

## 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, March 19, 2015  
10:15 a.m.*

#### I. Call to Order

Rachna Butani,  
Chairperson  
Bo Menkiti,  
Acting Chairperson

#### 10:15 a.m. II. Water Quality Monitoring

Charles Kiely

#### 10:25 a.m. III. Fire Hydrant Upgrade Program

David Wall

#### 10:35 a.m. IV. American University Park Cleaning & Lining Project

Jason Hughes

#### 10:45 a.m. V. Asset Management Program

Len Benson

#### 11:25 a.m. VI. AWTP Status Updates

Walt Bailey

1. BPAWTP Performance

#### 11:35 a.m. VII. Status Updates: Potomac Interceptor Sewer

Liliana Maldonado

1. Odor Abatement Project

#### 11:40 a.m. VIII. Action Items – Joint Use

Teresa Scott/Len Benson

1. Contract No. WAS-12-007-AA-SH, Nutri-Blend
2. Contract No. 15-PR-DET-03, RJN Group
3. Contract No. WAS-12-026-AA-JR, MC Dean
4. Contract No. DCFA #445, O'Brien & Gere

#### Non-Joint Use

1. Contract No. 14- PR- CCO-06, Mueller Systems, LLC

11:55 a.m. IX. Other Business/Emerging Issues

12:00 p.m. X. Executive Session\*

12:05 p.m. X. 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. Provide a graphic depicting the projected energy consumption at Blue Plains and for all DC Water for the next 10-, 15-, and 20-years and how much energy will be coming from PPA, CHP and Pepco. ***{To be presented at the March 19, 2015 Board Meeting.}***

**Status Report of Public Fire Hydrants for DC Water Services Committee - March 2, 2015**

	December Cmte. Report (Dec 01, 2014)	January Cmte. Report (Jan 05, 2015)	February Cmte. Report (Feb 03, 2015)	March Cmte. Report (Mar 02, 2015)
Public Fire Hydrants:	9,460	9,461	9,461	9,457
In Service:	9,345	9,340	9,357	9,350
Marked Out-of-Service (OOS)	115	121	104	107
OOS - defective requiring repair/replacement	53	60	59	63
<b>% OOS requiring repair or replacement (DC Water goal is 1% or less OOS)</b>	<b>0.56%</b>	<b>0.63%</b>	<b>0.62%</b>	<b>0.67%</b>
OOS - due to inaccessibility or temp construction work	62	61	45	44

Note: The number of public hydrants in the DC Water system fluctuates; this number fluctuates as hydrants are added and removed during development or construction activities as well as at the request of the Fire Dept.

**Breakdown of Public Fire Hydrants Out-of-Service (OOS) as of March 2, 2015 107**

**Breakdown of Defective**

	0-7 Days	8-14 Days	15-30 Days	31-60 Days	61-90 Days	91-120 Days	> 120 Days	Total
Hydrant Needs Repair/Investigation	1	1	9	2	1	0	5	19
Needs Valve Investigation for Low Flow/Pressure or Shut Test for Replacement	0	0	2	1	3	3	6	15
Needs Replacement	0	0	0	1	2	1	25	29

**Defective**

**63**

**Breakdown of Others**

	0-7 Days	8-14 Days	15-30 Days	31-60 Days	61-90 Days	91-120 Days	> 120 Days	Total
Temporarily OOS as part of operations such as a main repair	0	0	0	0	0	3	11	14
Construction* - OOS	0	0	0	3	0	3	21	27
Obstructed Hydrant – OOS hydrant due to operation impeded by an obstruction.	0	0	0	0	0	0	3	3

**Others**

**44**

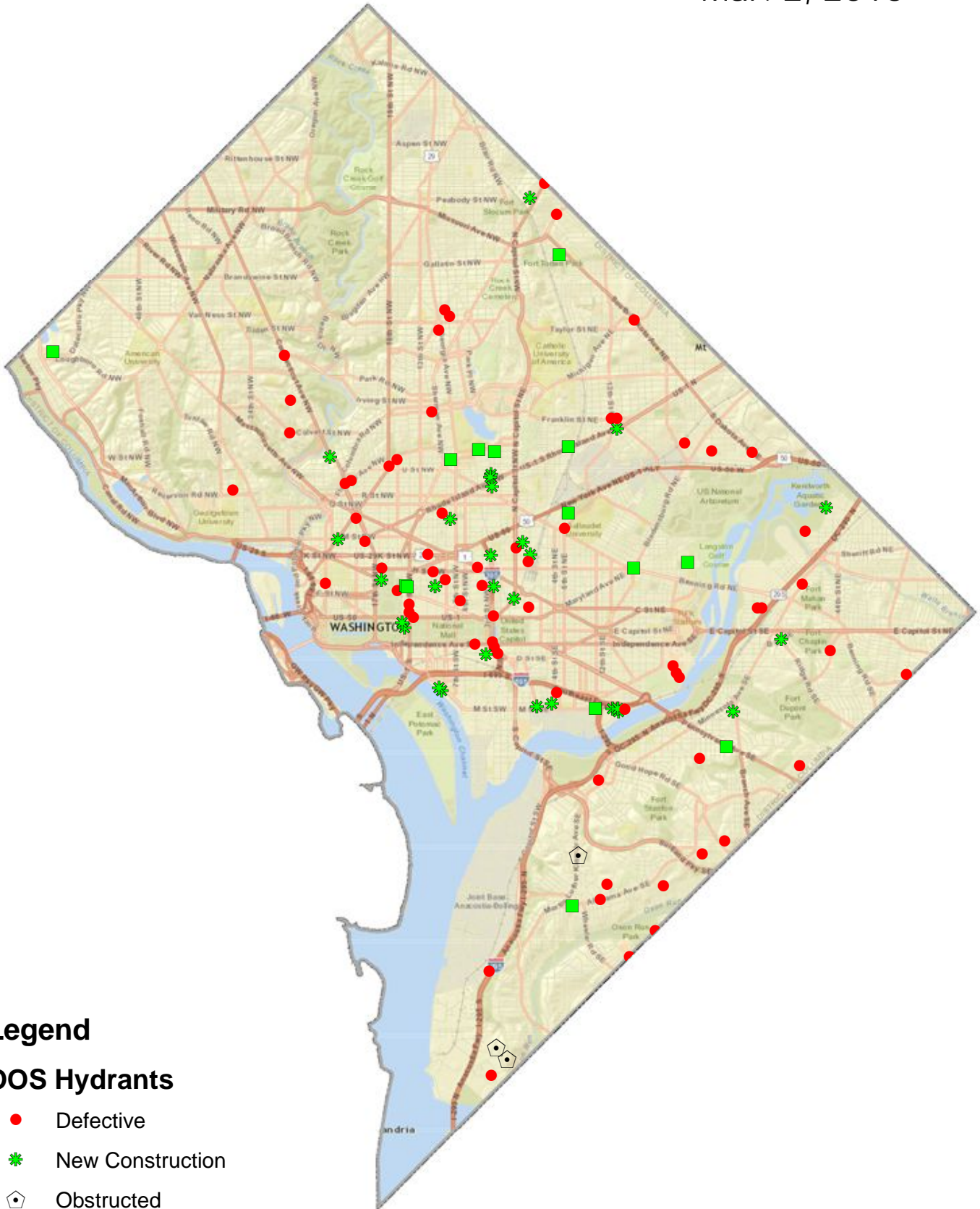
\*Fire hydrants not accessible due to construction activities. Also includes new hydrants which have not yet been commissioned or old hydrants which will be abandoned as part of ongoing construction projects.

**Status of Private Fire Hydrants-Based on FEMS Inspection Reporting**

Private Hydrants:	1,325
• In Service:	1,197
• Out-of-Service (OOS):	128

# Map of Public Out-of-Service Hydrants

Mar. 2, 2015



## Legend

### OOS Hydrants

- Defective
- \* New Construction
- ⬠ Obstructed
- Temporary



# ASSET MANAGEMENT PROGRAM



AM Program Status Update  
*Joint Meeting EQ&SS/WQ&WS*  
*March 19, 2015*



# Blue Horizon 2020 defines DC Water's strategy for the future

- 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*



# 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



# What is Asset Management?

## ASSET MANAGEMENT is:

- *The coordinated activity of an organization to realize value from assets.* (International Standard ISO 55000:2014)
- *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.* (Asset Management Practical Guide – Water & Wastewater Associations)



## An ASSET is:

*An item, thing or entity that has potential or actual value to an organization.* (International Standard ISO 55000:2014)

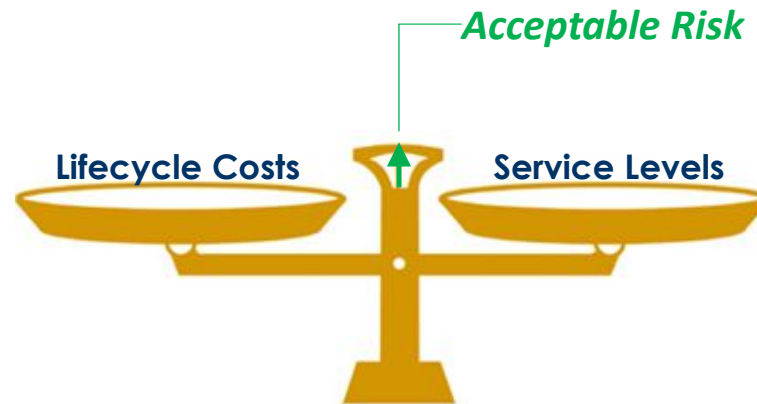
- *An item with an independent physical and functional identity that has a commercial or exchange value..... infrastructure assets (i.e., pump, motor, tank, pipeline, transformer).* (Asset Management Practical Guide – Water & Wastewater Associations)





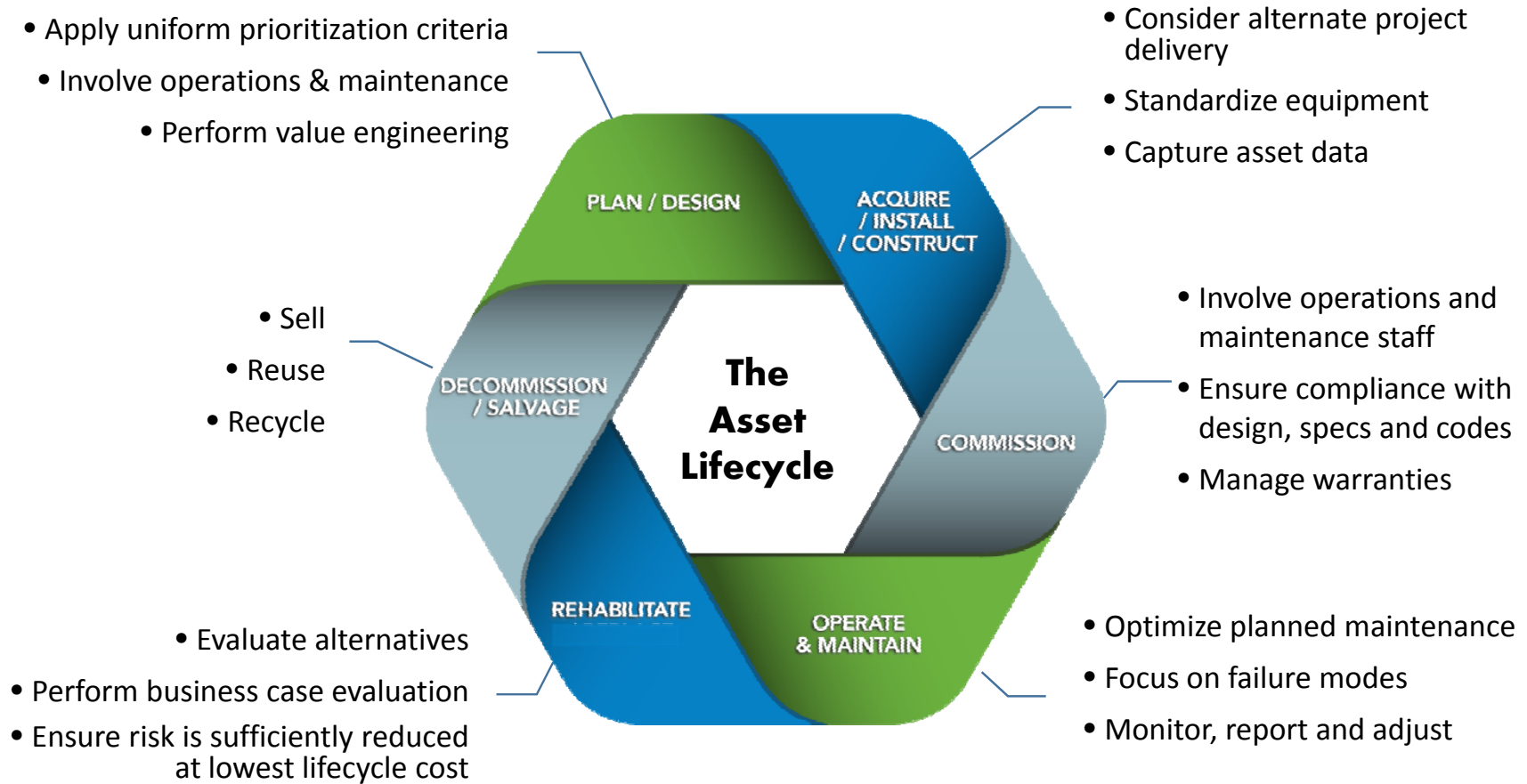
## Asset Management addresses costs, risks and service delivery of the entire asset lifecycle

*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.*

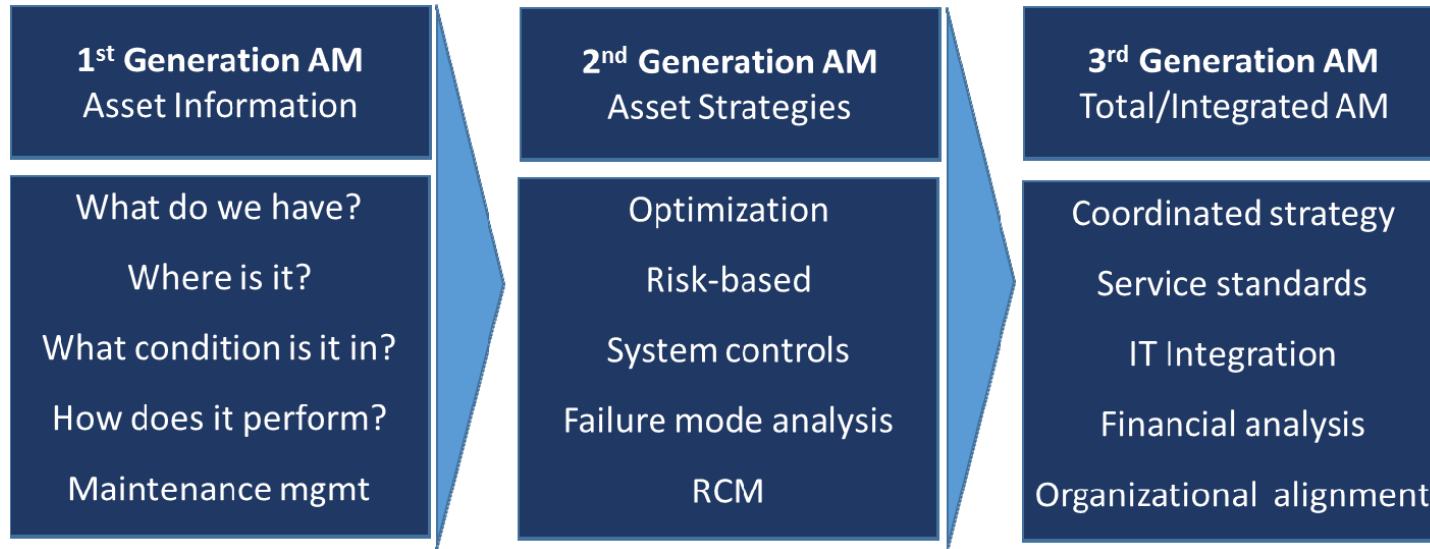


**Balance conflicting goals by managing risk**

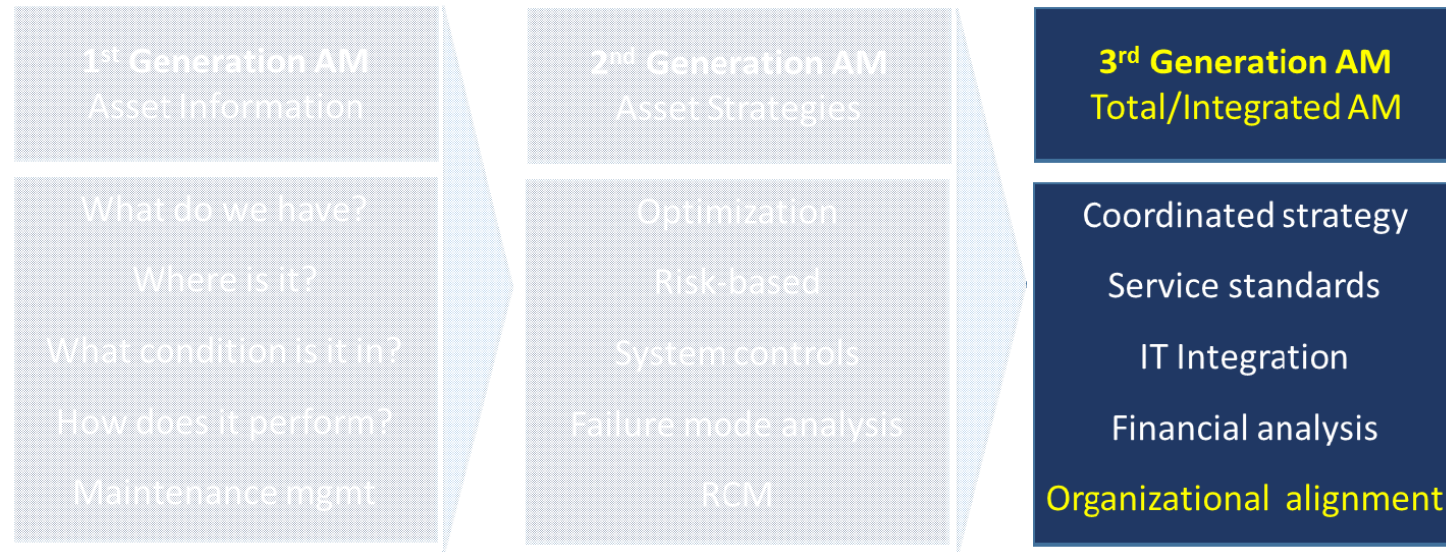
# Considering the lifecycle of assets provides multiple opportunities for managing costs



# Asset Management has become more strategic over the last few decades



# Key elements of Asset Management now include coordination, integration and organizational alignment along with financial analysis

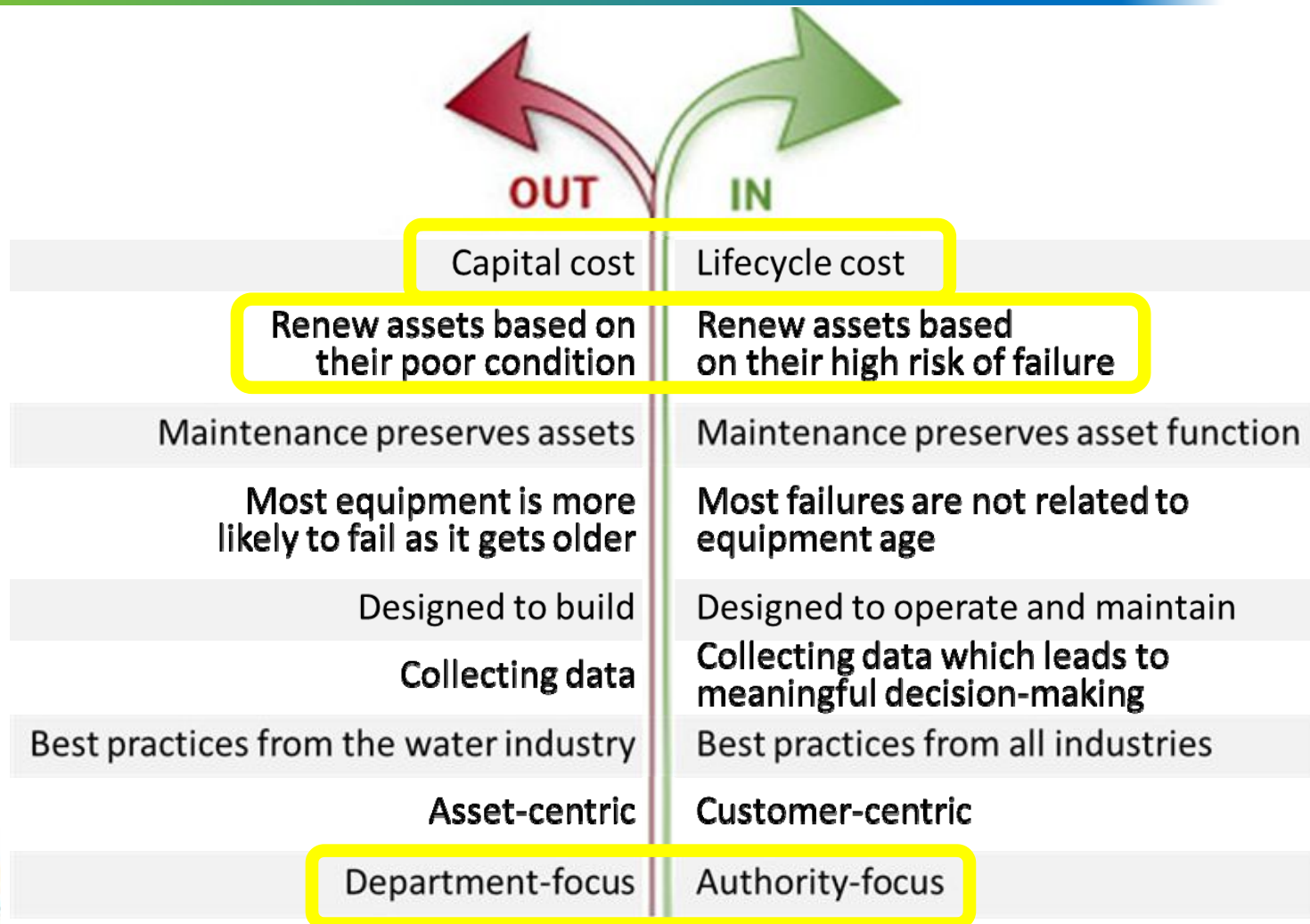


“Asset Management tools and technologies may be helpful, but **the engagement of the workforce, the clarity of leadership, and the collaboration between different departments and functions are the real differentiators** of a leading asset management organization.”



The Institute of Asset Management

# Asset Management principles and practices require the organization's staff to move away from traditional approaches



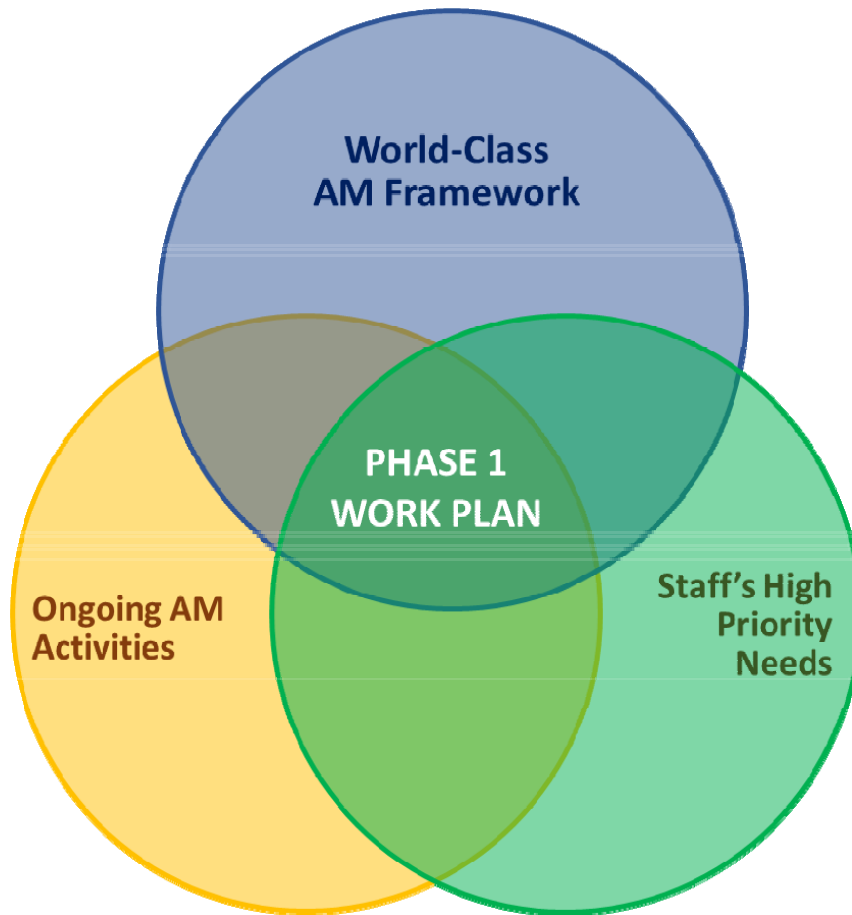
## A concerted and systematic approach to employee engagement will facilitate movement toward adoption of new processes and practices

- Communications and Change Management are key elements of the Asset Management Program
- Considerable time and resources are dedicated to involving all levels of DC Water staff in every aspect of the Asset Management Program:
  - Meetings
  - Workshops
  - Training

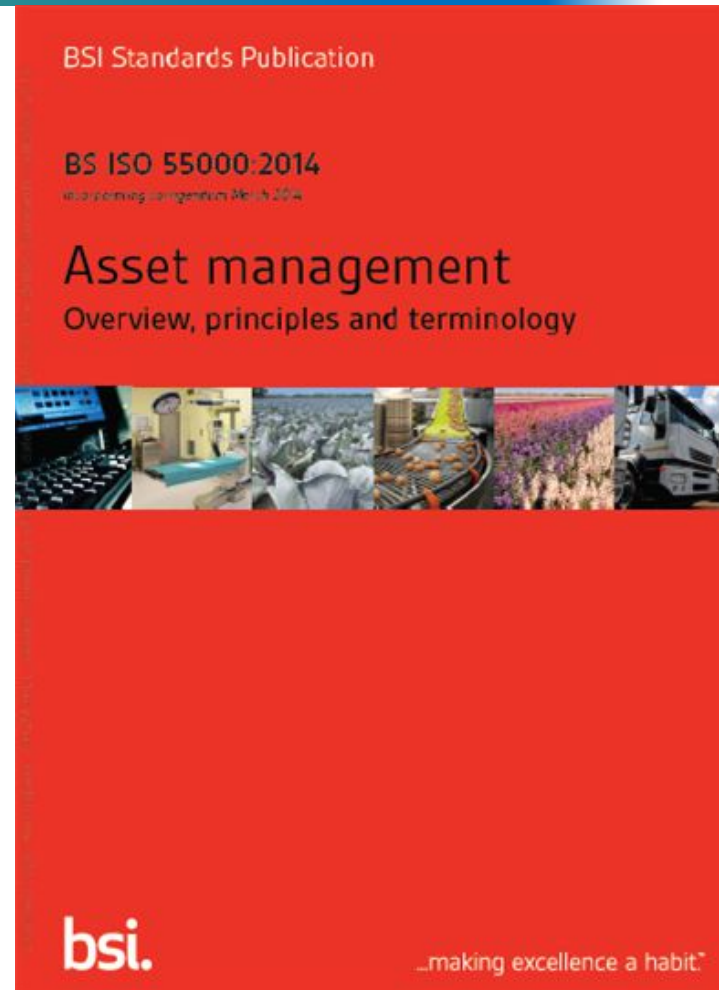
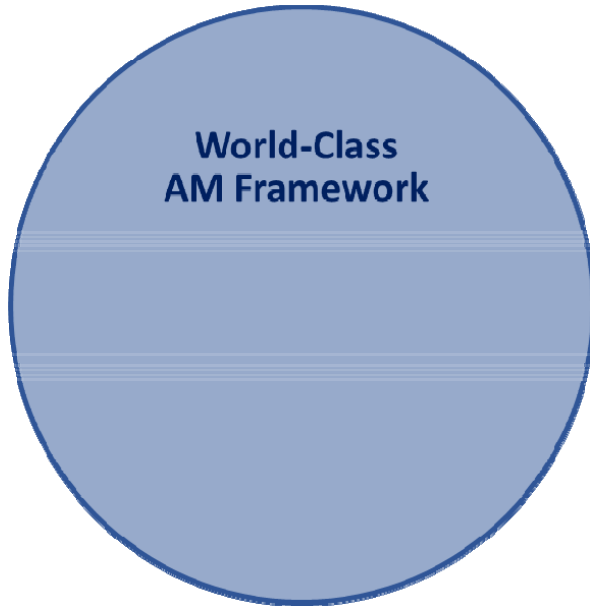


Nearly 300 DC Water staff members have been personally involved to-date  
All employees have been exposed to Asset Management through *Focus*

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

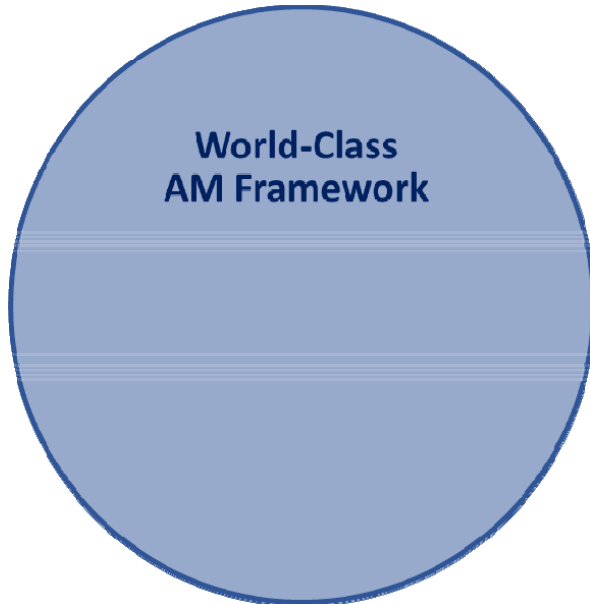


# Develop an AM Framework that leads to a World-Class AM Program





# Develop an AM Framework that leads to a World-Class AM Program



- 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 useful information
- Understanding the implications of deferred interventions
- Evidence-based decision-making

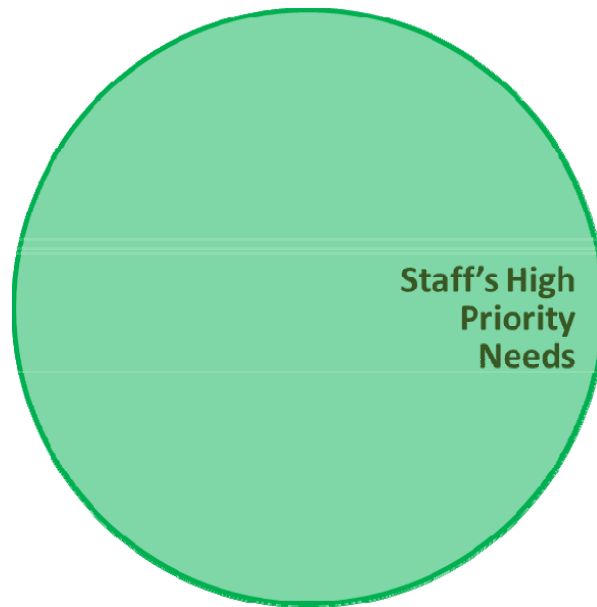
# Maintain momentum and build upon ongoing AM-related activities

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- Facilities planning
  - Water Program
  - Sewer Program
  - Wastewater Treatment Program
  - Clean Rivers Program
- Build on Operations & Maintenance Assistance Program (OMAP) for new facilities coming online at Blue Plains
- Continue to capture attributes and data of vertical assets in Computerized Maintenance Mngement System
- Enhance and accelerate Preventive Maintenance validation effort

# Address the high priority needs of DC Water's staff



- Asset inventory support for vertical assets
- Capture data for Water Distribution assets
- Optimize Preventive Maintenance (PM) activities
- Improve Corrective Maintenance process
- Establish Water Distribution asset attribute documentation process
- Integrate remote monitoring technology with maintenance management system
- Continue training on maintenance management system
- Reliability training
- Improve maintenance workflow
- Risk Framework pilot for Filtration
- Support CIP review (Water, Sewer, and Wastewater Treatment)
- Asset ID and naming convention
- Cultural assessment

# Providing a policy to guide the management of assets through key principles that align with DC Water's Strategic Plan

- Asset Management Policy
  - Establishes the nine principles of managing DC Water's infrastructure
  - Maintains "line-of-sight" to *Blue Horizon 2020*
  - Provides the foundation for developing the Strategic Asset Management Plan (SAMP) and future Asset Management Plans (AMPs)
  - Is a key element of a world-class Asset Management Program



See last page for full size AM Policy

**dc**  
water is life®

## 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-devised 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 DEFENSIBLE by using formal, consistent, scalable, and repeatable approaches.
5. SYSTEM-VIEW by managing assets as interrelated components in a unified system rather than as stand-alone assets.
6. INNOVATIVE by continually improving asset management processes and procedures using innovative tools, techniques and solutions.
7. RELIABILITY-FOCUSED by understanding consequences of asset failure and implementing appropriate maintenance processes to reduce likelihood of asset failure.
8. REGULATORY-DRIVEN by ensuring compliance with laws, regulations, permits, Consent Decrees, Administrative Orders and other legal requirements.
9. MANAGED RISK by directing resources and priorities to achieve established levels of service while minimizing life cycle costs at an acceptable level of risk.

September 3, 2014

# Providing a policy to guide the management of assets through key principles that align with DC Water's Strategic Plan

- Asset Management Policy
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  - Maintains "line-of-sight" to *Blue Horizon 2020*
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## DC WATER ASSET MANAGEMENT POLICY

### PRINCIPLES

1. Customer-focused
2. Whole Lifecycle Based
3. Sustainable and Forward-Looking
4. Transparent and Defensible
5. System-View
6. Innovative
7. Reliability-Focused
8. Regulatory-Driven
9. Managed Risk

# Structured communications provides staff with a better understanding of Asset Management and its principles and processes

## ■ Communications and Change Management

- Coordinated with External Affairs
- Created and consulting with the Communications and Change Team
- Conducted a change readiness assessment and an organizational culture assessment
- Articles in *Focus*
- Q&As in *Pipeline* (DC Water's intranet)



# An Authority-wide Risk Framework provides a uniform approach to capital and O&M investment

## ■ Risk Framework

- Purpose: Develop a uniform method for quantifying the relative risk of asset failure
- Provides the basis for mitigating risk by identifying and prioritizing:
  - Capital projects
  - O&M enhancements, condition assessments, and maintenance activities to extend useful life and minimize lifecycle cost

### ***Steps in Risk Assessment and Identification of Risk Mitigation***

1. *Determine consequence of failure – based on impact on Levels of Service*
2. *Determine likelihood of failure – based on condition and performance*
3. *Calculate relative risk of failure and prioritize*
4. *Identify risk mitigation options (capital projects and/or O&M enhancements)*
5. *Use a business case evaluation process to select preferred option*

RISK MATRIX		Likelihood of Failure				
		Remote	Unlikely	Possible	Likely	Nearly Certain
		1	3	5	7	10
Consequence of Failure	Very High	10	30	50	70	100
	High	7	21	35	49	70
	Moderate	5	15	25	35	50
	Low	3	9	15	21	30
	Negligible	1	3	5	7	10



# The Risk Framework will be piloted in a top-down approach for Sewer Pump Stations and for Multi-media Filtration

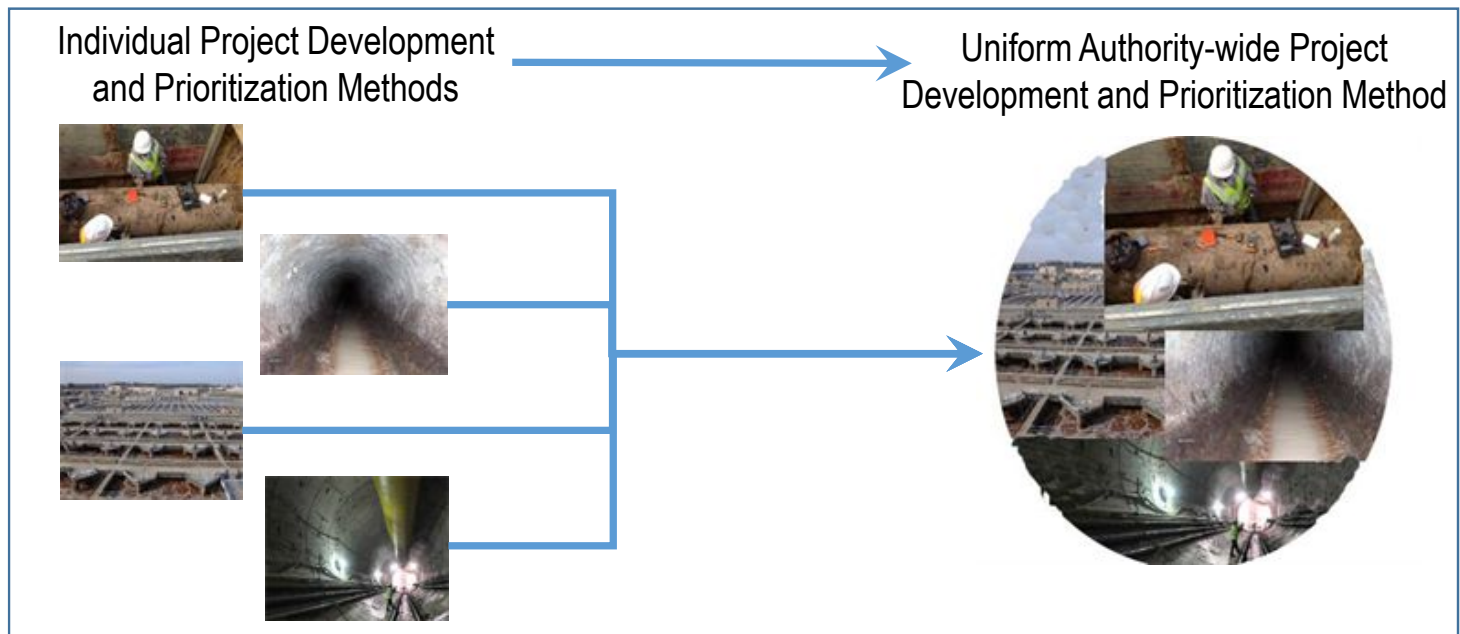
- Pilot Top-Down / Risk-Based approach on the nine Sewer Pump Stations
  - Applying risk matrices in workshops with DDCS operations and maintenance staffs and DETS
  - Identify highest risk pump station and drill-down hierarchy to identify highest risk assets
  - Coordinating with Wastewater Treatment Program Manager
- Followed by a similar pilot for Blue Plains Multi-media Filtration





# Consolidate current CIP development and prioritization processes into a uniform Authority-wide approach

- Developing an approach to identify and prioritize capital projects in a uniform manner across all service areas
- Considers risk mitigation plus non-risk criteria aligned with *Blue Horizon 2020* (i.e., Strategic Goals and Critical Success Factors)
- Involves Engineering, O&M staff and Program Managers



# The uniform Authority-wide CIP prioritization approach is being piloted with selected Water and Sewer projects

- Ten projects from Water
- Ten projects from Sewer
- Coordinated effort
  - DETS
  - DWS
  - DSS
  - DDCS
  - Water Program Manager
  - Sewer Program Manager
- Future pilot for Blue Plains



# Training staff to use maintenance management tools, new methods and informed decision-making increases useful life of assets

- In the past 5 months, over 150 DC Water staff members have attended training session in subjects such as:
  - Using the Computerized Maintenance Management System
  - Preventive Maintenance Optimization (PMO)
  - Reliability Centered Maintenance (RCM)
  - Maintenance Task Analysis (MTA)
  - Failure Mode and Effects Analysis (FMEA)
  - Risk-based approach



# Failure Mode and Effects Analysis (FMEA) leads to increased equipment reliability

- Using FMEA concepts at Bryant Street Pump Station and Blue Plains Multi-media Filtration to:
  - Systematically analyze component failures
  - Identify the effects on system operations
  - Reduce reactive maintenance
  - Improve quality and value of Preventive Maintenance activities
  - Optimize use of labor, NOT to reduce labor



### ***Five Questions of FMEA:***

1. *What causes each failure?*
2. *What happens when each failure occurs?*
3. *In what way does each failure matter?*
4. *What can be done to predict or prevent each failure?*
5. *What should be done if a suitable proactive task cannot be found?*

## Preventive Maintenance optimization pilot activities have yielded promising results

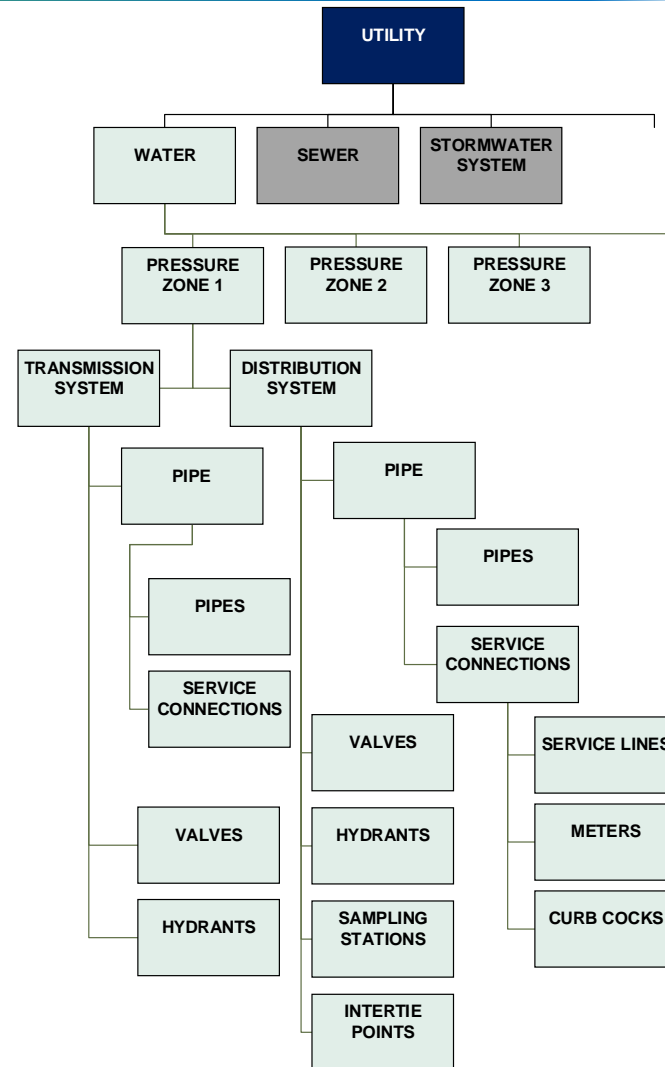
- Completed Preventive Maintenance Optimization (PMO) activities at the Bryant Street Pump Station
  - Covered >200 assets within 4 asset classes: pumps, motors, valves, actuators)



- Hours saved can be applied to backlog and higher value tasks (e.g., Predictive Maintenance)

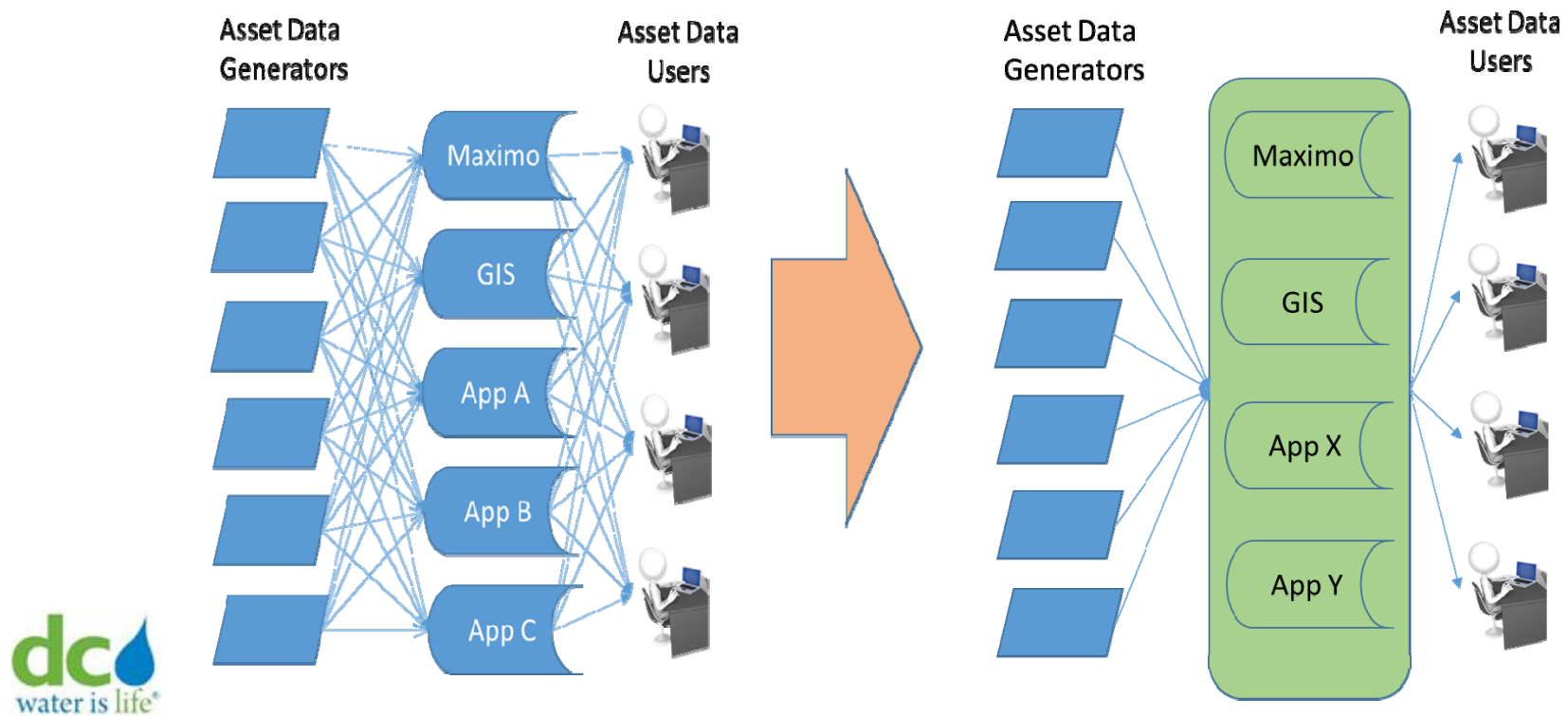
# Developing an asset hierarchy for the linear systems provides a logical means of assessing risk and better cost accounting

- Provided recommendations for linear asset definitions, hierarchy, and naming convention
- Holding meetings with DWS, DETS, IT and the Water and Sewer Program Managers to reach consensus on a useful representation of linear assets through a hierarchy

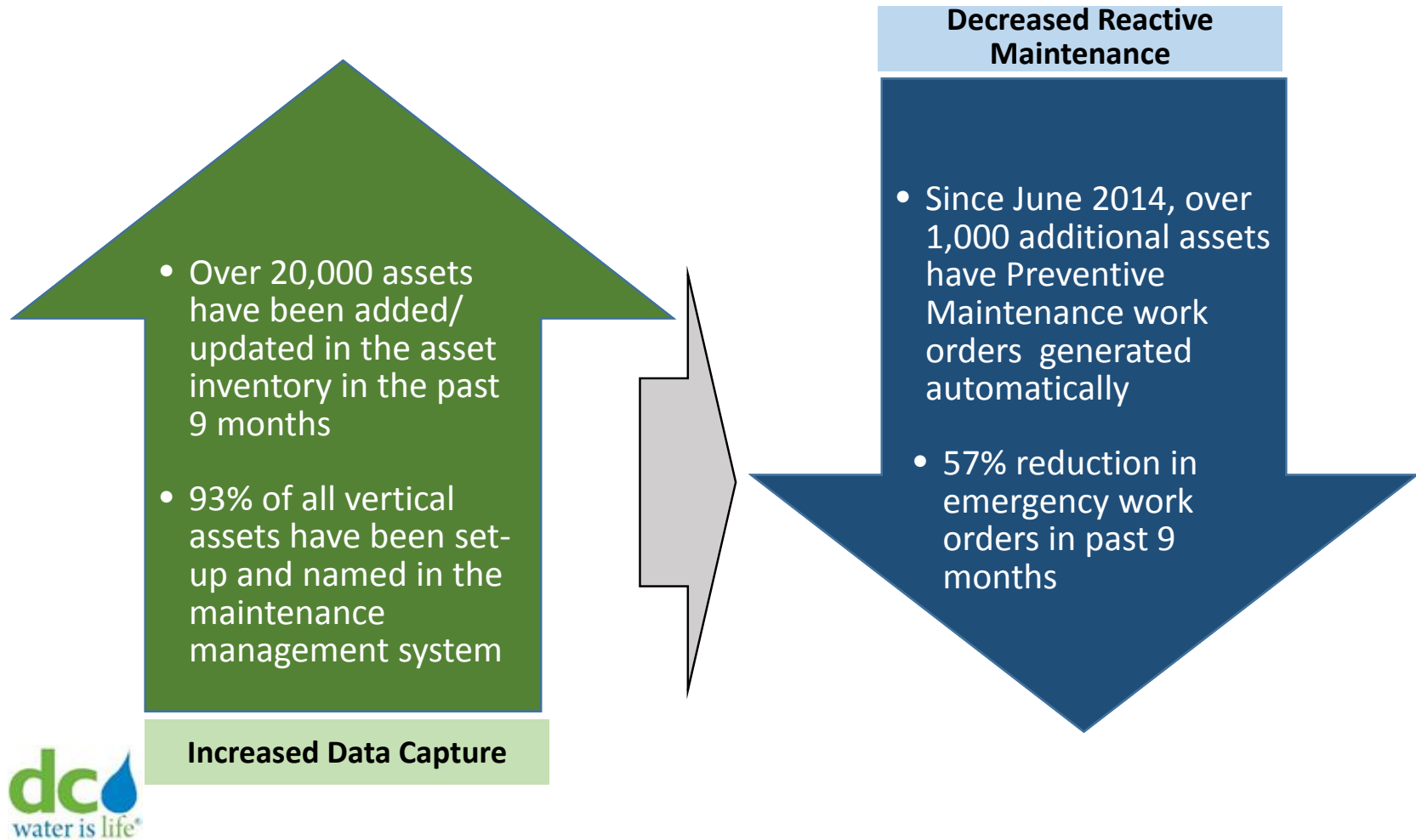


# Standardization and integration of asset data from multiple sources will lead to more informed and timely decisions

- Building data model for water distribution system
  - Process for capturing asset attributes and data
  - Synchronization between GIS & Computerized Maintenance Management
  - Will require implementation through information technology

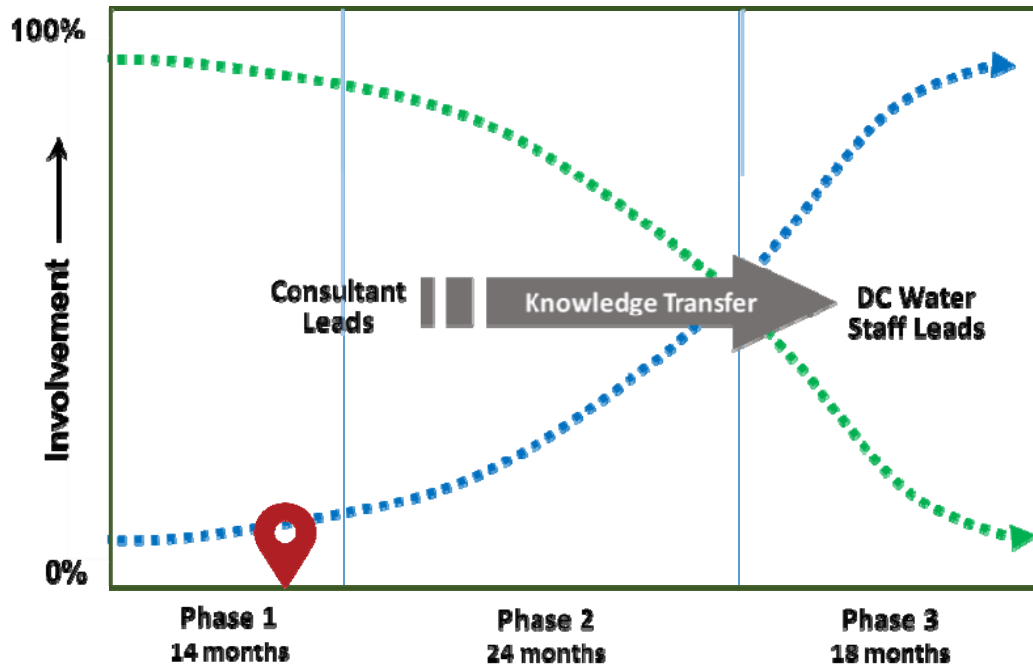


# Asset data capture and work order management refinement has reduced emergency work and overall backlog





# Implementing a sustainable world-class Asset Management Program is a journey that is well worth embarking upon



- Envisioned as a 4 to 5 year program
- After approximately 3 years the majority of the effort will transfer from the consultant to DC Water staff
- Organizational capacity building must continue
  - Competency training
  - Organizational change
  - Communications
  - Organizational capacity



# Building organizational capacity for sustaining Asset Management has already begun

- Recruiting Authority Asset Manager
  - Integration of Asset Management principles, practices and tools Authority-wide
  
- Recruiting Service Area Asset Managers
  - Coordinating and embedding Asset Management principles, practices and tools within Departments
  - Service Area Asset Managers will be aligned to the Authority Asset Manager to ensure uniformity of principles, practices and tools across DC Water



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 backup in her basement, Bell went to the woman's house.

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

Sowell is also responsible for standardizing processes. This includes making sure data is recorded and accurate. Every time a main is 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 some of the culprits behind some of these customer emergencies."

## Some of the key accomplishments so far...

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- ✓ Developed Asset Management Policy aligned with *Blue Horizon 2020* and ISO 55000
- ✓ Engaged 300 DC Water staff members in the Asset Management Program
- ✓ Established framework for assessing risk across the Authority
- ✓ Initiated a modified CIP prioritization approach
- ✓ Implementing and training of staff in advanced asset reliability methods
- ✓ Capturing asset attribute information and associated data
- ✓ Implementing preventive maintenance optimization pilots
- ✓ Defined asset hierarchies for linear and vertical assets
- ✓ Enhanced maintenance workflows



Thank you...



# Asset Management Steering Team

## Asset Management Advisory Team

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### Steering Team

- Walt Baily
- Len Benson
- Rosalind Inge
- Charles Kiely
- Mark Kim
- Tom Kuczynski

### Advisory Team

- Gail Alexander-Reeves
- Carlos Almeida
- Gus Bass
- Bethany Bezak
- Val Blinkoff
- Cuthbert Braveboy
- Gian Cossa
- Diala Dandach
- Rick Green
- Jason Hughes
- Ravi Kammila
- Salil Kharkar
- Nana Kwame
- Renee Lawrence
- Tony Mack
- John Madrid
- Liliana Maldondo
- Getachew Melsew
- Lauren Preston
- Teresa Scott
- Chuck Sweeney
- Aklile Tesfaye
- Biju Thomas

# Communications and Change Management

## External Affairs Liaison

- John Lisle
- Rahkia Nance
- Tamara Stevenson and staff

## General Manager Messaging

- Lisa Barton, GM Assistant

## Communications and Change Management Subteam

- Carlos Almeida
- Gus Bass
- Theresa Bruton
- Gian Cossa
- Diala Dandach
- Christina DeBarbadillo
- Mustaafa Dozier
- Salil Kharkar
- Liliana Maldonado
- Getachew Melsew
- Rahkia Nance
- Lauren Preston

## Additional Communications and Change Management Champions

- Tony Mack
- Phil Higgins
- James Neal
- Rick Green
- Marlee Franzen

## Organizational Culture and Change Readiness Assessments

- |                      |                     |
|----------------------|---------------------|
| • Carlos Almeida     | • Tony Mack         |
| • Walt Bailey        | • Liliana Maldonado |
| • Nicole Bell-Sowell | • Getachew Melsew   |
| • Tsedale Berhanu    | • Rahkia Nance      |
| • Gian Cossa         | • Clement Oguns     |
| • Diala Dandach      | • Lauren Preston    |
| • Jason Hughes       | • Teresa Scott      |
| • Salil Kharkar      | • Aklile Tesfaye    |
- 75 additional DETS staff



B

# Risk Framework

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- Gail Alexander-Reeves
- Walt Bailey
- Gus Bass
- Bethany Bezak
- Gian Cossa
- Diala Dandach
- Dan Frechette
- Eric Gainey
- Jason Hughes
- Ravi Kammila
- Salil Kharkar
- Renee Lawrence
- Ayodele McClenney
- Clarence McCray
- Dave McLaughlin
- Tony Mack
- Liliana Maldonado
- Pam Mooring
- Lola Oyeyemi
- Nick Passarelli
- Lauren Preston
- Jonathan Reeves
- Jodye Russell
- Sigi Sharp
- Chuck Sweeney
- Aklile Tesfaye
- David Wall
- Moussa Wone



# Asset Hierarchy

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- Dan Barker
- Michael Barnes
- Nichol Bell Sowell
- Tsedale Berhanu
- Bethany Bezak
- Cuthbert Braveboy
- Matt Bryant
- Gian Cossa
- Louis Desjardins
- Roger Gans
- Gary Geck
- Carmen Gibson
- Tom Grala
- Jason Hughes
- Omar Javed
- Hari Kurup
- Tom Kuczynski
- Brian McDermott
- Getachew Melsew
- Lauren Preston
- Dunbar Regis
- Deidre Sanders
- Christopher Sandt
- Biju Thomas
- Skip Tompkins
- Gert Van Der Walt
- David Wall





# Data Management Water Distribution Linear Assets

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- Dan Barker
- Michael Barnes
- Matt Bryant
- Gian Cossa
- Louis Desjardins
- Roger Gans
- Gary Geck
- Carmen Gibson
- Tom Grala
- Jason Hughes
- Omar Javed
- Tom Kuczynski
- Hari Kurup
- Brian McDermott
- Getachew Melsew
- Lauren Preston
- Christopher Sandt
- Deidre Sanders
- Biju Thomas
- Skip Tompkins
- Gert Van Der Walt
- David Wall

# Reliability - Training

## Reliability-Centered Maintenance

- Jaime Alba
- Theresa Bruton
- Marialena Hatzigeorgiou
- Elkin Hernandez
- Renee Lawrence
- Tony Mack
- Wesley Miller
- Hiram Tanner
- Aklile Tesfaye
- Edwin Yaniga

## Maintenance Task Analysis

- Jaime Alba
- Walter Bailey
- Joe Bastian
- Larry Bastian
- Theresa Bruton
- Marialena Hatzigeorgiou
- Elkin Hernandez
- Ravi Kammila
- Salil Kharkar
- Renee Lawrence
- Ryu Suzuki
- Edwin Yaniga

## Preventive Maint Optimization and Failure Mode & Effects Analysis

- Jaime Alba
- Bill Albrittain
- Miguel Alicea
- Marc Barbee
- Theresa Bruton
- Louis Couvillon
- Brian Fitzhugh
- Marialena Hatzigeorgiou
- Laurence Hendrickson
- Phil Higgins
- Karl Jameson
- Salil Kharkar
- Renee Lawrence
- Tony Mack
- Ronney McMillian
- Nick Passarelli
- David Peeler
- Jeff Proctor
- Antron Sutton
- Aklile Tesfaye
- Edrick Upshir
- Edwin Yaniga



# Computerized Maintenance Management System - Training

## Department of Distribution and Conveyance Systems (DDCS)

- Miguel Alicea
- Tsegaye D. Assefa
- Geoffrey Bagley
- David Billings
- Paul Childers
- Dennis Deahl
- Aregay Demeke
- Geoff Dunsta
- Richard Dudley
- Ayodeji Fagbamila
- Sandra Fitzpatrick
- David Gatheright
- Stephen Greene
- Larry Haynes
- Dwayne Holloway
- Reginald Howell
- Gregory Hunter
- Mesfin Isaac
- Jacob Kelly
- Pattie Lamb
- Robert Lee
- Anthony Littlejohn
- Dusti Lowndes
- Samuel Lynch
- Elie Philson
- Charles Redd
- Jonathan Reeves
- Steve Rein
- Arthur Schreuder
- Christopher Scipio
- Kenneth P. Shields
- Warren Small
- Calvin Smalls
- Floyd Smith
- Roger Spence
- Ion Stan
- Darrin Weedon
- Eugene White
- Calvert Wilson
- Tony Wimbish

## Clean Rivers (CR)

- Bethany Bezak
- Seth Charde
- Caitlin Feehan
- Michael Perkins



# Computerized Maintenance Management System - Training

## Department of Maintenance Services (DMS)

- John Adams
- Eduardo Arredondo
- Reginald Bell
- Nichol Bell Sowell
- Edward Blankenship
- Damon Brown
- Howard Cooper
- Stephen Clements
- Louis Convillon
- Jack Covert
- Wiley Darden
- DeJuan Davis
- Phillip Davis
- Winston Delozier
- Albert Emerick
- Ray Fenwick
- Montee Frazee
- Nathaniel Gales
- Jeffrey Grimes
- Michael Grimes
- David Hamilton
- Leonard Hanson
- Lolita Hardy
- Reginald Harper
- Ward Hawkins
- Gregory Holloman
- Jeffrey Holtzdaw
- Eddie Howard
- Shawn Island
- Quentin Jackson
- Titus Lawrence
- Calvin Lyon
- Craig Manning
- Leonard McAlpine
- Andre Middleton
- Dennis Morris
- Kevin Morton
- James Neal
- Darnell Quarles
- Ernest Proctor
- Theodore Proctor
- Michael Reeves
- Moses Riley
- Lawrence Robinson
- Rafael Rosso
- Coralynn Smith
- Steve Strong
- Jesse Stanton
- Robert Savoy
- Frederick Shinnamon
- Malik Salaam
- Michael Smith
- David Street
- Donald Taylor
- Eugene Thompson
- Dmitri Valouiski
- Vanika Watson
- Sylvester Wallace
- Gerald Wheeler
- Johnnie White
- Maurice Winston
- Stephen Winkler



# Preventive Maintenance Optimization Bryant Street Pilot

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## **PMO Subject Matter Experts**

- Miguel Alicea
- Marc Barbee
- Laurence Hendrickson
- Mesfin Isaac
- David Peeler
- Gregory Stevenson
- Keith Watts

## **PMO Reviewers/Approvers**

- Thomas Dyson
- Ravi Kammila
- Renee Lawrence
- Chuck Sweeney
- Wayne Reed



# Preventive Maintenance Optimization / Failure Mode and Effects Analysis Filtration Pilot

## **FMEA Management Team**

- William Albrittain
- Jaime Alba
- Theresa Bruton
- James Clarke
- Clark Fitzgerald
- Marialena Hatzigeorgiou
- Elkin Hernandez
- Salil Kharkar
- Tony Mack
- Nicholas Passarelli
- Edwin Yaniga

## **PMO Subject Matter Experts**

- George Baxter
- Steve Clements
- Louis Couvillon
- Phil Higgins
- Carlos Hunter
- Damion McAllister
- Robert Rotunno
- David Street

## **PMO Reviewers / Approvers**

- Bill Adams
- Jamie Alba
- William Albrittain
- Asa Chapman
- Roy Gibson
- Elkin Hernandez

## **FMEA SME Reviewers**

- Asa Chapman
- Louis Couvillon
- Roy Gibson
- Phil Higgins
- Damion McAllister
- Robert Rotunno





## 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-devised 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:

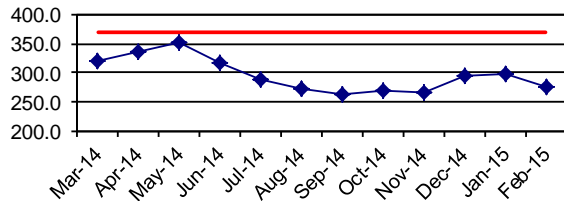
1. CUSTOMER-FOCUSED by meeting levels of service based on ratepayer and community preferences.
2. WHOLE LIFE-CYCLE BASED by considering asset resource and financial requirements from planning, design, construction/acquisition and commissioning, through operation, maintenance and renewal, to retirement and disposal.
3. SUSTAINABLE AND FORWARD-LOOKING by considering social, environmental and financial aspects in present and future service commitments.
4. TRANSPARENT AND DEFENSIBLE by using formal, consistent, scalable, and repeatable approaches.
5. SYSTEM-VIEW by managing assets as interrelated components in a unified system rather than as stand-alone assets.
6. INNOVATIVE by continually improving asset management processes and procedures using innovative tools, techniques and solutions.
7. RELIABILITY-FOCUSED by understanding consequences of asset failure and implementing appropriate maintenance processes to reduce likelihood of asset failure.
8. REGULATORY-DRIVEN by ensuring compliance with laws, regulations, permits, Consent Decrees, Administrative Orders and other legal requirements.
9. MANAGED RISK by directing resources and priorities to achieve established levels of service while minimizing life cycle costs at an acceptable level of risk.

September 5, 2014

## DEPARTMENT OF WASTEWATER TREATMENT February 2015

Average plant performance for the month was excellent with all effluent parameters well below the seven-day and monthly NPDES permit requirements. The monthly average influent flow was 275 MGD. There was no Excess Flow during this reporting period. The following Figures compare the plant performance with the corresponding NPDES permit limits.

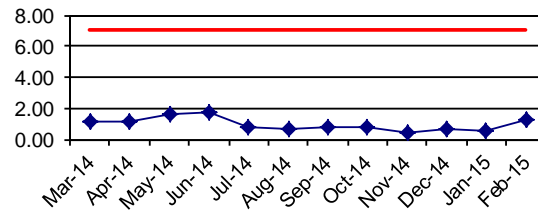
**Plant Influent Flow (mgd)**



■ Influent Flow    — Average Design Capacity

This graph illustrates the monthly average influent flow to the plant. The design average flow is 370 MGD. Blue Plains has a revised 4-hour peak flow capacity of 511 MGD through complete treatment. Flows up to 336 MGD in excess of the 511 MGD peak capacity receive primary treatment, disinfection and dechlorination.

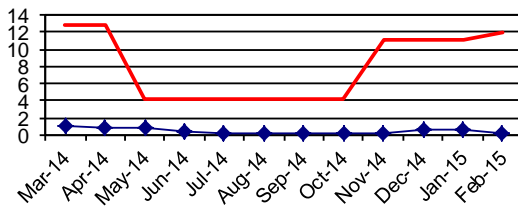
**TSS (mg/l)**



■ Effluent TSS    — Permit Limit

Effluent Total Suspended Solids (TSS) is a measure of the amount of solid material that remains suspended after treatment. The effluent TSS concentration for the month averaged 1.29 mg/L, which is below the 7.0 mg/L permit limit.

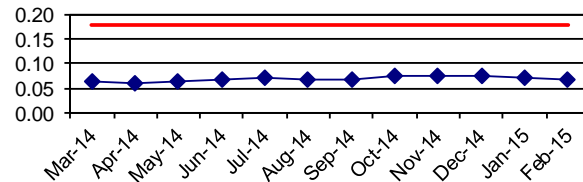
**Ammonia (mg/l)**



■ Effluent NH3    — Permit Limit

The Ammonia Nitrogen (NH<sub>3</sub>-N) is a measure of the nitrogen found in ammonia. For the month, effluent NH<sub>3</sub>-N concentration averaged 0.20 mg/L and is below the average 11.95 mg/L limit.

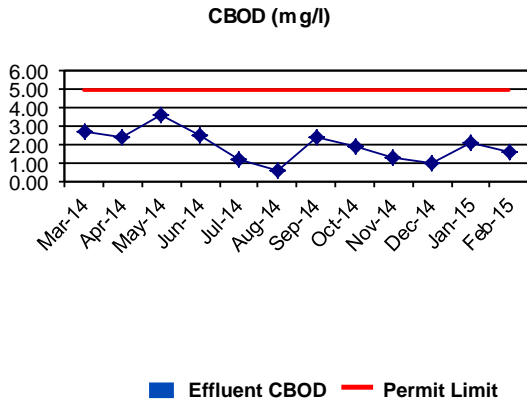
**Total Phosphorus Annual Average (mg/l)**



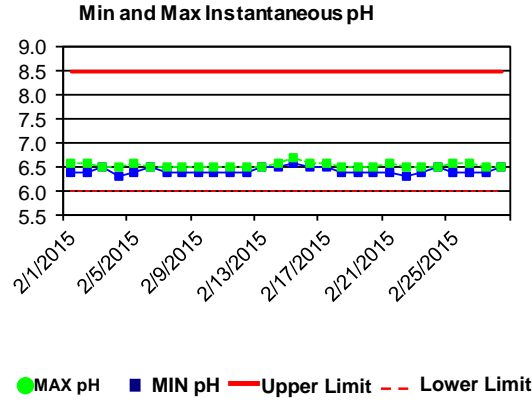
■ Effluent TP    — Permit Limit

The Total Phosphorus (TP) is a measure of the particulate and dissolved phosphorus in the effluent. The annual average effluent TP concentration is 0.07 mg/L, which is below the 0.18 mg/L annual average limit.

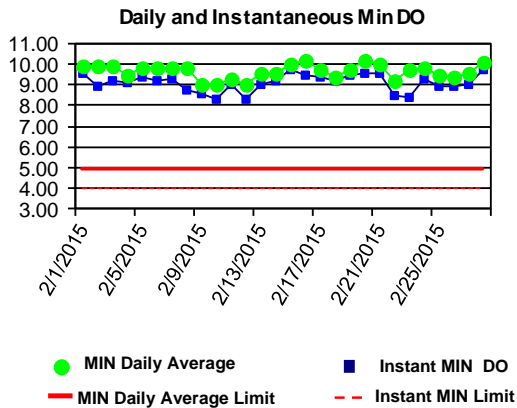




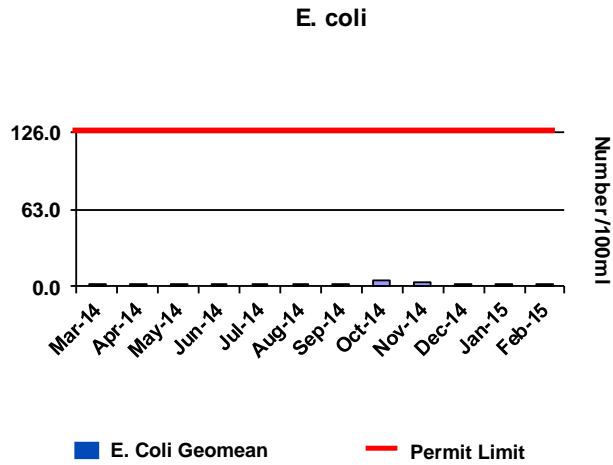
Carbonaceous Biochemical Oxygen Demand (CBOD) is a measure of the amount of dissolved oxygen required for the decomposition of organic materials. The effluent CBOD concentration averaged 1.60 mg/L (partial month) which is below the 5.0 mg/L limit.



pH is a measure of the intensity of the alkalinity or acidity of the effluent. The minimum and maximum pH observed were 6.3 and 6.7 standard units respectively. The pH was within the permit limits of 6.0 and 8.5 for minimum and maximum respectively.



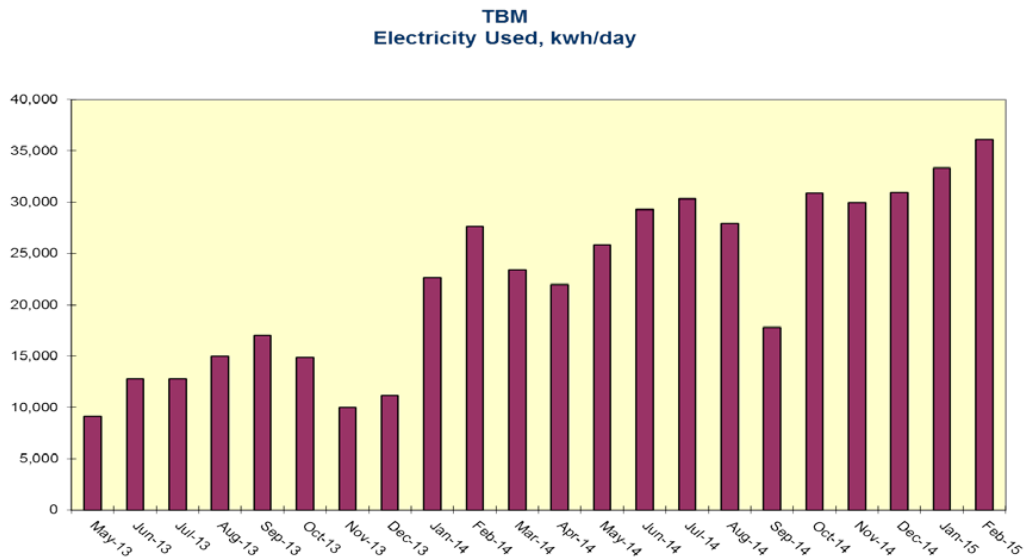
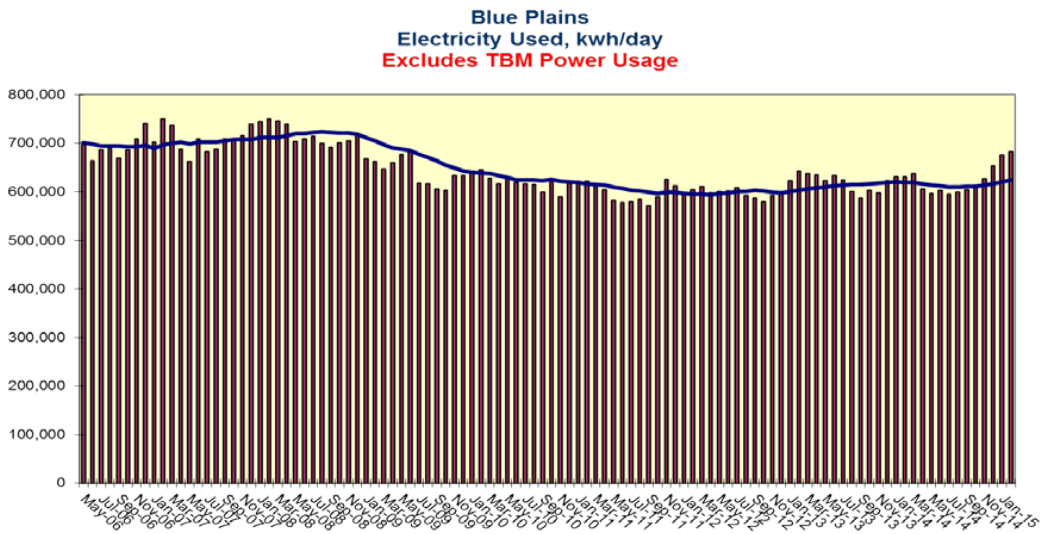
Dissolved Oxygen (DO) is a measure of the atmospheric oxygen dissolved in wastewater. The DO readings for the month are within the permit limits. The minimum daily average is 9.0 mg/L. The minimum instantaneous DO reading is 8.3 mg/L. The minimum permit limits are 5.0 mg/L and 4.0 mg/L respectively.



E.coli is an indicator of disease causing organisms (pathogens). The E.coli permit limit is 126/100mL. The E coli geometric mean is 1.1/100mL, and well below the permit limit.

## BLUE PLAINS ELECTRICITY USAGE

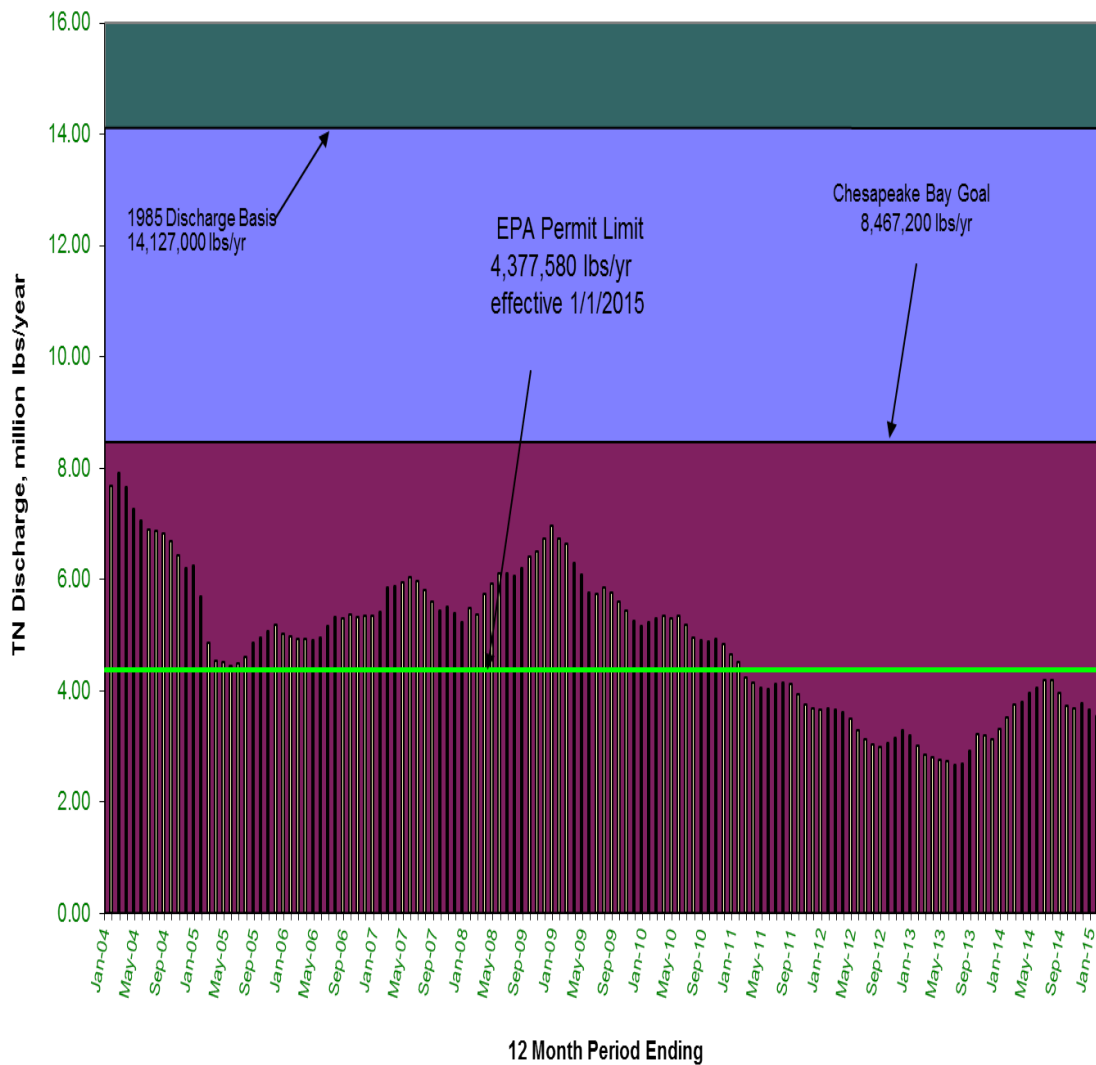
Blue Plains AWWTP has installed Power Monitors at critical points within the power distribution system to monitor power usage. The graph below is based on the installed power monitors and reflects usage at Blue Plains.



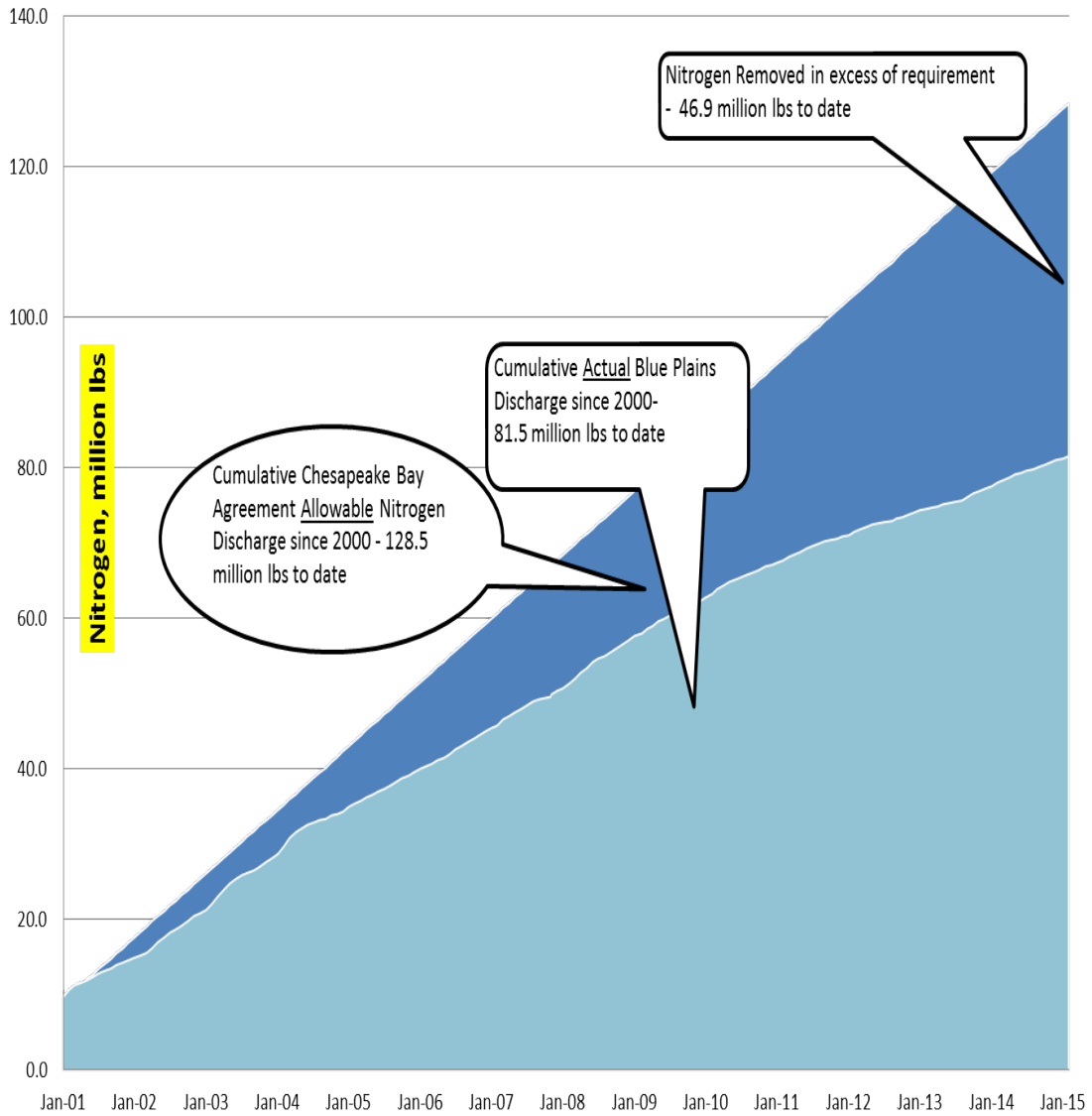
**BIOLOGICAL NUTRIENT REMOVAL PERFORMANCE**

During the month the full-scale BNR process produced an effluent with average total nitrogen concentration of 3.73 mg/l. The figure below shows Blue Plains effluent total nitrogen (TN) since the implementation of full scale BNR. The Figure shows Blue Plains meeting the Chesapeake Bay Goal of discharging less than 8,467,200 lbs/yr of TN.

**Annual Total Nitrogen Load, lbs/yr**



### Cumulative Nitrogen Discharged Since 2000



## START-UP AND COMMISSIONING UPDATE

As some parts of the nearly \$1 billion in construction activities at Blue Plains are winding down, the start-up and commissioning process is moving ahead. This process involves testing the newly built facilities to ensure:

1. the facilities perform as designed,
2. they are completed in accordance with an integrated schedule,
3. interfaces with Blue Plains have been made,
4. capture all new assets,
5. identify and order critical spare parts,
6. develop standard operating procedures, and
7. train personnel to take over the new facilities.

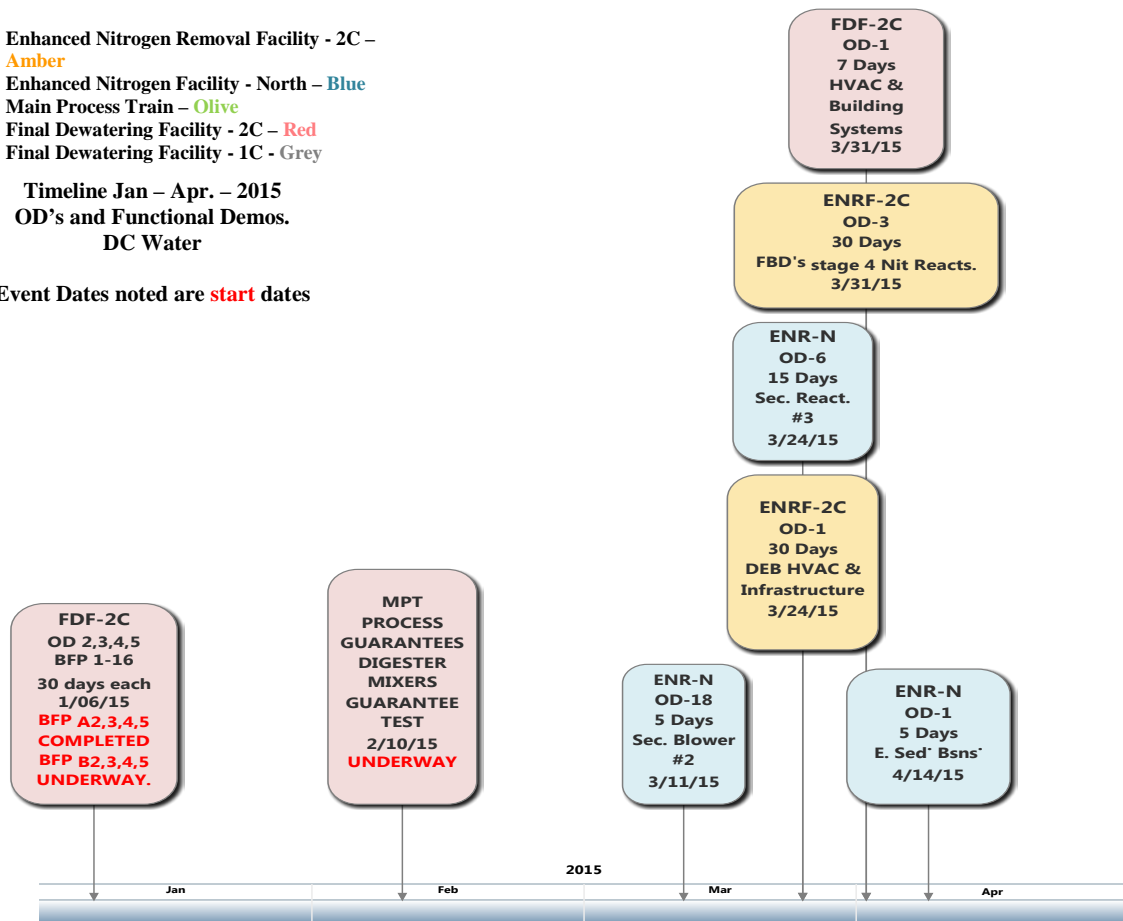
### Operational Demonstrations:

One part of the construction checkout process is called the Operational Demonstration (OD). The OD process provides a platform for the contractor and DC Water to prove out the newly constructed process under the various design conditions which can last from 5 days to 1 year. Following is the three month OD look-ahead for 2015.

Enhanced Nitrogen Removal Facility - 2C – **Amber**  
 Enhanced Nitrogen Facility - North – **Blue**  
 Main Process Train – **Olive**  
 Final Dewatering Facility - 2C – **Red**  
 Final Dewatering Facility - 1C - **Grey**

Timeline Jan – Apr. – 2015  
 OD's and Functional Demos.  
 DC Water

Event Dates noted are **start** dates



The Digested Sludge Dewatering Belt Filter Press Operational Demonstration for Final Dewatering Facility Second Contract is underway. Four out sixteen belt filter presses have successfully completed the demonstration and the operational demonstration four more belt filter presses is currently in progress. Additionally, Secondary Blower #2 is being prepared for its operational demonstration. The Process Guarantee for digester mixing for the Main Process Train Contract is in its second week of demonstration.



### **OPERATIONAL DEMONSTRATION: Secondary Blower #2 (OD 18)**

- Each of the 6 secondary blowers that provides air to the secondary biological reactors that removes BOD from the wastewater are being rehabilitated in order to improve blower reliability, performance, and energy economics.
- Blower #2 is about to start its operational demonstrations after all independent systems (i.e. lube oil) are confirmed operating properly



### **PROCESS GUARANTEE: Digester Mixing**

- There are many benefits of anaerobically digesting waste primary and secondary sludge. These benefits include: usable methane gas production and a reduction in the volume of sludge for disposal. In order to maximize the gas production and minimize the volume of sludge for disposal, the digester must be adequately and properly mixed.
- To ensure that the digester mixing is adequate, the mixing is undergoing a process guarantee. For this guarantee, an inert tracer is added into the digester and the digester contents are then sampled at various locations to ensure that the tracer is evenly dispersed throughout the digester.

### **Training:**

Successful operation of the new facilities will require significant training of operations and maintenance employees on new processes, procedures and equipment. We are also continuously working with Human Capital Management with the Cornerstone Training program to schedule and track employee training.

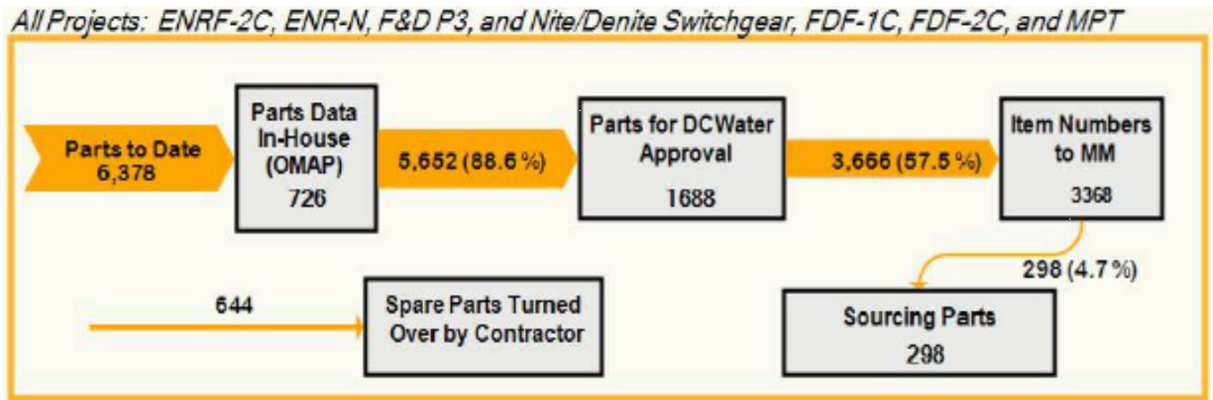
Training completed from January 20, 2015 – February 12, 2015:

- 1,396 hours of vendor training were completed by DC Water personnel.
- 198 hours of other required training were completed by DC Water personnel.

**Asset Integration:**

The process of asset integration involves capturing and identifying over 15,000 unique assets associated with the new projects coming on-line. This is done to facilitate ordering of critical spare parts through Maximo, identify qualified vendors, and to develop standard operating procedures. Efforts up through the month of Mid-February 2015 include:

- Asset attributes based on approved service manuals continue to be logged into the Maximo maintenance program,
- Working with Materials Management (MM) to identify vendors for critical spare parts.
- Parts work flow is as follows:



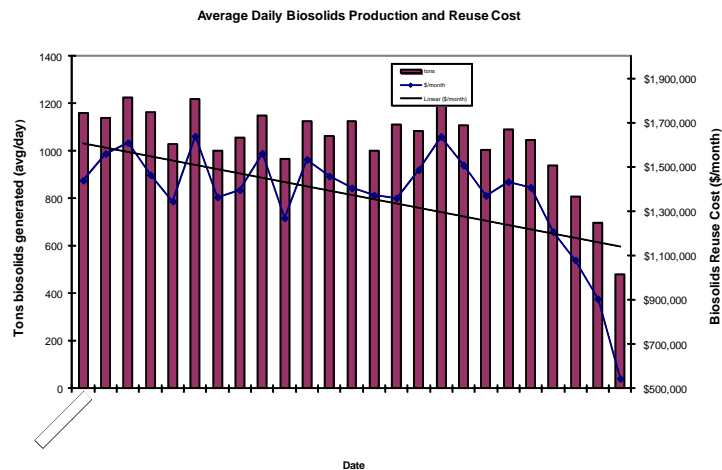
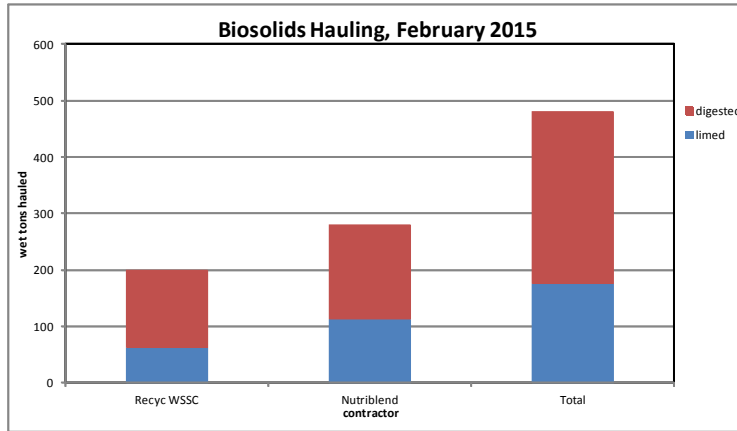
**Project Acronym Key:**

- ENRF-2C: Enhanced Nitrogen Removal Facility 2<sup>nd</sup> Contract
- ENR-N: Enhanced Nitrogen Removal – North
- F&D P3: Filtration and Disinfection Electrical Upgrades Phase 3
- Nite/Denite Switchgear: Nitrification/Denitrification Electrical Upgrades
- FDF-1C: Final Dewatering Facility 1<sup>st</sup> Contract
- FDF-2C: Final Dewatering Facility 2<sup>nd</sup> Contract
- MPT: Main Process Train

## BLUE PLAINS RESOURCE RECOVERY REPORT

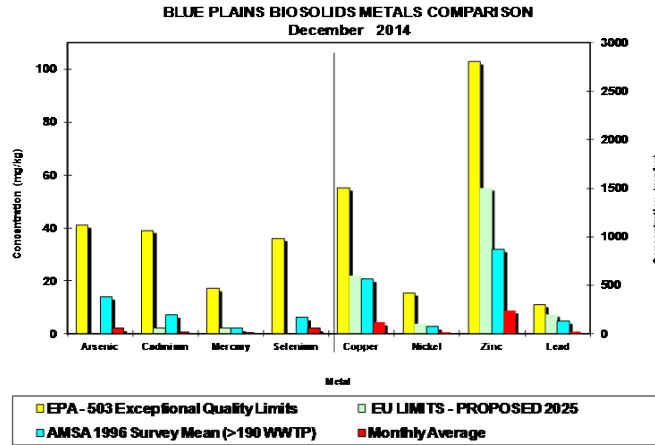
In February, biosolids hauling averaged 481 wet tons per day (wtpd). At the end of February the Cumberland County storage pad had approximately 20,000 tons (~25,000 tons capacity), Cedarville lagoon had approximately 10,000 tons of Blue Plains biosolids (~30,000 tons capacity), and Fauquier lagoon had 800 tons (~15,000 tons capacity).

Please note the drop in biosolids management costs (second graph below, right vertical axis) due to the reduction in solids production since digesters came on line, and also due to the drop in fuel costs. In February, diesel prices averaged \$2.86/gallon and with the contractual fuel surcharge the weighted average biosolids reuse cost in February for the two contracts (DC Water and WSSC) was \$40.54/wet ton. For comparison, in February 2014 the average diesel price was \$4.34/gal and the average contract cost was \$44.59/wet ton.





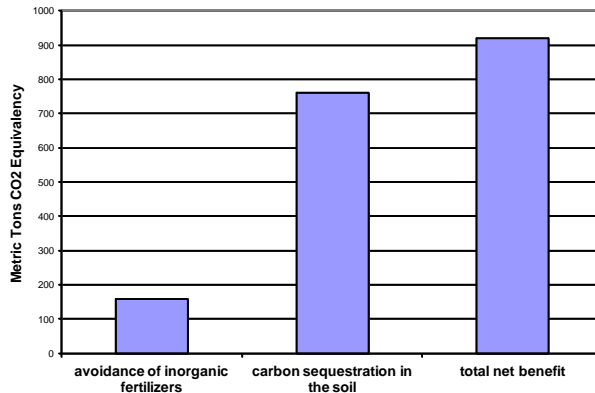
The graphs below show the EPA regulated heavy metals in the Blue Plains biosolids for the month of December 2014. As can be seen in the graphs, the Blue Plains levels are considerably below the regulated exceptional quality limits, the national average levels surveyed in 1996, and the European Union (EU) limits. The EU limits are more conservative than the USEPA limits, and Blue Plains biosolids metals content is lower than the EU standards as well.



### Environmental Benefits

The quantity land applied in January coming directly from the plant and from storage facilities equaled 13,674 tons. Taking into account the fuel required to transport biosolids to the field, the net benefit of the land applied material is 920 metric tons CO<sub>2</sub> equivalent avoided emissions. This is equivalent to taking 1,874,065 car miles off the road in the month of January (assumes 20 mpg, 19.4 lb CO<sub>2</sub> equivalent emissions/gallon gas – EPA estimate). The cumulative total avoided carbon emission since December, 2006 is 139,017 metric tons CO<sub>2</sub> equivalent.

**DCWater Biosolids Recycling Program  
Greenhouse Gas Balance Benefits  
January 2015 Totals**



## February Highlights

For the third time, staff gave a class and tour through the Knowledge Commons D.C. organization. The class sold out with over 30 people signing up. Staff gave a presentation on biosolids reuse and our plans for increased urban use. The participants were engaged and asked good questions. Several participants have subsequently inquired about receiving compost for organizations with whom they are associated. Photos of the event are available here: [goo.gl/EIZM6y](https://goo.gl/EIZM6y).

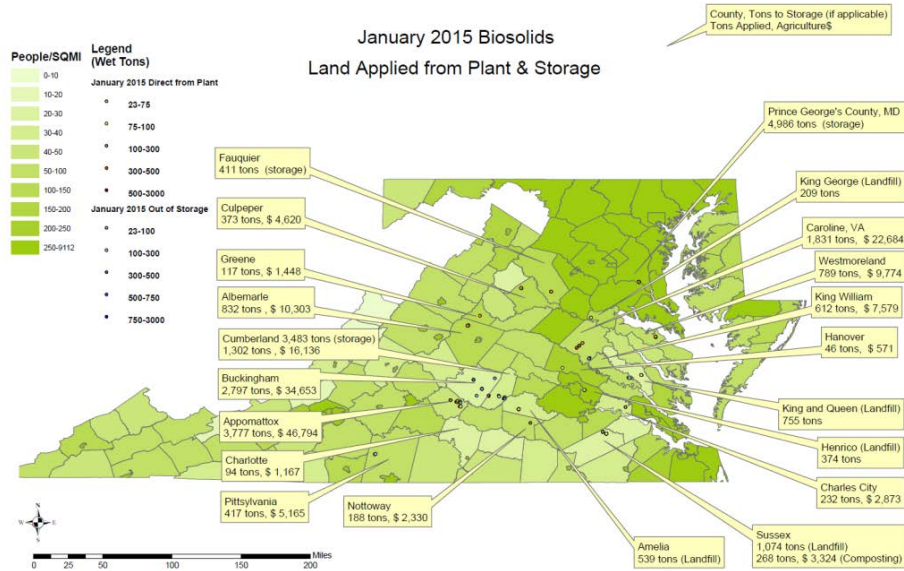


Staff worked with External Affairs and an outside graphics firm to develop a branding logo for our Class A biosolids products. After developing a long list of ideas, staff chose three names for the final round, and from those three settled on a name and tagline:



The team chose this logo and tagline because it emphasizes the benefit (plant growth) and opens the discussion about greater project benefits such as reduced carbon footprint, green energy, and carbon sequestration. Staff is working to develop a specialized mix for use in the DC Water green infrastructure projects.

### Map of Blue Plains Biosolids Applications and Agricultural \$'s for January 2015



## Clean Water Quality and Technology

The Clean Water Quality and Technology department includes research and development, pretreatment and laboratory programs.

### Research and Development Program

#### Fine Bubble Diffuser Fouling Study Updates

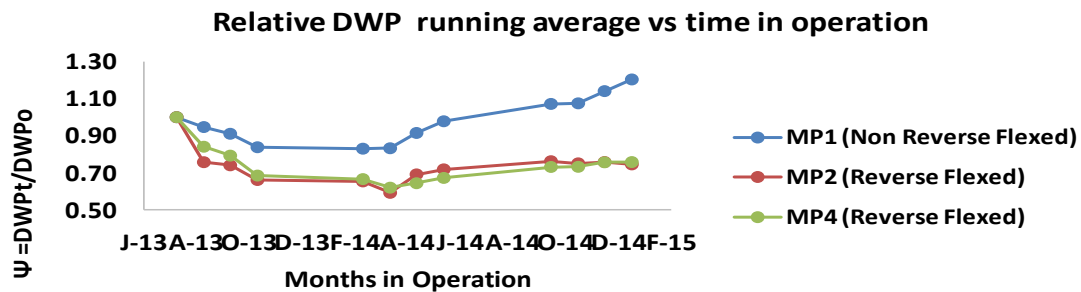
Fine pore (or fine bubble) diffusers are characterized by being an efficient aeration technology due to its high oxygen transfer efficiency (OTE) per energy consumed. Typically it delivers 3.6 - 4.8 kgO<sub>2</sub>/kW.h compared to coarse bubble diffusers technology which delivers 0.6 – 1.5 kgO<sub>2</sub>/kW.h. The main limitation of the fine bubble diffusers is fouling which is caused by the accumulation of inorganic, biomass, and biofilm on the diffuser causing blockage or deformation of the pores and thus affecting the characteristics of the air bubbles. Periodic cleaning of the fine bubble diffusers to enhance their aeration efficiency is therefore a necessity. The research and development group have been testing a new physical fouling mitigation method which can be performed without taking the tanks off line. The method is referred to as “reverse flexing” and was recommended by the manufacturers of fine pore panel diffusers known as Messner Panels (Exhibit A). During

reverse flexing, the airflow to the diffusers is stopped and the air line is vented to the atmosphere. This results in collapsing of the diffuser membrane on itself to breakup any buildup material on the membrane. The process is repeated during the day and is practiced daily. Four (4) Messner panels were installed in a 20,000 gallon pilot tank were two panels were reversed flexed and two were operated without any flexing. Exhibit B shows the change in the pressure differential across the Messner panels over time. The data showed that reversing flexing was effective in preventing the pressure differential across the diffuser to increase. Additional testing of the membranes to

determine the type of fouling on the diffusers and the measurement of the actual oxygen transfer efficiency will be needed to understand the actual impact of reverse flexing. The data will be presented in a future update.



**Exhibit A. Messner Aeration Panels®, by Rudolf Messner Umwelttechnik.**



**Exhibit B. Impact of reverse flexing on Differential Wet Pressure (DWP) across the membrane of the Messner Aeration Panels.**

**Events:**

- World Bank – Energy Efficiency in Water Utilities Workshop:** The workshop was organized by World Bank, Washington DC and it was presented by USEPA (Washington DC), WERF (Alexandria, VA), DC Water (Washington DC), and ARA Consult, Austria. The objective of this workshop was to get information from utilities on how they implement projects to optimize energy use and recovery. Dr. Sudhir Murthy was a panelist and presented DC Water approach to improve energy efficiency at Blue Plains AWTP including aeration, solar panels, and biogas generation from anaerobic digestion. This workshop provides a unique networking opportunity to potentially secure funding to conduct a collaborative research with World Bank.
- Lab space acquisition:** The research team has acquired a space in the heat exchanger building near the gravity thickeners to accommodate few of the analytical equipment used to analyze wastewater and sludge samples. The space will also include a conference room on the second floor and storage room.
- Research and innovation meeting for facility planning:** Ahmed Al-Omari and Sudhir Murthy arranged a series of meetings with Leonard Benson (Chief of Engineering), Walter Bailey (AGM, Blue Plains), John Carr (Manager, program management), Diala Dandash (Supervisor, WWT plant design) and Bohdan Bodniewicz (Program Manager, AECOM) to explore the next phase of research and innovation projects associated with the facility planning for Blue Plains Advanced Wastewater Treatment Plant. The meeting took place in the COF building and was conducted over three 1-hr meetings. The discussions included carbon capture, and sludge densification in the secondary reactors, nitrogen shortcut (nitrite shunt) fullscale demonstration, mainstream deammonification large scale pilot, co-digestion, solar panels, and effluent, sewer and cambi heat recovery.

## **Blue Plains Pretreatment Program**

The Blue Plains Pretreatment Program staff of two manages the Industrial Pretreatment Program, including temporary dischargers from construction activities, as well as the Hauled Waste Program. Additional responsibilities include providing specialized sampling and program management support for the Blue Plains NPDES permit and facilitating the quarterly Blue Plains Storm Water Committee meetings.

### **Industrial Pretreatment Program**

DC Water currently manages fifteen (15) Significant Industrial User (SIU) permits and sixteen (16) Non-Significant Industrial User (NSIU) permits. One NSIU permit was renewed this month for Half Street SE, LLC groundwater remediation facility. The permit fee was collected prior to issuance. All SIUs and permitted NSIUs are currently in compliance with discharge standards. The non-permitted facility, Adams Row Condo, is still in violation of the EPA gas/vapor toxicity discharge screening criteria, and DC Water and DDOE, are meeting with the remediation consultants the end of February to discuss objectives and scheduled due dates.

DC Water currently manages 59 Temporary Discharge Authorization (TDA) permits, primarily for construction site discharges of groundwater and/or surface runoff in the combined sewer area. Five new TDA permits were issued this month. The construction site at the American University East Campus construction on Nebraska Ave., NW (TDA 0714-1004) continued to conduct weekly monitoring this month. The discharge mercury concentration was 0.0036 mg/L on January 7, 2015, and 0.0037 mg/L on January 12, 2015, which is in violation of the mercury limit of <0.001 mg/L. A second Notice of Violation was issued to Skanska for the mercury violations on January 21, 2015, and required weekly submittal of mercury analyses and submittal of a preliminary design and implementation schedule for a treatment system or plan to bring the discharge into compliance. Follow-up monitoring on January 22, 2015, and January 26, 2015, showed mercury results in compliance with the limit. Self-monitoring reports for other TDA permits were reviewed. All other TDA discharges are currently in compliance with pretreatment standards.

### **Hauled Waste Program**

The hauled waste program currently has sixteen (16) permitted haulers authorized to discharge domestic septage, portable toilet waste, grease trap waste, groundwater or surface runoff, and other types of waste, if approved in advance and have been characterized and meet pretreatment standards. One waste hauler permit, Statewide Septic, was renewed this month. DC Water collected fees from seven waste haulers this month, including those on a monthly payment plan option.

DC Water received 339 hauled waste loads (925,291 gallons) from permitted haulers this month. Manifest forms from each truck entering the plant are collected by the security guards and picked up daily by Pretreatment staff. Data is entered into an Excel spreadsheet to track the volume and type of loads being discharged daily and the results of sampling. Two random hauled waste samples were collected this month, including one grease trap load. One waste hauler, Stillwater Septic, had a grease trap load with a pH of 3.9, which is in violation of discharge standards (pH must be 5-10), and a petroleum oil and grease concentration of 224 mg/L, which is in violation of the petroleum oil and grease limit of 100 mg/L. A Notice of Violation was issued on January 23, 2015.

### **NPDES Permit Sampling**

Pretreatment staff collected one wet weather 24-hour composite sample at outfall 002 and two wet weather grab samples at outfall 001 this month for low-level PCBs. Pretreatment staff also collected bimonthly metals at outfall 002, including low-level mercury using clean sampling techniques. Staff also collected samples over three 24-h composite periods at outfall 002 for chronic toxicity tests and a wet weather grab sample at outfall 001 for acute toxicity tests.

### **Department of Wastewater Treatment Main Laboratory**

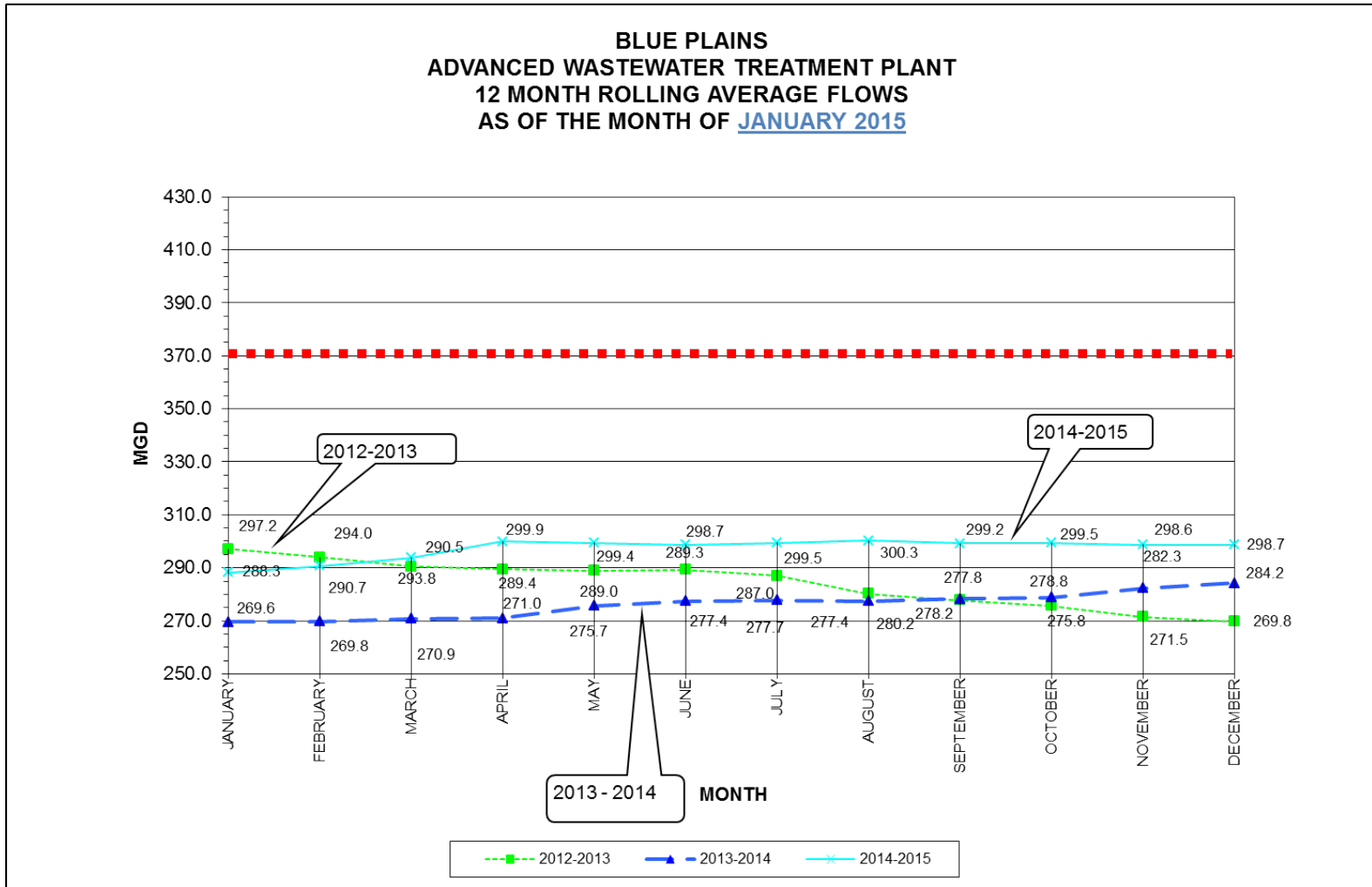
The **DWT Main Laboratory** conducts analyses on Blue Plains effluent for NPDES Permit requirements, as well as on biosolids, pretreatment samples, storm water runoff, and process samples, on a daily basis, 365 days a year. The laboratory currently analyzes approximately 2,800 samples a month and conducts approximately 8,000 analyses, including Total Suspended Solids, Volatile Suspended Solids, Total and Volatile Solids, Ammonia Nitrogen, Nitrite and Nitrate Nitrogen, Total, Soluble, and Ortho Phosphorus, Total and Soluble Kjeldahl Nitrogen, Carbonaceous Biochemical Oxygen Demand, Chemical Oxygen Demand, Total Alkalinity and Hardness, and Fecal Coliform and E. Coli microbiological testing.

The **DWT Laboratory** assists the **Department of Sewer Services** on a regular basis conducting microbiological analysis of water samples for E. Coli bacteria.

The **DWT Laboratory** also assists the **Biosolids Division** with ongoing Odor Control and Lime Stabilization studies, as well as continued pH monitoring of biosolids for 40 CFR 503 Pathogen and Vector Attraction Reduction requirements.

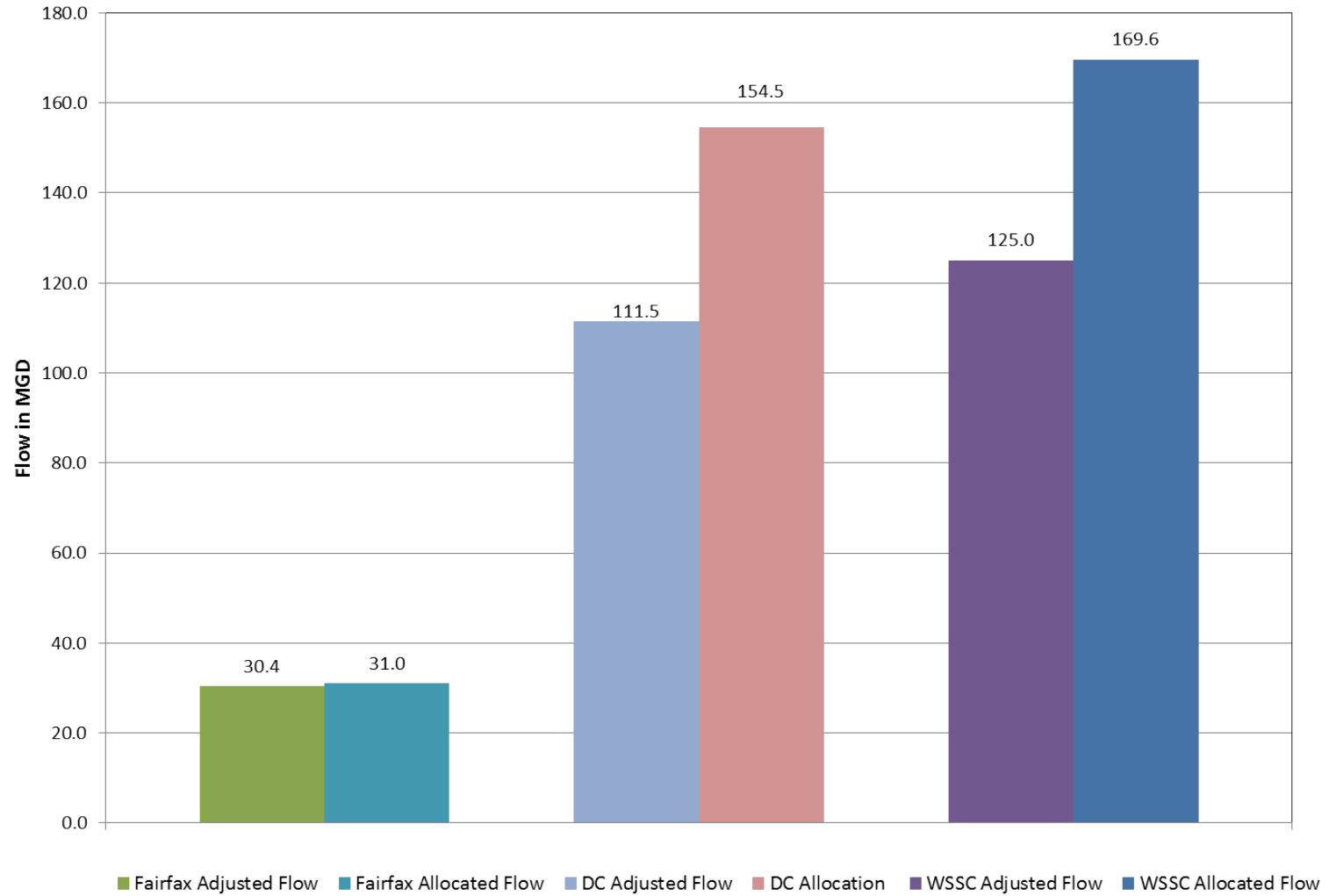
The **DWT Laboratory** also participates in the **WWOA Executive Board**.

This month, the **DWT Laboratory** continued analysis of samples for the **Biosolids Division** related to DCWater's **Class A Biosolids Certification** project, as well as analysis of digester samples for the new **Cambi Thermal Hydrolysis Digestion facility**, including Total and Volatile Solids, Total and Volatile Suspended Solids, Ammonia Nitrogen, and pH.





### Adjusted Flows vs Allocated Flows - JANUARY 2015



**Potomac Interceptor Long-Term Odor Abatement  
Status Report February 2015**

Project Description: This project provides for the long-term abatement of odors generated by the Potomac Interceptor by constructing six ventilation buildings along the main sections of the sewer. The six sites are located in the District of Columbia (Site 1995), Montgomery County, MD (Sites 4, 17 and 27), Fairfax County (Site 31) and Loudoun County (Site 46), VA. The constructed system draws gases from the sewer by vacuum, treats the gas stream with activated carbon and discharges the treated air to the atmosphere.

Summary Status:

**General**

Construction at the DC and three Maryland sites is substantially complete. Construction at the two Virginia sites is ongoing.

**DC Site (Site 1995)**

Facility is running.

**Maryland Sites**

*Site 4 (Little Falls PS)* – Facility is running.

*Site 17 (Beltway)* – Facility is running.

*Site 27 (Old Angler’s Inn)* – Construction is substantially complete. The counteractant delivery system was further upgraded and put into service for testing in February 2015. Exhaust-stack modifications will be performed in April 2015. Investigations into sources of odor complaints continue.

**Virginia Sites**

*Site 31 (Fairfax)* – Under Construction, 85% complete. Coordination with Verizon is ongoing for site service. Dominion is working on permanent power installation, conduit and cabling run, and tie-in connections . OA pipe wrapping/joining ongoing in building. Mechanical and electrical installations ongoing in building. Exterior stone work ongoing. Manual checkout and startup projected for early April contingent on delivery of power by Dominion. Full auto-mode operation demonstration test start date is projected by early July based on planned delivery and installation dates for air handling unit.

*Site 46 (Loudoun)* – Under Construction, 98% complete. Permanent power installation is complete. Verizon has installed the cable to the phone board in the building and SCADA connections are operational. Resolving issue of covering dampers and awaiting Fire Marshall certification prior to start of Operational Demonstration. Interior work ongoing with PLC and transformer set. Interior plumbing is ongoing. Manual checkout and start-up began February 2, 2015. Full auto mode operational demonstration test is projected to start by early April 2015.

Design & Construction Activities	Projected		Actual		Status
	Start	End	Start	End	
Place in operation, Site 31 (Fairfax)	7/06/15				Delay in Permanent Power completion and delivery of air handling unit.
Place in operation, Site 46 (Loudoun)	4/01/15				Manual operation began February 2. Full auto-mode operation projected to start by 4/1/15.

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

**ACTION REQUESTED**

**GOODS AND SERVICES CONTRACT MODIFICATION**

**BIOSOLIDS MANAGEMENT  
JOINT USE (DIRECT)**

Approval to exercise contract option year three (3) of a contract for biosolids management in the amount of \$5,800,000.00.

**CONTRACTOR/SUB/VENDOR INFORMATION**

<b>PRIME:</b> Nutri-Blend, Inc. P.O. Box 38060 Richmond, VA 23231	<b>SUBS:</b> N/A	<b>PARTICIPATION:</b> N/A
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**DESCRIPTION AND PURPOSE**

Original Contract Value,:	\$11,457,422.00
Original Contract Dates:	05/01/2012 – 04/30/2013
No. of Option Years in Contract:	4
Option Year (1) Value:	\$11,457,422.00
Option Year (1) Dates:	05/01/2013 – 4/30/2014
Option Year (2) Value:	\$7,662,750.00
Option Year (2) Dates:	05/01/2014 – 04/30/2015
Option Year (3) Value:	\$5,800,000.00
Option Year (3) Dates:	05/01/2015 – 04/30/2016
Unit Cost for Third Option Year:	\$30.55 per wet ton
Unit Price Increase from previous Year	0%*
Quantity for Third Option Year:	273,750 wet tons

**Purpose of the Contract:**

To continue compliance with discharge permit and distribute recycled biosolids to farms, compost facilities, and reclamation sites in the mid-Atlantic region.

**Contract Scope:**

To remove biosolids from the dewatered biosolids loading facility.

**Spending Previous Years:**

Cumulative Contract Value: 05/01/2012 – 04/30/2015 - \$30,577,594.50  
 Cumulative Contract Spending: 05/01/2012 – 02/03/2015 - \$25,786,735.15

**Contractor's Past Performance:**

The contractor's performance has been satisfactory.

**\*Note:** The unit price for option year three (3) remains the same as option year two (2) at \$30.55 per wet ton, for an estimated annual quantity of 273,750 wet tons totaling \$4,254,891.45; the fuel costs for transportation for the tonnage varies and additional in the amount of \$1,545,108.55 funds account for the anticipated costs.

**PROCUREMENT INFORMATION**


<b>Contract Type:</b>	Firm Fixed Unit Price	<b>Award Based On:</b>	Highest-Ranked RFP
<b>Commodity:</b>	Services	<b>Contract Number:</b>	WAS-12-007-AA-SH
<b>Contractor Market:</b>	Open Market with Preference Points for LSBE/LBE.		

**BUDGET INFORMATION**

<b>Funding:</b>	Operating	<b>Department:</b>	Wastewater Treatment
<b>Project Area:</b>	Blue Plains AWTP	<b>Department Head:</b>	Aklile Tesfaye

**USER SHARE INFORMATION**

User	Share %	Dollar Amount
District of Columbia	41.63%	\$ 2,414,540.00
Washington Suburban Sanitary Commission	42.96%	\$ 2,491,680.00
Fairfax County	10.57%	\$ 613,060.00
Loudon County	4.25%	\$ 246,500.00
Potomac Interceptor	0.59%	\$ 34,220.00
<b>Total</b>	<b>100.00%</b>	<b>\$5,800,000.00</b>

 3/11/15  
 Dan Bae Date  
 Director of Procurement

 3/11/2015  
 Gail Alexander-Reeves Date  
 Director of Budget

 3/11/15  
 Walter F. Bailey Date  
 Assistant General Manager, Blue Plains

\_\_\_\_\_  
 George S. Hawkins Date  
 General Manager

**DC WATER AND SEWER AUTHORITY  
BOARD OF DIRECTORS CONTRACTOR FACT SHEET**

**ACTION REQUESTED**

**GOODS AND SERVICES CONTRACT AWARD**

**(JOINT USE - INDIRECT COST)**

**Short Term Flow and Rainfall Monitoring Services**

Approval to execute a fifteen (15) month contract in the amount of \$3,143,511.00.

**CONTRACTOR/SUB/VENDOR INFORMATION**

<b>PRIME:</b> RJN Group 1589 Sulphur Spring Road Baltimore, MD 21227	<b>SUBS:</b> ADS Environmental Services	<b>PARTICIPATION:</b> 48.5%
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**DESCRIPTION AND PURPOSE**

Contract Value:	\$3,143,511.00
Contract Period:	15 Months
Number of Option Years:	0
Anticipated Contract Start Date:	05-01-2015
Anticipated Contract Completion Date:	07-31-2016
Proposal Closing Date:	01-30-2015
Proposals Received:	3
Proposal Range:	\$1,992,000.00 – \$4,018,190.00
Preference Points Received:	0

**Purpose of the Contract:**

The purpose of the contract is to furnish, install, calibrate, operate, maintain, collect and report data from flow monitors and rain gauges in various portions of DC Water's Wastewater Collection System. The data collected from this contract will be used to calibrate a system-wide hydraulic model, perform infiltration and inflow analyses, determine baseline level of service/level of control, and assess the impact of new development and other changes to the collection system. These evaluations will assist with Capital Improvement Program (CIP) planning, wet-weather management planning, system design, and implementation of improvements.

**Note:** The cost for the fifteen (15) month contract is \$3,143,511.00.

The procurement method utilized was a Request for Proposal (RFP). Award will be made to one firm. RJN Group is the highest rated offeror. The names of all responsive firms who submitted proposals are listed below.

**Proposals were received from:**

Goel Services  
Savin Engineers, P.C.  
RJN Group

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


**BUDGET INFORMATION**

<b>Funding:</b>	Capital	<b>Department:</b>	DETS
<b>Service Area:</b>	Sewer	<b>Department Head:</b>	Liliana Maldonado
<b>Project:</b>	GZ and LZ		

**ESTIMATED USER SHARE INFORMATION**

User	Share %	Dollar Amount
District of Columbia	89.59%	\$3,005,599.15
Washington Suburban Sanitary Commission	8.94%	\$300,052.57
Fairfax County	1.07%	\$35,842.96
Loudoun County	0.33%	\$11,236.09
Other PI	0.07%	\$2,269.23
<b>Total Estimated Dollar Amount</b>		<b>\$3,355,000.00</b>

  
 Gail Alexander-Reeves      3/12/2015  
 Director of Budget                      Date

  
 Dan Bae      3/12/2015  
 Director of Procurement                      Date

  
 Leonard R. Benson      3/12/15  
 Chief Engineer                      Date

\_\_\_\_\_  
 George S. Hawkins      /      Date  
 General Manager

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

**ACTION REQUESTED**

**GOODS AND SERVICES CONTRACT OPTION :**

**Annual Maintenance for Industrial Electrical Control Equipment  
(Joint Use)**

Approval to execute option year two (2) for annual maintenance for industrial electrical control equipment, in the amount of \$1,227,000.00.

**CONTRACTOR/SUB/VENDOR INFORMATION**

<b>PRIME:</b> M.C. Dean, Inc. 22461 Shaw Road, Suite 210 Dulles, VA 20166	<b>SUBS:</b> N/A	<b>PARTICIPATION:</b> 0%
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**DESCRIPTION AND PURPOSE**

Original Contract Value: \$1,030,000.00  
 Original Contract Dates: 11-01-2012—10-31-2013  
 No. of Option Years in Contract: 4  
 First Option Year Value: \$1,093,279.08  
 First Option Year Dates: 11-01-2013—10-31-2014  
 Contract modification Value: \$549,713.18  
 Contract Modification Dates: 11-01-2014 – 03-31-2015  
 This Option Year Value: \$1,227,000.00  
 This Option Year Dates: 01-01-2015 – 12-31-2015

**Purpose of the Contract:**

To provide annual maintenance of electrical control equipment for DC Water’s Department of Maintenance Services.

**Contract Scope:**

To provide supervisory personnel and licensed technicians to perform corrective and preventive maintenance services to an array of electrical controls and associated equipment utilized by DC Water.

**Spending Previous Year:**

Cumulative Contract Value: 11-01-2012 to 03-31-2015—\$2,672,992.26  
 Cumulative Contract Spending: 11-01-2012 to 12-02-2014—\$1,709,090.87

**Contractor’s Past Performance:**

The contractor’s past performance has been satisfactory.

**PROCUREMENT INFORMATION**

<b>Contract Type:</b>	Fixed Price	<b>Award Based On:</b>	Highest Rated
<b>Commodity:</b>	Goods and Services	<b>Contract Number:</b>	WAS-12-026-AA-JR
<b>Contractor Market:</b>	Open Market with preference for LBE and LSBE		


**BUDGET INFORMATION**

<b>Funding:</b>	Operating	<b>Department:</b>	Maintenance Services (DMS)
<b>Service Area:</b>	Blue Plains	<b>Department Head:</b>	Anthony Mack

**ESTIMATED USER SHARE INFORMATION**

User	Share %	Dollar Amount
District of Columbia	41.63%	\$ 510,800.10
Washington Suburban Sanitary Commission	42.96%	\$ 527,119.20
Fairfax County	10.57%	\$ 129,693.90
Loudoun County	4.25%	\$ 52,147.50
Potomac Interceptor	0.59%	\$ 7,239.30
<b>TOTAL ESTIMATED DOLLAR AMOUNT</b>	<b>100.00%</b>	<b>\$1,227,000.00</b>

\*Actual usage and cost by facility (either joint-use or non-joint use) varies each fiscal year and are charged to IMA participants based on actual costs at joint-use facilities (i.e., Blue Plains, Potomac Pumping Station, etc.). Services provided to non-joint facilities (i.e., Bryant Street Pumping Station) are charged directly to District ratepayers. In prior fiscal years, the majority of services provided under this contract have been for joint use facilities and for indicative purposes; the user shares shown above reflect Blue Plain's usage.

 3/11/15  
 Dan Bae Date  
 Director of Procurement

 3/11/2015  
 Gail Alexander-Reeves Date  
 Director of Budget

 3/11/2015  
 Walter Bailey Date  
 Assistant General Manager  
 Blue Plains

\_\_\_\_\_  
 George S. Hawkins Date  
 General Manager



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

**ACTION REQUESTED**

**ENGINEERING SERVICES SUPPLEMENTAL AGREEMENT:**

**Poplar Point Pumping Station Replacement  
(Joint Use)**

Approval to execute Supplemental Agreement No. 01 for \$1,556,507. The modification exceeds the General Manager's approval authority.

**CONTRACTOR/SUB/VENDOR INFORMATION**

<b>PRIME:</b>	<b>SUBS:</b>	<b>PARTICIPATION:</b>
O'Brien and Gere, LLC 4201 Mitchellville Road Bowie, MD 20716	Jenny Engineering Springfield, NJ	11%
	Bryant Associates, Inc. Hyattsville, MD	18%
	Government Services Integrated Process Lanham, MD	12%
	Shrewsbury & Associates Washington, DC	9%
	Belstar, Inc. Fairfax, VA	2%
		MBE

**DESCRIPTION AND PURPOSE**

Original Contract Value, Not to Exceed:	\$3,200,000.00
Value of this Supplemental Agreement:	\$1,556,507.00
Cumulative SA Value, including this SA:	\$1,556,507.00
Current Contract Value, Not-To-Exceed, including this SA::	\$4,756,507.00
Original Contract Time	1750 Days (4 Years, 10 Months)
Time Extension, this SA:	365 Days
Total SA Time Extension:	365 Days (1 Year, 0 Months)
Contract Start Date:	01-26-2012
Contract Completion Date:	11-10-2017

**Purpose of the Contract:**

Provide engineering design and related services for a new pumping station to replace the existing deteriorating Poplar Point Pumping Station that has been in operation since 1915. The work also includes replacement of the existing Barry Road Sewer crossing I-295 which has failed.

This work is required to comply with a Consent Decree and DC Water's NPDES Permit.

**Original Contract Scope:**

- Provide civil, architectural, mechanical process, HVAC, instrumentation, and electrical design services, and support activities, and preparation of contract documents for Poplar Point Pumping Station Replacement, approximately 1,000 lineal feet of trenchless 54-inch sewer and approximately 400 lineal feet of sewer from Barry Road to the pumping station crossing I-295.

**Current Supplemental Agreement Scope:**

- Provide Engineering Services During Construction not included in original scope including: construction phase submittals review; attend construction progress meetings; review and address requests for interpretation (RFIs); provide commissioning, start-up, and testing assistance; review operations and maintenance manuals; perform final inspection.

**Future Supplemental Agreement Scope:**

- No future supplemental agreement is anticipated at this time.

**ORIGINAL CONTRACT PROCUREMENT INFORMATION**

<b>Contract Type:</b>	Lump Sum	<b>Award Based On:</b>	Highest Ranking Score
<b>Commodity:</b>	Engineering Services	<b>Contract Number:</b>	DCFA-445
<b>Contractor Market:</b>	Open Market		

**BUDGET INFORMATION**

<b>Funding:</b>	Capital	<b>Department:</b>	DC Clean Rivers Project
<b>Service Area:</b>	Combined Sewer Overflow , Sewer	<b>Department Head:</b>	Carlton M. Ray
<b>Project:</b>	CY, G1		

**ESTIMATED USER SHARE INFORMATION**

**G1-Small Local Sewer Rehab Allocation**

User	Share %	Dollar Amount
District of Columbia	100.00%	\$146,526.00
Federal Funds**	0.00%	\$0.00
Washington Suburban Sanitary Commission*	0.00%	\$0.00
Fairfax County	0.00%	\$0.00
Loudoun County & Potomac Interceptor	0.00%	\$0.00
<b>Total Estimated Dollar Amount</b>	<b>100.00 %</b>	<b>\$146,526.00</b>

**CY – Poplar Point PS Allocation**


User	Share %	Dollar Amount
District of Columbia	90.00%	\$1,268,983.00
Federal Funds**	0.00%	\$0.00
Washington Suburban Sanitary Commission*	10.00%	\$140,998.00
Fairfax County	0.00%	\$0.00
Loudoun County & Potomac Interceptor	0.00%	\$0.00
<b>Total Estimated Dollar Amount</b>	<b>100.00%</b>	<b>\$1,409,981.00</b>

**Combined Allocation**


User	Share %	Dollar Amount
District of Columbia	90.94%	\$1,415,509.00
Federal Funds**	0.00%	\$0.00
Washington Suburban Sanitary Commission*	9.06%	\$140,998.00
Fairfax County	0.00%	\$0.00
Loudoun County & Potomac Interceptor	0.00%	\$0.00
<b>Total Estimated Dollar Amount</b>	<b>100.00%</b>	<b>\$1,556,507.00</b>

\* The cost share of \$146,526.00 is the portion of the contract increase for the Barry Road Sanitary Sewer, which is not joint use. The remainder of the supplemental agreement cost (\$1,409,981.00) is for the Pumping Station Replacement which is joint use with a WSSC share of 10% and a District of Columbia share of 90%.

\*\*Eligible for Federal Funding at 50% of the District of Columbia share. Federal funding is insufficient to fund all eligible contracts. It may be used if additional funding becomes available or if other eligible projects are postponed.

  
 Gail Alexander-Reeves  
 Director of Budget  
 Date 3/10/15

  
 Leonard R. Benson  
 Chief Engineer  
 Date 3/11/15

  
 Dan Bae  
 Director of Procurement  
 Date 3/11/15

  
 George Hawkins  
 General Manager  
 Date

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

**ACTION REQUESTED**

**GOODS AND SERVICES CONTRACT OPTION:**

**Interim Positive Displacement Meters  
Non Joint-Use**

Approval to execute option year one (1) of the contract in the amount of \$1,000,000.00.

**CONTRACTOR/SUB/VENDOR INFORMATION**

<b>PRIME:</b> Mueller Systems, LLC 10210 Statesville Blvd P.O. Box 128 Cleveland, NC 27013	<b>SUBS: N/A</b>	<b>PARTICIPATION: N/A</b>
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**DESCRIPTION AND PURPOSE**

Original Contract Value:	\$500,000.00
Original Contract Date:	04-15-2014—04-14-2015
No. of Option Years in Contract:	1
Option Year One (01) Value:	\$1,000,000.00
Option Year (01) Date:	04-15-2014—04-14-2015
Modification (1) Value	\$ 300,000.00
Modification Date:	10-31-2014 – 04-14-2015
Modification (2) Value:	\$190,000.00
Modification (2) Date:	02-18-2015—04-14-2015

**Purpose of the Contract:**

To provide Positive Displacement Meters in support of the District of Columbia Water and Sewer Authority's (DC Water) Department of Customer Care and Operations, Meter Division.

**Contract Scope:**

To provide additional meters for installation at residential and small commercial servicing sites to ensure accurate measurement of water consumption by DC Water's customers.

**Spending Previous Year:**

Cumulative Contract Value:	04-15-2014 to 03-10-2015—\$990,000.00
Cumulative Contract Spending:	04-15-2014 to 02-10-2015—\$748,926.50

**Contractor's Past Performance:**

The contractor's past performance has been satisfactory.

**PROCUREMENT INFORMATION**

<b>Contract Type:</b>	Fixed Price	<b>Award Based On:</b>	Single Bidder
<b>Commodity:</b>	Goods and Services	<b>Contract Number:</b>	14-PR-CCO-06
<b>Contractor Market:</b>	Open Market with LBE/LSBE Preference Points		

**BUDGET INFORMATION**


<b>Funding:</b>	6110	<b>Department:</b>	Department of Customer Care and Operations
<b>Service Area:</b>	DC Water servicing areas	<b>Department Head:</b>	Lauren Preston

**ESTIMATED USER SHARE INFORMATION**

User	Share %	Dollar Amount
District of Columbia	100.00%	\$1,000,000.00
Washington Suburban Sanitary Commission	0.00%	\$ 0.00
Fairfax County	0.00%	\$ 0.00
Loudoun County & Potomac Interceptor	0.00%	\$ 0.00
Other, Potomac Interceptor	0.00%	\$ 0.00
<b>TOTAL ESTIMATED DOLLAR AMOUNT</b>	<b>100.00%</b>	<b>\$1,000,000.00</b>

  
 Dan Bae  
 Director of Procurement  
 Date: 3/11/15

  
 Gall Alexander - Reeves  
 Director of Budget  
 Date: 3/11/15

  
 Charles Kiely  
 Assistant General Manager, Customer Care & Operations  
 Date: 3/11/15

\_\_\_\_\_  
 George S. Hawkins  
 General Manager  
 Date