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Where Does the Water Go? Agreement Investigation

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ABSTRACT

A development project – subdivision, shopping center, or irrigation system – requires the installation of a water meter to account for consumption by a developer or the retail customer. Once installed, it should begin measuring water flow and producing cash flow. Agreement Investigation (AI) is a post-development process that examines the timeliness of these flows. As with so many single-focus processes in a highly complex field and administrative system, investigating one problem often leads to opportunities in other functional areas.

INTRODUCTION

Problem

Water meters are installed by a contractor and accepted by the Las Vegas Valley Water District (LVVWD) for operation and maintenance following inspection and acceptance. The meters need to be activated (turned on, an administrative action) as quickly as possible. This activation does two things. One, it ensures that water is accounted for. Two, activation ensures that billing begins as soon as possible.

The AI project is a process for accounting for water and the resultant revenues from appropriate billing. The project did not include system design, projected demands of new services, effects on customer service or billing operations, or inspection of installed services. However, the latter item led to further ideas about examining the process of accounting for water in a more efficient manner.

Purpose

The purpose of this paper is to review the Agreement Investigation (AI) process as implemented by the LVVWD Development Services Office (DSO). AI is a post-development (after facility installation) process to account for the consumption of water through LVVWD meters. The objective of AI is to ensure that the water that flows through the meter is accurately logged into the resource and billing systems, that it is the correct size, and that revenue is generated as quickly as possible. Asking where the water goes taught us lessons that are leading us into future processes designed to reduce costs and increase operating efficiencies for the LVVWD.

Methodology

The process evolved based on previous efforts to improve water accountability and a review of available and appropriate staff resources.

BILL OF SALE:

- A document provided by the developer that transfers the water facilities (mains, meters, backflow assemblies, but not water lines between structures or parcels, or on-site plumbing) to the LVVWD for its operation and maintenance.

AI STAFF:

- DSO compares the Bill of Sale to as built drawings to ensure all services proposed to be installed were installed and accepted by the LVVWD.
- DSO develops work orders for Meter Services staff for field reviews of inactive meter locations.
- Meter Services investigates installation and activation, logs meter numbers, performs meter change outs, or reports status of meters for change out by developer (e.g., smashed lens, incorrect size) if project under warranty.
- Meter Services staff reports daily results to DSO for internal processes.
- DSO activates accounts, logs meter numbers and any consumption readings, prepares bills for consumption to either developers, who may have used water during construction, or to retail customer, who failed to sign for service. Once activated, Meter Readers have site added to database for monthly reading. Also, Billing Services' database is updated with these accounts.

Background

In late 2001, DSO received a phone call from a homeowner questioning his water bill. He was questioning whether he was paying for the common area irrigation service in addition to his domestic residential consumption.

We discovered four irrigation services that had never been activated by a developer for the purpose of monthly billing. The services were accepted by the LVVWD a year earlier and the meters were delivering water for irrigation.

Field checks of the four services led to \$149,538.00 in uncollected revenue. More importantly, this action placed the accounts in the billing system for regular monthly reading and billing.

This discovery and several other instances around that time caused our office to question the effectiveness of Agreement Investigation (AI). The rapid growth of the LVVWD (over 22,000 accounts yearly for the last four years) had changed priorities from post-development follow-up to sustaining the basic field functions of meter reading and maintenance. A data query showed 600 services still in an inactive (I) status which should be investigated for possible activation for billing.

A plan was developed with Meter Services to have all services on the report field checked to obtain meter numbers, meter readings and use type (residential, non-residential, irrigation). Work orders were created for each service. Copies of the work orders were printed, along with maps and other location information that would help locate services efficiently.

Over the course of about two weeks, two or three Meter Services personnel processed the orders, returning the hard copies with the information to Billing Services. Billing attached the meters to the accounts. Billing then sent any 'turn-on' information to Customer Services to prepare for any customer calls. We estimated that 90% of these services should have been activated for billing long before this special coordinated activity.

The total billing led to another \$2,000,000 of past-due revenues and the creation of new revenue streams from the activated meters. Customer Services was notified that write-offs were not to be considered until all other means to collect had been exhausted. Nearly all of those monies were collected through standard billing; special, interest-bearing payment arrangements; or through the established credit and collections process in Customer Services.

After the special field investigation, DSO initiated meetings to develop business processes that would restart the AI process among Billing, Meter Services, Customer Services, and Development Services. This included several work items. One, Billing would resume reviewing the large service (greater than 2-inch meter sizes) report to determine if these services were ready for activation and billing. Two, Meter Services would change the status of commercial and irrigation services from Inactive to Active following meter routing. The outcome was not what DSO expected. Billing continued to send Meter Services to investigate services for possible turn-on when the services had not been installed. Since we could not mediate this communication issue, DSO immediately cancelled the AI process.

In early 2003, following another data query, we researched 874 services, sending 48 work orders to have services checked by Meter Services. All were ready for billing, totaling \$90,916.28 in past-due revenues. The work established those accounts for regular billing.

At this time, DSO reviewed the process with all involved as if it were in charge of it from discovery through billing. Several approaches were developed. For example, as planning maps were reviewed, we checked irrigation and commercial services for a backflow (BF) device. If the device was attached to the account, the status of the service was changed to "A" from "I". We also tried to ascertain the possible meter number and place that number, along with the BF serial number, in the comments of the account. The date that the BF device was accepted served as the basis for activating the account for billing.

Despite these incremental improvements, there still was no consistency in the investigation process. If the DSO reviewed a plan map, the review would only capture what was on that map. The priority schedule for field investigations was unknown. Sometimes, field personnel, working on other priorities during their shift, had a hard time locating the services. This led to the work being sent to the lead technician or supervisor, creating another delay in capturing the information. For example, it took two months to find and read four of seven services. Development Services tried another approach.

In early 2004, Development Services requested a different kind of assistance from Meter Services. We asked for, and received, a meter reader on a weekly, part-time basis. We developed a daily list of accounts for field investigation. The reader provided the results each afternoon. The reader also noted field conditions while reading. These field conditions revealed how other divisions' processes were working in a way that would assist in accurate, timely water accountability.

Based on this initial success, the DSO negotiated a service agreement with Meter Services. All administrative work (data entry, research, work assignments, directions, unique information, and billing) connected with the AI process would be the responsibility of DSO. The reader and the truck were provided by Meter Services on a part-time basis. Further, DSO requested, and Billing agreed, to take the results of AI meter reading information and complete the billing process. This meant accepting AI meter reads and not sending Meter staff to the field to confirm a reading less than five days old.

The Managers of Meter Services and Financial Services agreed to the staffing and administrative procedures. This process change led to an added \$609,000 generated in developer and/or customer billings. Over 95% of these accounts will become permanent service billings, improving cash flow and accountability for water. Since this time, DSO has directed the AI process and has provided consistent reporting on and billing of new services.

RESULTS AND DISCUSSION

Some of the issues uncovered are best addressed through training and evaluation of field personnel; other issues require attention to administrative details, such as developers not calling for inspection of model home services, not calling to activate model home accounts, or not calling to schedule inspections of services with backflow assemblies prior to starting the use of services (irrigation, building occupancy, etc.). This information is reported to the inspection and water quality divisions to encourage added site visits to monitor development.

Another example is services are given LVVWD approvals for use or projects are accepted at 100% status with the wrong size meters in boxes, illegal services, idlers in meter boxes, non-LVVWD meters in boxes, no meters in boxes, meters installed backwards, stuck meters, backflow assemblies not installed or tested, wrong size backflow assembly. These events are recorded by service and distributed monthly for field training purposes.

Occasionally, the billing system drops a developer charge for consumption on the developer bill or meter change out fee. Because DSO is doing the billing for these accounts, we are an added review of these processes.

Meter readers may skip reading meters at locations that were under construction for a long time, but are now occupied, because the database used was not updated for new, active accounts. This is being addressed through the AI process activating accounts, thus ensuring that they are on the readers' route database.

CONCLUSIONS

With the ability to research service location and installation status and to activate services and bill for consumption, Development Services appears to be a logical location to manage AI.

However, the AI process is a component in post-development account auditing. The field investigations revealed information on quality of LVVWD staff work, developer responsibility, billing accuracy, and meter reading performance, all of which contribute to accounting for water. Furthermore, the volume of the AI work is really at a full-time level, not the part-time schedule that can be affected by illness, vacation, or higher priorities in either of the division providing the staff support.

What about the future? A test will be conducted in the near future that will co-locate the Billing and Meter Services functions into a Water Accountability Team. This test will provide lessons learned in inter-staff, face-to-face communication in one room, using a night shift to review meter reads. This pilot will examine the ability to make real time decisions based on added software, and the development of a level of communication and trust between historically separated staffs. The results of this experiment will provide the basis for further development of efficient and effective processes across organizational borders.

Another approach recently suggested is to have LVVWD staff install all meters. It is believed that this will reduce the post-development transaction time consumed by inspections, billing, DSO, and Meter Services. It will also eliminate issuing meter receipts to contractors and the quality control over the inventory once it leaves the LVVWD warehouse. Once a meter is installed by the LVVWD staff, all appropriate information as to size, location, meter number, reading, and activation is done at the time of installation, and distributed to affected divisions. This process is a prospect for a live pilot project in the near future.

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