



Highlights

Why OCA Did This Study

In accordance with the Office of the City Auditor’s Fiscal Year 2019 Audit Work Plan, we conducted a performance audit of the Public Utilities Department’s (PUD) Advanced Metering Infrastructure (AMI) Implementation. The objectives of this audit were to: 1) Evaluate the Citywide AMI implementation and identify lessons learned; and 2) Determine if efficiency and effectiveness can be improved.

What OCA Recommends

OCA made 13 recommendations to improve the AMI implementation and future major projects at PUD. We recommend that PUD:

- Establish project management and oversight structures for the AMI implementation;
- Develop a deployment plan for the AMI implementation;
- Issue a department directive establishing project management requirements for all future major projects managed by PUD;
- Develop staffing management plans for work groups involved in the AMI implementation;
- Evaluate the impacts and causes of turnover and vacancy, and work with the Personnel Department to address any identified issues;
- Provide timekeeping instructions to all business units working on the project; and
- Work with the Department of IT to evaluate the control environment for applications involved in the AMI implementation.

Several of these issues were evident early in our audit, and we issued a memo to management in December 2018 to encourage immediate corrective action. PUD agrees with all of our recommendations and has already implemented three of them.

For more information, contact the Office of the City Auditor at (619)533-3165 or cityauditor@sandiego.gov.

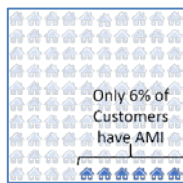
Performance Audit of the Public Utilities Department’s Advanced Metering Infrastructure Implementation

Insufficient Project Planning and Management Caused Major Delays and May Lead to Cost Overruns

What OCA Found

Advanced Metering Infrastructure (AMI) is a wireless technology that allows water meters to be read remotely, rather than in-person by a meter reader. The Public Utilities Department (PUD) began implementing AMI in 2012. AMI could help PUD reduce human error, improve customer service, and assist customers with water conservation. However, careful planning, budgeting, and project management are essential to a successful AMI rollout and to avoid costly changes to the implementation later in the process. We found that significant management deficiencies, staffing issues, and implementation of a new work order tracking system, EAM, all contributed to delays in implementing AMI Citywide.

Finding 1: AMI implementation is a complex undertaking that affects many different business areas of PUD. Therefore, careful planning, budgeting, and project management are essential to a successful AMI rollout and to avoid costly changes to the implementation later in the process. However, we found that PUD did not sufficiently plan, budget, or manage the initial attempt at a Citywide AMI implementation. As a result, the Citywide AMI implementation has experienced severe delays and may incur cost overruns. The project was originally scheduled to be completed by December 2017, but was suspended by PUD in July 2018 while PUD re-evaluates its options for conducting the rollout. At that time, only six percent of PUD customers had their meters read remotely via AMI.



Finding 2: Significant staffing issues in PUD’s AMI meter replacement group have seriously hindered the project’s progress. PUD anticipated completing the meter replacements needed for AMI within 30 months by using the equivalent of approximately 24 employees, each replacing between about 12 to 15 meters per workday. We found that from July 2017 to March 2018, PUD only had about 15 employees in the field replacing meters on the average workday, and each staff member replaced an average of about 10 meters per workday. This led to PUD’s meter replacement pace falling more than 50 percent below what PUD needed.



Finding 3: PUD management should accurately track actual implementation costs to improve financial accountability, enhance operational effectiveness, and promote citizens’ confidence in their government. However, PUD is not accurately tracking labor costs for the Citywide AMI implementation. As a result, PUD management cannot monitor and compare actual costs against the budget, and identify whether actual project costs are aligning with the budget.

Finding 4: Meter replacement crews must completely and accurately enter a variety of information into a mobile device. However, the device controls do not effectively prevent data entry errors. As a result, PUD must correct data on the back-end, which is not efficient and has led to at least some customers receiving delayed bills, including some customers who have received multiple bills at once.