GLWA: Working In Collaboration

MWEA Collections Seminar
October 20, 2016

Sue McCormick, CEO
One Water
Who is GLWA?

VISION:
“We are the Service Provider of Choice in Southeast Michigan”
Sue McCormick, CEO

MISSION:
The Mission of the Great Lakes Water Authority is to exceed our customers’ expectations by utilizing best practices in the treatment and transmission of water and wastewater, while promoting healthy communities and economic growth.
Water Service Area

1,709 Square-Mile Service Area

127 Suburban Communities

402 estimated Miles of Transmission Main

80 Water Projects Totaling over $650M in Five Year CIP

KEY:
- City of Detroit
- Suburban Communities

GLWA
Great Lakes Water Authority
Wastewater Service Area

- Encompasses Detroit and 76 Neighboring Communities
- 946 Square-Mile Service Area
- 12 Pump Stations
- Nine CSO Facilities
- Average of 400 Dry Tons of Solids Processed Each Day
- Average Daily Flow of 600 MGD
- Max Designed Primary Capacity of 1,700 MGD
- 58 Wastewater Projects Totaling over $575M in Five Year CIP

KEY:
- City of Detroit
- Suburban Communities

GLWA
Great Lakes Water Authority
GLWA’s Commitment to the Region

- Effective and Efficient Service
- Regional Collaboration
- Customer Engagement
- Integrity
- Sustainability
- Transparency
Effective and Efficient: 2012 Organizational Assessment

**Key Findings**
- Siloed organization
- Inflexible job descriptions
- Multiple reporting levels
- Lack of training
- Seasonal work issues
- Ineffective deployment and use of technology
- Disconnected business processes

**Key Recommendations**
- Flexible job design [✓]
- Resource loading [✓]
- Automation *ongoing*
- Computerized Maintenance Management System Improvements *in process*
- Change in business practices and enterprise systems *ongoing*
Continuous Improvement: Overview of Optimization

- Key findings and key recommendations were first tested in “pilot teams” and then implemented full-scale.
- Wastewater Treatment Plant staffing governed under the terms of a 2011 ACO.
- Refinement of our staffing design has been on-going since 2012.
- In 2016 we have had a specific focus on refinement of the staffing design at the wastewater treatment plant.

Key Finding: Approach to working in teams is highly effective.
July 2011: DWSD submitted a staffing plan pursuant to the ACO

Sept 2014: MDEQ approves plan contingent upon four guiding principles

Nov 2015: MDEQ approves plan contingent upon four guiding principles

Sept 2016: GLWA submits staffing assessment requesting a modification

Organizational Optimization Starts

37% Reduction
**Effective Planning includes a Focus on Efficiency and Sustainability**

*Master planning provides for system optimization and capital cost avoidance*

- Master planning process represents a shift from past practices
  - Leverages region's entire public infrastructure
  - Shift toward asset management and green infrastructure
  - Conducted in collaboration with customer communities

## Water System Updated Master Plan

- **Considers multiple future scenarios**
- **CIP Plan Amended**
- **Completed August 2016**

### Findings:
- System capacity exceeds demand
- De-rating can reduce capital costs while preserving flexibility

### Actions:
- Water CIP amended based on implementation planning*
- Convert Northeast Plant into storage & pumping facility
- Invest in new transmission mains to support northeast service area*
- Guidelines adopted for attracting new customers

### Outcomes*:
- Northeast repurposing will reduce operating costs and avoid significant capital expenditure
- Pro-active marketing; in active dialogue with potential new customers*

## Wastewater Master Plan Update

- **Launched late 2015**
- **Leverages Region’s Public Infrastructure**
- **Maintains Water Quality Focus**

### Goals:
- Find creative approaches to use the existing facilities in GLWA and its customers’ service areas
- Maximize the use of dynamic wet weather operations
- Explore strategic use of green infrastructure
- Collaborate with MDEQ and regional partners
- Recognize changes in weather patterns and rain event intensities
- Extensive system modeling including surface water and wastewater treatment
- Evaluate resource recovery options and energy reduction opportunities*
Emergency Response Preparedness
A First: Table Top Exercise

- Held on August 23rd at Water Works Park
- Hosted by the Security and Integrity Unit of GLWA
- Utilized the recently updated Emergency Response Plan
- Participants from City of Detroit Emergency management and First Responders, Wayne County First Responders, MDEQ and GLWA staff

Focused on water infrastructure

More on this later today from Chief W. Barnett Jones & Walter Davis!
Effective Utility Management (EUM)

- Simple and compelling way for utilities to identify improvement priorities based on EUM Attributes to provide a roadmap for success
- Utilizing EUM along with Lean and Six Sigma
  - Deliver financial and operational results
  - Enhance customer service
  - Reduce environmental and safety risks
  - Improve product quality
- Enhance continual improvement efforts through simple methods
To cover all critical attributes of water and wastewater management, a scorecard is developed using the 10 attributes of EUM.

Key Performance Indicators (KPI’s) most relevant to the organization and its customers are determined.
Financial Viability – Recent Revenue Performance Continues Successful Implementation of Wholesale Charge Reforms

Pre Sewer Rate Simplification
FY 2014 ($ millions)

Post Sewer Rate Simplification
FY 2015 ($ millions)

Pre Water Service Charge Structure Modifications
FY 2015 ($ millions)

Post Water Service Charge Structure Modifications
FY 2016 ($ millions)
Financial Viability – Revenue Stability and Appropriate O&M Cash Reserves

- Total Water System Regional and Local System Revenues are stable with actual at 101.8% of Budget and actual usage at 104.8% of Budget.
- Total Sewer System Regional and Local System Revenues are also stable at 99.4% of Budget.
- Cash balances are appropriate to fund monthly budgeted O&M with an average ratio of cash to budget of 1.92x for water and 2.28x for sewer (i.e. approximately 60 days cash transferred to O&M).
Infrastructure Strategy and Performance: Wastewater System – Maintenance and Service

Preventive Maintenance – July 2016

Highlights percent completed of planned preventive maintenance activities
Operational Optimization Wastewater System – Performance Indicators

Natural Gas Usage for Incineration – July 2016
- Measures the efficiency levels for incinerating bio-solids
- Higher dryness levels provide cheaper incineration and land disposal costs

Biosolids Production – July 2016
- Measures compliance with NDPES permit relative to capacity (930 dry tons)
- (Grey/shorter bars) highlight de-watering average per day

Sludge Inventory (dry tons)

Sludge Disposal by Method (dry tons)

Incinerated Sludge reduces sludge volume and amount of sludge to haul
Key Performance Indicators Water & Field

**Systems Control Center**

- Measures pressure compliance in the distribution system

**Chemical and Electrical cost per MGD**

- This is tracking electrical and chemical usage based on system demand and it is good for system optimization and monitoring

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**This** is tracking electrical and chemical usage based on system demand and it is good for system optimization and monitoring.

**Measures** compliance with the SDWA and the good thing is maintaining 100% compliance.

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**% Compliance** with Safe Drinking Water Act (SDWA) by Month

- Measures compliance with the SDWA and the good thing is maintaining 100% compliance.
Social Overview: Earned, Owned (Organic & Paid)

**Owned Content (as of August 31, 2016)**
- Total Owned Fan Audience: ~78K
- Total Owned Impressions (FB & TW): 473
- Total Owned Engagement (FB, TW): 3,531

**Owned Fan Audience as of August 31, 2016**
- Facebook: 249 Page Likes (4% vs Last Month)
- Twitter: 224 Followers (4% vs Last Month)

**2016 Content August 2016 (Month over Month Change)**
- Posts: 13
  - Facebook: 265 Impressions (40%)
  - Twitter: 7,705 Impressions (5%)
  - Facebook Page Likes: 550 Impressions (3%)
  - Twitter Followers: 3423 Impressions (23%)

**Earned Potential Impressions and Earned Mentions by Month**

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*Monitoring Period for Report: 1/1/16 – 8/31/16, **Earned Mentions / Potential Twitter Impressions via Listening Tool (“Great Lakes Water Authority” OR glwatermi); ***Owned Data based on all Organic AND Paid content posted to channels; ****Sum of Potential Followers for each account (Twitter & Facebook as of August 31)*
GLWA’s EUM Journey

- Authorized in Spring 2016
- Kick-off in Summer 2016 with Executive Leadership Team
- Phase I in process - Fall 2016
- Board Workshop Late 2016/Early 2017
- Beginning to focus our language and perspective in alignment with EUM

EUM’s Beginning

- In 2007, in collaboration with the U.S. Environmental Protection Agency, the American Public Works Association, the American Water Works Association, the Association of Metropolitan Water Agencies, the National Association of Clean Water Agencies, the National Association of Water Companies, and the Water Environment Federation signed an agreement to support effective utility management.

The EUM Framework

- The result, "Ten Attributes of Effectively Managed Water Sector Utilities", are a succinct indication of where effectively managed utilities focus and what they strive to achieve.
Financial Metrics Have Followed Operational Improvements

Accomplishments

Current Management Team Takes Over

Total Service Revenues

Debt Service Coverage

Days Cash on Hand

Operation & Maintenance Expenses

$312 $330 $351 $345 $358
$407 $433 $437 $471 $501
2011 2012 2013 2014 2015
Water System
Sewer System

$147 $165 $151 $145 $126
$231 $217 $210 $206 $181
2011 2012 2013 2014 2015
Water System
Sewer System

$ 250 $ 300 $ 350 $ 400 $ 450 $ 500 $ 550
2011 2012 2013 2014 2015
Water System
Sewer System

GLWA
Great Lakes Water Authority
Water System Capital Improvement Plan

The Regional Water System Capital Improvement Program includes expected financing sources from ongoing revenues, bond issuances, and state revolving fund loans.

- The Regional Water System CIP reflects the Master Plan Update and an ongoing asset management condition assessment.

- CIP calls for $752 million of capital expenditures over the next five fiscal years (2017-2021)
  - Increasing use of pay-as-you-go capital will improve GLWA’s balance sheet over time.

**Application of Financing Sources**

![Generation of Financing Sources](image)

**Source:** The Foster Group.
Sewer System Capital Improvement Plan

The Regional Sewer System Capital Improvement Program includes expected financing sources from ongoing revenues, bond issuances, and state revolving fund loans.

- The Regional Sewer System CIP reflects the utilization of an asset management strategy focused on reliability, environmental compliance and financial sustainability.
- CIP calls for $657 million of capital expenditures over the next five fiscal years (2017-2021)
  - Increasing use of pay-as-you-go capital will improve GLWA’s balance sheet over time.

Application of Financing Sources

Source: The Foster Group.
New Bond Ratings

Ratings

- CCC
- BB+
- BBB-
- BBB+
- Baa3
- BBB
- A
- A- 
- A3

Dates

- 2/28/2014
- 3/31/2014
- 4/30/2014
- 5/31/2014
- 6/30/2014
- 7/31/2014
- 8/31/2014
- 9/30/2014
- 10/31/2014
- 11/30/2014
- 12/31/2014
- 1/31/2015
- 2/28/2015
- 3/31/2015
- 4/30/2015
- 5/31/2015
- 6/30/2015
- 7/31/2015
- 8/31/2015
- 9/30/2015
- 10/31/2015
- 11/30/2015
- 12/31/2015
- 1/31/2016
- 2/29/2016
- 3/31/2016
- 4/30/2016
- 5/31/2016
- 6/30/2016
- 7/31/2016
- 8/31/2016
- 9/30/2016
Inaugural $1.3 Billion Bond Transaction Results

- New money water $284M; balance refunding ($774M Water, $480M sewer)
- Optimal time for the transaction – longer-term tax-exempt bonds have only been lower than today’s rates % of the time in the past 40 years.
- $309 Million in cash flow savings (15% as a % of refunded par)
- All in cost of funds including financing costs and new money 3.82%
- Release of $25M in reserves

Significant demonstration of early benefit in the creation of GLWA