

DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY

Board of Directors

*Joint Meeting of the
Water Quality and Water Services Committee and
Environmental Quality and Sewerage Services
Committee*
5000 Overlook Avenue, SW, Room 407
Thursday, May 21, 2015
10:30 a.m.

I. Call to Order

Rachna Butani,
Chairperson
Bo Menkiti,
Acting Chairperson

10:30 a.m. II. **Asset Management Program Update**

Len Benson/Alan Ispass

10:50 a.m. III. **Action Items – Joint Use**

Teresa Scott/Len Benson

1. **DCFA #456, CH2M Hill Engineers, PC**

Non-Joint Use

None

10:55 a.m. IV. **Other Business/Emerging Issues**

11:00 a.m. V. **Executive Session**

11:00 a.m. VI. **Adjournment**

Rachna Butani,
Chairperson
Bo Menkiti,
Acting Chairperson

* The DC Water Board of Directors may go into executive session at this meeting pursuant to the District of Columbia Open Meetings Act of 2010, if such action is approved by a majority vote of the Board members who constitute a quorum to discuss: matters prohibited from public disclosure pursuant to a court order or law under D.C. Official Code § 2-575(b)(1); contract negotiations under D.C. Official Code § 2-575(b)(1); legal, confidential or privileged matters under D.C. Official Code § 2-575(b)(4); collective bargaining negotiations under D.C. Official Code § 2-575(b)(5); facility security under D.C. Official Code § 2-575(b)(8); disciplinary matters under D.C. Official Code § 2-575(b)(9); personnel matters under D.C. Official Code § 2-575(b)(10); proprietary matters under D.C. Official Code § 2-575(b)(11); decision in an adjudication action under D.C. Official Code § 2-575(b)(13); civil or criminal matters where disclosure to the public may harm the investigation under D.C. Official Code § 2-575(b)(14), and other matters provided in the Act.

Follow-up Items from Prior Meetings:

1. None.



ASSET MANAGEMENT PROGRAM



AM Program –
Phase 1 Review and Phase 2 Plan
Joint Meeting EQ&SS/WQ&WS

May 21, 2015



An overview on the Asset Management Program was presented on March 19th

Asset Management

An integrated set of processes to minimize the lifecycle costs of infrastructure assets, at an acceptable level of risk, while continuously delivering established levels of service

- Alignment of organizational strategy to activity “on the ground”
- Whole-organization alignment
- Active and visible sponsorship from senior executives
- Defining the levels of service
- Recognizing the lifecycle costs of ownership
- Understanding the risks of asset failure
- Turning data into knowledge
- Understanding the implications of deferred interventions
- Evidence-based decision-making

Asset Management translates DC Water's strategy into technical decisions & activities

Vision: *To be a world-class water utility.*

Mission: *Exceed expectations by providing high quality water services in a safe, environmentally friendly, and efficient manner.*

Goal 8: *Optimally manage infrastructure*

Initiative: *Complete development of, and implement a comprehensive asset management plan*

Benefits of World-Class Asset Management

- Informed and defensible asset investment decisions
- Better managed risk
- Improved asset reliability
- Improved efficiency and effectiveness
- Improved service delivery
- Improved customer satisfaction
- Demonstrated compliance
- Improved internal coordination and communication

Phase 1 Purpose: *Create a framework for World-Class Asset Management*

Phase 1 Goals:

AWARENESS: Increase internal stakeholder awareness of AM and its benefits through briefings, electronic media/forums, and interpersonal interaction.

COLLABORATION: Increase information sharing, knowledge transfer, and use of consistent business processes throughout the Authority.

ACTION: Build buy-in and desire for instituting AM by working closely with staff in the development of AM processes and through training staff in AM principles and practices.

STRUCTURE: Create a foundation for adopting world-class AM practices while leveraging progress made to-date and addressing staff's high priority needs.

Phase 1 addresses long-term strategic and short-term operational needs



Phase 1 Outcomes - Awareness

STAFF AWARENESS OF ASSET MANAGEMENT

- Completed Communications and Change Management Plan, which is now being implemented
- Rolled-out AM communications through the DC Water's existing communication channels
- Engaged operators to be "the owner" of the assets and actively identify early warning signs of equipment failure
- Engaged over one-third of DC Water staff members in the Asset Management Program via face-to-face meetings, workshops and training sessions

FOCUS

A DAY IN THE LIFE: Nichol Bell Sowell, Program Manager, Asset Management

Just call **Nichol Bell Sowell** (Sewer Services, Program Manager, Asset Management) a problem solver. As an asset management program manager, she works with crews and foremen in sewer services to track work performed on the sewer collection system.

"I'm involved in trying to coordinate the repair effort," she said. "I try to make sure nothing slips through the cracks."

Sometimes a seemingly small problem offers a clue to a larger issue. This is when Sowell springs into action. When a customer complained of sewer odors and a



"We determined that we needed to do repairs, but we also discovered a DDOT issue and we were able to connect her to DDOE's rain barrel program."

Sowell is also responsible for standardizing processes. This

cleaned, repaired or replaced, it's documented.

"If you can get ahead of a potential problem with preventive maintenance, that's always good," Sowell said. "That could be regular cleaning or root control—those are



Phase 1 Outcomes - *Collaboration*

COMMON VISION AND AUTHORITY-WIDE COLLABORATION

- Developed AM Policy that was approved by AM Steering Team
- Recommended hierarchy and uniform naming convention for linear assets
- Introduced a consistent, Authority-wide approach to CIP development and prioritization
- Developed Authority-wide risk-based framework to enable a uniform approach to managing both linear and vertical assets



DC WATER ASSET MANAGEMENT POLICY

Purpose

To manage DC Water's assets in a way that ensures sound stewardship of the Authority's resources, while delivering services valued by customers, protecting the environment, and providing for the health and safety of the public and the workforce.

Policy

DC Water will manage its infrastructure assets in a strategic and enterprise-wide manner through an integrated business approach and cross-functional collaboration that relies on well-defined processes, knowledgeable staff, sufficient resources, and communications with stakeholders to deliver established levels of service. This Policy will be implemented through the DC Water Asset Management Program, which will optimize asset value throughout the asset life-cycle.

The Asset Management Program will support delivery of DC Water's mission, vision and strategic goals consistent with DC Water's strategic plan, Blue Horizon 2020. DC Water will create and maintain clear links between the broader organization's objectives, policies and strategies and the daily activities associated with managing the Authority's assets.

DC Water is committed to the following principles for managing its infrastructure assets:

1. CUSTOMER-FOCUSED by meeting levels of service based on ratepayer and community preferences.
2. WHOLE LIFE-CYCLE BASED by considering asset resource and financial requirements from planning, design, construction/acquisition and commissioning, through operation, maintenance and renewal, to retirement and disposal.
3. SUSTAINABLE AND FORWARD-LOOKING by considering social, environmental and financial aspects in present and future service commitments.
4. TRANSPARENT AND DEFENDIBLE by using formal, consistent, scalable, and repeatable approaches.

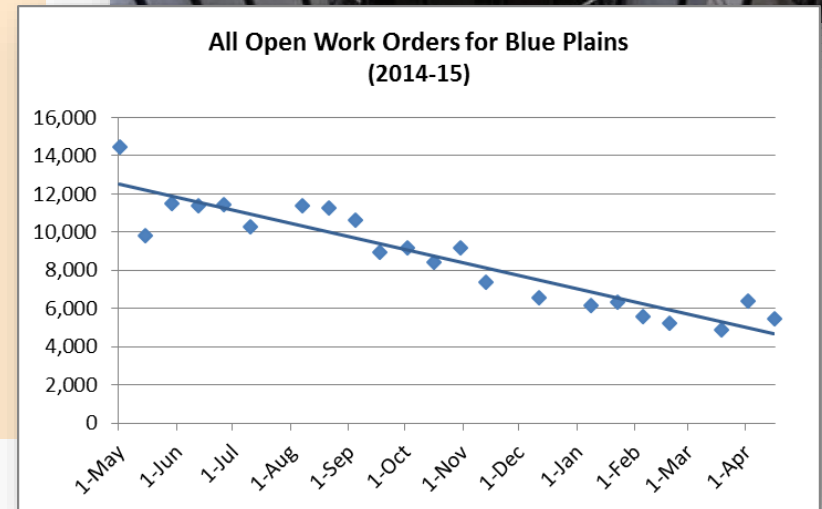


system rather than as
cedures using innovative
implementing appropriate
s, Consent Decrees,
levels of service while

Phase 1 Outcomes - *Action*

ACTIVE PARTICIPATION AND BUY-IN FOR ASSET MANAGEMENT

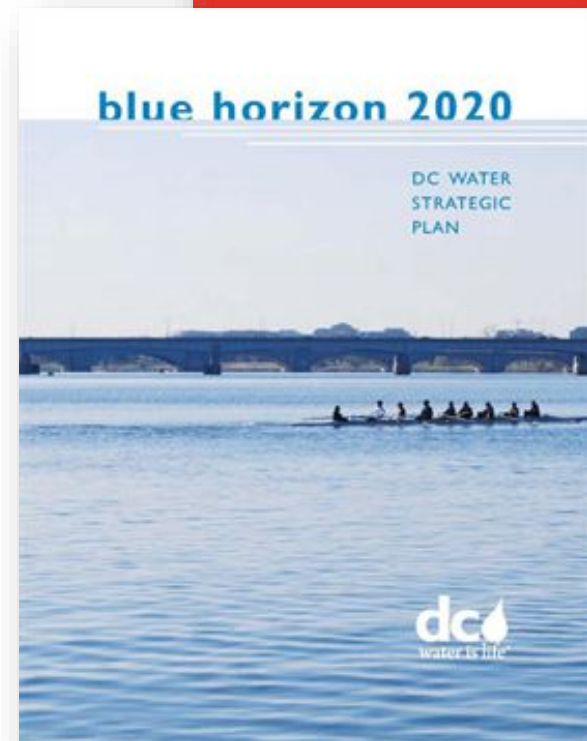
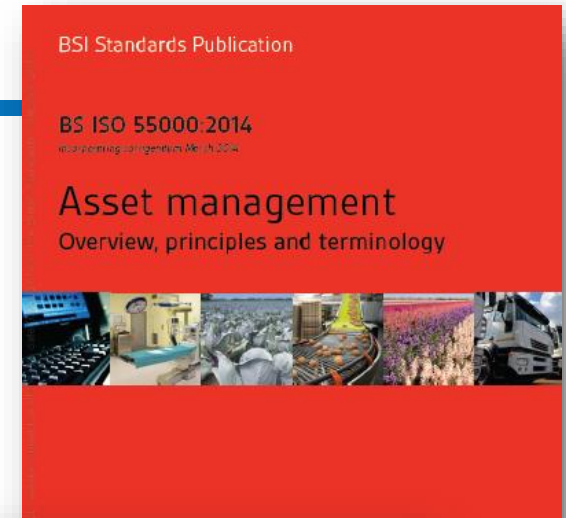
- Piloted the risk-based framework with Sewer Pump Stations, and scored their relative risk of failure
- Added/updated over 20,000 assets in the asset inventory
- Set-up over 93% of all vertical assets in Maximo
- Enabled an additional over 1,000 assets to have preventive maintenance work orders generated automatically
- Observed a 58% reduction in open work orders at Blue Plains



Phase 1 Outcomes - *Structure*

ESTABLISHED FOUNDATION FOR WORLD-CLASS ASSET MANAGEMENT

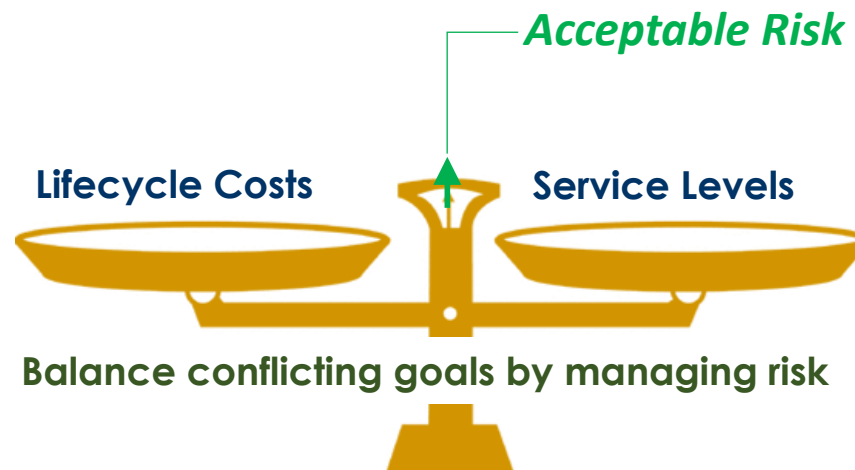
- Aligned AM Program with *Blue Horizon 2020* to achieve DC Water's vision, "To be a world-class water utility"
- Aligned AM Program with the International Standard for Asset Management (ISO 55000)
- Developed initial Levels of Service criteria and target levels
- Prepared recommendations on asset information requirements
- Finalizing the Strategic Asset Management Plan (SAMP)



Detailed Phase I Accomplishment:

Developed a Risk Framework

Purpose: Develop a uniform method for quantifying the relative risk of asset failure



A **risk framework** provides the basis for identifying the relative risk of asset failure and prioritizing risk mitigation measures, as well as extend useful life and minimize lifecycle cost

Detailed Phase I Accomplishment: Risk Scoring Pilot

- Applied Risk Framework for Sewer Pump Stations
 - Employed risk matrices in workshops with staff
 - Identified highest risk sewer pump stations
 - Identified highest risk asset classes



Outcomes

- Key DC Water staff are trained and engaged
- Have a fine-tuned risk framework, based on actual data, ready to be applied to other infrastructure assets
- Project priorities and future assessments will focus on areas of high risk

Detailed Phase I Accomplishment: Preventive Maintenance Optimization Pilot

- Completed Preventive Maintenance Optimization (PMO) activities at the Bryant Street Water Pump Station and Blue Plains Multi-Media Filtration
- Covered 988 assets within 9 asset classes: pumps, blowers, motors, drives, valves, gates, actuators, instrumentation, and basins)
- Focused on preventing failures and increasing reliability



Outcomes

- Estimated savings of 4,900 hours per year to be applied to higher value tasks (e.g., Predictive Maintenance)
- Operators are trained and invested in early identification and prevention of asset failure

Phase 1 Successes Will Drive Phase 2

Refined Risk Framework

Increased Knowledge of Assets

Preventive Maintenance Techniques

Outcomes

Accurate and in-depth asset information

Knowledge of where asset failure poses the greatest risk

An integrated enterprise process for identifying and prioritizing capital projects

Ability to make evidence-based decisions on an ongoing basis

Phase 1 Successes Will Drive Phase 2

**Communication and
Change Management**

**Training
&
Instruction**

**Active, Collaborative Tools
and Processes**

Outcomes

People working efficiently in ways that optimize customer value

Invested staff who can predict and prevent asset failure

Staff using Asset Management tools and practices as a way of business

Systems to track and manage performance

Key tools and processes developed in Phase 2 will aid DC Water in making better decisions about where to focus capital, operating and maintenance resources...

Tools and Processes

- Risk framework rolled-out across the Authority
- Risk mitigation option identification and selection process
- Uniform CIP prioritization process
- Business case evaluation process for capital projects
- Stage-gating process to enhance project from planning and design to construction, commissioning and warranty administration
- Operations & maintenance strategy for Blue Plains and Pump Station assets
- Sewer and Stormwater asset attribute documentation process
- Optimized work management process for performing maintenance tasks
- Identification of high-priority standard operating procedures (SOPs) to be developed or updated

Key documents and strategies are being developed in Phase 2 specific to DC Water...



Documents & Strategies

- Preventative Maintenance Optimization implementation plan
- Asset Management Plan template and plans for selected asset classes
- Condition Assessment Plan for selected assets (based on risk and consequence score) at Blue Plains and Pump Stations
- Asset Management competency framework, and recommendations for roles and responsibilities
- Operator competency framework and development plan
- Coordination with the update of *Blue Horizon 2020* Goals
- Update to the Strategic Asset Management Plan
- Outsourcing strategy

Key asset attribute information is being updated, and collaboration is being made integral to all work conducted in Phase 2...

Information & Training

- New assets coming on-line at Blue Plains, Sewer Pump Stations and Clean Rivers Program will be added to DC Water's computerized maintenance management system
- Existing assets within the water distribution and sewer collection systems will be added to Maximo from GIS
- For existing assets, the risk of failure and consequence of failure scores will be added to the Maximo record
- Communications and change management activities will continue
- Staff training in new processes and methods

Contract Plan

PHASE 2

Managing Our Risks

FOCUS RESOURCES ON ASSET
LIFECYCLE AND HIGH RISK

- 2-year timeframe
 - Start – June 15, 2015
 - End – June 14, 2017
- Value: \$10,200,000

PHASE 3

Managing Our Investments

OPTIMALLY MANAGE
ASSET RISK AT
LOWEST LIFECYCLE COST

- Transfer of AM responsibilities from consultant to DC Water staff
- Level of effort and timing to be determined

Thank you...



**DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY
BOARD OF DIRECTORS CONTRACTOR FACT SHEET**

ACTION REQUESTED

ENGINEERING SERVICES SUPPLEMENTAL AGREEMENT:

**Asset Management Program
(Joint Use)**

Approval to execute a Supplemental Agreement for architectural and engineering services contract not-to-exceed \$10,200,000.

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME:	SUBS:	PARTICIPATION:
CH2M Engineers, PC 901 New York Ave, NW Suite 4000 East Washington, DC 20001	EMA, Inc. St. Paul, MN	18.0%
	Sheladia Associates, Inc. Rockville, MD	10.3%
	EBA Engineering, Inc. Baltimore, MD	10.0%
	ADC Management Solutions Washington, DC	4.6%
	Peer Consultants, PC Washington, DC	3.1%
	Passaro Engineering Mount Airy, MD	4.0%
		MBE

DESCRIPTION AND PURPOSE

Original Contract Value, Not to Exceed:	\$ 5,400,000.00
Value of this Supplemental Agreement:	\$10,200,000.00
Cumulative SA Value, including this SA:	\$10,200,000.00
Current Contract Value, Not-To-Exceed, including this SA::	\$15,600,000.00
Original Contract Time	439 Days (1 Year, 3 Months)
Time Extension, this SA:	744 Days
Total SA Time Extension:	744 Days (2 Years, 0.5 Months)
Contract Start Date:	04-04-2014
Contract Completion Date:	06-30-2017

Purpose of the Contract:

To provide support services for an enterprise-wide asset management program

Original Contract Scope:

- Services to be provided include Asset Management Program Development and Guidance, Technology and Data Management, Asset Lifecycle Management, and Investment Plan Delivery. It is anticipated that full program delivery will occur over a 5-year period.

Current Supplemental Agreement Scope:

- The Supplemental Agreement constitutes the second phase of the Asset Management Program plan and provides services to validate/modify current asset management framework, systems, and structure. Support services for ongoing asset management initiatives will be provided, as well as implementation of new asset management initiatives across the enterprise including integration of mobile solutions and GIS requirements.

Future Supplemental Agreement Scope:

- Future Supplemental Agreements(s) are anticipated, subject to satisfactory review of the consultant's performance.

PROCUREMENT INFORMATION

Contract Type:	Cost plus Fixed Fee	Award Based On:	Highest Ranking Score
Commodity:	Engineering Design Services	Contract Number:	DCFA #456-WSA
Contractor Market:	Open Market		

BUDGET INFORMATION

Funding:	Capital	Department:	Engineering and Technical Services
Service Area:	Water, Sewer, and Wastewater Treatment	Department Head:	Liliana Maldonado
Project:	LP, LR, and LQ		

ESTIMATED USER SHARE INFORMATION

For Wastewater Only

User	Share %	Dollar Amount
District of Columbia	41.22%	\$ 2,250,612.00
Washington Suburban Sanitary Commission	45.84%	\$ 2,502,864.00
Fairfax County	8.38%	\$ 457,548.00
Loudoun County & Potomac Interceptor	4.56%	\$ 248,976.00
Total Estimated Dollar Amount	100.00%	\$ 5,460,000.00

For Water and Sewer Only


User	Share %	Dollar Amount
District of Columbia	100.00%	\$ 4,740,000.00
Washington Suburban Sanitary Commission	0.00%	\$ 0.00
Fairfax County	0.00%	\$ 0.00
Loudoun County & Potomac Interceptor	0.00%	\$ 0.00
Total Estimated Dollar Amount	100.00%	\$ 4,740,000.00

Combined*

User	Share %	Dollar Amount
District of Columbia	68.54%	\$6,990,612.00
Washington Suburban Sanitary Commission	24.54%	\$2,502,864.00
Fairfax County	4.49%	\$457,548.00
Loudoun County & Potomac Interceptor	2.44%	\$248,976.00
Total Estimated Dollar Amount	100.00%	\$10,200,000.00

* Under the terms of the IMA, the capital costs associated with each joint use facility are to be split among the users in proportion to the peak flow each user is allocated. It is not possible, at this time, to allocate costs by individual facility. It is anticipated that as projects are developed for work associated with specific facilities and costs are developed, the individual users will be notified and billed accordingly.


 Gail Alexander-Reeves
 Director of Budget
 Date 5/12/15


 Leonard Benson
 Chief Engineer
 Date 5/13/15


 Dan Bae
 Director of Procurement
 Date 5/15/15


 George S. Hawkins
 General Manager
 Date