

# Seattle Public Utilities Residential Solid Waste Billing Controls Audit

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**Seattle Office of City Auditor**

# Seattle Public Utilities Residential Solid Waste Billing Controls Audit

## Report Highlights

### Background

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Seattle Public Utilities (SPU) is a City of Seattle (City) department responsible for the collection and disposal of municipal solid waste, which includes all garbage, yard waste, compost, and recyclable materials. Solid waste includes materials and items that need special handling, such as furniture and appliances. Year 2020 residential solid waste revenues were about \$208.7 million. The number of solid waste customer accounts serviced by SPU is about 165,000.

### What We Found

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In general, we found that SPU has implemented several controls that help ensure that residential solid waste billings are accurate, timely, complete, and authorized. Some of these controls are incorporated into the Customer Care and Billing (CCB) system and operate automatically. However, as identified in our testing, certain controls were either lacking or need to be strengthened. Examples include (1) the lack of timely resolution of several system related errors that prevent solid waste charges from appearing on one or more subsequent billing cycles; (2) the absence of documented policies and procedures regarding certain types of adjustments or inconsistent adjustment policies; (3) insufficient controls that could result in the fraudulent adjustment of customer billings; and (4) risk assessments and key controls that affect residential solid waste are not documented.

### Recommendations

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This audit provides 12 recommendations to improve existing internal controls or implement additional controls over the accuracy, timeliness, completeness, and authorization of SPU's residential solid waste billing.

### Department Response

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We address SPU's responses to our recommendations in Appendix A. SPU concurred with all our report's recommendations.



### WHY WE DID THIS AUDIT

We conducted this audit because SPU's residential solid waste revenues have not been audited by our office. Our audit objectives were to determine if SPU's internal controls over these revenues provide reasonable assurance that billings for residential solid waste services are accurate, complete, timely, and authorized.

### HOW WE DID THIS AUDIT

To accomplish the audit's objectives, we:

- Documented various processes related to the billing of residential solid waste.
- Conducted interviews with various SPU work groups.
- Identified internal controls and internal control gaps.

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## INTRODUCTION

### Audit Overview

The objective of our audit was to determine if Seattle Public Utilities' (SPU) internal controls provide reasonable assurance of accurate, complete, timely, and authorized residential solid waste billing. SPU is a City of Seattle (City) department responsible for the collection and disposal of municipal solid waste, which includes all garbage, yard waste, compost, and recyclables that customers set out for collection. Our audit focused on determining whether such controls met those audit objectives. SPU Director's Rule FIN-160, Customer Account and Billing Management, states that SPU is responsible for issuing timely and accurate bills, reviewing bills for accuracy, making necessary corrections, and adjusting bills for over and underbilling consistent with SPU's established rules and procedures.<sup>1</sup>

In general, we found that SPU has implemented several controls that meet billing controls objectives. Some of these controls are incorporated into the Customer Care and Billing (CCB) system and operate automatically. We tested selected internal controls over solid waste billing to determine if they are working as intended. As a result, we identified improvements that could be made to some of those controls and made recommendations to address this.

We wish to thank SPU personnel for their cooperation during the audit. We are grateful to personnel we interviewed at the City's Contact Center, SPU Customer Accounts and Billing Services (CABS), and SPU's Solid Waste Inspection and Compliance (SWIC) work groups. Finally, we give special thanks to SPU's Internal Controls work group manager, who took the time necessary to help ensure our understanding of the complex billing process and to provide requested data for our analysis.

### Background

The collection, disposal and/or processing of garbage, recycling, and yard/compost waste for residential customers are performed by private contractors paid by SPU for these services. SPU has about 165,000 solid waste residential accounts. Year 2019 and 2020 revenues from residential solid waste were \$208.9 million and \$208.7 million, respectively. Residential customers receive bi-weekly recycling services. Garbage and yard/compost waste collection are serviced weekly.

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<sup>1</sup> [Customer Account and Billing Management](#), SPU Director's Rule FIN-160, par. 2

The City has a “Solid Waste Code” that is enumerated in the Seattle Municipal Code, Title 21, Subtitle III – Solid Waste. Single-family and multi-family residential services are billed for solid waste on a combined SPU bill, together with sewer and water services.

SPU contracts with both Waste Management of Washington and Recology King County for solid waste collection services. Contract terms with each company run for ten years, beginning in 2019. In addition to weekly collection services, SPU provides one-time services such as special collections<sup>2</sup>, pick up of extra garbage, and the collection of electronic equipment and bulk item materials such as furniture and appliances.<sup>3</sup> Discount programs are available to those customers who qualify.

The billing system used for residential solid waste billing is the Customer Care and Billing system (CCB). The system went live at SPU in September of 2016. The CCB application has a workflow system that automatically routes certain billing adjustments to designated managers for approval when required by policy. Approval is done online without the need for paper documentation. CCB also uses a software interface that allows communication between SPU and the solid waste contractors (Appendix C).

The SPU work groups primarily involved with residential solid waste customer billing are as follows:

**Contact Center in the Customer Response Division:** There are eight supervisors who oversee utility account representatives (UARs) whose responsibilities include initiating the new account setup process for residential solid waste billing and resolving customer billing disputes.<sup>4</sup>

**Customer Account and Billing Services (CABS) in the Utility Accounts Division:** The CABS work group is responsible for processing billing adjustments of charges previously billed.

**Solid Waste Inspection and Compliance (SWIC) in the Planning and Program Management Division:** This work group has 11 solid waste inspectors, an inspector lead, and a manager. Inspectors primarily work with multi-family customer accounts to assist with their service needs, which includes determining the number and size of waste containers. They work with customers to change their service levels when requested, and work with the contractors who

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<sup>2</sup> Special collections are the pickup of solid waste outside of regularly scheduled collections.

<sup>3</sup> See Appendix B in this report for a comprehensive list of one-time services.

<sup>4</sup> If there is an escrow involved, only a subgroup of the UAR Offline Team handles a new account setup.

provide solid waste services to resolve billing disputes. They also submit requests for billing adjustments when appropriate.

The UARs at the SPU Contact Center communicate electronically through a software interface with the contractors, for example, when requesting one-time services for customers. Contractors can also communicate electronically with SPU, for example, to update a customer record in CCB to record newly delivered waste containers.<sup>5</sup>

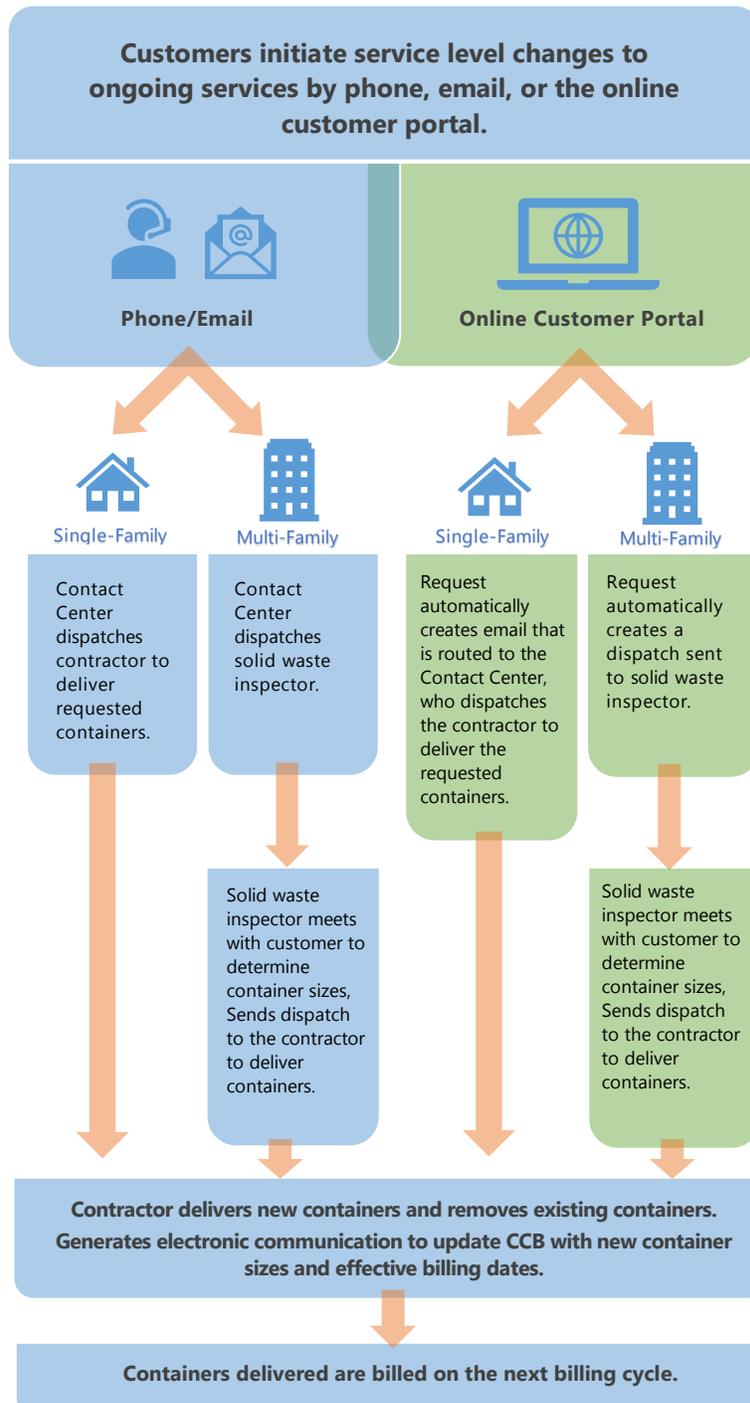
The CCB system also facilitates electronic communications between SPU work groups, such as notification from the UARs at the Contact Center to an inspector in the SWIC work group, for example, to contact a multi-family customer regarding a change in the size of a waste container. Once the inspector approves a change in container size, the approval is electronically communicated to the contractor to deliver the new container. In May 2020, the City opened an online customer portal that allows SPU customers to order services, such as changes in container sizes. The portal also uses the software interface for this purpose.

SPU bills most of its residential solid waste customers every two months. CCB automatically generates solid waste billings based on the meter read cycle number for water services assigned to each customer in the CCB billing system. Billings are sent to customers in defined billing cycles rather than billing the entire customer base at the same time. The system bills each of the three container types, garbage, yard/compost waste, and recycle, within the span of a billing cycle. Each container is assigned an effective date in CCB to designate when billing for servicing the container should begin. If a container is exchanged for a different size within the billing cycle, the system automatically prorates billing for the number of days each container was in service. The process for changing service levels is shown in Exhibit 1 below.

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<sup>5</sup> The update is accomplished using a field activity report, which when completed by the contractor in the CCB system, automatically updates the customer record with the new containers.

**Exhibit 1: Process Flow for Service Level Changes**



Source: Seattle Office of City Auditor

Internal controls help SPU management accomplish their objectives of billing timeliness, authorization, accuracy, and completeness. Accordingly, we have organized these objectives into sections in this report.

## BILLING TIMELINESS

### Section Summary

We found several internal control deficiencies related to the timeliness of SPU's residential solid waste billing. These issues concern the timeliness of SPU's corrections of billing errors and unattached service points. Untimely billing results in delayed customer payments and could result in large back billings if the unbilled charges extend into previous billing cycles. This situation can negatively affect SPU's reputation. High dollar back billings may also trigger the need for customer payment plans, further delaying payments.

### Timely Correction of CCB System Errors that Result in Billing Exceptions is Needed

SPU needs to strengthen its controls over the timeliness of correcting CCB system billing errors as shown in Supervisor To-Do Summary Reports.

Billing related "To-Do's" are created by the CCB system as a method of notifying appropriate SPU personnel of billing exceptions, which are billings excluded from a billing cycle due to CCB related errors. One form of notification appears on the "Supervisor To-Do Summary" report, used by CABS and the Contact Center to identify the To-Do's that need correction. For example, if a billing cycle number is not entered in a customer record when a new customer account is created, a To-Do is generated by the CCB system as notification that a billing cycle number is needed. To-Do notifications are an important control to help ensure the timeliness and completion of residential solid waste billing.

We tested a sample of different types of billing-related To-Do's from a list of CCB To-Do's provided by SPU to determine if they were completed in a timely manner. A bi-monthly billing occurs every 60 days; therefore, we measured timeliness as the completion of To-Do's within a 60-day period starting from the To-Do creation date, or one billing cycle. We found that completion was untimely (more than 60 days) in four of the six To-Do types tested. Within these six To-Do types, there were 875 To-Do's that were not completed within the 60-day period. Untimely billing could result in delayed customer payments and an accumulation of large back billings that can negatively affect SPU's reputation.

Exhibit 2 below shows an example of a Supervisor To-Do Report, listing various To-Do types and the number of To-Do's that need to be completed for each type (see the "Total" column). We note this report also includes To-Do's for the water and sewer lines of business at SPU.

**Exhibit 2: Supervisor To-Do Report**

To Do Type	Priority	Total	Open	Being Worked On
Bill segments in error	10	1480	1276	204
SPU Adjustment Approval - Audit Fees	10	66	65	1
SPU Adjustment Approval - Refunds	10	144	92	52
SPU Credit Card Refund Request	10	8	5	3
SPU EAP Adjustment Request	10	8	8	0
SPU Escrow Refund Request	10	408	394	14
SPU Hearing Officer Adjustment	10	1	0	1
SPU Low Income Rate Remove or Research	10	7	7	0
SPU Low Income Rate Remove or Research	10	151	101	50
SPU Payment Corrections	10	2	0	2
SPU Regular Refund Request	10	13	6	7
SPU Request Billing Adjustment	10	752	481	271
SPU Request Leak Adjustment	10	1069	1000	69
SPU Transfer Account Receivable	10	10	4	6
Write-off events require attention	10	29	0	29
FA Completion Notification (CABS)	20	54	8	46
Returned Payment Process Errors with Payment	20	1	0	1
Review SPU- FA for Field Adjustment	20	220	219	1
Review SPU-FA for Stuck Meter	20	89	89	0
Sewer Max Calculation Exceptions	50	100	34	66
Create Bill Using Bill Cycle Errors	80	27	26	1

Source: Seattle Public Utilities

**Recommendation 1**

**Seattle Public Utilities management should investigate the causes of untimely completion of billing related To-Do’s and implement controls to reduce or eliminate the untimeliness.**

SPU needs to strengthen controls over the timeliness of correcting CCB system billing errors that appear in Unbilled Service Agreement (SA) reports.

The "Unbilled SA" report,<sup>6</sup> received every other month by a Utility Accounts Services (UAS) Manager, identifies solid waste customers who are not billed due to CCB related errors. The UAS Manager is charged with oversight of unbilled SA's and routes the list of unbilled customers to the work groups responsible for correcting the errors. The work groups at SPU include CABS, Meter Reading, Account Services, and the Contact Center. A column in the report shows the number of days from the date of the last solid waste billing for each customer through the date of the Unbilled SA report. Another column labeled "Issues" identifies the problem associated with each

<sup>6</sup> "SA" is short for "service agreement" and captures basic information about a customer. An unbilled SA indicates the existence of a service agreement; however, CCB related errors are preventing the creation of a billing.

Unbilled SA. Generally, the problems are related to uncompleted To-Do's.

We reviewed the Unbilled SA report dated April 1, 2021 and computed unbilled statistics for two categories of issues that together equaled 58 percent of the total unbilled report population. One such category was identified as "Accounts without a bill cycle" indicating a billing cycle number is missing in the customer's CCB record. This could happen, for example, when a customer account is created and a billing cycle number was not entered into the customer's record, preventing the billing of solid waste charges. This category showed an average of 194 days unbilled. The total number of unbilled accounts for which one or more billing cycles were missed on this report was calculated at 48.<sup>7</sup> The second category identified on the report was "Bill segment in error", which means a new solid waste customer name was not verified against King County property records. The CCB system is configured with a rule that requires the verification of all new King County customers to ensure the accuracy of the property owner's name for billing purposes. Until this verification is noted as completed in CCB by Contact Center personnel, billing for solid waste charges will not appear on subsequent billing cycles. This category showed an average of eight unbilled days. The total number of unbilled accounts with a "Bill segment in error" issue was 15.

Exhibit 3 below shows an example of the first five lines of an Unbilled SA report from April 1, 2021. Column B shows the number of days since the customer account was last billed.

**Exhibit 3: Unbilled SA Report**

A	B	C	D	E	F	G	H	
	Unbilled Days	Last Bill Date	Customer Class Code	Customer Class Description	Account ID	SA Type Code	Role	Issue
	169	NEVER BILLED	WRES	Residential SPU		WRESB	CABS	Bill segments in error
	169	NEVER BILLED	WRES	Residential SPU		WRESB	CABS	Bill segments in error
	169	NEVER BILLED	WRES	Residential SPU		WRESB	CABS	Bill segments in error
	170	NEVER BILLED	WCOM	Commercial SPU		FCOM	CABS	Bill segments in error
	173	NEVER BILLED	WRES	Residential SPU		WRESB	CABS	Bill segments in error

Source: Seattle Public Utilities

<sup>7</sup> A billing cycle is equal to 60 days.

## Recommendation 2

**Seattle Public Utilities management should implement controls to help ensure the timeliness of resolving issues on the “Unbilled SA” report.**

SPU needs to strengthen controls over the timeliness of correcting unattached service points that result in CCB system billing errors.

In the CCB system, solid waste residential customer billing is based on service points entered in a customer record. Each service point has a solid waste container associated with it. There are three service points for each customer; garbage, yard/compost, and recycling.<sup>8</sup> Each of the three service points must be “attached”<sup>9</sup> to a service agreement so the charges for each customer container appear on a billing.

During field work, we requested that SPU provide us with their report showing CCB service points not attached to solid waste service agreements (“Service Points with Item and No Service Agreement ID’s”). The data showed 620 service points that were not attached. Of the 620 service points, 379 are billable for garbage and yard/compost waste (recycle services are at no charge). The number of billable service points *not attached* to a service agreement greater than 60 days measured, from the service point effective date<sup>10</sup> to the report date, was 284, indicating that as many as 284 service points (containers) were not billed in one or more billing cycles.

If not resolved in a timely manner, SPU may continue to lose revenue at each billing cycle for each service point not attached to a service agreement.

Exhibit 4 below shows, as an example, the first of several rows of the “Service Points with Item and No Service Agreement ID’s” report that we used to obtain the above test results. The highlighted column (# Days) was inserted into the report by the auditor to calculate the number of days between the effective date of each service point and the report date.

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<sup>8</sup> Some customers who are located outside the Seattle service area for solid waste that receive water service from SPU, are not billed for solid waste charges.

<sup>9</sup> “Attached” means there is a reference number included in each service point that ties it to the same reference number in the customer service agreement.

<sup>10</sup> The effective date is the date a container was delivered to the customer and is the starting point for billing purposes.

**Exhibit 4: Service Points with Item and No Service Agreement ID's Report**

PREM_ID	SP_ID	SP_TYPE_CD	SP_STATUS_FLG	SP_INSTALL_DATE	ITEM_EFFECTIVE_DATE	Date of this Report	# Days (F-G)	ITEM_TYPE_CD
0108433139	0101534980	YWRESS	R	29-JUL-20	27-JAN-21	3/16/2021	48	YC13GAL
0171146266	0173164486	YWRESS	R	12-JUL-19	23-JUL-20	3/16/2021	236	YC13GAL
0199343939	0193629314	YWRESS	R	17-AUG-18	28-FEB-20	3/16/2021	382	YC13GAL
0210083447	0210845330	GRESS	R	22-OCT-20	04-NOV-20	3/16/2021	132	GC32GAL
0211554679	0219588274	YWRESS	R	23-APR-18	07-DEC-20	3/16/2021	99	YC32GAL
0262403069	0263196008	GRESS	R	02-MAR-20	03-MAR-21	3/16/2021	13	GC32GAL
0262403069	0268376786	YWRESS	R	02-MAR-20	03-MAR-21	3/16/2021	13	YC13GAL
0278578738	0270975476	GRESS	R	09-JUL-20	09-FEB-21	3/16/2021	35	GC32GAL
0278578738	0279001504	YWRESS	R	09-JUL-20	09-FEB-21	3/16/2021	35	YC32GAL

Source: Seattle Public Utilities

**Recommendation 3**

Seattle Public Utilities management should determine the cause for the high number of unattached residential solid waste service points and implement controls to minimize or eliminate this condition.

## BILLING AUTHORIZATION

### Section Summary

We found several internal control deficiencies related to the authorization of solid waste billing. Policies for the approval of one-time billing adjustments and cancelled adjustments are not aligned with practice. Cancelled billing adjustments have a higher risk of fraud and therefore should be controlled through written, management approved procedures. We also note that policies and procedures for reviewing CCB user access do not reflect current practice. User access must be controlled to help prevent fraud. SPU management should update and align its approval policy and practice for billing adjustments and adjustment cancellations for one-time charges to ensure consistency of approval policies.

### Policy for Management Approval of Adjustments and Cancelled Adjustments is Not Aligned with Practice

Management approvals of billing adjustments for *one-time charges* and the cancellation of those adjustments are addressed in SPU Procedure CS-320 (Procedure). These types of adjustments are made to remove a previous billing<sup>11</sup> for *one-time charges*, such as charges for the pickup of electronics and appliances. Management approval levels required for these adjustments, as defined in paragraph six of the Procedure, are based on the total dollar amount of the original adjustment being cancelled. However, approval levels defined in the Procedure do not align with adjustment approval levels programmed in CCB.

Exhibit 5 below shows a comparison between CCB defined adjustment approval levels and the approval levels defined in the Procedure. Exhibit 6 below compares the same adjustment approvals, but for *cancelled* adjustments; that is, previously added adjustments that were cancelled (removed).

### Exhibit 5: Adjustments

Position	CCB Approval Limits	Procedure CS-320 Approval Limits
Tech 3	Up to \$1,000	Up to \$1,001
Manager	Up to \$2,500	Up to \$4,999
Division Director	Up to \$5,000	Up to \$19,999
Deputy Director	Not Specified	Up to \$49,999
General Manager / Chief Executive Officer	Not Specified	\$50,000 and Above

Source: Seattle Office of City Auditor

<sup>11</sup> A cancelled adjustment could also be used to remove a previous cancelled adjustment, resulting in a charge to the customer, if for example, the cancelled adjustment was given in error.

**Exhibit 6: Adjustment Cancellations**

CCB Approval Limits	Procedure CS-320 Approval Limits
Not specified in CCB	Same as in Exhibit 5

Source: Seattle Office of City Auditor

From this comparison, we note two situations that warrant management attention. First, for adjustments, approval levels beyond the limit of \$5,000 are not defined in CCB. As a result, adjustments greater than \$5,000 will not be automatically routed in CCB to the deputy director or general manager as required in the Procedure.

Second, while the Procedure also addresses *adjustment cancellation* limits, CCB is not configured to automatically route adjustment cancellations to the appropriate approver in accordance with the limits specified in the Procedure. We tested year 2020 cancelled adjustments recorded in CCB<sup>12</sup> and found that in 16 instances, Tech 3's in CABS approved cancelled adjustments that exceeded \$1,000, contrary to approval levels authorized in the Procedure.<sup>13</sup>

**Recommendation 4**

**Seattle Public Utilities management should re-visit adjustment approval dollar thresholds and align them between Procedure CS-320 and Customer Care and Billing system.**

**Recommendation 5**

**Seattle Public Utilities management should define a process by which cancelled adjustments are approved outside of the Customer Care and Billing system and document that process.**

**Cancellation of Adjustments for Ongoing Services Lacks a Defined Approval Process**

Cancellation of charges related to ongoing services need a controlled approval process.

Another type of cancelled billing adjustment is the cancellation of charges for *ongoing services*, such as the charges for weekly service of containers and dumpsters. These types of cancellations are referred to by SPU as "cancelled bill segments". Procedure CS-320 does not address cancelled bill segments and there are no defined approval authority levels for these types of adjustments programmed in CCB. Further, there are no *documented* approval policies for the cancellation of bill segments. In year 2020, the highest bill segment cancellation was just over \$27,000 and the total of all cancelled bill segments that year was about \$1.2 million. While CABS management

<sup>12</sup> These adjustments had to be manually routed to approvers since CCB is not configured to automatically do so for cancelled adjustments.

<sup>13</sup> The dollar amounts ranged from about \$1,008 to \$1,222.

reviews cancelled bill segments on a monthly report *after* such bill segments are cancelled, controls are needed to help ensure they are approved *before* the cancellation. Cancelled bill segments are subject to a higher risk of fraud and therefore preventative controls<sup>14</sup>, that include procedures requiring *prior* management approval of these cancellations, are preferable to the current monthly management review after the fact (detective control).

## Recommendation 6

**Seattle Public Utilities management should implement written, management approved policies and procedures that include preventative controls to address the cancellation of residential solid waste bill segments.**

### **Policies and Procedures for the Update of CCB User Access Do Not Reflect Current Practice**

Procedures addressing the CCB system user access review process need to be updated and policies created.

CCB system user access is reviewed and updated by SPU division directors once each year, or more often at their request. The Accounting Division Internal Controls work group emails Excel spreadsheets to division directors showing existing CCB user profiles and roles for each employee in their division. The spreadsheets show the degree of access, if any, users currently have to the CCB system. The directors are asked to review the spreadsheets and make any updates such as changing existing user profiles and roles, deleting users, or adding new users. The spreadsheets with the corrections noted by the directors are then emailed back to the Accounting Division Internal Controls work group, who in turn, sends any spreadsheets with noted corrections to the CIS Functional Team to make the user access changes in CCB.

While SPU has documented procedures for this review process, they need to be updated and policies created to reflect the use of the CCB system rather than the legacy billing system (CCSS). Policies regarding the review process should be documented and approved by management to be sure the procedures are aligned with policy.

## Recommendation 7

**Seattle Public Utilities management should update procedures and document management approved policies to reflect the current practice of updating user access to the Customer Care and Billing system.**

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<sup>14</sup> "Managing the Business Risk of Fraud: A Practical Guide", sponsored by the Institute of Internal Auditors, the American Institute of Certified Public Accountants, and the Association of Certified Fraud Examiners. Principle 3 for effectively managing an organization's fraud risk asserts that prevention techniques should be established when feasible to mitigate the possible impacts on the organization. Principle 4 states that detection techniques should be established when preventative measures fail, or unmitigated (residual) risks are realized.

**Approval Policies for the Cancellation of Adjustments are Not Aligned Between SPU Work Groups**

Policies for approving the cancellation of adjustments between the CABS group and the SWIC group need to be aligned.

Approval requirements for cancelling a previously billed adjustment on a customer's solid waste billing account are not aligned between the CABS work group and the SWIC work group. According to the SWIC work group manager, all billing adjustment cancellation requests submitted by inspectors in that group for amounts greater than \$1,000 must be approved by her before the billing adjustments are processed by CABS. On the other hand, a CABS billing tech we interviewed who processes adjustment cancellations stated that she only requires authorization from the SWIC manager if the adjustment affects more than one billing cycle. She stated that she was unaware of the SWIC approval policy. While the SWIC manager's policy is in writing, there is no documentation of a CABS approval policy.

**Recommendation 8**

**Management from Seattle Public Utilities' Customer Accounts and Billing Services and the Solid Waste Inspection and Compliance work groups should agree on a uniform adjustment cancellation approval policy for residential solid waste billing. The policy should be documented and approved by Seattle Public Utilities management.**

## BILLING ACCURACY

### Section Summary

Residential solid waste rates are updated each year in CCB to reflect rates approved by the City Council. SPU Finance Division's final review and approval of updated rates is not documented. Inaccurate updates will have a material effect on billing accuracy. We also found a lack of controls over updating critical billing data, increasing the risk of fraudulently lowering a customer's solid waste bill.

### Final Management Approval of the Annual Solid Waste Rate Update Process is Needed

Final approval of residential solid waste rates by SPU Finance Division management should be performed and documented.

The Seattle City Council approves rates for residential solid waste services which change each year. Rates are based on container and dumpster sizes and other ancillary service types requested by customers. The effective date of the annual rate change is April 1st of each year.

The work groups involved in the update process in CCB are the rates work group in the Finance Division, the internal controls work group in the Accounting Division, and the customer information systems (CIS) functional team work group in the Corporate Performance Division. The updates are done in accordance with documented procedures that help ensure the accuracy and completeness of updated solid waste rates. Updated solid waste rates are promoted to the production environment and validated by the internal controls work group manager at the end of the process. SPU's Finance Division is charged with oversight of the rates update process. SPU's internal controls work group manager provided us with documented procedures that outline each step in the update process. However, according to the CIS functional team manager, there is no management approval of the rates update process *after* the rates have been moved to the production environment, where all updates become live, which is concerning given the high impact of billing errors resulting from potentially inaccurate solid waste rates.

### Recommendation 9

**Seattle Public Utilities Finance Division management should review and approve the rate updates after completion to verify all documented procedural steps have been taken. There should be documented evidence of this review.**

**Insufficient Controls  
Over Updating Critical  
Billing Data**

SPU needs to implement controls to prevent or detect unauthorized changes to residential solid waste service points.

The three residential solid waste customer service points in CCB are garbage, yard/compost, and recycling. Each service point has specific container sizes within. For example, within a garbage service point, container capacity ranges from a 12-gallon to a 90-gallon container. For dumpsters, capacity ranges from .75 yards to 30 yards. Solid waste rates are based on container capacity.

There are 64 employees from four SPU work groups who are currently authorized to make direct changes to a customer's service points in CCB when a correction to those service points is needed. However, there is no audit trail in CCB that tracks these changes, increasing the risk of fraudulently lowering a customer's solid waste bill, for example, by changing the container sizes. The revenue loss as a result could be significant over time.

**Recommendation 10**

**Seattle Public Utilities management should implement preventative and/or detective controls to address the risk of unauthorized changes to solid waste service points.**

## RISK ASSESSMENTS AND KEY CONTROLS

### Section Summary

SPU has not documented risk assessments and key controls tied to residential solid waste billing. Identifying risks and implementing controls to address those risks are necessary to help reasonably ensure that all residential solid waste billing objectives are achieved.

### Risk Assessments and Key Controls Tied to Residential Solid Waste Billing are Not Documented

Risk assessments and key controls that affect residential solid waste billing activities should be documented.

Risk assessments identify the need for key controls that help ensure the accuracy, completeness, timeliness, and authorization of residential solid waste billing. The risks and corresponding controls should be documented and updated as changes occur in the billing process. According to the CCB system specialist, risk assessments of the residential solid waste billing process are not performed by SPU. Risk assessments and related key controls identification are necessary to help ensure management's billing objectives are met.

### Recommendation 11

**Seattle Public Utilities management should perform a risk assessment of the residential solid waste billing process that include controls to address those risks. Risks and corresponding controls should be updated as necessary to reflect changes in the billing process. Control owners should be assigned for each control and be responsible for oversight and monitoring responsibilities to ensure that controls are working as intended.**

### Recommendation 12

**Seattle Public Utilities management should ensure that all risks and controls identified in the risk assessment of the residential solid waste billing process are documented.**

## RACE AND SOCIAL JUSTICE IMPLICATIONS OF SPU'S SOLID WASTE EXTRAS CHARGES

For all our audits, we consider the potential race and social justice implications of our work. For this audit, we spoke with SPU management about analyzing "extras" charges, which occur when a customer is charged additional fees for putting out garbage and food/yard waste over what the containers/dumpsters are designed to hold. In 2020, SPU charged customers \$9 million in extras charges, which constituted the largest number of one-time charges for that year. We wanted to know whether SPU had conducted or had plans to analyze extras charges to see whether there were racial or other disparities when they are assessed. SPU's Solid Waste Contracts Manager stated that SPU plans to use the City's Racial Equity Toolkit to analyze recent years' extras charges to determine if the data shows there are racial or other disparities in charging for extras. According to SPU, the work will be completed in the first quarter of 2022. SPU has agreed to share the results of this analysis with us.

## OBJECTIVES, SCOPE, AND METHODOLOGY

### Objectives

Our objectives for this audit were to determine if internal controls provided reasonable assurance that Seattle Public Utilities' billings for residential solid waste services are accurate, complete, timely, and authorized.

### Scope

SPU's Internal controls related to our objectives that were in place at the commencement of the audit.

### Methodology

We examined SPU's residential solid waste billing controls by conducting interviews with management and the work groups reporting to them, by reviewing related documentation, and by performing data analysis and controls testing. We considered both Customer Care and Billing (CCB) application controls that operate automatically, such as with the billing adjustment approval process, as well as manual controls.

Specific activities performed:

- We collected and reviewed documents relevant to our audit objectives including the Knowledge Point database of policies and procedures.
- We conducted interviews with various SPU work groups, including Customer Accounts and Billing Services, the Utility Account Representatives at the Customer Response Division (Contact Center), and the Solid Waste Line of Business Inspection and Compliance work groups.
- We performed data analysis to understand relationships in the billing data.
- We identified internal controls and internal control gaps in the residential solid waste billing process.
- We tested selected solid waste billing controls to determine their effectiveness.
- We documented processes related to the billing of residential solid waste.

We used the judgmental method to determine the samples selected for our audit test work. The results of this work cannot be projected to the population as we did not select a random sample.

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.

## APPENDIX A

### Recommendations and Department Response

C= Concur; PC= Partially Concur; DNC = Does not Concur

City Auditor's Recommendation	SPU Management response	Responsible Owner	
<p><b>Recommendation 1</b></p> <p>Seattle Public Utilities management should investigate the reasons for the untimely completion of billing related To-Do's and implement controls to reduce or eliminate the untimeliness.</p>	<p>SPU agrees with the recommendation. The Customer Account and Billing Services (CABS) workgroup will investigate the reasons for the untimely completion (greater than 60 days) of billing related To-Do's.</p> <p>Management will analyze the reasons for the delay in completion of To-Do's and will evaluate whether controls need to be strengthened over billing timeliness.</p>	<p>CABS</p>	<p>C</p>
<p><b>Recommendation 2</b></p> <p>Seattle Public Utilities management should implement controls to help ensure the timeliness of resolving the issues on the "Unbilled SA" report.</p>	<p>SPU agrees with the recommendation. The Utility Account Services (UAS), Customer Account and Billing Services (CABS), Meter Reading, and Contact Center workgroups will review the Unbilled SA report on a bi-monthly basis.</p>	<p>UAS CABS Meter Reading Contact Center</p>	<p>C</p>
<p><b>Recommendation 3</b></p> <p>Seattle Public Utilities management should determine the reason for the high number of unattached residential solid waste service points and implement controls to minimize or eliminate this condition.</p>	<p>SPU agrees with the recommendation. The Contact Center, Customer Information System (CIS) and Development Services Office (DSO) workgroups are analyzing the cause for the high number of solid waste residential service points that aren't attached to service agreements. Management will evaluate the need to implement controls to minimize or eliminate this condition and streamline</p>	<p>Contact Center CIS DSO</p>	<p>C</p>

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	unattached residential solid waste service points.		
<p><b>Recommendation 4</b> Seattle Public Utilities management should re-visit adjustment approval dollar thresholds and align them between Procedure CS-320 and the Customer Care and Billing system.</p>	SPU agrees with the recommendation. The Customer Account and Billing Services (CABS) and Corporate Performance Division workgroups will fix the adjustment approval dollar threshold misalignment between Procedure CS-320 and CCB.	CABS  Corporate Performance Division	C
<p><b>Recommendation 5</b> Seattle Public Utilities management should define the process by which cancelled adjustments are approved and document that process.</p>	SPU agrees with the recommendation. The Customer Account and Billing Services (CABS) and Customer Information System (CIS) workgroups will create a report that shows the user ID of cancelled adjustment transactions not approved within CCB. The review and approval process will be documented in a procedure.	CABS  CIS	C
<p><b>Recommendation 6</b> Seattle Public Utilities management should Implement written, management approved policies and procedures that include preventative controls to address the cancellation of residential solid waste bill segments.</p>	<p>SPU agrees with the recommendation. Management will evaluate whether preventative controls can be put into place to ensure that the review is performed before the cancellation.</p> <p>Management will create written and approved procedures to address cancellation of residential solid waste bill segments.</p>	CABS  CIS	C
<p><b>Recommendation 7</b> Seattle Public Utilities management should update procedures and create policies to reflect the current practice of updating user access to</p>	SPU agrees with the recommendation. The Customer Account and Billing Services (CABS) and Corporate Performance Division workgroups will	CABS  Corporate Performance Division	C

**Seattle Public Utilities Residential Solid Waste Billing Controls Audit**

<p>the Customer Care and Billing system.</p>	<p>review Procedure CS-106.1 and CS-106.2. The procedures will be revised to reflect the correct billing system.</p>		
<p><b>Recommendation 8</b> Management from Seattle Public Utilities' Customer Accounts and Billing Services and the Solid Waste Inspection and Compliance work groups should agree on a uniform adjustment cancellation approval policy for residential solid waste billing. The policy should be documented and approved by Seattle Public Utilities management.</p>	<p>SPU agrees with the recommendation. The Solid Waste Inspection and Compliance (SWIC) and Customer Account and Billing Services (CABS) workgroups will ensure that there is alignment in the approval of adjustment cancellations between both workgroups.</p> <p>The adjustment cancellation approval process will be documented in a procedure.</p>	<p>SWIC CABS</p>	<p>C</p>
<p><b>Recommendation 9</b> Seattle Public Utilities Finance Division management should review and approve the rate updates after completion to verify all documented procedural steps have been taken. There should be documented evidence of this review.</p>	<p>SPU agrees with the recommendation. The Accounting and Finance Division workgroups will ensure accuracy and completeness of updated rates in the production environment and evidence of review notation.</p>	<p>Accounting Division Finance Division</p>	<p>C</p>
<p><b>Recommendation 10</b> Seattle Public Utilities management should implement preventative and/or detective controls to address the risk of unauthorized changes to solid waste service points.</p>	<p>SPU Management will evaluate whether there are additional measures that need to be taken.</p>	<p>SWIC CIS</p>	<p>C</p>
<p><b>Recommendation 11</b> Seattle Public Utilities management should perform a risk assessment of the residential solid waste billing process that includes controls to address those risks. Risks and corresponding controls should be updated as necessary to reflect changes in the billing process. Control owners should be assigned</p>	<p>SPU agrees with the recommendation. We will perform a risk assessment over the residential solid waste billing process.</p>	<p>RQA Internal Controls</p>	<p>C</p>

<p>for each control and be responsible for oversight and monitoring responsibilities to ensure that controls are working as intended.</p>				
<p><b>Recommendation 12</b> Seattle Public Utilities management should document all risks and controls identified in the risk assessment of the residential solid waste billing process.</p>		<p>SPU agrees with the recommendation. SPU will document the risk assessment and controls over the residential solid waste billing process.</p>	<p>Internal Controls  RQA</p>	<p>C</p>

## APPENDIX B

### Solid Waste One-Time Charges

Year 2020 Revenues from One-Time Charges		
Solid Waste Service Types:	# Services	Service Revenues
Solid Waste FYW Can Cleaning	1	\$ 12
Solid Waste Garbage Can Cleaning	2	\$ 24
Solid Waste Recycle Dumpster Cleaning	1	\$ 92
Solid Waste Recycle Can Cleaning	3	\$ 162
Solid Waste Garbage Dumpster Cleaning	4	\$ 229
Solid Waste Recycle Dumpster Replacement	9	\$ 329
Solid Waste Garbage Illegal Dumping	2	\$ 550
Solid Waste Garbage Dumpster Replacement	20	\$ 732
Solid Waste Recycle Can Replacement	24	\$ 733
Solid Waste Special Items Small Pickup	199	\$ 1,020
Solid Waste Recycle Dumpster Lock Replacement	58	\$ 1,664
Solid Waste Garbage Dumpster Lock Replacement	116	\$ 2,216
Solid Waste FYW Can Replacement	135	\$ 4,114
Solid Waste Small Electronics Pickup	440	\$ 8,800
Solid Waste Recycle Can Special Pickup	99	\$ 8,811
Solid Waste Garbage Can Replacement	290	\$ 8,841
Solid Waste Garbage Can Special Pickup	121	\$ 9,149
Solid Waste FYW Can Special Pickup	186	\$ 9,250
Solid Waste Recycle Dumpster Lock Installation	63	\$ 10,407
Solid Waste Garbage Dumpster Lock Installation	113	\$ 14,878
Solid Waste Recycle Dumpster Special Pickup	92	\$ 26,700
Solid Waste Garbage Dumpster Special Pickup	196	\$ 46,948
Solid Waste Bulky Item Pickup	8,197	\$ 338,048
Solid Waste Extra Yard Waste	97,797	\$ 1,419,106
Solid Waste Extra Garbage	330,789	\$ 7,848,681
Solid Waste Garbage Adjustment	21	\$ (1,261)
Solid Waste Yard/Food Waste Adjustment	6	\$ (65)
	<b>Total</b>	<b>\$ 9,760,172</b>

Source: Seattle Office of City Auditor; Compiled from data supplied by Seattle Public Utilities

## APPENDIX C

### Software Interface

Solid waste contractors and SPU can exchange communications with each other using CCB system *interfaces*, which allows electronic communication of information between them. Below are some examples of those communications.

#### Seattle Public Utilities Software Interface with Solid Waste Contractors ( Waste Management, and Recology)



- Notification to Deliver New Containers and Dumpsters
- Notification to Replace Existing Containers and Dumpsters
- Notification of Special Customer Pickups
- Notification to Provide One-Time Services to Customers
- Update of Contractor Customer Information Systems from CCB
- Notification of Missed Collections
- Notification to Provide Ancillary Services
- Photo Request



- Generates a Customer Billing in CCB for Extra Garbage and Yard Waste
- Updates CCB with Newly Delivered Container Sizes
- Notifies SPU of one of 29 Collection Exceptions (e.g., Damaged or Overweight)

Source: Seattle Office of City Auditor

## APPENDIX D

### Seattle Office of City Auditor Mission, Background, and Quality Assurance

#### **Our Mission:**

To help the City of Seattle achieve honest, efficient management and full accountability throughout City government. We serve the public interest by providing the City Council, Mayor 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 Seattle residents.

#### **Background:**

Seattle voters established our office by a 1991 amendment to the City Charter. The office is an independent department within the legislative branch of City government. The City Auditor reports to the City Council and has a four-year term to ensure her/his independence in deciding what work the office should perform and reporting the results of this work. The Office of City Auditor conducts performance audits and non-audit projects covering City of Seattle programs, departments, grants, and contracts. The City Auditor's goal is to ensure that the City of Seattle is run as effectively, efficiently, and equitably as possible in compliance with applicable laws and regulations.

#### **How We Ensure Quality:**

The office's work is performed in accordance with the Government Auditing Standards issued by the Comptroller General of the United States. These standards provide guidelines for audit planning, fieldwork, quality control systems, staff training, and reporting of results. In addition, the standards require that external auditors periodically review our office's policies, procedures, and activities to ensure that we adhere to these professional standards.

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