Great Lakes Water Authority

UPDATE

of

Key Performance Indicators and

Effective Utility Management (EUM) Metrics

April 11, 2018

REVIEW

Why KPIs

1) WHAT ARE KPIs

A) KPIs are a tool of Measurement.

KPI' A set of quantifiable measures that a company or industry uses to gauge or compare performance in terms of meeting their strategic and operational goals. **KPIs** vary between companies and industries, depending on their priorities or performance criteria.
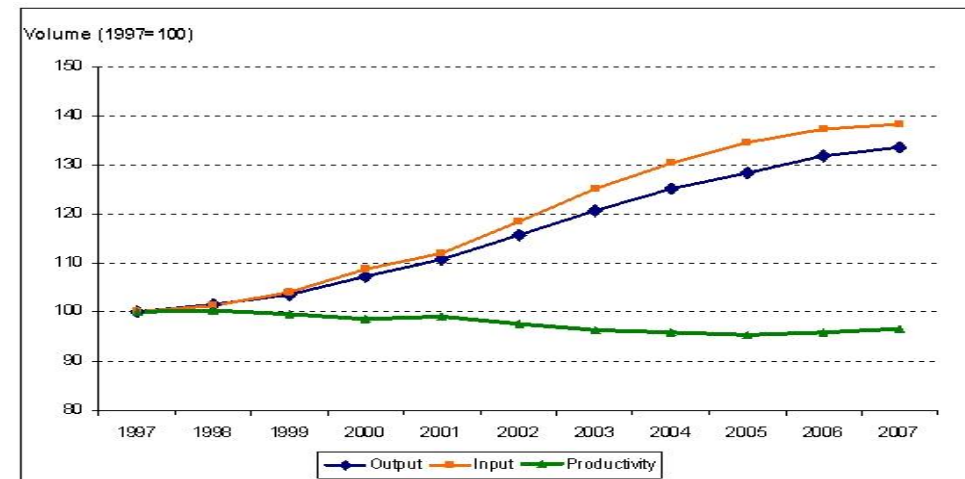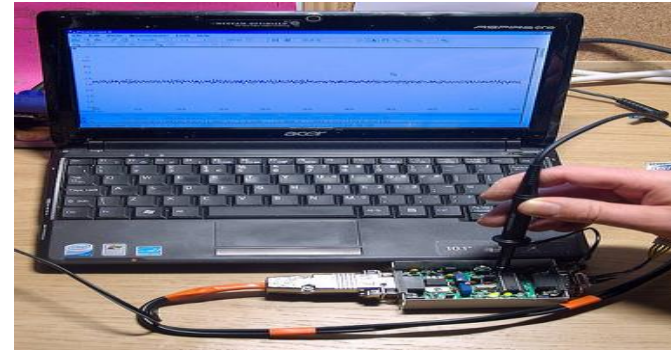
What is the Purpose of a KPI?

KPIs are a business metric **used** to evaluate factors that are crucial to the success of an organization.

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Types of KPI

1) Input

2) Output

3) Value

WHY ARE KPIs IMPORTANT

WHY ARE KPIs IMPORTANT

KPIs help us to define; what success looks like.

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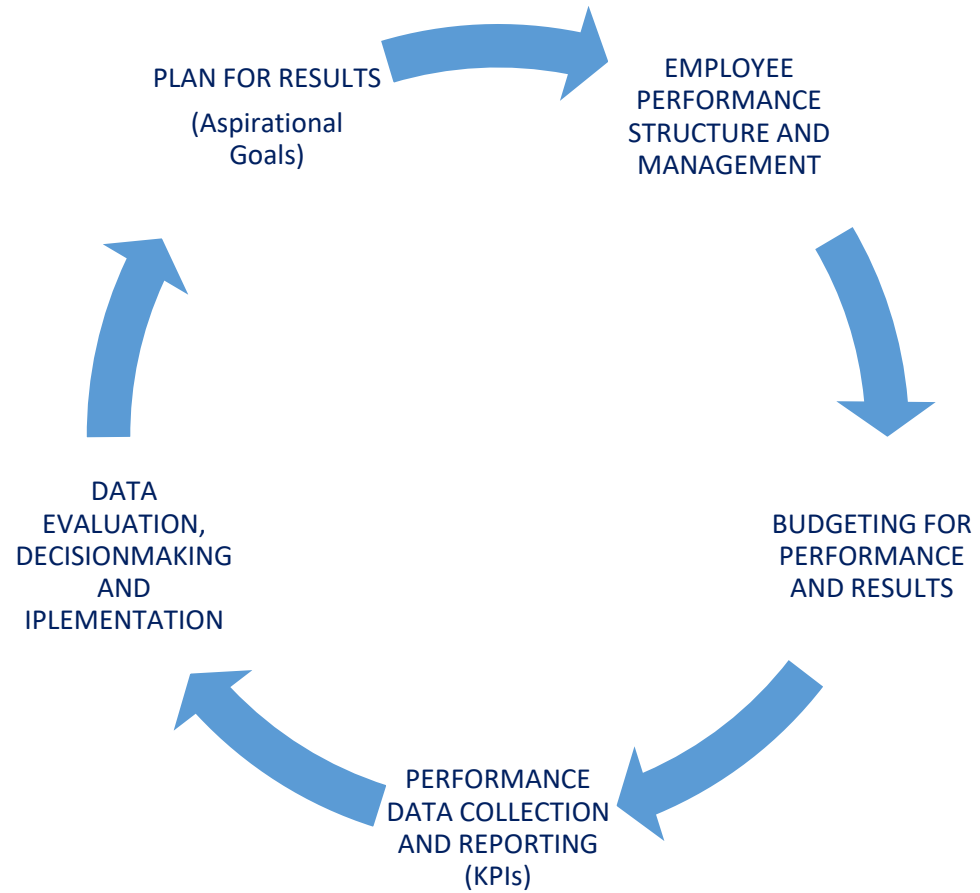
Different Types of KPI Measurements
Lead and Lag Measures

"Leading indicators are in our control and lead to our hoped-for success. Lagging indicators, our big goals, are affected by what we do to influence our leading indicators."

Why its Better to Lead than Lag: Leading and Lagging indicators for Education

A lag measure for a smaller goal may be a lead measure for a larger goal.

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ENTERPRISE PERFORMANCE AND CHANGE MANAGEMENT

PLAN FOR RESULTS
(Aspirational Goals)

EMPLOYEE PERFORMANCE STRUCTURE AND MANAGEMENT

BUDGETING FOR PERFORMANCE AND RESULTS

PERFORMANCE DATA COLLECTION AND REPORTING (KPIs)

DATA EVALUATION, DECISIONMAKING AND IPLEMENTATION

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REVIEW

Effective Utility Management

Ten Attributes of Effectively Managed Water Sector Utilities (EUM)
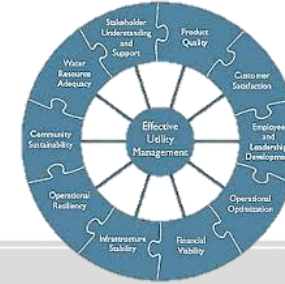
• **Employee and Leadership Development**	• **Product Quality**
• **Operational Optimization**	• **Customer Satisfaction**
• **Financial Viability**	• **Community Sustainability**
• **Infrastructure Strategy and Performance**	• **Water Resource Sustainability**
• **Enterprise Resiliency**	• **Stakeholder Understanding and Support**

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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.

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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, stormwater 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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GLWA's RECOGNITION FOR EFFECTIVE UTILITY MANAGEMENT

2017 – GLWA wins Association of Metropolitan Water Agencies' (AMWA)
Gold Award
For
Exceptionally Managed Utilities

Utilities are only eligible once to win Gold Award

2020 – GLWA will be eligible to compete for AMWA Platinum Award

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NEW THIS MONTH

Security & Integrity –   (New value measure) Measures the value of Patrols

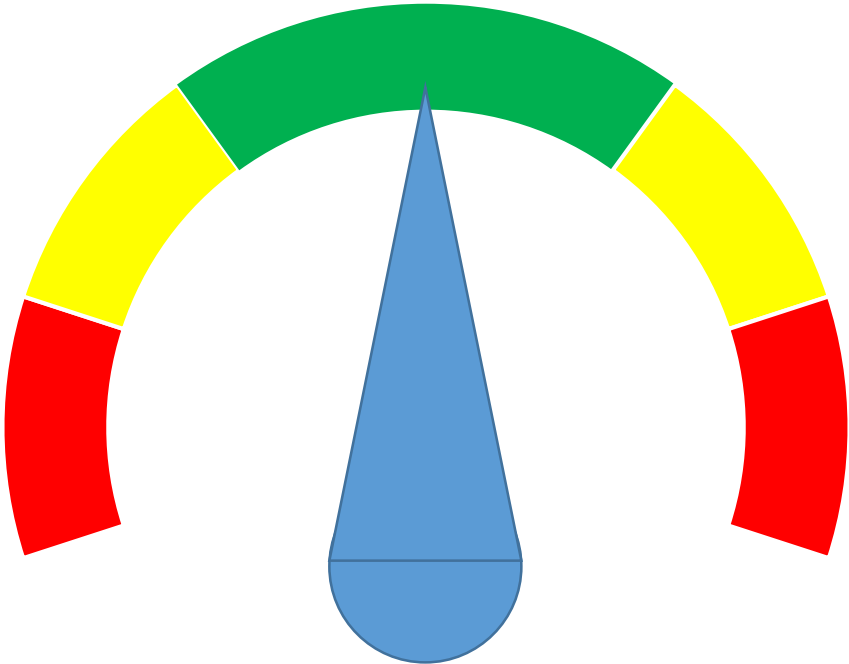Measurement: Number of Incident Reports per patrol/ total number of patrols

EUM Attribute: Enterprise Resiliency

Aspirational Goal: GLWA security patrols will produce an average of 2 Security Reports per Patrol
(Security Reports = Incident and Facility Reports)

Red, Yellow, Green: Green = 1.9 to 2.7 average of Security Reports per patrol; Yellow = average of 1.5 – <1.9 or
<2.7 to 2.9 Security Reports per patrol; and Red = average of < 1.5 or > 2.9 Security
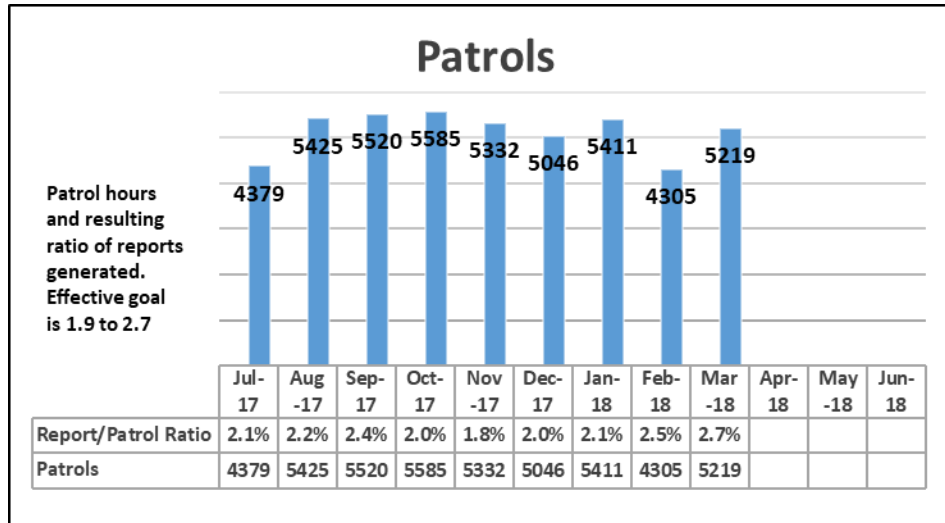Reports per patrol

Significance: Patrols serve a deterrence and risk management function. Too few or too many reports per
patrol may reflect a lack of effectiveness in managing and deterring risk   .

Patrol value

■ 1.9 -2.7 Patrols ■ 1.5<1.9 or <2.7 to 2.9 patrols ■ <1.5 or >2.9 Patrols

Security & Integrity

Patrols

	Jul-17	Aug-17	Sep-17	Oct-17	Nov-17	Dec-17	Jan-18	Feb-18	Mar-18	Apr-18	May-18	Jun-18
Report/Patrol Ratio	2.1%	2.2%	2.4%	2.0%	1.8%	2.0%	2.1%	2.5%	2.7%			
Patrols	4379	5425	5520	5585	5332	5046	5411	4305	5219			

Patrol hours and resulting ratio of reports generated. Effective goal is 1.9 to 2.7

- 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).

Security Reports

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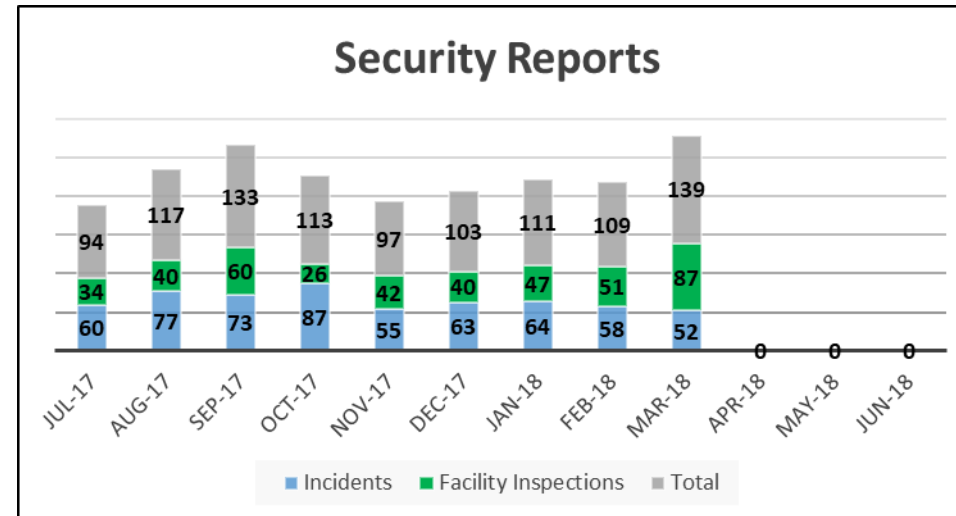
NEW THIS MONTH

Information Technology – (New value measure) First Try successful system data back-ups

Measurement: Number of first try successful system data back-ups per month/ Number of system data back-ups per month

EUM Attribute: Enterprise Resiliency

Aspirational Goal: At least 90% of GLWA system data back-ups will be successful on the first attempt.

Red, Yellow, Green: Green = 90 to 100% first attempt success; Yellow = <90 to <85% first attempt success; and Red = <85% first attempt success

Significance: Successfully performing regular system back-ups on the first attempt maximizes data availability, minimizes risk of data loss and reduces time demand on IT resources   .

Information Technology – (New value measure) Service Request Resolution

Measurement: Number of service requests resolved within 5 days of receipt / Number of service requests received

EUM Attribute: Enterprise Resiliency

Aspirational Goal: At least 68% of GLWA service requests will be resolved within 5 days of receipt

Red, Yellow, Green: Green = 68 to 100% resolution; Yellow = 55 to <68% resolution; and Red = <55% resolution rate

Significance: GLWA currently measures service desk response time. This new measure builds upon the current KPI by measuring the time between receipt and resolution. Like timely response, timely resolution of service requests supports GLWA team member productivity and job satisfaction

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Information Technology

Successful Backups (1st Try)
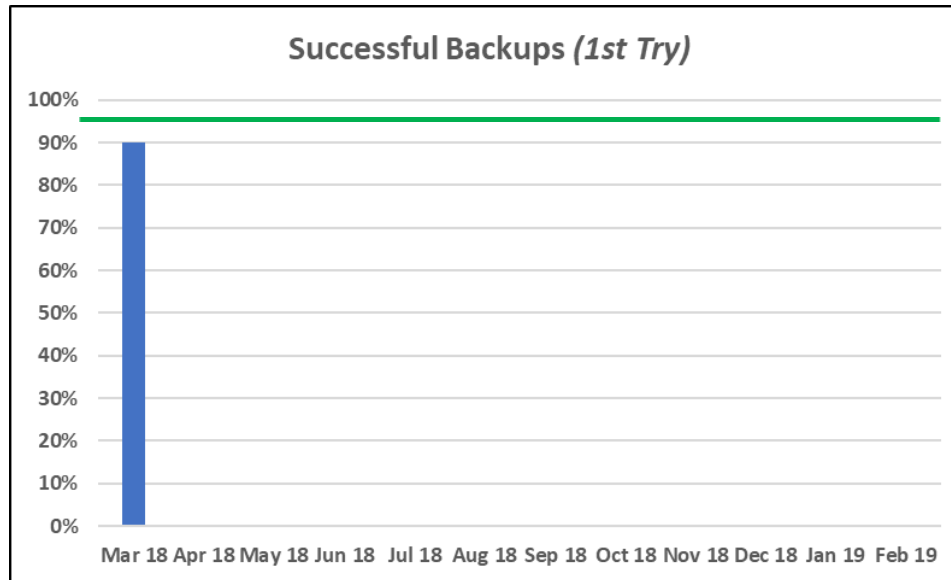
- Backups ensure that GLWA's information is safe in case of unexpected disruptions.

- 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.

Percent of Service Requests Closed Within 5 Days
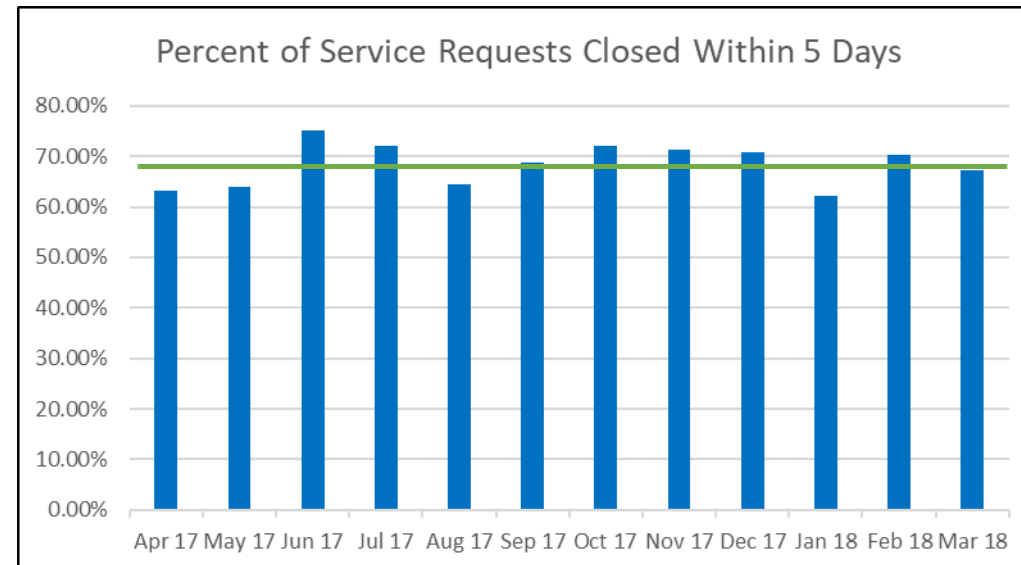
Information Technology – (New value measure) Cyber-security

Measurement: Number of GLWA Team Members completing most recent cyber-security training/ Number of GLWA team members assigned most recent cyber-security training.
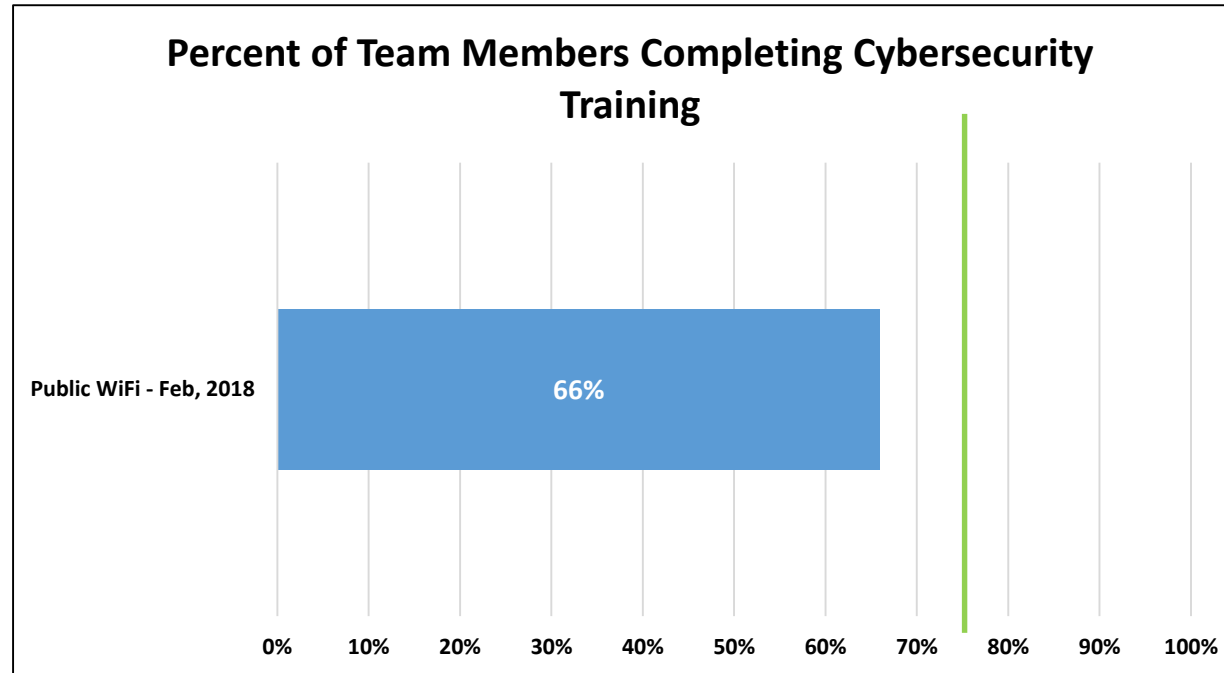
EUM Attribute: Enterprise Resiliency

Aspirational Goal: At least 75% of GLWA team members will complete the most recent monthly cyber security training within one month of issuance.

Red, Yellow, Green: Green = 75 to 100% of team members completing most recent training; Yellow = 60 to <75% of team members completing most recent training; and Red = <60% of team members completing most recent training within one month of issuance.

Significance: Approximately 80% of system cyber-security breaches are enabled by end users. Because GLWA regularly faces cyber-security threats, it has instituted a series of monthly cyber-safety training modules to minimize risk for the utility and its team members.

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Information Technology

Percent of Team Members Completing Cybersecurity Training

Public WiFi - Feb, 2018	66%

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

- End users are responsible for 80% of cybersecurity breaches.

- Well trained users are less likely to take action that could cause a breach

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General Counsel   (New output measure) Information Request Response

   Measurement: Number of information requests received by General Counsel
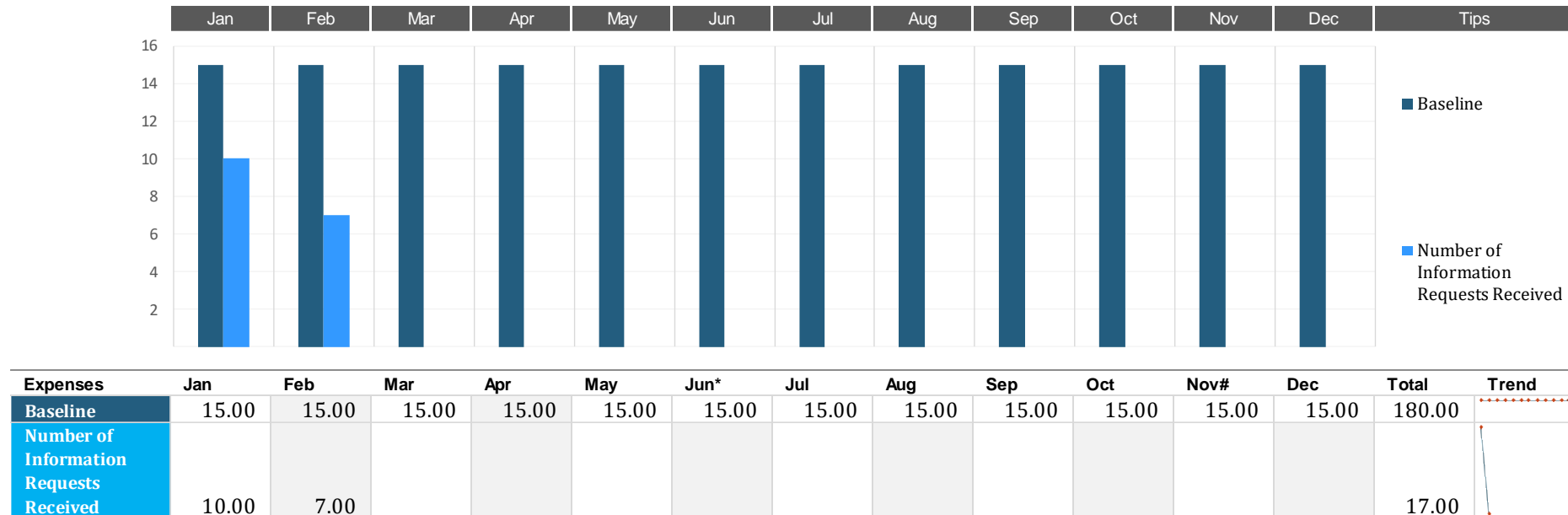
   EUM Attribute: Enterprise Resiliency

   Aspirational Goal: General Counsel will receive 15 or less information requests each month

   Red, Yellow, Green: Green = <13 requests; Yellow = 13 to 15 requests; and Red = <16 requests

   Significance: One of the measures of organizational transparency is access to information. GLWA
                      maintains many avenues of informal information access through its website, member-
                      partner outreach and communications team. Formal requests for information, including
                      requests received by GLWA under Michigan's Freedom of Information Act, are reviewed and
                      responded to by the Office of General Counsel. To the extent that information is readily
                      available, such formal requests should be limited allowing GLWA legal and operational
                      resources to be focused in other areas.

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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	10.00	7.00											17.00	

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.

Water Operations   (New and revised value measure) Preventative Maintenance Completion
Wastewater Operations

Measurement: Number of monthly Preventative Maintenance work orders (PMs)completed / Number of monthly PMs required
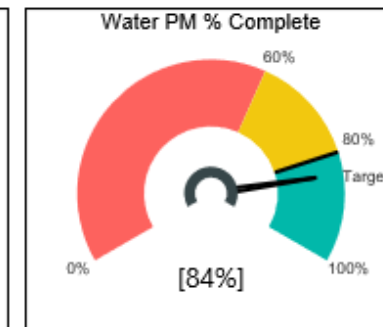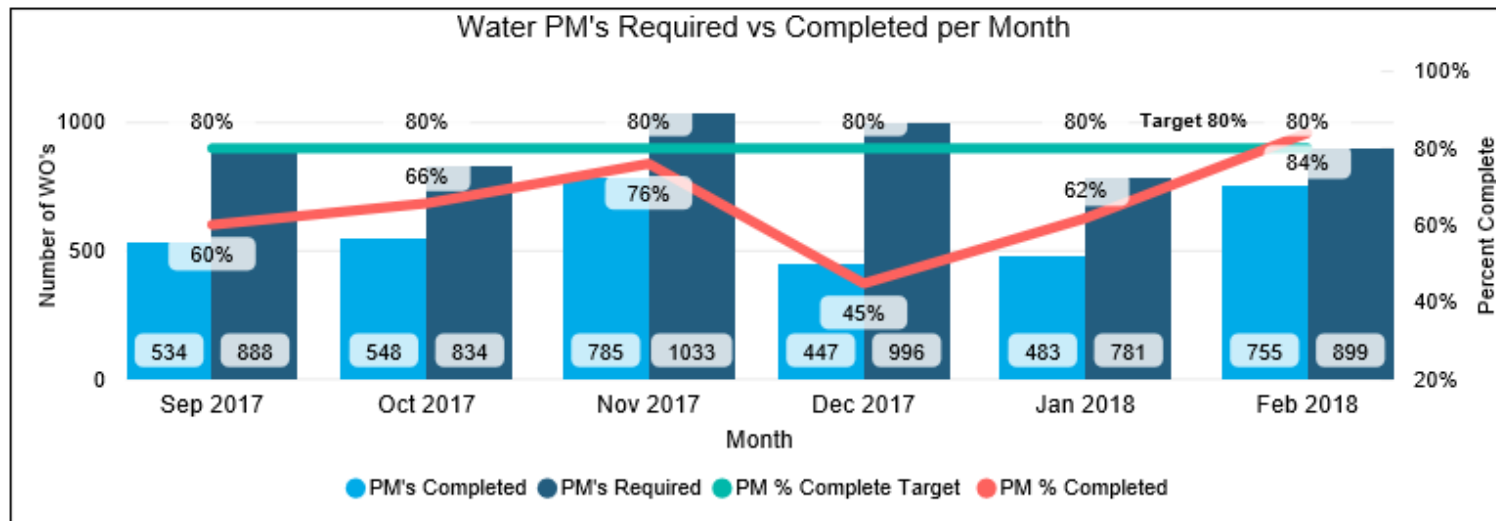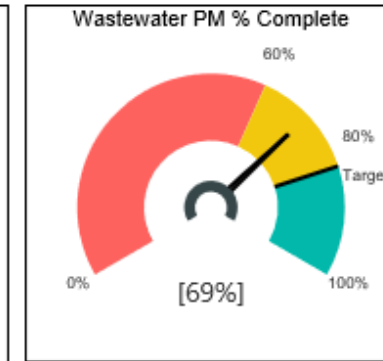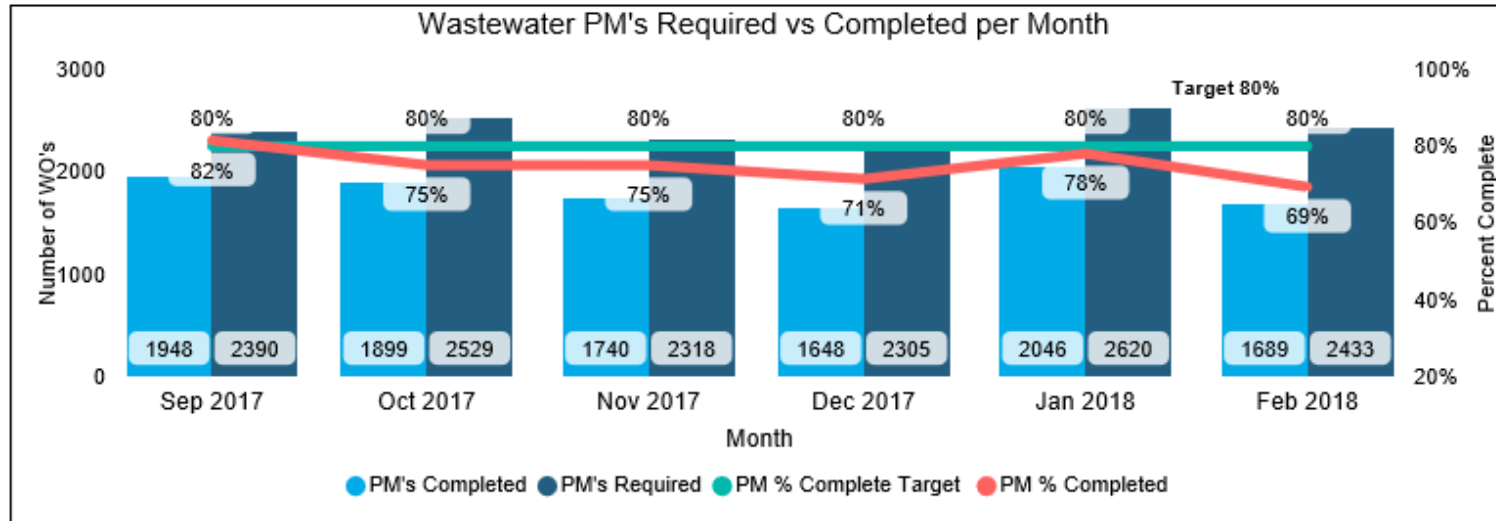
EUM Attribute: Infrastructure Strategy and Performance

Aspirational Goal: At least 80% of assigned monthly PMs will be completed as scheduled.

Red, Yellow, Green: Green = 80 to 100% completed; Yellow = >60 to <80% completed; and Red = <60% completed

Significance: This marks one of the first uses of GLWA's Business Intelligence (BI)capabilities to generate a KPI. (Note: included red, yellow, green.) This KPI has also been extended to include Water Operations and the performance standard increased from 75 to 80%. Timely completion of PMs is an important component of asset management as regular performance of PMs extends asset life, minimizes service disruption risk due to equipment failure, and provides asset condition information which often serves as a lead measure for potential equipment malfunction

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Infrastructure Strategy and Performance -
Wastewater and Water Preventative Maintenance (PM) Management
February 2018

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

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

Wastewater Operations   (New value measure) Maintenance Management

Measurement: Number of monthly Preventative Maintenance work orders (PMs)completed / Total Number of PMs and corrective maintenance orders (CMs) performed during that period

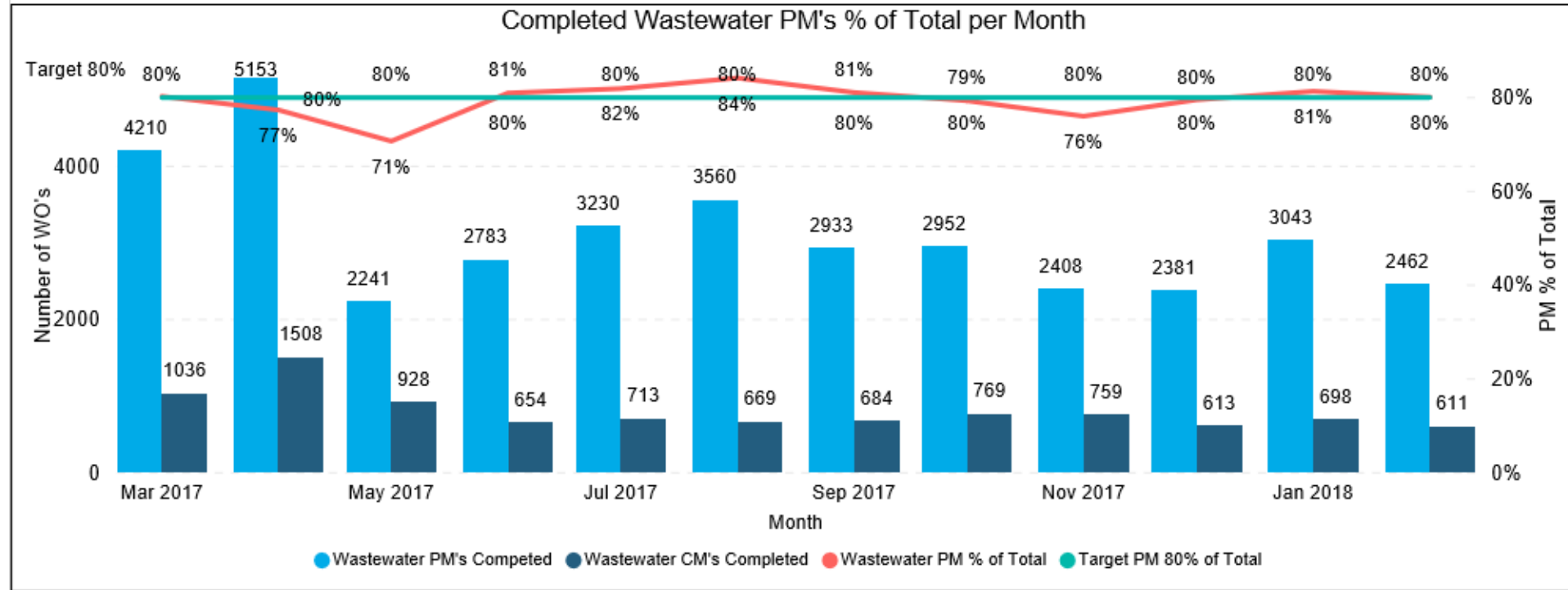EUM Attribute: Infrastructure Strategy and Performance

Aspirational Goal: GLWA will maintain a PM completion level of 80% of Total work orders (PMs and CMs)

Red, Yellow, Green: Green = 75% - 85%; Yellow = > 85%; and Red = <75%

Significance: 2017 American Water Works Association benchmarking data indicates appropriate levels of PMs within total work orders. GLWA's 80% completion goal puts it within the top quartile of benchmarked utilities. If the percentage is significantly lower (red) it is a lead measure warning of possible unplanned or emergency type work. If the percentage is significantly higher (yellow) it is a lead measure warning that PMs can be reduced and resources may be better directed to other system needs. (This is another example of BI and a similar measure for water operations is anticipated in the next 120 days.)

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Infrastructure Strategy and Performance -
Wastewater Preventative & Corrective Maintenance Management
February 2018

Completed Wastewater PM's % of Total per Month

Legend: Wastewater PM's Competed ● Wastewater CM's Completed ● Wastewater PM % of Total ● Target PM 80% of Total

*The target is derived from the 2017 American Water Works Association (AWWA) 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

Wastewater PM % of Total
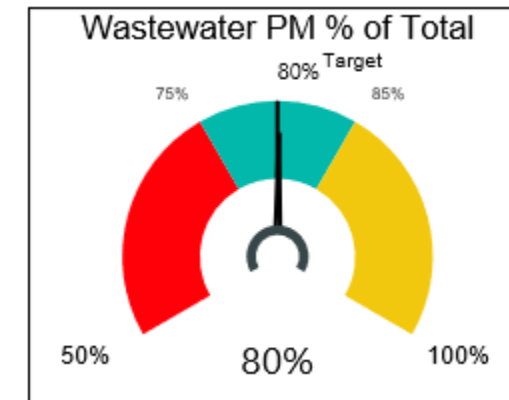
COMING SOON

Water Operations:

Measurement: Maintenance Management (PMs as a percentage of Total Work Orders)
EUM Attribute: Infrastructure Strategy and Performance
Estimated Inclusion Date: 90 - 120 Days

Measurement: Maintenance Backlog Management (Backlogged work orders measured by type and duration)
EUM Attribute: Infrastructure Strategy and Performance / Operational Optimization
Estimated Inclusion Date: 130 – 160 Days

Measurement: Valve Exercising and rehabilitation Pilot (percentage of operational assigned valves)
EUM Attribute: Infrastructure Strategy and Performance
Estimated Inclusion Date: >120 Days

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Wastewater Operations:

Measurement: Maintenance Backlog Management (Backlogged work orders measured by type and duration)

EUM Attribute: Infrastructure Strategy and Performance / Operational Optimization

Estimated Inclusion Date: 130 -160 Days

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UNDER DEVELOPMENT

Financial Services:

Updated Financial Services metrics are under development. Inclusion of revised metrics for this Area has been postponed to allow the team to focus on MOU, budget, charges, and audit matters, and to allow for implementation of Bonfire contract management software system. The new Financial Services Metrics will be included in FY 19 reports.

Systems Planning:

Metric(s) related to performance of funded projects within GLWA's Capital Improvement Plan are under development to be included in FY 19

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REVIEW

Why KPIs

BIG FIVE KPIs

1) GLWA will maintain 100% compliance with permitted water quality requirements (no violations of Safe Drinking Water Act and no unpermitted discharges of wastewater)
2) GLWA will be at least an A rated utility
3) 90% of member-partners surveyed will express satisfaction with GLWA management's performance.
4) GLWA will meet or exceed service sector employee retention rates.
5) GLWA will limit annual increases in revenue requirement to 4% or less

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QUESTIONS