



CITY AUDITOR'S OFFICE

Utility Billing Services

September 6, 2011

AUDIT REPORT NO. 1203

CITY COUNCIL

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September 6, 2011

Honorable Mayor and Members of the City Council:

Enclosed is the audit report, *Utility Billing Services*. The City's Utility Billing program is part of the Finance & Accounting Division's Customer Service department.

This audit determined that generally there are sufficient controls to ensure utility bills are processed accurately and timely and customers are responded to within reasonable timeframes. However, certain sewer fee adjustments, which for FY 2011/12 totaled approximately \$712,000, are made without specific criteria and senior management oversight, and more accurate cost allocation may save the General Fund approximately \$13,500 per year. As well, efficiencies may be gained by reducing meter reread work orders and improving the usefulness of exception reports.

We would like to thank staff from the Finance & Accounting Division, particularly the Utility Billing program and system support staff, and the Water Resources Division for their cooperation throughout the audit.

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

Sincerely,

A handwritten signature in black ink that reads "Sharron Walker". The signature is written in a cursive, flowing style.

Sharron Walker, CPA, CFE
City Auditor

Audit Team:

Lisa Gurtler, CPA, CIA - Assistant City Auditor
Kyla Anderson, CIA - Senior Auditor

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EXECUTIVE SUMMARY

This audit of the City's *Utility Billing Services* was included on the Council-approved FY 2011/12 Audit Plan. The audit objective was to review processes, controls and efficiency measures for administration of City utility services' accounts and related customer service.

The Utility Billing (UB) program is part of the Customer Service department within the Finance & Accounting Division. The program is primarily responsible for generating customer utility bills for water, sewer and solid waste accounts, responding to water and sewer related customer phone calls, and entering service work orders. Budgeted at \$1.5 million, the program consists of ten full time staff, including two staff responsible for providing utility billing system support. Last fiscal year, UB staff generated more than one million customer bills, answered about 83,000 phone calls and generated 24,500 service work orders.

Generally there are sufficient controls to ensure utility bills are processed accurately and timely, and customers are responded to within reasonable timeframes. However, opportunities for improvement exist.

- Sewer fee adjustments are made without specific criteria and senior management oversight. For these adjustments, an initial exception report is created based on staff-established criteria, then Water Resources Division staff review the report and identify the individual accounts to be adjusted. These adjustments reduced FY 2011/12 sewer revenues by approximately \$712,000.
- Properly allocating certain Customer Service costs to the four programs within the department, including Utility Billing, could save the General Fund approximately \$13,500 by appropriately transferring the costs to the Enterprise Funds.
- Although meter readers attain an accuracy rate of more than 99%, when a customer has high bill concerns, UB staff routinely process a work order for the meter to be reread. Reducing the number of these work orders may save from 270 to 430 staff hours annually. Further, improving exception reports to better identify potential problems would also increase efficiency.

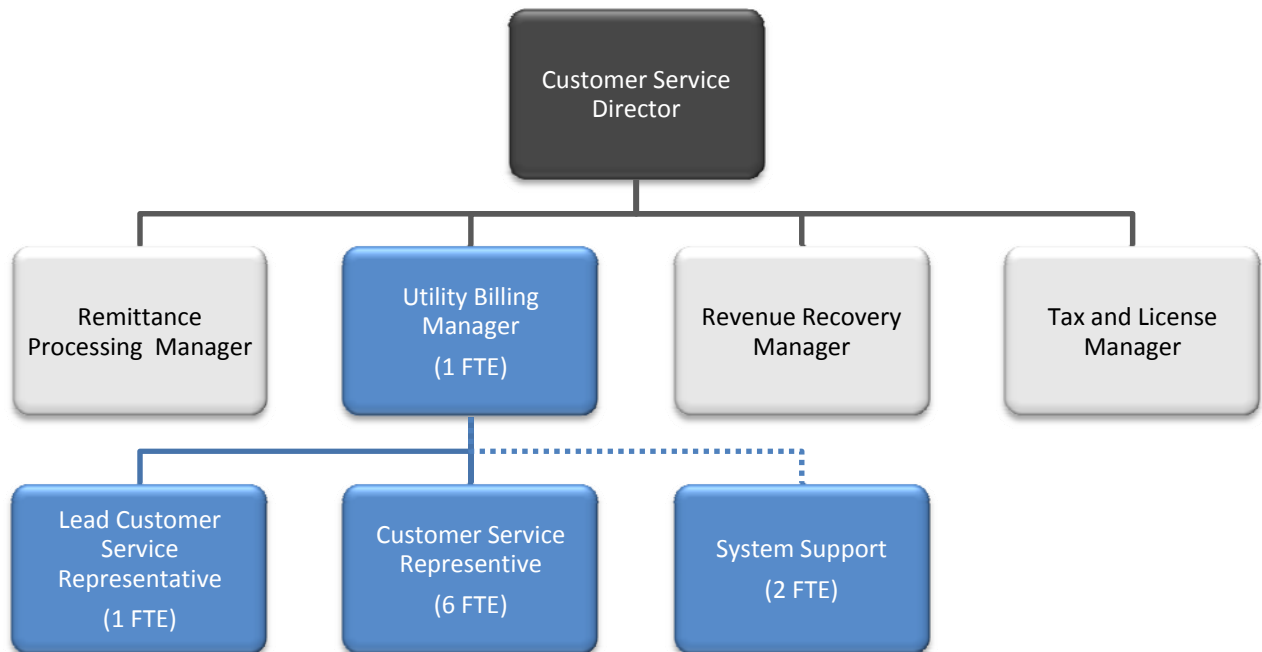
Implementing additional controls, such as limiting access to the NorthStar utility billing system based on employee job responsibilities and continuing to use the newly created daily reconciliation process, will help assure the continued integrity and accuracy of utility account billings.

BACKGROUND

The Utility Billing program (UB) is part of the Customer Service department within the Finance & Accounting Division. The program is primarily responsible for generating customer utility bills for water, sewer and solid waste accounts, responding to water and sewer related customer phone calls, and entering service work orders.

As shown in Figure 1, UB is currently staffed with ten full time positions including one Manager, one Lead Customer Service Representative, six Customer Service Representatives and two system support staff. The system support staff primarily report to the Financial Services Technology Director. The UB program, which supports water, sewer and solid waste, is funded by the Enterprise Funds. The FY 2011/12 budget of \$1.5 million increased by \$295,000, or 25%, over FY 2010/11 actual expenditures. The increase is primarily due to anticipated service fees for a new online utility bill payment system and allocation of a Manager position.

Figure 1: Organizational Structure of UB Program



SOURCE: Auditor analysis of organizational structure.

Utility Billings

The UB staff use the NorthStar utility billing system to generate more than one million customer bills annually. Billings are processed daily based on the City's 19 meter reading cycles. The process, which takes about four hours, includes verification of data, calculation of bills, and creating the billing journal. Because the process is largely automated, UB staff is also able to perform other tasks during this time. According to the UB Manager, approximately 80% of staff time is spent answering customer calls, while the remaining 20% is generally divided between entering work orders, processing customer e-mail and fax inquiries, and generating daily utility bills.

As shown in Table 1, Scottsdale's proportion of customer service calls to customer billings is 8%. This compares favorably to two nearby cities, which receive customer service calls at rates of 17% and 12%, respectively.

**Table 1. Comparison of Customer Calls and Utility Billings
FY 2010/11**

	Scottsdale	City 1	City 2*
Customer Calls	82,885	324,573	60,000
Utility Billings	1,077,722	1,876,872	516,000
Calls as % of Billings	8%	17%	12%

* counts estimated by the city's Customer Service management.

SOURCE: City of Scottsdale Automatic Call Distribution (ACD) reports for FY 2010/11, billing data provided by the Technology Coordinator and actual and estimated data provided by the local cities' Customer Service management.

Customer Service-Related Statistics

As municipalities often do, the City uses a call tracking system that provides useful management statistics related to the handling of customer service phone calls. The American Water Works Association (AWWA) reports the industry standard is to answer customer calls within 58 seconds and achieve an abandoned call rate of 5.8% or lower.¹

Table 2 compares selected call statistics to those of two other local cities. Scottsdale UB staff achieved a call answer time of only 43 seconds and a low call abandonment rate of 5%. In addition, a Scottsdale Customer Service Representative (CSR) receives about 13,800 calls annually compared to 12,000 and 8,600 per CSR in the other two cities.

¹ *Benchmarking Water Utility Customer Relations Best Practices*, published by the AWWA and AWWA Research Foundation, 2006. A call is "abandoned" when the caller hangs up before being connected to a Customer Service Representative.

Table 2. Comparison of Customer Call Center Phone Statistics

	Scottsdale ^a	City 1 ^b	City 2 ^c
Annual Calls	82,885	324,573	60,000
% of Calls Abandoned	5%	10.7%	4%
Minutes to Answer	43 seconds	3.03 minutes	30 seconds
# of Line Staff	6	27	7
# Calls per Line Staff	13,814	12,021	8,571
Ratio of Supervisor to Line Staff ^d	1:3	1:8	1:4

^a FY 2010/11 actual calls include water and sewer; non-bill related solid waste calls are directed to the Solid Waste program which has three customer service representatives.

^b FY 2010/11 actual calls including water, sewer, solid waste, gas, electricity and irrigation related calls.

^c Reflects the first five months of FY 2010/11 annualized; line staff excludes one FTE that serves as a cashier. Calls include water and sewer; solid waste calls are directed to the Field Services Division.

^d Supervisory staff includes Lead, Supervisor and/or Manager.

SOURCE: City of Scottsdale Automatic Call Distribution (ACD) reports for FY 2010/11, Customer Service management in both local cities provided data.

Work Orders

Customer Service Representatives initiate meter reading work orders to respond to customer phone calls, e-mails and faxes. The work orders are entered into the MCare work order system, which alerts Meter Reading staff of requests for meter rereads, final meter readings, and service disconnections. The UB staff processed more than 27,000 work orders in FY 2009/10 and about 24,500 in FY 2010/11. This 11% decline is primarily related to fewer move-in/move-out work orders, which were abnormally high in FY 2009/10.

OBJECTIVES, SCOPE, AND METHODOLOGY

This audit of the City's *Utility Billing Services* was conducted in accordance with the Council-approved fiscal year 2010/11 audit plan. The objective was to review processes, controls and efficiency measures for administration of the City utility services accounts and related customer service. The audit scope included fiscal years 2009/10 through 2010/11.

To gain an understanding of the UB program, we reviewed:

- Budget Book information for the program for FY 2008/09 through FY 2010/11
- City Code, Chapter 24 – *Solid Waste Management* and Chapter 49 – *Water, Sewers, and Sewage Disposal* including the Council-approved water, sewer and solid waste user fees
- Utility billing-related audit reports completed by the City Auditor's Office and by other government auditors
- UB policies and procedures
- UB website program information
- Management generated reports reflecting program and staff statistics
- Customer Service staff job descriptions

We also interviewed the Utility Billing Manager, Customer Service Director, Customer Service budget liaison and Enterprise Finance Manager. To understand the NorthStar utility billing system, we interviewed the Financial Services Technology Director and Technology Coordinator.

To evaluate the program's efficiency, we:

- Monitored customer phone calls and observed staff functions including work order processing, daily exception report reviews and generation of utility bills.
- Analyzed staff workloads, including call center statistics, and compared the results with two local municipalities.
- Reviewed the e-Board process used to receive Solid Waste account information for billing purposes.

To evaluate account adjustments for appropriateness, accuracy and supervisory review, we analyzed customer account adjustments for trends and performed testing to ensure selected adjustments were supported by appropriate documentation. Further, we cross-referenced City employee addresses with utility service addresses and reviewed a sample of employee utility accounts for any unsubstantiated adjustments.

In analyzing the UB program cost, we reviewed budget and actual expenditure trend information for the UB cost centers. Additionally, we reviewed whether all identifiable program costs were included.

To determine the timeliness, accuracy and completeness of utility bills, we recalculated a sample of utility bills to evaluate compliance with City Code and City Council-approved rates and fees. Additionally, we reviewed the bills to determine if they were sent in the correct billing cycle.

We reviewed the controls in place over billing to determine if the utility bills for City facilities were being properly monitored and if NorthStar system access was appropriate for the position/job description.

Based on these audit procedures, generally there are sufficient controls to ensure utility bills are processed accurately and timely and customers are responded to within reasonable timeframes. However, sewer fee adjustments are made without specific criteria and senior management oversight. Additionally, certain Customer Service costs are not allocated to Utility Billing. Reread work orders, associated with high bill concerns, are routinely generated although meter readers attain an accuracy rate of more than 99%. Further, improving exception reports to better identify potential problems would also increase efficiency. Implementing additional controls, such as limiting access to the NorthStar utility billing system and continuing to use the newly created daily reconciliation process, will help assure the continued integrity and accuracy of utility account billings.

We conducted this audit in accordance with generally accepted government auditing standards as required by Article III, Scottsdale Revised Code, §2-117 et seq. 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 June through July 2011, with Lisa Gurtler and Kyla Anderson conducting the work.

FINDINGS AND ANALYSIS

1. Additional controls can help ensure account adjustments are appropriate and utility billings are complete and accurate.

Based on staff judgment, adjustments totaling more than \$712,000 were made to sewer charges with limited management oversight. Additionally, some employees have more access to the utility billing system than necessary, and billing controls can be improved by reconciling active meters to bills generated.

- A. The sewer charges for more than 3,400 customer accounts were adjusted during FY 2010/11, as summarized in Table 3. According to Scottsdale Revised Code §49-141, sewer charges are based on a Seasonal Sewer Average (SSA), which is determined by taking 90% of the account's prior year average winter water consumption.² Code allows the SSA to be adjusted if either the customer or the City determines that a significant portion of water was used for lawns, shrubbery, or other non-sewer purposes. City Code does not specify, however, how Water Resources should determine whether an adjustment is warranted or how to calculate it.

Table 3. FY 2010/11 Seasonal Sewer Average (SSA) Adjustments

	No. of Accounts	Adjustment Value
Customer Requested	467	\$ 96,347
Staff Requested	2,984	\$ 616,316
Total	3,451	\$ 712,663

SOURCE: Auditor analysis of sewer adjustment data provided by the Enterprise Finance Manager.

The Enterprise Finance Manager, in the Water Resources Division, indicated that the accounts reviewed annually are determined by a staff-developed report designed to detect significant year-over-year water use variances. Additionally, customers may complete a written appeal form to have their SSA reviewed. However, the criteria used in evaluating which accounts to actually adjust have not been defined to provide consistency or approved by senior management.

In FY 2010/11, 8,834 of the approximately 77,000 total sewer accounts, or 11.5%, were identified by report criteria as potentially having high water usage. Water Resources Division staff then manually reviewed these accounts and, based on their judgment, reduced the system-calculated SSAs for 2,984 accounts. An additional 467 accounts were adjusted based on customer appeals.

² Winter consumption is defined as use during the months of December, January and February.

These adjustments are estimated to have reduced FY 2011/12 sewer revenues by more than \$712,000. Despite the large amount of revenue involved, senior management does not review and approve the methodology or the specific account adjustments. In addition, the process is highly dependent on staff judgment and only a portion of the potentially affected sewer accounts are adjusted. The manual process of reviewing almost 8,900 accounts may result in inconsistent treatment of sewer customers.

- B. The NorthStar utility billing system is used to record customer account information and calculate monthly utility bills. However, system access has not been based on each employee's regular job responsibilities and the principle of least privilege access. Least privilege access refers to providing only the system access necessary to perform one's job duties, which limits potential risk exposure. More than 100 City employees have some access to the NorthStar system. For this audit, we focused our review on the system access rights of UB and Meter Reading staff.
- All UB staff has access to the Adjustment and Refund module within NorthStar even though the practice is for adjustments and refunds to be forwarded to the Lead Customer Service Representative (CSR) or the back-up Lead CSR for processing. While this practice will provide appropriate segregation of duties, the UB staff's current system access does not ensure the practice is followed.
 - Four employees in Meter Reading have access to the module for importing and exporting meter reading data. This function is performed by the Lead Meter Reader or the Manager, but two Water Audit Technicians also have access to it. Unnecessary access to system functions increases the risk of error.

According to the Technology Coordinator, user access is not periodically reviewed to determine any needed changes. Limiting user access helps to prevent unauthorized use of sensitive customer data and intentional or unintentional account adjustments.

- C. The number of meter readings, accounts and billings were not being reconciled to ensure that all active meters are being billed. A series of steps are performed for each billing cycle to ensure the integrity of utility billings, such as verifying control totals, reviewing error messages and confirming the number of bills printed. But without reconciling the number of meters read for the billing cycle to the number of active accounts and utility bills generated, meters could go unbilled without detection.

During the audit, management worked with system support staff to develop a new report to assist with this daily reconciliation. Testing confirmed the report is now being used, with the most typical reconciling item being multiple meters billed on a single account.

Recommendations:

- A. The City Treasurer should work with the Water Resources Division to ensure a written SSA adjustment procedure is developed which outlines criteria used in making the

adjustments. In addition, the City Treasurer should formally approve the recommended adjustments given the significant revenue reduction involved.

- B. The Customer Service Director and the Financial Services Technology Director should ensure current users' NorthStar system access is reviewed for appropriateness based on the "least privilege" principle. This review should include requesting other City management, such as the Water Resources Division, to verify whether their staff's access is based on job responsibilities. Further, system access should be reviewed annually, at a minimum.
- C. The Utility Billing Manager should update UB's written procedures to ensure meter readings continue to be reconciled to account billings, such as with the newly developed Meter Count/Billing Reconciliation report.

2. Allocation of certain costs and processes for handling billing concerns can be improved.

Certain UB program costs are not allocated or may be overestimated. Additionally, reducing meter reread work orders and enhancing the daily exception reports could improve efficiency.

- A. Certain UB program costs and allocations should be reviewed.
 - 1. The Customer Service Department consists of four programs: UB, Tax & License, Revenue Recovery and Remittance Processing.³ Although the Customer Service Director and Administrative Secretary provide support to all four, the director's and secretary's salary and benefits are recorded as Remittance Processing and Revenue Recovery costs.

Accounting for the director's and the secretary's salary and benefits in this manner results in the General Fund paying for a larger share of these costs. Remittance Processing and Revenue Recovery are funded by the General and Enterprise Funds, while UB is funded by just the Enterprise Funds. Redistribution of these salaries using current estimates provided by the Customer Service Director, would result in \$13,500 increased funding from the Enterprise Funds and a corresponding reduction from the General Fund.

- 2. In FY 2009/10, UB paid \$103,000 to print utility bills and paid \$92,000 in FY 2010/11. The 10% decline was primarily due to customers electing to receive their bills electronically rather than through the mail. However, \$140,000 was budgeted for FY 2011/12 based on the prior year's budget rather than the current cost trend. As a result, it appears this budget item has been overestimated by about \$48,000. Furthermore, as additional customers opt for electronic billing, UB's printing and mailing costs should continue to decline.

³ Effective July 1, 2011 the Meter Reading program moved from the Customer Service department of the Finance & Accounting Division to the Water Resources Division.

- B. High bill concerns often result in meters being reread even though the meter reading accuracy rate is higher than 99%. The UB staff routinely initiates a water meter reread work order when a customer calls with a high bill concern. Customers are told that their meter will be reread the following business day, and a Water Audit Technician will contact them within 3 to 5 business days. However, because Meter Reading staff consistently maintains a high accuracy rate of 99.95%, rereading the water meter rarely finds an error.⁴

The UB staff could review the customer’s historical usage and direct him/her to the City’s website for information on how to check their own meter as well as ways to test for possible leakage. If necessary, staff could send a work order to the Water Audit Technicians to provide additional assistance, reread the meter, or schedule an onsite evaluation as appropriate.

Reducing reread work orders may save the City between 270 to 430 staff hours, or 0.13 to 0.21 full-time equivalent (FTE), as shown in Table 4.

Table 4. Estimated Savings of Reducing Water Meter Rereads

Estimated 80% Work Orders Eliminated ^a	2,160
Total Hours ^b	432
Estimated FTE Savings	0.21
Estimated 50% Work Orders Eliminated ^a	1,350
Total Hours ^b	270
Estimated FTE Savings	0.13

^a Meter Reading management estimated 80% of the 2,700 high bill/meter reread work orders could be eliminated, with 20% remaining necessary because the customer is not able to access the meter. This analysis conservatively reflects eliminating between 50% and 80%.

^b Meter Reading management estimated meter rereads to take 12 minutes each on average.

SOURCE: Meter Reading FY 2010/11 work order Activity Log and Meter Reading management estimates of work order reduction and staff time per rereading.

The customer call center management of other local municipalities indicated that their staffs first offer to assist the customer with understanding how to read his/her own meter to confirm the reading and usage prior to initiating a field staff rereading.

- C. Enhanced exception reporting could reduce the number of accounts analyzed daily. Both UB and Meter Reading staff use a version of the same High/Low exception report to identify questionable meter readings. The vendor-provided report typically lists more than 500 accounts that had meter readings 150% higher or 75% lower

⁴ Our *Meter Reading Program* audit dated July 19, 2011, confirmed management’s assessment of a 99.95% meter reading accuracy rate from FY 2008/09 through the first nine months of FY 2010/11.

than their previous 12-month average. An experienced Meter Reading employee spends about one hour each day reviewing this report to evaluate which of the meter readings may actually be erroneous or suggestive of a malfunctioning meter.

According to the Lead Meter Reader, some accounts currently appear on the report even though they are not necessarily indicative of questionable or erroneous reads. Some of the criteria currently applied manually when reviewing the exception report include:

- Customer accounts with a current meter reading that is less than any single month's usage during the last 12 months.
- Recently replaced meters. New meters will have a reading significantly lower than the prior reading from the old meter, but are not an exception that needs attention.
- Current and prior month zero reads. These accounts are also listed on a daily Zero Usage report.

Eliminating items with characteristics that are known to not need investigation will reduce the volume of this exception report by about one-third and save approximately 104 staff hours annually. Because this is a vendor-provided report, limited changes can be made to it. However, the system support staff can create a custom exception report incorporating additional criteria. Automating the criteria will also assure consistency in analyzing accounts.

Recommendations:

- A. The Customer Service Director should:
 1. Work with Budget and Accounting staff to proportionately allocate the director and secretary salaries to the UB and Tax & License programs.
 2. Reevaluate budgeted printing costs for FY 2011/12 and future years based on electronic billing trends.
- B. The Customer Service Director and Utility Billing Manager should, working in conjunction with Meter Reading management, consider using a pilot project to determine if the practice of routinely issuing reread work orders for high bill concerns can be limited. For example, Utility Billing staff could assist customers with information on checking their own meter readings and detecting possible leaks. The concerns that cannot be resolved in this manner could then be referred to Water Audit Technicians for additional follow up.
- C. The Customer Service Director, in conjunction with Meter Reading management, should request development of a custom exception report that incorporates experienced Meter Reading staff knowledge to reduce the volume of transactions on the current vendor-provided exception report.

MANAGEMENT ACTION PLAN

1. Additional controls can help ensure account adjustments are appropriate and utility billings are complete and accurate.

Recommendations:

- A. The City Treasurer should work with the Water Resources Division to ensure a written SSA adjustment procedure, is developed which outlines criteria used in making the adjustments. In addition, the City Treasurer should formally approve the recommended adjustments given the significant revenue reduction involved.
- B. The Customer Service Director and the Financial Services Technology Director should ensure current users' NorthStar system access is reviewed for appropriateness based on the "least privilege" principle. This review should include requesting other City management, such as the Water Resources Division, to verify whether their staff's access is based on job responsibilities. Further, system access should be reviewed annually, at a minimum.
- C. The Utility Billing Manager should update UB's written procedures to ensure meter readings continue to be reconciled to account billings, such as with the newly developed Meter Count/Billing Reconciliation report.

PROPOSED RESOLUTION:

- A. The City Treasurer, in partnership with the Water Resource Division Executive Director, agrees to direct staff in the development of a SSA adjustment procedure. This procedure will outline the SSA criteria and include a hierarchical-based approval structure.
- B. The Customer Service Director and the Financial Services Technology Director agree with the recommendation to review NorthStar system access, based on the least privilege principle and job responsibilities, no less than annually.
- C. The Utility Billing Manager agrees with the recommendation to update the UB department written procedures specific to the Meter Count/Billing Reconciliation report.

RESPONSIBLE PARTY:

- A. City Treasurer and Water Resource Division Executive Director
- B. Customer Service Director and Financial Services Technology Director
- C. Utility Billing Manager

COMPLETED BY: February 2012

2. Allocation of certain costs and processes for handling billing concerns can be improved.

Recommendations:

- A. The Customer Service Director should:
 - 1. Work with Budget and Accounting staff to proportionately allocate the director and secretary salaries to the UB and Tax & License programs.
 - 2. Reevaluate budgeted printing costs for FY 2011/12 and future years based on electronic billing trends.
- B. The Customer Service Director and Utility Billing Manager should, working in conjunction with Meter Reading management, consider using a pilot project to determine if the practice of routinely issuing reread work orders for high bill concerns can be limited. For example, Utility Billing staff could assist customers with information on checking their own meter readings and detecting possible leaks. The concerns that cannot be resolved in this manner could then be referred to Water Audit Technicians for additional follow up.
- C. The Customer Service Director, in conjunction with Meter Reading management, should request development of a custom exception report that incorporates experienced Meter Reading staff knowledge to reduce the volume of transactions on the current vendor-provided exception report.

PROPOSED RESOLUTION:

- A. The Customer Service Director agrees with the recommendations listed as items A.1 and A.2 and will follow-up accordingly.
- B. The Customer Service Director and Utility Billing Manager agree to evaluate the reread practice for high bill concerns via a pilot project or alternative initiatives.
- C. The Customer Service Director agrees to review this recommendation with Water Meter Reading management in an effort to reduce the volume of exception report transactions.

RESPONSIBLE PARTY:

- A. Customer Service Director
- B. Customer Service Director and Utility Billing Manager
- C. Customer Service Director and Meter Reading management

COMPLETED BY: February 2012

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