Great Lakes Water Authority

Key Performance Indicators and
Effective Utility Management (EUM) Metrics
August 8, 2018

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)
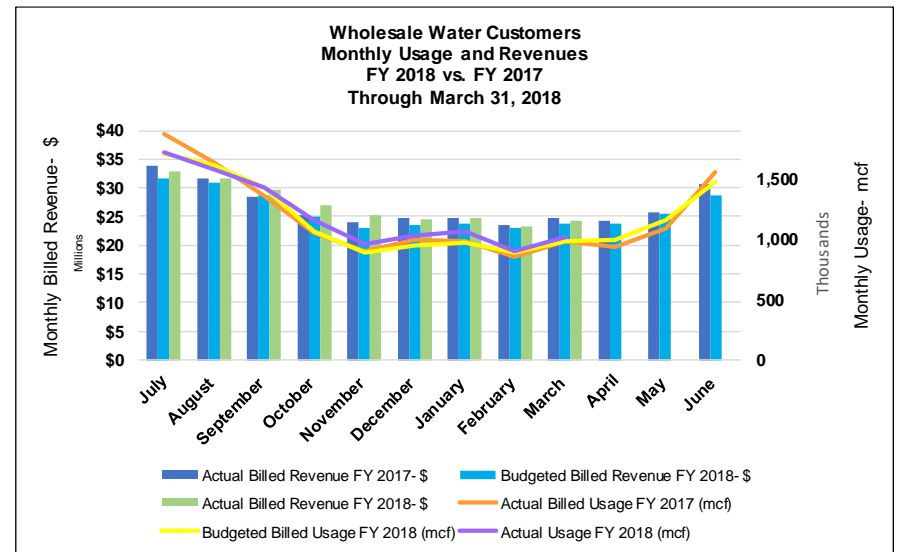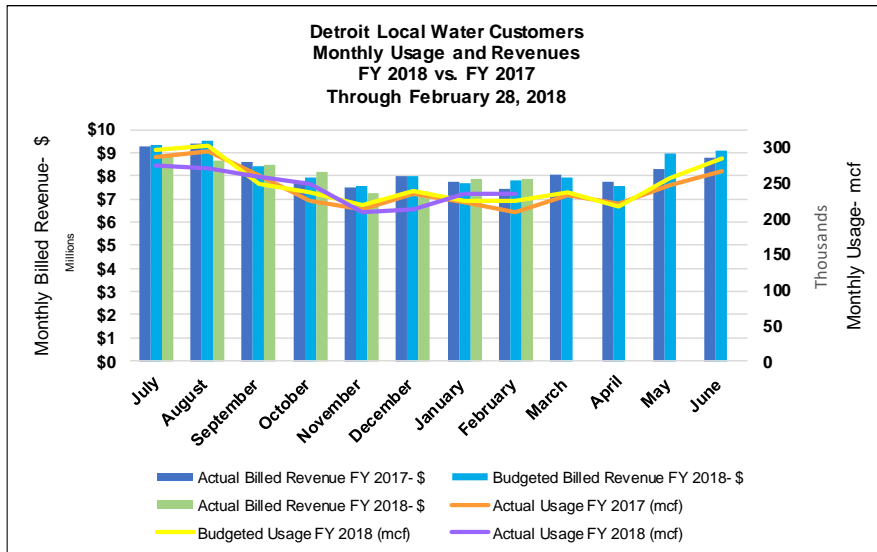

Attribute	Attribute Components
Product Quality	Produces "fit for purpose" water that meets or exceeds full compliance with regulatory and reliability requirements and consistent with customer, public health, ecological, and economic needs. Products include treated drinking water, treated wastewater effluent, 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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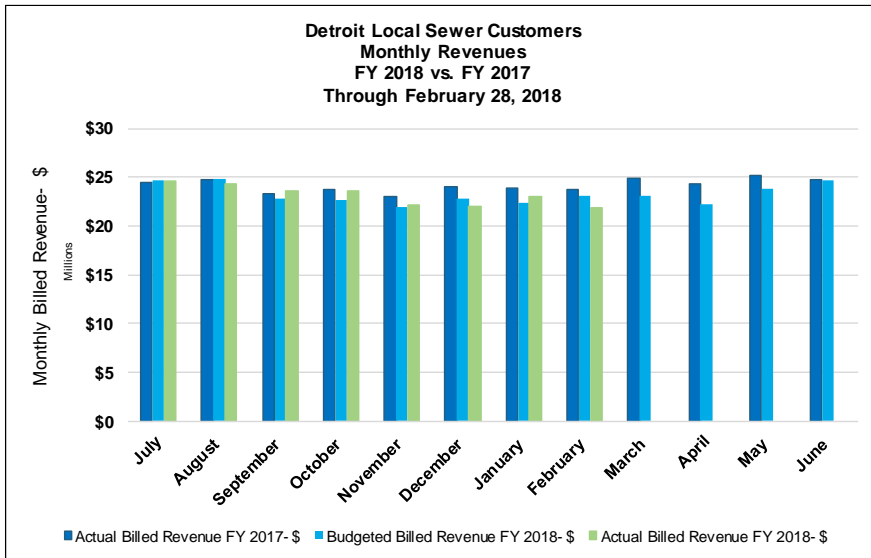
EUM Attribute:

Financial Viability

Financial Viability –
Reliability of Water System Revenue Projections

Detroit Local Water Customers
Monthly Usage and Revenues
FY 2018 vs. FY 2017
Through February 28, 2018

Wholesale Water Customers
Monthly Usage and Revenues
FY 2018 vs. FY 2017
Through March 31, 2018

<u>Detroit Local Water System</u> billed revenues for FY 2018 are stable with actual billings at 97.3% of budget and actual usage at 97.7% of budget through February 2018. Billed revenue for FY 2018 was 2.0% lower compared to the same period in FY 2017.

<u>Wholesale Water System</u> billed revenues for FY 2018 are stable with actual billings at 104.2% of budget and actual usage at 103.2% of budget through March 2018. Billed revenue for FY 2018 was 1.0% higher compared to the same period in FY 2017.

Financial Viability –
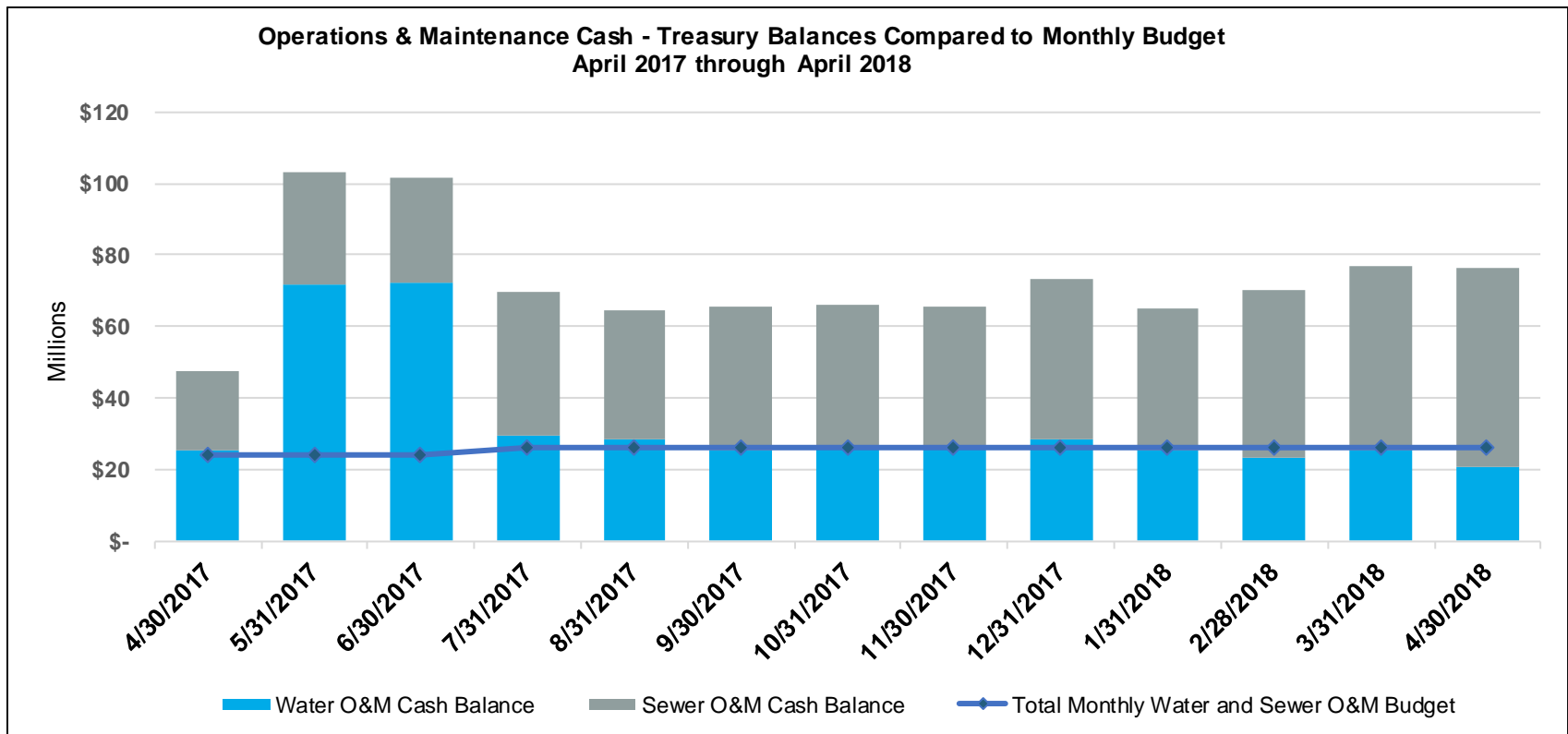# Reliability of Sewer System Revenue Projections

Detroit Local Sewer Customers
Monthly Revenues
FY 2018 vs. FY 2017
Through February 28, 2018

■ Actual Billed Revenue FY 2017- $ ■ Budgeted Billed Revenue FY 2018- $ ■ Actual Billed Revenue FY 2018- $

Wholesale Sewer Customers
Monthly Revenues
FY 2018 vs. FY 2017
Through March 31, 2018

■ Actual Billed Revenue FY 2017- $ ■ Budgeted Billed Revenue FY 2018- $ ■ Actual Billed Revenue FY 2018- $

Detroit Local Sewer System billed revenues for FY 2018 are stable with actual billings at 100.0% of budget and actual usage at 99.2% of budget through February 2018. Billed revenue for FY 2018 was 3.0% lower compared to the same period in FY 2017.
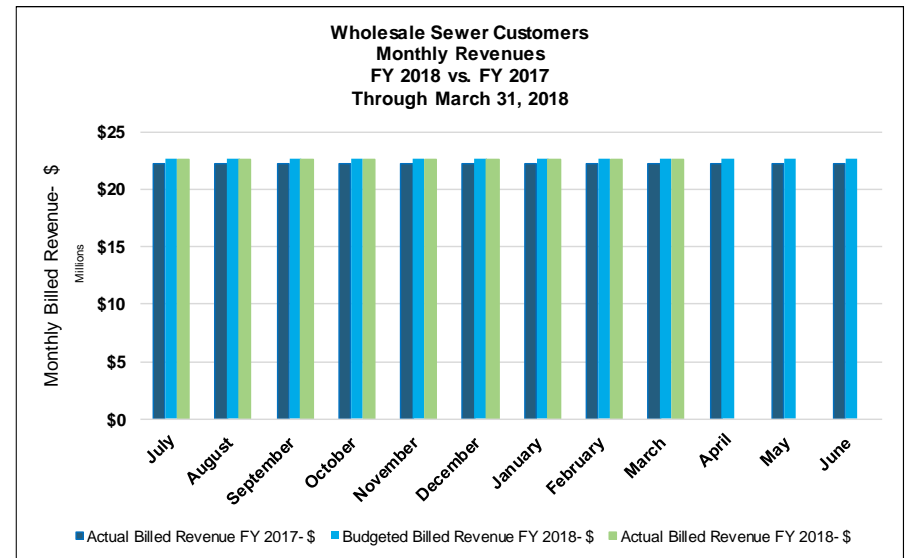
Wholesale Sewer System billed revenues for FY 2018 are stable with actual billings at 100% of budget (based on the full fixed monthly charge) through March 2018. Billed revenue for FY 2018 was 1.9% higher compared to the same period in FY 2017.

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Financial Viability – Revenue Stability and Appropriate O&M Cash Reserves

Operations & Maintenance Cash - Treasury Balances Compared to Monthly Budget
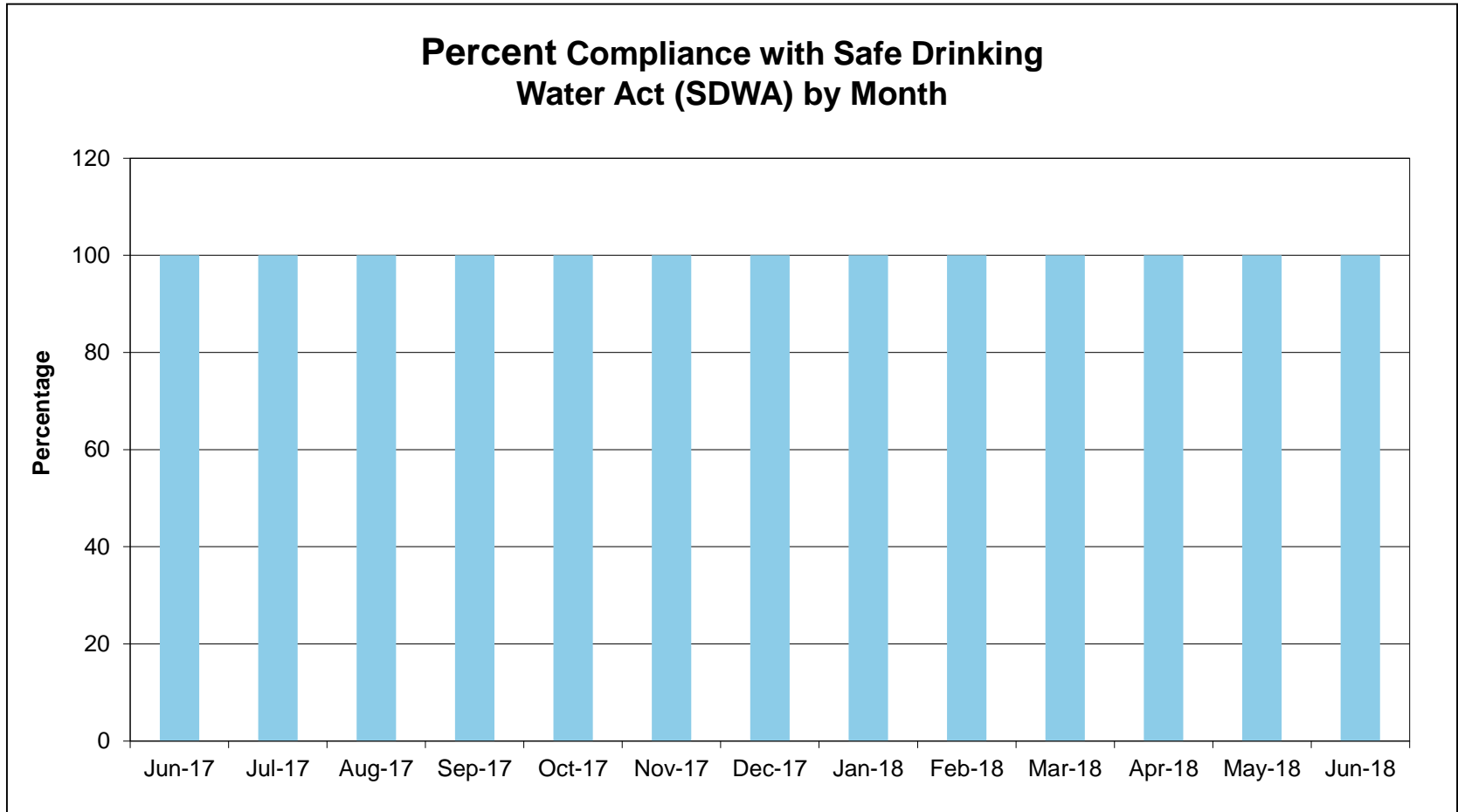**April 2017 through April 2018**

- Cash balances are appropriate to fund monthly budgeted Operations & Maintenance (O&M) with an average ratio of O&M cash to budget of 3.36x for water and 2.54x for sewer.
- Variability in cash balances for May and June 2017 is due to the settlement timing of interfund receivables/payables through December 2015 and continued refinement of cash management practices.

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EUM Attribute:

Product Quality

Product Quality – SDWA Compliance

Percent Compliance with Safe Drinking Water Act (SDWA) by Month

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

Product Quality
Regulatory Compliance – Effluent Phosphorous Concentration

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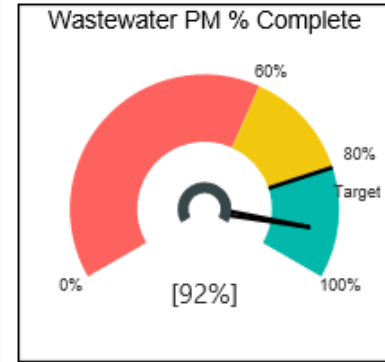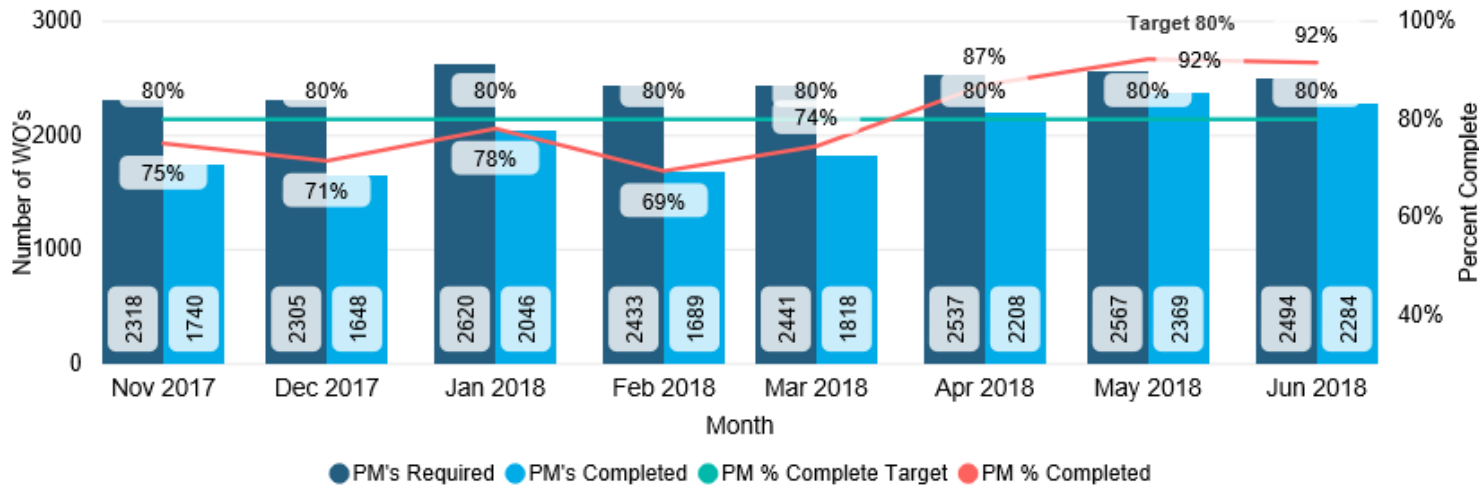- GLWA strives to surpass Federal and State requirements.

Effluent Phosphorus Concentration
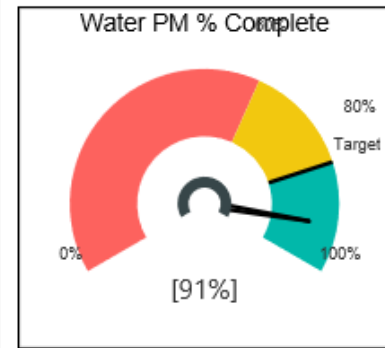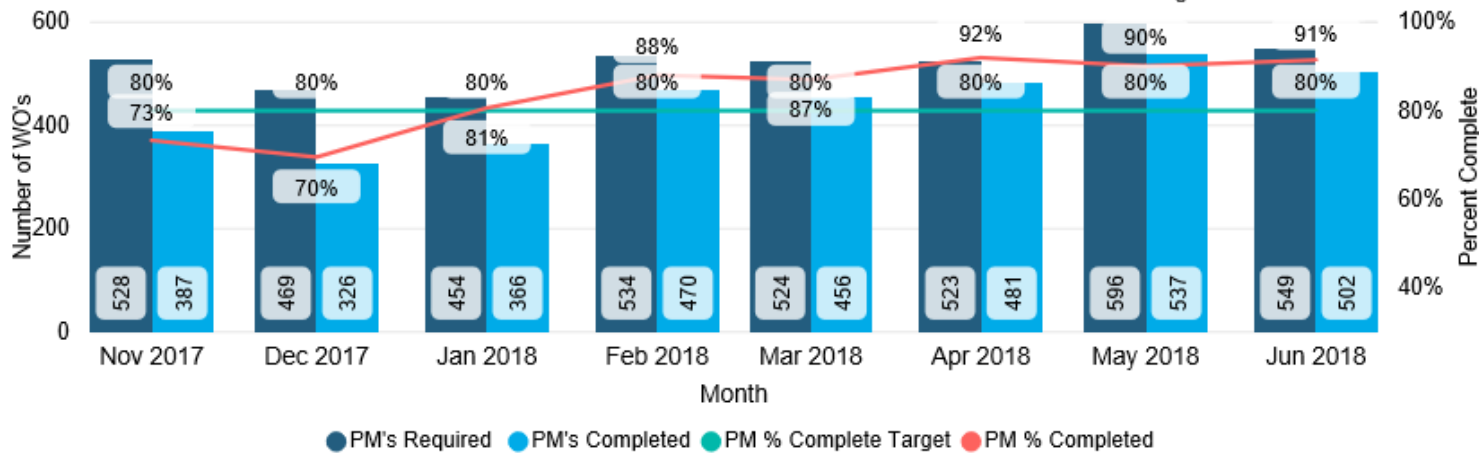**1996 to 2018**
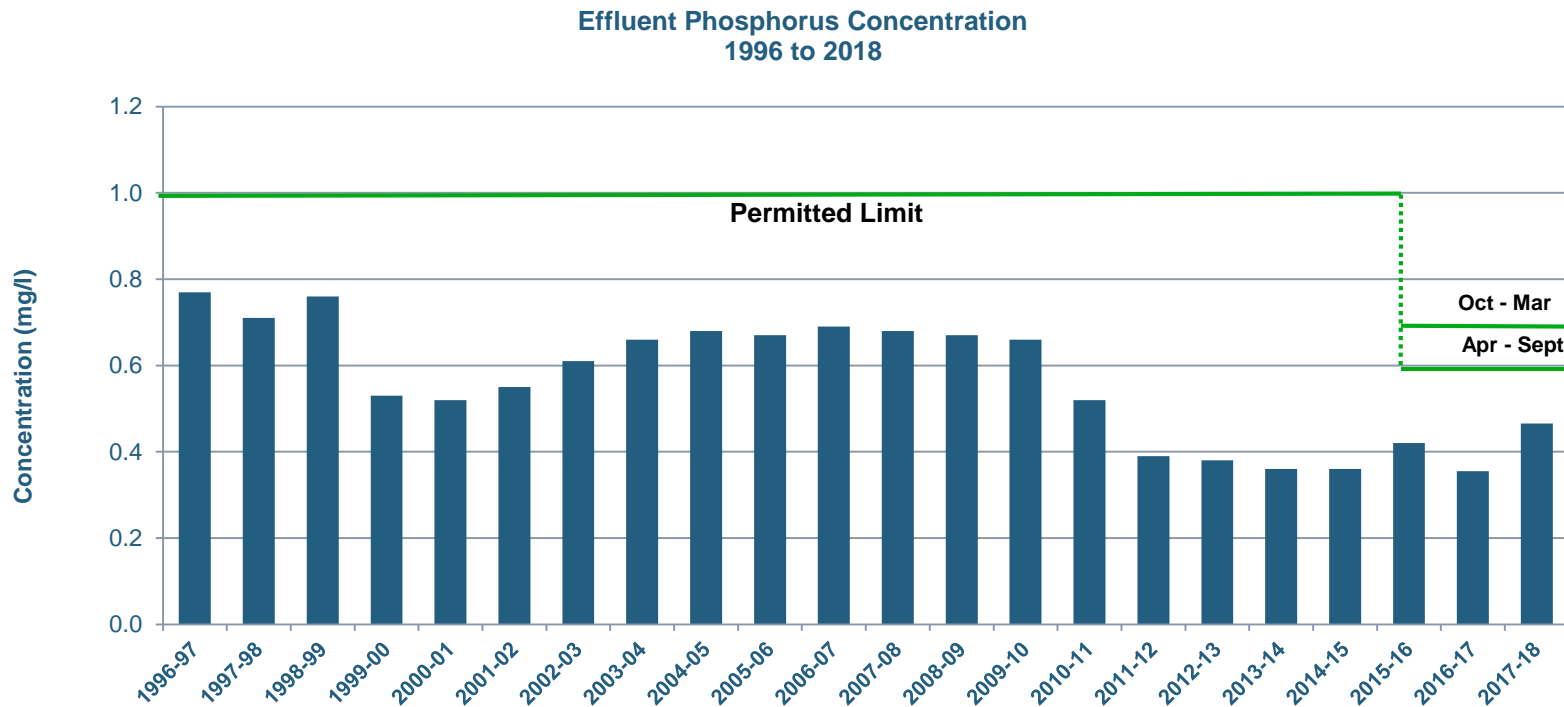
EUM Attribute:

Infrastructure Strategy and Performance

Infrastructure Strategy and Performance –
Wastewater and Water Preventative Maintenance (PM) Management
## June 2018

*Wastewater PM's Required vs Completed per Month*

Wastewater PM % Complete [92%]

Water PM's Required vs Completed per Month

Water PM % Complete [91%]

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

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

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Infrastructure Strategy and Performance –
Wastewater Preventative & Corrective Maintenance Management
June 2018

Completed Wastewater PM's % of Total per Month
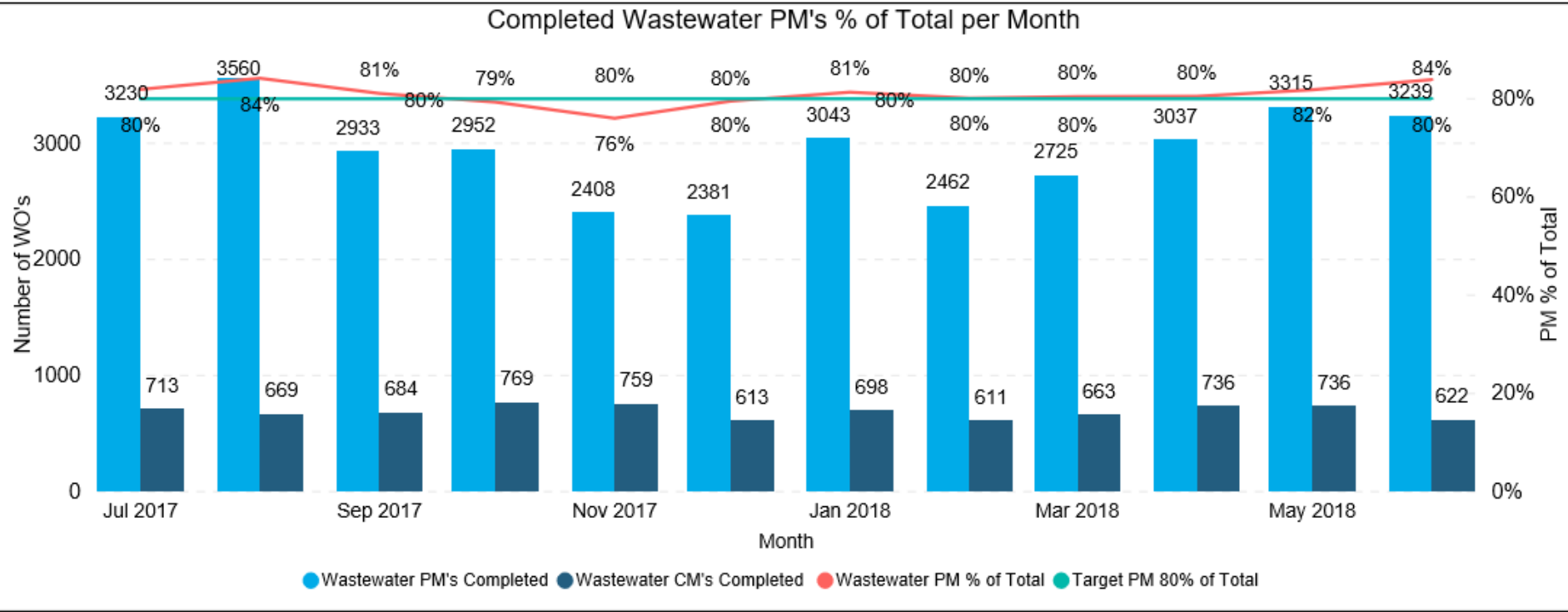
*The Target is derived from the 2017 American Water Works Association Utility Benchmarking program that indicates that an appropriate level of PM activities can be identified by the PM percentage of total maintenance work performed. If the percentage is significantly lower than the target (red) it is 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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Wastewater PM % of Total

84%
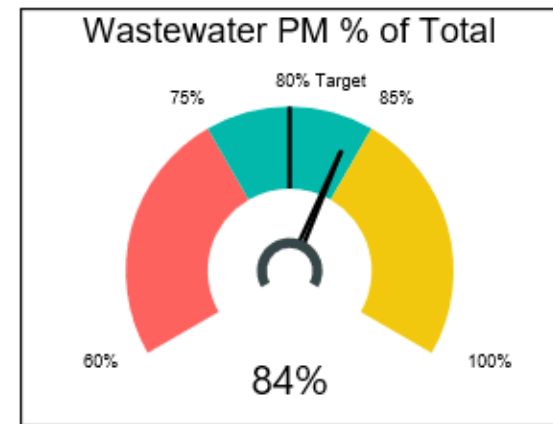
EUM Attribute:
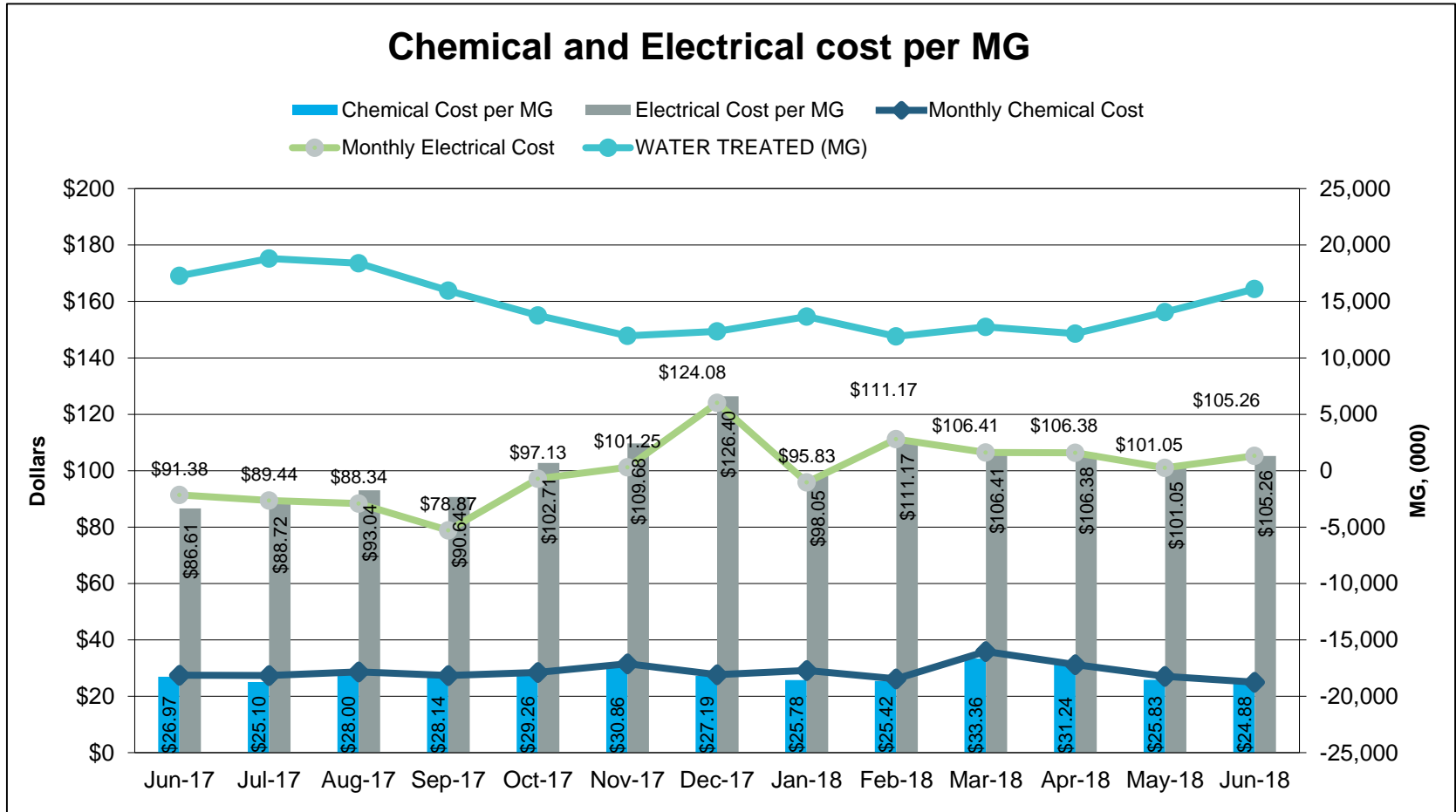
**Operational
Optimization**

Operational Optimization
Regulatory Compliance – Monthly Solids Inventory

- Solids inventory is a measure of process performance and is regulated by the State.
- Having consistently tracked below 750 dry tons since Oct. 2014 is noteworthy.

Monthly Solids Inventory July 2014 to June 2018

Legend: — Monthly Average Solids Inventory — 750 Dry Tons (Regulatory Limit)
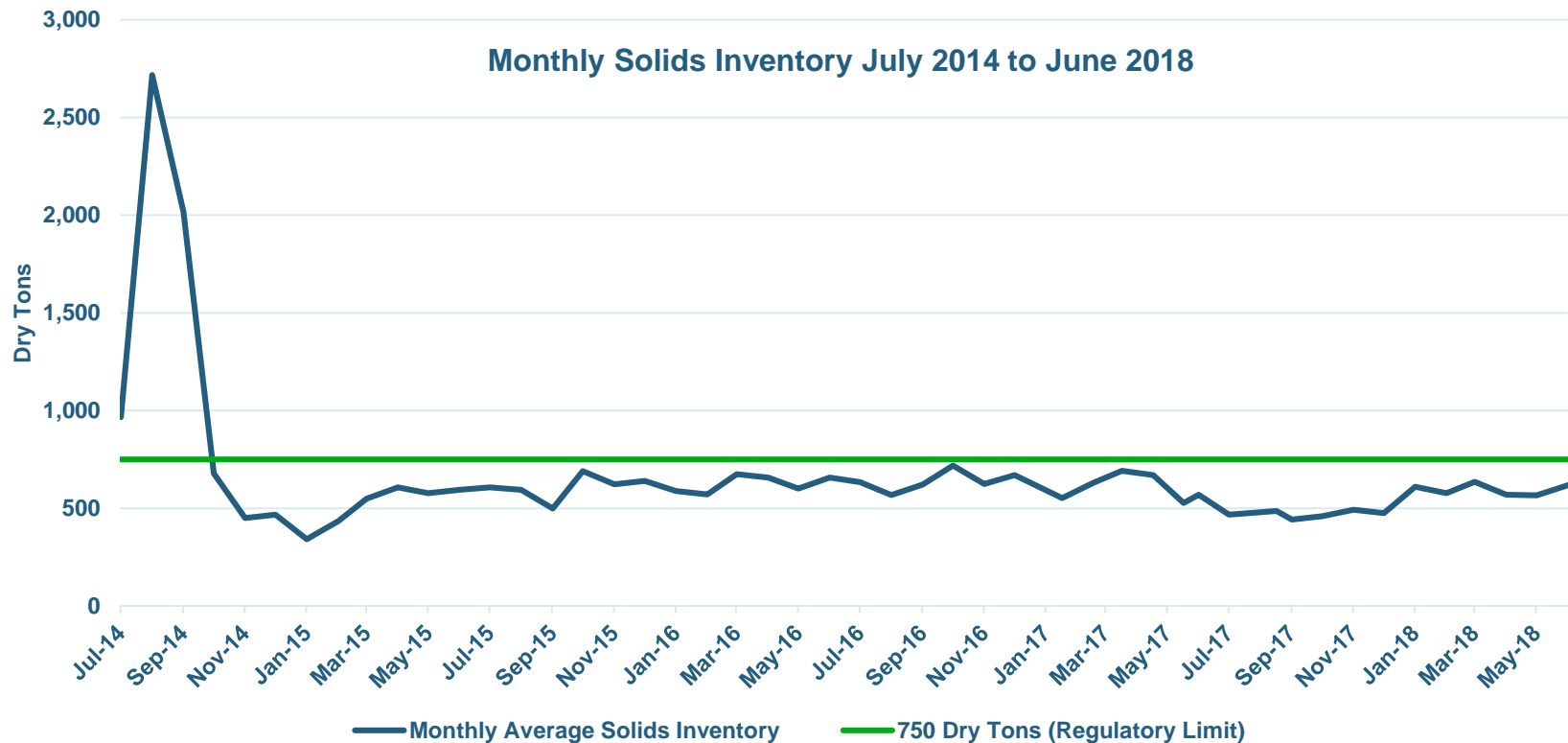
Operational Optimization
Chemical & Electrical Cost

Chemical and Electrical cost per MG

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.

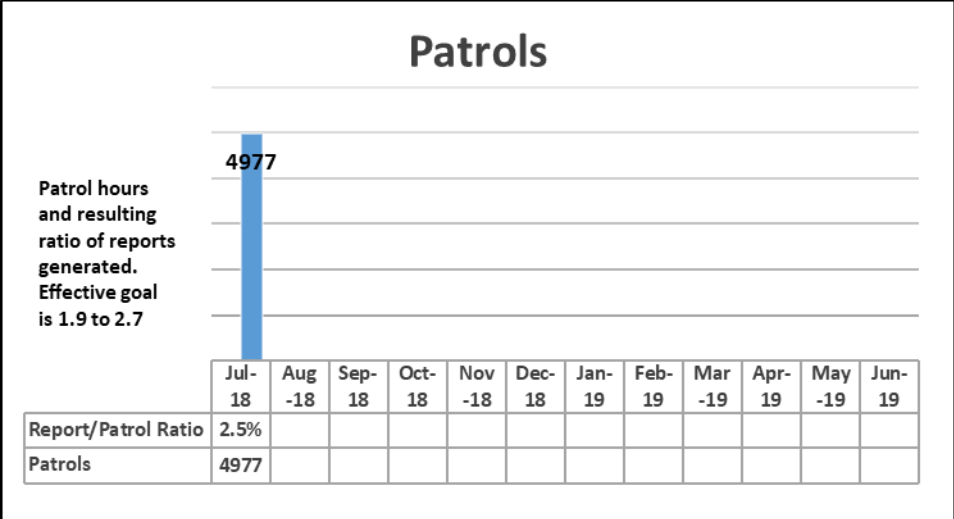# EUM Attribute:

Enterprise Resiliency

Enterprise Resiliency –
General Counsel Information Requests Received

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Tips

Legend: ■ Baseline   ■ Number of Information Requests Received
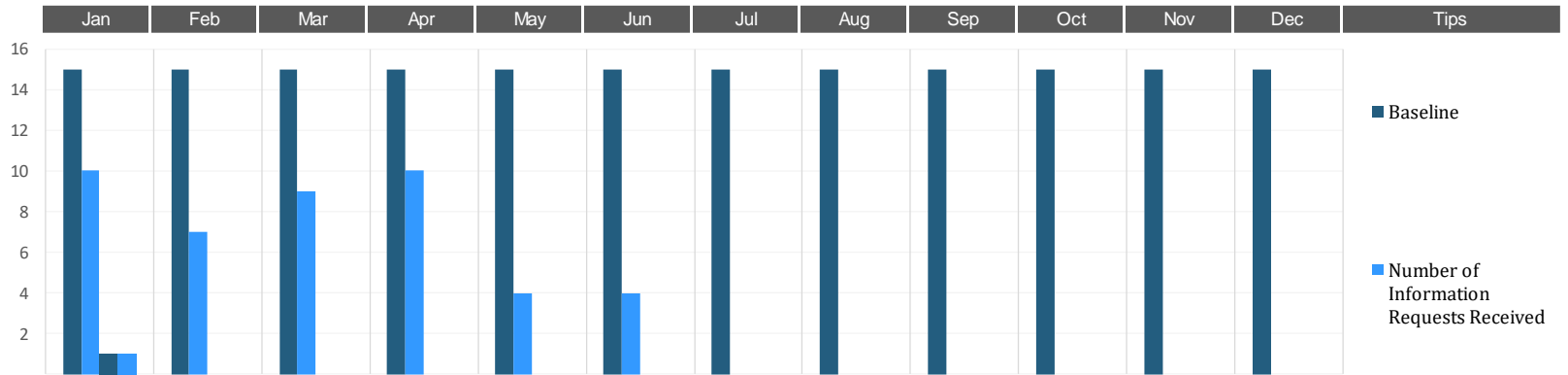
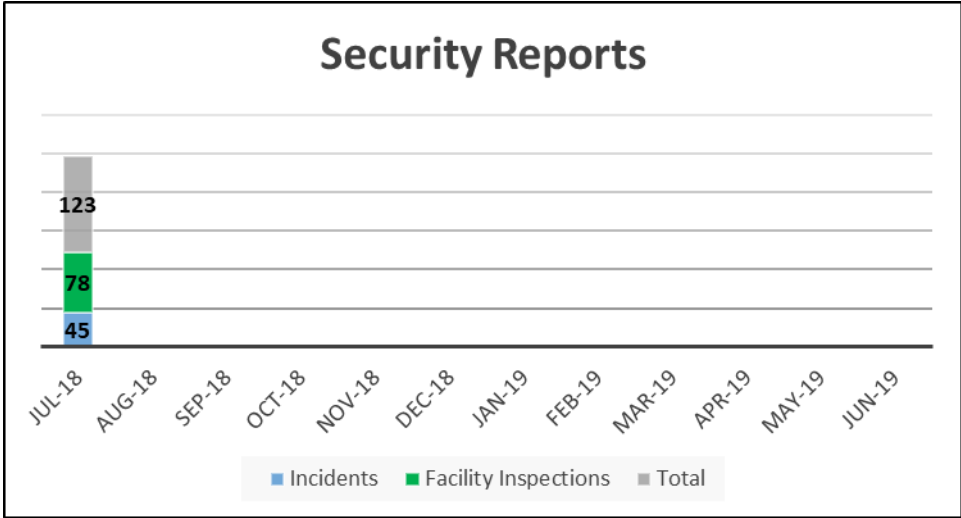| Expenses	Jan	Feb	Mar	Apr	May	Jun*	Jul	Aug	Sep	Oct	Nov#	Dec	Total	Trend
Baseline	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	15.00	180.00	
Number of Information Requests Received	10.00	7.00	9.00	10.00	4.00	4.00							44.00	

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

Patrols

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

4977

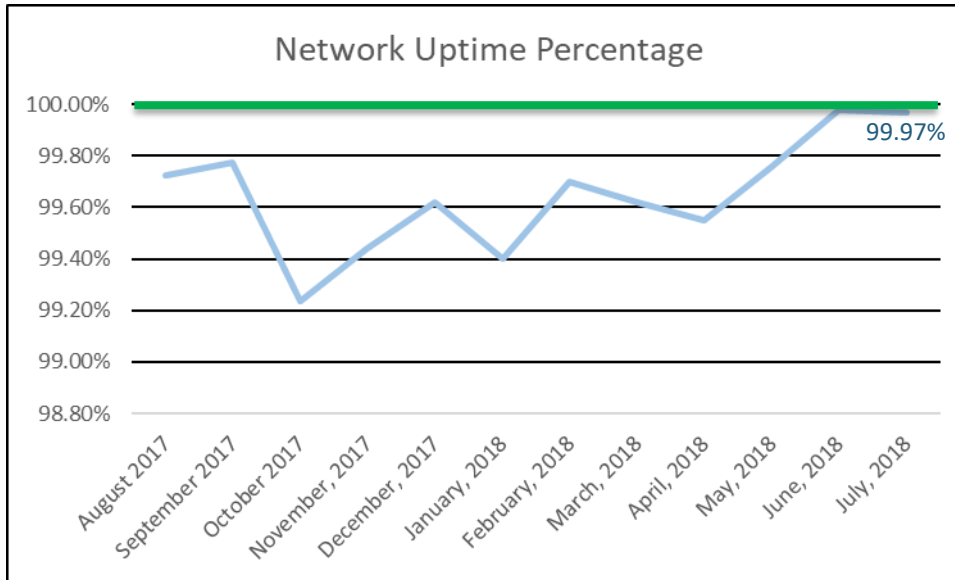|	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19
Report/Patrol Ratio	2.5%											
Patrols	4977											

• 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

123

78

45

JUL-18 AUG-18 SEP-18 OCT-18 NOV-18 DEC-18 JAN-19 FEB-19 MAR-19 APR-19 MAY-19 JUN-19

■ Incidents ■ Facility Inspections ■ Total

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Enterprise Resiliency – Information Technology

Network Uptime Percentage

- GLWA has 59 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%

Percent of Incidents Closed Within 24 Hours

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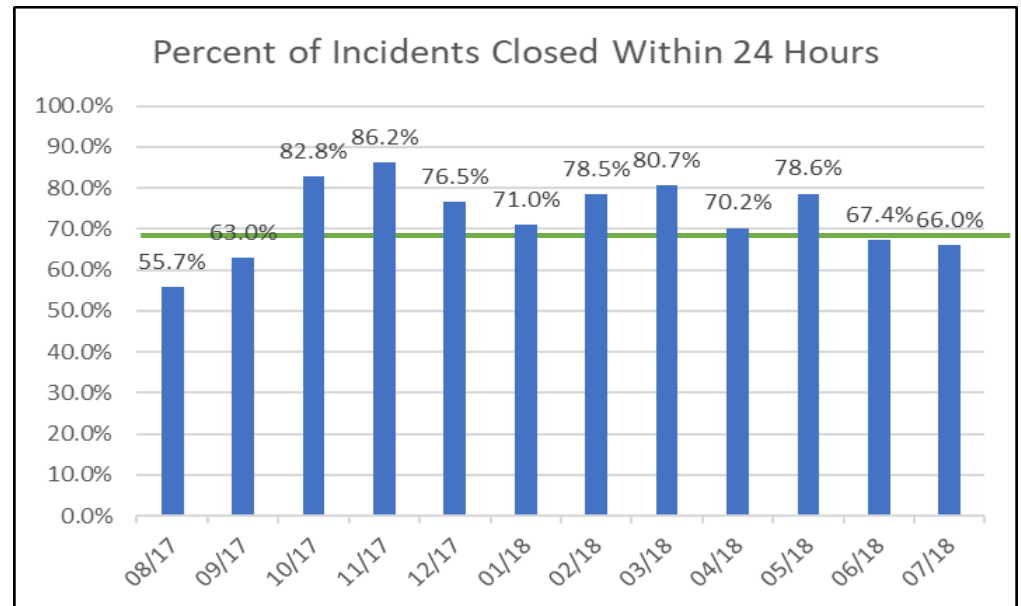
Successful Backups (1st Try)
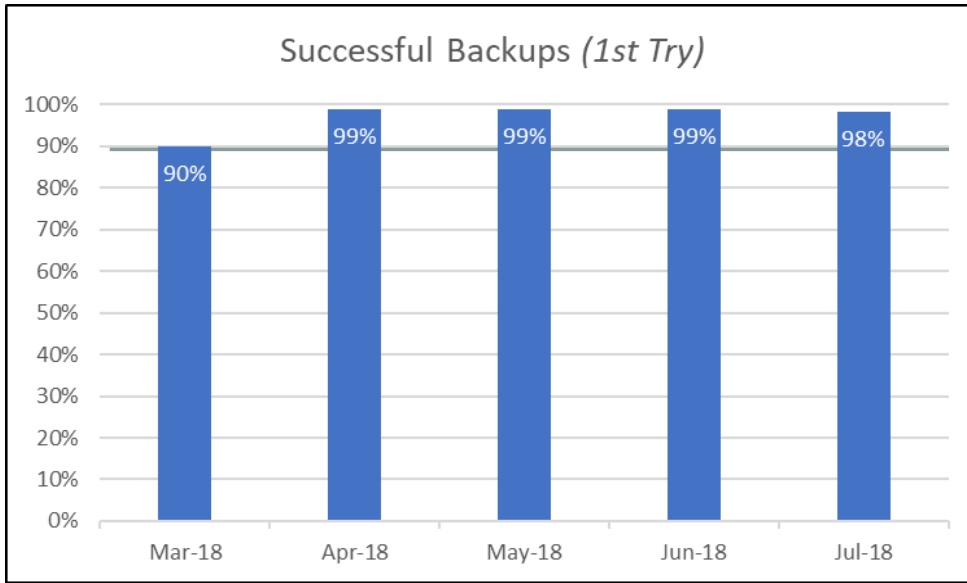
- Backups ensure that GLWA's information is safe in case of unexpected disruptions.

- 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.
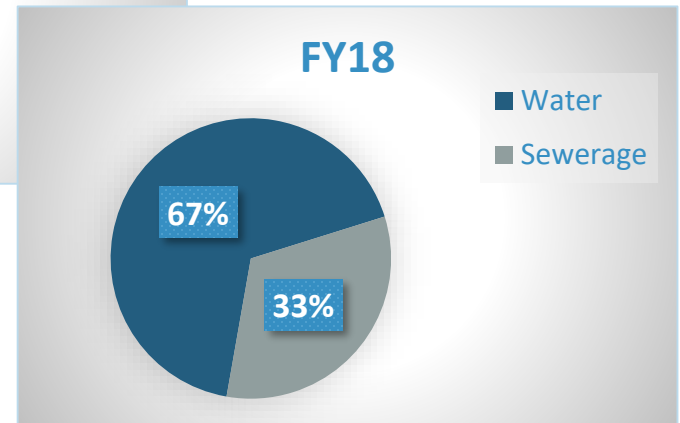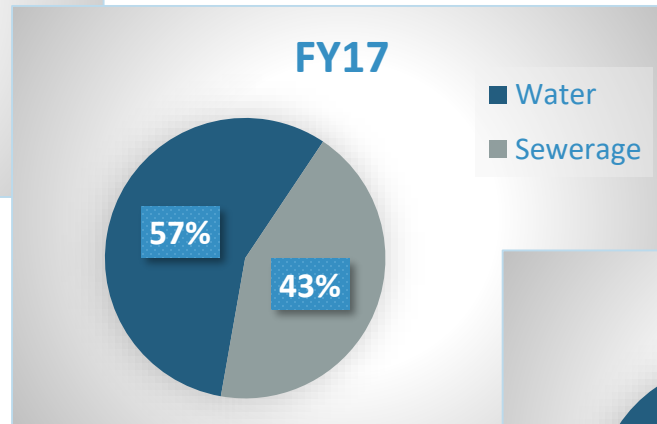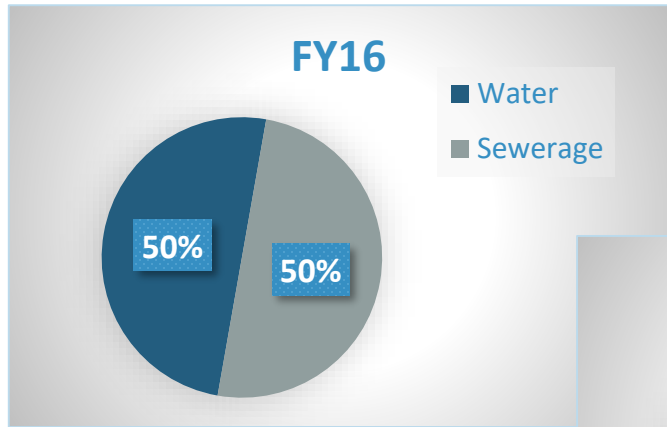
Percent of Service Requests Closed Within 5 Days

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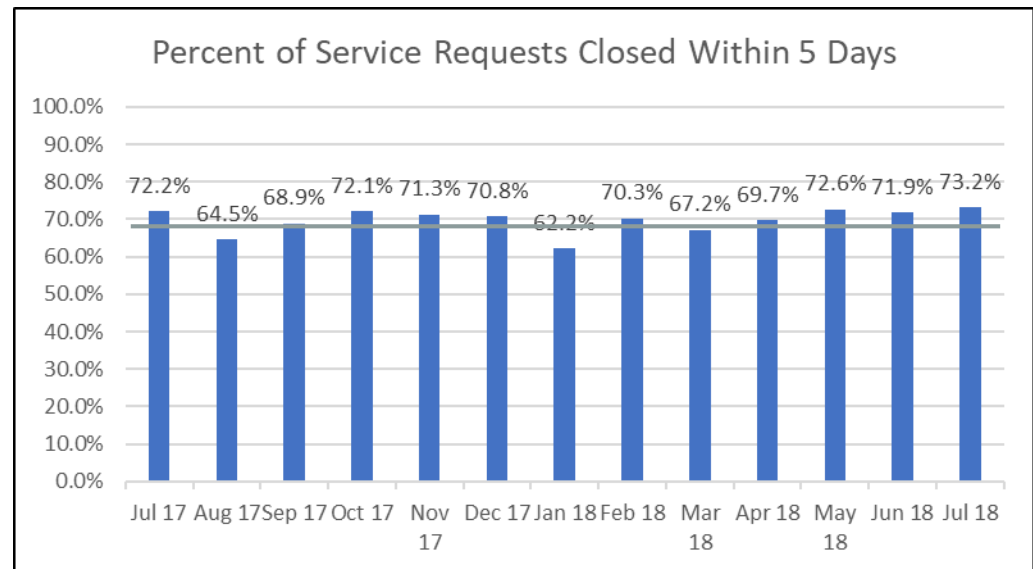
Enterprise Resiliency –
Key Workers' Compensation Comparative Metrics
Valued as of June 30, 2018

Fiscal Year Ending	Claim Count	Incurred	Paid	Average Paid Cost per Claim	Other Metrics		
					# of Litigated Claims	# of Open Claims	% Medical Only
06.30.2016	30*	$46,720	$46,720	$1,557	-0-	-0-	77%
06.30.2017	53	$189,301	$189,301	$3,572	-0-	-0-	74%
06.30.2018	50	$341,249	$142,086	$2,841	2	13	55%

*Represents 6 months of losses (January 1, 2016 – June 30, 2016)

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This is an annual metric that will be updated again in July 2019.

Enterprise Resiliency –
Workers' Compensation Claims by System
As of June 30, 2018

FY16
- Water
- Sewerage

50% | 50%

FY17
- Water
- Sewerage

57% | 43%

FY18
- Water
- Sewerage

67% | 33%

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This is an annual metric that will be updated again in July 2019.

Enterprise Resiliency –
All Litigated Workers' Compensation Claims
As of June 30, 2018

Total number of litigated files = 1.5% of <u>all</u> reported claims since January 1, 2016

Date of Loss / Injury Description	Claim Status	Total Incurred	Total Paid	Expected Outcome
October 4, 2017 Right Rotator Cuff	Pending	$72,440	$34,828	"Take nothing" re: additional wage loss following termination for cause
October 29, 2017 Motor Vehicle Accident – Alleged Lower Back	Pending	$9,000	$9.80	Claimant's *Application for Mediation* to be withdrawn by WC Agency (failure to pursue)

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Enterprise Resiliency –
General Liability and Auto Liability Claims
As of June 30, 2018
(all claims are closed)

Fiscal Year Ending	General Liability		Auto Liability	
	# of Claims	Total Paid	# of Claims	Total Paid
06.30.2016	1	$405	1	$1,000
06.30.2017	3	$246,034*	3	$2,649
06.30.2018	0	$ -0-	1	$ -0-

* $244,923 (99.6%) of the total is related to *Beasley vs. GLWA* matter

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This is an annual metric in July 2019.

EUM Attribute:

**Customer
Satisfaction**

Customer Satisfaction –
Water & Field Services

Customer Pressure Compliance %

NOTE: The compliance percentage for October 2017 is low due to 42-inch main break that occurred in Farmington Hills.
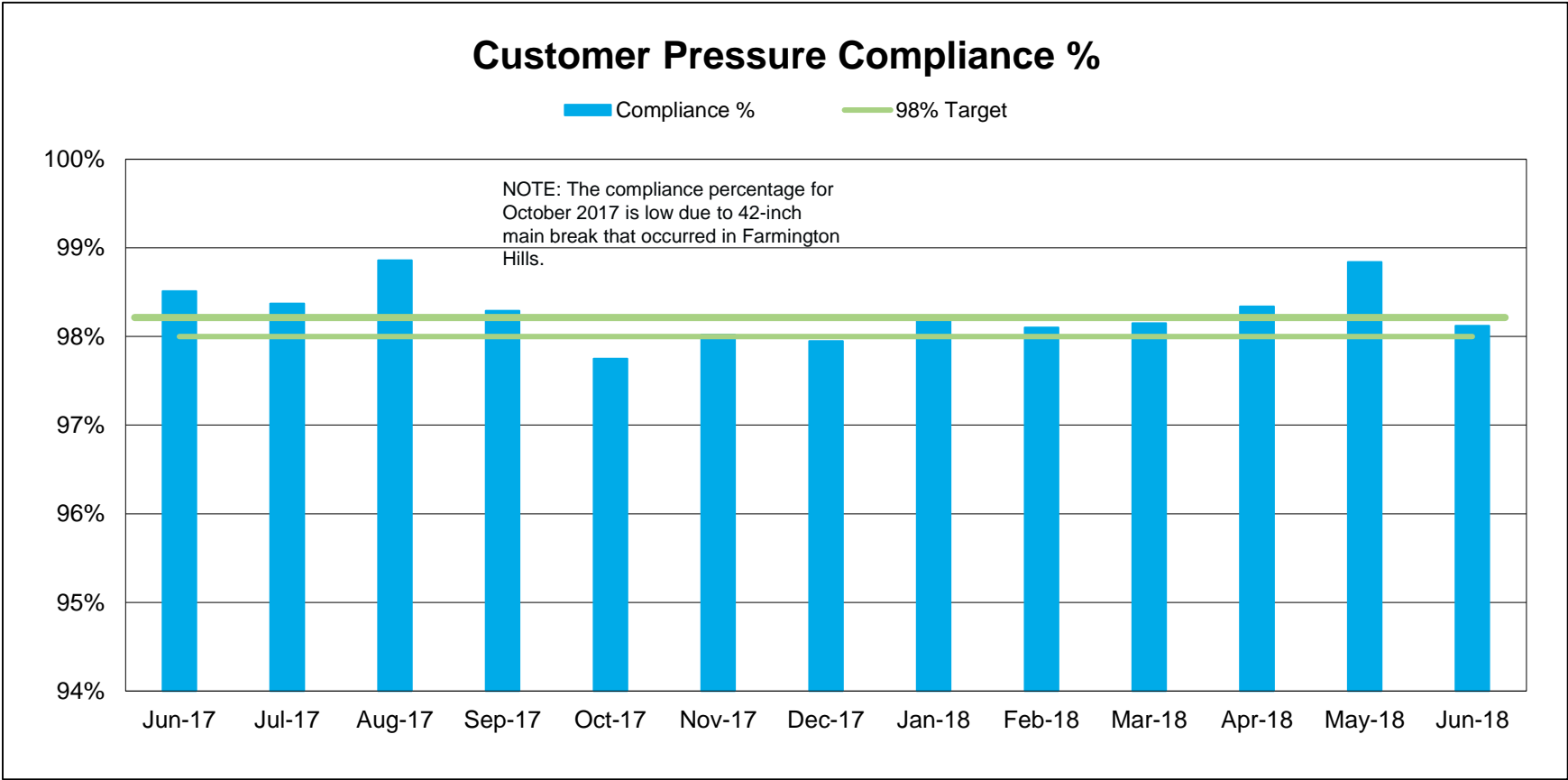
Customer Satisfaction: To exceed customer compliance by being greater than 98% of contractual pressures.

EUM Attribute:

Community Sustainability

Community Sustainability – Watershed Health

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

- GLWA has surpassed the State and Federal reduction goal.

Effluent Phosphorous Loading 1996 to 2018

MDEQ Goal of 40% Reduction
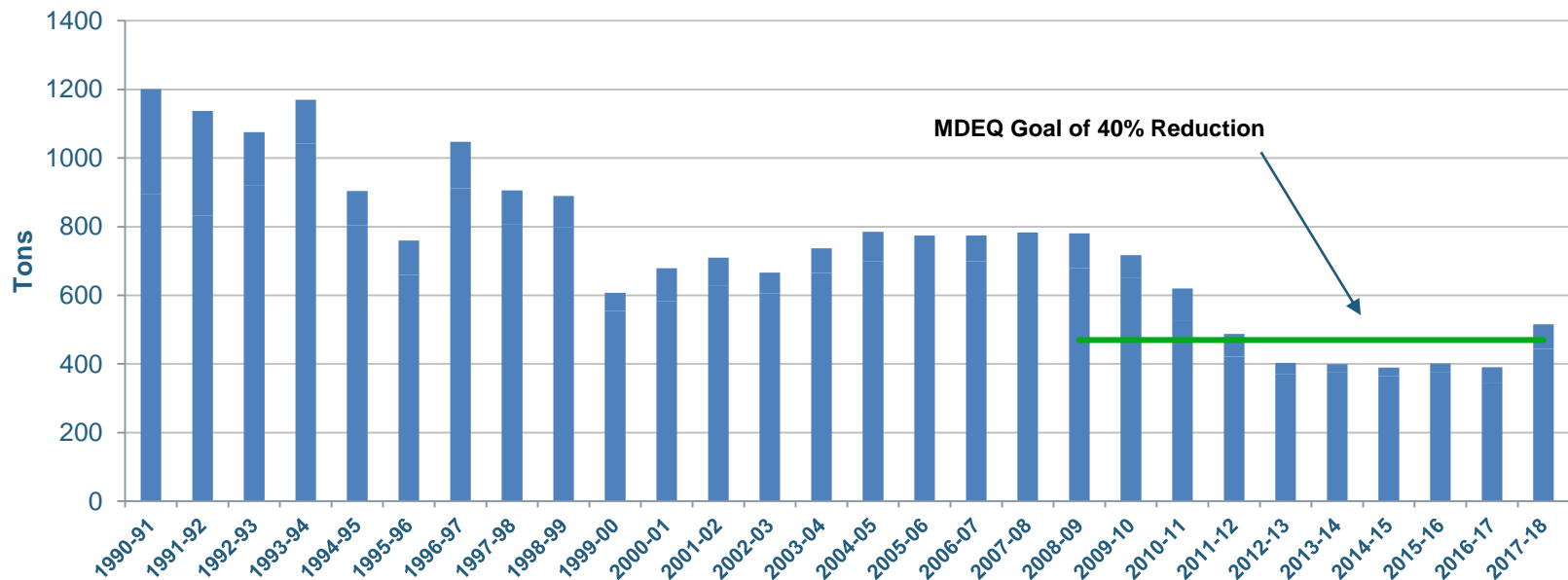
EUM Attribute:

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.
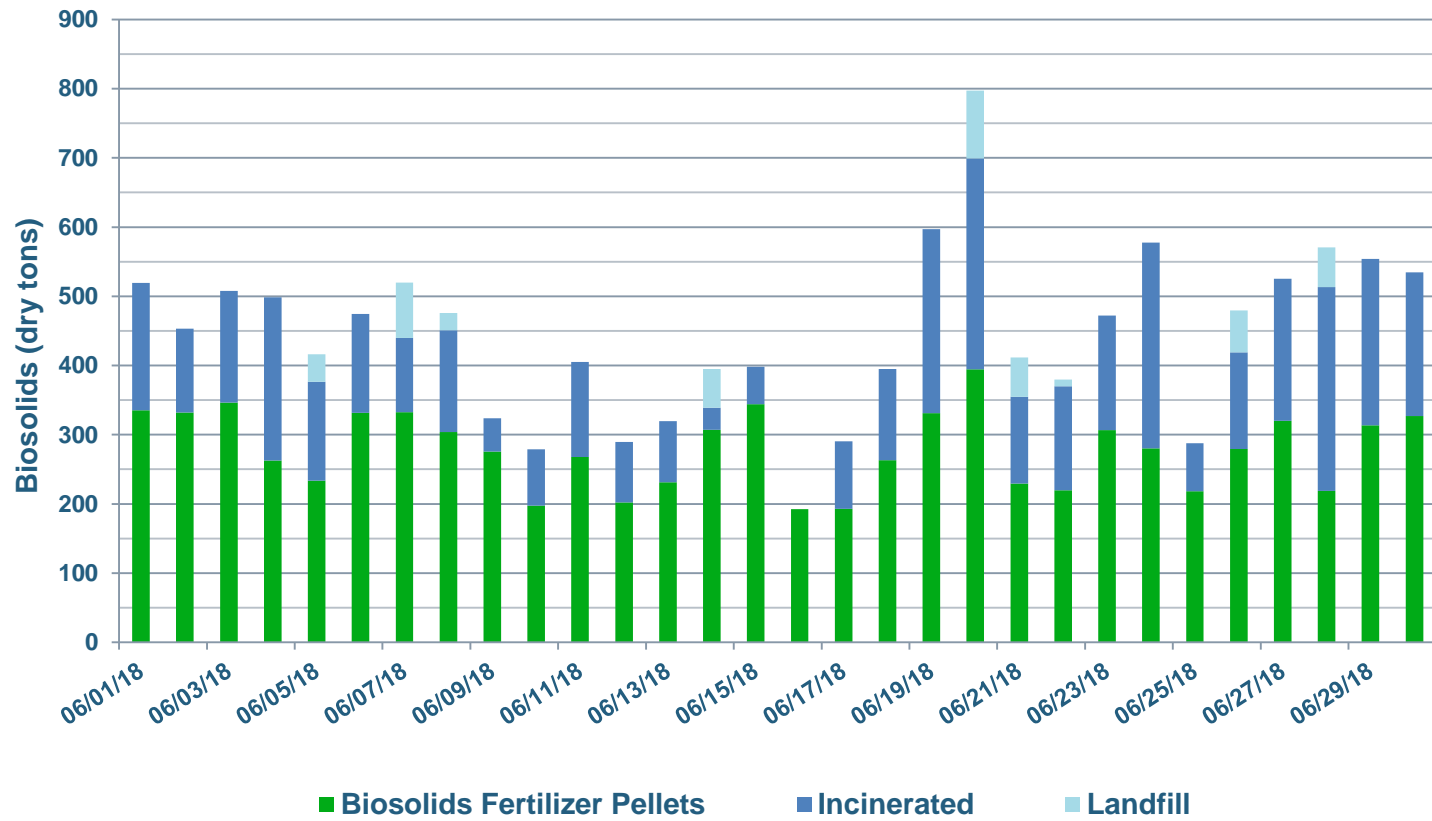
EUM Attribute:

Stakeholder Understanding and Support

Stakeholder Understanding and Support – Traditional Media Summary

Relevant news coverage for the Great Lakes Water Authority (GLWA) in July focused primarily on the board approval of FY19 charges, as well as CFO Nicolette Bateson speaking at the annual Water Finance Conference. Overall in July, GLWA saw a 65 percent increase in mentions compared to June. Articles were largely neutral with a small amount of positive sentiment attributed to the story about Bateson speaking at the conference. There were no negative mentions of GLWA throughout the month.
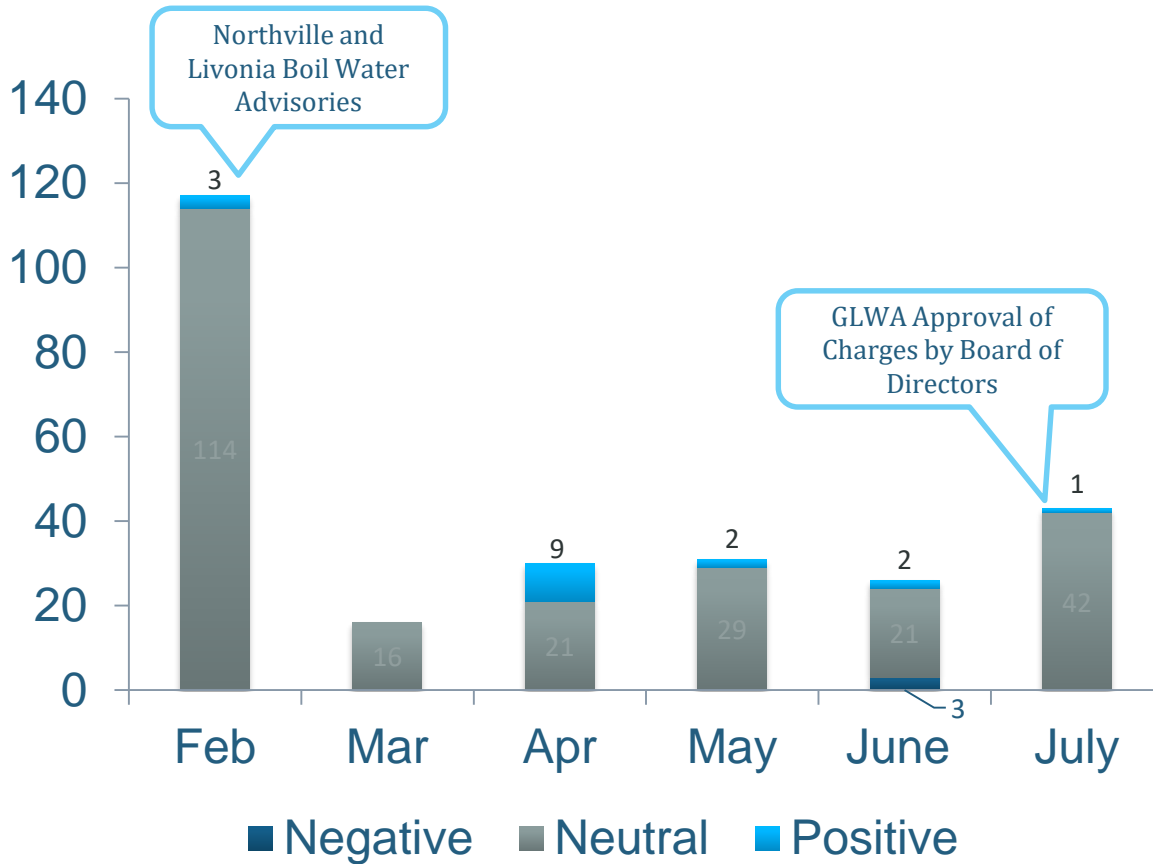
MESSAGE PULL THROUGH*

96%
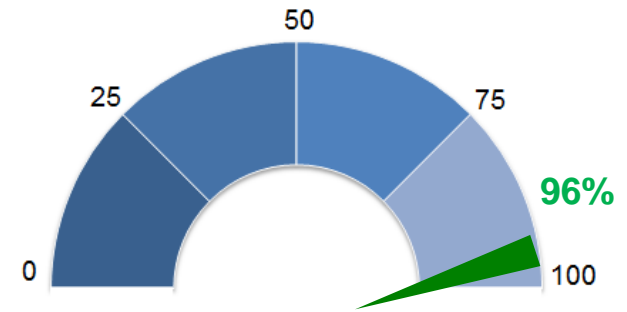
96% of coverage contained a GLWA message **(GOAL = 75%)**

MEDIA VOLUME: 43

CURSORY OR FLINT MENTIONS: 18

CONTAINED GLWA MESSAGE: 24

*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.

Bar chart callouts:
- Northville and Livonia Boil Water Advisories (Feb)
- GLWA Approval of Charges by Board of Directors (June)

Bar chart values:
- Feb: Neutral 114, Positive 3
- Mar: Neutral 16
- Apr: Neutral 21, Positive 9
- May: Neutral 29, Positive 2
- June: Neutral 21, Positive 2, Negative 3
- July: Neutral 42, Positive 1

Legend: ■ Negative ■ Neutral ■ Positive

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Stakeholder Understanding and Support – Social Media (Facebook & Twitter) Quarterly Update
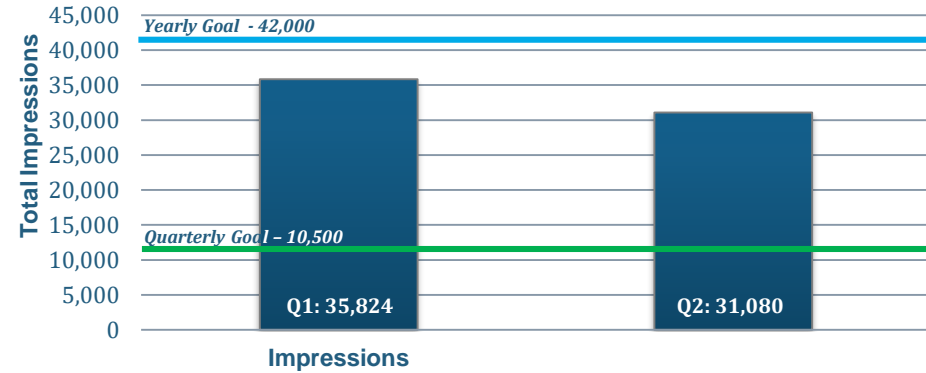
Facebook - Total Impressions Q2 2018

- Yearly Goal (84,000 impressions/year)
- Quarterly Goal (21,000 impressions/quarter)
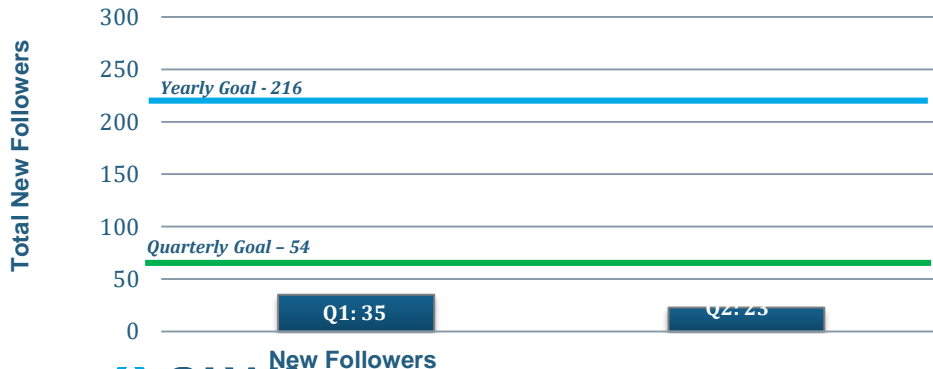- Total Q2 Impressions (25,094 total impressions)
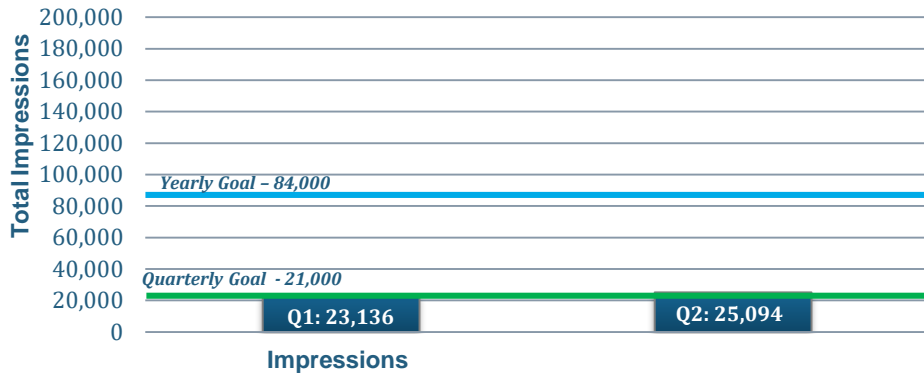
Twitter - Total Impressions by Q2 2018

- Yearly Goal (42,000 impressions/year)
- Quarterly Goal (10,500 impressions/quarter)
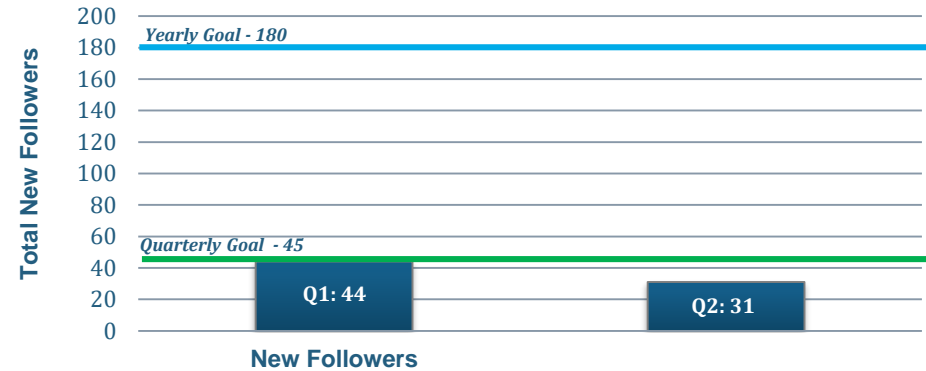- Total Q2 Impressions (31,080 total impressions)

Facebook - Total New Followers Q2 2018

- Yearly Goal (216 new followers/year)
- Quarterly Goal (54 new followers/quarter)
- Q2 New Followers (23 followers)

Twitter - Total New Followers Q2 2018

- Yearly Goal (180 new followers/year)
- Quarterly Goal (45 new followers/quarter)
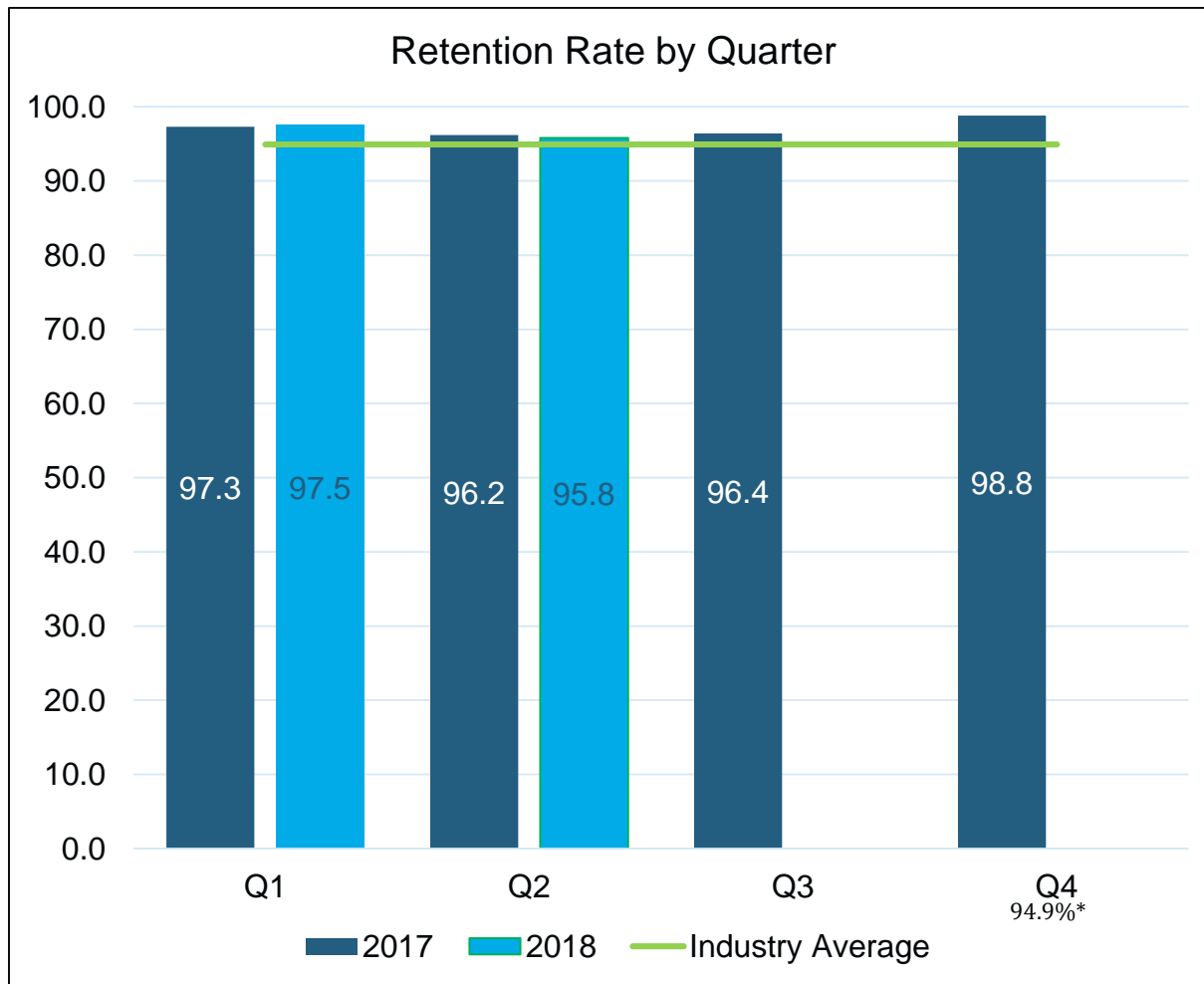- Q2 New Followers (31 total new followers)

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- *Q1: January 2018 – March 2018*

This is a quarterly metric that will be updated again in October 2018.

EUM Attribute:

Employee and Leadership Development

Employee and Leadership Development – Team Member Retention

Retention Rate by Quarter

- 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."

Above retention rates are reflected in percentages

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Updated: 7/9/18

This is a quarterly metric that will be updated again in October 2018.