



City of Aledo
UTILITY BILLING
 Operational audit of meter to cash functions
 April 4, 2024



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AUDIT TASKS

- 01** Meter Accuracy - Evaluate high-level metering accuracy to identify errors in consumption reporting.
- 02** Billing Accuracy - Evaluate data handling and bill calculations to verify accurate billing.
- 03** Utility Billing Organizational Assessment - Conduct management and organization review of utility billing to determine if any areas for improvement or recommendations can be identified.
- 04** Stakeholder Engagement and Communication - Update key stakeholders on audit and participate in educational sessions.

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Meter Read Accuracy



Reads Matched to Photos

39 of 40 manual reads clearly matched photo;
One photo had obscured read



Manual Reads Matched Billing

26 legacy meters billed with correct read and multipliers



Recent AMI Exchanges Varied

6 Reads were billed off AMI read instead of manual
Volume from timing variance billed the following cycle
3 Reads did not capture full volume
4 Accounts overcorrected prior month



Meter Data Unavailable

Aledo has not consistently maintained data on metering infrastructure, repair records or testing data



Installation Process Reviewed

Performed in field review of new meter installation and vendor-installed AMI exchange;
Additional review of account set up and AMI program

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Legacy Meter Testing Results

- 25 meters removed from service and sent to 3rd party lab for performance analysis*
- Meters tested against AWWA standards for minimum, intermediate and maximum flow
- Analysis provided by SL Serco

*2 meters were damaged and unable to test

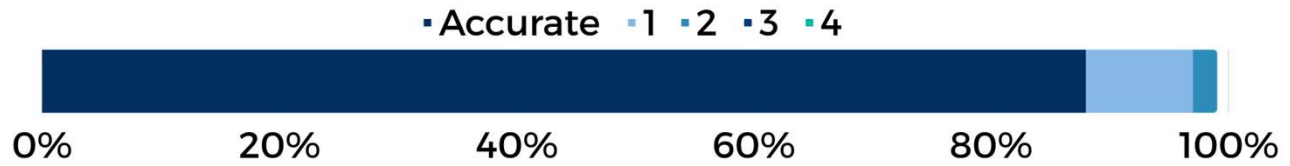
Average meter accuracy

74%

	Minimum	Intermediate	Maximum
Total	23.0	23.0	23.0
# pass	7.0	14.0	7.0
# Fail	16.0	9.0	16.0
% Pass	30.4	60.9	30.4
% Fail	69.6	39.1	69.6

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Billing Verification Results



1 Inaccurate application of authorized rates and charges

2 Account set up errors impacting services billed

3 Miscalculated volume charge

4 Errors made at point of AMI meter exchange

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BILL LATENCY

➤ Average time from read to production - 14 calendar days

➤ Average time to mail - 2 calendar days

➤ Average time to submit payment - 15 calendar days

Key billing dates

Service	Read Dates*	Bill Production	Mail Date	Due Date
January	2/15/24	2/29/24	3/1/24	3/15/24
December	1/15/24	1/31/24	2/5/24	2/15/24
November	12/15/23	1/2/24	1/5/24	1/15/24
October	11/15/23	11/29/23	12/1/23	12/15/23
September	10/15/23	10/31/23	11/2/23	11/15/23
August	9/15/23	9/28/23	9/30/23	10/15/23
July	8/15/23	8/28/23	8/28/23	9/15/23
June	7/15/23	7/26/23	7/27/23	8/15/23
May	6/15/23	6/26/23	6/28/23	7/15/23
April	5/15/23	5/25/23	5/30/23	6/15/23
March	4/15/23	4/26/23	4/27/23	5/15/23
February	3/15/23	3/27/23	3/29/23	4/17/23

*generally occurs 12th-15th of month

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Other Billing Observations

1. Practice/Ordinance Alignment

Adopted fee ordinance varies from billing practice. Examples include deposit refund, late fees, refuse fees (corrected).

2. Account Classification

A review of all active accounts identified 23 commercial accounts classified as residential. Primarily churches and HOAs.

3. Internal Controls

Roles-based controls are configured in the billing system. Staff now has ability to review and adjust as necessary; Policies related to account access and cash handling are not well documented.

4. Work Tracking

Work related to field activity including rereads and exception handling, bill estimation, and field activities are not tracked. Service orders coded as Miscellaneous, providing limited detail.

5. Customer Bill Data

Bill has historically included service dates inconsistent with read-to-read service charges; Prior to AMI program, calculation of usage from reads did not depict billed multiplier on the statement.

6. Payment Posting and Deposit

Cash and check collection practices are manual and lack policy and procedure documentation; Prior to new staff, checks were input by hand and deposits were inconsistently delivered for deposit.

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AMI Program Implementation Observations

1. Implementation Timeline

Field conditions and lack of supply commonly impact implementations in AMI programs – lack of meter infrastructure data and complete understanding of process.

2. Vendor Oversight

Vendors produced inspections, missed locations, leak repair when directed. Field and UB staff required more advanced training to use systems as they were installed.

3. Public Information

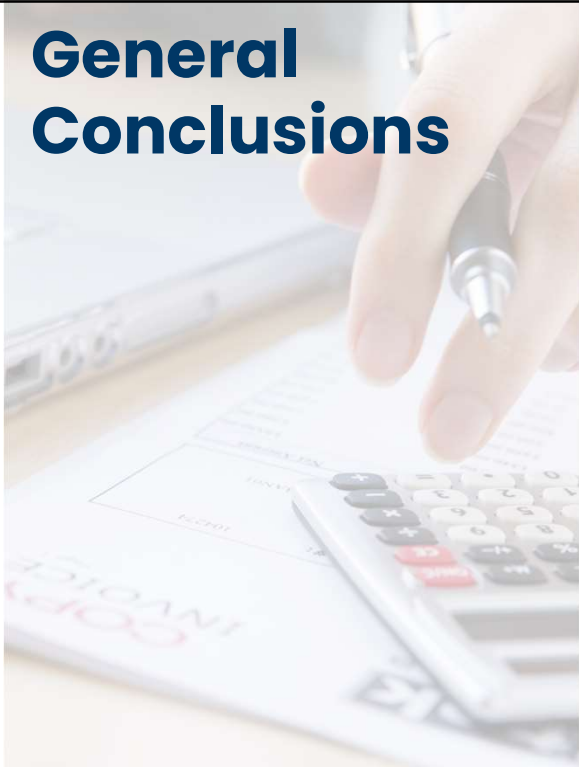
A high level of education related to both the meter exchange and water use are required for a successful implementation.

4. Governance

Program implementation requires new ordinances, policies and procedures to support new/changing tasks. This includes testing checklists, clear financial results and Key Performance Indicators.

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General Conclusions



No systemic or chronic billing issues identified



Mistakes primarily due to human error, lack of training and lack of documentation



Field meter activities accurately executed with AMI primarily completed



Committed to improvement with limited staff capacity addressing inherited conditions



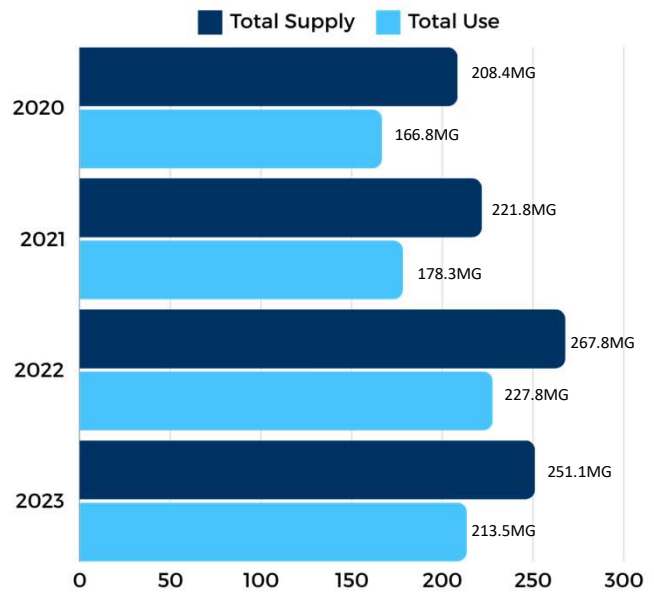
Opportunity for modernized processes and customer engagement/education

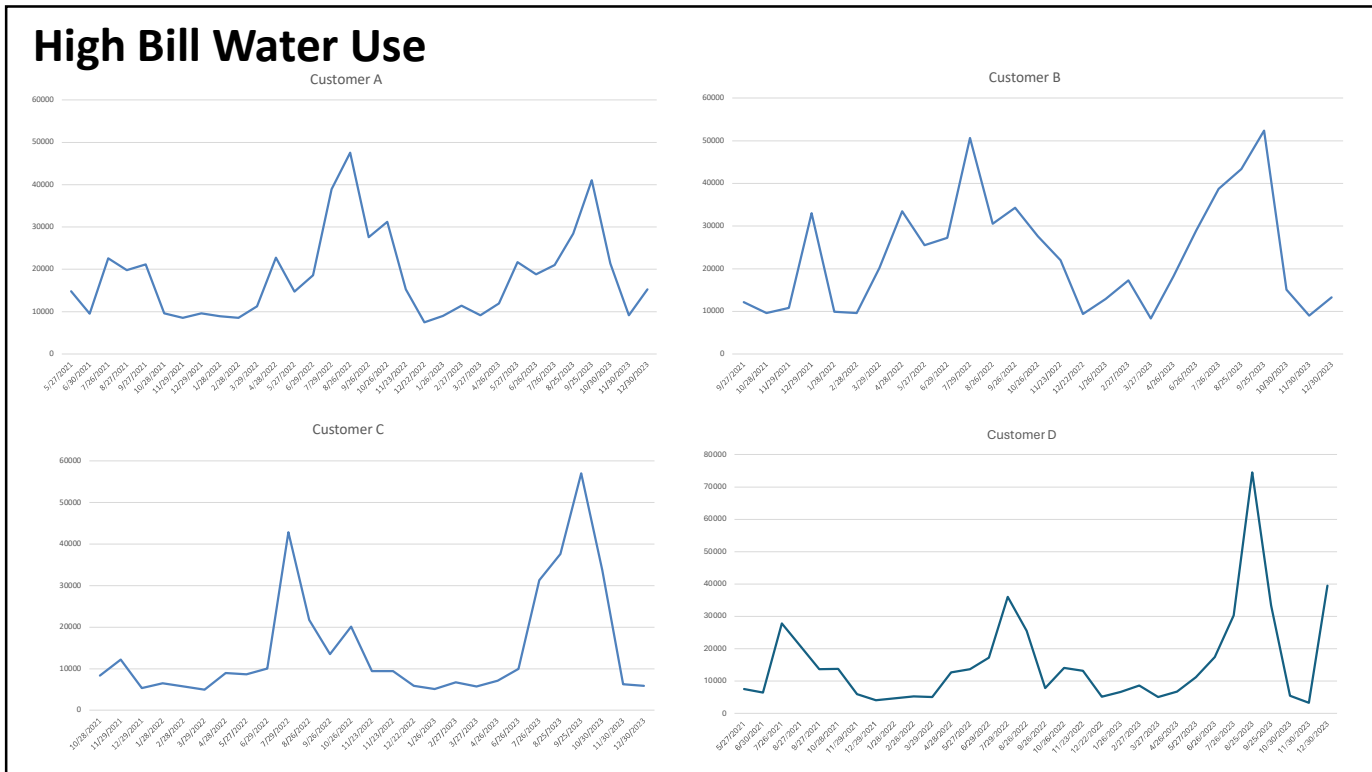
WATER USE

Purchased supply exceeds the amount used by residential and commercial customers by an average of 17%.

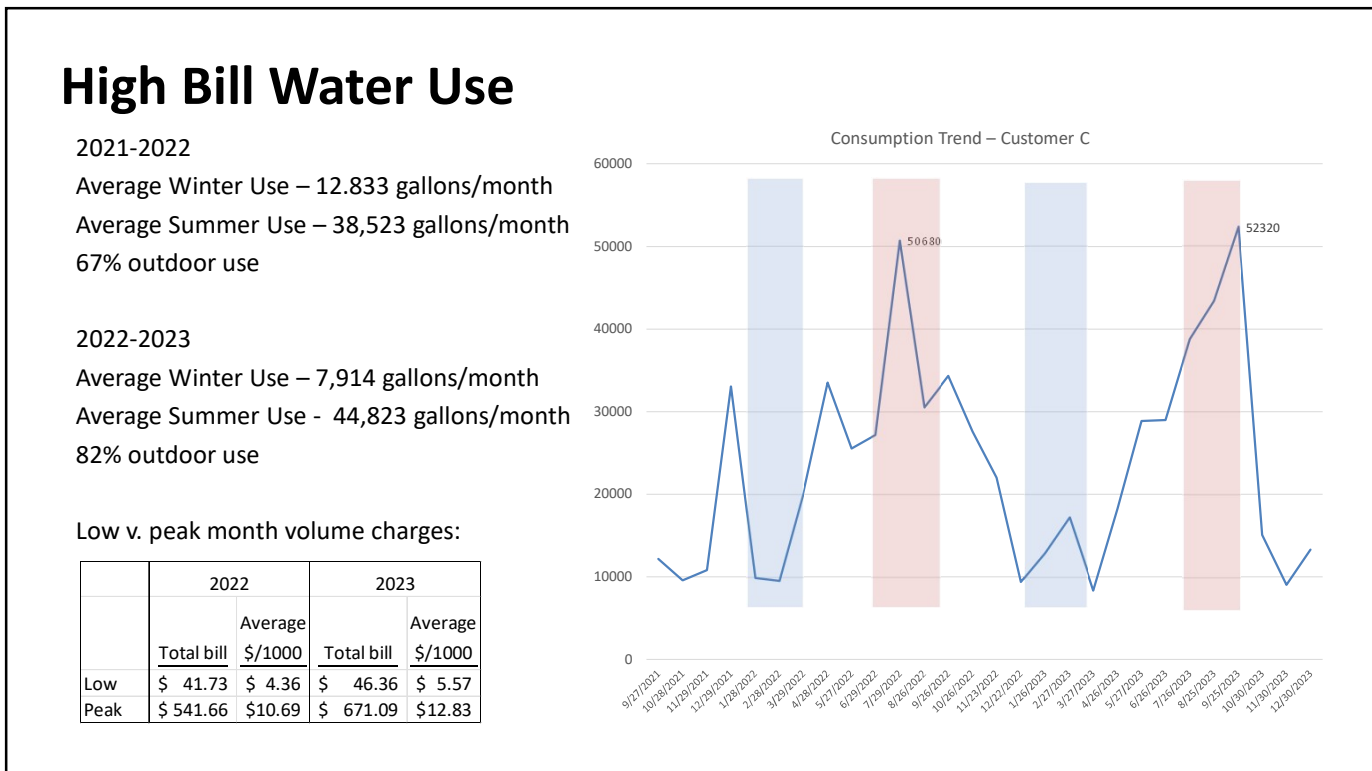
This represents real water losses within the distribution system from leaks and breaks, as well as apparent losses stemming from under-registering meters and billing adjustments in the form of non-revenue water loss.

Advanced Metering Infrastructure contributes to the reduction of loss.





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High Use Scenarios (using AMI Data)

Residential Irrigation

- Common driver of high bills
- Violating watering restrictions
- Malfunctioning systems
- Controller/operator error
- System more accurately measures high GPM

Unusual Usage

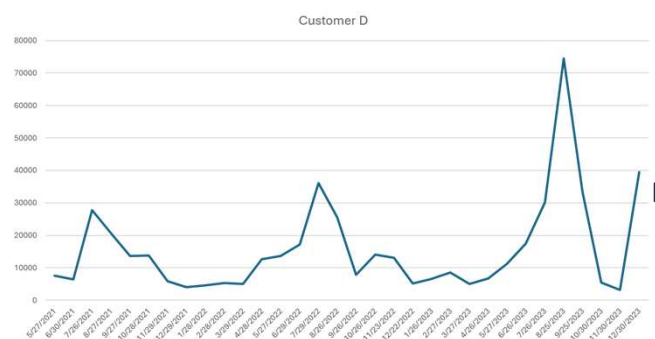
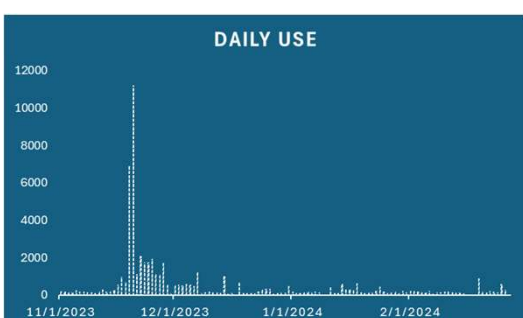
- Often driven by pool maintenance or hoses left running¹³
- Significant decline in use also apparent when leaks are repaired

Probable Leak

- System more accurately measures low flow GPM – constant usage /potential leak
- Common pattern identified in consumption data review

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High Bill Water Use

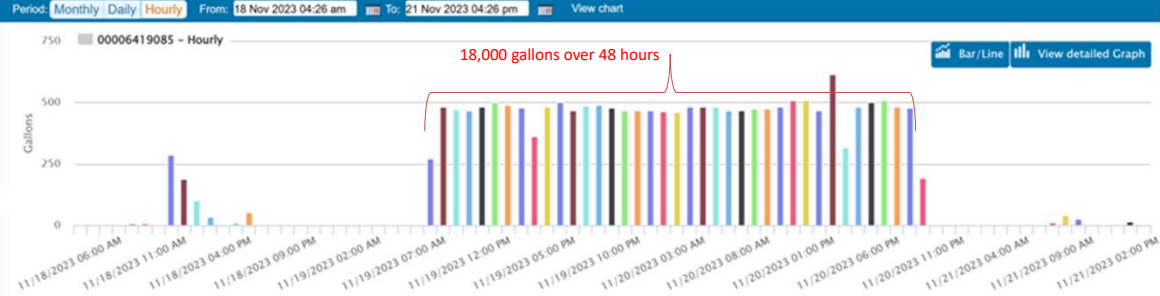



Dashboard | Period: **Monthly** | Daily | Hourly | From: 18 Nov 2023 04:26 am | To: 21 Nov 2023 04:26 pm | View chart

Meter Details | Alerts | Related Entities | Consumption | **Charts** | Events

00006419085 - Hourly

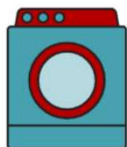
18,000 gallons over 48 hours



Bar/Line | View detailed Graph

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WATER USE



AROUND THE HOUSE

- Faucet dripping at 1 drop per second 1,825 gallons/year
- Full Laundry Load 15-25 gallons
- Full Dishwasher 4-12 gallons
- Running a Faucet 2.5 gallons
- Brushing Teeth 4 gallons

IN YOUR YARD

- Watering to 1 inch (100x100 sqft) 6,200 gallons/week
- 10-minute home car wash 30-100 gallons/wash
- Garden hose without nozzle 2 gallons/minute



Outdoor watering makes up 30-50% of usage during summer months.

Swimming Pools Can Waste a Lot of Water

- The average pool takes about 18,000 gallons of water to fill and during the summer in Texas, pools can lose several inches of water due to evaporation every couple of days (about 120 gallons of water). Over the course of a year, that could add up to 30,000 gallons (and a high water bill) if it is refilled each year.

Year-round Landscape Irrigation System Requirements

Mandatory
Twice-a-Week
irrigation system
watering restrictions



No watering with
irrigation systems
10 a.m.-6 p.m.

Monday: No watering
Tues & Fri: Commercial properties
Wed & Sat: Residential ends in 0,2,4,6,8
Thur & Sun: Residential ends in 1,3,5,7,9

Sign up for a free
irrigation system
evaluation.



Watering by hand-held hose, drip irrigation or soaker hose is allowed at any time.

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STRENGTHS

WEAKNESSES

Aledo
SWOT
ANALYSIS

OPPORTUNITIES

THREATS

ORGANIZATIONAL ASSESSMENT

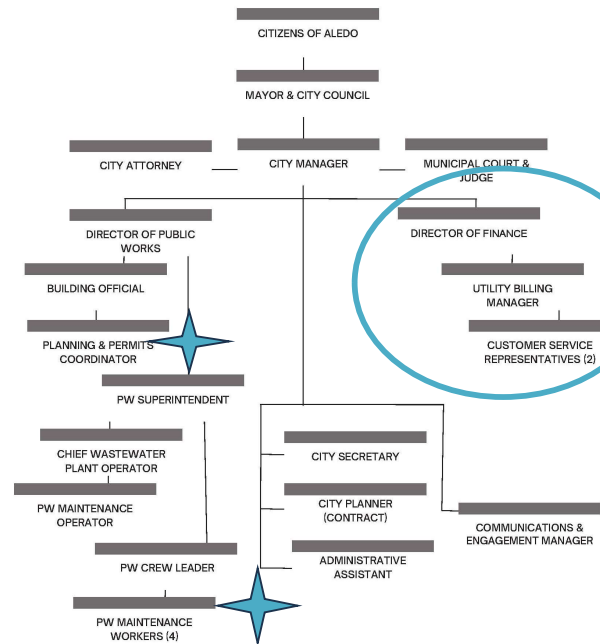
- Evaluate staffing resources and identify gaps
- Facilitate SWOT assessment
- Facilitate development of Key Performance Indicators
- Update business process

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STAFFING

Challenges:

- Billing work is compressed
- Timely customer response difficult
- Classifications do not support technical nature of billing process
- Staff lacks tenure and institutional knowledge
- Lack of systems and end to end process training
- Lack of policy and dependence on the way things have been done
- Public Works has wide breadth of responsibility




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LEADERSHIP FOCUS

Utility billing is designed to achieve an **accurate accounting of services** provided with **consistent revenue recovery** and **excellent customer services**, provided by **knowledgeable staff** to Aledo's residents and businesses. To achieve these goals, staff is committed to **improved accuracy, consistency, and transparency** with enhanced staff and public education and timely customer response.

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KEY STAFF NEEDS

- 01 Articulate clear vision with well-defined end goal documented staff expectations.
- 02 Build documentation of necessary procedures throughout the full meter-to-cash cycle, operating within documented, authorized policy in lieu of historic practice.
- 03 Focus on systems training, including completion of Incode modules.

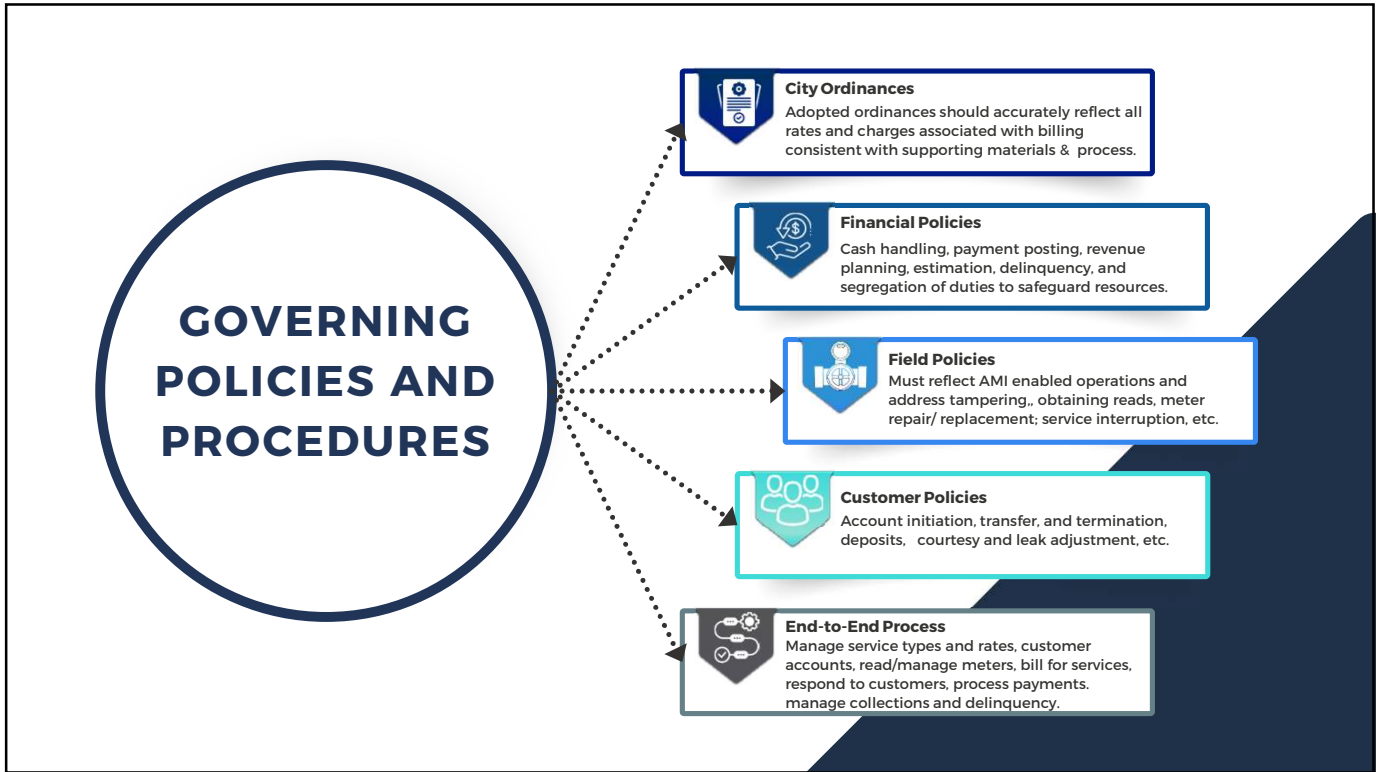
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KEY RECOMMENDATIONS

Addressing the following areas will reduce risk, improve customer confidence, and provide for a more resilient organization.

- 01 **ESTABLISH GOVERNING POLICIES AND OPERATING PROCEDURES** 
- 02 **UPSKILL AND ENHANCE STAFFING RESOURCES** 
- 03 **COMMIT TO METRICS AND SYSTEMATICALLY TRACK AND TREND WORK** 
- 04 **DEVELOP EFFECTIVE CUSTOMER COMMUNICATIONS AND EDUCATION** 

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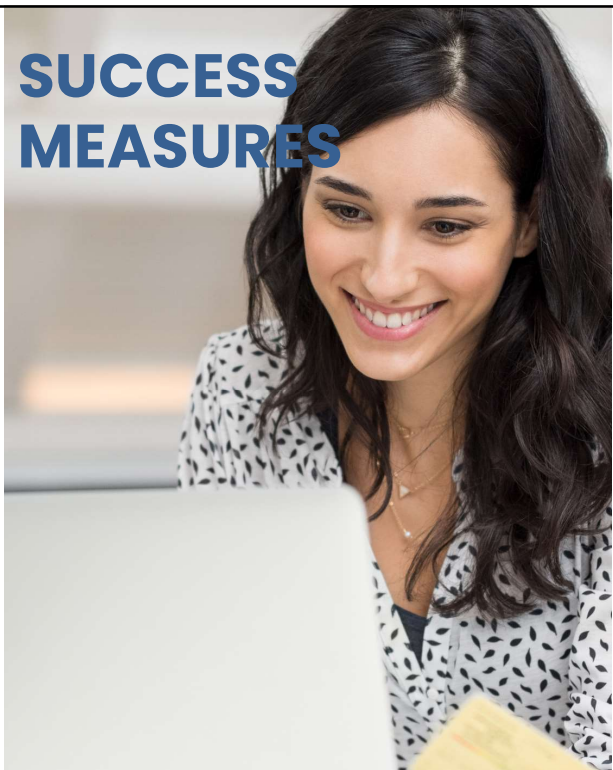


STAFFING

- 01** Maintain 3 FTEs in Utility Billing but clarify roles and responsibilities and “Upskill” all roles to reflect the technical aptitude required and improve controls. Provide technical, organizational and functional training.
- 02** Redistribute utility billing workload throughout billing cycle to improve accuracy and support for other city/financial functions as necessary.
- 03** Capacity of Public Works staff from the implementation of AMI should be redistributed to other public works needs, while supporting the billing process.

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SUCCESS MEASURES



Meter Performance

- % meters not communicating for 72-hours
- % successful register reads
- # identified tamper incidents



Customer Service

- Calls per 100 accounts - total
- Customer response time
- First call resolution



Billing

- % accounts billed within 7-days of read date
- Billing errors and adjustments per 100 accounts
- High bill inquiries per 100; value of adjustments
- # and \$ delinquent accounts



Water Efficiency

- # of leak alerts
- # of outdoor watering notifications
- % non-revenue water/ water loss
- Gallons per capita per day



Use of New Tools

- % accounts with portal registration
- # of app downloads
- Payments posted through improved systems

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COMMUNICATION AND EDUCATION



Revise Billing Statement

Incorporate customer feedback and improve clarity of services and volumes billed; ensure bill reflects service period within industry standards.



Improve Customer Information

Update and streamline welcome packet, online policy information, provide more educational resources via website, social media, inserts, etc. Improve website and other communication tools.



Increase Water Use and Conservation Education

Provide customers with information and resources to help monitor water use, conserve water and manage monthly bills.



Explain water system, projects and costs

Increase understanding of Aledo's water systems, key projects, operational and capital costs, and future funding needs.

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SUPPORTING RECOMMENDATIONS

01 CUSTOMER SERVICES

- Implement call tracking system
- Realign staff roles to ensure timely customer response
- Train staff throughout process in systems, services, and customer relations (include cost of service/rates, Incode, Harmony, portal, workorder processing, adjustments).
- Offer residential irrigation audits
- Promote portal registration and use

02 BILLING AND METER OPERATIONS

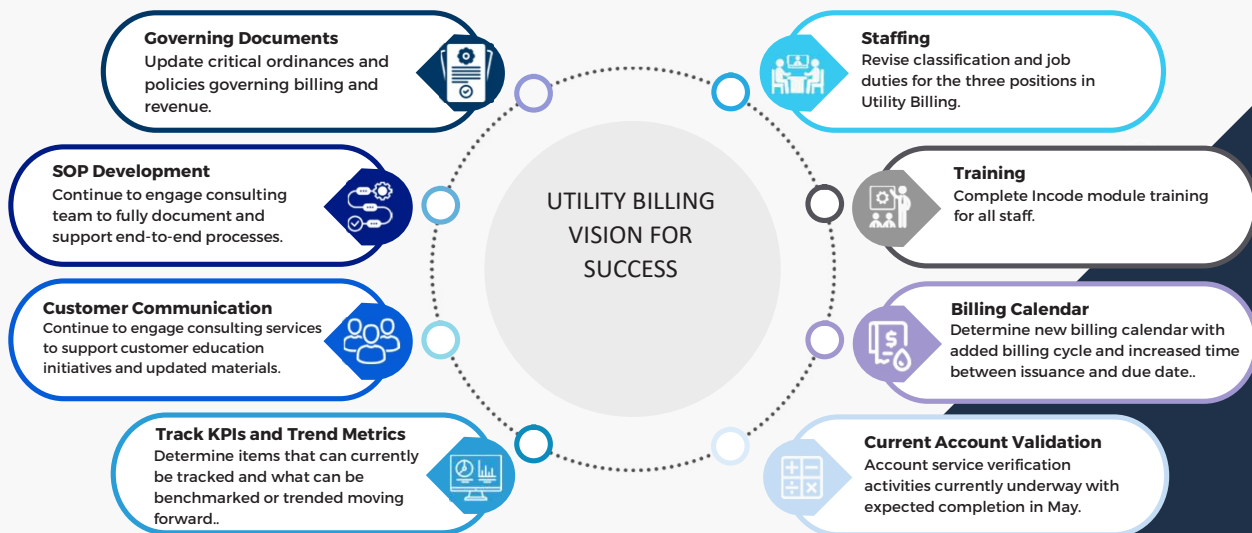
- Redistribute UB work with additional billing cycles
- Revise billing calendar to ensure a minimum of 16 days to pay
- Verify account services
- Work with Incode to improve available queries and work order types
- Update service application and UB staff access to new development data
- Update bill exception process/parameters
- Develop standards and testing protocols for rate changes
- Update forms to get more complete service information at account set up
- Maintain complete meter asset data

03 FINANCIAL AND ADMIN OPERATIONS

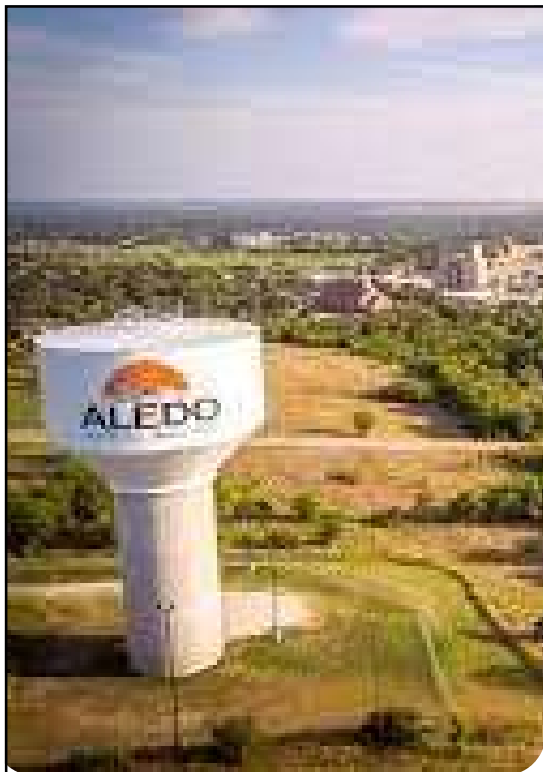
- Improve efficiency of cash and check payment processing
- Expand payment options
- Clarify contract compliance roles in major initiatives
- Review rate structure and impact of current tiers; analyze use of scaled sewer base fee
- Look at long term billing support options and 'core service' assessment
- Improve record keeping by leveraging systems of record and improving disposition and storage

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PATH FORWARD



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THANK YOU!



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