ATTENTION

The City Council meeting will be held in a hybrid format that may include both in-person AND virtual attendance via Zoom. Unless they have cause to appear virtually, Councilmembers will attend the meeting in person in Council Chambers, fifth floor of City Hall, 316 N. 26th Street. In order to honor the Right of Participation and the Right to Know in Article II, Sections 8 and 9, of the Montana Constitution, the City of Billings and City Council are making every effort to meet the requirements of the open meeting laws.

Citizens are invited to:

- Review the Agenda Packet on the City's website at: www.billingsmt.gov and click on "Your Government," "City Council," and "Agendas & Minutes".
- View the meeting:
  - On Community 7 TV - Channel 7 or Channel 507 -- Spectrum Cable. *(On evenings when there is a conflict with School District No. 2 Board meetings, the City Council meeting will be broadcast on Channel 8 - Spectrum Cable.)* Channel 7 or Channel 978 - TDS Fiber.
  - Online at www.comm7tv.com and click on the "Watch Live" icon. Community 7 also has links to their Facebook page and YouTube channel.
  - On the City's website at www.billingsmt.gov and click on "Watch Meetings Online" on the homepage.
  - In-Person.

Citizens may submit public comment via the following methods:

- Mail: City Clerk, P.O. Box 1178, Billings, MT 59103
- Email: Council@billingsmt.gov.
  - Emails received after 3:00 PM on the day of the meeting, may be posted on the Council's webpage the following day for public viewing.
- Attend the meeting in person

Please contact Denise Bohlman, City Clerk, at bohlmand@billingsmt.gov, or at 406.657.8210, with any questions.

CITY OF Billings

VISION STATEMENT:
"The Magic City: A diverse, welcoming community where people prosper and business succeeds."

WORK SESSION AGENDA

COUNCIL CHAMBERS | FEBRUARY 3, 2025 | 5:30 P.M.

REVISED TO ADD OATH OF OFFICE SWEARING IN CEREMONY

CALL TO ORDER: Mayor Cole

Oath of Office - Swearing in Ceremony

PUBLIC COMMENT ON ALL ITEMS. This is the time to comment on any matter (Agenda or Non-Agenda) falling within the scope of the Billings City Council. There will also be time in conjunction with each agenda item for public comment relating to that item. You may only speak once for each item during the meeting.

Please note, the City Council cannot take action on any item of significant interest to the public that does not appear on the agenda. Comments are limited to three (3) minutes during each public comment period or as set by the Mayor. **Speaker sign-in required.** Please sign the roster at the cart located at the back of the Council chambers or at the podium.

1. **Utility Billing Conversion Audit.**

   -Public Comment

2. **Billings MPO Transportation Alternatives Program.**

   -Public Comment

HIGHLIGHT UPCOMING AGENDA ITEMS OF COUNCIL INTEREST:

COUNCIL DISCUSSION:

PUBLIC COMMENT on "NON-AGENDA ITEMS". Speaker Sign-in required. (*Restricted to ONLY items not on this printed agenda. Comments are limited to 3 minutes or as set by the Mayor. Please sign the roster at the cart located at the back of the Council chambers or at the podium.)*

ADJOURN:

Note:

- This meeting is an "informal" meeting of the City Council. The content of the Agenda is subject to change at the meeting.
- In the event there is a Closed Executive Session, the sole purpose is to discuss litigation strategy. The other parties to the case(s) discussed are not public bodies or associations as described in Section 2-3-203(1) and (2), MCA. The meeting is closed, as allowed by Section 2-3-203(4)(a), MCA, "to discuss a strategy to be followed with respect to litigation when an open meeting would have a detrimental effect on the litigating position" of the City of Billings.

City Council Work Session

Date:	02/03/2025
Title:	Utility Billing Conversion Audit
Presented by:	Chris Kukulski, City Administrator
Department:	Finance
Presentation:	Yes
Legal Review:	No
Project Number:	N/A

RECOMMENDATION

No action is requested. Dave Allen from SLserco will present their findings and answer questions.

BACKGROUND (Consistency with Adopted Plans and Policies, if applicable)

In October 2024, the City of Billings solicited the services of a firm to undergo a review of our entire utility billing system and processes. A group of City staff and two council members developed a scope for the system audit. After interviewing multiple firms, the City entered into a contract with SL Serco to provide the identified services.

The areas to be reviewed include the following areas:

- Communicate the impact of client requests for adjustments to service
- Perform project status and compliance reporting monthly.
- Determine if the measurement of water consumption was converted appropriately and billed accurately in accordance with data stored in Neptune 360.
- Determine if the last meter reading in the legacy system was imported correctly into VertexOne.
- Determine if customers were billed according to approved rate schedules.
- Determine if prorations between fiscal years and tiers was calculated accurately.
- Determine if the billing data from VertexOne was correctly reflected on the bill image.
- Determine if wastewater charges were calculated correctly.
- Determine if storm and garbage fees were billed correctly based on the abnormal billing periods. Verify proration if applicable.
- Verify that billing cycles and periods were maintained correctly (i.e., no double billing for same or overlapping periods).
- Verify that automatic payments for customers on autopay match what was billed (i.e., no extra debits have been taken).
- Review the CITY'S decision-making process and public communication related to the bills in question. Document where CONSULTANT observes opportunities for process and communication improvements.
- Review summary bill process and multi-account holders online access compared to the industry best practice.
- Report findings to staff and council including a description of the processes used throughout the review and a presentation at a public council meeting.

The review included the recalculation of all residential bills. This recalculation included the final two bills in the old system and the first two bills in the new system, including independent testing of a selection of meters.

SL Serco has completed their audit of the system and will be onsite to provide their findings. (see attached audit report and power point presentation)

Based on these findings and our conversations throughout the process, we have learned alot. The following are five areas we would do differently if we started this project tomorrow.

1) A full-time IT expert would be imbedded in the PW department. This is needed going forward and will be requested in the 2026 budget.
2) The city needs to hire a 3rd party software conversion expert who represents the city throughout the project for software conversions of this size, complexity and impact.
3) Increased and improved communication with our customers, council and staff.
4) Once it was determined that the conversion was not going to be completed by May 1, we would delay implementation until October to avoid the summer irrigation season.
5) Once the system conversion failed by producing thousands of "exceptions", we should have requested a delay in implementing rate adjustments to better triage the situation.

There are also series of action-steps being taken:

1) IT and Administration are updating our IT policy (administrative order) to reflect what we have learned.
2) A temporary call center is being set up with temp staff to respond to audit-related calls.
3) We are improving the information on our utility bills, so customers can verify that charges are correct.
4) We need Council to determine when late fees and shut-offs will be reinstated. Staff believe this should be no sooner than three or later than six months.
5) As stated above, our proposed 2026 budget will include an additional IT staff person embedded in PW.

ALTERNATIVES

City Council may:

- Approve; or,
- Not Approve

FISCAL EFFECTS

There are no direct fiscal effects from the Audit. The SLserco contract costs $33,000 plus meter testing estimated at $18,000.

Attachments

Utility Audit Report
Audit Presentation Slides

Metering and Billing Audit: Billings, MT

SLserco Final Report 1/30/2025

Executive Summary:

The City of Billings, Montana, saw a sharp increase in the number of customer calls and requests for billing investigations in the late summer and early fall of 2024.

- These were primarily the result of:
    - High bills
    - Concerns with the City's new bills created with the new Customer Information System

In September 2024, the Billings City Council requested an audit of the City's metering and billing functions to identify irregularities and provide recommendations for program improvements.

- Audit tasks were designed to examine each component of the billing process during the software conversion.
    - The audit-confirmed account holders served by the City of Billings are accurately and equitably charged for services provided, in accordance with established rate structures.
    - The audit also evaluated internal processes, controls, documentation, and communication with residents and other stakeholders.

Below are results from the meter and billing system audit.

- All meters were found to be at national American Water Works Association (AWWA) standards for new meters or registering lower as is expected for aging meters.
- The bills that were sent out during the evaluated period were also found to be accurate and, in any case where bills were found to be in error, were corrected by the city prior to review, or the error favored the account holder.
- There were no bills, found to have overcharged an account holder, and were not corrected.
- Errors introduced during the transition between the two systems were primarily due to inaccuracies in the initial setup of the new system and human error, driven by a lean staff, lack of training, system knowledge and documented procedures.
- It was determined high bills experienced in the Fall of 2024 were the result of peaks in seasonal water use, inaccurately low estimated bills magnifying the total consumption of the next bill, and a rate change just before the system transition.

Next Steps

- Establish operating procedures appropriate for the new system and technology.
- Upskill and enhance staffing resources, especially in the technology area of public works.
- Commit to metrics and systematically track and trend performance indicators.

Clear next steps will help Billings Montana Water provide stronger service going into the future.

Introduction:

Overview

The City of Billings, Montana, saw a sharp increase in the number of customer calls and requests for billing investigations in the late summer and early fall of 2024. These were primarily the result of high bills but also included concerns about the City's new bills created with the new Customer Information System. The Customer Information System was being implemented during 2024. In September, the Billings City Council requested an audit of the City's metering and billing functions to identify potential irregularities and provide recommendations for program improvements.

Audit tasks were designed to examine each component of the billing process. The examination validated that account holders served by the City of Billings are accurately and equitably charged for the services provided. The audit also served to determine if the City of Billings would benefit from improving its internal processes, controls, documentation, and communication with residents and other stakeholders.

Scope and Methodology

Due to customer concerns and suspected billing inaccuracy, the City of Billings requested SLserco assess the meter reading process, billing process with customer billing calculations, and the organization supporting utility billing. Third party water meter testing results were also reviewed.

SLserco's work was structured to ensure policies and procedures are in place and complied with, information is accurate and reliable, revenue is properly recorded, and City resources are safeguarded. The process began with the gathering of data, including detailed billing and metering information, to build a foundation for assessing the current state of billing activities. Documentation was reviewed and compared to industry standards, best practices, and established policies and ordinances. SLserco also conducted meter reading walkthroughs in the field to review accuracy and efficiency.

Throughout the assessment, SLserco met with in-house staff representing each process within the meter-to-cash cycle to gather additional data and identify pain points in current processes.

Billings monitors and tracks inconsistencies and potential problems to industry standards. The utility has 40,945 accounts in total, though the focus is 28,877 residential accounts. The assessment went through a series of 5 stages outlined below.

- Stage 1: Define Scope with the Council and City Administrator
- Stage 2: 30 randomized accounts evaluated completely from Meter all the way to the Bill to ensure complete data is present
- Stage 3: Data audit reviewed the meter reads from two billing cycles for all the residential accounts from the legacy system and then compared the calculations of two billing cycles from the new system
- Stage 4: Meter Testing
- Stage 5: Reporting to the Council and City Administrator

After going through the assessment, the scope was identified as important to The City of Billings. These scope items were analyzed and executed. Each section outlines the background, approach, findings, and key observations from the analysis. Final recommendations are incorporated into the conclusion section of this report. Compliance and status reporting directly to City Administration leadership during this audit ensured access, transparency, and accountability. Scope items are grouped into four key components.

- Meter Accuracy
- Billing Accuracy
- Utility Billing Organization
- Stakeholder Engagement and Communications

SLserco's assessment was structured to evaluate accuracy and reliability, revenue is correctly recorded, and City resources are safeguarded. The process began with the gathering of data, including detailed billing and metering information, to build a foundation for assessing the current state of billing activities.

Overview of Findings

Audit Summary

The City of Billings' installation of the new Customer Information System (used to create monthly invoices and track payments) started out with the expected organization / development period. This period was longer than predicted by the vendor but is a standard and expected industry wide process. At the point where the implementation consistently passed testing, go-live was later than expected. Actual results of the billing from the new system caused billing errors which were caught by City of Billings employees. These errors were overwhelming to the City of Billings' systems and caused changes in bill dates and timing.

General Conclusions

Metering and billing functions are largely accurate, with no chronic or systemic issues identified. The water billing and meter reading systems are working correctly, and the meters are recording water consumption accurately. Errors introduced during the transition between the old and new systems were primarily due to inaccuracies in the initial setup of the new system and human error, driven by a lack of training, system knowledge and documented procedures. It was also determined that high bills experienced in the fall of 2024 were the result of peaks in seasonal water use, inaccurately low estimated bills magnifying the total consumption of the next bill, and a rate change just before the system transition.

After auditing the meters and billing system, all meters were found to be accurate according to national American Water Works Association (AWWA) standards. The bills that were sent out during the evaluated timeframe were also found to be accurate and any case where bills were found to be in error were corrected by the city prior to our review or the error favored the account holder. There

were no bills that were found to have overcharged an account holder. It is clear that a core value of the Billings staff is to always send correct bills and if in doubt always favor the account holder.

In the summer of 2024, there was an increase in the complexity of the billing process with a rate change and new system implemented during a time with peak water usage for the year. This complexity contributed to the speed an overload of exceptions reported by the new system was addressed. The system is designed to catch potential errors or inconsistency with a bill. This overload of exceptions forced a delay in bills. The delay changed billing periods and consistency. This change in billing increased customer service needs. The consequence was a lack of trust that the bills produced were correct.

The Billings' staff runs lean to ensure the lowest cost for the utility on a continuing basis. With the increased exceptions reported and complexities, the staff was not able to keep up with the calls and the billing responsibilities. The billing area was staffed too lean for this type of project. Specifically, a technology subject matter expert was needed from the planning point of this project. This technology subject matter expert needed to understand the unique needs of public works with a water utility. The current team with the subject matter expert may have been enough to accomplish this effort but it would have likely included moving the go-live date into spring of 2025.

Bottom line is that meter data is accurate at this time and all bills are now accurate or favored the account holder. Processes will need to be reevaluated and updated for the future and additional public works technology expertise needs to be added to the City team.

Meter Accuracy Results:

Meter Accuracy

Meters are read effectively and appropriate procedures to monitor read accuracy and meter resolution are in place. Metering infrastructure, maintenance and testing records are limited.

Third party meter testing of 46 legacy meters confirmed meters are running as expected, within industry standards or registering slightly low. None of the meters show over registration.

Policies and procedures designed to support new billing related field activity and billing practices are currently being developed. In addition, there is not a tracking process in place to document billing activity performance levels.

Context

The City of Billings has a long history of using water meters for volume of water and wastewater used at an account between scheduled billing reads. It has also used interval reads between billing reads as well as alarms to evaluate the activity at a specific account.

The City of Billings water meter crews maintain the meters and provide service calls to utility account holders. The Billings meter crew is a strong and experienced service team.

On average, the meters in the system are about 10 years old. There are some meters much newer and much older than 10 years old. Meters are changed out of the system when they have been in the system 20 years or are showing a history of problems.

Steps

The meter accuracy in the system was analyzed through a two-part process.

It started with an onsite field audit of a random set of account holders to collect unbiased data. This was the first data collected and reviewed to assess if the meters are set up correctly and running correctly in the field. It was important to do this first to make sure other data did not sway any observations found in the auditing process. To keep this process unbiased, it was important to randomly select meters. 30 meters were selected for these site visits.

The next step to analyzing the accuracy of these meters was to test meters in the system in accordance with industry standard set by the American Water Works Association (AWWA). This test was performed on 46 meters in the system by a third party. This again was a randomly selected sample of meters. These 46 meters provided a 95 percent confidence level for this sample as it's applied to the entire system. The data from this test was then used to analyze the effectiveness of the system.

Finding

Field Audit:

The field segment of the audit was designed to evaluate the accuracy and reliability of residential water meter data and associated records by focusing on a randomly selected subset of accounts. The following procedures and findings from the audit contribute to the broader assessment of the utility's metering and billing accuracy.

Sample Selection and Scheduling

The audit began with a randomized selection of 30 residential meters from the full account list, with an additional list of 30 meters designated as alternates. Appointments were scheduled for the primary 30 meters and as needed, from the alternate list. These appointments were organized hourly over a three-day period, with 10 accounts audited per day.

Field Audit Procedures

During each audit visit, a standardized process was followed to ensure consistency and thorough data collection:

1. **Pre-Visit Preparation**
    - Arrival before the scheduled time.
    - Verification of account details through the City's metering data collection system, Neptune 360, including capturing an image of the account record and recording the current read.
    - RF radio verification and recording of the Radio ID and read.

2. **Customer Interaction**
    - Knocked on the door, introduced audit staff to the resident, and explained the purpose of the visit.
    - Described the process of taking pictures and recording information from the water meter and radio.
3. **Data Collection at the Meter**
    - Photographed and recorded details of the meter register.
    - Logged critical data, including:
        - Meter size, model, and ID.
        - Register resolution and unit of measurement.
        - Correct installation status of the meter.
    - Photographed and recorded the RF Radio's barcode and Radio ID.

Data Comparison and Verification

For each account, the meter read was cross-verified using three sources:

1. The RF radio read,
2. The Neptune 360 Advanced Metering System's account information,
3. The physical read taken directly from the meter.

These were then compared with the most recent billed read. Minor variances in the final digits of the read were expected and considered normal. Generally, the initial three to four digits were expected to match across all reads, including the last billed read. For the 3 reads taken onsite, only small variances were detected and is considered normal if water is being used at the time of the audit. Additionally, each meter's Register ID, Meter ID, size, and unit of measurement were checked against records in the billing system.

Audit Findings Summary

The audit yielded the following results:

- **Account Verification**: All 30 Meter IDs and Radio IDs matched the billing system records.
- **Read Transmission**: Meter reads at all 30 accounts matched and transmitted correctly from the meter to the radio and to the Neptune 360 system.
- **Meter Type and Resolution**:
    - 23 meters had digital registers, while 7 had analog registers.

- Digital registers displayed readings to the 1,000th of a cubic foot (CF) with nine digits and transmitted reads to the 100th CF, with eight digits to the Neptune 360 system.
- Analog meters read to the single CF, transmitted reads were multiplied by 100, in the Neptune 360 system, for consistency with the digital register format.

- **Meter Size Discrepancies**:
  - 12 meters were the expected size as per billing records.
  - 8 meters were listed as ¾" but were actually 5/8 x 3/4" meters.
  - One meter was listed as a ¾" but had a 5/8" register, which was corrected on-site by Billings staff.
- **Register Model and Unit of Measurement**: All registers were Model T10 and configured to measure in cubic feet.

These findings provide a comprehensive overview of the metering accuracy and record alignment within the sample group.

Meter Testing:

In accordance with standard practice another sample set of meters were sent to a third-party testing firm which is certified and respected in the industry. All meters were tested at a minimum flow, intermediate flow and maximum flow using the procedures outlined in American Water Works Association (AWWA) M6 Manual Volume 5. A meter change out was not part of this implementation or process.

A sample size of 46 meters were sent to be tested which ensured a 95% confidence level for the entire utility. A 95% confidence level allows these results to be applied to all meters in the system. This sample set would contain an expected standard deviation of 5 and margin of error (precision) of 1.5. To go from a 95% confidence level to a 99% confidence level would multiply the cost of testing 2.39 times the current cost.

Each meter was tested at High, Medium and Low (maximum, intermediate, minimum) flow rates which is important to be able to understand how a meter performs at all levels of stress. Meters tested were 5/8" meters. The accuracy limits for each flow rate were 98.5-101.5, 98.5-101.5 and 95-101 (%) respectively as seen in the chart below:

Table 5–3 Test requirements for new, rebuilt, and repaired cold-water meters*
Displacement Meters (ANSI/AWWA C700 and C710)

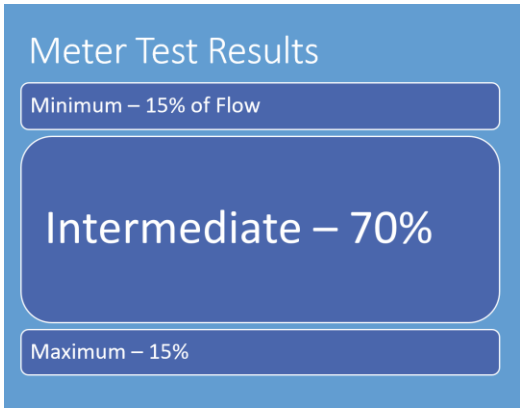
Size	Maximum Rate (All Meters)				Intermediate Rate (All Meters)				Minimum Rate (New and Rebuilt)				Minimum (Repaired)
	Flow Rate†	Test Quantity††		Accuracy Limits	Flow Rate**	Test Quantity††		Accuracy Limits	Flow Rate	Test Quantity††		Accuracy Limits	Accuracy Limits
in.	*gpm*	*gal*	*ft³*	*percent*	*gpm*	*gal*	*ft³*	*percent*	*gpm*	*gal*	*ft³*	*percent*	*percent (min)*
1/2	8	100	10	98.5–101.5	2	10	1	98.5–101.5	1/4	10	1	95–101	90
1/2 x 3/4	8	100	10	98.5–101.5	2	10	1	98.5–101.5	1/4	10	1	95–101	90
5/8	15	100	10	98.5–101.5	2	10	1	98.5–101.5	1/4	10	1	95–101	90
5/8 x 3/4	15	100	10	98.5–101.5	2	10	1	98.5–101.5	1/4	10	1	95–101	90
3/4	25	100	10	98.5–101.5	3	10	1	98.5–101.5	1/2	10	1	95–101	90

Meters are not expected to speed up with time, so it would be unusual for a meter to perform above these standards. It is more common to see one performing under these standards than over. The meters tests showed these meters at all flow rates (minimum, intermediate and maximum), 16 meters failed at some point. All fails were under registering. There were no meters registering higher than American Water Works Association (AWWA) standards at any flow rate tested. This shows no meters are being over billed because of an over registering meter.

These test results were then used to find a weighted accuracy of these meter flows. This was calculated using American Water Works Association (AWWA) M6 Manual Volume 5 "Determining Accuracy Limits for Meter Types A weighted average meter accuracy can be calculated, based on accuracy test results at various flow rates and an assumed model for actual consumption patterns in the field. For example, one such weighting function for residual meter applications is the algebraic sum of 15 percent of the low flow results, 70 percent of the intermediate flow results, and 15 percent of the maximum flow results". The following calculations was applied to the tests done on each meter:

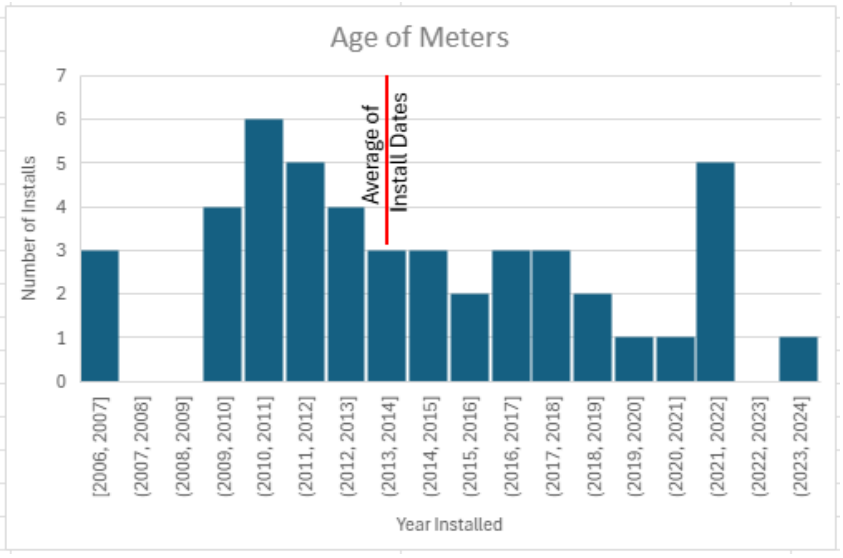
$$Weighted\ Average = (15\% * Minimum\ Flow) + (70\% * Intermefiate\ Flow) + (15\% * Maximum\ Flow)$$

This formula is used to represent how common these stress levels of flow tend to be used in the real life span of a meter. Minimum flow is seen when there is a leaking faucet or another very small amount of water is used at a time. Maximum flow is seen when a large quantity of water is being used for an extended time like filling a pool. Intermediate flow is what all other water uses fall into, and is 70% of all water used on a typical residential water meter. This is why the real heath of a meter can only really be determined after looking at this weighted average of the flows through a meter.



Using this calculation, 6 meters were found to have also failed low in the weighted average flow calculation. This again shows these meters are under registering resulting in no overbilling.

Even with these results showing some meters are failing low, when it comes to the revenue being realized in the system this percentage is fairly high. 40/46 or 87% passed the revenue test which looks at all meters that passed the standards when the weighted average is applied. When it came to the weighted accuracy of the entire system it was found that 99.36% of revenue is being realized. This is as good as even some new systems. There also did not seem to be a correlation between install date and failure rate.


Age of Meters
Number of Installs
Year Installed
Average of Install Dates
0
1
2
3
4
5
6
7
[2006, 2007]
(2007, 2008]
(2008, 2009]
(2009, 2010]
(2010, 2011]
(2011, 2012]
(2012, 2013]
(2013, 2014]
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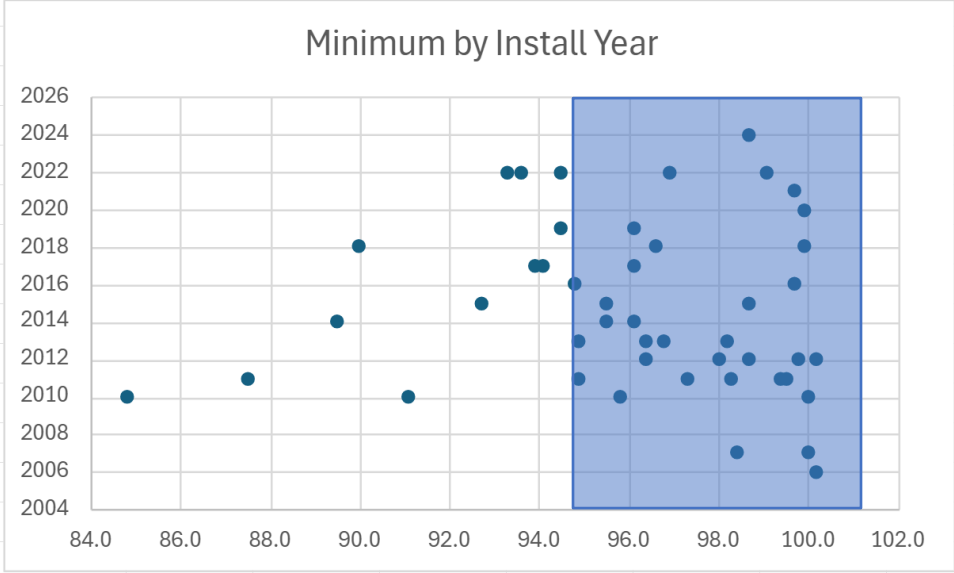
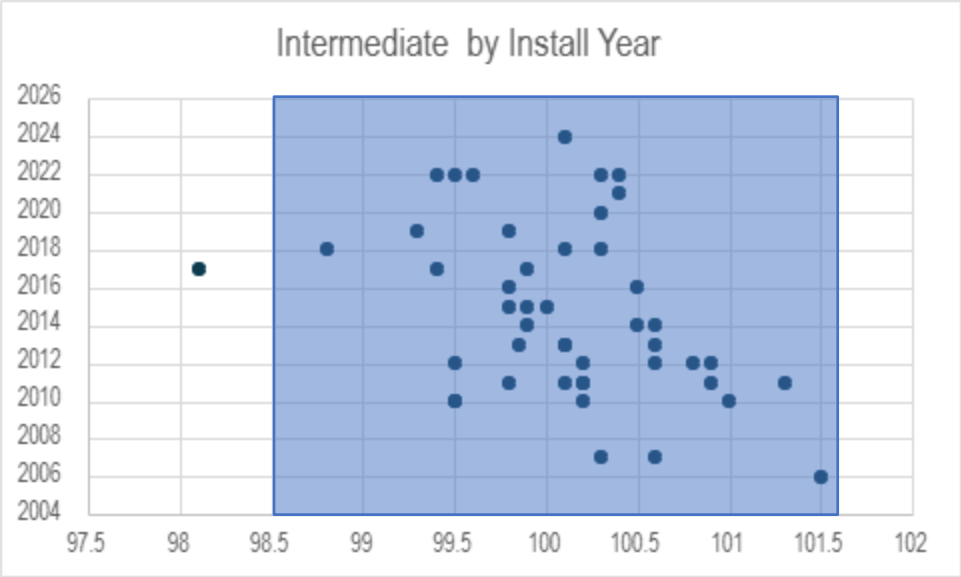
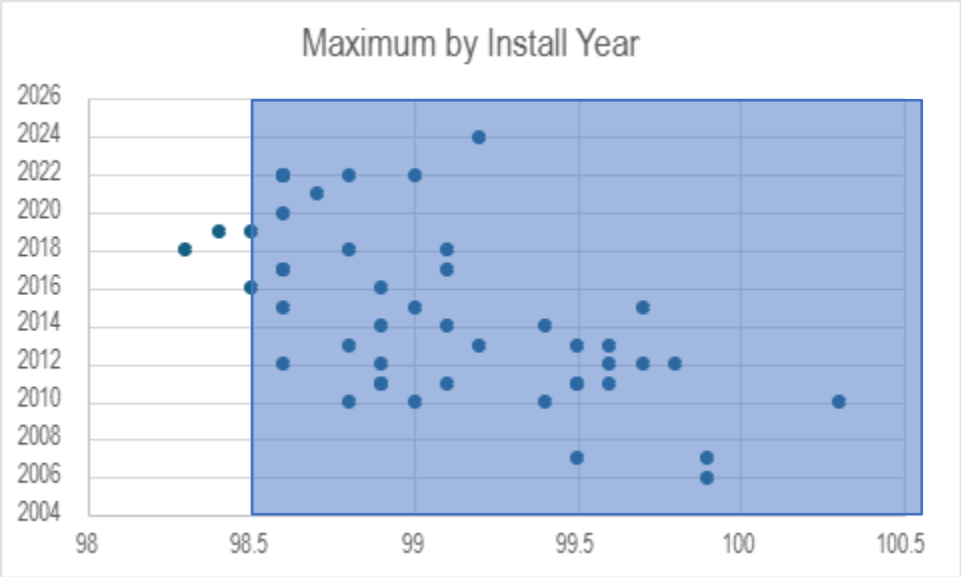

Minimum by Install Year
2004
2006
2008
2010
2012
2014
2016
2018
2020
2022
2024
2026
84.0
86.0
88.0
90.0
92.0
94.0
96.0
98.0
100.0
102.0





The overall health of the system is good with a strong revenue performance without overbilling. It is still important to develop a written meter maintenance plan. This can improve accountability and planning.

Conclusion:

Through this analysis of the meter accuracy in the system the following things were found

- The fieldwork confirmed system data stays accurate as it flows from meter to billing.
- The field audit findings show, except for a few size discrepancies, meters were set up and performed as expected. These errors were also fixed by Billings field staff.

- The meter testing found some meters under registering, but no meters are failing high in the sample of the system. When looking at the weighted accuracy the system was found to have a strong revenue performance without overbilling.

Billing Accuracy Results:

Billing Accuracy

Customer utility bills are accurately calculated using adopted rates in most cases. During the evaluated period, rate changes not implemented consistently were always in favor of the resident, resulting in errors and underbilled revenue.

Modest internal controls are in place, but account access policies and the standardization of bill adjustments would provide further assurance future bills are accurate and properly authorized.

Context

In addition to confirming the meters are performing accurately the billing accuracy had to be analyzed to make sure the entire system is working properly.

Billings is implementing a new billing system. The implementation created changes for staff at the utility issuing bills and for account holders.

Another element complicating this transition to a new billing system was changes to the rate schedule made on July 1st, 2024. This coincided with the implementation of the new system as well as peak water use typically occurring in the summer.

All of this happening at the same time added complexity to the billing process, which is part of the reason why the billing process was analyzed to ensure all parts are working in the way they have been communicated to the public.

Steps

The bill accuracy audit started by receiving the meter read, bill, and bill print data from the legacy and the new system. This included the data for the read transition from the old to the new billing system, data for water, wastewater, storm water and solid waste. The audit team also evaluated the proration with the implementation of the new rates, billing / consumption dates (ensuring there was no double billing), as well as evaluating the automatic payments.

SLserco also focused on better understanding the process and justification for all charges and bills, including rate schedules and policies. This was done through a series of requests for information and meetings. Once all of this information and data was collected, all data was evaluated. All areas of data provided were analyzed to confirm charges were calculated according to policies provided. Then, SLserco was better able to understand the weaknesses and gaps in the process as well as what next steps would be most advantageous.

Finding

One step to ensure billing accuracy was to make sure the last reads from the old system (CitySuite) were imported correctly into the new system (VertexOne). This was done by taking the last read on the

old system and the first read on the new system and comparing them. The read values and read dates for these accounts were evaluated. Differences in reads, dates or duplicates in reads and dates are the source of the exceptions which caused the overload.

Meters with errors had duplicate reads. There were 730 meters, for example, with matched date but not read value. Research found mistaken entries were subsequently corrected by Billings staff before SLserco evaluated the data.

Rate schedules and charges based on consumption type were analyzed. To be able to analyze if account holders were charged according to the rate schedule charges, data was divided by usage for consumption type records such as water, sewer services, storm water and solid waste. Then these aggregated totals were compared against rate schedules for each type of consumption. This analysis only focuses on accounts within Billings. During the period of bills in question, there was a rate change. The long bills also added inconsistencies. Depending on the consumption type, these inconsistencies were delt with in different ways.

Water and Wastewater

The rate schedule for water in Billings is divided by account type (residential, commercial, ect.) as well as usage divided into tiers according to the consumption of water by each account. These tiers being:

Tier 1 (0 – 10,000 Gallons)

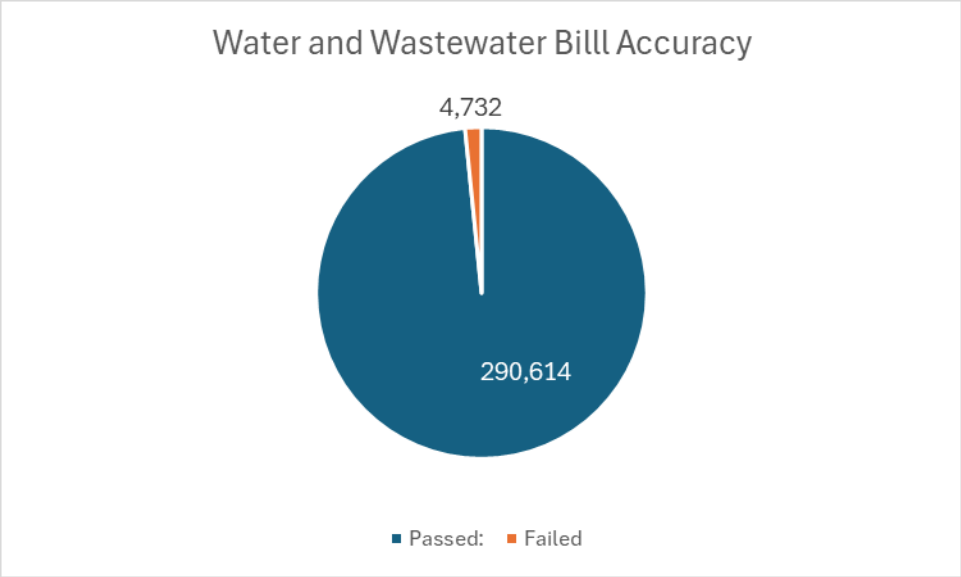
Tier 2 (11,000 – 32,000 Gallons)

Tier 3 (33,000 - 75,000 Gallons)

Tier 4 (> 75,000 Gallons)

The charge records provided were split both by tier and by number of days before and after the rate change within the billing period.

Most consumption charges (290,614 charges) were found to successfully match against available rate schedules. 4,732 did not match. Most of these are only off by one or two cents which is due to data rounding. 98.4% of the water and wastewater charges were accurate when SLserco evaluated the data. When there was inaccuracy, they favored the resident by a cent or two.



Storm:

Storm water charges were evaluated as well. Storm water was a new charge on the utility bill in the summer of 2024. Storm water charges were moved from property tax to utility bill starting July 1st 2024. This is also a consistent charge and will not change from month to month. Based on the information provided, these charges appear correct.

Solid waste:

The charges for solid waste were evaluated to ensure billing was done correctly and proration was applied consistently. Solid waste charges also have some inconsistency with rounding. There seemed to be a small number of accounts where new rates were applied in the proration slowly. Whenever there was an error like this, it favored the resident and overbilling did not occur.

Along with ensuring rate schedules were adhered to billing data had to be analyzed to ensure proration had also been applied correctly. The July 1st 2024 rate change was applied during the system change. These rate changes happened in the middle of a long bill period. This made ensuring proration was calculated accurately important. Based on data provided, long bills were calculated correctly, and proration was overall applied correctly across all types of rates. When proration was applied incorrectly it was because of slow implementation, so these errors favored the residents. That being said there were low estimate errors also during this time which caused tier changes in prorated amounts for water and wastewater. These inconsistencies were credited back to residents and were identified by Billings staff before SLserco looked at data.

When looking through data it was not found that there were any double bills for the same period of overlapping bills for the same period. Also, when looking at automatic payments it was not found that

any extra debits were taken. There were partial payments made when it was expected that only full payment would be possible in this system. This was an error made in the setup of the new system and has since been corrected.

Conclusion:

Bill accuracy is strong throughout the system. There were some errors when the system was first set up, but was corrected by Billings staff once any problems were realized. It is clear that there is a core value among the Billings staff to always send out correct bills and to not over bill, and when in doubt to bill in the residents favor.

Utility Billing Organization:

Utility Billing Operations

The business group is professional and focused on serving account holders. This internal direction keeps many metrics at or above industry standards. Documenting and tracking procedures and performance indicators would help leadership to connect and document changes in service expressed by constituents while also keeping the professional team focused on results. Project documentation of issues is valuable to a utility's operations. This documentation could be added to current normal procedures. Performance indicators are important for the billing operations and do not seem to exist. Documented procedures reflecting billing activities in the current customer billing system, supported by meter data, would improve efficiency and reduce errors.

Context

The City's Billing group organization consists of a team which is professional and skilled in billing. They understand the community's need for consistent and clear billing. Questions surfaced during the installation of the new system involving autopay and the team's general organization. This section will address organization-related questions.

Steps

This area of examination took place during work in the field, on the meters and with the billing data. Each time data was requested or collected, the billing team was asked to include their tools and process for the direction they took.

Finding

The Billings staff runs lean to ensure the lowest cost for the utility. With the increased exceptions reported and complexities, the staff was not able to keep up with the calls and the billing responsibilities. The area was staffed too lean for this type of project. Specifically, a technology subject matter expert was needed from the planning point of this project. This technology subject matter expert needs to understand the unique needs of public works with a water utility. The current team with the subject matter expert may have been enough to accomplish this effort but it would have included moving the go-live date into spring of 2025.

Project documentation of issues is valuable. It would be valuable to log challenges found after the project is over for the utility. Leading utilities will diary activity for all roles where backup is not present for the role or where turnover happens more frequently than once a year.

Performance indicators are important for billing operations. These indicators are being developed. The business group is professional and focused on serving account holders. This internal direction keeps many of the metrics at or above industry standards. Documenting and tracking procedures and performance indicators would help leadership to connect and document changes in service expressed by constituents while also keeping the professional team focused on results. Documented procedures reflecting billing activities in the current customer billing system, supported by meter data, would improve efficiency and reduce errors.

Stakeholder Engagement and Communications:

Account Holder Communication

Standard use of bill statement communication, City newsletters and public statements were the primary methods of communication for the utility. When significant delays and shifts were happening in the regular bill schedule additional press releases and direct communication were used.

These communications underestimate the potential challenges in a major utility billing system shift. Adjustments in the length of bills and bill layout caused a lack of trust. It is critical for account holders to be able to calculate their bills or at least see consistent bill amounts.

Context

The City of Billings, Montana, saw a sharp increase in the number of customer calls and requests for billing investigations in the late summer and early fall of 2024. Increased calls related to bills that were not consistent. Bills were incorrect because of human error (not systemically wrong) and were corrected. Most were bills where the duration of the billing period changed, which caused a significant trust gap for account holders.

Steps

Similar to the utility billing organization audit this area of examination took place during work in the field, on the meters and with the billing data. Each time data was requested or collected, the billing team was asked to include their tools and process for communicating these updates and changes to stakeholders and account holders.

Finding

Standard use of bill statement communication, City newsletters and public statements were the primary methods of communication for the utility. The utility also leveraged City website space, social media posts, phone tree adjustments and a significant effort talking to customers as they called in. When significant delays and shifts were happening in the regular bill schedule additional press releases and direct communication were used.

These communications underestimate the potential challenges in a major utility billing system shift. Adjustments in the length of bills and bill layout caused a lack of trust. It is critical for account holders to be able to calculate their bills or at least see consistent bill amounts. Added complexity would have been alleviated if the utility would have delayed implementing the new rates.

The portal is an effective way for account holders to track consumption and usage. Larger percentages of the account base, when compared with industry standards, have signed up for portal use in Billings which shows this will continue to be a resource for the utility.

Incoming calls are reducing as account issues are being addressed and bills going out consistently. The number of calls will fluctuate. The new system provides tools to track types of calls and helps the Billing team to see the needs of account holders quicker. These tools are being implemented and will help with future communication strategies.

Conclusion

The City of Billings has been through a great deal with this implementation. The audit has identified the exception overload from a rushed go-live process was the cause of the problem. The audit also tested and confirmed the meters are not part of the issue. The System Integration is addressed above, and the utility needs to look forward by addressing the following items.

- Establish operating procedures appropriate for the new system and technology.
- Upskill and enhance staffing resources, especially in the technology area of public works.
- Commit to metrics and systematically track and trend performance indicators.
- The bill needs to contain all the information to confirm all charges are correct.

Data and service demands are pushing all utilities into having a technology knowledge base within the utility. Billings is no different.

David Allen and the SLserco Team

Utility Billing / Meter-to-Payment Audit

Findings, recommendations & actions

David Allen | SLserco

Findings – Public Meeting (first draft)

February 3, 2025

Agenda

- Overview of Findings
- Scope
- Findings
  - Context
  - Approach
- Key Observations
- Next Steps
- Questions

Meter Accuracy

- Meter test
- Track meter to bill

Utility Billing

- Decision – making
- Summary bill process

Billing Accuracy

- Rates
- System transition
- Proration

Communications

- Transparency
- Challenge call volume

Data

- 100% data retained accuracy through the flow

Meter

- 46 meters tested in three flow rates
- None overbill

❑Written meter maintenance plan

Weighted

- 99.36% Revenue realized (Weighted Accuracy)
- 40/46=87% Pass revenue test

Context

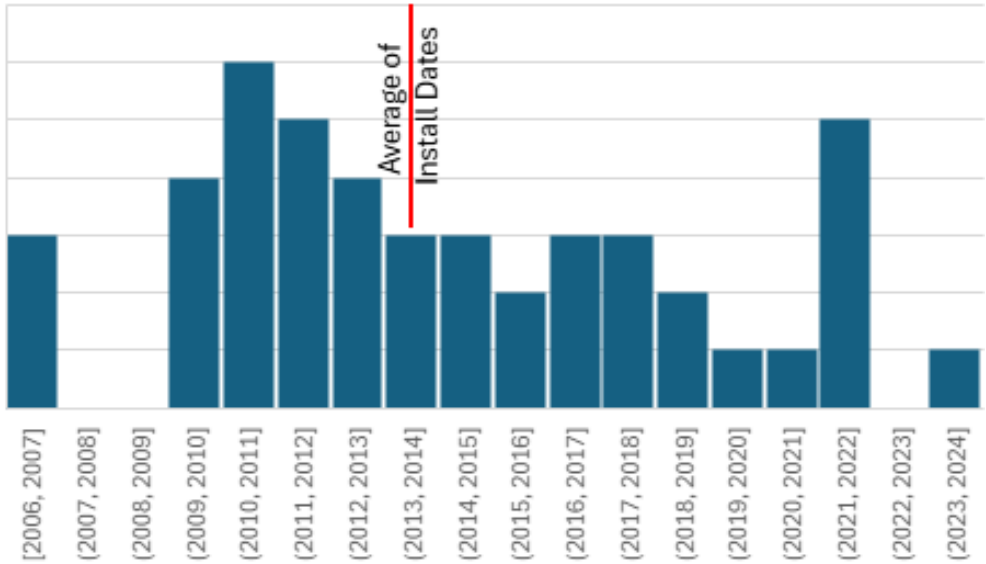
- Meters are 10 years old
- Strong meter service team
- Meters changed at 20 years of use

Approach

- On site account meter visits
- Meter test

Findings

- Data is accurate
- Meters are performing well



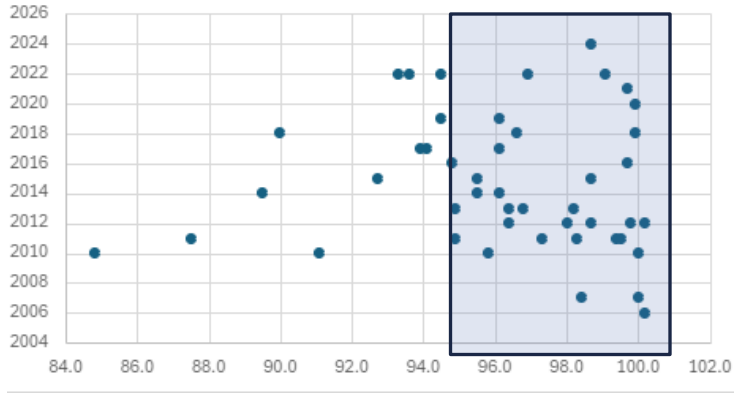
Meter Accuracy

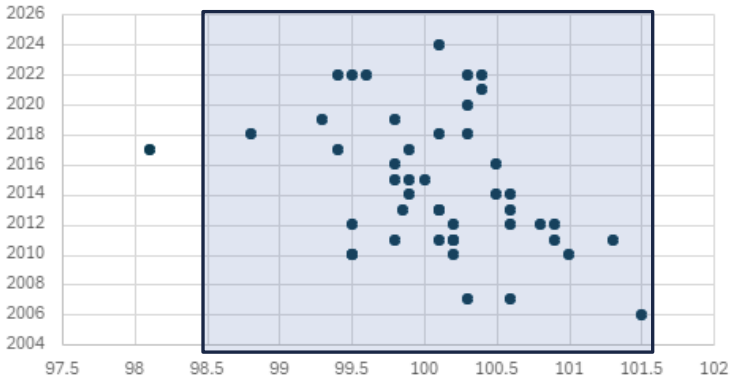
Meter Test Results

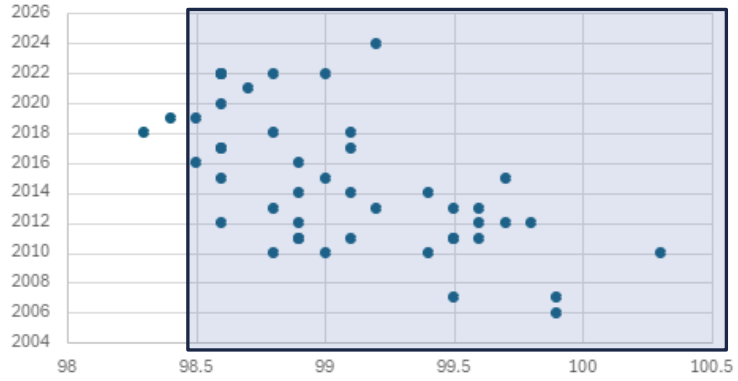
Minimum – 15% of Flow

Intermediate – 70%

Maximum – 15%







Criteria	Value
Level of confidence	95
Expected Standard Deviation	5
Precision or Margin of Error	1.5
Number of meters	46

Meter selection?

- Meter change out not part of the implementation
- Industry does not expect meters to speed up
- To move from a level of confidence of 95 to 99 multiply cost of testing 2.39 times current cost
- SLserco selected random meters to select
- This process was different than site visits

Random Sample Size

- Level of confidence
- Method of selection

Testing Firm Used

- Certified
- Respected
- Available

Findings

- Strong revenue performance without overbilling

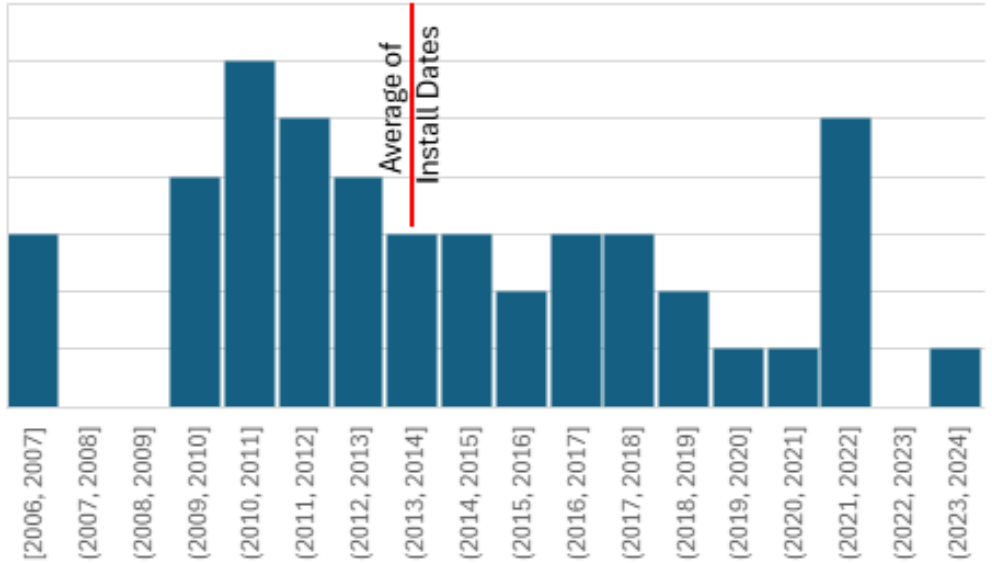
Table 5–3 Test requirements for new, rebuilt, and repaired cold-water meters*

Displacement Meters (ANSI/AWWA C700 and C710)

Size	Maximum Rate (All Meters)				Intermediate Rate (All Meters)				Minimum Rate (New and Rebuilt)				Minimum (Repaired)
	Flow Rate†	Test Quantity††		Accuracy Limits	Flow Rate**	Test Quantity††		Accuracy Limits	Flow Rate	Test Quantity††		Accuracy Limits	Accuracy Limits
in.	*gpm*	*gal*	*ft³*	*percent*	*gpm*	*gal*	*ft³*	*percent*	*gpm*	*gal*	*ft³*	*percent*	*percent (min)*
1/2	8	100	10	98.5–101.5	2	10	1	98.5–101.5	1/4	10	1	95–101	90
1/2 x 3/4	8	100	10	98.5–101.5	2	10	1	98.5–101.5	1/4	10	1	95–101	90
5/8	15	100	10	98.5–101.5	2	10	1	98.5–101.5	1/4	10	1	95–101	90
5/8 x 3/4	15	100	10	98.5–101.5	2	10	1	98.5–101.5	1/4	10	1	95–101	90
3/4	25	100	10	98.5–101.5	3	10	1	98.5–101.5	1/2	10	1	95–101	90

Context
Approach
Findings

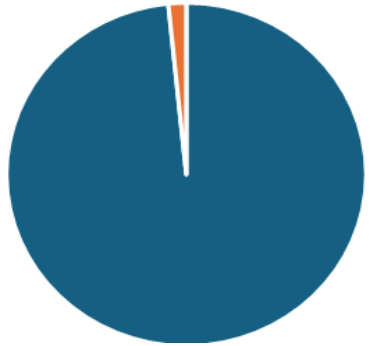
Meters are Accurate



Meter Accuracy

Bills – Water and Wastewater

- 98.4% accurate
- Most of the differences were off by 2 cents



Solid Waste and Storm

- Solid waste had slow application of new rates or inconsistent rounding
- ✓Storm appears correct

Proration

- ✓Long bills calculated correctly
- ✓Low estimate caused high prorated amount (Credit issued)

Context

- Billing system install happening
- Rate changes

Approach

- Receive data
- Justification of process
- Evaluate results
- Understand process weakness

Findings

- System calculation accuracy is high
- Inaccuracy favors resident

Billing Accuracy

Autopay

- Partial payments when full payments expected

✓Error on setup - corrected

Decisions

- Professional

❑Situational leadership

❑Documentation – process, goals, performance indicators

Context

- Several larger issues coming from the operation of Utility Billing needed evaluation
- Utility billing is experienced

Approach

- Evaluated meters, bills and execution issues with an eye toward the decision-making process

Findings

- Team works well together
- Clear documentation needed
- Overwhelmed with exceptions immediately after go live

Utility Billing

Transparency

Portal – Currently 17,882 registered

Advertisements in local paper

25 Social Media posts

Press releases

Phone tree messages

Auto email reply

Customer Service Representatives

Website messages

Call Volume

Performance indicators

Industry standards

Context

- Trust gap

Approach

- Discussed bill error handling
- Reviewed call logs
- Reviewed communications

Findings

- Performance indicators

Communications

Meters are accurate

System is calculating accurately

Exception overload

Project staff was too lean

Bottom line

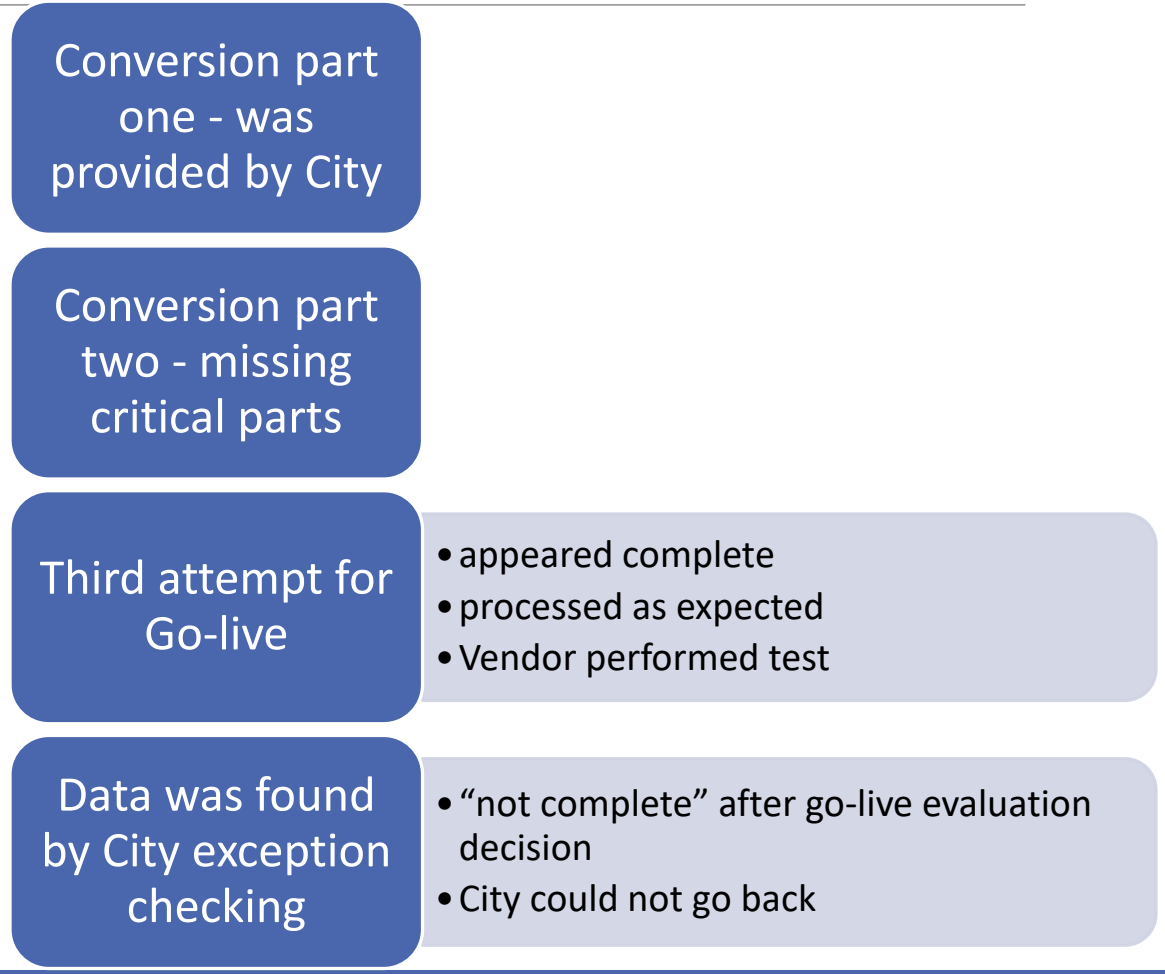
- Lean project staffing
- Complexity increased with schedule changes
- Exception overload
- Core value ***send correct bills***, forced delay
- Accurate and favored the resident

What happened on go-live day

Context:

Legacy system data difficult to extract

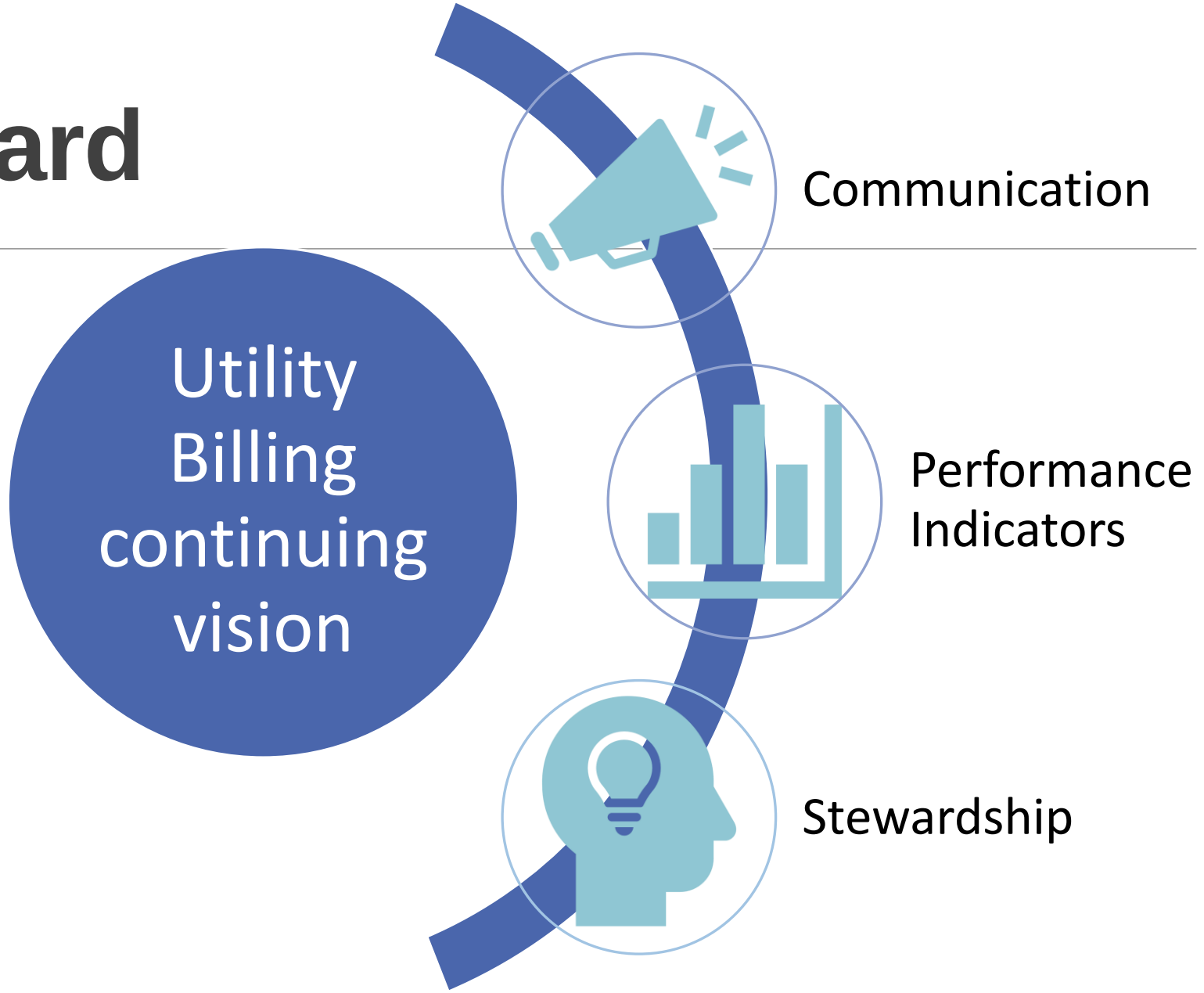
- ❑Verifying vendor declarations would have caught this problem
- ❑Needed public works IT leadership available



Key Observations

- Procedures and governance documents
- Performance indicators
- Written meter maintenance plan
- Vendor / Billings' relationship
- Communication
  - Account holders
  - Leadership
- System training

Path Forward



Conclusion & Questions

CITY OF Billings

City Slides

If we could do it over

1) One IT employee in PW
2) Contracted a 3rd Party software conversion expert to represent the City throughout the project
3) Improved communication with public and executive staff
4) Moved implementation to October once we missed April
5) Requested a delay in rate adjustments to triage exceptions

Action Items

1) **Revised IT Policy via administrative order**
   - Mandatory IT involvement
     (IT was included in this project but too lean)
   - Expanded integration and migration guidelines
     (including 3rd party consideration)
   - Testing standards (change management policy)
   - Training & awareness requirements
   - Vendor accountability
   - Increased IT resources for projects of this magnitude

Action Items (Cont.)

2) **Add IT staff expertise to PW**
3) **Improved communication -** External & internal
4) **Determine when late fees and turn off dates are reinstated**
   - Minimum of 90 days out
   - Payment plans encouraged

Action Items (Cont.)

5) **Detailed utility bill**

   Info necessary to verify calculations:

   - Service periods
   - Utility rates including tiers, K-gal & Cubic Feet
   - Historic usage charts & graphs
   - Integrate west end water plant and reservoir line item
   - Listen and respond to customer feedback

Customer Information

- **Call center for audit questions**
- **BillingsMT.gov/auditresults**
- **Create your on-line account**
- **Sign up for water notifications**

City Council Work Session

Date:	02/03/2025
Title:	Billings Metropolitan Planning Organization Transportation Alternatives Program
Presented by:	Lora Mattox
Department:	Planning & Community Services
Presentation:	Yes
Legal Review:	Not Applicable
Project Number:	N/A

RECOMMENDATION

This staff presentation is intended to provide an overview of the 2025 Billings Metropolitan Planning Organization (MPO) Transportation Alternatives Program (TA) and to outline the process for selecting and implementing eligible projects. The TA is a federally funded program designed to enhance the community's transportation network by supporting non-motorized and alternative transportation initiatives that improve safety, accessibility, and connectivity. This work session presents an opportunity for the Council to learn about the programa nd process and provide staff with guidance and input on applying for Transportation Alternative funding in the current cycle.

BACKGROUND (Consistency with Adopted Plans and Policies, if applicable)

The Transportation Alternatives Program (TA) is a set-aside program from the Surface Transportation Block Grant (STBG) program. Eligible uses of the funds include projects and activities that were previously eligible under the Transportation Alternatives Program under the Moving Ahead for Progress in the 21st Century Act (MAP-21). This includes a variety of pedestrian and bicycle facilities, recreational trails, safe routes to school projects and other community improvement projects.

The Bipartisan Infrastructure Law (BIL) allows for Metropolitan Planning Organizations (MPOs) to administer their own competitive application process with approval and oversight from the Montana Department of Transportation (MDT). Billings, Missoula, Great Falls, Helena, and Gallatin Valley (Bozeman) will be overseeing a local process for the TA funding that is specific to areas with a population of over 50,000. Entities within the MPO may also apply with MDT's Call for Applications as well, as there is funding that is not tied to population. The timeline for both processes runs concurrently. This year, the Billings MPO received an allocation of approximately $1.78 million of TA funds. It is important to note that while the funds are available in this funding cycle, it usually takes a few years to get the projects selected, approved through the MDT process and then begin programming for construction.

Previous projects funded through the TA program include the 2013 Broadwater Avenue Multi-Use Pathway, 32nd to Shiloh (Billings), the 2015 Becraft Lane Sidewalk (Lockwood) and the most recent 2023 TA projects currently underway include the Old Hardin Road Sidewalk (Lockwood) and Stagecoach Trail (Billings) projects.

Program Overview

The Transportation Alternatives Program provides funding for a variety of transportation-related projects, including but not limited to:

- Pedestrian and bicycle infrastructure such as sidewalks, bike lanes, and shared-use paths.
- Safe Routes to School initiatives.
- Projects that improve accessibility for individuals with disabilities.

2025 Application and Selection Process

The 2025 TAP cycle is currently underway, and the Billings MPO has initiated the call for project proposals. Proposals are due to the MPO by April 9, 2025, by 5:00 p.m.

Project proposals will be evaluated based on their alignment with the MPO's long-range transportation plan and supplemental planning studies, MET Transit planning studies, the project's ability to address safety and accessibility, and the potential to enhance the quality of life for Billings residents.

The Technical Advisory Committee (Committee) is responsible for evaluating and scoring TA applications. The scores from TAC will be translated into a list of recommended projects. The MPO will present the list of the recommended projects to the local governing bodies that make up the Policy Coordinating Committee (PCC). The PCC is made up of a representative of the Billings City Council, Yellowstone County Commissioners, Billings-Yellowstone County Planning Board and MDT. Each entity will review the projects recommended by TAC and can

either approve that recommendation and forward it to PCC or take a different action and forward that onto PCC. PCC will take into consideration each recommendation and make the final decision on which applications to fund.

Funding and Local Match Requirements
TA projects are funded through federal grants that cover up to 86.58% of eligible project costs. Applicants are required to provide a minimum 13.42% local match, which can only include cash, not in-kind donations.

Potential TA Projects
Potential projects for application through the Billings MPO TA program include:

- Coulson Park Trail Connection (FY25-29 CIP) -- Improves non-motorized access between downtown and Coulson Park, complementing scheduled improvements to Coulson Park.
- MET Transit projects -- Focus on bus stop/shelter ADA improvements, crossings, and sidewalks to enhance transit access.
- Safe Routes to School (SRTS) projects -- Identify additional opportunities beyond those in the CIP for the 2025/2026 construction seasons.

STAKEHOLDERS
The MPO held a public informational meeting on January 14, 2025, to educate local governments, organizations, and community members about the TA Program. The meeting covered an overview of the program, including its eligibility requirements and timelines. Additionally, it is important for all applicants that propose projects seeking funding to be aware the project must be included in a local plan or study adopted by the PCC. These plans and studies have undergone substantial public participation during both the planning and adoption processes.

ALTERNATIVES
N/A

FISCAL EFFECTS
The application for Transportation Alternatives (TA) funding through the Metropolitan Planning Organization (MPO) carries financial implications for local jurisdictions. Local governments are obligated to provide matching funds equal to 13.42% of the total project cost. Furthermore, the City must dedicate staff resources to oversee the project, including management during both the development and construction phases. Maintenance of the completed projects also must be managed by the local jurisdiction, depending on the location of the improvement - in City Park Land; in City Street ROW.

SUMMARY
The 2025 Billings Metropolitan Planning Organization (MPO) Transportation Alternatives Program (TA) aims to enhance the transportation network through federally funded projects that support non-motorized and alternative transportation, such as pedestrian and bicycle infrastructure, Safe Routes to School initiatives, and accessibility improvements. The MPO received $1.78 million in funding and is overseeing a competitive application process, with proposals due by April 9, 2025.

Attachments

TA Program Presentation

2025 Billings Metropolitan Planning Organization Transportation Alternatives Program

Monday, February 3, 2025

City Council Work Session

BILLINGS - YELLOWSTONE COUNTY

MPO

METROPOLITAN PLANNING ORGANIZATION

Introduction

- History of federal non-motorized grant administered locally
  - Community Transportation Enhancement Program – CTEP
  - Transportation Alternatives - MDT
- 2021 Bipartisan Infrastructure Law – Allows MPO's to administer their own competitive application process and approval with oversight from MDT. Includes Billings, Missoula, Great Falls, Gallatin Valley, and Helena
- Funding outlook for this round: $1,784,111
- Applicants: City, County, Tribal. Non-profits may not apply as primary, must have local government sponsor

TAP Process

- Grant process – Local review with project recommendation to MDT for programming
- MDT manages all projects unless community participates in the MDT LAG program
- All projects must include a local match of 13.42% (cash match only). All projects must be locally run and require MDT approval of a Local Agency Guidelines (LAG). MDT Instructions on developing the budget is included in the TA Instructions
- Non-profits are **not** eligible to apply as a stand-alone entity, must have a local government sponsor (City or County)

Eligible Projects

- On/Off road and trail facilities
  - Pedestrians
  - Bicyclists
  - Sidewalks
  - Bicycle infrastructure
  - Bike/pedestrian signals
  - Traffic calming
  - ADA projects
  - Transit
- Non-driver safe routes (multi-destination) for children, older adults and those with disabilities
- Conversion/use – abandoned rail corridors
- Construction – turnouts, overlooks

Eligible Projects Continued

- Safe Routes to School – Projects must be identified in a locally, adopted SRTS Plan
- Historic preservation and rehabilitation of historic transportation facilities
- Pavement preservation projects of facilities previously funded through the Community Transportation Enhancement or Transportation Alternatives Program

Full list of eligible projects is available here: Montana Department of Transportation – Transportation Alternatives Program

Not Eligible

- Safety and Education activities
- Landscaping and scenic beautification
- Acquisition of scenic easements or historic sites
- Visitor/welcome centers
- Historic preservation unrelated to transportation. Or operation of historic transportation facilities
- Archaeology
- Transportation museums

TAP Application/Evaluation Scoring

100 Total Points:

Category	Points Available
TA Eligible	Yes/No
Local Sponsor	Yes/No
Project Description	0-10
Project Benefits	0-45
Project Risk Analysis	0-45

Potential Projects

- Coulson Park Trail Connection (FY25-29 CIP) – Improves non-motorized access between downtown and Coulson Park, complementing scheduled improvements to Coulson Park.

- MET Transit projects – Focus on bus stop/shelter ADA improvements, crossings, and sidewalks to enhance transit access.

- Safe Routes to School (SRTS) projects – Identify additional opportunities beyond those in the CIP for the 2025/2026 construction seasons.

This presents an opportunity for the Council to provide staff with guidance and input on the feasibility of applying for Transportation Alternative funding.

Local TA Program Timeline

- January 10, 2025 – MPO/MDT call for applications.
- January 14, 2023 – Public meeting
- April 9, 2025 – Applications due by 5 p.m.

Additional Resources

- Montana Department of Transportation – Transportation Alternatives Program
- Federal Highway Administration – Bipartisan Infrastructure Law
- Billings MPO TA Instructions
- Billings MPO TA Application

Questions

Thank you!

Lora Mattox, AICP
Transportation Planning Coordinator
mattoxl@billingsmt.gov
406-247-8622

BILLINGS - YELLOWSTONE COUNTY
MPO
METROPOLITAN PLANNING ORGANIZATION