



CITY AUDITOR'S OFFICE

# Utility Billing

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January 17, 2019

AUDIT REPORT NO. 1910

## CITY COUNCIL

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January 17, 2019

Honorable Mayor and Members of the City Council:

Enclosed is the audit report for *Utility Billing*, which was included on the Council-approved FY 2018/19 Audit Plan. This audit was conducted to evaluate the effectiveness and accuracy of Business Services' water, wastewater and solid waste billing services and billing system controls.

While most Utility Billing transactions were properly authorized and applied correctly, Utility Billing controls did not effectively prevent or detect some errors. We found a small number of errors in billing entries that indicate a more thorough management review is needed. Also, a few billing rates did not match the Council-approved rates, with some resulting in billing errors. Other rate discrepancies were attributed to special or past negotiated commercial solid waste rates or incorrect account information in the billing system. Further, certain staff outside of Utility Billing have system access to adjust billings, and this access should be removed or adequately monitored.

If you need additional information or have any questions, please contact me at (480) 312-7867.

Sincerely,

Sharron E. Walker, CPA, CFE, CLEA  
City Auditor

Audit Team:

Paul Christiansen, CPA, CIA – Sr. Auditor



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# AUDIT HIGHLIGHTS

## Utility Billing

January 17, 2019

Audit Report No. 1910

### WHY WE DID THIS AUDIT

An audit of Utility Billing was included on the City Council-approved fiscal year (FY) 2018/19 Audit Plan. The audit objective was to evaluate the effectiveness and accuracy of Business Services' water, wastewater and solid waste billing services and billing system controls. The audit scope encompassed Utility Billing transactions recorded from July 2017 through September 2018.

### BACKGROUND

The Utility Billing program, part of the Business Services department within the City Treasurer's Office, is funded by the Enterprise Funds of the utility operations.

Utility Billing staff use the NorthStar billing system to generate monthly customer bills for the City's approximately 100,000 customers. Billings for water, sewer and solid waste usage are processed daily based on the City's meter reading and other information.

The City Council authorizes the rates that City utility departments charge customers for services provided. Utility department directors are authorized to establish special rates for unusual or unique situations not expressly covered in code.

Water services represent about 61% of the City's \$180 million utility account charges for FY 2017/18, with sewer, solid waste, and reclaimed water charges making up nearly all the remaining amounts.

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### WHAT WE FOUND

**A small portion of account entries were not properly authorized, calculated or entered.**

While most transactions were properly authorized and applied correctly, Utility Billing did not prevent or detect some errors. For example, we found:

- Of 41 transactions tested, 5 accounts were not charged correct rates for commercial solid waste services.
- Out of 765 UB Communicator transactions, 8 roll-off orders were applied to the wrong account, incorrectly billed or not billed.
- The billing reconciliation between NorthStar and the general ledger was not effective.

**Some NorthStar billing rates did not match those authorized in City Code.**

Specifically, we found:

- 115 of about 2,700 commercial solid waste customer rates did not match Council-approved rates. The majority were attributed to past negotiated or special rates and others to incorrect account information.
- Thirty-two of 33 Paradise Valley customer accounts were overcharged for out-of-city sewer surcharges, totaling approximately \$14,000. The surcharge was not applied to one account, underbilling about \$190.

**NorthStar segregation of duties controls can be improved.**

Staff in other areas, including Water and Remittance Processing, have system access to adjust billings. Eleven of the 25 tested entries had minor calculation errors or were missing supporting documentation.

### WHAT WE RECOMMEND

We recommend Business Services management ensure Utility Billing:

- Develops a formal quality control review process to help identify entries with incorrect amounts, calculation errors, or insufficient documentation.
- Takes reasonable steps to verify that the department-provided billing rates agree to the Council-authorized rates or special rates approved by the department director.
- Limits account adjustment access for employees with incompatible duties or ensures management review of those entries.

### MANAGEMENT RESPONSE

Business Services management agreed with the audit recommendations.



## BACKGROUND

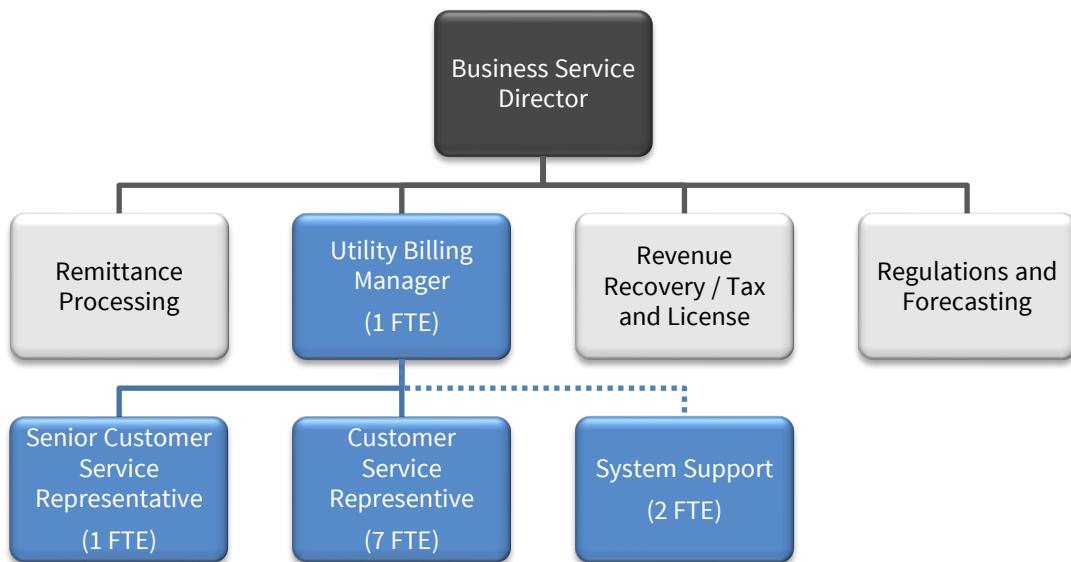
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The Utility Billing program is part of the Business Services department within the City Treasurer's Office. The program generates customer utility bills for water, sewer and solid waste accounts, responds to water and sewer related customer phone calls, and enters service work orders.

As shown in Figure 1, Utility Billing currently has nine full-time positions including one Manager, one Senior Customer Service Representative, and seven Customer Service Representatives. In addition, two system integrators from the Treasury Technology group provide software system support.

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**Figure 1. Utility Billing Organizational Structure**



SOURCE: Auditor analysis of organizational structure.

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The Utility Billing program, which supports water, sewer and solid waste, is funded by the Enterprise Funds. As shown in Table 1 on page 4, from FY 2014 through FY 2018, the City has budgeted approximately \$1.5 million for Utility Billing.

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**Table 1. Utility Billing Budgeted and Actual Expenses**

	Budget Amount	Personnel Services	Contractual Services	Other	Total Expenses
FY2013/14	\$1,500,244	\$747,754	\$704,855	\$8,478	\$1,461,087
FY2014/15	\$1,533,373	\$719,884	\$649,308	\$11,123	\$1,380,315
FY2015/16	\$1,523,028	\$730,738	\$687,787	\$17,576	\$1,436,101
FY2016/17	\$1,545,975	\$777,657	\$704,296	\$16,164	\$1,498,117
FY2017/18	\$1,547,828	\$755,944	\$651,653	\$8,130	\$1,415,727

**SOURCE:** Auditor analysis of SmartStream Budget to Actual reports for Utility Billing.

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### **Utility Billing System**

Utility Billing staff use the NorthStar utility billing system to generate monthly customer bills for the City's approximately 100,000 customers. Billings for water, sewer and solid waste usage are processed daily based on the City's meter reading and other information.

Customers contact Utility Billing or the operating departments to begin a utility service. Residential customers generally contact Utility Billing. Commercial customers generally contact the utility department (Water or Solid Waste) to determine the type of account needed and the operating department provides that information to Utility Billing.

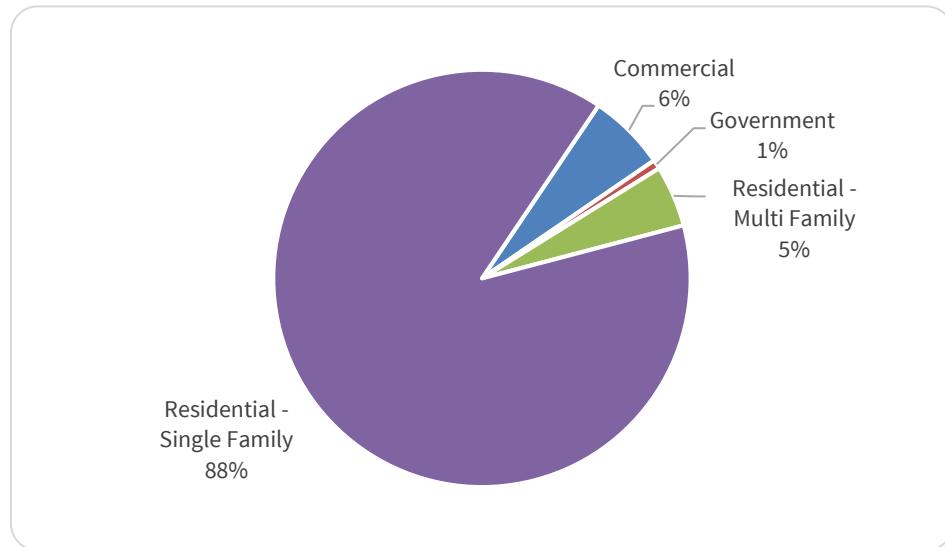
Once an account has been established, the utility billing process includes verification of data, calculation of bills, and creating the billing journal.

As shown in Figure 2 on page 5, most of the City's utility accounts are single-family residential properties, with some commercial and multi-family residential properties and few government locations.

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**Figure 2. Utility Accounts by Account Type**



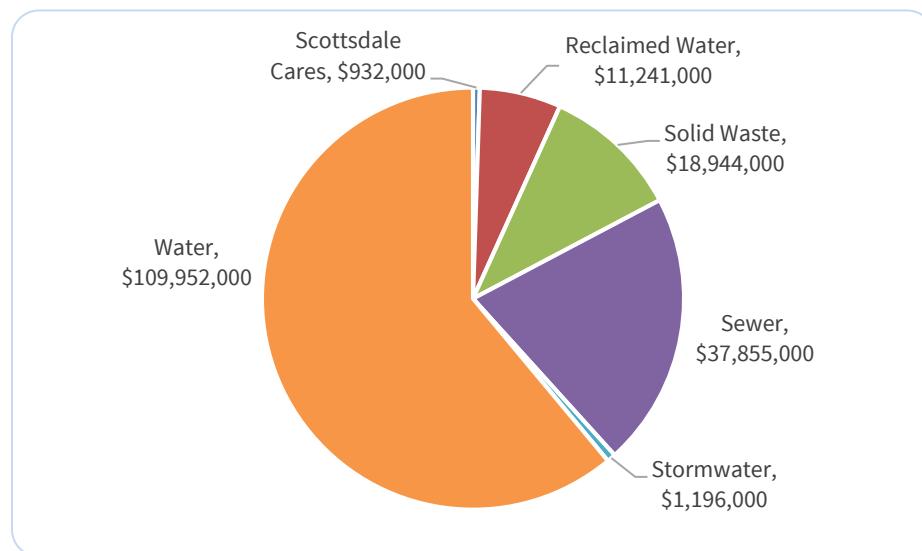
SOURCE: Auditor analysis of NorthStar account activity.

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As shown in Figure 3, water services represent most of the City's \$180 million utility charges in FY 2017/18, with sewer, solid waste, and reclaimed water charges making up nearly all the remaining amounts.

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**Figure 3. NorthStar Charges by Utility Type**



Note: Scottsdale Cares is voluntary customer donations, which the City grants to nonprofit organizations providing community services.

SOURCE: Auditor analysis of NorthStar FY 2017/18 account activity.

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## **OBJECTIVES, SCOPE, AND METHODOLOGY**

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An audit of *Utility Billing* was included on the City Council-approved fiscal year (FY) 2018/19 Audit Plan. The audit objective was to evaluate the effectiveness and accuracy of Business Services' water, wastewater and solid waste billing services and billing system controls. The audit scope encompassed Utility Billing transactions recorded from July 2017 through September 2018.

To gain an understanding of the Utility Billing program, we reviewed prior City Auditor reports including *Utility Billing Services*, Report No. 1203, as well as related audit reports recently completed by other auditors. In addition, we reviewed:

- Arizona Revised Statutes, Title 9 *Cities and Towns* Chapter 5 *Public Utilities* Article 2 *Municipal Ownership*
- City Code, Chapter 2 – Administration, Chapter 24 – *Solid Waste Management* and Chapter 49 – *Water, Sewers, and Sewage Disposal* including the Council-approved water, sewer and solid waste user fees
- Budget Book information for the Utility Billing program for FY 2017/18 and FY 2018/19
- Utility Billing program policies and procedures
- Management-generated reports reflecting program and staff statistics

We also interviewed the Business Services Director, the Utility Billing Senior Customer Services Representative, a Utility Billing Customer Service Representative, and Water Resources and Solid Waste departments' staff who support customer accounts, rates and billing.

To gain an understanding of the program's information system, NorthStar, we interviewed the program's System Integrators and reviewed data, reports and information technology controls. In addition, we reviewed Utility Billing's reconciliations of the NorthStar billing system to the general ledger. To assess the completeness and reliability of NorthStar data provided for the audit, we also reconciled that data to the SmartStream general ledger entries.

To determine if the correct billing rates were applied, we:

- Reviewed the NorthStar rate table and related effective dates and verified the rates matched the Council-approved rates.
- Compared solid waste roll-off charge requests to billed roll-off charges to determine if the charges matched City Council-approved rates and were applied correctly.
- Compared commercial solid waste customer rates to Council-approved rates, matched customer charges to these approved rates, and reviewed a randomly selected sample of unmatched charges to determine if they were properly authorized by the department, at rates approved by the City Council, and accurately calculated.
- Reviewed a randomly selected sample of miscellaneous charges and fees to determine if the correct amounts were applied.
- Reviewed the billed charges for contracted water and sewer districts to determine if the correct contract amounts were billed.

To determine if Utility Billing account adjustments and refunds were correctly calculated and properly approved, we:

- Reviewed a randomly selected sample of account adjustments and refunds to determine if appropriate authorizations were obtained, sufficient documentation was retained, and any Utility Billing calculations were accurate.
- Reviewed adjustments to Utility Billing staff accounts and recurring adjustments by a Utility Billing staff to evaluate potential conflict of interest.
- Reviewed a randomly selected sample of transactions from the electronic notification system to determine if they were correctly entered and applied. This system allows the Solid Waste and Water departments to transmit customer account billing information directly to Utility Billing.

To determine if NorthStar user access rights are appropriate and authorized, we reviewed NorthStar user account access roles to determine if the roles are appropriate to the user's job.

Based on these audit procedures, we found that while most transactions were properly recorded, Utility Billing does not have an effective review process to identify errors. Further, billing rates did not always agree to the Council-approved rates, and segregation of duties controls can be improved.

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. Audit work took place from August to December 2018.

## FINDINGS AND ANALYSIS

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### 1. A small portion of account entries were not properly authorized, calculated or entered.

While most Utility Billing transactions were properly authorized and applied correctly, Utility Billing controls did not effectively prevent or detect some errors.

A. Current Utility Billing management review practices are not ensuring that all charges are properly authorized and applied correctly. The identified errors primarily related to account adjustments, such as setting up new accounts or one-time billings.

1. In a review of approximately 21,000 commercial solid waste billing transactions, we determined almost 6,500 had rates that did not match standard rates. Of the 41 transactions selected for testing, we identified 5 accounts that were not charged correct rates for commercial solid waste services.

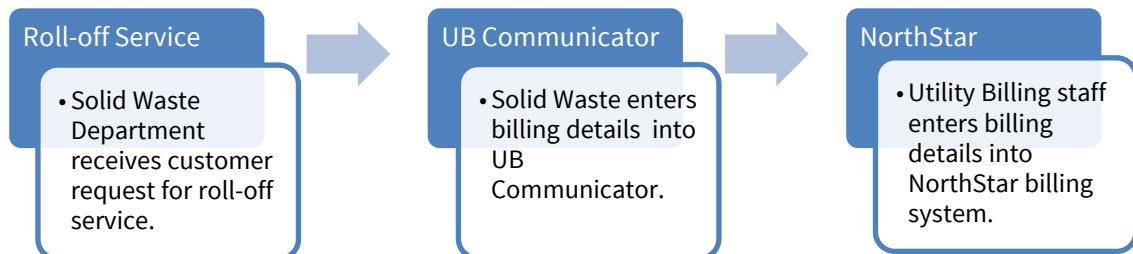
When a customer begins utility services with the City, Utility Billing typically bills for the same services that the prior occupant had. However, commercial solid waste services and the related billing rates can vary greatly, due to size and type of container as well as frequency of pickups. As a result, this practice increases the risk that a customer is being incorrectly charged without authorization.

For these 5 accounts, 3 were receiving more services than they were billed for, resulting in an undercharge of approximately \$1,200. The 2 other customers did not receive services but were billed nearly \$1,000.

2. As shown in Figure 4, Solid Waste submits some customer billing information to Utility Billing through an electronic notification system called UB Communicator.

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**Figure 4. Solid Waste Roll-Off Service Billing Process**



SOURCE: Interviews with Utility Billing staff

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In our review of approximately 765 UB Communicator entries, eight roll-off orders totaling approximately \$4,600 were applied to the wrong account, incorrectly billed or not billed.

- Three customers were not billed approximately \$4,100 for six roll-off orders and two other accounts were incorrectly charged for these services. The two overbilled accounts

were City accounts that are paid automatically, and there is no indication that the incorrectly billed City departments questioned these charges.

- Charges for one roll-off order were not billed at all and another account was only partially billed. These billing errors resulted in nearly \$500 of unbilled service.

Utility Billing does not currently have an effective review process to verify that UB Communicator billing requests from the operating departments have been correctly entered into NorthStar, the billing system.

3. During testing, we found other minor errors and omissions that indicate a more thorough management review is needed.

- Three customers were billed incorrect amounts for contracted water and sewer service. Two customers were overcharged four times for a total of \$43 and one was undercharged twice for a total of \$336.
- Five entries made to reverse late fee charges were calculated incorrectly. These minor errors totaled \$7.
- Two roll-off orders were billed for a slightly lower rate than authorized. While each error totaled less than \$1, there was no explanation for the incorrect rate.
- Two commercial solid waste customers were billed at rates that did not agree to the rate identified by Solid Waste, resulting in \$25 in overcharges.
- One customer was not charged the appropriate out-of-city surcharge, resulting in a total \$190 undercharge.
- Account adjustments totaling \$5,500 on one account lacked sufficient documentation to explain why the entry was made. This account was for a residence that was sold, but the city was not notified at the time. Utility Billing began researching the account in July 2018 and made adjustments in August and September. However, the research results were not documented.
- Further, for eleven other account adjustments, the supporting documentation referred to in the account notes was missing.

Utility Billing does not currently have a formal quality control review process to help ensure that entries are made correctly and to identify staff training needs.

- B. Utility Billing's NorthStar billing reconciliation with the general ledger was not effective, and the recently revised process does not yet include all relevant accounts.

To ensure that transaction data is correctly recorded as it moves from the detailed NorthStar billing system to the summary SmartStream general ledger, Utility Billing staff prepare a manual reconciliation. However, this process was incomplete and prone to error.

In testing the reconciliation, we found four minor errors where amounts were not properly entered. When presented with this concern in October 2018, Utility Billing staff developed an automated process to prepare the reconciliation. The revised reconciliation process eliminates some of the procedural steps prone to manual error. While the reconciliation includes 75% of the City's autopay utility expenses, it does not yet include the NorthStar activity in 55 of the 59

related expense accounts. Other types of posting errors would not be detected by this automated process.

#### **Recommendations:**

Business Services management should ensure Utility Billing:

- A. Develops a formal quality control review process to help identify entries with incorrect amounts, calculation errors, or insufficient documentation. Also, the department should consider developing an automated method to upload UB Communicator bill requests into NorthStar.
- B. Improves its NorthStar reconciliation process to include all related general ledger accounts.

#### **2. Some NorthStar billing rates did not match those authorized in City Code.**

The City Council authorizes the rates that City utility departments charge customers for services provided. As shown in the text box, the City Council has also authorized the utility department directors to establish special rates for unusual or unique situations not expressly covered in code.

However, billing rates for the utility departments did not always agree to the approved rates.

- A. Based on testing July 2017 through September 2018, 115 of about 2,700 commercial solid waste customer rates, or 4.3%, did not match Council-approved rates.

Because individual commercial solid waste customers' services differ, such as size of container and number of pick-ups, Solid Waste notifies Utility Billing of the billing rate for each commercial customer.

- Of the 115 discrepancies, 82 occurred in 2016 rates and frequently related to recycling services. These were likely due to customers on special negotiated rates that lapsed after the 2016 rate changes. These discrepancies were not identified and explained in Utility Billing or Solid Waste records.
- The remaining 33 errors related to 2018 rates. Solid Waste staff explained 21 of these rate differences were due to a special billing rate created to cover excess tonnage and maintenance costs related to horse manure collection and disposal. Although this rate has been used since fall of 2016, it has not yet been presented to the City Council for approval.

Solid Waste acknowledged one of the other rate errors was a mistake but explained that the listed billing factors in the NorthStar system, like count and size of containers, frequency of pick up, and share percentage, were incorrect for the remaining 11 rate differences.

#### **Sec. 24-4. Solid Waste special services; rates and charges.**

"The director may establish special rates or charges when required by unusual, unique or special needs. The rates and charges for such services will be based upon the cost of the services provided."

A similar provision exists for Water Resources in Sec 147-17.

**Source:** Scottsdale Revised Code

In addition, testing identified three commercial roll-off orders that were charged significantly less than the authorized rates. While Solid Waste calculated most new charges correctly using the updated 2016 rates, three roll-off services were billed at rates between 55% and 61% of the authorized rate, totaling \$600 undercharged.

These rate differences and discrepancies may have been corrected if they had been questioned by Utility Billing.

- B. Thirty-two of 33 Paradise Valley customer accounts were overcharged a total of approximately \$14,000 on out-of-city sewer surcharges since July 2017. The surcharge was not applied to one account, resulting in about \$190 not being billed.

For more than twenty years, the City's Water Division has provided wastewater services to the Town of Paradise Valley. These residential and commercial customers are charged a 10% out-of-city surcharge specified by City code. Effective July 2017, the City Council approved increasing the out-of-city surcharge from 10% to 15% but retained the 10% surcharge for Paradise Valley wastewater customers.

Water Resources notified Utility Billing of the increased 15% out-of-city surcharge but did not retain the 10% surcharge for its Paradise Valley customers. Utility Billing did not question the 15% surcharge differing from the Council-approved rates for these customers. From July 2017 through September 2018, 32 Paradise Valley customer accounts were charged a total of \$14,362 more than authorized by City Council. The surcharge error may have been avoided if it had been questioned.

#### **Recommendation:**

Utility Billing should take reasonable steps to verify that the rates provided by the Solid Waste and Water departments agree to the rates authorized by the City Council or approved by the department director. For ongoing special rates, Utility Billing should question why the rates have not been submitted for Council approval.

### **3. NorthStar segregation of duties controls can be improved.**

Staff in other areas, including Water and Remittance Processing, have system access to adjust billings. To help reduce the risk of accidental or intentional adjustments to customer accounts, no one person or function should be able to authorize and record a transaction. Further, because the NorthStar utility billing system does not have transaction-level approval capabilities, segregation of duties controls become even more important.

Utility Billing staff manages the various user roles and permissions in NorthStar. These user roles and permissions include access to record meter installation, meter readings, account billing, refunds, and various other transactions. This audit focused on financial account activity, such as billing, refunds, and adjustments, and we did not test user access roles for the other functions, such as meter changes.

We tested certain transactions entered by staff with roles that are not compatible with billing adjustments:

- A Water Resources employee recorded 9 late fee and 1 disconnect fee reversals. We tested these transactions for documentation of the reason for each adjustment and calculation accuracy.
- Remittance Processing employees recorded 363 late fee adjustments/reversals. We selected 15 of these transactions to test for documentation and accuracy.

Of these 25 tested entries, 5 had minor calculation errors and 11 were missing the supporting documentation that was referred to in the account notes.

To help ensure billing entries are appropriate, properly authorized, and entered correctly, staff in other areas should submit the supporting documentation for Utility Billing to enter account adjustments. If there are reasons why this adjustment access cannot be avoided, Utility Billing should develop an exception report identifying these transactions for management review.

**Recommendation:**

Utility Billing should not provide system access for employees with incompatible duties to enter account adjustments or should ensure management review of those entries.



## **MANAGEMENT ACTION PLAN**

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### **1. A small portion of account entries were not properly authorized, calculated or entered.**

#### **Recommendations:**

Business Services management should ensure Utility Billing:

- A. Develops a formal quality control review process to help identify entries with incorrect amounts, calculation errors, or insufficient documentation. Also, the department should consider developing an automated method to upload UB Communicator bill requests into NorthStar.
- B. Improves its NorthStar reconciliation process to include all related general ledger accounts.

**MANAGEMENT RESPONSE:** Management agrees with recommendation A, and the implementation of a formalized quality control process. Management agrees with recommendation B. In October 2018, NorthStar Support and the Business Services Director created an automated reconciliation report. The report verifies that NorthStar transactions match information contained in Smart Stream. At the time, City of Scottsdale expense accounts were not included in the reconciliation report. These are the accounts the current audit identified as missing from the reconciliation report. Testing was recently performed to determine whether NorthStar activity for these accounts could be isolated within Smart Stream, as these accounts are managed by other areas. The testing was successful, and resulted in those missing accounts being added to the monthly reconciliation report.

#### **PROPOSED RESOLUTION:**

- A. Management agrees with recommendation A, and will take appropriate actions to correct billing errors discovered in this audit. NorthStar support will create an exception report to capture all future account adjustments. The Utility Billing manager will be responsible for reviewing a random sample of accounts to ensure adjustments are documented, justified, and applied correctly. This will be used in addition to the current internal procedural utilized for reviewing and applying adjustments.
- B. Utility Billing will utilize the newly created reconciliation report to verify NorthStar activity matches Smart Stream activity.

**RESPONSIBLE PARTY:** Utility Billing Manager and NorthStar Support

**COMPLETED BY:** March 30, 2019

### **2. Some NorthStar billing rates did not match those authorized in City Code.**

#### **Recommendation:**

Utility Billing should take reasonable steps to verify that the rates provided by the Solid Waste and Water departments agree to the rates authorized by the City Council or approved by the department director. For ongoing special rates, Utility Billing should question why the rates have not been submitted for Council approval.

**MANAGEMENT RESPONSE:** Management agrees with this recommendation, and will add an additional verification step to the System Change process to ensure rate approval and verification have been completed within the Solid Waste and Water departments.

**PROPOSED RESOLUTION:** All rate changes made to NorthStar require a “System Change” form. The form is signed by the requestor and the requestor’s manager or director, and includes a scope of work statement requesting the change. This ensures the requested work has been approved within that department. Upon completion, the form is again signed by the requestor and requestor’s manager or director and the NorthStar system owner, indicating the system change has been completed. This ensures the requested work has been completed. Utility Billing will add an additional verification step to this process to ensure that rate approval and verification have been completed within the Solid Waste and the Water departments. Management will explore the feasibility of adding this step to the System Change form. Additionally, the Utility Billing Manager will conduct an independent review of updated rates and fees using the Council Action documents.

**RESPONSIBLE PARTY:** Business Services Director, NorthStar Support

**COMPLETED BY:** June 30, 2019

### **3. NorthStar segregation of duties controls can be improved.**

#### **Recommendation:**

Utility Billing should not provide system access for employees with incompatible duties to enter account adjustments or should ensure management review of those entries.

**MANAGEMENT RESPONSE:** Management agrees that managerial review of account adjustments must occur, as several Business Services roles require NorthStar access to apply adjustments appropriate for that work area.

**PROPOSED RESOLUTION:** Several Business Services roles require system access to perform adjustments appropriate for that role. The creation and implementation of the adjustment exception report mentioned in item 1 will be used to identify and review account adjustments.

**RESPONSIBLE PARTY:** Business Services Management, NorthStar Support

**COMPLETED BY:** March 30, 2019

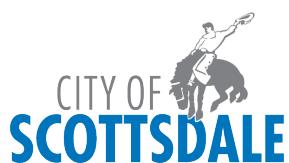


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