



**DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY
Board of Directors**

*Meeting of the
Environmental Quality and Operations Committee*

*5000 Overlook Avenue, SW, Room 407
Thursday, December 21, 2017
9:30 a.m.*

- | | | |
|-------------------|---|-------------------------------|
| | I. Call to Order | James Patteson
Chairperson |
| 9:30 a.m. | II. AWTP Status Updates
1. BPAWTP Performance
2. Approval of Amendments for the Waste Hailer and High Strength Waste Fee Regulations
3. Approval of Amendments for the Dental Amalgam Pretreatment Standards Regulations | Aklile Tesfaye |
| 9:40 a.m. | III. Clean Rivers Project Follow-up | Carlton Ray |
| 10:00 a.m. | IV. Action Items | John Bosley/Leonard Benson |
| | Joint Use | |
| | 1. Contract No. 15-PR-WWT-53A – Carter & Carter, Ferric Chloride
2. Contract No. 15-PR-WWT-53B – PVS Technology, Ferric Chloride
3. Contract No. DCFA-496-WSA – O'Brien & Gere Engineers, PC, Wastewater Treatment Facilities Construction Management
4. Contract No. DCFA #489-WSA – AECOM, Wastewater Treatment Facilities Construction Management | |
| | Non Joint Use | |
| | 1. Contract No. WAS-12-070-AA-SC – Business Promotion Consultants, Meter Lids | |
| 10:15 a.m. | V. IT Strategy | Tom Kuczynski |
| 10:30 a.m. | VI. Fire Hydrants Update | Charles Kiely |
| 10:40 a.m. | VII. Water Quality Monitoring | Charles Kiely |
| 10:50 a.m. | VIII. Other Business/Emerging Issues | |
| 10:55 a.m. | IX. Executive Session* | |

11:00 a.m. X. Adjournment

James Patteson
Chairperson

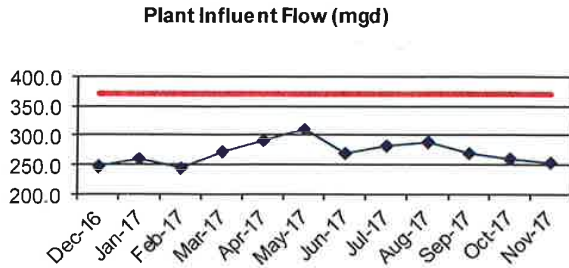
* The DC Water Board of Directors may go into executive session at this meeting pursuant to the District of Columbia Open Meetings Act of 2010, if such action is approved by a majority vote of the Board members who constitute a quorum to discuss: matters prohibited from public disclosure pursuant to 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. Assistant General Manager, Blue Plains: Provide detailed update regarding the reconciliation/settlement efforts with PES that resulted from the performance issues with the CHP facility. **[To be included in BPAWTP Monthly Report, Dec 21st EQ&Ops MTG]**
2. Manager, Program Services: Provide updates regarding change order rates and general contract management performance as part of the next CIP quarterly update. **[Target Feb 2018 EQ&OPs Cmte Mtg, CIP Quarterly Update]**
3. Chief Information Officer, DC Water: Provide an update that shows how funds are being allocated across the different services contracts within the Department of Information Technology. **[BOD Secretary distributed to Cmte Chair, 11/27/17]**
4. Chief Information Officer, DC Water: Provide an update on the Department's enterprise-wide IT strategy & vision during the next EQO Committee meeting. **[Scheduled for Dec 21st EQ&Ops Mtg]**
5. Chief Engineer, DC Water: Provide an update on strategies being implemented by the Authority to successfully meet all consent decree project deadlines. **[To be included in DCCR PPT, Dec 21st EQ&Ops MTG]**

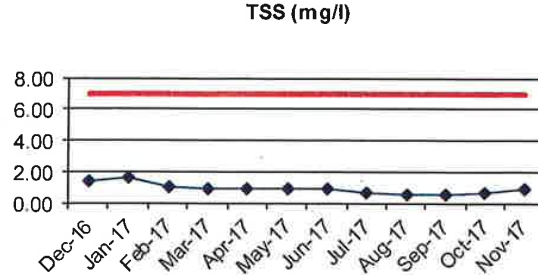
BLUE PLAINS ADVANCED WASTEWATER TREATMENT PLANT PERFORMANCE REPORT – NOVEMBER 2017

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 254 MGD. There was 15 MG of Excess Flow during this reporting period. The following Figures compare the plant performance with the corresponding NPDES permit limits.



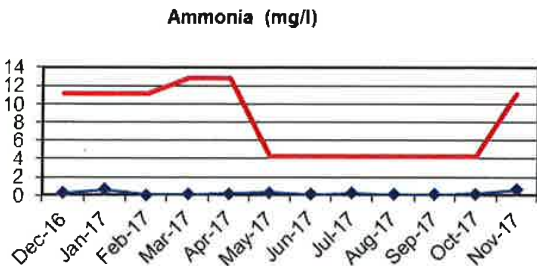
■ Influent Flow — Average Design Capacity

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.



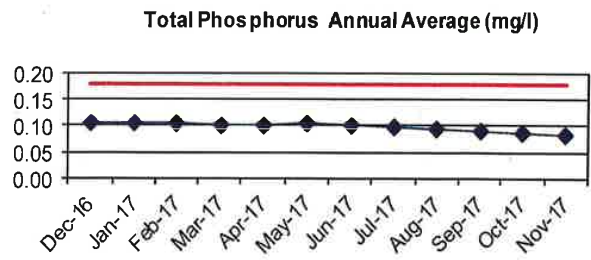
■ Effluent TSS — Permit Limit

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 0.84 mg/L, which is below the 7.0 mg/L permit limit.



■ Effluent NH3 — Permit Limit

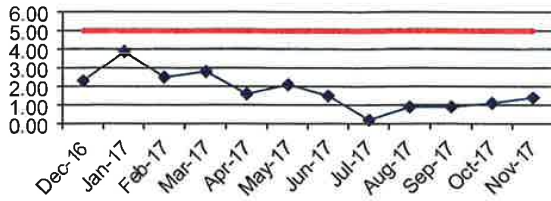
The Ammonia Nitrogen (NH₃-N) is a measure of the nitrogen found in ammonia. For the month, effluent NH₃-N concentration averaged 0.58 mg/L and is below the average 11.1 mg/L limit.



■ 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 0.08 mg/L, which is below the 0.18 mg/L annual average limit.

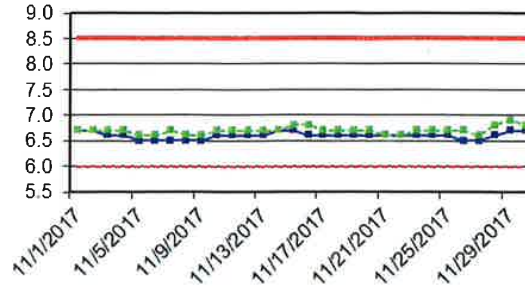
CBOD (mg/l)



■ Effluent CBOD — Permit 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 1.45 mg/L (partial month), which is below the 5.0 mg/L limit.

Min and Max Instantaneous pH

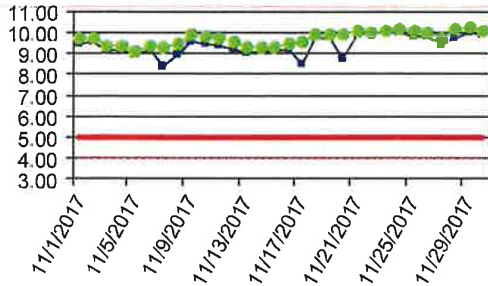


● MAX pH ■ MIN pH — Upper Limit - - Lower Limit

pH is a measure of the intensity of the alkalinity or acidity of the effluent. The minimum and maximum pH observed were 6.5 and 6.9 standard units, respectively. The pH was within the permit limits of 6.0 and 8.5 for minimum and maximum respectively.

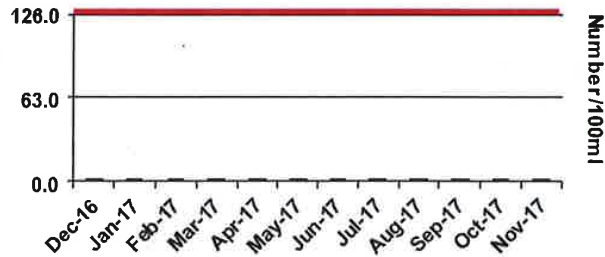
E. coli

Daily and Instantaneous Min DO



● MIN Daily Average ■ Instant MIN DO
— MIN Daily Average Limit - - Instant MIN Limit

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 9.1 mg/L. The minimum instantaneous DO reading is 8.4 mg/L. The minimum permit limits are 5.0 mg/L and 4.0 mg/L respectively.

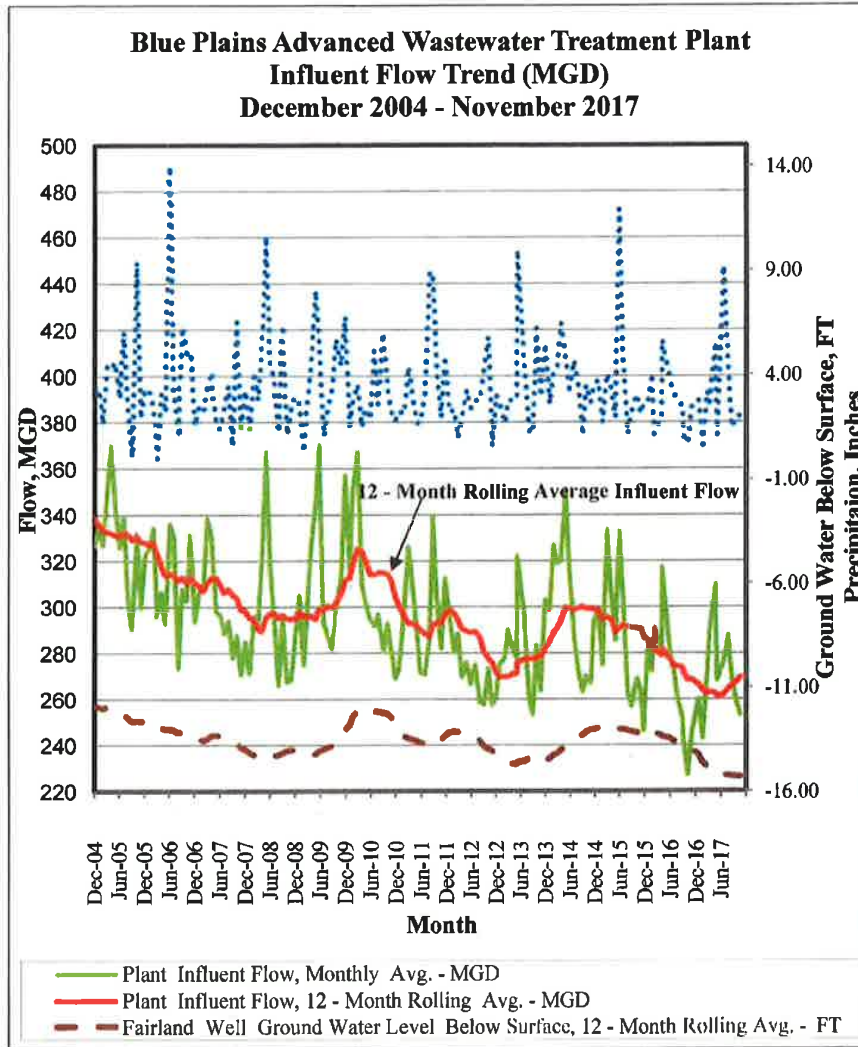


■ E. Coli Geomean — Permit Limit

E.coli is an indicator of disease causing organisms (pathogens). The E.coli permit limit is 126/100mL. The E coli geometric mean is 1.0 /100mL, and well below the permit limit.

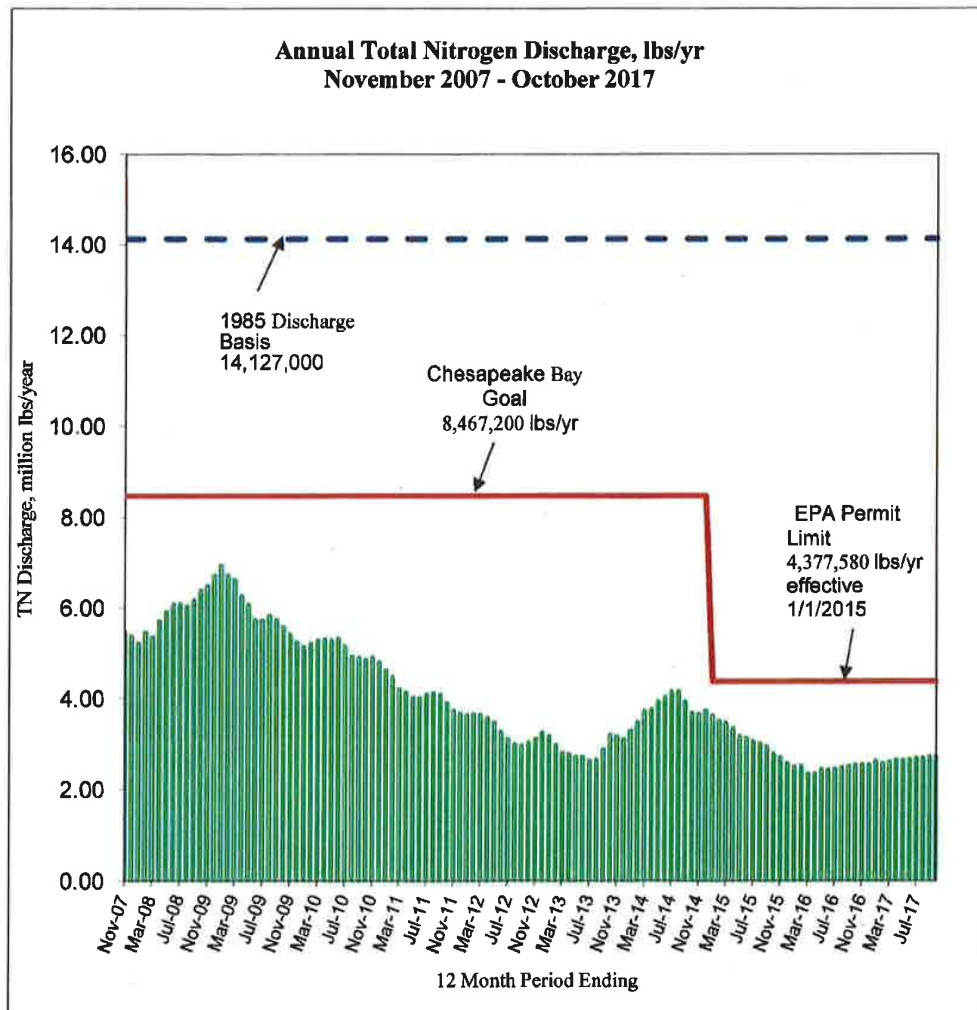
Plant Influent Flow Trend

The graph below shows a long-term influent flow trend to the plant ending November 2017. While for any given month the flow is weather dependent, the 12-month rolling average influent flow has remained at or below 300 MGD since February 2011.

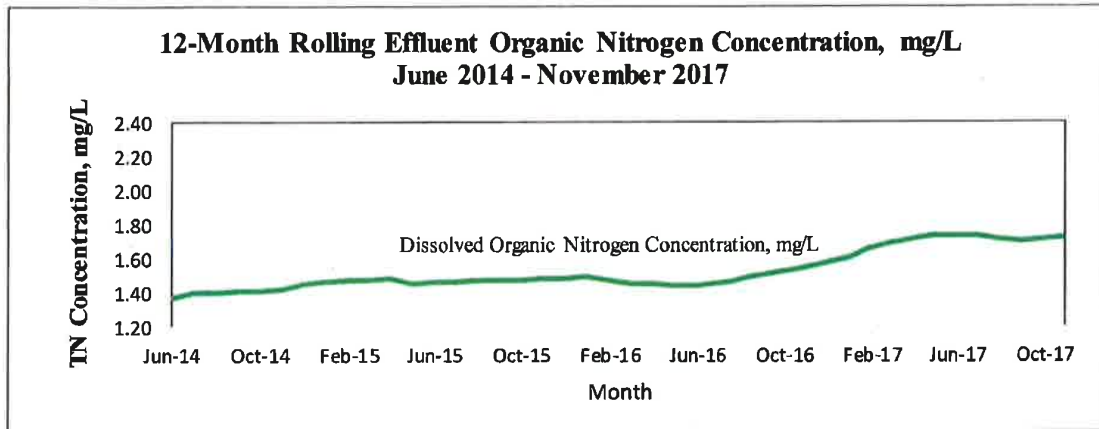


Blue Plains Total Nitrogen (TN) Removal – Performance

The graph below shows 12-month rolling TN discharge, in million pounds per year, over a 10-year period ending November 2017. In November 2017, the monthly average TN concentration and total load in the effluent were 4.4 mg/L and 277,600 lbs respectively. During the current calendar year (January 1 – November 30, 2017), the total pounds of nitrogen discharged in the effluent was 2,626,800 lbs and is on track to remain below the NPDES permit discharge limit of 4,377,580 lbs/year. The performance corresponds to average influent flow of 290 MGD, maximum month flow of 308 MGD, and average monthly wastewater temperatures above 17 °C observed during the calendar year to-date. The Blue Plains Enhance Nitrogen Removal Facility (ENRF) is designed to meet the TN discharge limits at influent loads corresponding to annual average flows of 370 MGD, maximum month flows of 485 MGD, and operating wastewater temperatures below 12 °C.

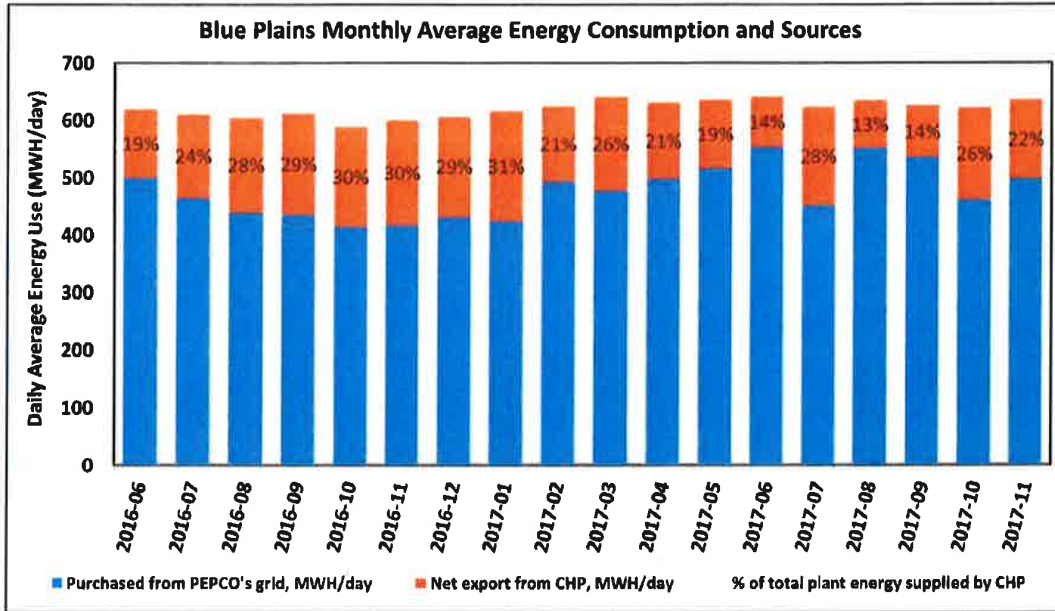


Since the commissioning of ENRF, the nitrogen load in the effluent continued to decline and reached the lowest level in March of 2016. Although the TN load in the effluent remained well below the permit limit, the slight but steady increase since March of 2016 was mostly caused by higher concentrations of refractory dissolved organic nitrogen (rDON) in the filterate (liquid removed from dewatering class A biosolids) returned for treatment in the plant's secondary and enhanced nitrogen removal processes. The rDON concentrations are within anticipated levels and have stabilized in recent months as shown on the chart below.



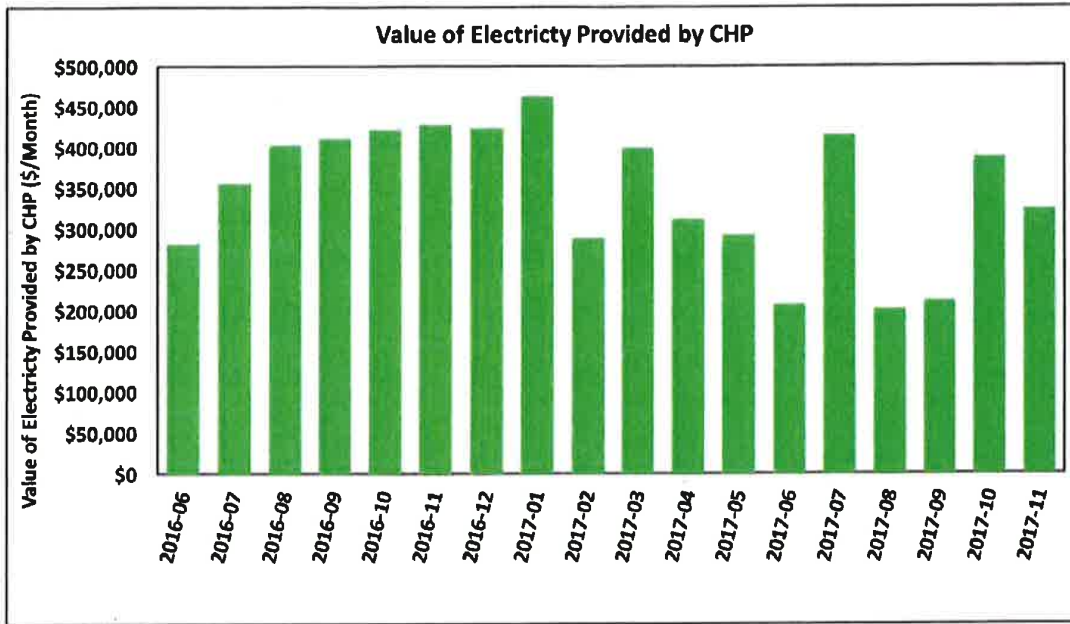
Blue Plains Electricity Generation and Usage

In November 2017, the average energy consumed at Blue Plains was 636 megawatt hours per day (MWH/day) or 2.5 MWH of electricity per million gallon of wastewater processed through complete treatment. The Combined Heat and Power (CHP) facility generated an average of 138 MWH/day, making up for 22% of total energy consumed at Blue Plains. The remaining 498 MWH/day was purchased from PEPCO.



The graph above is based on power monitors installed at the Main Substation and CHP, and reflects average energy consumed at Blue Plains in MWH/day. Of the total use, the energy purchased from PEPCO and net energy supplied by CHP are indicated by the blue and orange highlights, respectively.

The graph below shows the monthly value of the net electricity produced by CHP by assuming unit price of \$78/MWH of electricity.



CHP Operation and Maintenance Status

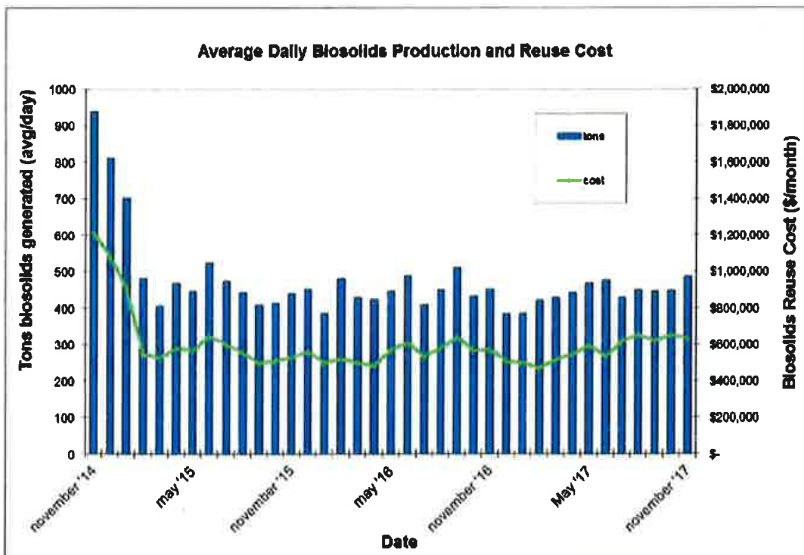
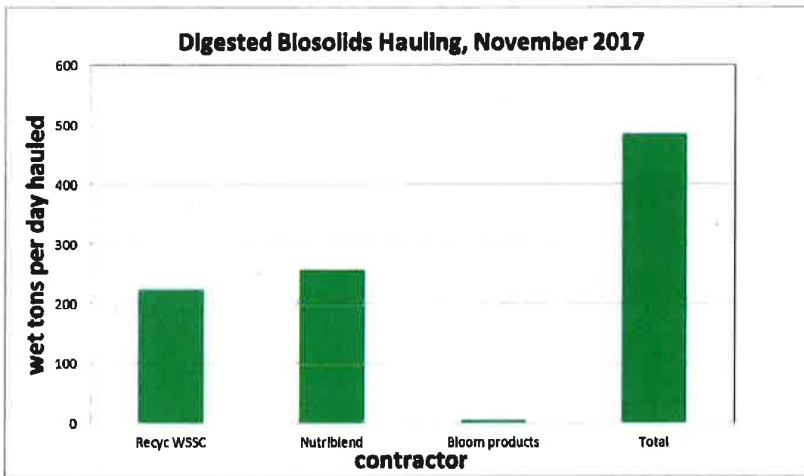
In November, the net electricity produced was lower - as compared to the previous month - because of partial and full outages required to complete annual inspections of the Combustion Turbines (CT) and the associated Heat Recovery Steam Generators (HRSG) and repair and replacement of other critical assets. As a result, the CHP facility generated a net average of 138 MWH of electricity per day or 22% of the energy use at Blue Plains.

Reconciliation of costs for the contact operation period that ended on September 30, 2017 is in progress. The settlement will include reimbursements associated with failure to comply with Digester Gas Electrical Power Production Guarantee, as required by the terms of contract. The claim, along with all supporting data, was submitted and is under review by the contract operator, Pepco Energy Services (PES). The Authority expects a response by the end of this year

RESOURCE RECOVERY

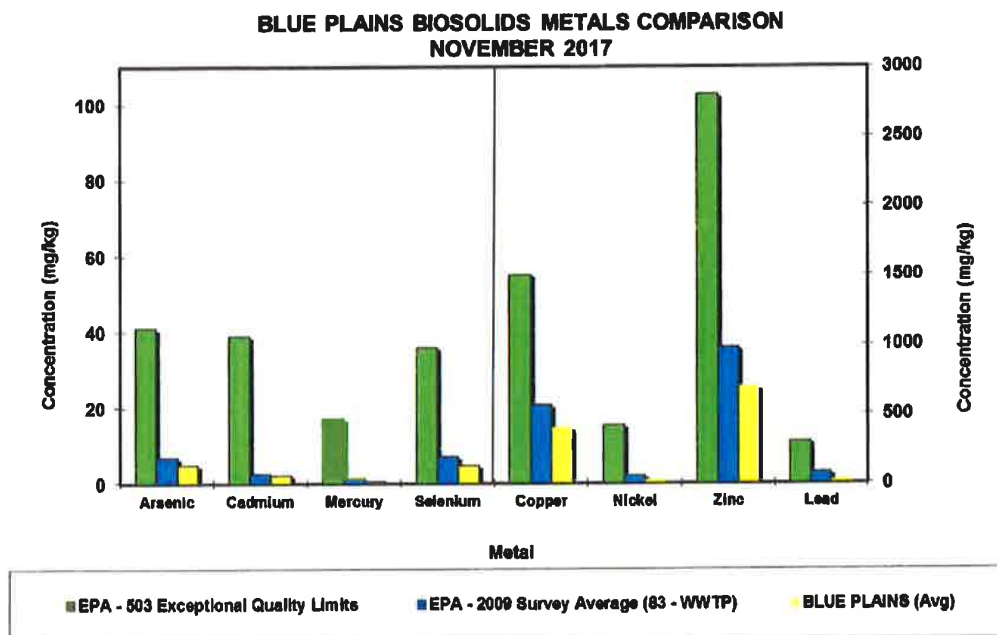
In November, biosolids hauling averaged 485 wet tons per day (wtpd). The average percent solids for the Class A material was 29.3%. The graph below shows average daily biosolids produced and the associated monthly cost for reuse (transportation and application cost) for a three-year period ending November 2017. In November, diesel prices averaged \$3.03/gallon, and with the contractual fuel surcharge, the weighted average biosolids reuse cost (taking into account the marketed material) was \$43.17 per wet ton.

The average quantities of Class A biosolids transported and applied on farms by the two major contracts (WSSC's Recyc and DC Water's Nutriblend) and the quantities marketed as Bloom are shown on the graph below. In November, 160 wet tons of Bloom were distributed to 2 different customers.

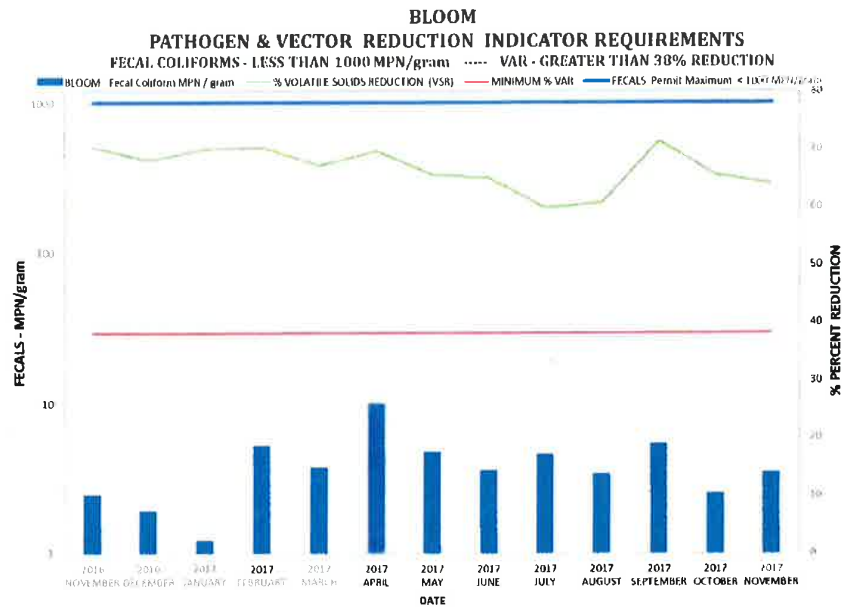


Product Quality

All biosolids produced during the month of November met Class A Exceptional Quality (EQ) requirements required by EPA. The graph below shows the EPA regulated heavy metals average concentrations in the Class A biosolids. The concentrations are considerably below the regulated exceptional quality limits (EPA-503 Exceptional Quality Limits) and the national average (EPA-2009 Survey Average).

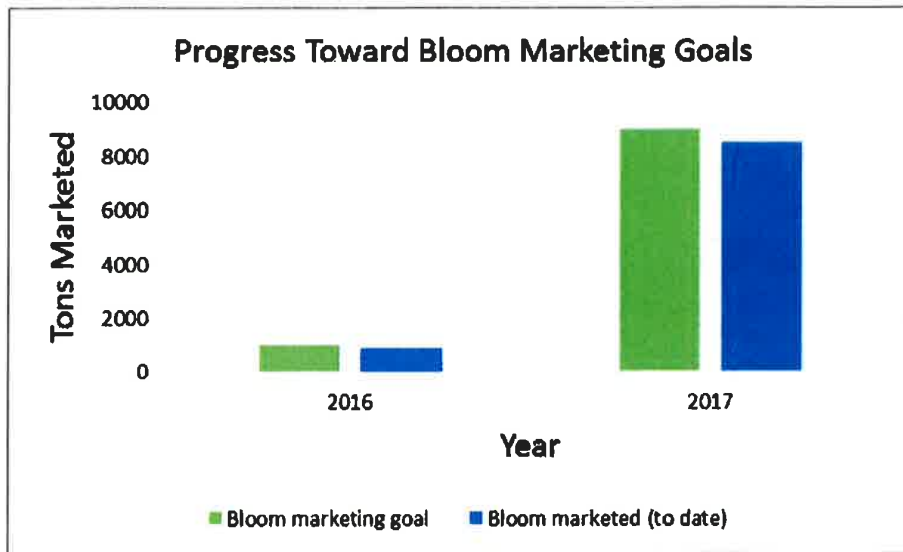


The graph below shows both Vector Attraction Reduction (VAR) and Fecal Coliform (FC) results in the Class A product, both of which are required to maintain the Class A Exceptional Quality (EQ) status. Vector Attraction Reduction is measured by the reduction in Volatile Solids (VS) or organic compounds that may be odorous and attract nuisance vectors such as flies and rodent. DC Water anaerobic digesters reduced VS by over 65 percent, well above the required 38 percent minimum. In addition, the graph shows fecal coliforms levels in the Class A product. Fecal coliforms are indicators of disease causing organism (pathogens), and must be below 1,000 MPN/g to meet Class A standards. The FC levels in the Class A product are two orders of magnitude less than the maximum allowable level.



Bloom Marketing

Bloom sales as of November 30, 2017 totale 8507 tons for the calendar year. This represents 94.5% of the goal.



CLEAN WATER QUALITY AND TECHNOLOGY

The Department of Clean Water Quality and Technology includes the research and development, pretreatment and laboratory programs. A summary of activities for each group is provided below.

Research and Development

The research and development team focuses on research topics associated with the planning and operation of Blue Plains. The current focus of research is to optimize treatment process capacity and to work toward achieving energy neutral operations. Activities during October included continued work by our research team in the carbon removal/redirection, nitrogen removal, and solids treatment focus areas. In addition, members of the R&D team were involved with the activities below.

WEFTEC Conference, Chicago, IL – Sep 29th – Oct 4th, 2017

The research and development group had a good representation at WEFTEC this year. The group produced 6 technical papers and participated in organizing workshops as summarized below. In addition, the group was involved in meetings with current or potential collaborators for the technology development arm of research to support DCW innovation and external revenue generation efforts.

Technical Sessions – The R&D group participated and prepared students for podium presentations at WEFTEC in various topics related to research at Blue Plains AWTP. The topics ranged from carbon capture and energy recover, odor control, sidestream deammonification startup (filtrate treatment), aeration efficiency, and hydrolysis in anaerobic digestion. The titles of the papers are listed as the following:

- Presentation by Tim Van Winkel [University of Kansas] - It's Time to Harvest: Combining Internal Selection and Flocculent External Selection to Maximize Carbon Capture Efficiency.
- Presentation by Nam Ngo [Catholic University] – Experimental metrics to predict the flocculent settling coefficient in a 1D settler model
- Presentation by Elizabeth Manning [George Washington University] – The Role of Physics in the Hydrolysis Step of Mesophilic Anaerobic Digestion with Thermal Hydrolysis Pretreatment.
- Presentation by Qi Zhang [Gent University] – “Startup Strategies of Deammonification Reactors Treating Reject Water from Thermally Hydrolyzed Solids”
- Presentation by Ahmed Al-Omari [DC Water] – Improving Oxygen Transfer in Short SRT System”.
- Workshops – Haydee de Clippeleir and Ola Olagunjo helped organize a workshop titled “Respirometry Renaissance: Realizing the Potential of Respirometry for Diagnostic and Control Applications”. Haydee de Clippeleir

presented novel respirometry applications at DCW and Ola participated in conducting two hands on Activities.

In addition to the technical sessions, we met with several companies to discuss technology collaboration including S:CAN, Metamateria, Evoqua, Trojan, Meiden and Brentwood.

Filtrate Treatment Facility Startup

The R&D team is assisting process engineering, operations, and World Water Works (WWW) with the startup of the new filtrate treatment facilities (FTF). The team developed guidelines to deal with startup under inhibitory and less than ideal conditions. The team continues to monitor the activity of the organisms in the start-up reactors for assessment of health of the biomass which is then considered by WWW and the commissioning team when making changes to the reactors operation.

Blue Plains Main Laboratory

The Main Laboratory staff conducts analyses on Blue Plains AWTP 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 each 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.

In addition to comprehensive testing to support operation of liquid stream processes, the laboratory analyzes Belt Filter Press cake samples for fecal coliform bacteria for DC Water's Class A Biosolids reporting, as well as digester samples from the new Cambi Thermal Hydrolysis and Anaerobic Digestion facility, including Total and Volatile Solids, Total and Volatile Suspended Solids, Ammonia Nitrogen, alkalinity and pH. Fecal coliforms in the BFP dewatered cake and TS and VS upstream and downstream of the digestion process are monitored to show compliance with 40 CFR 503 Pathogen and Vector Attraction Reduction requirements.

The laboratory also assisted the Department of Sewer Services conducting microbiological analysis of water samples for E. coli bacteria, as well as monitoring the Northeast Boundary Swirl Facility Effluent for NPDES compliance. Laboratory staff also participated in the WWOA Executive Board.

This month the laboratory continued analysis of samples from the new Filtrate Treatment Facility which removes nitrogen from the belt press dewatering filtrate. Parameters analyzed include ammonia, nitrate, and nitrite nitrogen; ortho-phosphorus; COD; TSS; VSS and alkalinity.

Blue Plains Pretreatment Program

The Blue Plains Pretreatment Program manages the Industrial Pretreatment Program, including temporary dewatering dischargers from construction and other 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 and other SWPPP compliance activities, including participation in the DOEE inspection this month. Staff continued providing sampling assistance for the team evaluating gas production in the sewer system and treatment process. Proposed regulations were published in the DC Register this month incorporating EPA's new Dental Amalgam Rule, new hauled waste fees (volume-based instead of annual flat fee), and fees for industrial high strength waste. Informal discussions with stakeholders has occurred, but no issues have been identified that need addressed in the regulations.

Industrial Pretreatment Program

DC Water currently manages twelve (12) Significant Industrial User (SIU) permits and eighteen (18) Non-Significant Industrial User (NSIU) wastewater discharge permits. Staff conducted one SIU inspection and compliance monitoring this month at Naval Support Facility Carderock. The following enforcement actions were taken this month:

- A pH violation was identified at the time of sampling and a Notice of Violation was issued to NSF Carderock for pH<5. Follow-up monitoring showed the pH to be consistently in compliance and subsequent investigation of this incident suggested that it was a batch discharge from a research project evaluating grease separator technologies for Navy ships and consisted of galley water from the main mess hall of Joint Base Myer-Henderson Hall.
- Notice of Infraction and Administrative Order prepared for NSF Carderock for failure to conduct required permit monitoring for mercury in three quarters between 2016 and 2017. NSF was determined to be in Significant Noncompliance.

A Directive Letter was issued to the Adams Row Condo Association for follow-up monitoring of benzene. Results were received and below levels of concern, so no further action is required. DC Water received monthly self-compliance monitoring reports for six (6) SIUs and one NSIU. All SIUs and NSIUs are in compliance with discharge standards for the current month.

Billing for the FY2018 annual industrial user compliance fee was sent out this month. DC Water negotiated a special contract with United Airlines at Dulles Airport to accept high strength waste from fire-fighting foam cleanup activities, which occurred this month.

DC Water currently manages 85 Temporary Discharge Authorization (TDA) permits, primarily for construction site discharges of groundwater and/or surface runoff in the combined sewer area. Eight new TDA permits were issued this month. All TDA discharges are currently in compliance with pretreatment standards.

Hauled Waste Program

As of the end of the current month, the hauled waste program had 33 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. Staff issued one new permit and renewed two hauled waste permits this month.

DC Water received 924 hauled waste loads (1,831,960 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 hauled waste samples were collected this month.

NPDES Permit Sampling

Pretreatment staff collected two dry weather and one wet weather low level PCB samples at outfall 002 this month.



District of Columbia Water and Sewer Authority
George S. Hawkins, CEO & General Manager

Briefing on:

2018 Anacostia River Tunnel System Commissioning

Briefing for:

Environmental Quality and Operations Committee

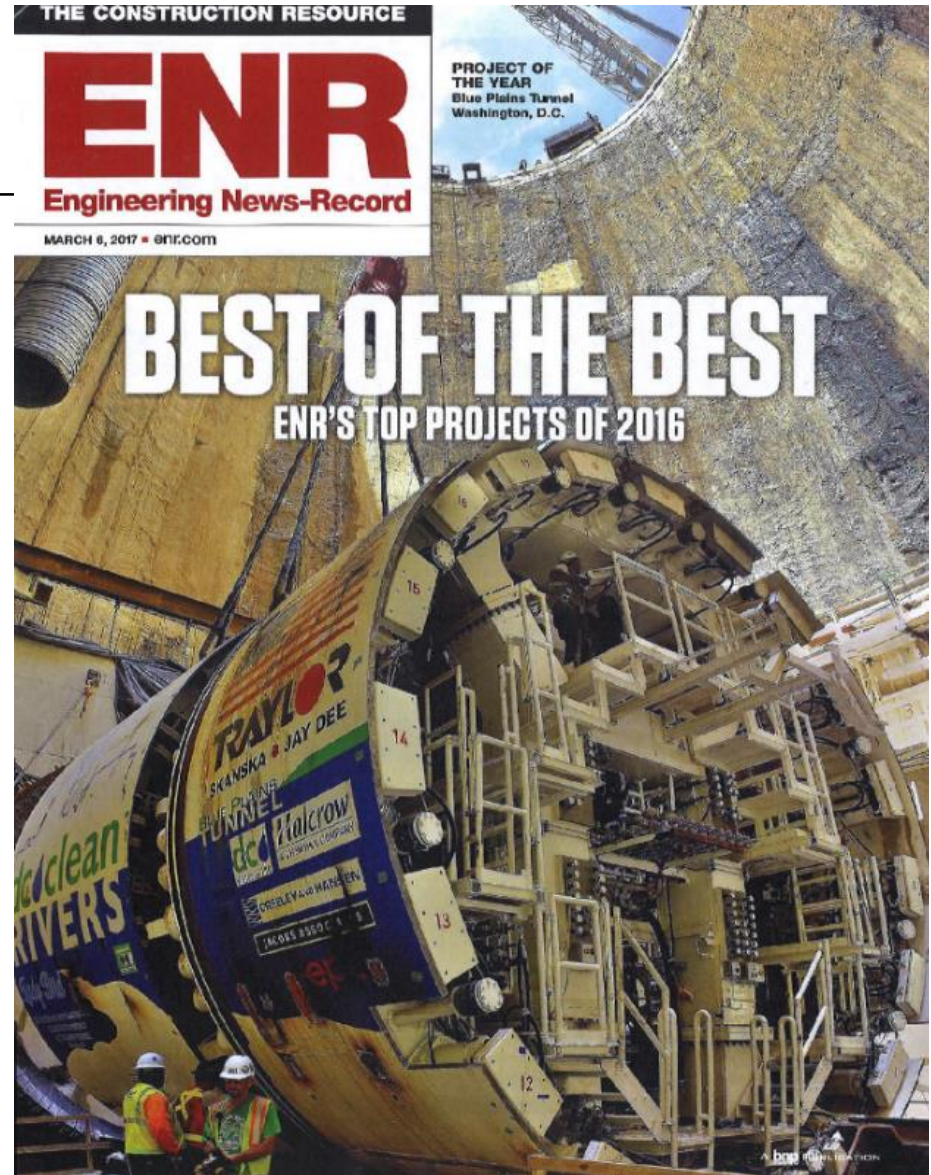
December 21, 2017



DCWATER.COM

Agenda

- Background and Consent Decree Requirements
- Status of Active Contracts
- Commissioning Coordination
- Questions



DC Clean Rivers Project Overview

Controls Combined Sewer Overflows



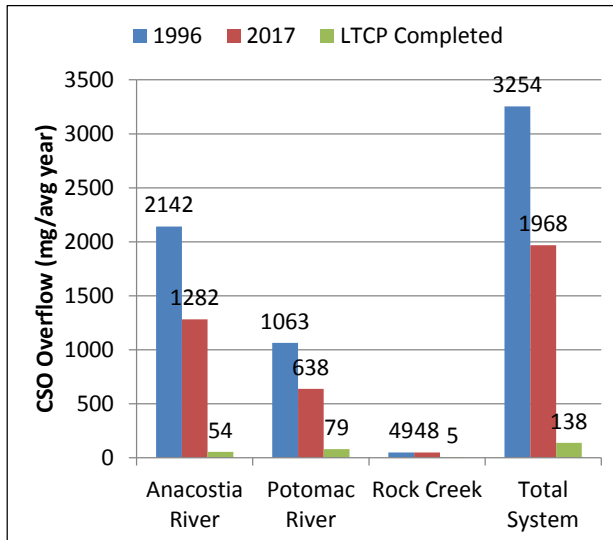
Addresses Chronic Sewer Flooding



▲ Flooding at 1st and V Streets NW

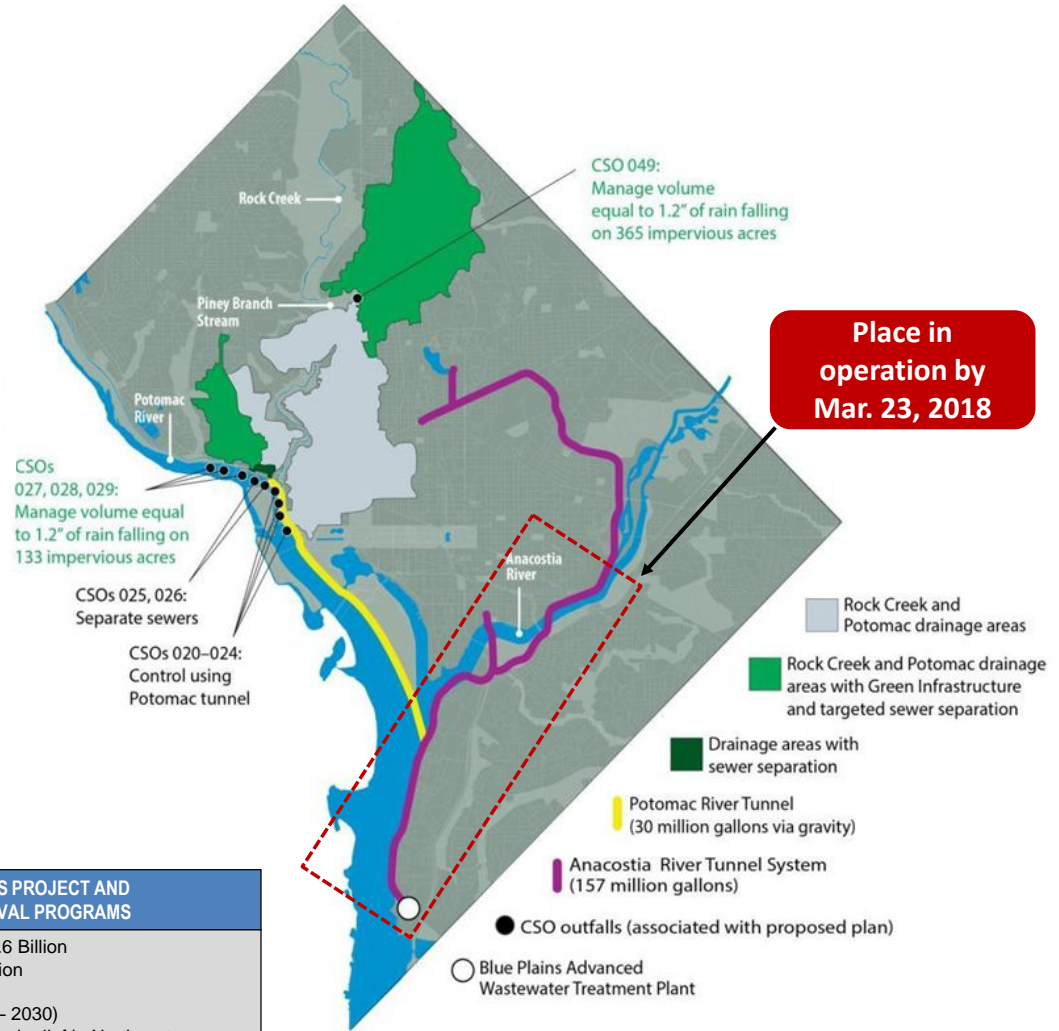


▲ Flooding at 1st and Rhode Island Ave NW



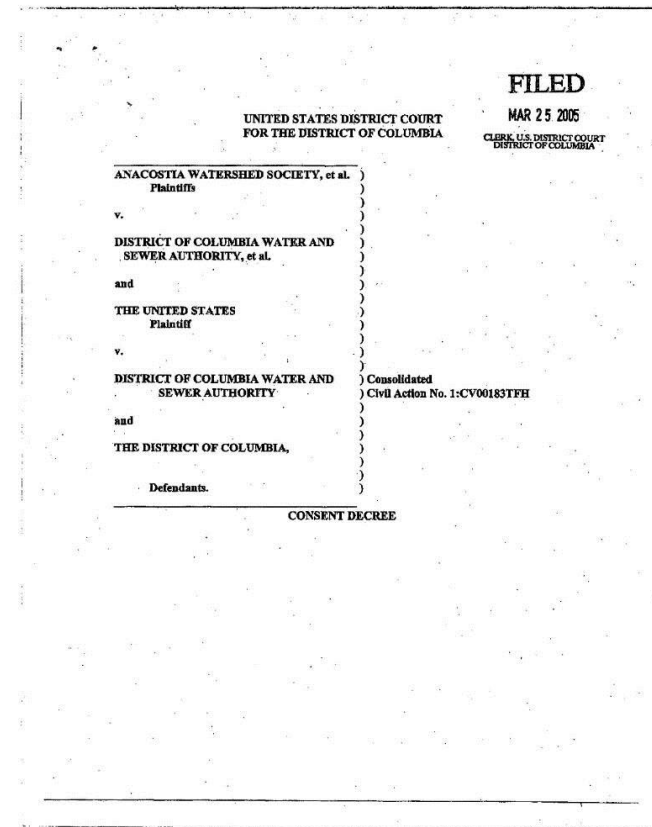
DC CLEAN RIVERS PROJECT AND NITROGEN REMOVAL PROGRAMS

- DC Clean Rivers Project: \$2.6 Billion
- Nitrogen Removal: \$950 Million
- Total > \$ 3.5 Billion
- 25 yr implementation (2005 – 2030)
- 96% reduction in CSOs & flood relief in Northeast Boundary
- Approx 1 million lbs/yr nitrogen reduction predicted



Consent Decree Requirements

- Signed by EPA, DOJ, District and DC Water
- Place in operation all facilities south of RFK Stadium by **March 23, 2018**
 - Blue Plains to Main Pumping Station and CSO 019
- “Place in Operation” means to achieve steady state operation and to operate consistently in such a way as to accomplish the intended function, even though all construction close-out activities (such as completion of a punchlist and resolution of contract disputes or close-outs) may not yet be completed.
- Significant stipulated penalties for failure to meet deadline



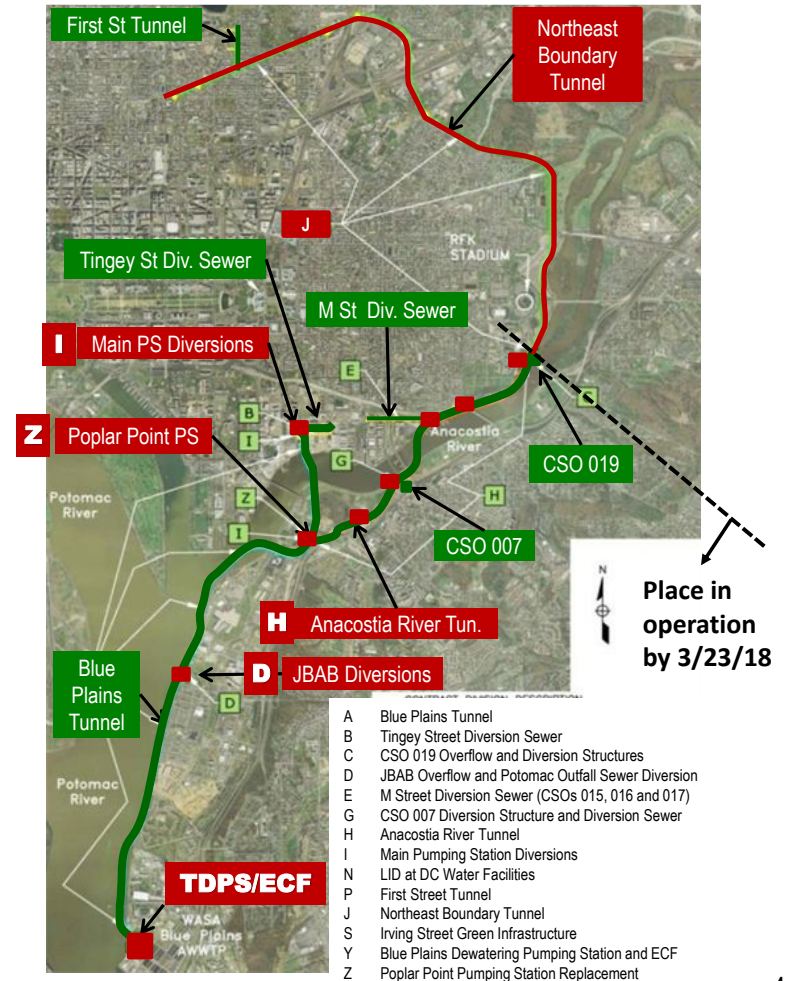
Active Contracts Anacostia River Tunnel South of RFK

Div.	Description	Contractor	Status
A	Blue Plains Tunnel	Traylor/Skanska/JD	Complete
B	Tingey St Diversions (CSO 013/014)	Forest City	Complete
C	CSO 019 Overflow	Ulliman Schutte	Complete
D	JBAB Overflow & Diversions, instrumentation + startup	Corman	In progress
E	M Street Diversion Sewer	Corman	Complete
G	CSO 007 Diversion @ 11 th St Bridge	Skanska via DDOT	Complete
H	Anacostia River Tunnel	Impregilo Healy Parsons JV	In progress
I	Main Pumping Stations Diversion	Corman	In progress
Z	Poplar Point PS and Main Overflow Diversion	E.E . Cruz	In progress



TDPS/ECF	Tunnel Dewatering Pumping Station and Enhanced Clarification Facility	PC/CDM JV	In progress
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Legend
█ Completed
█ Construction





Division H – Anacostia River Tunnel Project Status



Tunnel



Shafts



Diversion Structures

Complete:

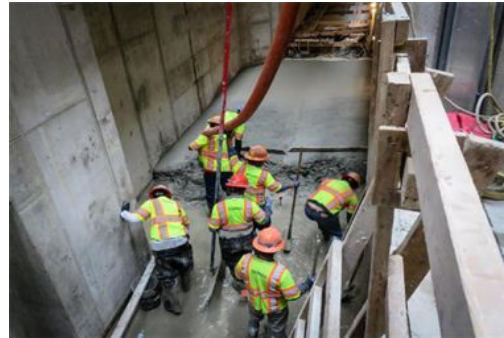
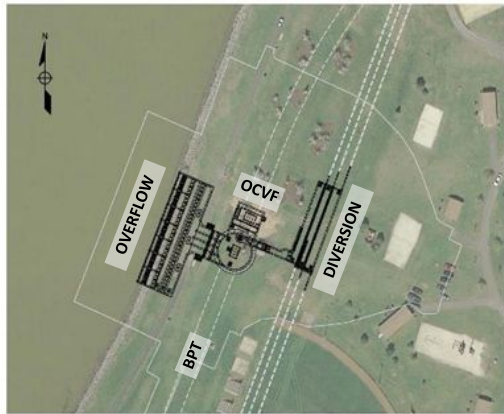
Remaining:

- Electrical and instrumentation hookups
- Startup and testing
- Removal of temporary bulkheads

➔ Substantial completion anticipated Jan 2018



Division D – JBAB Overflow and Diversion Structures Status



Diversion Structure



Drop Shaft Internals



Overflow Structural Work

Complete:

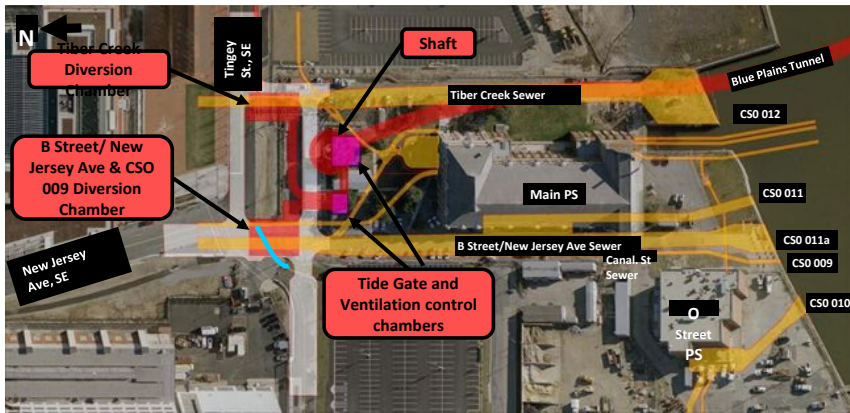
Remaining:

- Drop shaft cover
- Architectural finishes
- Electrical and instrumentation fit-out
- Startup and testing – at JBAB and remainder of tunnel sites

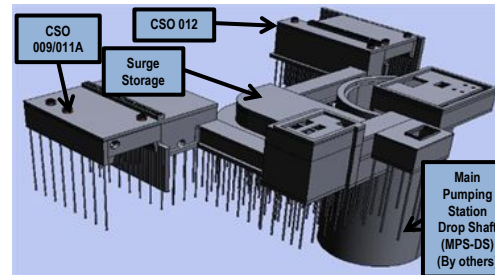
➔ Substantial completion anticipated Feb 2018



Division I – Main Pumping Station Diversions Project Status



Complete:



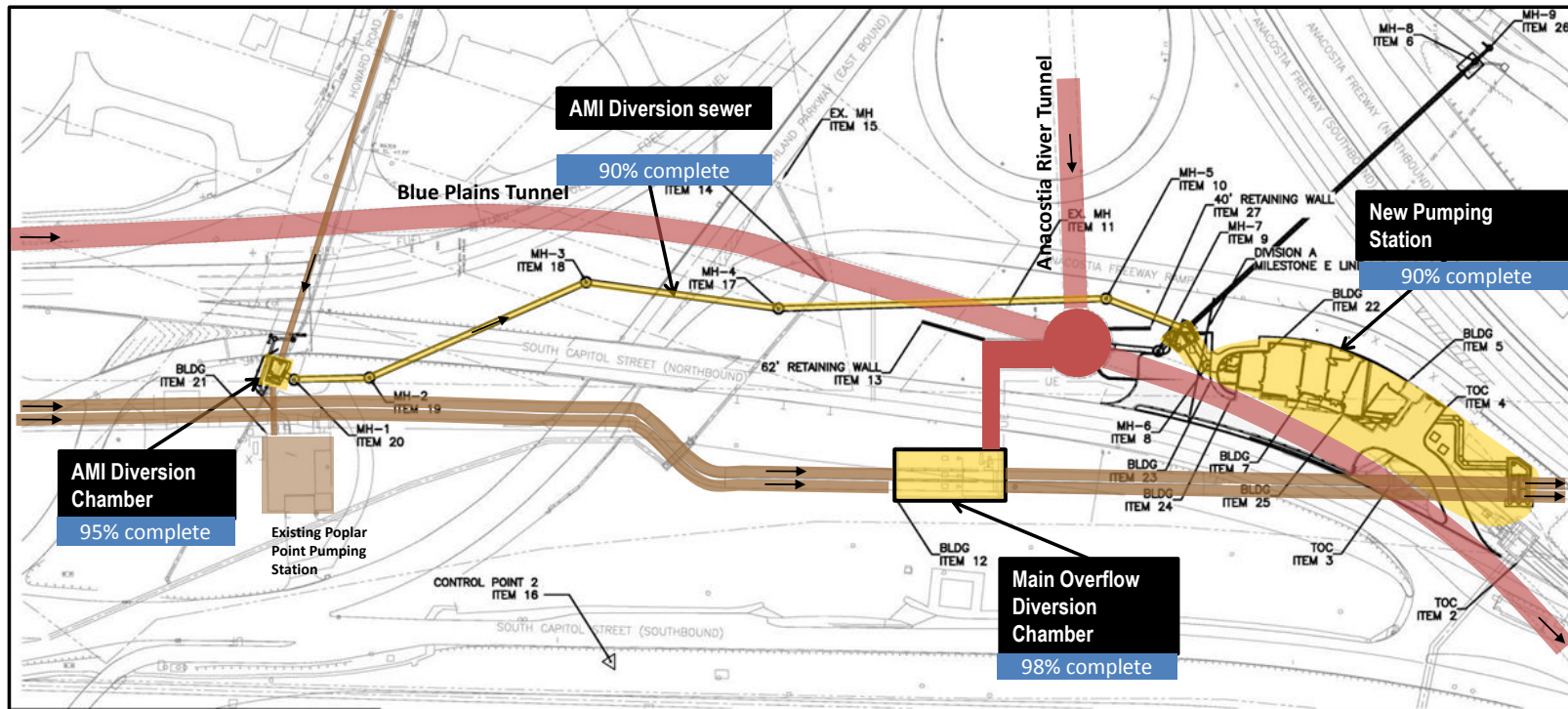
- Drop shaft
- Diversion Structures
- Surge Tank
- Venting & Odor Structures

Remaining:

- Architectural finishes
- Grading & access covers
- Electrical and instrumentation fit-out
- Startup and testing

➡ **Substantial completion anticipated Feb 2018**

Division Z – Poplar Point Pumping Station Status



- Start of Operational Demonstration anticipated in Jan/Feb 2018
- Consent Decree obligations can be met after sufficient operation has been performed in core function (pumping sewage) to demonstrate facility operation
- Ancillary items (e.g. break room, landscaping, etc.) not required to meet consent decree



Division Z – Poplar Point Pumping Station Status



Division Z – Project Challenges and Mitigations

Project Challenges

- Challenging AMI tunnel – differing site conditions
- Limited staging area
- Multiple work sites
- Adjacent highways and ramps limit access between sites and mobility
- Limited availability of skilled labor
- Interfaces with other Clean Rivers Contracts limits site access
- Some work such as flow diversion can only be performed in dry weather and must work around pumping operations
- Availability of other construction work makes it challenges to retain staff

Clean Rivers Mitigations

- Regular meetings with E.E. Cruz senior leadership
- Weekly team meetings to identify ways to improve schedule
- Adding staff in the field to identify preplanning needed to keep ahead of trades
- 2nd shift work
- Looking for every opportunity to simplify and accelerate the work
- Shifting work to PCO to reduce costs and accelerate schedule
- Assist with scheduling responsibilities



TDPS/ECF Project Status

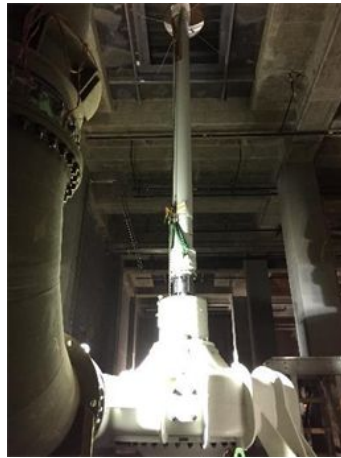
- Witness combined loop testing (WCLT) approximately 50% complete
- Functional Testing approximately 50% complete
- Commissioning Testing on schedule
- Actiflo OD1 start set for 2/1/18
- OD1 completion of 2/15/18 – Compliance with Consent Decree (03/23/2018)
- OD2 start date 2/15/18



Tunnel Dewatering Pump Station Facilities



Fine Screens



Tunnel Dewatering Pump



High Rate Clarification (Actiflo)



Chlorination



Commissioning Coordination Started in March 2017 (1 year in advance of deadline)

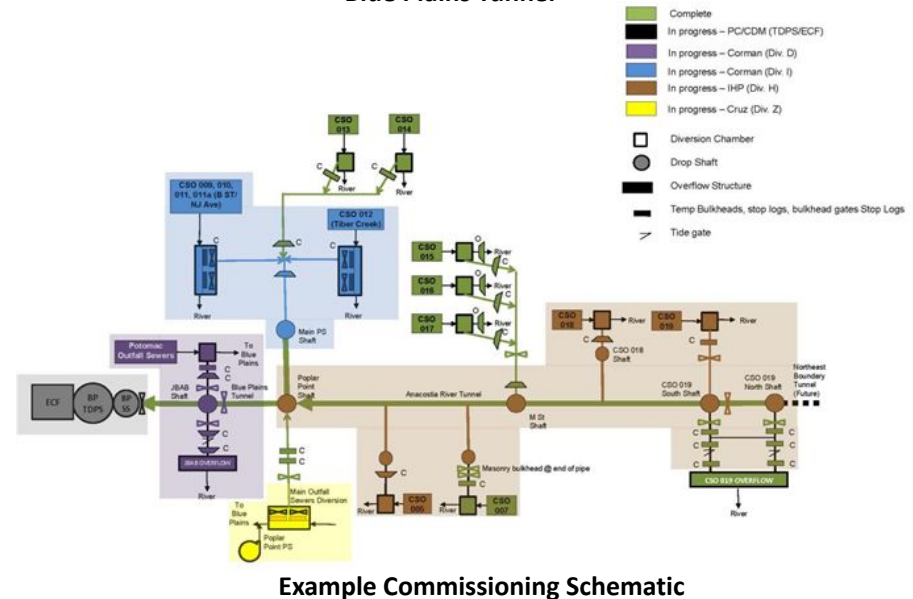
- **Program Level Coordination (Quarterly)**
 - Develop program-wide understanding of overall goals
 - Assess progress
 - Identify opportunities for scope modifications to mitigate schedule risks

- **Contract Interface Level Coordination (Monthly)**
 - Review status of construction
 - Review schedule for completion
 - Review potential conflicts
 - Review safety considerations

- **Project Level Coordination (Weekly, as-needed)**
 - On-site meetings between field teams for detailed coordination of concurrent activities



Blue Plains Tunnel



Look Ahead

- Continue to push construction
- Continue commissioning coordination meetings
- Looking forward to March 23, 2018 Place in Operation



QUESTIONS



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

ACTION REQUESTED

GOODS AND SERVICES CONTRACT OPTION YEAR

**FERRIC CHLORIDE
(Joint Use)**

Approval to exercise option year 2 for the supply and delivery of Ferric Chloride in the amount of \$3,600,000.00

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME:	SUBS:	PARTICIPATION:
Carter & Carter Enterprises Inc. 212 Van Buren Street, NW Washington, D.C. 20012 LSBE	N/A	100%

DESCRIPTION AND PURPOSE

Original Contract Value:	\$3,325,000.00
Original Contract Dates:	01-10-2016—01-09-2017
No. of Option Years in Contract:	4
Option Year 1 Value:	\$3,281,775.00
Option Year 1 Dates:	01-10-2017—01-09-2018
Option Year 2 Value:	\$3,600,000.00
Option Year 2 Dates:	01-10-2018—01-09-2019

Purpose of the Contract:

This contract is to supply and deliver liquid ferric chloride to DC Water’s Blue Plains Advanced Wastewater Treatment Facility. Ferric chloride removes phosphorous from the wastewater within the plant’s primary and secondary treatment stages, as well as odor-causing compounds. Ferric chloride also works with a polymer to coagulate and remove suspended solids. All of these functions are needed for DC Water to comply with its water discharge permits.

Contract Scope:

To ensure supply security, ferric chloride supply was awarded to two companies with independent supply chains. 70% of DC Water’s requirements was awarded to Carter & Carter (this contract), and the remaining 30% was awarded to PVS Technology. The projected ferric consumption is approximately 24.2 million pounds for both contracts combined. Carter & Carter will supply approximately 16.9 million pounds, and PVS will supply about 7.3 million pounds during option year 2. These consumption figures include an incremental 8.8% from previous years due to the start-up of the Tunnel Dewatering Pumping Station (TDPS) in spring, 2018.

Spending Previous Year:

Cumulative Contract Value:	01-10-2016 to 01-09-2018: \$6,606,775.00
Cumulative Contract Spending:	01-10-2016 to 11-30-2017: \$6,357,641.00

Contractor’s Past Performance:

According to the COTR, the Contractor’s quality of product and services, timeliness of deliverables; conformance to DC Water’s policies, procedures and contract terms; and invoicing all meet expectations and requirements.

PROCUREMENT INFORMATION

Contract Type:	Good and Services	Award Based On:	Best Value
Commodity:	Ferric Chloride	Contract Number:	15-PR-WWT-53A
Contractor Market:	Open Market with Preference Points for LBE and LSBE Participation		

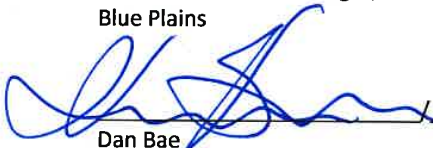
BUDGET INFORMATION


Funding:	Operating	Department:	Wastewater Treatment
Project Area:	Blue Plains	Department Head:	Salil M. Kharkar

ESTIMATED USER SHARE INFORMATION

User - Operating	Share %	Dollar Amount
District of Columbia	41.92%	\$1,509,120.00
Washington Suburban Sanitary Commission	43.33%	\$1,559,880.00
Fairfax County	9.81%	\$353,160.00
Loudoun Water	4.29%	\$154,440.00
Other (PI)	0.65%	\$23,400.00
TOTAL ESTIMATED DOLLAR AMOUNT	100.00%	\$3,600,000.00


 _____ / 12/6/17
 Akile Tesfaye Date
 Assistant General Manager,
 Blue Plains


 _____ 12/6/17
 Dan Bae Date
 Director of Procurement


 _____ 12/12/17
 Matthew T. Brown Date
 Chief Financial Officer

 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 YEAR

**FERRIC CHLORIDE
(Joint Use)**

Approval to exercise option year 2 for the supply and delivery of Ferric Chloride in the amount of \$1,540,600.00.

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME:	SUBS:	PARTICIPATION:
PVS Technology 10900 Harper Avenue Detroit, MI 48213	N/A	N/A

DESCRIPTION AND PURPOSE

Original Contract Value:	\$1,447,500.00
Original Contract Dates:	01-10-2016—01-09-2017
No. of Option Years in Contract:	4
Option Year 1 Value:	\$1,443,487.50
Option Year 1 Dates:	01-10-2017—01-09-2018
Option Year 2 Value:	\$1,540,600.00
Option Year 2 Dates:	01-10-2018—01-09-2019

Purpose of the Contract:

This contract is to supply and deliver liquid ferric chloride to DC Water’s Blue Plains Advanced Wastewater Treatment Facility. Ferric chloride removes phosphorous from the wastewater within the plant’s primary and secondary treatment stages, as well as odor-causing compounds. Ferric chloride also works with a polymer to coagulate and remove suspended solids. All of these functions are needed for DC Water to comply with its water discharge permits.

Contract Scope:

To ensure supply security, ferric chloride supply was awarded to two companies with independent supply chains. 30% of DC Water’s requirements was awarded to PVS Technology (this contract), and the remaining 70% was awarded to Carter & Carter. The projected ferric consumption is approximately 24.2 million pounds for both contracts combined. PVS will supply approximately 7.3 million pounds, and Carter & Carter will supply about 16.9 million pounds during option year 2. These consumption figures include an incremental 8.8% from previous years due to the start-up of the Tunnel Dewatering Pumping Station (TDPS) in spring, 2018.

Spending Previous Year:

Cumulative Contract Value:	01-10-2016 to 01-09-2018: \$2,890,987.50
Cumulative Contract Spending:	01-10-2016 to 11-30-2017: \$2,089,987.00

Contractor’s Past Performance:

According to the COTR, the Contractor’s quality of product and services, timeliness of deliverables; conformance to DC Water’s policies, procedures and contract terms; and invoicing all meet expectations and requirements.

No LBE/LSBE participation.

PROCUREMENT INFORMATION


Contract Type:	Good and Services	Award Based On:	Best Value
Commodity:	Ferric Chloride	Contract Number:	15-PR-WWT-53B
Contractor Market:	Open Market with Preference Points for LBE and LSBE Participation		

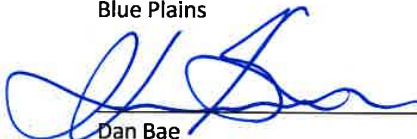
BUDGET INFORMATION


Funding:	Operating	Department:	Wastewater Treatment
Project Area:	Blue Plains	Department Head:	Salil M. Kharkar

ESTIMATED USER SHARE INFORMATION

User - Operating	Share %	Dollar Amount
District of Columbia	41.92%	\$645,819.52
Washington Suburban Sanitary Commission	43.33%	\$667,541.98
Fairfax County	9.81%	\$151,132.86
Loudoun Water	4.29%	\$66,091.74
Other (PI)	0.65%	\$10,013.90
TOTAL ESTIMATED DOLLAR AMOUNT	100.00%	\$1,540,600.00

 / 12/6/17
 Akile Tesfaye Date
 Assistant General Manager,
 Blue Plains

 / 12/6/17
 Dan Bae Date
 Director of Procurement

 / 12/12/17
 Matthew T. Brown Date
 Chief Financial Officer

_____/_____
 George S. Hawkins Date
 General Manager

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

ACTION REQUESTED

CONSTRUCTION MANAGEMENT SERVICES:

**Basic Ordering Agreement 8 - Wastewater Treatment Facilities
Construction Management
(Joint Use)**

Approval to execute a construction management services contract for \$6,000,000.

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME:	SUBS:	PARTICIPATION:
O'Brien & Gere Engineers, PC 4201 Mitchellville Road – Suite 500 Bowie, MD 20716 <u>Headquarters</u> Syracuse, NY 13221	Bryant Associates Landover, MD	MBE 13.0%
	DME Consulting Baltimore, MD	MBE 10.0%
	BVF Engineering Inc. Columbia, MD	MBE 5.0%
	Sheladia Associates, Inc. Rockville, MD	MBE 1.0%
	The Robert B. Balter Company Owings Mills, MD	WBE 2.0%
	Keville Enterprises Inc. Herndon, VA	WBE 2.0%
	RK&K Baltimore, MD	10.0%

DESCRIPTION AND PURPOSE

Contract Value, Not-To-Exceed: \$6,000,000.00
 Contract Time: 1,826 Days (5 Years)
 Anticipated Contract Start Date (NTP): 01-31-2018
 Anticipated Contract Completion Date: 01-30-2023

Other firms submitting proposals/qualification statements:

AECOM*	Insight Engineering
Alpha Corporation	JMT
AMAR Group	Louis Berger
ARCADIS*	Tetra Tech
Brown and Caldwell*	The Temple Group
Hazen and Sawyer	

*Asterisk indicates short listed firms

Purpose of the Contract:

To provide onsite construction management and related engineering services for the DC Water Blue Plains Advanced Wastewater Treatment Plant on an as needed basis through individually negotiated task orders.

Contract Scope:

- Task orders will provide construction management and related engineering services for CIP projects as needed.
- Professional services are anticipated in the following disciplines; civil, structural, architectural, process mechanical, plumbing, electrical, HVAC, instrumentation and control.
- Projects will include upgrades and additions to various facilities and structures at the Blue Plains Advanced Wastewater Treatment Plant.
- Work will be accomplished through a series of defined Task Orders. Each task order will identify the scope of work, deliverables, compensation and schedule for performance.

PROCUREMENT INFORMATION


Contract Type:	Cost Plus Fixed Fee	Award Based On:	Highest Ranking Score
Commodity:	Engineering Services	Contract Number:	DCFA #496-WSA
Contractor Market:	Open Market		

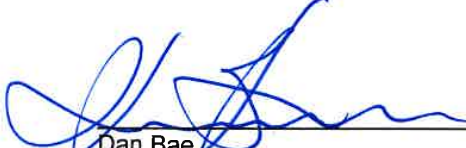
BUDGET INFORMATION


Funding:	Capital	Department:	Wastewater Engineering
Service Area:	Wastewater	Department Head:	Diala Dandach
Project:	UC, IY, BQ, TZ		

ESTIMATED USER SHARE INFORMATION

User	Share %	Dollar Amount
District of Columbia	41.22%	\$2,473,200.00
Federal Funds	0.00%	\$
Washington Suburban Sanitary Commission	45.84%	\$2,750,400.00
Fairfax County	8.38%	\$ 502,800.00
Loudoun County & Potomac Interceptor	4.56%	\$ 273,600.00
Total Estimated Dollar Amount	100.00%	\$6,000,000.00


 _____, 12/12/17
 Matthew T. Brown Date
 Chief Financial Officer


 _____, 12/12/17
 Dan Bae Date
 Director of Procurement


 _____, 12-12-17
 Leonard R. Benson Date
 Chief Engineer

_____, /
 George S. Hawkins Date
 General Manager

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

ACTION REQUESTED

ENGINEERING SERVICES:

**Basic Ordering Agreement 6 - Wastewater Treatment Facilities
Construction Management
(Joint Use)**

Approval to execute a construction management services contract for \$6,000,000.

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME:	SUBS:	PARTICIPATION:
AECOM 3101 Wilson BLVD – STE 900 Arlington, VA 22201 <u>Headquarters</u> Los Angeles, CA 90067	Cube Root Corporation Washington, DC MBE	10.0%
	McKissack & McKissack Washington, DC MBE	6.0%
	Savin Engineers, PC Baltimore, MD MBE	6.0%
	Sigma Associates Inc. Washington, DC MBE	6.0%
	Winstead Management Group, LLC Richmond, VA MBE	3.0%
	SZPM Consultants Oakton, VA WBE	5.0%
	Robert B. Balter Company Owings Mills, MD WBE	3.0%

DESCRIPTION AND PURPOSE

Contract Value, Not-To-Exceed: \$6,000,000.00
 Contract Time: 1,826 Days (5 Years)
 Anticipated Contract Start Date (NTP): 01-31-2018
 Anticipated Contract Completion Date: 01-30-2023

Other firms submitting proposals/qualification statements:

Alpha Corporation	JMT
AMAR Group	Louis Berger
ARCADIS*	O'Brien and Gere*
Brown and Caldwell*	Tetra Tech
Hazen and Sawyer	The Temple Group
Insight Engineering	

*Asterisk indicates short listed firms

Purpose of the Contract:

To provide onsite construction management and related engineering services for the DC Water Blue Plains Advanced Wastewater Treatment Plant on an as-needed basis through individually negotiated task orders.

Contract Scope:

- Task orders will provide construction management and related engineering services for CIP projects as needed.
- Professional services are anticipated in the following disciplines; civil, structural, architectural, process mechanical, plumbing, HVAC, electrical, instrumentation and control.
- Projects will include upgrades and additions to various facilities and structures at the Blue Plains Advanced Wastewater Treatment Plant.
- Work will be accomplished through a series of defined Task Orders. Each task order will identify the scope of work, deliverables, compensation and schedule for performance.

PROCUREMENT INFORMATION


Contract Type:	Cost Plus Fixed Fee	Award Based On:	Highest Ranking Score
Commodity:	Engineering Services	Contract Number:	DCFA #489-WSA
Contractor Market:	Open Market		


BUDGET INFORMATION

Funding:	Capital	Department:	Wastewater Engineering
Service Area:	Wastewater	Department Head:	Diala Dandach
Project:	BX, UC, BV, TZ		

ESTIMATED USER SHARE INFORMATION

User	Share %	Dollar Amount
District of Columbia	41.22%	\$2,473,200.00
Federal Funds	0.00%	\$
Washington Suburban Sanitary Commission	45.84%	\$2,750,400.00
Fairfax County	8.38%	\$ 502,800.00
Loudoun County & Potomac Interceptor	4.56%	\$ 273,600.00
Total Estimated Dollar Amount	100.00%	\$6,000,000.00

 _____, 12/12/17
 Matthew T. Brown Date
 Chief Financial Officer

 _____, 12/13/17
 Dan Bae Date
 Director of Procurement

 _____, 12-12-17
 Leonard R. Benson Date
 Chief Engineer

_____, _____
 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 FUNDING

**Meter Lids
(Non-Joint Use)**

Approval to extend contract term and add additional funding for FY18 for Meter Lids contract in the amount of \$511,460.00

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME: Business Promotion Consultants Inc 5028 Wisconsin Ave, NW, Suite 302 Washington, DC 20011 LSBE	SUBS: N/A	PARTICIPATION: 100%
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DESCRIPTION AND PURPOSE

Original Contract Value:	\$51,320.00
Original Contract Dates:	08-12-2013 to 01-09-2014
Option Year 1 Value:	\$80,000.00
Option Year 1 Dates:	01-10-2014 to 01-09-2015
Option Year 2 Value:	\$60,000.00
Option Year 2 Dates:	01-10-2015 to 01-09-2016
Option year 3 Value:	\$50,000.00
Option Year 3 Dates:	01-10-2016 to 01-09-2017
Option year 4 Value:	\$1,300,000.00
Option Year 4 Dates:	01-10-2017 to 01-09-2018
Prior Modification Values:	\$578,867.00
Prior Modification Dates:	08-12-2013 to 01-09-2017
Prior Modification Values:	\$370,000.00
Prior Modification Dates:	07-06-2017 to 01-09-2018 ¹
This Modification Value:	\$511,460.00
This Modification Dates:	01-10-2018 to 09-30-2018

Purpose of the Contract:

To provide meter lids for FY18 in order to support the demand from daily operations and the remaining demand for the Automated Meter Reader (AMR) Replacement Program.

Contract Scope:

This contract provides DC Waters Department of Customer Care and Operations (CCO) with meter lids to support the AMR Replacement Program and daily operations. The meter lids under this contract are plastic discs that cover the pits into which water meters and meter transmitting units (MTUs) are installed.

Spending Previous Year:

Cumulative Contract Value:	01-10-2013 to 01-09-2018: \$2,490,187.10
Cumulative Contract Spending:	01-10-2013 to 11-21-2017: \$2,421,979.97

Contractor's Past Performance:

According to the COTR, the Contractor's quality of products and services, timeliness of deliverables; conformance to DC Water's policies, procedures and contract terms; and invoicing all meet or exceed expectations and requirements.

¹ Added to support updated demand forecasts for AMR program.

PROCUREMENT INFORMATION

Contract Type:	Firm Fixed	Award Based On:	Single Proposer
Commodity:	Goods and Services	Contract Number:	WAS-12-070-AA-SC
Contractor Market:	Open Market with Preference Points for LBE and LSBE Participation		

BUDGET INFORMATION

Funding:	Capital	Department:	Customer Service
Service Area:	Capital Equipment	Department Head:	Carolyn A. Mackool
Project:	EQP2340SME	Use	AMR Project

ESTIMATED USER SHARE INFORMATION

User	Share %	Dollar Amount
District of Columbia	100.00%	\$456,160.00
Washington Suburban Sanitary Commission	0.00%	\$0.00
Fairfax County	0.00%	\$0.00
Loudoun County	0.00%	\$0.00
Other (PI)	0.00%	\$0.00
TOTAL ESTIMATED DOLLAR AMOUNT	100.00%	\$456,160.00

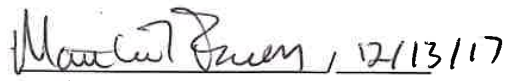
BUDGET INFORMATION

Funding:	Capital	Department:	Customer Service
Service Area:	Washington D.C. Customers	Department Head:	Carolyn A. Mackool
Project:	EQP2350SME	Use	Day-to-Day Operations

ESTIMATED USER SHARE INFORMATION

User	Share %	Dollar Amount
District of Columbia	100.00%	\$55,300.00
Washington Suburban Sanitary Commission	0.00%	\$0.00
Fairfax County	0.00%	\$0.00
Loudoun County	0.00%	\$0.00
Other (PI)	0.00%	\$0.00
TOTAL ESTIMATED DOLLAR AMOUNT	100.00%	\$55,300.00


 Charles Kiely
 Assistant General Manager,
 Customer Care and Operations
 Date: 12/2/17


 Matthew T. Brown
 Chief Financial Officer
 Date: 12/13/17


 Dan Bae
 Director of Procurement
 Date: 12/11/17

 George S. Hawkins
 General Manager
 Date: _____



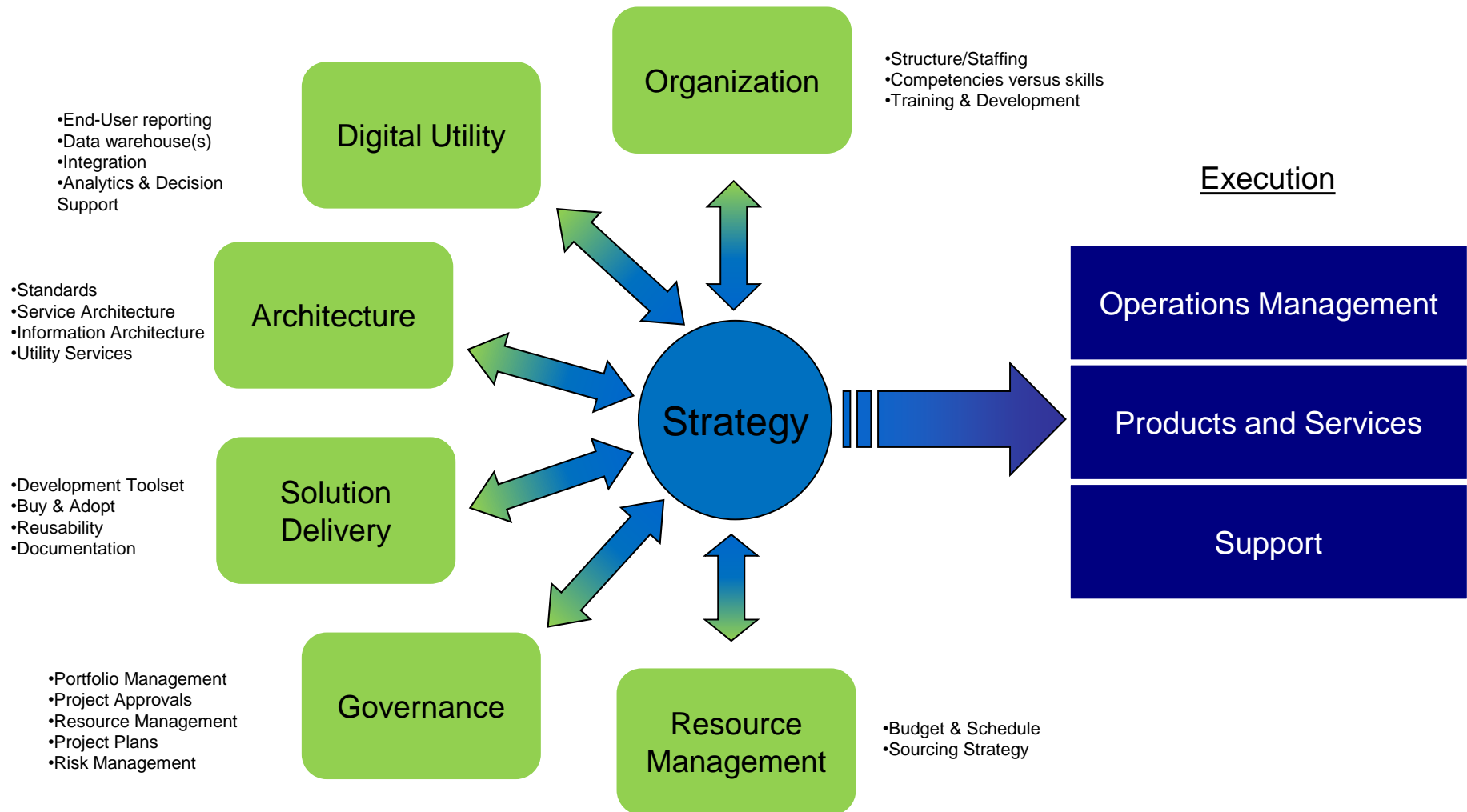
Making I.T. Happen

A Strategy for 2018 and beyond!

Board Summary



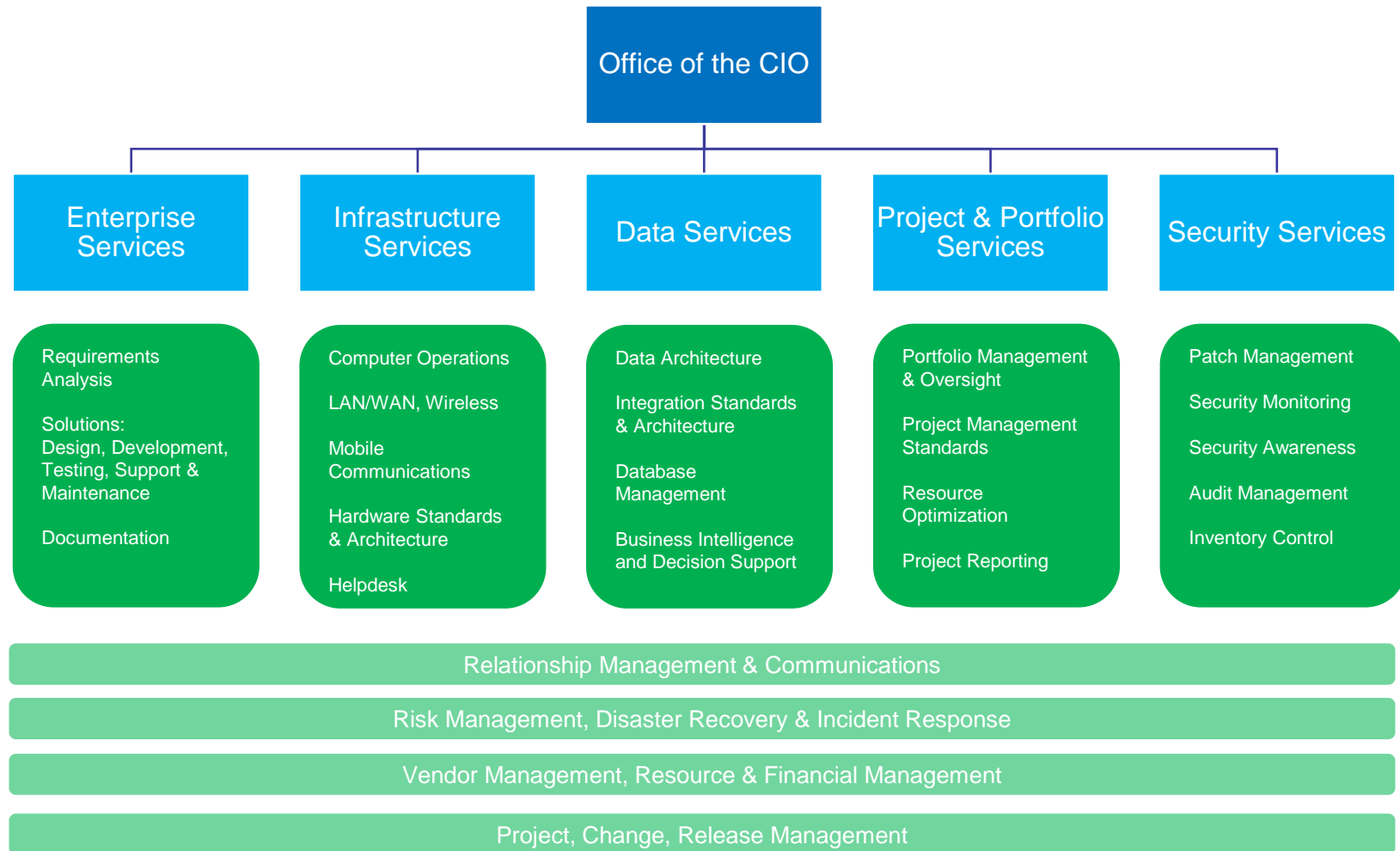
Six Focus Areas for the Strategy





Organization Design

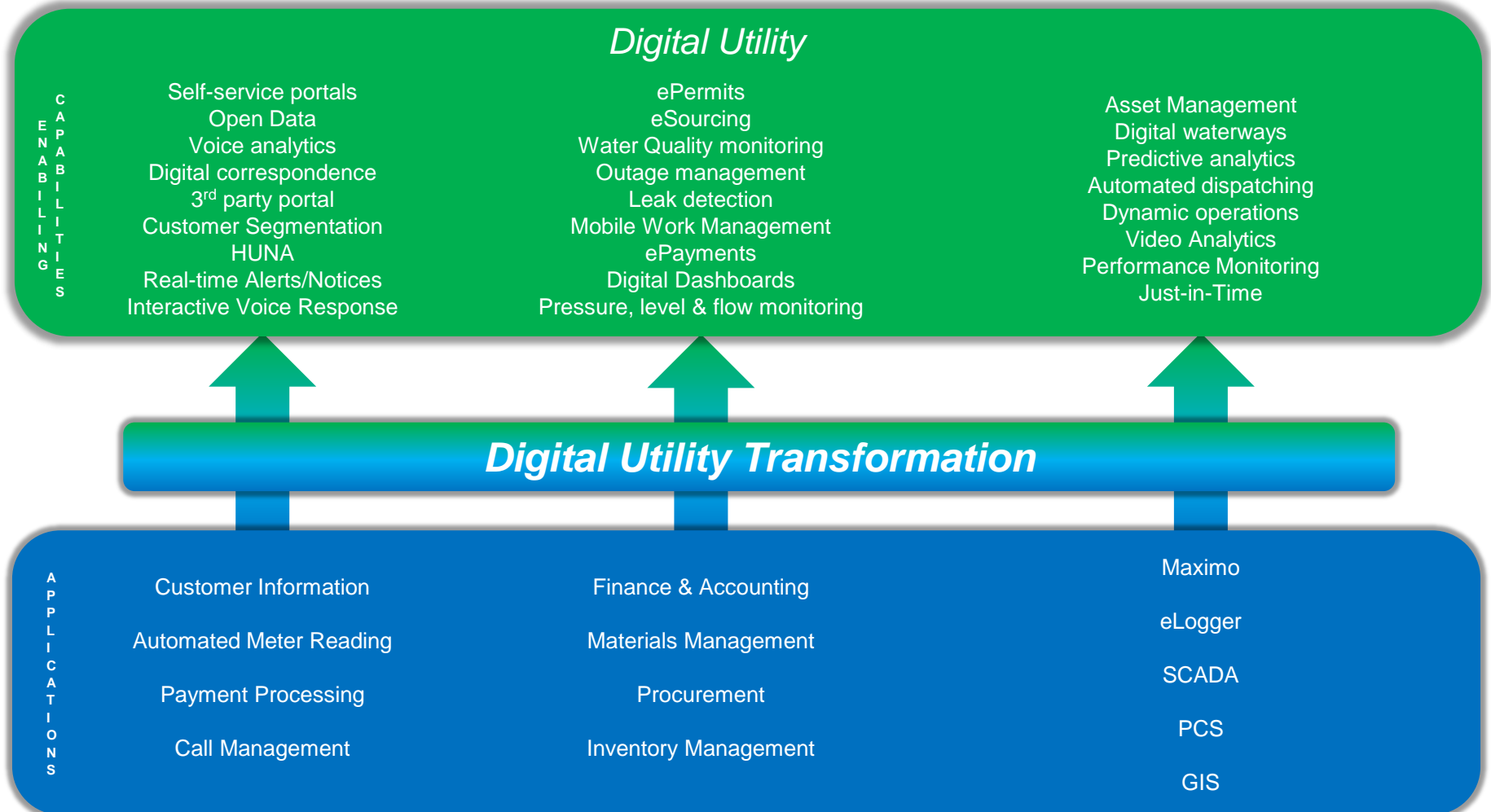
Aligning the IT Organization with the products and services that it needs to deliver to support the business is essential to an effective and efficient delivery model.





The Digital Profile

The **Digital Utility** is characterized by enabling capabilities that allow for proactive management of all aspects of the business. The **Digital Utility** thinks in the terms of a Systems View rather than a single application or transactional requirement. The lines of source systems blur for the **Digital Utility** as the focus shifts from collecting data to applying knowledge.

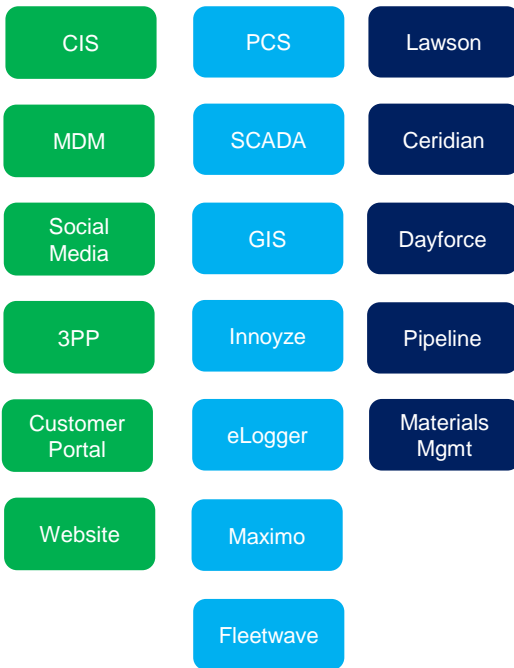




The Digital Utility Transformation

The existence of digital silos and digital islands coupled with the absence of an enterprise data model and standard definitions for core information assets prevents the organization from transitioning to a **Digital Utility**. Synchronization problems persist and more time is spent proving results rather than analyzing trends and driving performance improvements.

Digital Silos



Characteristics:

- Excessive data gathering
- Extensive production cycle
- Limited sharing
- Limited analytics
- Limited time for decision making

The high-level enterprise data model is influenced by 3 primary entities:

CUSTOMER

The information assets that define our customers and the relationships with them. Systems that contain customer data include: CIS, Collections, Meter Reading, Social Media, Customer Portal, 3PP

OPERATIONS

The information assets that define the operational activities the company performs. Systems that contain operational information include: PCS, SCADA, P16, Innozye , eLogger, Maximo

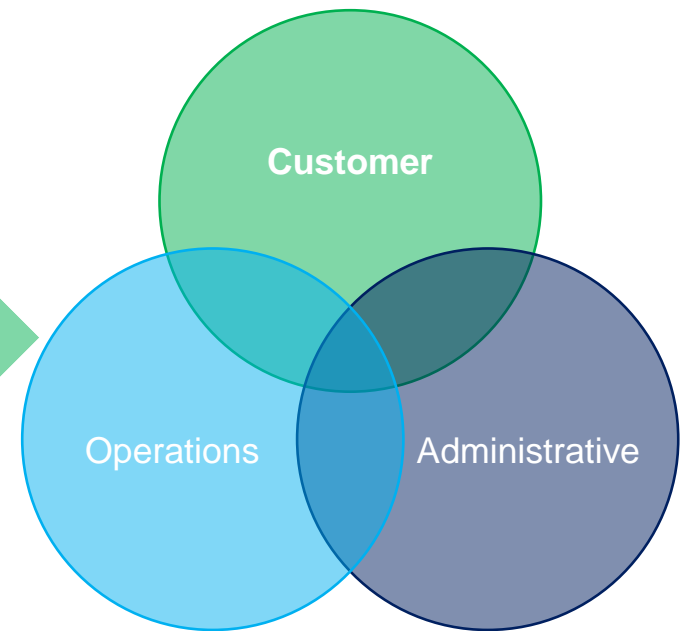
ADMINISTRATIVE

The information assets that define the support functions required to run the company. Systems that contain support data include: Dayforce, Ceridian, Lawson, Pipeline

Common relationships exist between the primary entities but are not clearly defined and multiple interfaces exist to move data between applications. The absence of accurate meta-data can lead to inaccurate results and makes end-user reporting and analysis difficult.

Note: Without an Information Classification Policy, information assets can be easily compromised.

Digital Utility



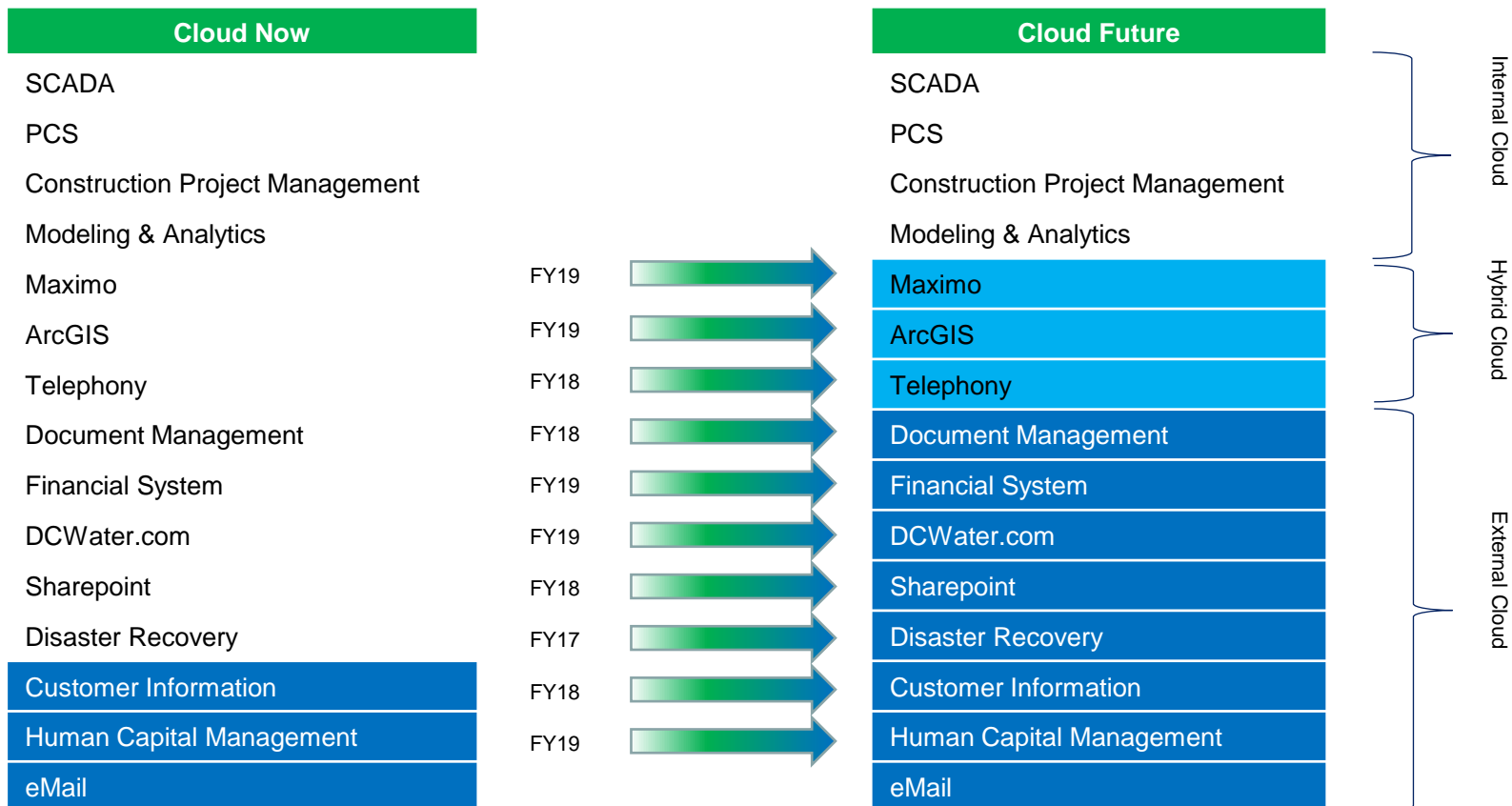
Characteristics:

- Automated data gathering
- Automated data production
- Seamless sharing
- Automated & adhoc analysis
- Informed decision making



Cloud First

A Cloud First approach allows Information Technology to adapt quickly to changing organizational needs. Focusing internal solutions on the core business allows IT to reduce risk and increase overall system reliability at a lower Total Cost of Ownership (TCO).





Access to Anything Anywhere

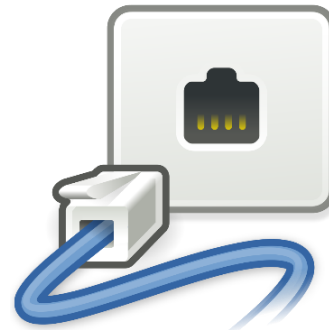
The advent of the mobile workforce requires the tether to the desktop to be severed while preserving the experience and providing the same features, functions and performance that we have become accustomed too regardless of location. Creating a common experience to “Anything” “Anywhere” increases overall productivity.

On-Premise

Hybrid Cloud

Private Cloud

Public Cloud





Buy & Adopt

Buy & Adopt versus Buy & Adapt or Build & Adapt provides DC Water with the best balance between capabilities and cost. Limiting customizations solely to those items that are regulated ensures that DC Water can take advantage of industry “Best Practices” more quickly as they become available.

Buy	
Advantages	Disadvantages
Solutions come pre-packaged and ready to use	Some functional gaps may exist after implementing
In many cases a high degree of functionality can be addressed at a reduced cost	All knowledge experts are not on staff
Implementation cycles are substantially reduced	Solutions may need to be integrated with other applications potentially increasing cost

Build	
Advantages	Disadvantages
Highly customized solutions generally address all or most functionality	Lengthy implementation cycles
Highly dependent on existing hardware and software architecture	Requires dedicated staff to maintain and support over long-term
Knowledge experts are on staff	High cost associated with build from scratch approach
	Tightly integrated solutions can be negatively impacted by minor changes

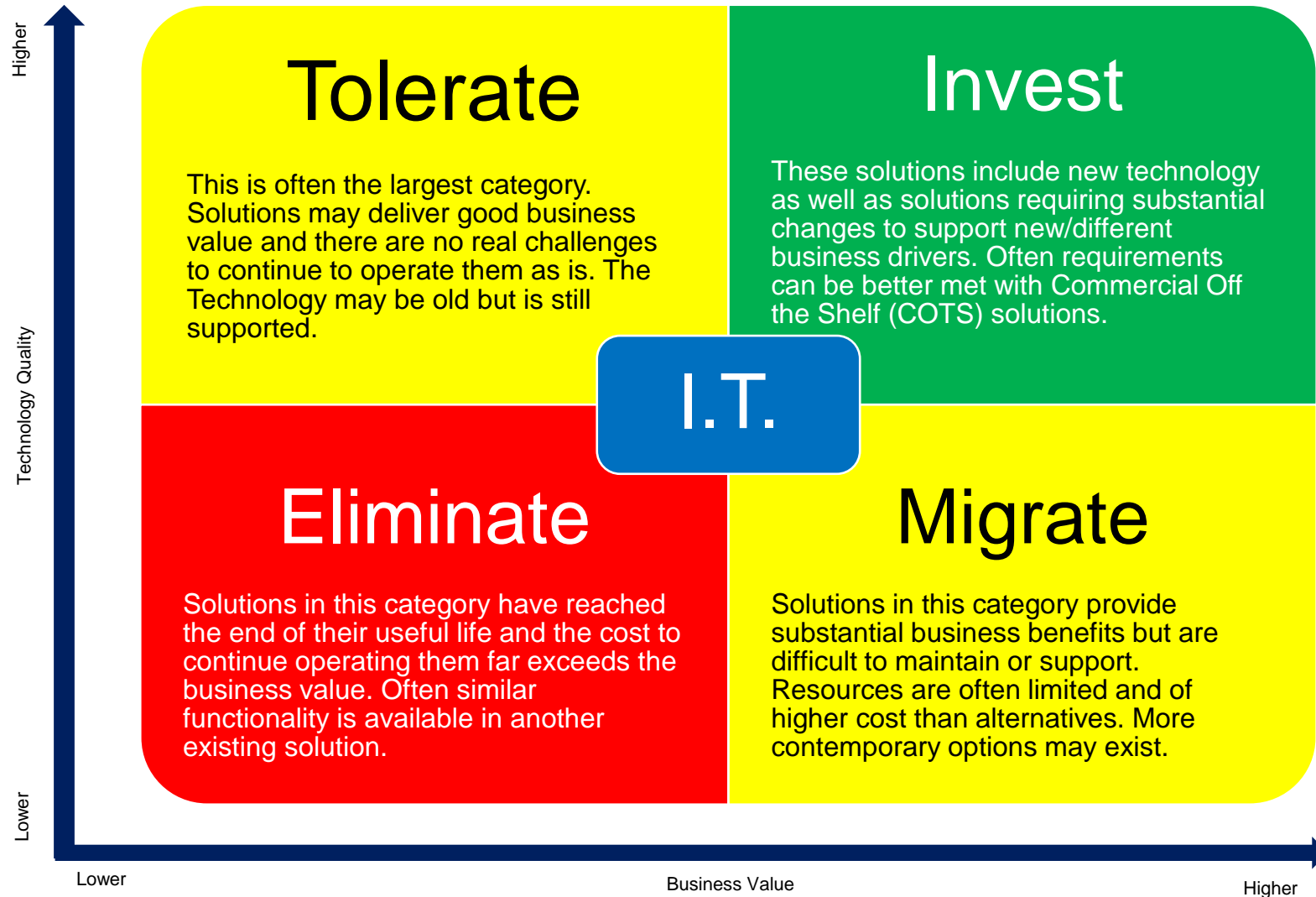
Adopt	
Advantages	Disadvantages
“Best Practices” can be adopted more quickly	Early resistance to change current practices may exist
Broader resource pool available to help with implementation, training & support	In demand resources can command a premium
Greater influence on new capabilities when a majority of customers support it	Some preferred changes may not be a high priority for a vendor

Adapt	
Advantages	Disadvantages
Preferences are implemented as requested	Vendor may charge a premium for customizations and maintenance could be more expensive
No need to change current practices because system is changed	Upgrading to new technology or adding additional functionality could be more challenging
Priorities are set based on individual need without the need to negotiate with others	Adopting “Best Practices” in the future could be compromised by customizations



Mapping the Solution Landscape

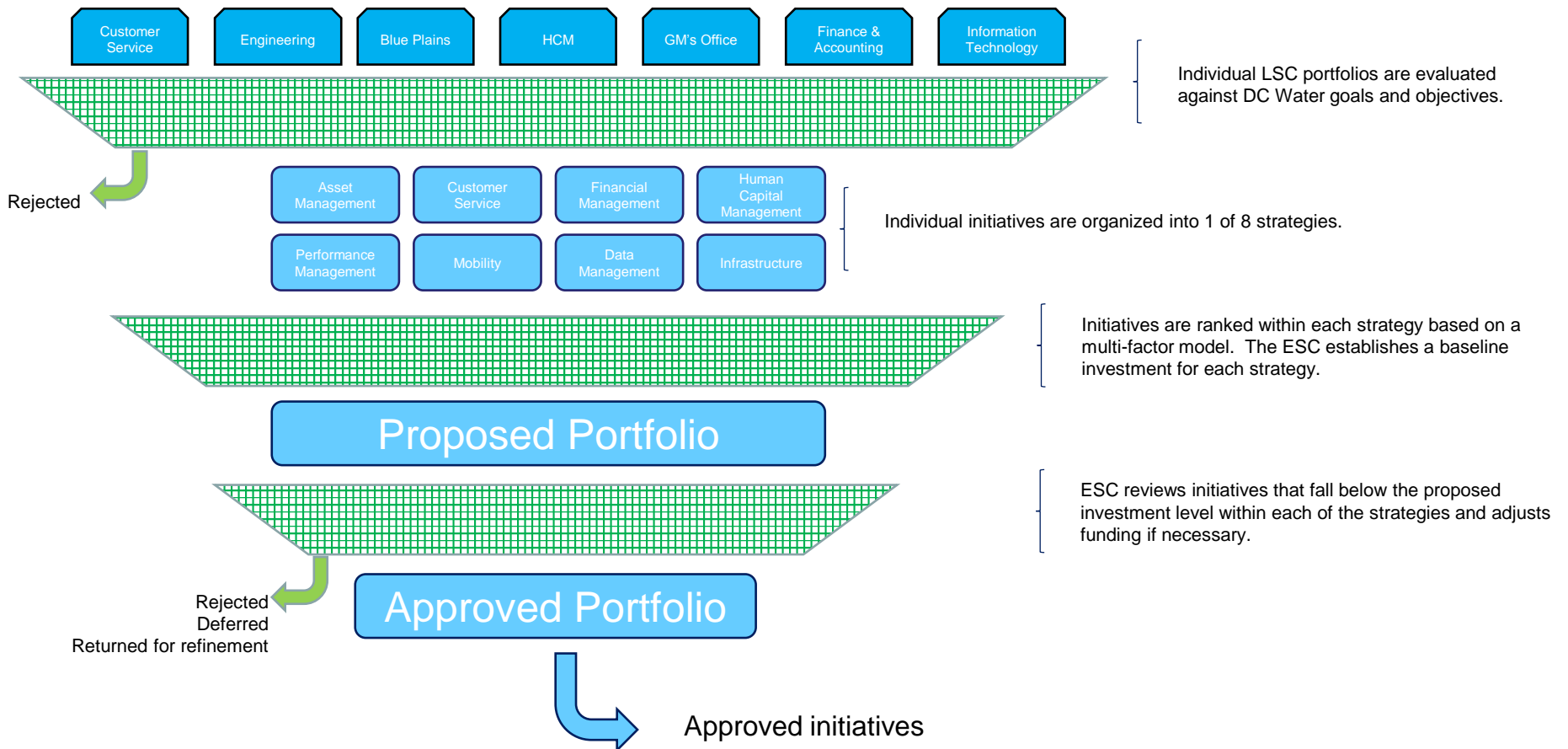
Understanding where to invest is essential to ensure the proper focus for the IT Organization.





Achieving a Balanced Portfolio

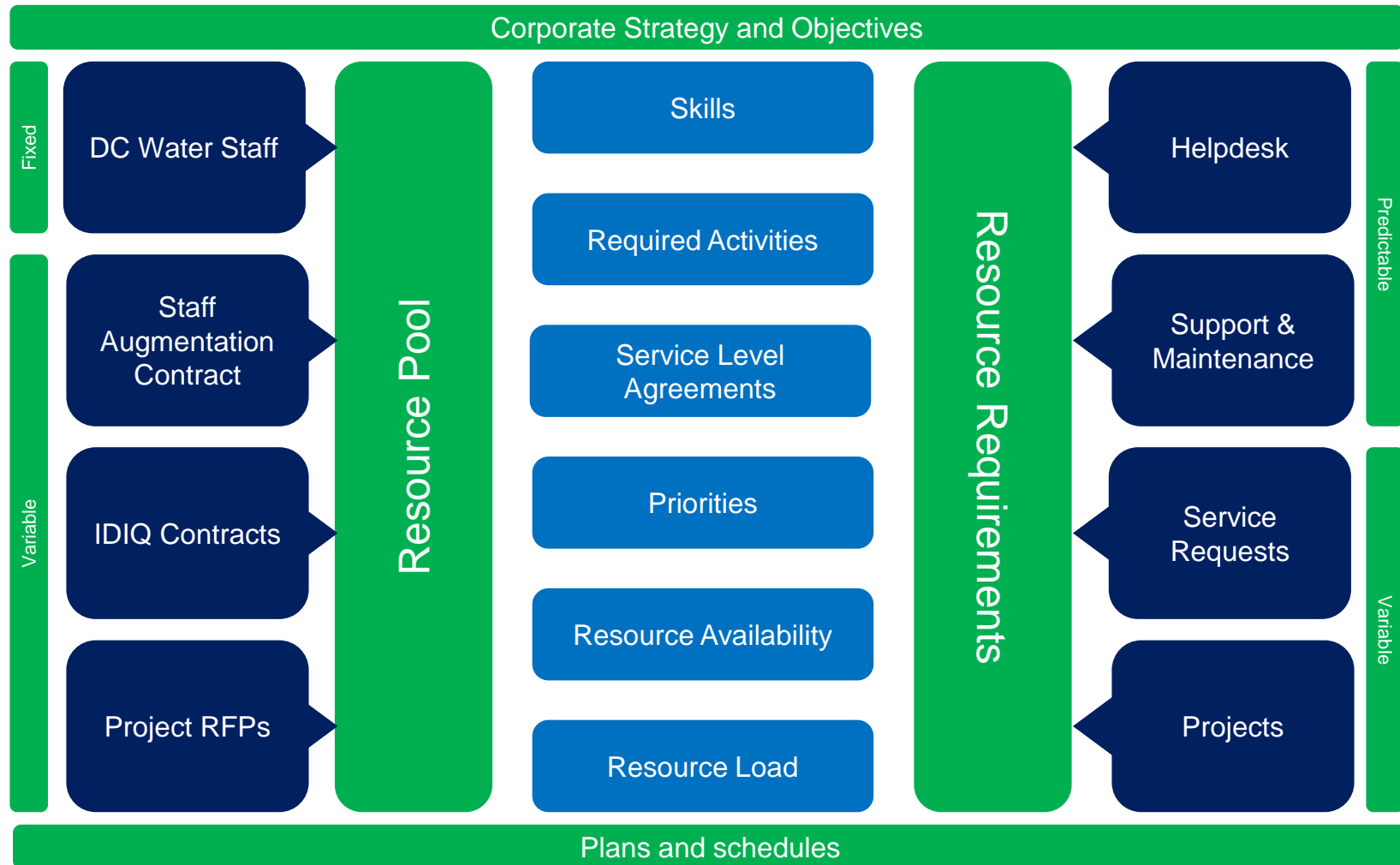
To become a “World-Class Water Utility” DC Water must achieve objectives across a wide range of strategies; many with dependencies between them. Balancing IT investments across these strategies is paramount to the success of the overall portfolio and achieving organizational objectives.





Resource Management

Resource Management optimizes the resource pools (fixed & variable) against resource requirements (predictable & variable) to achieve the necessary balance between cost and schedule.



Status Report of Public Fire Hydrants for DC Water Services Committee - December 4, 2017

	September Cmte. Report (Sep 05, 2017)	October Cmte. Report (Oct 02, 2017)	November Cmte. Report (Nov 01, 2017)	December Cmte. Report (Dec 04, 2017)
Public Fire Hydrants:	9,554	9,551	9,549	9,548
In Service:	9,479	9,491	9,511	9,501
(OOS)	75	60	38	47
OOS - defective requiring repair/replacement	36	29	24	29
% OOS requiring repair or replacement (DC Water goal is 1% or less OOS)	0.38%	0.30%	0.25%	0.30%
OOS - due to inaccessibility or temp construction work	39	31	14	18

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 December 4, 2017 47

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	4	0	1	0	0	0	3	8
Needs Valve Investigation for Low Flow/Pressure or Shut Test for Replacement	0	1	0	0	0	0	2	3
Needs Replacement	4	0	3	0	2	0	9	18

Defective

29

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	2	3	2	1	3	11
Construction* - OOS	1	0	0	0	1	0	1	3
Obstructed Hydrant – OOS hydrant due to operation impeded by an obstruction.	0	0	0	0	0	0	4	4

Others

18

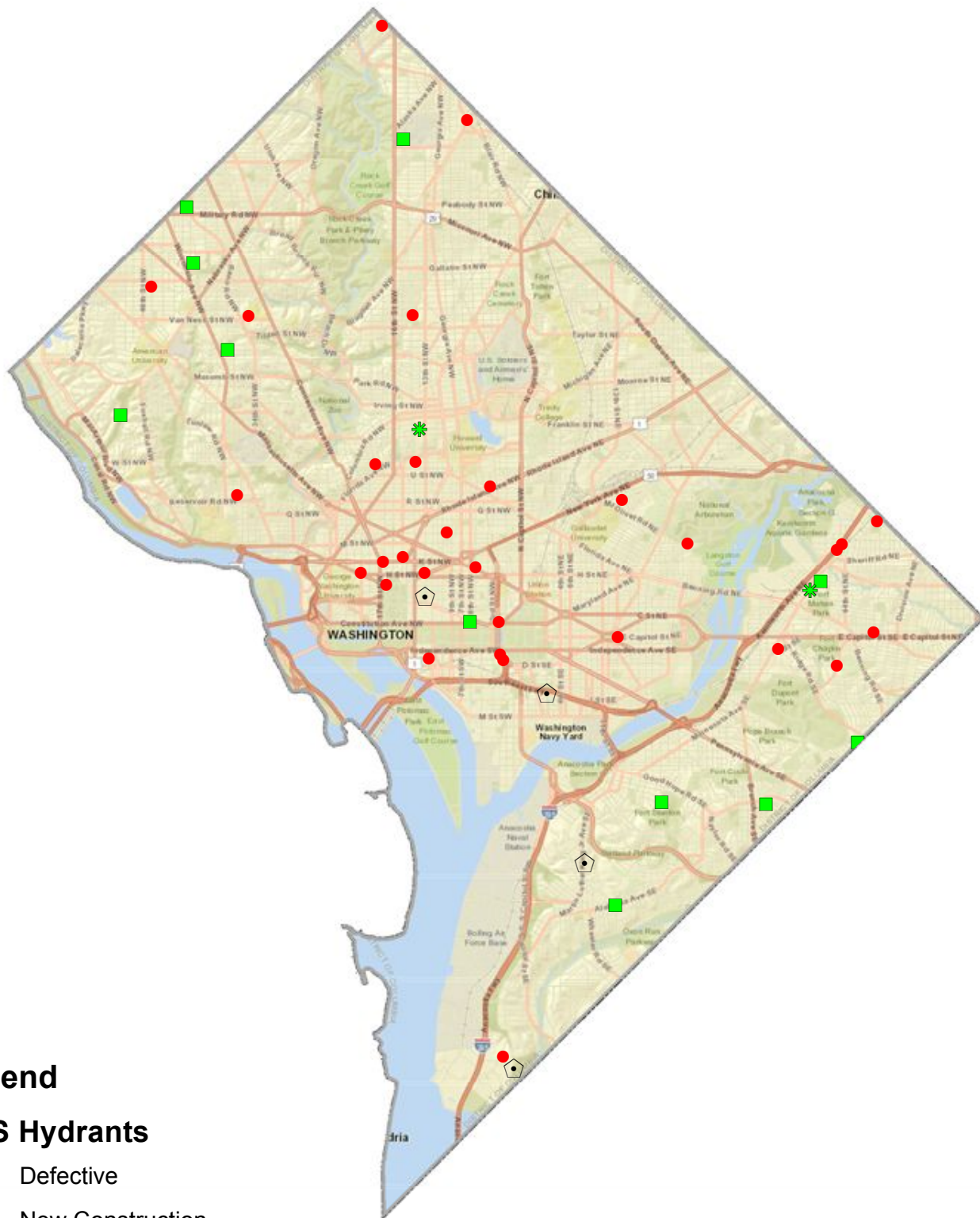
*Fire hydrants not accessible due to construction activities. Also includes new hydrants which have not yet been commissioned or old hydrants which will be abandoned as part of ongoing construction projects.

Status of Private Fire Hydrants-Based on FEMS Inspection Reporting

Private Hydrants:	1,318
• In Service:	1,179
• Out-of-Service (OOS):	139

Map of Public Out-of-Service Hydrants

December 4, 2017



Legend

OOS Hydrants

- Defective
- ✱ New Construction
- ⬠ Obstructed
- Temporary