

City of Austin



**A Report to the
Austin City Council**

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Laura Morrison
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**Office of the
City Auditor**

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FOLLOW-UP AUDIT REPORT

Follow-up of Austin Water Utility Water Loss Audit

June 2012



REPORT SUMMARY

We found that AWU management has implemented two of the four recommendations that we selected for the follow-up, and implementation of the remaining two recommendations is underway.

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GOVERNMENT AUDITING STANDARDS COMPLIANCE

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 TEAM

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June 2012



Audit Report Highlights

Why We Did This Audit

This follow-up audit was conducted as part of the Office of City Auditor's FY 2012 Strategic Audit Plan.

The initial audit issued contained 23 recommendations aimed at improving the accuracy, quality, and availability of information for the Utility.

What We Recommend

We did not issue any new recommendations.



For more information on this or any of our reports, email oca_auditor@austintexas.gov

FOLLOW-UP OF THE AUSTIN WATER UTILITY WATER LOSS AUDIT

Mayor and Council,

I am pleased to present this follow-up audit on Austin Water Utility Water Loss.

BACKGROUND

In 2009, the Office of the City Auditor (OCA) issued an audit report titled Austin Water Utility Water Loss. The report contained 23 recommendations aimed at improving the accuracy, quality, and availability of information for the Utility to use in its planning process.

OBJECTIVE AND SCOPE

Our objective was to confirm whether, and to what degree Austin Water Utility (AWU) management has implemented selected recommendations from the original audit. After assessing risk associated with each recommendation, we chose four for testing. The audit scope includes the steps taken by AWU management since 2009 to implement these four recommendations.

WHAT WE FOUND

We found that AWU management has implemented two of the four recommendations that we selected for the follow-up, and implementation of the remaining two recommendations is underway.

Recommendation	Last Status Reported by Management	Status Verified by Auditors
6. Create process to identify, notify, and account for all private fire hydrants	Implemented	Underway
8. Perform analysis to ensure water meters are installed, accounts set up and quantities accounted for related to City department usage	Implemented	Underway
13. Develop policies governing water use from hydrants and develop program to educate contractors	Implemented	Implemented
19. Implement strategies to reduce response and repair times for water leaks	Implemented	Implemented

We appreciate the cooperation and assistance we received from Austin Water Utility staff during this audit.


Kenneth J. Mory, City Auditor

BACKGROUND

In fiscal year (FY) 2009, the Office of the City Auditor (OCA) issued an audit report titled Austin Water Utility Water Loss. The original report contained 23 recommendations aimed at improving the accuracy, quality, and availability of information for the Austin Water Utility (AWU) to use in its planning process.

OBJECTIVES, SCOPE, AND METHODOLOGY

The Follow-Up of the Austin Water Utility Water Loss Audit was conducted as part of the Office of the City Auditor's FY 2012 Strategic Audit Plan, as presented to the City Council Audit and Finance Committee.

Objectives

Our objective was to determine whether, and to what degree, Austin Water Utility management has implemented selected risk-based recommendations from the original audit.

Scope

The audit scope includes the steps taken by Austin Water Utility management since 2009 to implement the selected recommendations.

Methodology

To accomplish our audit objectives, we performed the following steps:

- Assessed the risk of AWU not implementing each recommendation. Selected for testing the four highest-risk recommendations that AWU had reported as implemented.
- Interviewed Austin Water Utility staff.
- Reviewed documentation supporting implementation status.
- Performed sample testing to verify the testimony and documentation provided.
- Considered risks of fraud, waste, and abuse.

AUDIT RESULTS

The April 2009 audit included 23 recommendations and management concurred with all recommendations. Those recommendations were aimed at improving the accuracy, quality, and availability of information for the Austin Water Utility (AWU) to use in its planning processes.

In January 2012, AWU management reported to the Controller's Office that 19 recommendations were implemented and 4 were underway. After assessing risk associated with each recommendation, we selected and tested 4 of the 19 recommendations AWU has reported as implemented: recommendations 6, 8, 13, and 19. We verified that AWU has implemented 2 recommendations and implementation of the other 2 is underway. See Exhibit 1, which shows an excerpt of the original recommendation, last reported status, and verified status. See Appendix B for the full text of the original recommendations, AWU Management's responses, and last reported status for each of the selected recommendations.

EXHIBIT 1
Verified Status of Selected Recommendations

Recommendation (summary)	Last Status Reported by Management	Status Verified by Auditors As of June 2012
6. Coordinate with AFD to ensure that a process is created to properly identify responsible parties for all private fire hydrants; the responsible parties are notified of the requirements for annual testing; and water used during inspection and maintenance activities is properly accounted for	Implemented	Underway
8. Perform an analysis to ensure water meters are installed at all sites from which other City departments draw water, and that accounts are set up on the CIS to ensure that quantities are correctly accounted for	Implemented	Underway
13. Ensure that policies governing the use of water from hydrants by non-City-owned vehicles are developed and implemented, and develop a program to educate contractors	Implemented	Implemented
19. Ensure that strategies to reduce response and repair times are identified and implemented for water leaks	Implemented	Implemented

SOURCE: OCA analysis of recommendation implementation status, May 2012.

Finding 1: Austin Water Utility has implemented two of the four recommendations selected for review.

For recommendation number 13, AWU has chosen to follow procedures governing the use of water from hydrants that are laid out in City Code Chapters 15-3 and 18-5. In addition, AWU has created hangtags to warn about water theft from hydrants and notify customers of the process to obtain water legally. The utility states that they have installed 200 of the hangtags on fire hydrants. AWU has also begun education efforts, such as putting up posters on water theft at the One Stop Shop, the Glen Bell Service Center, and the Waller Creek Center. AWU also prepared bill stuffers on water theft and stated that they included them in utility bills for January and February 2010.

For recommendation number 19, we confirmed that in 2009 the AWU Pipeline Operations Division conducted three five-day meetings with frontline staff. The Division held the meetings to analyze the leak and repair response time process step-by-step. The objective was to determine how to improve the response time. AWU reports that these events are a vehicle for staff to suggest strategies to executive level management to increase efficiencies in processes.

Finding 2: Two of the four recommendations selected for review and reported by AWU as implemented are still underway.

AWU reported to the Controller's Office that it had implemented recommendations number 6 and 8 from the 2009 audit. However, we found that both are underway.

For recommendation number 6, AWU reports that its Special Services Division has developed a Private Fire Hydrant Program using the Geographic Information Systems (GIS) to identify private hydrants. The Division has also developed a Water Environmental Integrated Recordkeeping System (WEIRS) web-enabled database to track and manage information related to private fire hydrants. The information tracked includes customer information, hydrant data, third party technicians that test the hydrants annually, and other pertinent information.

The utility states that due to the limited number of certified technicians, the Division implemented a 30-month incremental approach, beginning in January 2011, to identify and test private fire hydrants. Using this approach, the Division has identified approximately 6,400 of the 7,800 private fire hydrants in the City. Of those, approximately 3,600 belong to AWU customers and 2,800 are outside of AWU's service area. They linked the hydrants they identified to AWU customers in the WEIRS database, which they plan to use when sending annual testing notifications.

According to AWU, until the new Customer Care & Billing (CC&B) system is fully operational and reliable, the utility plans to bill customers responsible for private fire hydrants by using data from both the CC&B and the legacy Customer Information System (CIS). However, the identification numbers used in WEIRS, CIS, and CC&B to track and manage private fire hydrants do not correspond. AWU reports that this resulted in over 900 billing issues, and they have resolved approximately 800 of the issues.

Regarding recommendation number 8, the AWU Consumer Services Division reported that they conducted an analysis and identified City departments that utilized large amounts of water or used water for irrigation. The analysis identified the Austin Fire Department (AFD), Austin Resource Recovery (ARR), Public Works Department (PWD), and Watershed Protection Department (WPD) as departments with unmetered water use. AWU states that they also identified the Aviation Department, Fleet Services, Library, and Parks and Recreation Department (PAR) as departments with metered water use. These four departments are set up in both the CIS and CC&B billing systems.

AWU reported that the utility developed Memorandums of Understanding (MOUs) for each unmetered departments and that AFD was the only department that has not signed an MOU. AWU Consumer Services Division staff reported that they have been working with AFD since 2009 to develop a MOU that includes agreed upon methodologies for calculating and reporting unmetered water use.

ARR and WPD are set up in CIS and CC&B with unmetered water use and billing data. PWD is set up in both billing systems, although the account contained limited or no water use and billing data. AFD is set up in the billing systems for metered water use, but not for unmetered water use.

MANAGEMENT RESPONSE



MEMORANDUM

To: Kenneth J. Mory, City Auditor
From: Greg Meszaros, Director
Austin Water Utility
Date: June 26, 2012
Subject: Water Loss Follow-up Audit

I have been briefed on the results of OCA's recent follow-up on the Water Loss Audit. Based on the revised draft report received on June 26, my responses are as follows.

I concur with Finding 1 regarding the status of recommendations 13 and 19, although I would like to take this opportunity to expand upon the actions AWU has taken to implement those recommendations.

- On recommendation 13, AWU has worked with the One Stop Shop to establish new procedures requiring builders to identify the source of the water to be used for construction before permits are issued. AWU has also created a training program to help field personnel in other City departments to identify and report water theft.
- On recommendation 19, AWU has revised how leaks are prioritized. AWU added a second repair crew shift, which reduced leak response repair times in 2010 and allowed crews to keep up with a record number of leaks in 2011.

I also concur with Finding 2 where it states that recommendations 6 and 8 are not implemented, but are instead underway. I would like to clarify why AWU had previously reported those recommendations as implemented and provide additional information about our efforts to implement them.

- On recommendation 6, by July 2011, AWU had established a process to identify and contact owners of private hydrants and to track their required annual tests as well as the water used in those tests. At that point, over 2,000 of 7,000+ private hydrant owners had been identified and



notifications were underway. As recommendation 6 speaks to setting up the process, and since the process was established and would be permanently ongoing, AWU reported that it was implemented. That process has continued, with 6433 hydrants identified as of June 25, 2012. The remaining private hydrants in the distribution system when the program began are on track to be identified, notified, and tested by December 15, 2013. After further discussion with OCA's audit team, I concur that since all of the initial backlog of hydrants have not yet gone through the process, the recommendation remains underway.

- On recommendation 8, AWU initially understood recommendation 8 to address water used by City departments that is either metered or is taken from fixed points that can be metered. To implement recommendation 8, meetings were held with City departments that were large water users or that used water for irrigation, and it was determined that all water that could be metered was being metered. However, OCA's audit team explained that the intent of recommendation 8 was to track all water used by City departments, both metered and unmetered. I concur that under that interpretation, recommendation 8 remains underway. Unmetered water use by City departments is also the subject of recommendation 9, and since an MOU has yet to be established with AFD, that recommendation has remained underway. The MOU with AFD is scheduled to be signed by August 15. Additionally, delays in the transition of the utility billing system from CIS to CC&B have delayed billing Public Works for their unmetered water, but the implementation of a billing code to allow for accounting and billing of unmetered water is currently in testing and all billing will be current by the end of the fiscal year.

AWU has undertaken a broad and comprehensive water loss reduction program reaching well beyond the recommendations of the initial report. We have worked to implement each of the recommendations and will continue to improve upon them.



Greg Maszaros
Director, Austin Water Utility



APPENDIX B

AWU WATER LOSS FOLLOW-UP - VERIFIED RECOMMENDATIONS

Rec #	Recommendation	Updated Management Response	Updated Status
6	<p>In order to ensure that annual inspections are performed for each of the private fire hydrants within their jurisdiction, the AWU Department Director should coordinate with AFD to ensure that a process is created to properly identify responsible parties for all private fire hydrants, that the responsible parties are notified of the requirements for annual testing, and that water used during inspection and maintenance activities is properly accounted for.</p>	<p>Since December 2010, the Austin Water Utility's (AWU) Private Fire Hydrant (PFH) Program has been in production using the Water Environmental Integrated Recordkeeping System (WEIRS) web-enabled database to track and manage the PFH customers, data, PFH technicians (i.e., third party PFH testing contractors), and other information used in support of the PFH Program.</p> <p>As of June 26, 2012, of the 7,812 PFHs originally identified by GIS: 3,650 have been identified in WEIRS; 2,783 have been identified as other jurisdictions; and 1,379 are pending identification. We expect that new PFHs will continue to be located and this will be an ongoing process. The WEIRS database PFH module is now being utilized to notify customers of their responsibility to annually have their PFHs flow tested and inspected, using certified third party PFH technicians, and to report and document the operational status of the PFHs and flow results of these tests through an online interface.</p> <p>Passing PFHs are noted and scheduled for future maintenance and failing PFHs are noted for repairs. The AWU's Special Services Division (SSD) follows up on repairs and retests. When fully operational, the PFH Program will include processes so that AFD will be notified for follow-up enforcements, as necessary. The initial set of notice letters to PFH customers went out on December 2010. We are on a 30 month schedule to have the known PFHs identified and linked to AWU water customers, so that these PFH customers can be notified on their anniversary month to have their PFHs tested and results reported using a Test and</p>	<p>Underway</p> <p>Target Date: 12/31/2013</p> <p>PERSON RESPONSIBLE: Joint responsibility between AFD personnel and Antonio M. Canales & Water Protection Staff from the AWU's Special Services Division</p>

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Rec #	Recommendation	Updated Management Response	Updated Status
		<p>Maintenance (T&M) Report back to the AWU. PFH T&M reports include rate of water flow, time flowed, total gallons used, and the PFH Program will include a process to report PFH water use data to AWU personnel that need this information.</p> <p>This 30 month incremental approach to fully implement the PFH Program has been selected in order to be able to handle the workload created, as there weren't enough PFH contractors available to perform these PFH tests. To address this gap, SSD personnel have conducted four classes to train 111 more third party PFH technicians. The next class is tentatively scheduled for August 2012 depending on the availability of the training facilities used for this class. The Austin Community College (ACC) has also been used to provide this training. The AWU and ACC provided training brings the total number of certified PFH contractors to 136.</p> <p>AWU personnel are continuing the work required to realize the full benefits of this PFH Program. For example,</p> <ul style="list-style-type: none"> • The development and implementation of various statistical and other reports (e.g., water loss and accountability, PFH test completion status, PFH operational status, GIS PFH mapping updates, etc.) is underway. • Work is progressing in partnership with AFD to create a process for notification of non-operational PFHs, enforcement, and compliance follow-up. <p>Meetings and projects are underway with AWU GIS and Hansen personnel to develop a process and possible</p>	

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Rec #	Recommendation	Updated Management Response	Updated Status
		<p>interfaces with WEIRS in order to incorporate these databases into the PFH Program to keep their PFH related information current.</p>	
8	<p>To properly measure and analyze the water used by other City departments, the AWU Department Director should perform an analysis to ensure that water meters are installed at all sites from which other City departments draw water, and that accounts are set up on the CIS to ensure that the quantities are correctly accounted for.</p>	<p>AWU has met with representatives of other City departments that draw large amounts of water or use water for irrigation, and has determined that there are no fixed point where water is regularly drawn that are not metered.</p> <p>MOUs have been signed with Public Works, Watershed Protection and Resource Recovery to track and bill for their unmetered water usage. AWU is working with the Austin Fire Department to refine the tracking and billing procedures for their unmetered water. AFD will be billed for the water used for training that takes place away from their metered training facilities, for hydrant flow tests, and for standpipe flow tests. Water used for fire suppression and hydrant maintenance will continue to be provided free of charge by AWU. Estimation methodologies are being formulated based on data gathered from field observations and will be included in an MOU.</p> <p>Accounts were set up in CIS to track water used and to bill the departments with MOUs. Those accounts have been set up in CC&B, and the departments will be billed for their water use once the billable charge configurations are complete.</p>	<p>Underway</p> <p>Target Date: 8/15/2012</p> <p>PERSON RESPONSIBLE: Dan Strub</p>
13	<p>In order to ensure that all water used by contractors is accounted for, the AWU Department Director should ensure that policies governing the use of water form hydrants by non-City-owned vehicles are developed and implemented. Additionally, AWU should develop a program to educate contractors to ensure compliance with those policies.</p>	<p>An ordinance is already in place governing the use of water from hydrants. 200 hang tags have been created and installed to warn about water theft form hydrants and notify customers of the process to obtain water legally. Education efforts have begun; posters on water theft have been put up at the One Stop Shop, the Glen Bell Service Center, and Waller Creek Center; and bill stuffers on</p>	<p>Implemented</p>

APPENDIX B

Rec #	Recommendation	Updated Management Response	Updated Status
		water theft were sent out in the February utility bills.	
19	In order to reduce the amount of water lost through leaks and breaks, the AWU Department Director should ensure that strategies to reduce response and repair times are identified and implemented.	The Pipeline Operations Program Area has backed away from selective routine maintenance work orders to concentrate on leaks and main repairs. Groups will now focus on leak/break repairs, critical out of service fire hydrants, SSO's and meters. Repair crews will focus only on leak/break repairs with the exception of replacing critical out of service fire hydrants. Repairs that have completed their one calls and scheduling will be done on Saturdays. In the event leak/break repairs escalate, we will initiate a modified version of the AWU Emergency operations plan. Three Kaizen efficiency events have been held, one focusing on reducing the time between notification by Dispatch and crew arrival on site, and one focusing on site repair processes.	Implemented

