



KEN BURKE, CPA

Clerk of the Circuit Court & Comptroller
Pinellas County, FL

Clerk of the County Court • Recorder of Deeds
Clerk and Accountant of the Board of County Commissioners
Custodian of County Funds • County Auditor

Division of Inspector General

510 Bay Avenue, Clearwater, FL 33756
Telephone: (727) 464-8371 | Fax: (727) 464-8386
Fraud hotline: (727) 45FRAUD (453-7283)
www.mypinellasclerk.gov



REPORT NO. 2026-13

TO: Jeremy Waugh, Director
Utilities Department

FROM: Melissa Dondero, Inspector General/Chief Audit Executive *MD*
Division of Inspector General

DIST: Ken Burke, CPA, Clerk of the Circuit Court and Comptroller
The Honorable Chair and Members of the Board of County Commissioners
Barry Burton, County Administrator
Jill Silverboard, Deputy County Administrator and Chief of Staff
Noralvys Hancock, Deputy Director, Utilities Department
Joan Luttmann, Technical Services Manager, Utilities Department

SUBJECT: Follow-Up Audit of Utilities Meter Installation and Repair Process

DATE: May 15, 2026

This memo serves to inform you that the Division of Inspector General completed a Follow-Up Audit of Utilities Meter Installation and Repair Process. The purpose of our follow-up review was to determine the status of previous recommendations for improvement.

The objectives of the original audit were to:

1. Ensure Pinellas County (County) Utilities (PCU) had adequate oversight of the installation and inspection of the Advanced Metering Infrastructure (AMI): Water Meter Upgrades project
2. Evaluate PCU's process for converting the existing water meter technology to digital water meter technology
3. Ensure PCU had a documented process in place to maintain, repair, and replace the digital water meters according to standard operating procedures (SOPs), industry and manufacturer standards, and best practices following the completion of the AMI: Water Meter Upgrades project

To determine the current status of our previous recommendations, we surveyed and/or interviewed management to determine the actual actions taken to implement

recommendations for improvement. We performed testing to verify that management's action plans have effectively addressed the opportunities for improvement (OFIs). The extent and timing of testing were based on the significance of the OFIs and management's planned implementation completion date.

Our follow-up audit was conducted in accordance with the *Global Internal Audit Standards* of The Institute of Internal Auditors and the *Principles and Standards for Offices of Inspector General* of the Association of Inspectors General. Accordingly, it included such tests of records and other auditing procedures as we considered necessary in the circumstances.

Our follow-up testing was performed during the months of December 2025 through April 2026. The original audit period was from August 4, 2022, through October 31, 2024. However, transactions and processes reviewed were not limited by the audit period.

Of the 21 recommendations in the original audit report, we determined that 14 have been implemented, four have been partially implemented, and three have been identified as acceptable alternatives. The status of each recommendation is presented in this follow-up report.

Original Report Reference

To view the original report (Report No.: 2025-01), published in the report section of our website, please use the following link:

[Audit of Utilities' Meter Installation and Repair Process](#)

Recommendation Implementation Status

The table below reports on the status of management’s action plans to implement the recommendations contained in the original audit report.

OFI	PREVIOUS RECOMMENDATION	STATUS
1	<i>PCU’s Operational Efficiency Was Adversely Affected By AMI Water Meter Data Issues And Understaffing.</i>	
A	Within the PCU Business and Customer Services Division engage with the Department Director and the AMI project managers to discuss the AMI data issue and explain its broader negative implications for the AMI rollout. By doing so, the department can collaboratively devise strategies to enhance operational efficiency as the AMI project progresses in the coming years.	<p style="text-align: center;">Implemented</p> Management confirmed they discussed the AMI data issues with the Department Director and the AMI project managers. Additionally, they indicated the project is near completion.
B	Consider hiring or contracting with qualified external candidates or realigning existing PCU Business and Customer Services Division staff to fill the vacant positions within the PCU Business and Customer Services Division.	<p style="text-align: center;">Implemented</p> Management confirmed the Business and Customer Services Division is now fully staffed.
C	Within the PCU Business and Customer Services Division continuously monitor the import of data into both cloud-based systems to ensure timeliness, completeness, and accuracy of AMI water meter installation and consumption data.	<p style="text-align: center;">Implemented</p> Management indicated both the SAP HANA and BEACON systems are monitored.

OFI	PREVIOUS RECOMMENDATION	STATUS
2	<i>PCU's Logical Security Controls For Its SAP High-Performance Analytic Appliance (HANA) System Required Improvement.</i>	
A	Ensure the identified transaction is removed from the Revenue Management role and added to the Field Services role and that the nine noted Field Services team members be removed from the Revenue Management role.	<p style="text-align: center;">Implemented</p> <p>After the issuance of the original report, management created a Customer Engagement Section and transferred seven of the nine Field Services team members to the new position. The Customer Engagement Section does not need access to the identified transaction and was not granted access to it. Management confirmed they removed the Revenue Management access for the other two team members during the follow-up audit.</p>
B	Revoke the four separated team members' access to the SAP HANA application and remove them from the application's active user list.	<p style="text-align: center;">Implemented</p> <p>Management provided a current list of active SAP HANA users, reflecting three out of the four separated team members no longer had access. The fourth team member, although no longer a County employee, continues to perform work with PCU through a temporary agency and requires access to the system.</p>
C	Create a written policy instructing the Integrated Account Services team to conduct periodic reviews, as defined by management, and cleanups of the SAP HANA user and roles list. This will ensure that access for separated users, both in PCU and in other municipalities granted access, is revoked promptly following their separation, appropriate roles are assigned to users, and access for temporary users is either revoked or adjusted, as necessary.	<p style="text-align: center;">Implemented</p> <p>Management provided their SAP Roles Access and Monitoring SOP, which reflected the review process for user access to the SAP system. Each month, an email is sent to all supervisors who manage team members with access to the system. The email prompts the supervisor to submit a request if there are any changes to the team members' roles or system access.</p>

OFI	PREVIOUS RECOMMENDATION	STATUS
3	<i>PCU's Logical Security Controls For Its BEACON Advanced Metering Analytics (AMA) System Required Improvement.</i>	
A	Create a written policy to verify on a monthly basis that each active PCU user of BEACON AMA remains a team member of PCU, using exportable team member data from the Cityworks system and information requested from the County's Human Resource Department.	<p align="center">Acceptable Alternative</p> Management provided their BEACON Roles Access and Monitoring SOP (BEACON SOP), which outlines how a monthly email is sent to supervisors who manage team members with access to the BEACON system. The email prompts the supervisor to submit a request if there are any changes to a team member's role or system access.
B	In concurrence with the monthly review of active PCU users, contact third-party contractors to verify their team members who are active users of BEACON AMA still require permissions.	<p align="center">Implemented</p> Management provided their BEACON SOP, which directs PCU team members to annually contact contractors or third-party vendors who have access to the system to ensure their access is still needed.
C	Ensure that, in the future, the only users with the Admin role are active users authorized to have all the permissions associated with the Admin role.	<p align="center">Implemented</p> Management provided their BEACON SOP, which outlines how a monthly email is sent to supervisors who manage team members with access to the BEACON system. The email prompts the supervisor to submit a request if there are any changes to a team member's role or system access.
D	Develop a written policy to periodically review all active users with Admin role permissions in BEACON AMA to ensure each user requires that level of access. This review could be incorporated into the monthly active user audit.	<p align="center">Implemented</p> Management provided their BEACON SOP, which outlines how a monthly email is sent to supervisors who manage team members with access to the BEACON system. The email prompts the supervisor to submit a request if there are any changes to a team member's role or system access.

OFI	PREVIOUS RECOMMENDATION	STATUS
4	<i>Pedal Valves, Inc. (PVI) Used Potable Water Meter Box Lids On Some Installations Of AMI Reclaimed Water Meters.</i>	
A	Ensure PVI replaces all potable water lids on reclaimed water boxes with appropriate reclaimed water lids by the specified deadline for the AMI project.	<p style="text-align: center;">Implemented</p> Management provided documentation showing all reclaimed water boxes with potable water lids were replaced with reclaimed water lids.
B	Monitor PVI's documentation of AMI reclaimed water meters with incorrect meter box lids and the progress made in replacing them with the correct lids during weekly meetings.	<p style="text-align: center;">Implemented</p> Management provided documentation showing all incorrect reclaim meter box lids were replaced.
5	<i>Some AMI Installations Did Not Include a Recently Implemented Tamper-Resistant Feature.</i>	
A	Ensure its internal and contracted installation teams prioritize completing future AMI installations with the tamper tag device.	<p style="text-align: center;">Partially Implemented</p> Management indicated future AMI installations would include the tamper tags, which are already purchased. They provided a completion date of September 30, 2026, during the original audit; therefore, it is reasonable the recommendation is partially implemented.
B	Maintain the detailed data of existing AMI installations that require retrofitting with a tamper tag or other appropriate tamper-resistant device to secure the encoder and endpoint connection. This AMI installation data will continue to help management oversee the progress of its department as it completes the necessary work to ensure all AMI installations have secure encoder and endpoint connections.	<p style="text-align: center;">Acceptable Alternative</p> Instead of keeping a detailed log of existing AMI installations that require retrofitting, management indicated that when a team member performs a meter examination, they will install a tamper tag if one is not already installed and document it in Cityworks. Every meter is examined every three years. The BEACON system creates an alarm if a meter is tampered with. An employee will investigate the alarm and install a tamper tag if one is not already installed.

OFI	PREVIOUS RECOMMENDATION	STATUS
C	Implement its plan to retrofit all AMI installations lacking a tamper tag with the appropriate tamper tag or tamper-resistant device to secure the encoder and endpoint connection in the future.	<p align="center">Acceptable Alternative</p> PCU uses the BEACON system, which generates an alarm if a meter is tampered with. A team member will investigate the alarm and install a tamper tag if one is not present. Additionally, management indicated their work order template directs a team member to install a tamper tag during their periodic meter inspections if one is not already installed.
6	<i>PCU Did Not Create SOPs And Schedules For The Maintenance And Replacement Of AMI Water Meters.</i>	
A	Research the most current guidance manuals, standards, and practice guides pertaining to the upkeep and renewal of AMI technology and distribute this knowledge among its staff.	<p align="center">Partially Implemented</p> Management is in the process of researching and developing SOPs and schedules for servicing and replacing Badger AMI water meters. They provided a September 30, 2026, completion date during the original audit; therefore, it is reasonable the recommendation is partially implemented.
B	Leverage its experiential knowledge and authoritative research to develop comprehensive SOPs that outline the department's strategy for executing preventive and corrective maintenance and replacements of Badger AMI water meters.	<p align="center">Partially Implemented</p> Management is in the process of researching and developing SOPs and schedules for servicing and replacing Badger AMI water meters. They provided a September 30, 2026, completion date during the original audit; therefore, it is reasonable the recommendation is partially implemented.
C	Leverage its experiential knowledge and authoritative research to develop provisional schedules for servicing and replacing Badger AMI water meters.	<p align="center">Partially Implemented</p> Management is in the process of researching and developing SOPs and schedules for servicing and replacing Badger AMI water meters. They provided a September 30, 2026, completion date during the original audit; therefore, it is reasonable the recommendation is partially implemented.

OFI	PREVIOUS RECOMMENDATION	STATUS
7	<p><i>PCU Field Services Did Not Have A Defined Plan to Address The Change In The Essential Job Functions Of Its Meter Readers Following The Completion Of The AMI Project.</i></p>	
A	<p>Implement a structured, phased plan for transitioning meter reader positions in alignment with the completion of the AMI project. This plan, at a minimum, should incorporate the following key components:</p> <ul style="list-style-type: none"> • New essential job functions and associated class specifications • Training program for meter readers addressing the maintenance, repair, and replacement of AMI water meters • Policies and procedures governing the maintenance, repair, and replacement of the AMI water meters 	<p>Implemented</p> <p>Management created a new Customer Engagement Section and transferred the meter readers to the new section and Tech Services. Management provided the Customer Engagement position description, which details the job functions for the new position.</p>
B	<p>Evaluate staffing levels for its meter readers to ensure sufficient staff is available to fulfill maintenance, repair, and replacement responsibilities for the AMI meters. Conversely, if staffing levels are in excess of those required to fulfill required responsibilities, management should coordinate internally or with other departments to ensure resource maximization.</p>	<p>Implemented</p> <p>Management created a new Customer Engagement Section and transferred the meter readers to the new section and Tech Services.</p>

OFI	PREVIOUS RECOMMENDATION	STATUS
8	<i>The PCU Policy Manual Required Revisions And Approval From The Board of County Commissioners (BCC).</i>	
	Complete revisions to the PCU Utilities Policy Manual to incorporate clear language in the policies and procedures clarifying any changes to the billing process, as applicable, resulting from the implementation of the AMI project, as well as other necessary policy modifications, and obtain approval from the BCC.	Implemented Management confirmed the BCC adopted the updated PCU Utilities Policy Manual through Resolution No. 25-40 on May 6, 2025.

We appreciate the cooperation shown by the staff of the Utilities Department during the course of this review.

MD/LS