Great Lakes Water Authority

Key Performance Indicators and
Effective Utility Management (EUM) Metrics
January 13, 2021

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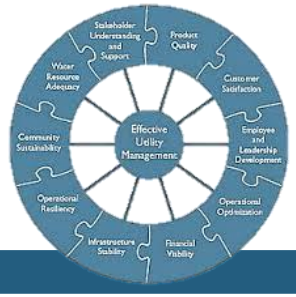
Ten Attributes of Effectively Managed Water Sector Utilities (EUM)



Attribute	Attribute Components
Employee and Leadership Development	Recruits and retains a workforce that is competent, motivated, adaptive, and safety-focused. Establishes a participatory, collaborative organization dedicated to continual learning, improvement, and innovation. Ensures employee institutional knowledge is retained, transferred, and improved upon over time. Provides a focus on and emphasizes opportunities for professional and leadership development, taking into account the differing needs and expectations of a multi-generational workforce and for resource recovery facilities. Establishes an integrated and well-coordinated senior leadership team.
Operational Optimization	Ensures ongoing, timely, cost-effective, reliable, and sustainable performance improvements in all facets of its operations in service to public health and environmental protection. Makes effective use of data from automated and smart systems, and learns from performance monitoring. Minimizes resource use, loss, and impacts from day-to-day operations, and reduces all forms of waste. Maintains awareness of information and operational technology developments to anticipate and support timely adoption of improvements.
Financial Viability	Understands the full life-cycle cost of utility operations and value of water resources. Establishes and maintains an effective balance between long-term debt, asset values, operations and maintenance expenditures, and operating revenues. Establishes predictable rates—consistent with community expectations and acceptability—adequate to recover costs, provide for reserves, maintain support from bond rating agencies, plan and invest for future needs, and taking into account the needs of disadvantaged households. Implements sound strategies for collecting customer payments. Understands the opportunities available to diversify revenues and raise capital through adoption of new business models.
Infrastructure Strategy and Performance	Understands the condition of and costs associated with critical infrastructure assets. Plans infrastructure investments consistent with anticipated growth, system reliability goals, and relevant community priorities, building in flexibility for evolution in technology and materials, and uncertainty in the overall future operating context (e.g., climate impacts, customer base). Maintains and enhances the condition of all assets over the long-term at the lowest possible life-cycle cost and acceptable risk consistent with customer, community, and regulator-supported service levels. Assures asset repair, rehabilitation, and replacement efforts are coordinated within the community to minimize disruptions and other negative consequences.
Enterprise Resiliency	Ensures utility leadership and staff work together internally, and with external partners, to anticipate, respond to, and avoid problems. Proactively identifies, assesses, establishes tolerance levels for, and effectively manages a full range of business risks (including interdependencies with other services and utilities, legal, regulatory, financial, environmental, safety, physical and cyber security, knowledge loss, and natural disaster-related) in a proactive way consistent with industry trends and system reliability goals.

Ten Attributes of Effectively Managed Water Sector Utilities (EUM)

Attribute	Attribute Components
Product Quality	Produces "fit for purpose" water that meets or exceeds full compliance with regulatory and reliability requirements and consistent with customer, public health, ecological, and economic needs. Products include treated drinking water, treated wastewater effluent, recycled water, storm water discharge, and recovered resources.
Customer Satisfaction	Provides reliable, responsive, and affordable services in line with explicit, customer-derived service levels. Utilizes a mix of evolving communication technologies to understand and respond to customer needs and expectations, including receiving timely customer feedback and communicating during emergencies. Provides tailored customer service and outreach to traditional residential, commercial, and industrial customers, and understands and exercises as appropriate the opportunities presented by emergent customer groups (e.g., high strength waste producers, power companies).
Community Sustainability	Takes an active leadership role in promoting and organizing community sustainability improvements through collaboration with local partners (e.g., transportation departments, electrical utilities, planning departments, economic development organizations, watershed and source water protection groups). Manages operations, infrastructure, and investments to support the economic, environmental, and social health of its community. Integrates water resource management with other critical community infrastructure, social, and economic development planning to support community-wide resilience, sustainability, and livability to enhance overall water resource sustainability.
Water Resource Sustainability	Ensures the availability and sustainable management of water for its community and watershed, including water resource recovery. Understands its role in the complete water cycle, understands fit for purpose water reuse options, and integrates utility objectives and activities with other watershed managers and partners. Understands and plans for the potential for water resource variability (e.g., extreme events, such as drought and flooding), and utilizes as appropriate a full range of watershed investment and engagement strategies (e.g., Integrated Planning). Engages in long-term integrated water resource management, and ensures that current and future customer, community, and ecological water-related needs are met.
Stakeholder Understanding and Support	Engenders understanding and support from stakeholders (anyone who can affect or be affected by the utility), including customers, oversight bodies, community and watershed interests, and regulatory bodies for service levels, rate structures, operating budgets, capital improvement programs, and risk management decisions. Actively promotes an appreciation of the true value of water and water services, and water's role in the social, economic, public, and environmental health of the community. Involves stakeholders in the decisions that will affect them, understands what it takes to operate as a "good neighbor," and positions the utility as a critical asset to the community.

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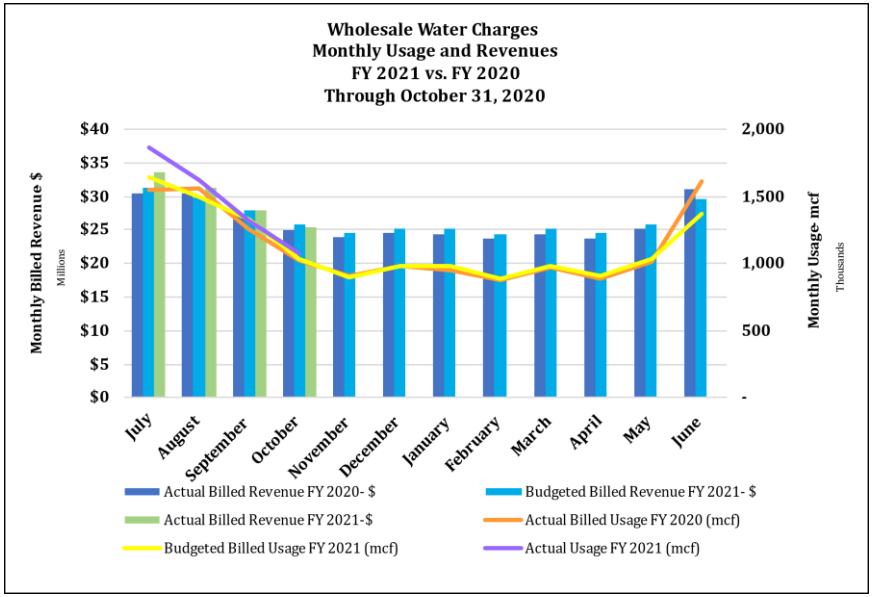
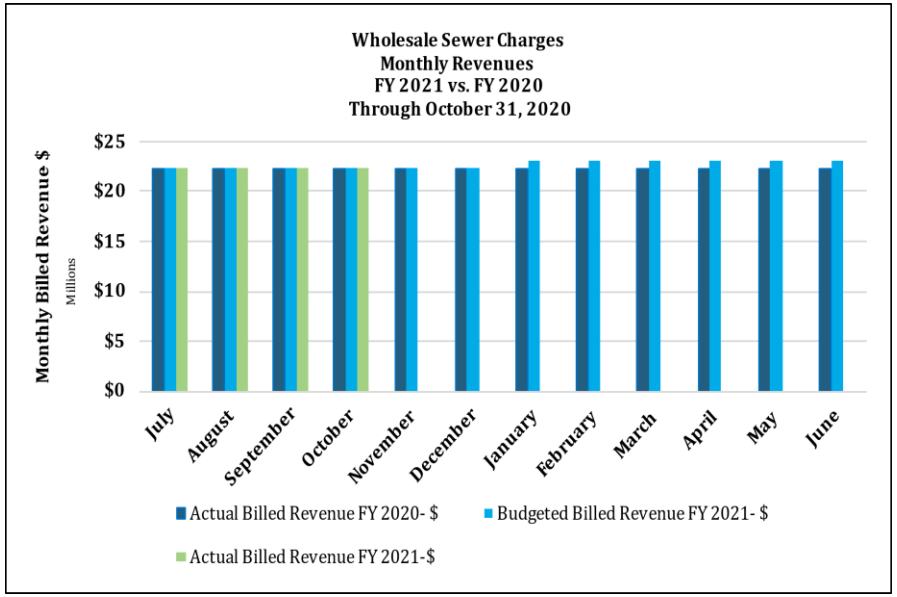
EUM Attribute:

Financial Viability

Financial Viability – Reliability of Wholesale Water and Sewer Revenue Projections





Wholesale Water System billed revenues for FY 2021 are at 103.66% of the amended budget and actual usage at 106.78% of the amended budget through October 2020. Billed revenue for FY 2021 was 4.4% higher compared to the same period in FY 2020.

Wholesale Sewer System billed revenues for FY 2021 are at 100% of the amended FY 2021 budget (based on the full fixed monthly charge) through October 2020.

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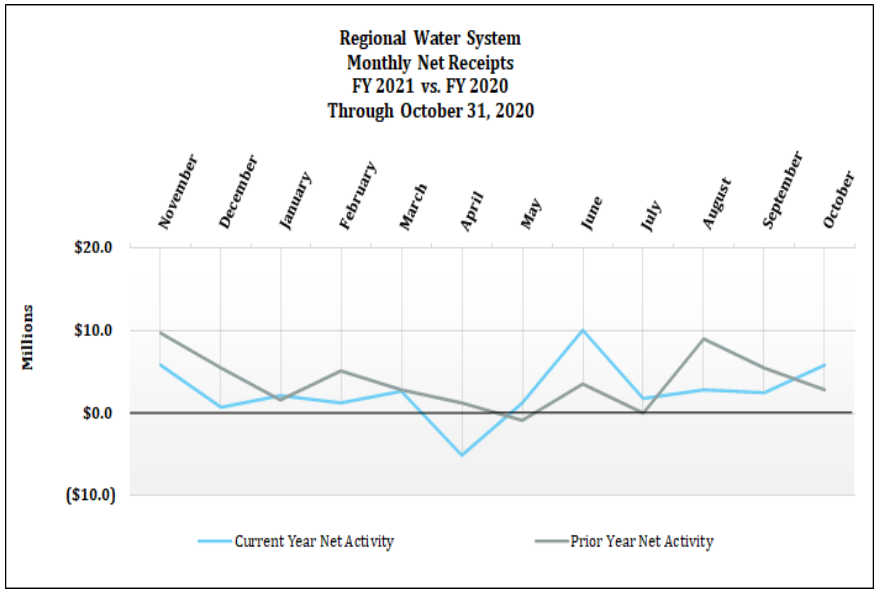
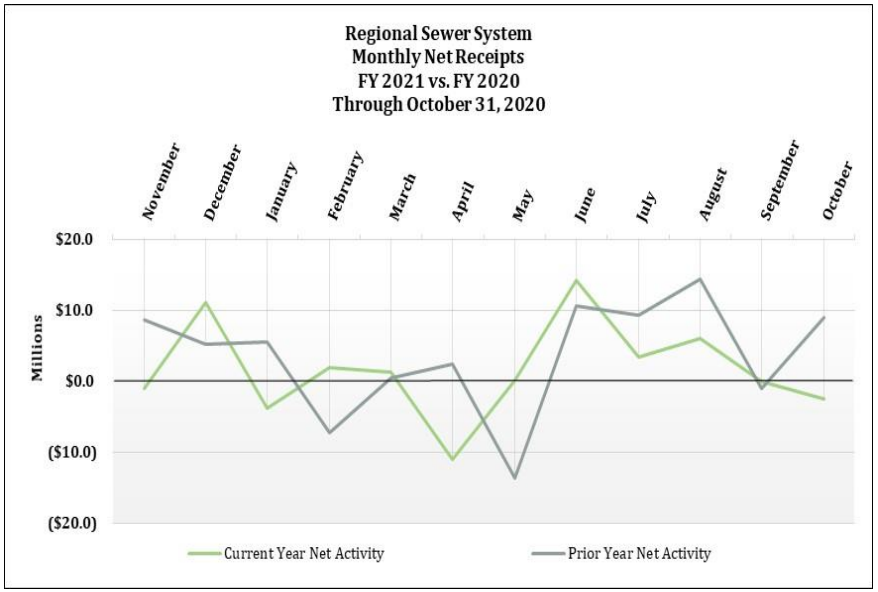
Financial Viability – GLWA Regional System Net Receipts

For the purposes of this reporting, ***Net Receipts equals cash collections less Master Bond Ordinance (MBO) disbursements****.*
The black line in the charts below at zero highlights the minimum goal for net receipts.
While this measure may vary monthly based on billing and collection cycles,
cumulative positive net receipts supports long-term financial sustainability.





Regional Water System net receipts for the month of October 2020 exceeded required MBO disbursements by $1.1 million. This equates to a 13% surplus of net monthly receipts over required disbursements year-to-date.

Regional Sewer System net receipts for the month of October 2020 fell short of required MBO disbursements by $9.2 million. Despite the current month's shortfall, this still equates to a 5% surplus of net monthly receipts over required disbursements year-to-date.

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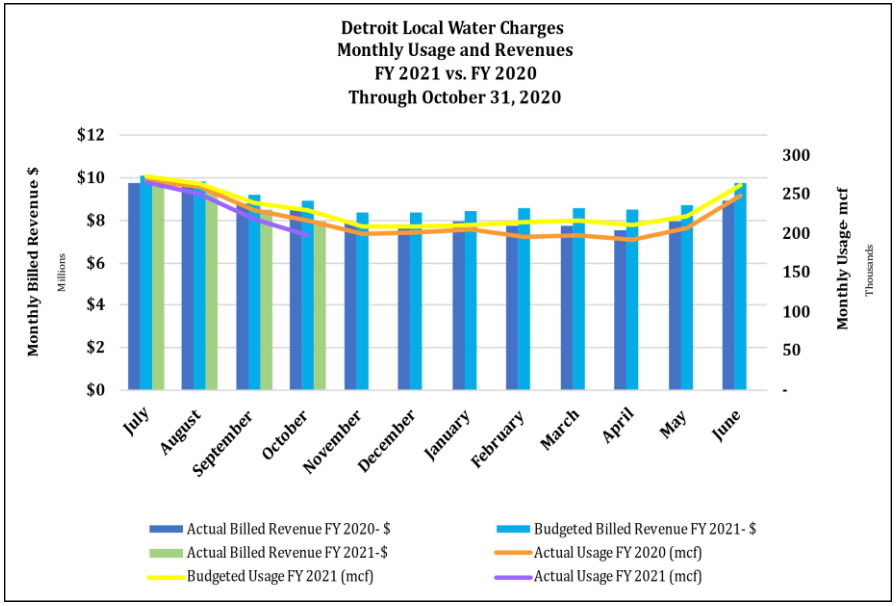
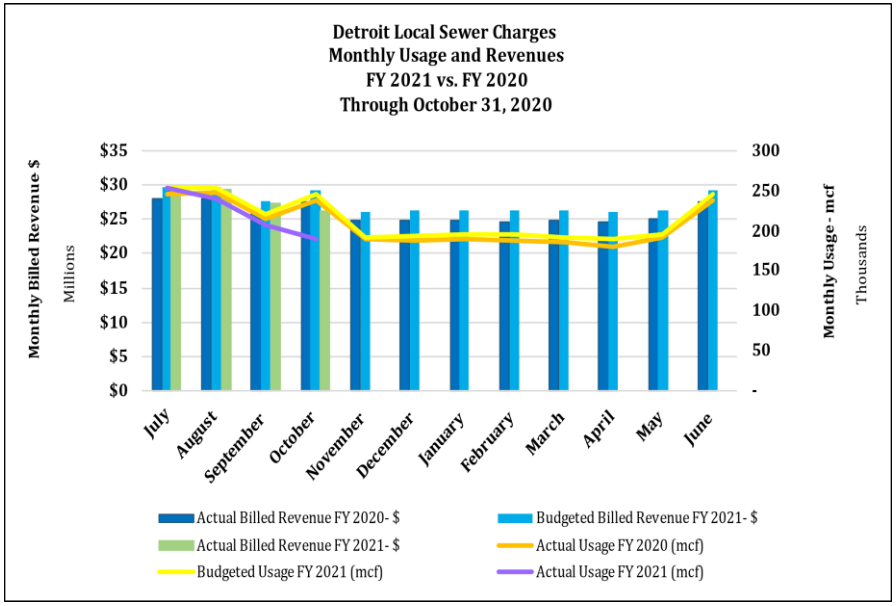
Financial Viability – Reliability of Detroit Local Water and Sewer Revenue Projections



Detroit Local Water System billed revenues for FY 2021 are at 93.64% of budget and actual usage at 92.71% of budget through October 2020. Billed revenue for FY 2021 is 3.1% lower compared to the same period in FY 2020.



Detroit Local Sewer System billed revenues for FY 2021 are at 96.85% of budget and actual usage at 91.55% of budget through October 2020. Billed revenue for FY 2021 is 2.2% higher compared to the same period in FY 2020.

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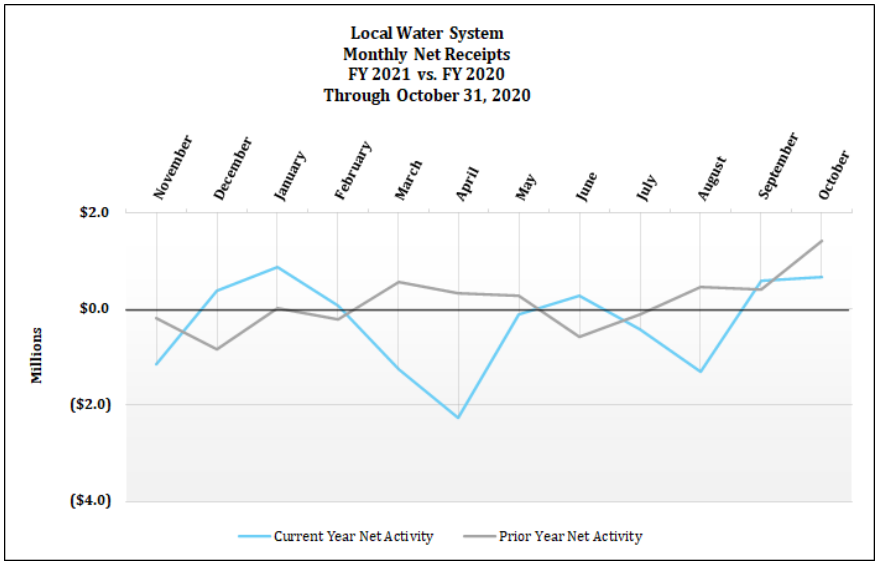
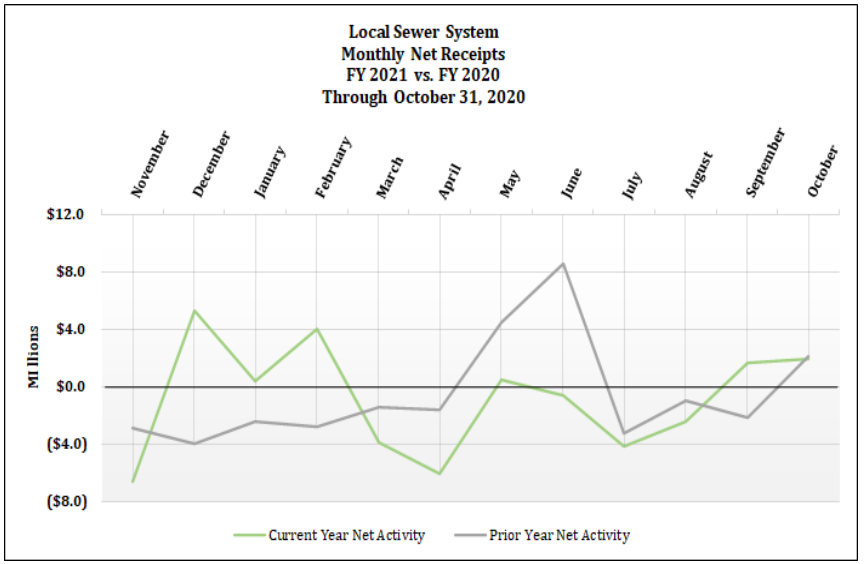
Financial Viability – DWSD Local System Net Receipts

For the purposes of this reporting, ***Net Receipts equals cash collections less Master Bond Ordinance (MBO) disbursements.***
The black line in the charts below at zero highlights the minimum goal for net receipts.
While this measure may vary monthly based on billing and collection cycles,
Cumulative positive net receipts supports long-term financial sustainability.





Local Water System net receipts for the month of October 2020 exceeded MBO disbursements by $671 thousand. The shortfall of net monthly receipts over required disbursements is now 1% or $450 thousand year-to-date.

Local Sewer System net receipts for the month of October 2020 exceeded of MBO disbursements by $2.0 million. The shortfall of net monthly receipts over required disbursements is now 3% or $2.8 million year-to-date.

Looking ahead, DWSD Management a) expects a material distribution of state of Michigan CARES Act funding to support these past due balances; b) will be implementing tax liens on commercial and industrial properties; c) anticipates a positive operating budget variance.

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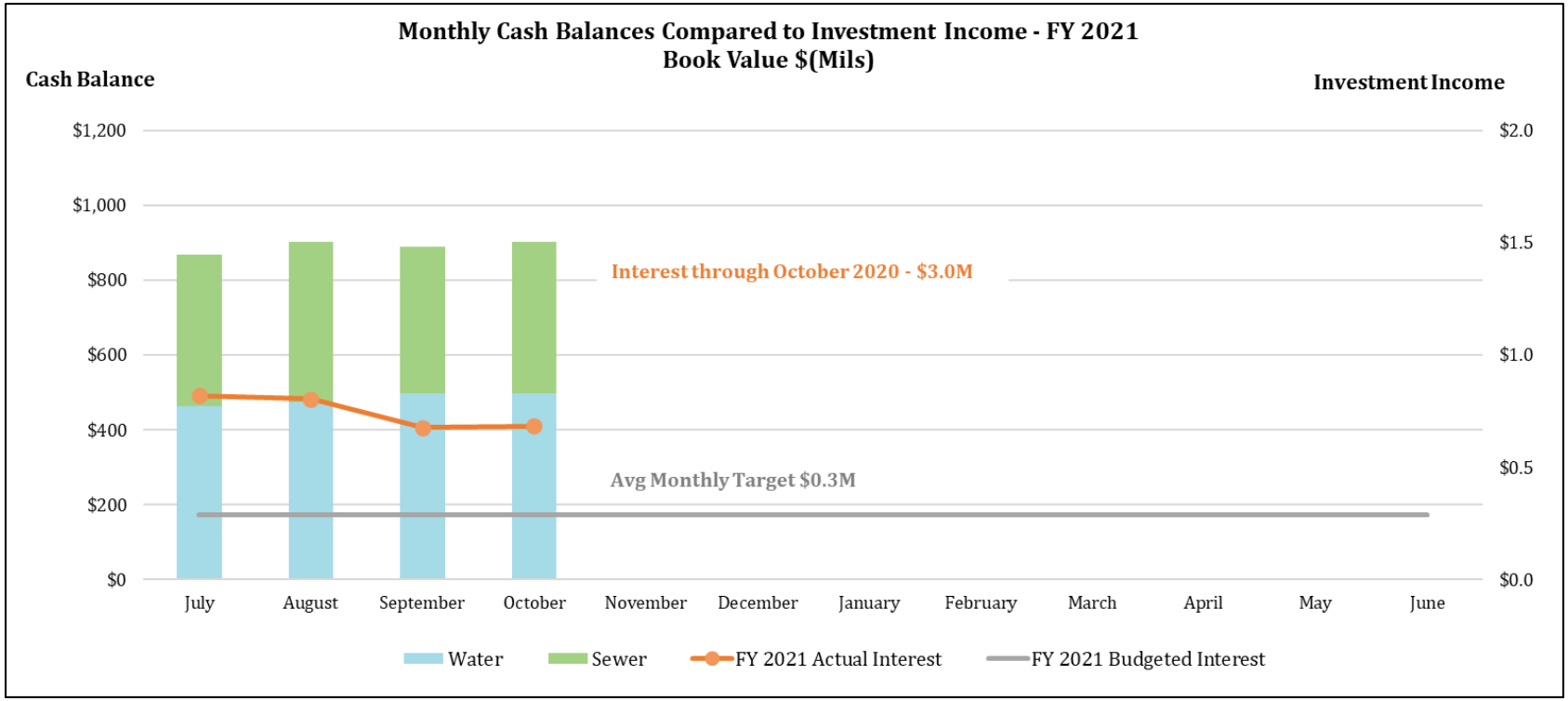
Financial Viability – Optimizing Cash Balances



- Cash & investment balances for the water & sewer funds change each month based on Master Bond Ordinance funding, operational requirements, capital funding, and debt payments.
- Investment income fluctuates monthly with the cash & investment balances as well as market conditions and investment strategy.
- For the month of October 2020, GLWA earned investment income of $0.7 million and the cumulative FY2021 earnings through October is $3.0 million. The investment earnings for the remainder of the fiscal year is expected to significantly decline due to maturities of existing investments being reinvested into lower, current market rate investments. The projected the total investment income for FY2021 is $3.5 million.
- GLWA continues to refine cash flows and work with its investment advisor to identify strategies to maximize future investment income while meeting the objectives of safety and liquidity.

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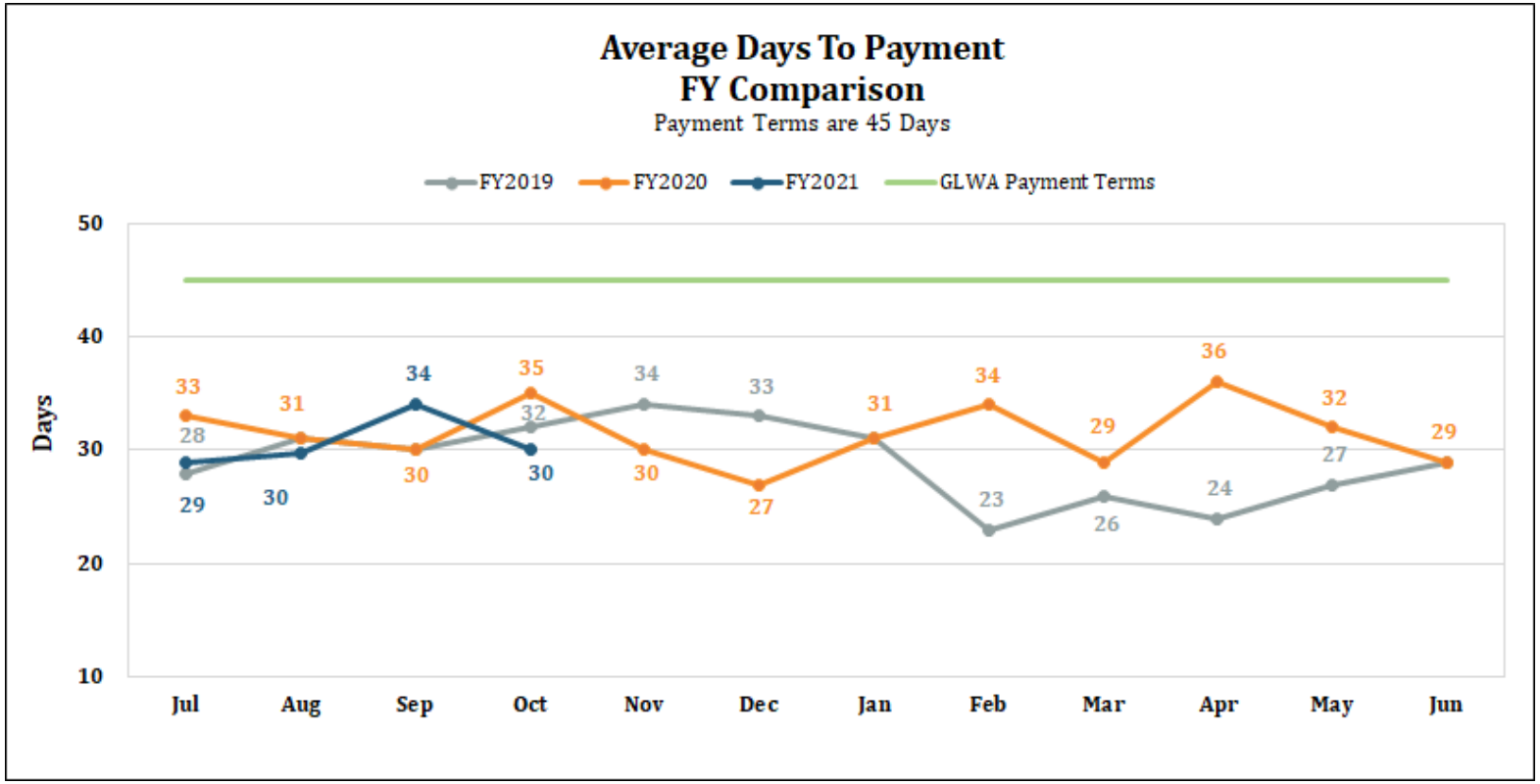
Financial Viability – Days to Pay an Invoice

The goal is a 12-month average of < 30 days to support vendor relations and expand the early payment discount program. The number of days is calculated as the days between invoice and payment date.



Timely vendor payments support:
- Positive supplier relations;
- Leveraging early payment discounts; and
- Effective cashflow management.

Twelve-month average days to payment		
FY 2019	FY 2020	FY 2021 (rolling calendar)
29	31	31

The average days to pay was higher than the target of less than 30 days for FY 2020 and FY 2021 to date due to challenges with a small number of vendors over the course of the year. The Accounts Payable team is working in conjunction with the Procurement team to assist in improving vendor management and compliance.

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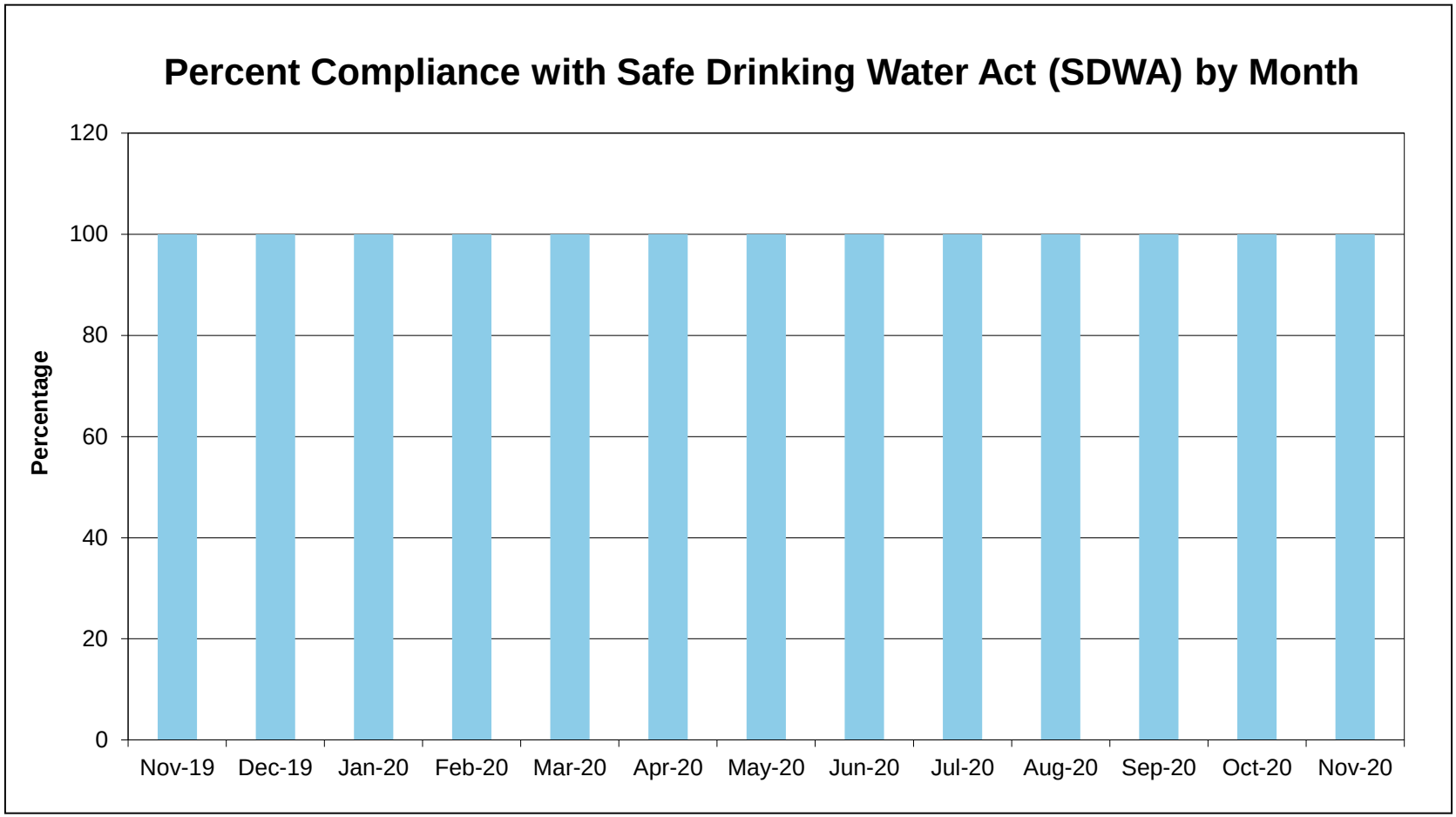
EUM Attribute:

Product Quality

Product Quality – SWDA Compliance



Product Quality: GLWA's goal is to surpass Safe Drinking Water Act requirements and this slide indicates compliance for the month.

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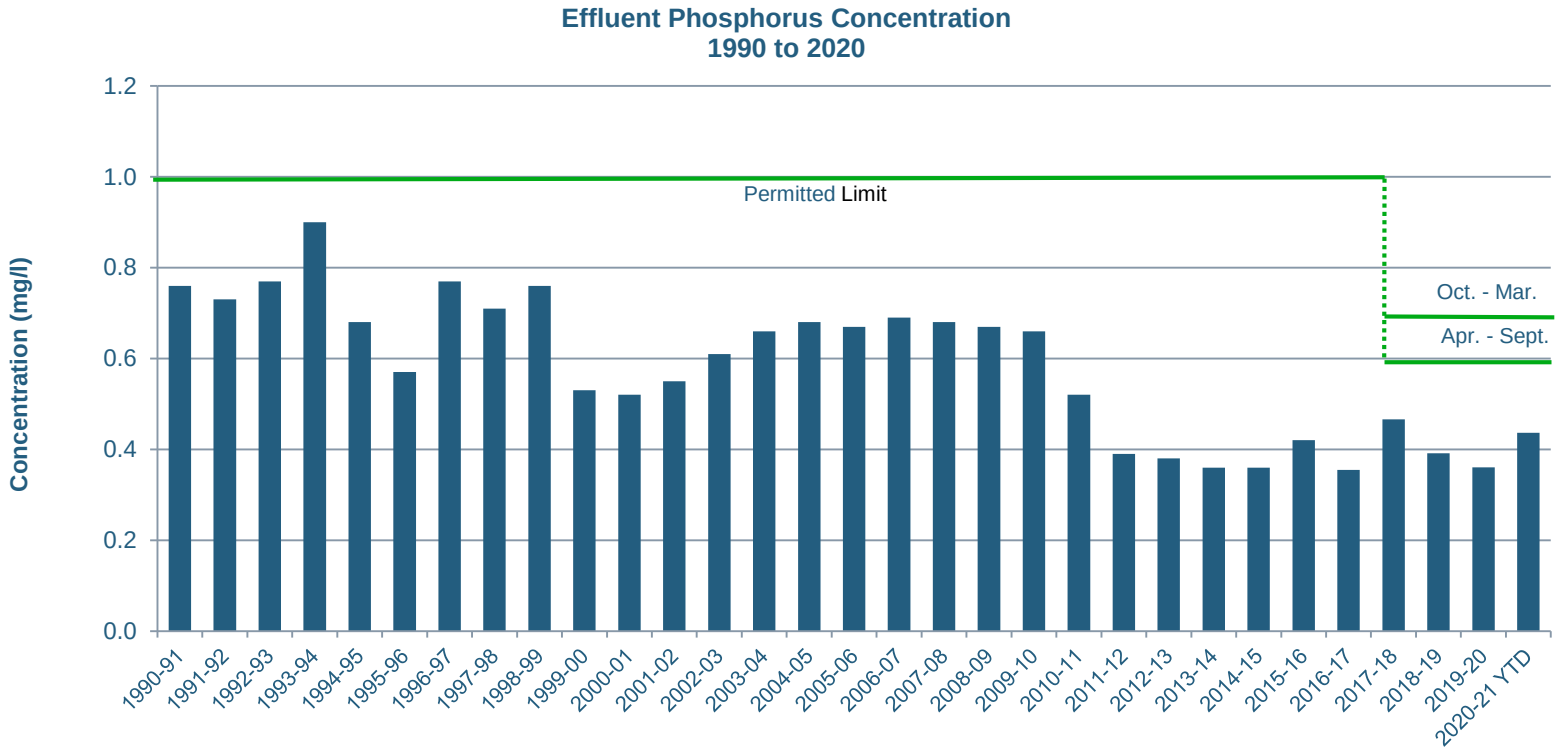
Product Quality
Regulatory Compliance – Effluent Phosphorous Concentration

- Significant progress has been made in the reduction of effluent phosphorus.
- GLWA strives to surpass Federal and State requirements.



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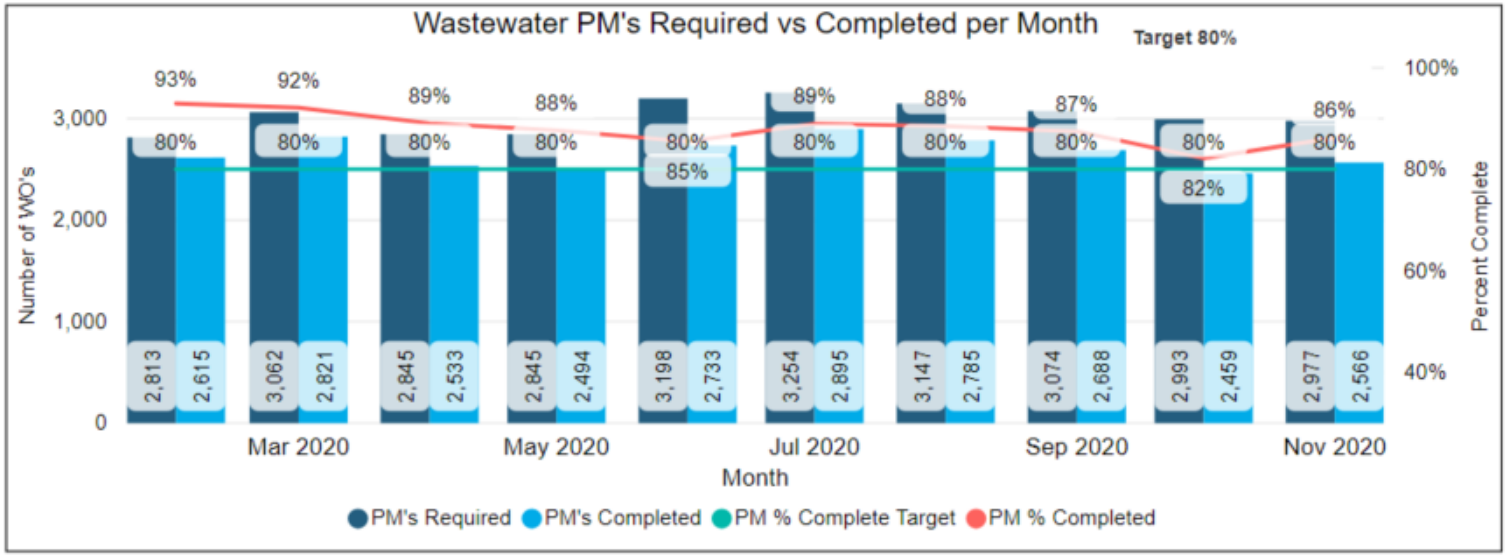
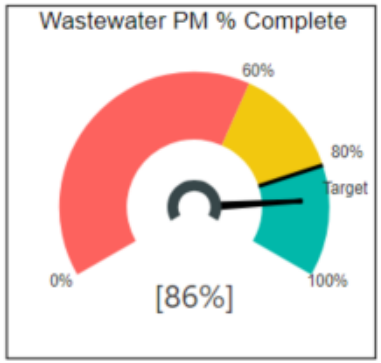
EUM Attribute:

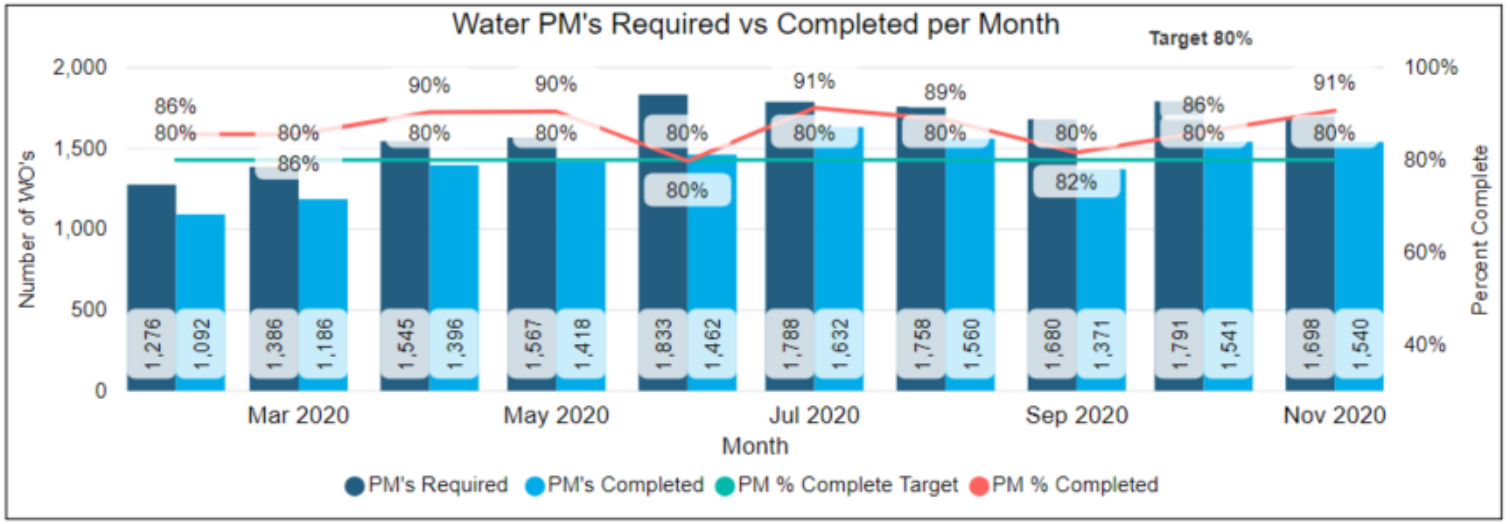
Infrastructure Strategy and Performance

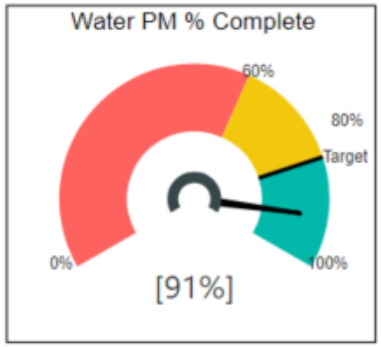
Infrastructure Strategy and Performance – Wastewater and Water Preventative Maintenance (PM) Management

November 2020









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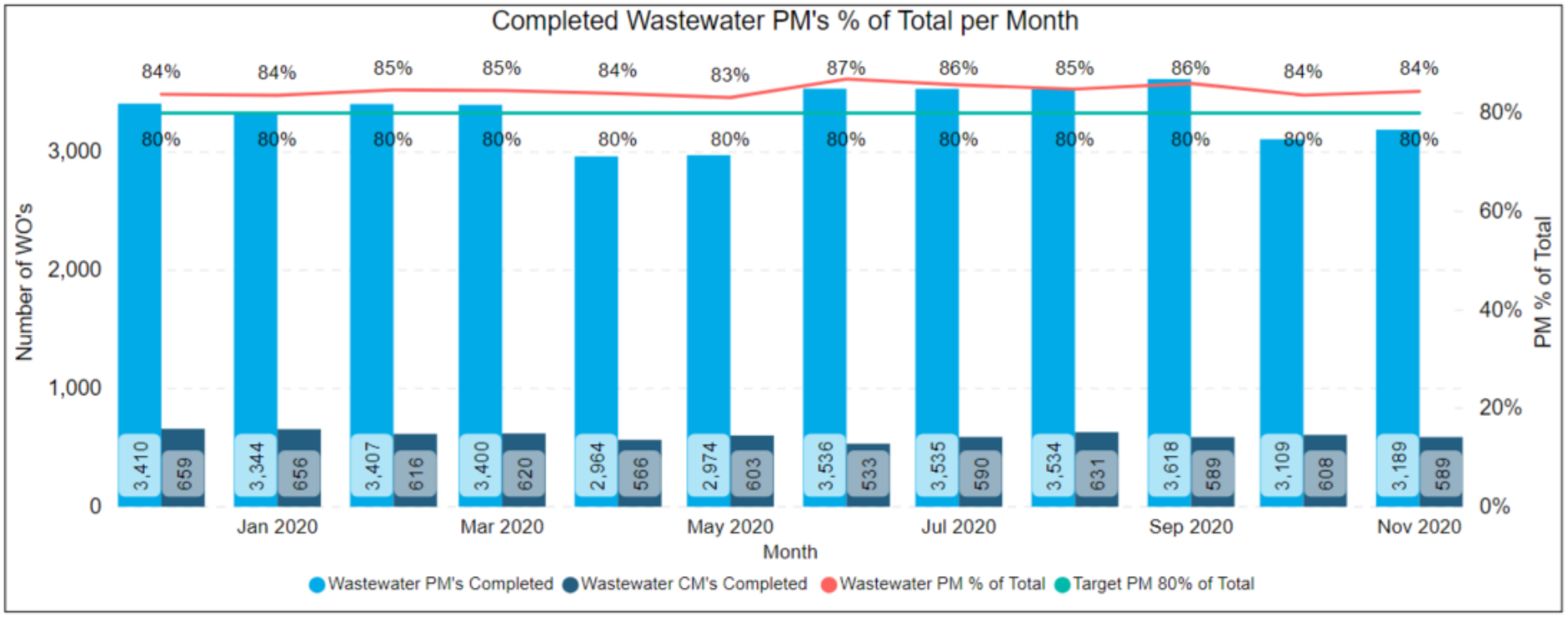
*Timely preventative maintenance extends asset useful life and minimizes unplanned downtime.

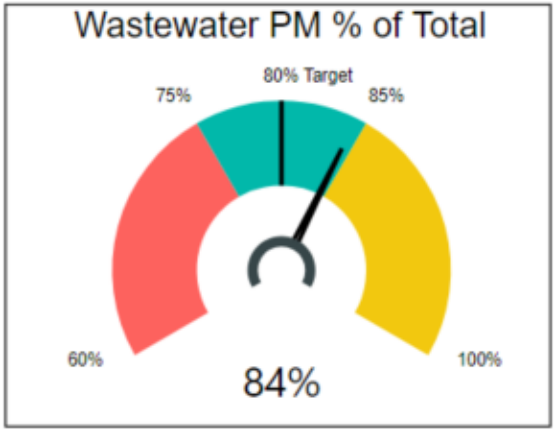
*Unplanned downtime can lead to permit non-compliance and negative environmental impacts.

Infrastructure Strategy and Performance – Wastewater Preventative & Corrective Maintenance Management

November 2020



*The Target is derived from the 2017 American Water Works Association Utility Benchmarking program that indicates that an appropriate level of PM activities can be identified by the PM percentage of total maintenance work performed. If the percentage is significantly lower than the target (red) it is a warning of possible increase in unplanned, emergency type work (CM). If the percentage is significantly higher than the target (yellow) it is a warning that PMs can be reduced, and resources can be better directed to other system needs.



PM = Preventative Maintenance
CM = Corrective Maintenance

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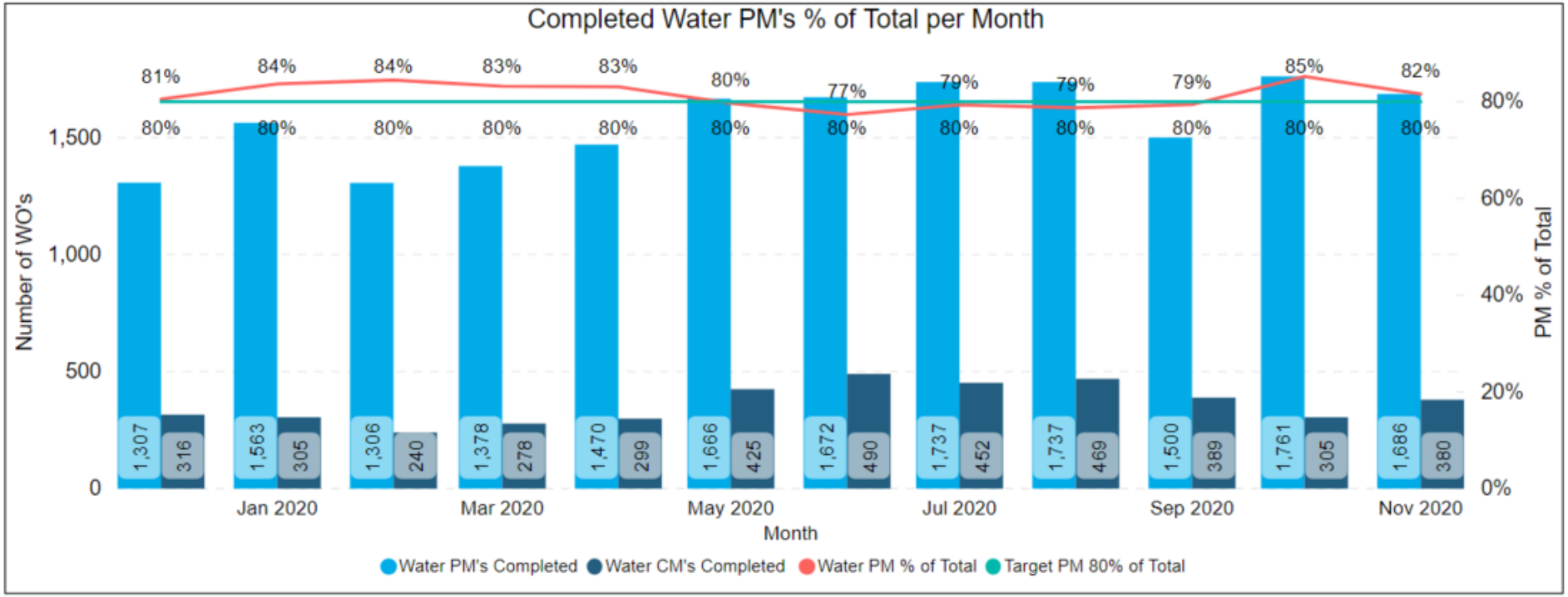
Infrastructure Strategy and Performance – Water Preventative & Corrective Maintenance Management

November 2020



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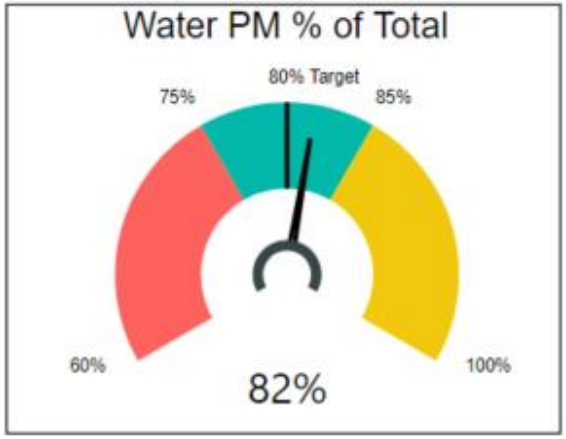

PM = Preventative Maintenance
CM = Corrective Maintenance

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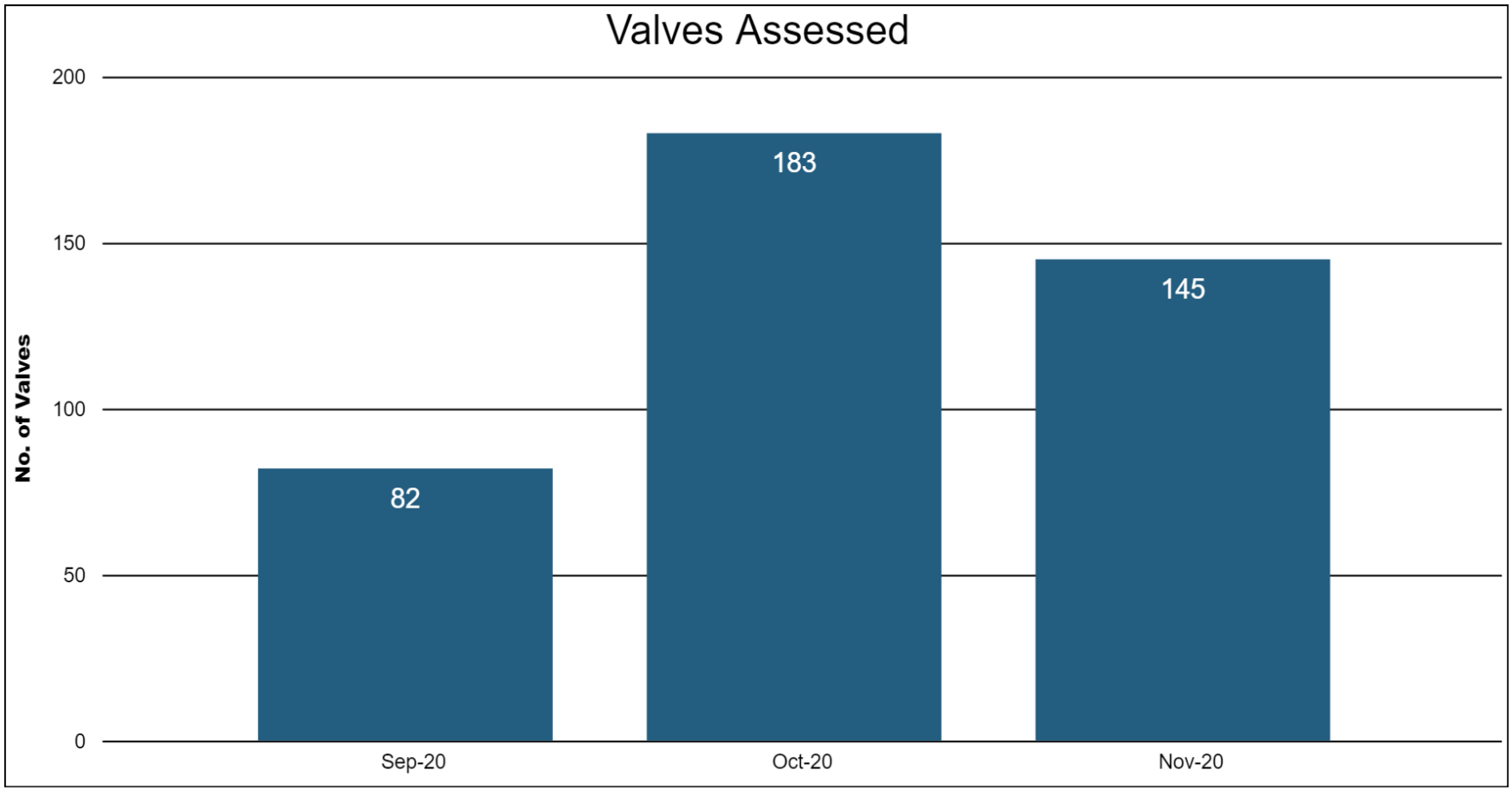
Infrastructure Strategy and Performance – Water and Field Services Valve Exercising



Note: Phase 2 of the project began in August 2020. The project will focus on locating and assessing designated valves within the water transmission main.

Infrastructure Strategy and Performance: GLWA's ultimate goal is to locate, visually assess, determine the condition and valve position, and fully exercise system valves.

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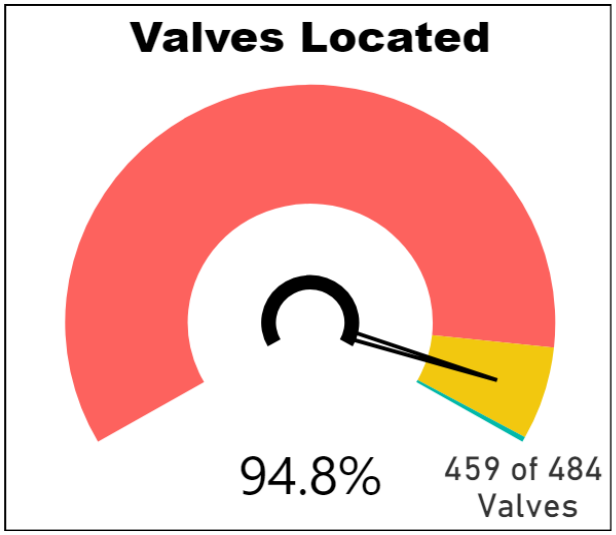
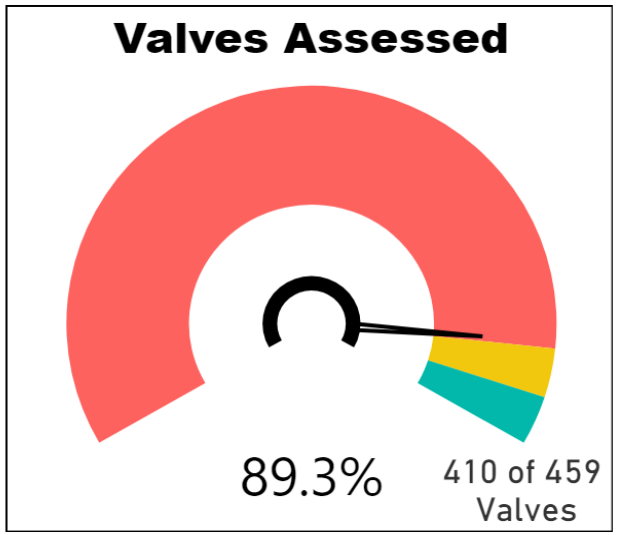
Infrastructure Strategy and Performance – Water and Field Services Valve Exercising

November 2020 KPIs



Red = <90%, Yellow = 90 to 99.5%, Green =>99.5%



Red = <90%, Yellow = 90 to 95%, Green =>95%

Reason for yellow on Valves Located (94.8%) and red on Valves Assessed (89.3%): Valves not located were mostly due to heavy vegetation and some were paved over. Some valves could not be assessed due to location of the valves.

NOTE: During the initial preliminary stages of the project the contractor is conducting inventory, locating and assessing designated valves, as well as determining which valves are operational within the GLWA water transmission system.

Infrastructure Strategy and Performance: GLWA's ultimate goal is 100% operational valves. We are in a transitional phase moving towards that goal and will reassess the red, yellow, green targets annually thereafter for the next 3 years.

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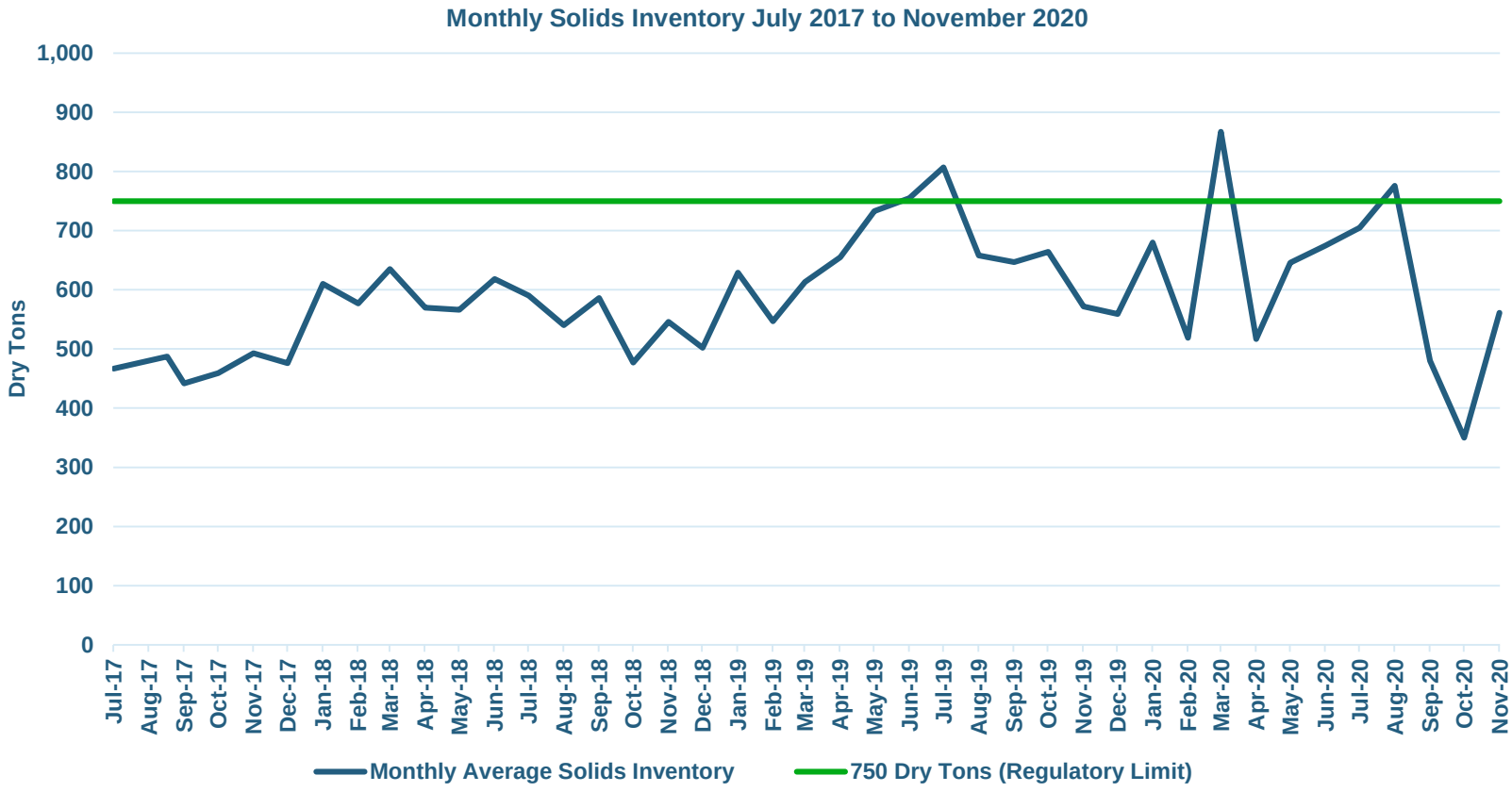
EUM Attribute:

Operational Optimization

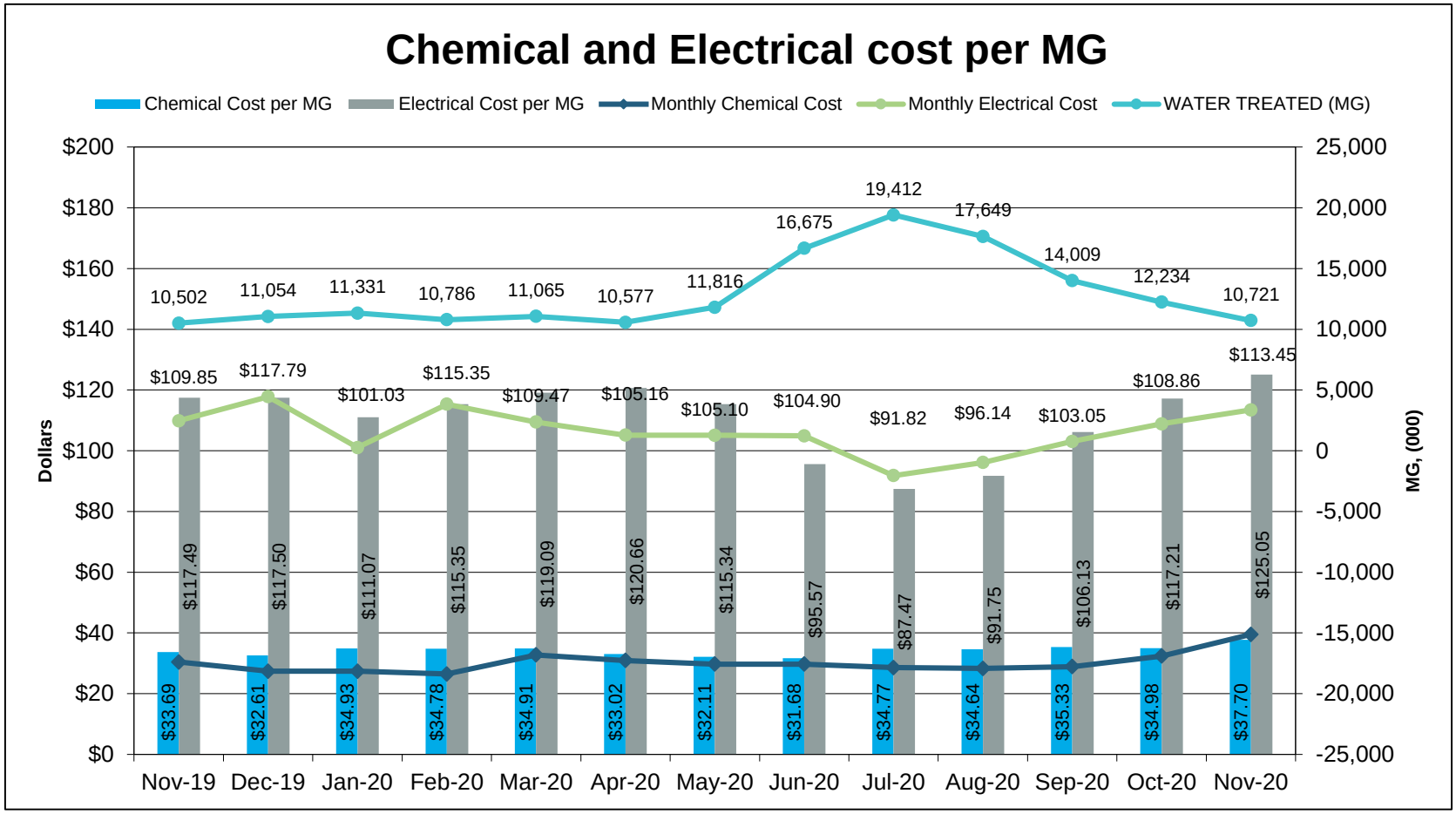
Operational Optimization
Regulatory Compliance – Monthly Solids Inventory

- Solids inventory is a measure of process performance and is regulated by the State.
- Except for July 2019's extraordinary sustained wet weather event, GLWA has consistently tracked below 750 dry tons since Oct. 2014.



Note: No violation occurred in July 2019, March 2020, or August 2020: the limit did not apply in those months due to the number of days on which PE discharge occurred.

Operational Optimization
Chemical & Electrical Costs



Operational Optimization: Being able to identify ongoing performance improvements for chemical and electrical usage per MG of water pumped is a key metric in managing operational cost. This slide is under development to include tracking of total costs per MG.

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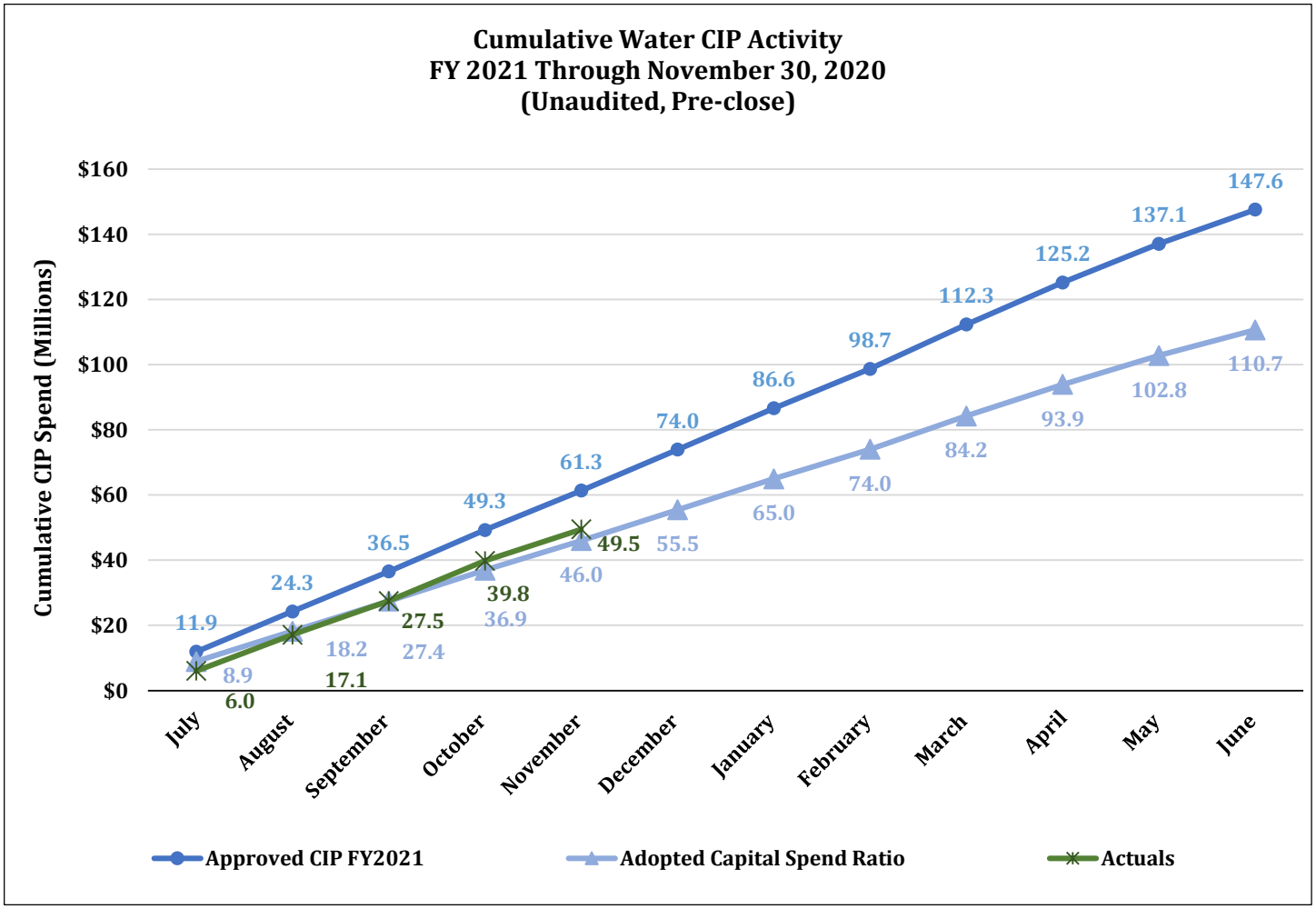
EUM Attribute:

Enterprise Resiliency

Enterprise Resiliency
FY 2021 Total Water CIP Spend



Current Status: The water system incurred $49.5 million of CIP costs through November 2020. This is 80.7% of the FY 2021 monthly prorated *Approved CIP* and **107.6%** of the *Adopted Capital Spend Ratio* amount.

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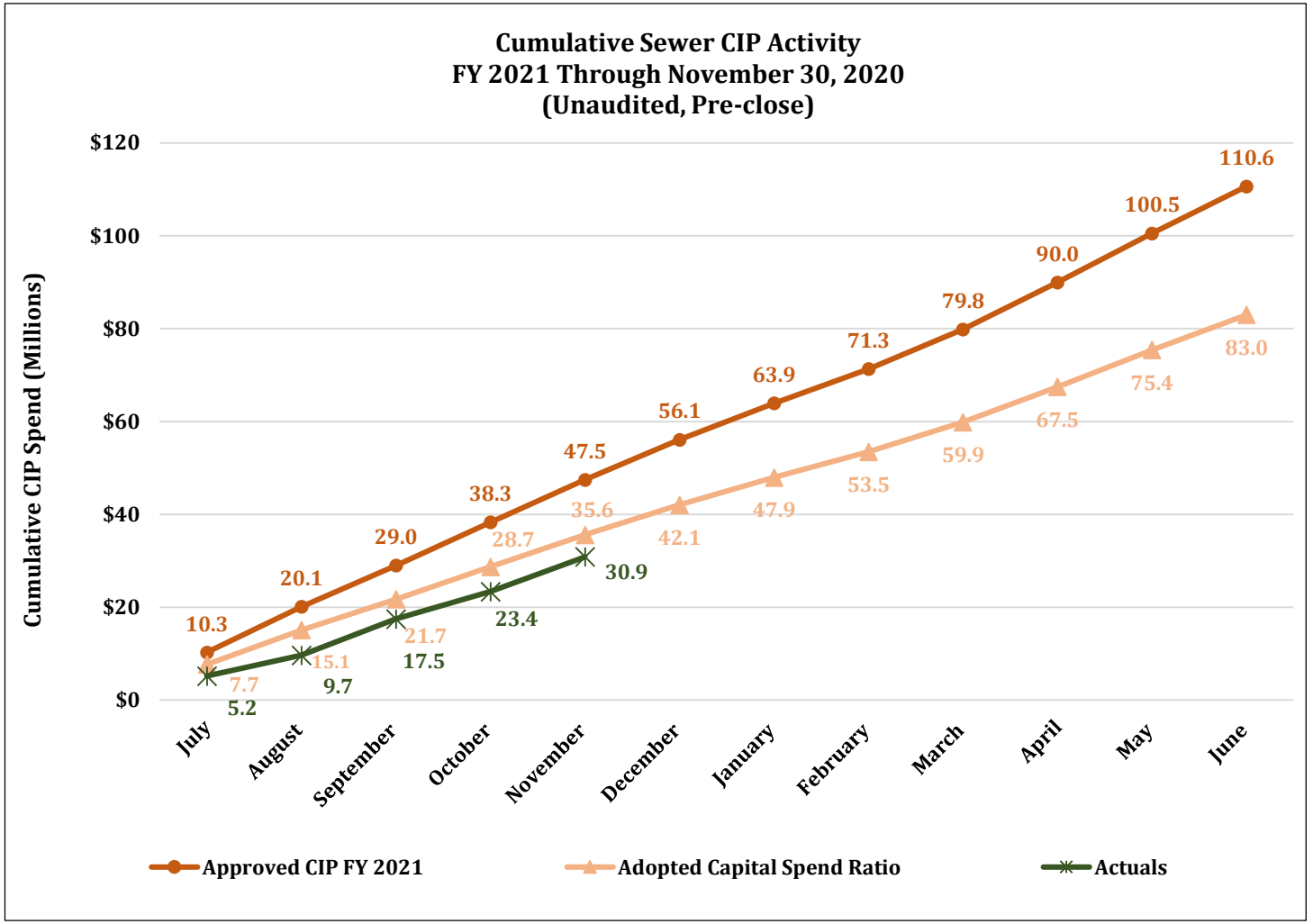
Enterprise Resiliency
FY 2021 Total Sewer CIP Spend



Current Status: The sewer system incurred $30.9 million of CIP costs through November 2020. This is 65.0% of the FY 2021 monthly Prorated *Approved CIP* and **86.8%** of the *Adopted Capital Spend Ratio* amount.

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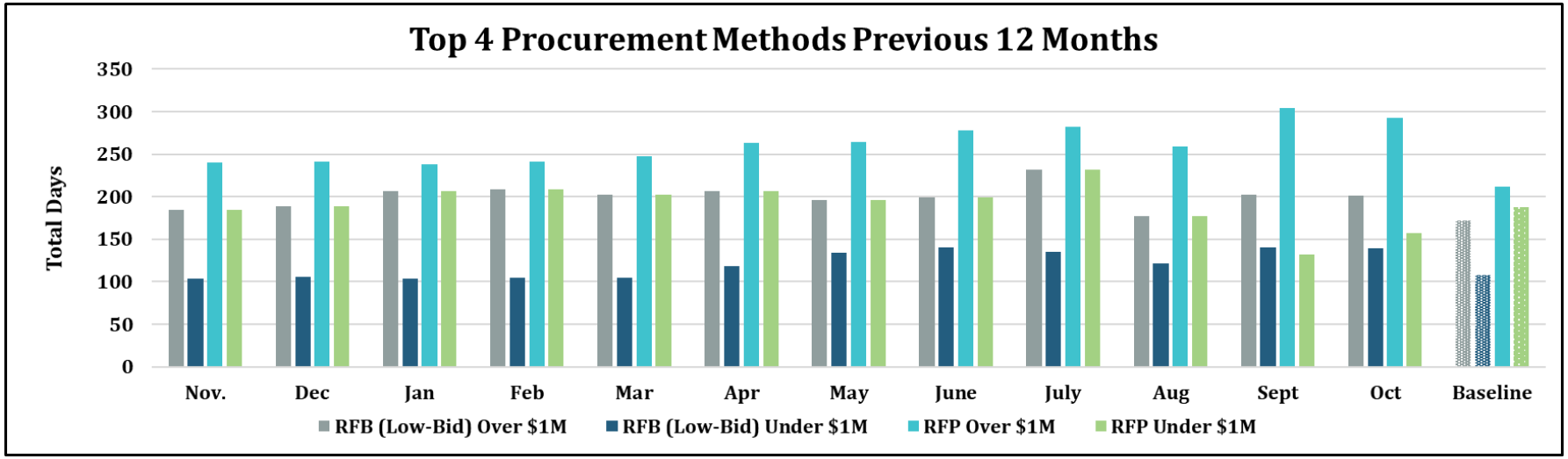
Enterprise Resiliency - Procurement Cycle



Method/Commodity	Awarded Amounts (in millions)	Total Count
RFB (Low-Bid)	$185.6	71
Construction	$104.3	12
Consultant	$55.0	6
IT	$0.5	1
Services	$17.8	19
Supplies/Equipment/Stock	$8.0	33
RFP	$153.1	23
Construction	$6.0	2
Consultant	$58.8	6
Design Build	$63.6	3
IT	$0.5	1
Legal Services	$0.1	1
Personnel Services	$10.9	1
Services	$13.1	9
Grand Total	$338.7	94

- *Scope:* The population in this slide represents NEW contracts executed in the past 12 months (excludes purchase orders, specialized, emergency, RFI, RFQ, Small Purchases, and changes/amendments).
- RFBs and RFPs are GLWA's most intensive bid methods. The structured procedures ensure internal customer requirements are met while constraining GLWA costs.
- The chart above highlights the total days required to execute Request for Bid (RFB) and Request for Proposal (RFP) contracts over the previous 12 months. Established baselines are provided on the right-hand side of the chart for comparison.
- For October 2020, RFP contracts under $1 million were executed in timeframes below the required timeframes.
- The table to the left provides a breakdown of this activity based on the type of contract awarded and the amount awarded for the past 12 months.
- RFB and RFP activity resulted in $339 million in executed contracts over the previous 12 months.

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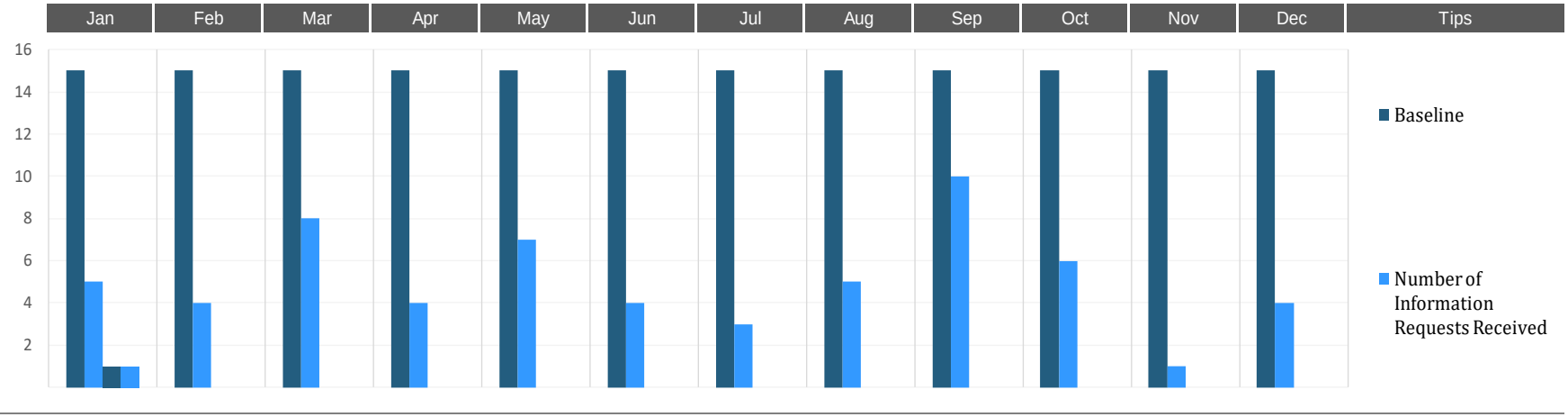
Enterprise Resiliency – General Counsel Information Requests Received



Expenses	Jan	Feb	Mar	Apr	May	Jun*	Jul	Aug	Sep	Oct	Nov	Dec	Total	Trend
Baseline	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	180.00	
Number of Information Requests Received	5.00	4.00	8.00	4.00	7.00	4.00	3.00	5.00	10.00	6.00	1.00	4.00	61.00	

One of the measures of organizational transparency is access to information. GLWA maintains many avenues of informal information access, including through its website. To the extent the information is readily available, the Office of the General Counsel should receive fewer FOIA requests over time.

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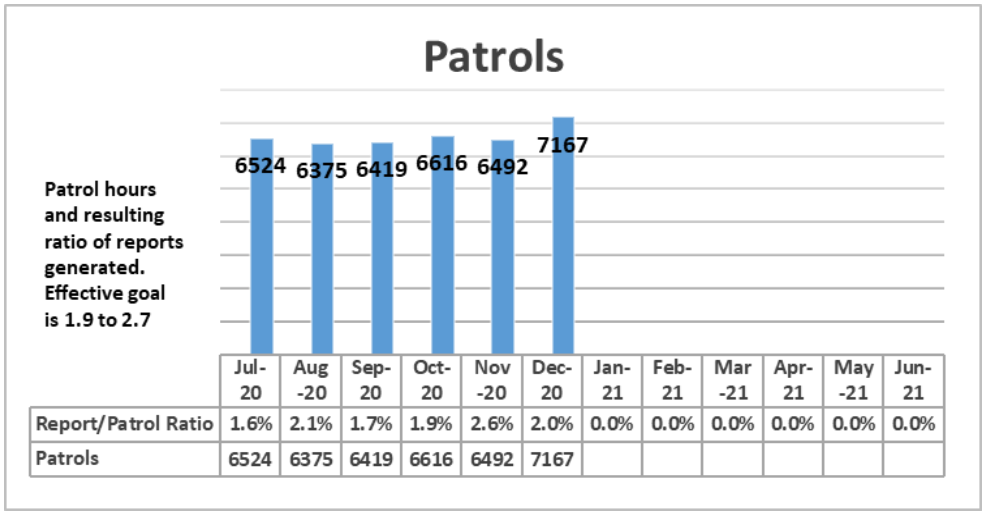
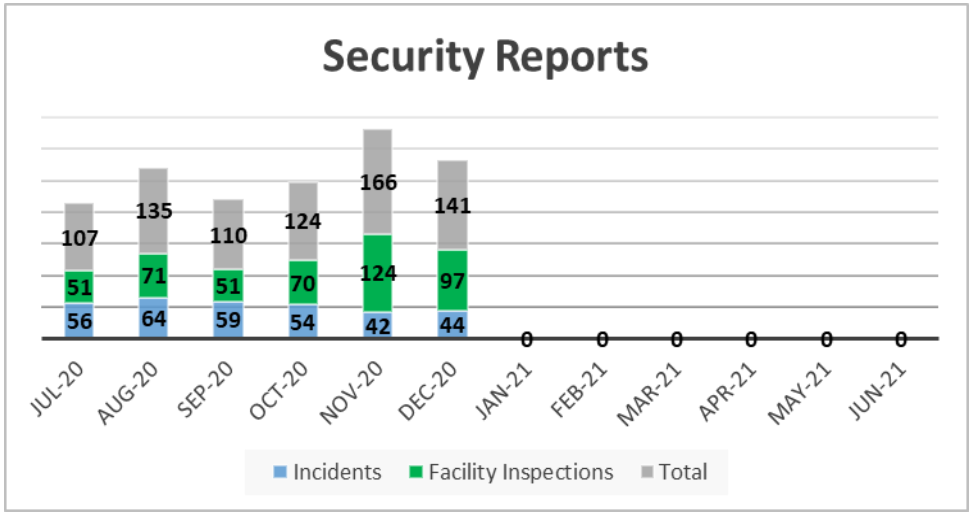
Enterprise Resiliency – Security & Integrity



	Jul-20	Aug-20	Sep-20	Oct-20	Nov-20	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21
Report/Patrol Ratio	1.6%	2.1%	1.7%	1.9%	2.6%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Patrols	6524	6375	6419	6616	6492	7167						

- Patrols are an indication of the level of services rendered by the staff of the Security & Integrity Group.

- Security reports are an indication of the effectiveness of security programs (less is better).



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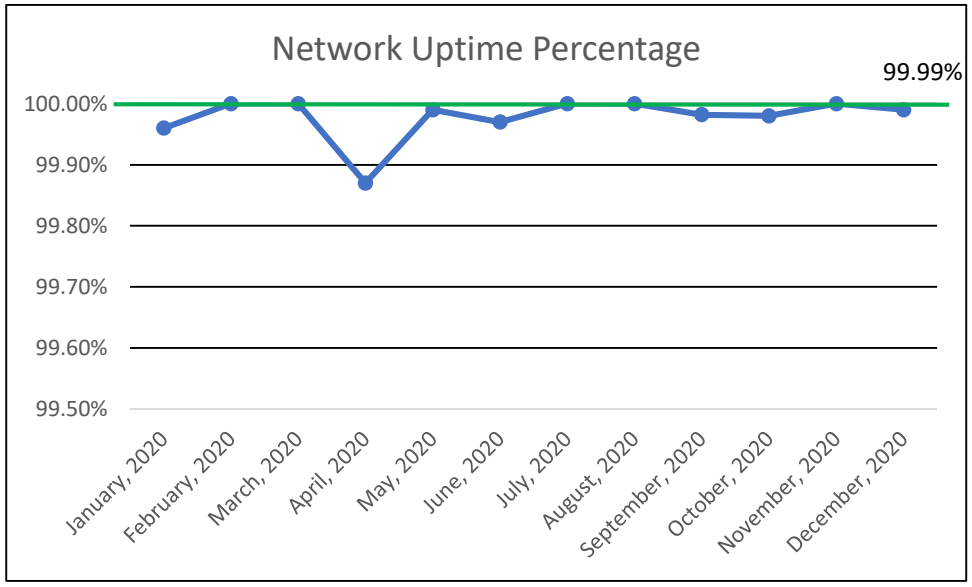
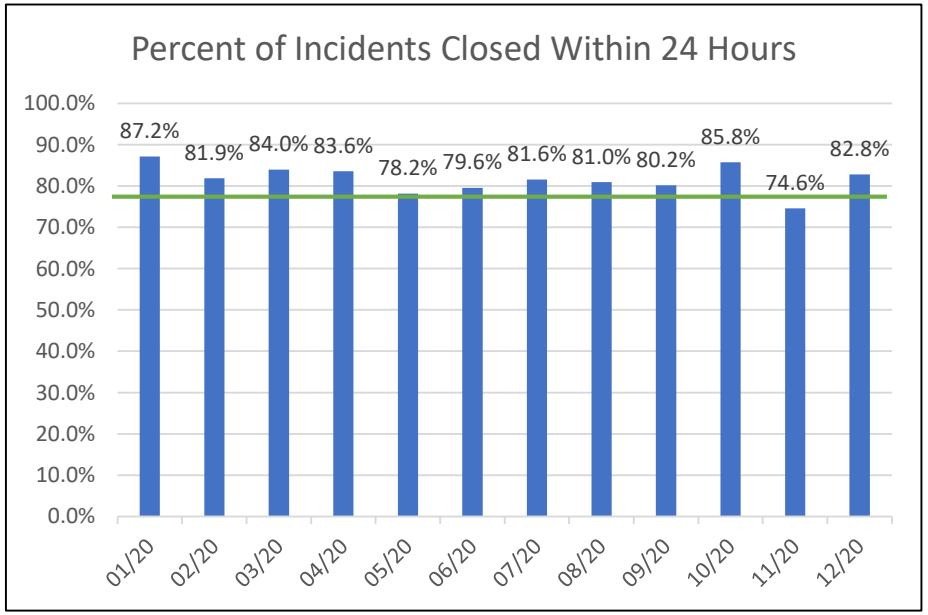
Enterprise Resiliency – Information Technology



- GLWA has 42 monitored, network-connected sites, including offices, plants, pump stations, and other facilities.
- Network connectivity allows employees to access the applications needed to do their work and connects plants and pump stations to the intranet to report operational data

- An Incident is a technology issue that is preventing an employee from performing some part of their job duties
- Quick resolution of incidents increases employee productivity.
- The industry standard for 24-hour resolution is 68%



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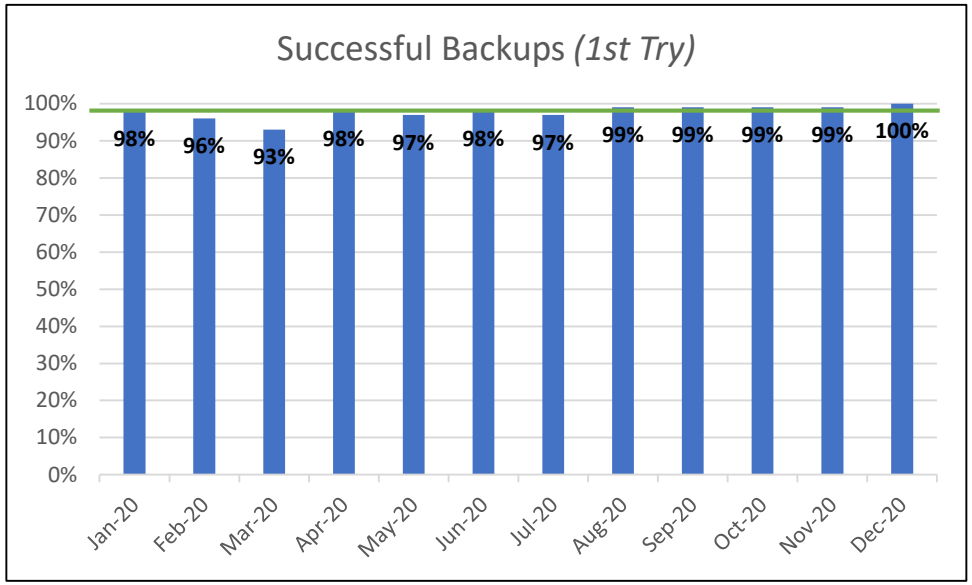
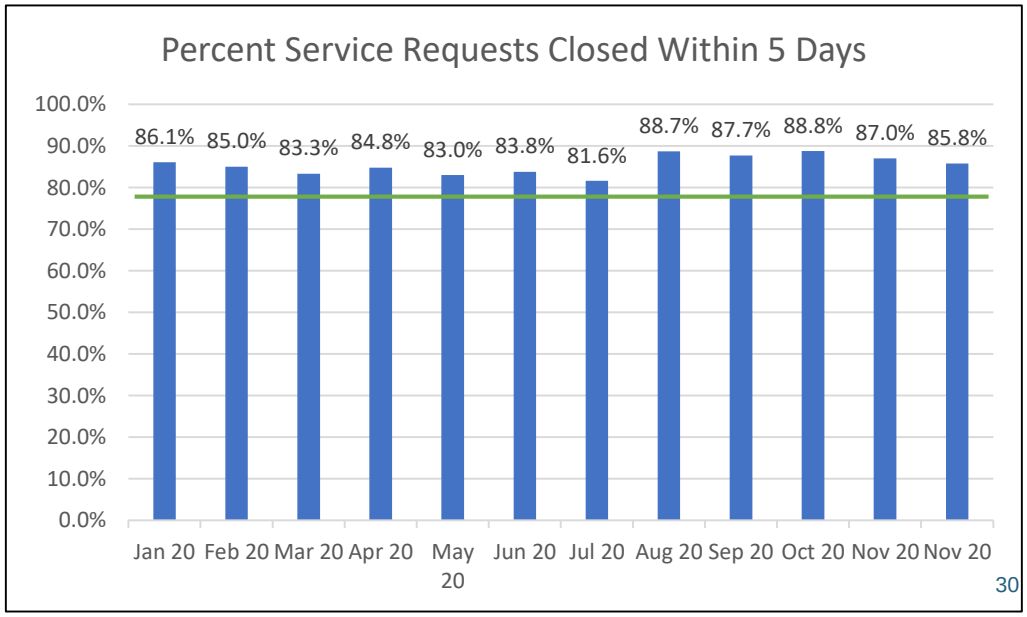
Enterprise Resiliency – Information Technology



- Backups ensure that GLWA's information is safe in case of unexpected disruptions.
- Successfully backing up on the first try streamlines operations and frees up resources for other tasks.

- A service request is a request for IT work that is not preventing an employee from performing their work.
- Timely fulfilment of service requests ensure that employees have the technology resources needed to do their jobs and increases job satisfaction.



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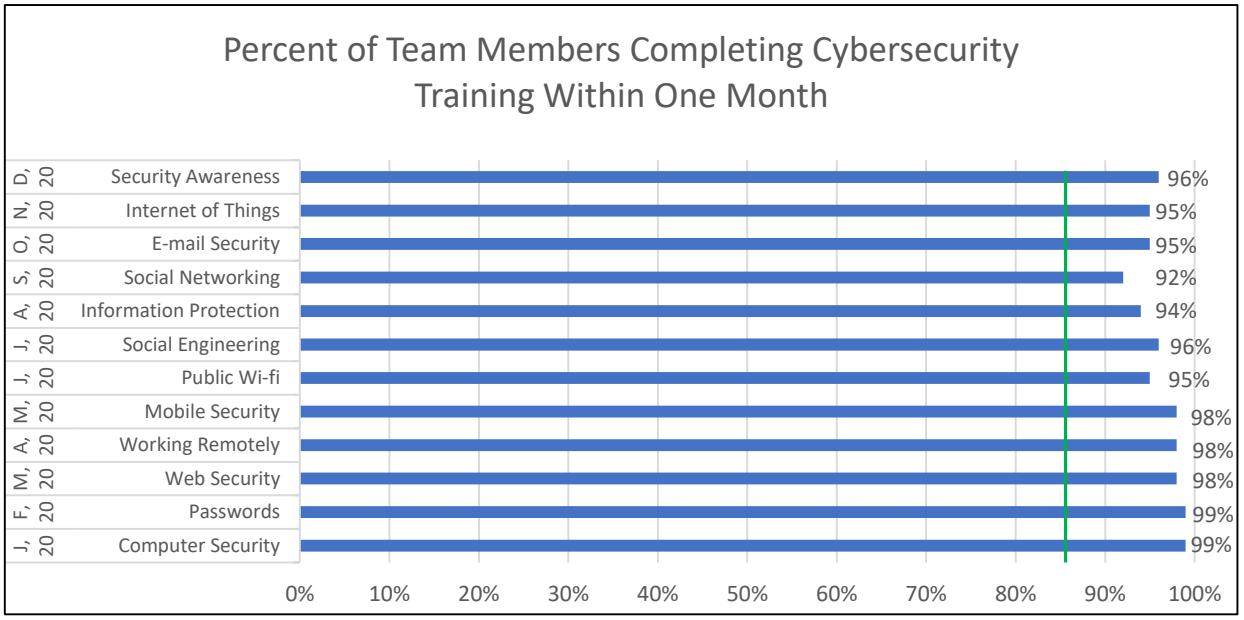
Enterprise Resiliency – Information Technology



- End users are responsible for 80 percent of cybersecurity breaches.
- Well trained users are less likely to take action that could cause a breach

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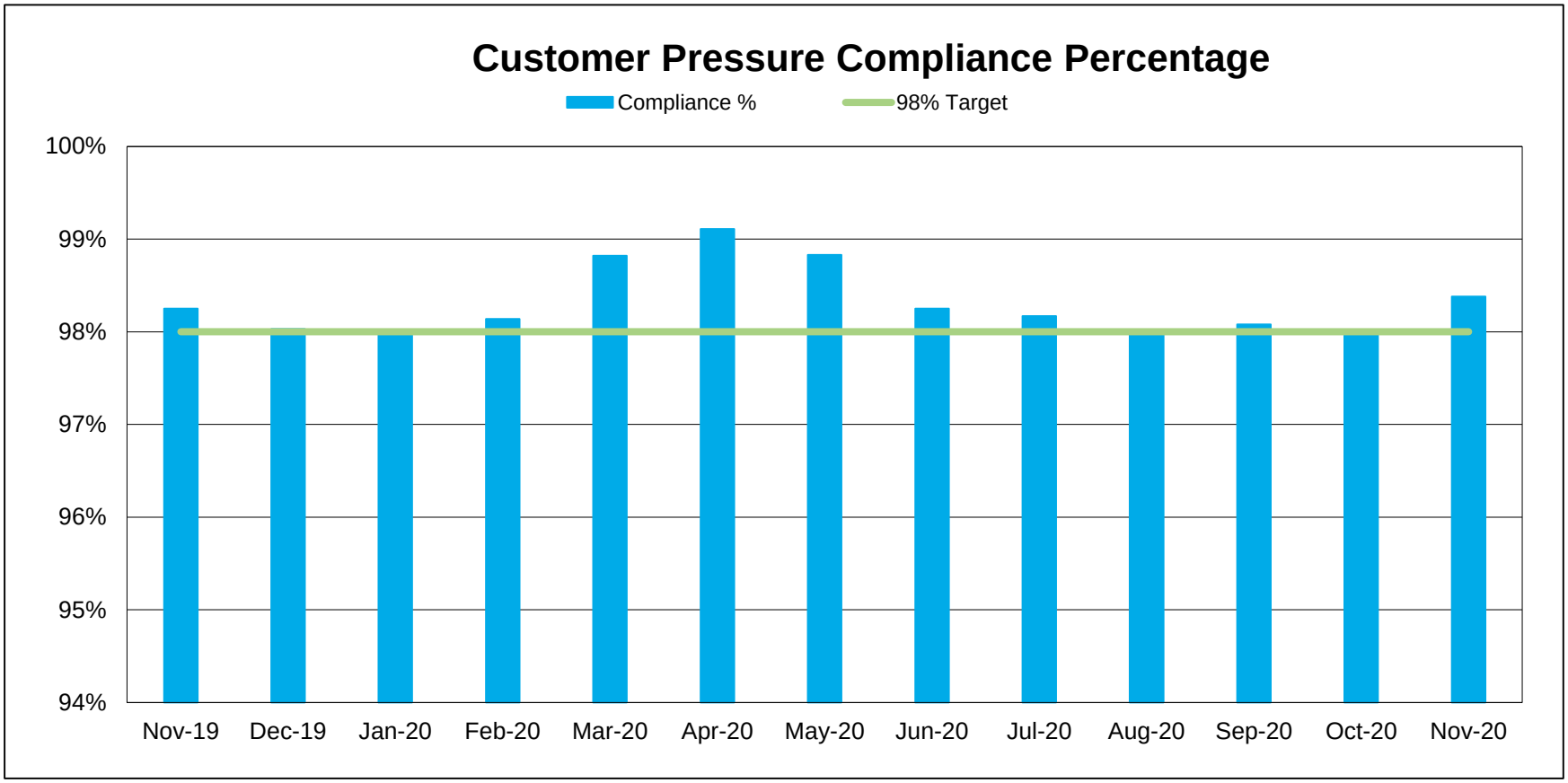
EUM Attribute:

Customer Satisfaction

Customer Satisfaction – Water & Field Services



Operational Resiliency: To exceed customer compliance by being greater than 98% of contractual pressures.

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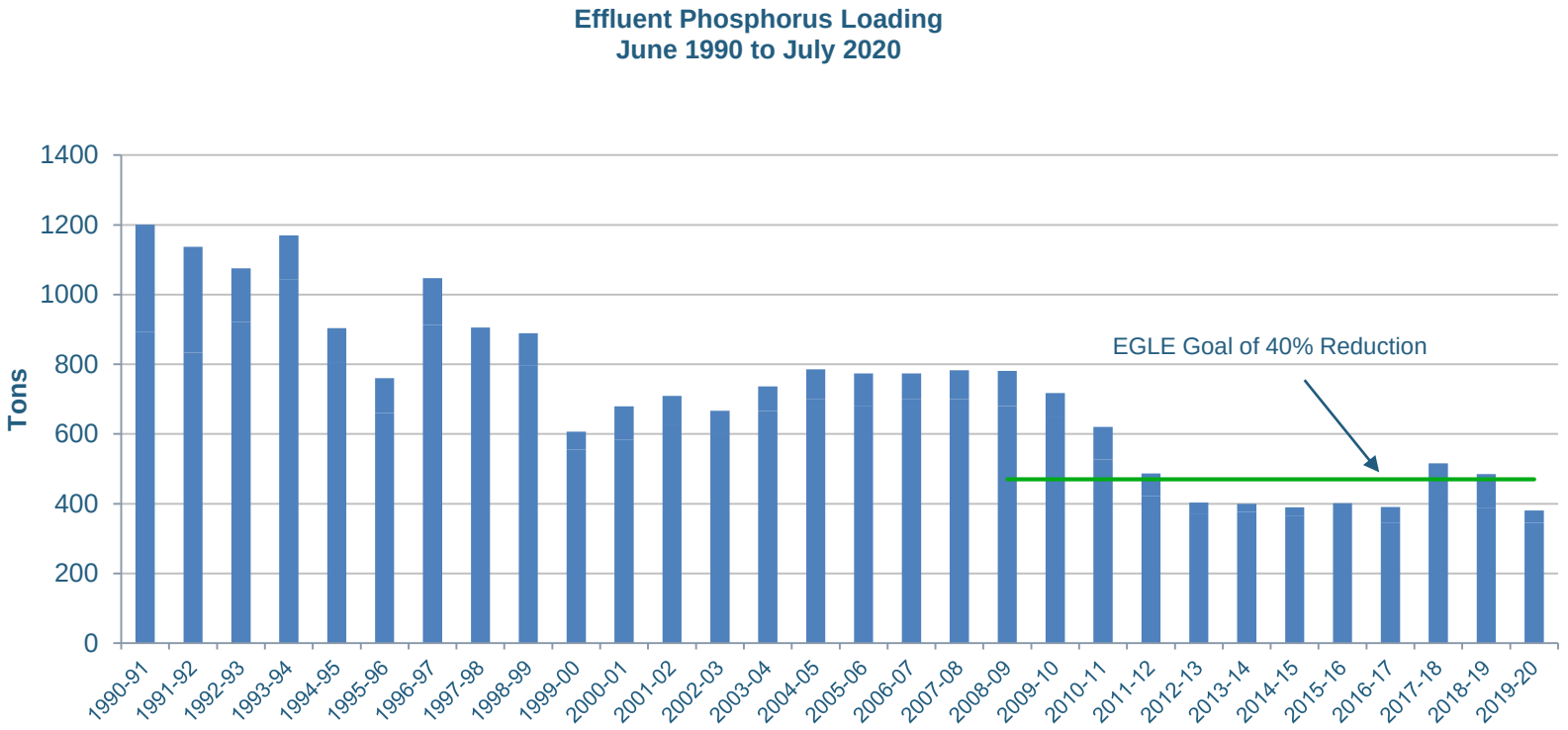
EUM Attribute:

Community Sustainability

Community Sustainability – Watershed Health

- State and Federal regulators have a goal of 40 percent reduction in phosphorus loading in the Western Lake Erie Basin.
- GLWA has surpassed the State and Federal goal.



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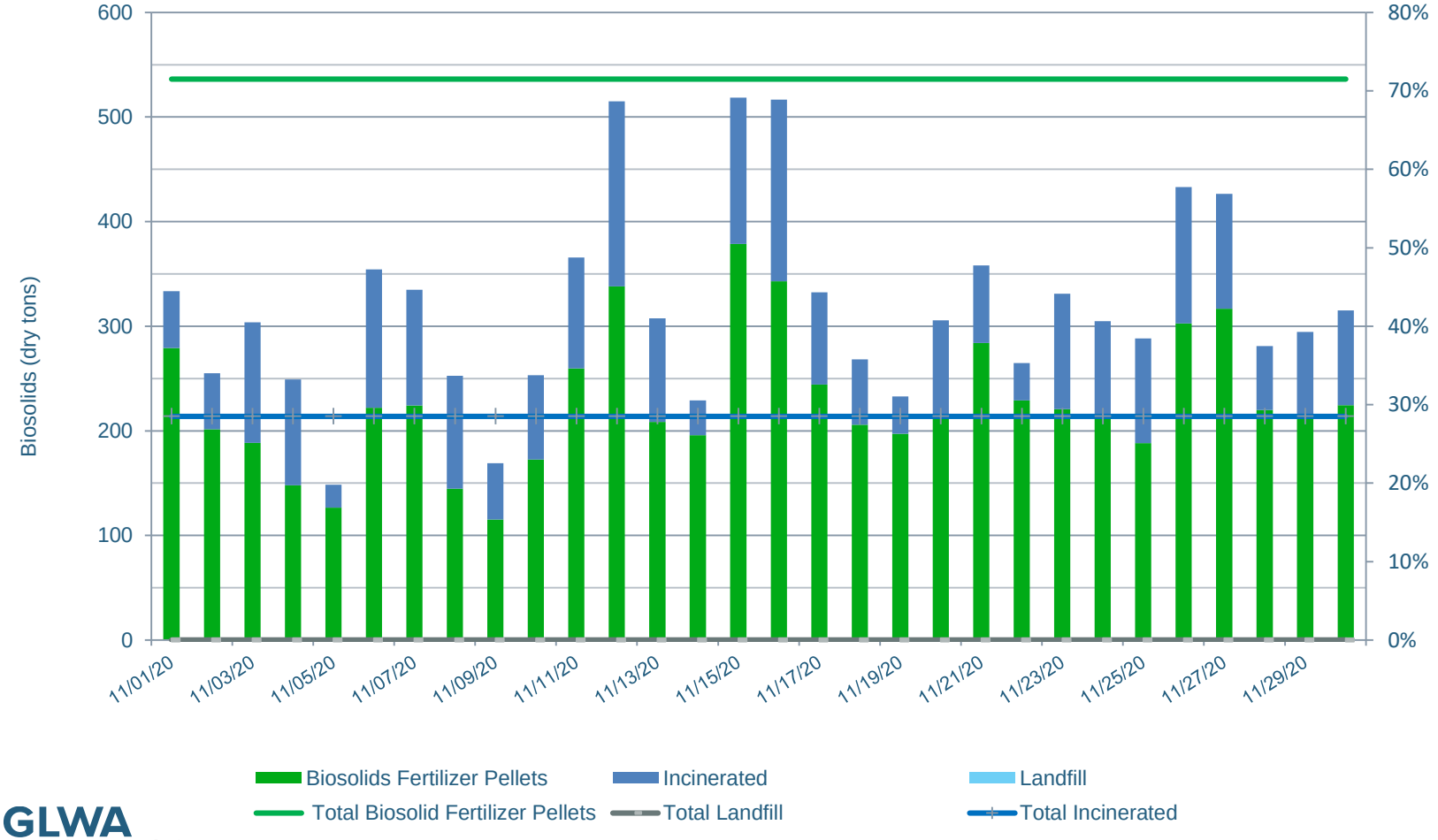
EUM Attribute:

Water Resource Sustainability

Water Resource Sustainability – Biosolids Handling by Method

- GLWA strives to increase nutrient recovery and beneficial reuse of biosolids.
- Use of the biosolids dryer facility for solids handling is preferred because it uses biosolids for the production of fertilizer pellets.



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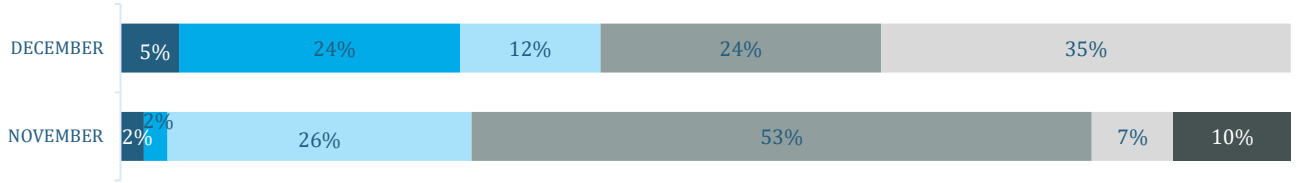
EUM Attribute:

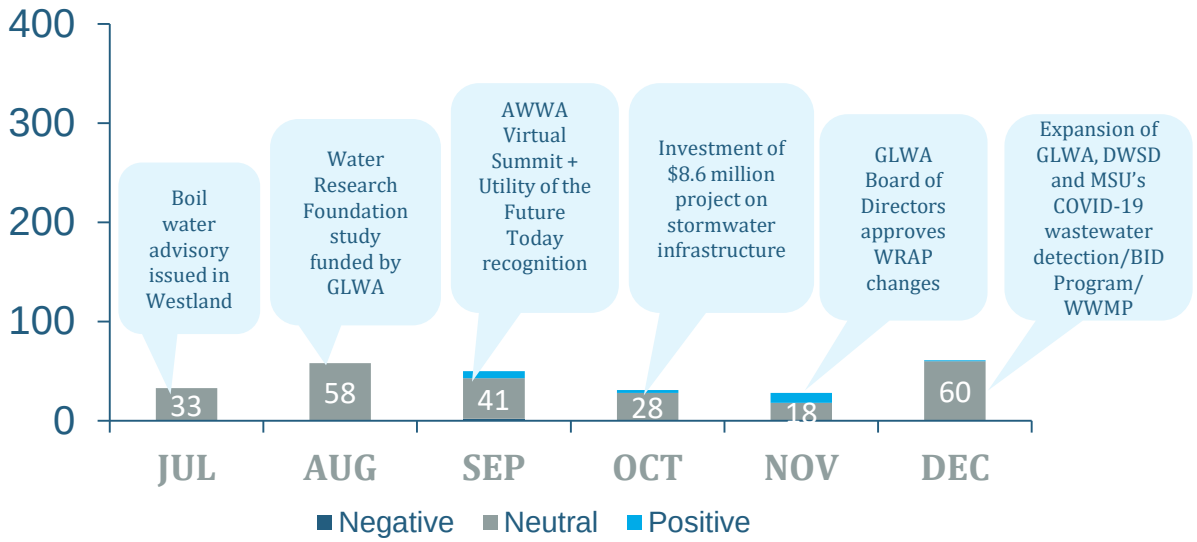
Stakeholder Understanding and Support

TRADITIONAL MEDIA SUMMARY

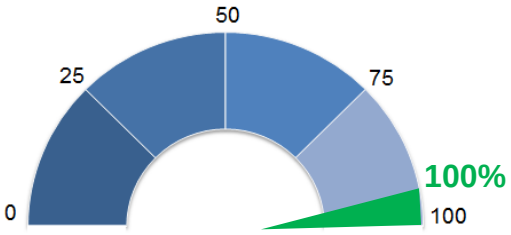
Media coverage volume in December was more than double November's. Coverage was largely neutral with two percent positive and no negative mentions. Positive coverage surrounded the Board of Directors' recent approval of changes to WRAP, as well as the proactive announcement of GLWA's Wastewater Master Plan and its Business Inclusion and Diversity (BID) Program, which resulted in podcast interviews and print media placements. Coverage included 54 percent with cursory mentions and 46 percent with non-cursory mentions. Of the stories with non-cursory mentions, 100 percent included a quote or a GLWA message, scoring well above the 75 percent message pull-through goal.

PERCENT COVERAGE BY MESSAGE PILLAR





MESSAGE PULL-THROUGH*



100% of non-cursory coverage included a GLWA message **(GOAL = 75%)**

MEDIA VOLUME: 61

CURSORY OR FLINT MENTIONS: 33

INCLUDED GLWA MESSAGE: 28

*Message pull-through includes quotes or comments from a GLWA spokesperson, a quote from a GLWA press release or underlying theme of GLWA providing safe and clean water.

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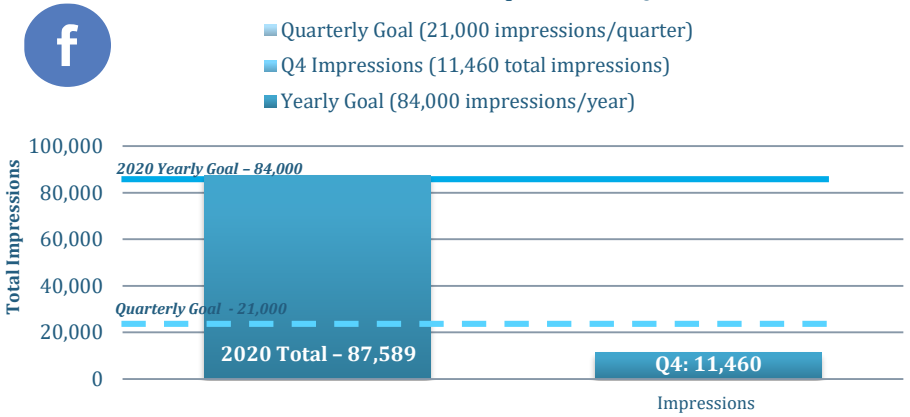
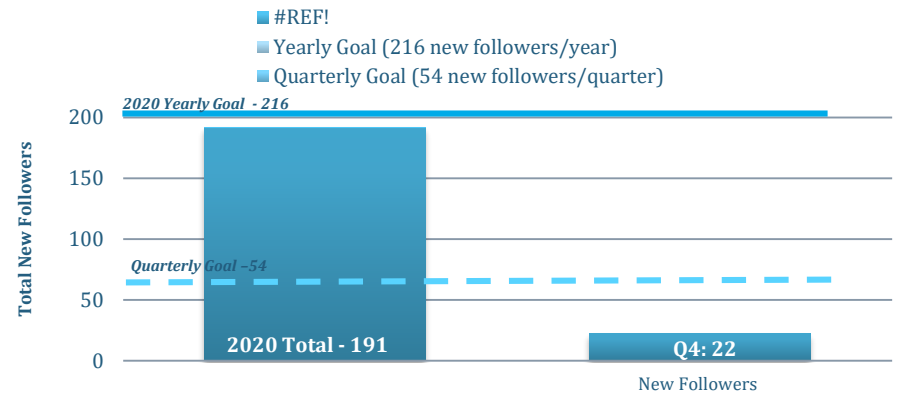
FACEBOOK & TWITTER QUARTERLY REVIEW

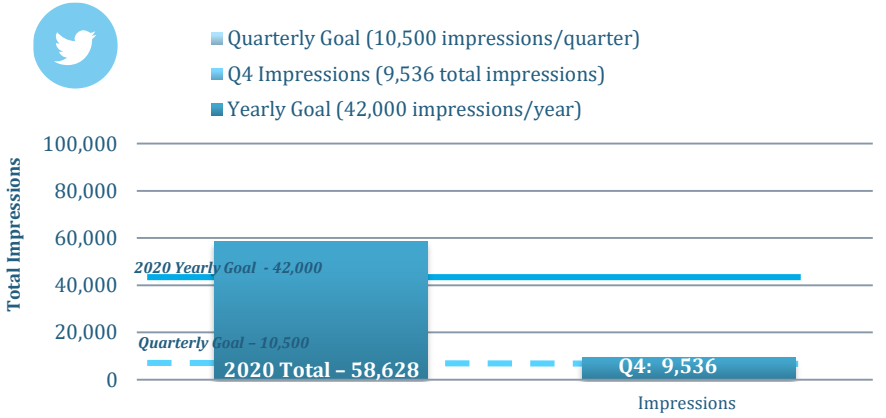
Facebook - Total Impressions **Q4 2020**



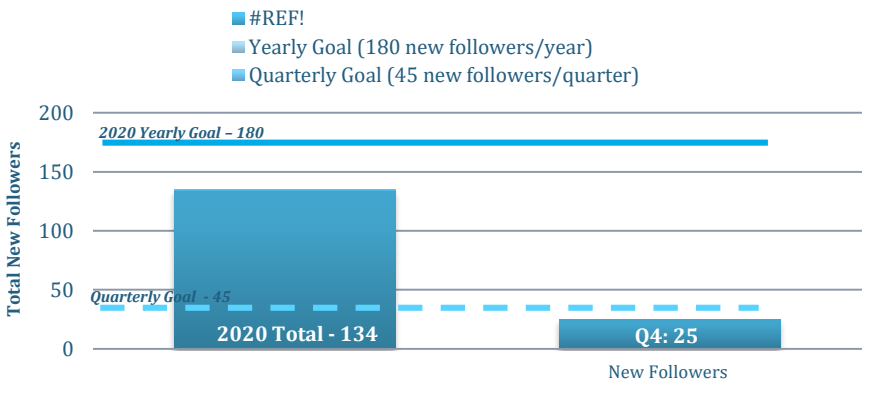
Facebook - Total New Followers **Q4 2020**



Twitter - Total Impressions **Q4 2020**



Twitter - Total New Followers **Q4 2020**



- *Q4: October – December 2020*
- *Impressions only include organic numbers*

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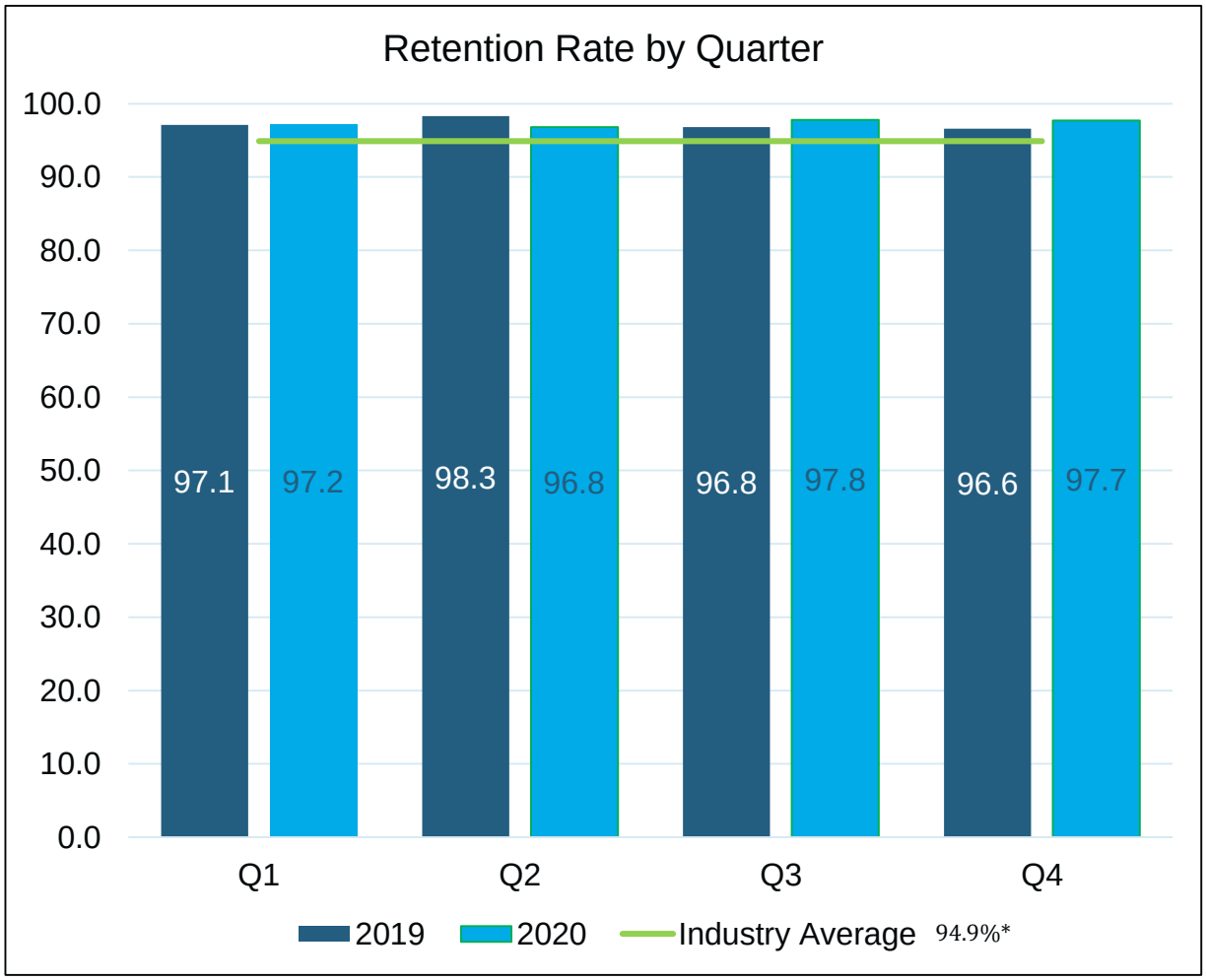
EUM Attribute:

Employee and Leadership Development

Organizational Development



Above retention rates are reflected in percentages

- Retention leads to decreased training costs, increased productivity, and cross training and development.

*From the U.S. Bureau of Labor Statistics 10-Oct-2016 report for the sector "State and Local Government, Excluding Education."

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Updated: 1/5/21

*This is a quarterly slide that will be updated in April's report.