, and the tenant moves out. At that time, the tenant account switches to an inactive status. SPU also has some "inactive owner" and "inactive metered out" accounts. Inactive owner accounts occur when the owner has delinquent debt from the period that their property wasn't rented and the owner's name was on the SPU account, but a new tenant is now renting the property. SPU's billing system cannot handle two active accounts at the same address, and SPU can't shut off water services for the new tenant if they are paying their bill, so the delinquent owner account moves to an inactive status. Metered-out accounts occur when the water meter has been removed from the property due to account delinquency, but

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by the Treasury group in Finance and Administrative Services (FAS) and then the SPU Fund Accountants book them to the individual funds later when they receive the daily CCSS reporting showing how the payments should be distributed.

SPU doesn't write off the debt because they assume that the property owner will want the meter re-installed later at some point. The owner cannot get a new meter installed until their SPU debts are paid in full.

Currently, SPU's delinquent inactive accounts represent about \$1 million, and about \$514,000 of this are delinquent wastewater charges. Some of these accounts date back to 2007 and earlier.

Once a delinquent tenant account reaches SPU's dollar level threshold, SPU will notify the property owner about the delinquency. SPU's current practice with inactive tenant accounts is to transfer any remaining delinquent debt to the property owner when the debt is one year or less delinquent. However, the Director of the UST division indicated there is no established policy specifying exactly when to transfer this debt to the owner and when to notify the owner of a tenant's delinquency. In addition, he noted that SPU does not have a formal policy and procedure, or a consistent system in place, for handling bad debts and write-offs in general. The UST division is currently working on drafting a formal policy. The Director also noted that SPU's former billing system, called CUBS, automatically transferred delinquent account debt back to the property owner, but with the current CCSS system every step must be handled manually after the point at which an account becomes inactive. SPU does not send delinquent inactive accounts to a collection agency. This is partly because the debt belongs to the property owner so if a tenant doesn't pay, the debt will be treated as an unrecorded lien against the property until it is paid in full. It is also because SPU does not currently collect either a driver license or social security number from their customers, which makes it very difficult for a collection agency to trace former customers who have moved without leaving a forwarding address.

At the end of 2009, SPU Accounting booked a bad debt reserve of just slightly over \$1 million for the delinquent inactive accounts because SPU management deemed there was no reasonable probability of collecting on these debts and thus they were overstating accounts receivable. However, as of May 2010, these accounts had not actually been written off.

#### Issue, Impact, and Recommendation

SPU policies and procedures for handling delinquent inactive accounts should minimize the amount of lost revenues from these accounts. Currently, SPU has problems with inactive accounts, particularly delinquent inactive tenant accounts that result in lost revenues of over \$1 million from wastewater, water, and residential solid waste fees. When tenants move without leaving a forwarding address, their delinquent SPU accounts become basically uncollectible under SPU's current procedures.

We recommend SPU consider the following options for policy and procedural changes to reduce lost revenues from inactive accounts:

- Collect a driver's license or social security number from tenant customers, or all customers, so that a collection agency could trace them when they move;
- Send delinquent inactive tenant and/or owner accounts to the City's collection agency;

- Revert any delinquent tenant accounts to the property owner, either as soon as the tenant moves out or after a relatively short period of time (e.g., 60 or 90 days);
- Collect a deposit from tenant customers, or all customers, to help deal with any amounts left owing when the account is closed or “abandoned;”
- Discontinue tenant accounts and put all combined-SPU utility accounts in the name of the property owner; and
- Develop new procedures for handling delinquent inactive accounts and other SPU delinquent utility accounts. Procedures should be formalized and adopted in a documented policy and procedure.

In addition, although SPU Accounting reserved properly for delinquent inactive accounts that they do not expect to collect, they have yet to actually write off the accounts.

#### **ACTIONS PLANNED OR TAKEN – SPU Response:**

Based on early discussions with the City Auditor, SPU has been actively engaged in examining changes to our customer account policies, including options to eliminate tenant accounts and require owners to maintain rental property accounts in their names. Since a significant portion of inactive delinquent accounts are associated with these tenant accounts, changes to this policy would likely reduce the quantity of delinquent accounts in the future. SPU expects to begin implementation of changes in policy by third quarter, 2011.

## **V. OUTSOURCED OPERATIONS - CONTRACTS, RATES, AND INVOICING -** *Controls require significant improvement*

### Background

SPU collects and conveys wastewater from SPU customers; however, SPU outsources sewer processing (i.e., wastewater treatment) functions. SPU outsources all but a very small portion of its sewer processing needs to King County’s Wastewater Treatment Division, and the remaining amount to the Southwest Suburban Sewer District. (A more detailed discussion of the contract for sewer services with Southwest Suburban can be found in section I of the report, Rates and Sewer Contracts.) King County processes SPU’s wastewater, as well as wastewater from other wholesale sewer customers at the County’s two wastewater treatment plants – the Westpoint treatment plant, in the Magnolia area of Seattle, and the Renton treatment plant. The original agreement between the City of Seattle and King County for sewer processing, treatment, and disposal services was signed and implemented in 1961, amended in 1992, and the amended contract is in effect until July 2036 with no intervening periods set for renegotiation. King County has the same type of agreement for providing wholesale sewer processing services with about 30 other municipalities and sewer districts in the region. In 2009, SPU paid just under \$111 million to King County for sewer processing services while earning revenues from wastewater fees of over \$186 million for 2009.

In addition to the County contract, there are other authoritative guidance and oversight entities for the County's regional wastewater functions including the Revised Code of Washington (RCW), the County Code, the County Council Regional Water Quality Committee, and the County's operating board for wholesale sewer customers.

SPU reports wastewater consumption volumes to King County quarterly and calculates the amounts owed to King County for wastewater services monthly, based on the average of the prior two quarters' consumption volumes. The SPU Rates unit is responsible for wastewater consumption reporting and calculating the amounts owed to the County, and uses detailed spreadsheets to make these calculations. King County charges for sewer processing services based on the number of residential customer equivalents (RCEs). Each SPU residential customer represents one RCE, and commercial customers are converted to RCE equivalents by dividing their metered wastewater consumption by 7.5 ccf's, or what King County considers to be the monthly consumption of their average residential customer. King County then invoices SPU based on SPU's wastewater consumption reporting and charges their basic sewer or MSR rate (i.e., currently \$31.90) by the number of RCEs reported by SPU. In addition, there are other wastewater charges included in the County's invoice, including charges for hazardous industrial waste (HSIW) and contaminated stormwater.

#### Scope of Audit Work

We reviewed the controls over SPU's outsourced sewer processing functions for the areas of contracts, rates, and invoicing. Our audit objectives were to ensure the City's contract with the County for sewage disposal services appropriately protects SPU's and the City's interests, that rates are accurate and appropriate, and that invoicing is accurate and in accordance with contract terms. We limited the scope of our work for this section of the audit to reviewing SPU's contract with the County for sewage disposal, and SPU's three other small wholesale sewer arrangements mentioned in Conclusion section I – Rates and Sewer Contracts. We conducted a detailed review of SPU's contract with King County and all relevant state, County, City, and regional legal and other authoritative guidance over wastewater functions. We met with SPU Finance, SPU Corporate Policy and Performance, SPU senior management, and City Council Central Staff to discuss these areas. We also met with two King County Wastewater Finance officials to discuss the same. We performed a detailed review of controls over wastewater consumption calculations, reporting, and invoicing accuracy for the County's sewer processing services. We examined and verified the accuracy of a sample of three monthly invoices selected from 2008 and 2009, verified supporting data in the CCSS billing system, reviewed appropriate source documents, and verified the proper payment of these invoices. We worked with SPU Rates and SPU Accounting to conduct this invoice audit work.

#### Conclusion

Overall, we concluded that the City's contract with the County for sewage disposal services does not adequately protect SPU's and the City's interests, and is not aligned with its related authoritative guidance. We concluded that invoicing is accurate and complies with contract terms, although we noted an issue with the procedures for approving invoice payments. We found nothing during the audit to indicate that there were any issues with the County's provision of contracted wastewater services; however, we noted a lack of performance expectations for

King County included in the contract. The details on the control weaknesses we found in these areas are covered below.

**Sewer Processing Contract and Authoritative Guidance - Conclusion 14: There are problems with SPU’s contract with King County for sewer processing services and the related authoritative wastewater guidance. High risk**

Background

In 1958, the Municipality of Metropolitan Seattle (i.e., Metro) was formed in order to “perform the function of metropolitan sewage disposal” for Seattle and other municipalities in the region. The region was growing at the time and government leaders believed the best course of action would be to pursue a regional solution to handling and financing sewer infrastructure. When Metro was later disbanded and merged into King County government in 1992, the County assumed the responsibility for regional sewage disposal and the related infrastructure.

Contract

As noted above, the City of Seattle contracts with King County for sewer processing services and the current agreement for sewage disposal was last amended in 1992 and is in effect until July 2036, with no intervening periods set for renegotiation. King County provides these same types of sewer processing services for many other municipalities in the region. It should be noted that the City of Seattle’s wastewater represents about 42% of the County wastewater system’s total volume.

Authoritative Wastewater Guidance

The Regional Water Quality Committee (RWQC) is the King County Council committee that oversees wastewater functions. The RWQC includes representatives of King County, the City of Seattle (i.e., two City Councilmembers), and the suburban cities and sewer districts that obtain sewer processing services from the County. This group can make recommendations on wastewater issues, but has no binding votes. In 1998, the RWQC met and agreed to a plan for financing the proposed Regional Wastewater Services Plan (RWSP), which provided for sewer infrastructure to support the growth forecasted for the region, and to set the guidance for the sewer financing policies. This meeting was known as the Robinswood meeting and it was held before the vote on the adoption of the RWSP. Senior-level representatives from the City of Seattle and the County’s other municipal wastewater customers attended the Robinswood meeting. The results of the meeting were documented in a letter to Ron Sims, the County Executive at the time, from the RWQC. This letter is referred to as the Robinswood Agreement. At some point after the Robinswood meeting and issuance of the Robinswood Agreement, King County adopted the financial policies that were agreed to at the meeting for the execution of the RWSP. These financial policies were codified as section 28.86.160 of the King County Code. The financing plan agreed to at the Robinswood meeting led to the decision to construct the County’s new Brightwater sewage treatment plant.

In addition to the RWQC, King County has an operating board for its wholesale sewer customers called MWPAAC (Metropolitan Water Pollution Abatement Advisory Committee) and representatives from the City of Seattle sit on this board. The MWPAAC members serve strictly in an advisory capacity to the County on wastewater policies. County wastewater policies may

be unilaterally changed by the King County Council without the agreement of the wholesale customers. In contrast, SPU's Wholesale Water Operating Board, which represents the wholesale customers, must vote on significant water policy changes.

#### Issue, Impact, and Recommendation

The City's contract with the County for sewer processing services should appropriately protect SPU and the City's interests, and comply with the related authoritative guidance. Currently, these objectives are not being attained:

- Contract Renegotiation Periods. The City has no renegotiation provisions for a contract that is in force for 45 years. There are several contract terms that both SPU and the County would like to revise. Currently, however, the County cannot change the terms of the contract unless all of the wholesale customers agree to the change. Achieving a consensus on changing the agreement would be difficult due to the different population sizes and interests of these diverse municipalities, and specifically whether they represent a growth-oriented area such as the outer suburbs, or a highly-developed area such as Seattle. SPU indicated they have been working with the County for five years to renegotiate and/or further specify certain terms of the wastewater contract but without success to date.
- Rate Calculations. The contract does not specify how the County will calculate either their basic sewer rate (i.e., MSR rate) that is charged for all sewer customers or their capacity charge that is assessed to new sewer customers. The contract's lack of specificity in this area allows the County complete discretion over how their sewer rates are calculated and does not provide Seattle or the County's other wholesale sewer customers with any significant role in setting rates. Wastewater rates are a significant expense for the citizens of Seattle and to protect the citizens' interests, the methodology that is followed for these calculations should be specified and made transparent in the City's contract terms. SPU has been asking for the County's rate calculation methodologies to be agreed to in "binding documents" but to date the County has not agreed to this.
- Wastewater Cost True-Ups. The contract does not require the County to conduct or document the results of an annual "true up" of actual wastewater costs versus forecasted costs, or recalculate their wholesale sewer rates to reflect this. In contrast, SPU conducts an annual cost true-up for its wholesale water line of business and wholesale water rates are adjusted to reflect the actual cost of service. This annual cost true-up is audited by an outside, independent audit firm and the audit results are made available to all of SPU's wholesale customers. Since many of the County's wholesale sewer customers are also SPU wholesale water customers, some of them have requested that the County conduct cost true-ups for wastewater, but with no success to date.
- Audit Clause. The contract does not contain an audit clause granting the City the authority to audit King County's wastewater system books and records. We would recommend the inclusion of an audit clause for any significant City contract, but it is imperative for a contract involving payments of over \$100 million annually. Again,

SPU's wholesale water contracts include audit clauses and some of these customers who are also County wholesale sewer customers have expressed their concerns on this point.

- Authoritative Wastewater Guidance. While the policies agreed to by the RWQC in the Robinswood Agreement were adopted within the King County Code's Wastewater Financial Policies, these adopted policies do not include all of the key points that were agreed to during the Robinswood meeting.

The current contract is not adequate to protect the interests of the citizens of Seattle. We recommend that SPU encourage the County to initiate regional meetings with the key wastewater customers/stakeholders to begin resolving some of the issues with the sewer processing contract.

#### **ACTIONS PLANNED OR TAKEN – SPU Response:**

The *Agreement for Sewage Disposal* between Seattle and King County is in effect until July 1, 2036. We agree that the issues listed in the audit are important and should be incorporated into a revised contract. SPU anticipates re-entering negotiations with King County prior to the expiration of the existing agreement.

#### **Sewer Processing Invoice Review - Conclusion 15: Improved controls are needed over the review and approval of King County sewer processing invoices before payment. *Medium risk***

##### Background

The SPU Rates unit is responsible for performing the wastewater consumption calculations that determine SPU's charges for King County sewer processing services. SPU Rates calculates wastewater consumption quarterly, but King County invoices monthly, so the quarterly charges are simply divided by three. SPU Accounting is responsible for reviewing and approving King County's monthly invoices. In 2009, SPU paid the King County Wastewater Treatment division about \$111 million for sewer processing services, and this averaged about \$9.2 million per month.

In order to prepare the quarterly payment calculation and consumption reporting, SPU Rates relies on reports from the CCSS utility billing system that provide data on water/wastewater consumption in ccf's, the number of premises served, consumption for sewer submeters, etc. The wastewater consumption data from two quarters prior is used to determine the charges for the following quarter. There is a six month lag due to the delay in getting reporting from CCSS. For example, the King County charges for 2<sup>nd</sup> quarter 2010 were determined based on the wastewater consumption data from 4<sup>th</sup> quarter 2009.

SPU Rates first obtains the number of residential households whose wastewater is processed through King County's sewer processing plants.<sup>20</sup> Each household is considered to be one residential customer equivalent (RCE). King County charges SPU a flat rate per RCE that is

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<sup>20</sup> SPU has a small number of customers whose wastewater is processed in sewer treatment plants not owned by King County, such as the Southwest Suburban Sewer District that processes wastewater for SPU customers located in an area of West Seattle.

currently \$31.90. SPU Rates then obtains the total water/wastewater consumption for SPU commercial customers, subtracts any volume related to sewer deduct meters, adds any volume for sewer-only chargeable meters, and subtracts the volume of sewage that is disposed of outside of King County's wastewater system. The "non-metered" consumption from construction site dewatering is added to this consumption total. The wastewater consumption of the commercial customers plus the dewatering consumption are converted to RCEs by dividing by 7.5 ccfs.<sup>21</sup> SPU prepares wastewater consumption reporting for King County based on the information above, and King County uses this consumption reporting to prepare their monthly invoices to SPU for sewer processing services.

The invoices include the following charges:

- The base charge for sewer processing services based on \$31.90 times the number of RCEs calculated for residential and commercial SPU customers.
- Three types of industrial waste charges, known as high-strength industrial waste or HSIW. King County provides a list noting the charges for each SPU customer. These charges are billed to the customers and end up being direct pass-through charges for SPU.
- Quarterly contaminated stormwater charges. King County provides a list noting the charges for each SPU customer. These charges are billed to the customers and end up being direct pass-through charges for SPU.

The King County sewer processing invoices are routed to an Accounting Technician in SPU, who reviews the invoices, codes them to a payables account, and approves the invoices for SPU Accounts Payable to pay with a wire transfer.

#### Issue, Impact, and Recommendation

Due to the very large sums of money involved, the King County sewer processing invoices should be reviewed and approved by SPU management before payment. There should be documentation of this management review. Currently, these invoices are reviewed and approved by an Accounting Technician in SPU Accounting, without management review or approval before payment. As part of our audit fieldwork, we reviewed the sewer processing invoices for three months<sup>22</sup> in detail. We recalculated all consumption volumes and charges, verified the data used in the calculations to the CCSS billing system and various source documents, and noted no errors or exceptions. So, while we have no reason to think that there have been errors due to the current procedures, nevertheless, due to the sizable amount of funds involved, we recommend that a formalized management review process be established and implemented for the King County sewer processing invoices.

#### **ACTIONS PLANNED OR TAKEN – SPU Response:**

The invoice amount submitted by King County is based on figures generated by SPU's Rates Manager and submitted to them in the form of a memo. Given the large quantities involved, we agree that the process would benefit from assurance that the invoice actually received in

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<sup>21</sup> King County sets their sewer processing rates based on the assumption that 1 RCE or household consumes 7.5 ccf's of water/wastewater per month.

<sup>22</sup> Each month selected for audit test work was from a different quarter.

accounting matches the amount we provided. As such, we will incorporate a new step in our process of issuing a copy of the memo to the Fund Accountant when we send it to the County so that they can verify a match when the invoice is received.

# APPENDIX 1

## Wastewater Revenue Data

Source: SPU Accounting

	2005	2006	2007	2008	2009
<b>Residential Wastewater Revenues</b>	\$57,853,457	\$59,952,508	\$65,177,048	\$67,336,857	\$76,490,850
<b>Commercial Wastewater Revenues</b>	<u>\$85,798,233</u>	<u>\$88,563,149</u>	<u>\$96,744,179</u>	<u>\$98,660,727</u>	<u>\$110,102,010</u>
<b>Total Wastewater Revenues</b>	\$143,651,690	\$148,515,657	\$161,921,227	\$165,997,584	\$186,592,861

## APPENDIX 2

### SPU Revenue Cycle Audit – Wastewater – Risk Matrix

Risk Level Definitions:

Red = High risk – Internal controls should be strengthened as soon as possible.

Yellow = Medium risk – It would be ideal to strengthen internal controls.

Green = Low risk – Internal controls appear to be adequate.

<b>Scope Area and Issues</b>	<b>Risk Level</b>
<b>Rates and Contracts</b>	<b>Red</b>
<ul style="list-style-type: none"> <li>• SPU Wastewater Rates</li> </ul>	<b>Red</b>
<ul style="list-style-type: none"> <li>• King County Sewer Processing Rates</li> </ul>	<b>Red</b>
<ul style="list-style-type: none"> <li>• Sewer Contract Remittances</li> </ul>	<b>Green</b>
<b>Utility Usage Tracking</b>	<b>Yellow</b>
<ul style="list-style-type: none"> <li>• Self-Read Submeters</li> </ul>	<b>Yellow</b>
<ul style="list-style-type: none"> <li>• Submeter Usage Monitoring</li> </ul>	<b>Red</b>
<ul style="list-style-type: none"> <li>• Submeter Accuracy Testing</li> </ul>	<b>Red</b>
<ul style="list-style-type: none"> <li>• Submeters and CCSS</li> </ul>	<b>Yellow</b>
<ul style="list-style-type: none"> <li>• HSIW Volumes</li> </ul>	<b>Yellow</b>
<ul style="list-style-type: none"> <li>• Contaminated Stormwater Volumes</li> </ul>	<b>Yellow</b>
<ul style="list-style-type: none"> <li>• Billing Construction Sites for Dewatering</li> </ul>	<b>Red</b>
<ul style="list-style-type: none"> <li>• Construction Site Dewatering Volumes</li> </ul>	<b>Red</b>
<b>Billing and Payments</b>	<b>Green</b>
<ul style="list-style-type: none"> <li>• Construction Site Dewatering Late Payments</li> </ul>	<b>Yellow</b>
<b>Fund Accounting – Revenues and Receivables</b>	<b>Yellow</b>
<ul style="list-style-type: none"> <li>• Delinquent Inactive Accounts</li> </ul>	<b>Red</b>
<b>Outsourced Operations - Contracts, Rates, and Invoicing</b>	<b>Red</b>
<ul style="list-style-type: none"> <li>• Sewer Processing Contract and Authoritative Wastewater Guidance</li> </ul>	<b>Red</b>
<ul style="list-style-type: none"> <li>• Sewer Processing Invoice Review</li> </ul>	<b>Yellow</b>