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 20, 2018
9:30 a.m.

	I.	**Call to Order**	James Patteson, Chairperson
9:30 a.m.	**II.**	**AWTP Status Update**	Aklile Tesfaye
9:40 a.m.	**III.**	**Resource Recovery/Energy RFI**	Chris Peot
10:00 a.m.	**IV.**	**Action Items**	Dan Bae/ Leonard Benson

Joint Use

1. Contract No. 15-PR-WWT-53A – Supply and Delivery of Ferric Chloride, Carter & Carter Enterprises, Inc.
2. Contract No. 16-PR-DMS-43 – Repair and Rehabilitation of Various Process Assets, Electric Motor & Contracting Co., Inc.

Non-Joint Use

1. Contract No. 130140 - Spring Valley Main Rehabilitation & Replacement, Fort Myer Construction Corp.

10:20 a.m.	**V.**	**DCCR Update**	Carlton Ray / Moussa Wone
10:35 a.m.	**VI.**	**DC Water IT Strategy – Board Summary**	Joe Edwards
10:50 a.m.	**VII.**	**Executive Session***	
10:55 a.m.	**VIII.**	**Adjournment**	James Patteson, Chairperson

Follow-up Items from Prior Meetings:

1. The IMA Regional Committee (RC) brief the EQ&Ops Committee on the work of the IMA RC **[Target: February 2019 EQ&Ops Cmte Mtg]**
2. Director, DETS: Provide additional detail regarding specific impacts to sewage pumping stations for both the 100-year and 500-year flood scenarios. **[Target: January 2019 EQ&Ops Cmte Mtg]**
3. COO, DC Water: Provide a briefing to the Committee regarding preventative and corrective maintenance programs on water, storm and sanitary sewer pump stations also including performance of DC Water's SCADA system. **[Target: January 2019 EQ&Ops Cmte Mtg]** .

* 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.

Resource Recovery at DC Water – Energy RFI

EQ & Ops Committee

December 20th, 2018

Chris Peot, P.E., BCEE
Director of Resource Recovery

District of Columbia Water and Sewer Authority

Blue Plains Resource Recovery Facility

NUTRIENTS and CARBON RECYCLING

FARMING

Provides carbon and nutrients valued at $300.00 per acre.

SILVICULTURE

Increases yield and improves understory.

RECLAMATION

Restoring mines to their natural state and providing wildlife habitats.

URBAN RESTORATION

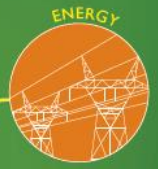
Grow trees and reduce runoff.

dc water is life — BLUE PLAINS ADVANCED WASTEWATER TREATMENT PLANT: A RESOURCE RECOVERY FACILITY

water • nutrients • carbon • energy

BLUE PLAINS SERVICE AREA

DC Water receives and treats wastewater collected from the District of Columbia sewer system and from the Maryland and Virginia suburbs. On an average day, more than 330 million gallons of raw sewage flow into the Blue Plains Advanced Wastewater Treatment Plant from area jurisdictions.



CARBON NUTRIENTS

CLEAN WATER

CARBON NUTRIENTS

CARBON NUTRIENTS

CARBON NUTRIENTS

CARBON NUTRIENTS

dcwater.com/biosolids

GREEN ENERGY BIORENEWABLES

THERMAL HYDROLYSIS PROCESS (THP) AND DIGESTION FACILITY

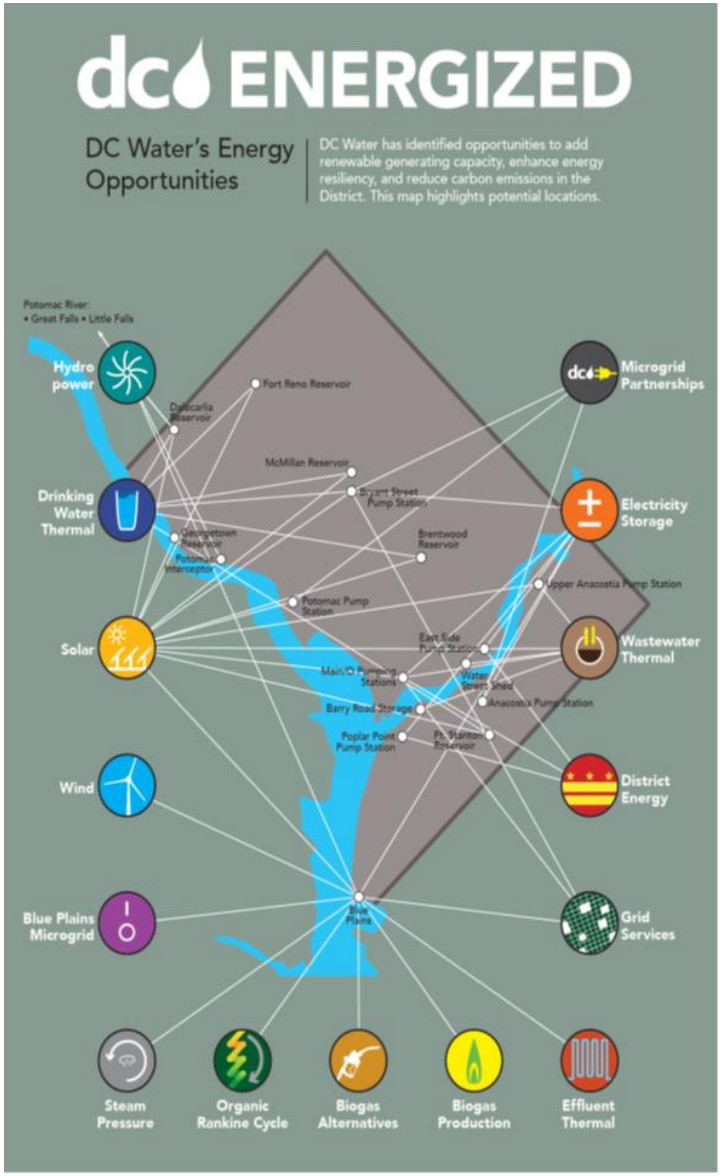
DC WATER THP AND DIGESTION FACILITY RENDERING

DC Water will be the first in North America to use thermal hydrolysis for wastewater treatment. When completed, this facility will be the largest plant of its kind in the world.

GREEN BENEFITS:

- Produce combined heat and power, generating 13 MW of electricity
- Save DC Water $10 million annually cutting grid demand by a third (DC Water is the largest consumer of electricity in the District)
- Reduce carbon emissions by approximately 50,000 metric tons of CO_2e per year.
- Reduce trucking by 1.7 million miles per year.
- Save $10 million in biosolids trucking costs
- Produce Class A biosolids to grow trees, sequester carbon and reduce runoff.

DC Water Energy Map



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Projects that generate revenue and savings

- Digas RNG for vehicle fuel
- BP solar
- Offsite solar
- Co-digestion
- Bloom storage and processing
- Blue Plains thermal recovery system
- Biosolids drying
- Secondary blower upgrade
- Sewer heat recovery and district heating

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Goals

- Inform committee of concepts, not seeking a decision
- Outline our plan to quickly realize underleveraged resources
- Describe a potential path of investment and shared risk to fund future projects w/o raising rates

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Why this different path?

- We would like to build projects that generate savings and revenue and fund future such projects
- This will preserve the capital budget for other needed investments
- Need a partner to maximize value to DC Water with:
  - Expediency
  - Risk share
  - Capital access
  - Expertise leveraging
- Long-term partner will have a vested interest
- Values and vision of ingenuity and stewardship

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DC Water Energy RFI

dc water is life | PROCUREMENT
Tap Into the Opportunities.

DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY (DC Water)

REQUEST FOR INFORMATION (RFI)

RFI	18-PR-DWT-05	Information Due Date and Time	December 8,2017 4PM EST
Date Issued	November 1, 2017		
For	Energy Partnership		

DC Water Point of Contact (POC):	Submission Instruction:
Name: Mr. Scott Kang Title: Sr. Sourcing Specialist Tel: (202) 787-7058	Submit your responses only by Email to DC Water POC. Do not submit printed hard copies.

	Timeline (Estimated)*
RFI Published/Advertised	November 1,2017
Deadline to Submit Questions	November 13,2017
Response to Contractor Questions	November 20,2017
RFI Response Due	December 8,2017
Vendor Presentation (if required)	
Commodity Codes	Solar Energy Systems (290-82) Energy Collecting Equipment (936-28;981-32;290-00) Recycled Energy Collection Equipment (290-17) Energy Comprehensive Performance (961-31) Energy Conservation Consulting (918-41) Energy Conservation Services (910-16) Energy Conservation; New Energy Source (906-28) Energy Management – architectural (906-27) Construction, Energy Related (912-21)

* Dates may change at DC Water's convenience

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Proprietary Property of District of Columbia Water and Sewer Authority

RFI Purpose and Progress

- Identify partners willing to help design and implement energy innovations and share financial risks
- Received 11 responses, started working on some low hanging fruit projects in preparation for an RFP
- Met with the three firms with most relevant responses
- Outlined a draft approach to pay for services through revenue generated
- Now looking to get a partner on board soon to help with some of the highest priority projects

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Digas: Power or Fuel Use?

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REC and RIN definition

RECs

- US states all have RPSs that outline goals for renewable electrical energy generation and use
- Tier 1 RECs include electricity generated from WWTP digas
- For instance, MD set a goal for 2017 of 13% renewable use, with 1% from solar
- All power generators and sellers are obligated to sell the defined percentage of renewable energy
- When they cannot meet the obligation, they purchase RECs from the open market
- 1 REC = 1 MWhr
- RECs in MD and PA currently at $5/REC, fluctuate as high as $15/REC. DC RECs sell for $1/REC

RINs

- Part of the Clean Air Act, EPA mandated
- Refiners and importers are obligated parties
- Requires a % of refined transportation fuels to be blended with renewable fuels
- EPA sets renewable volume obligations annually
- Some comply by blending, others through purchase of RINs
- RFS currency, the RIN, is a credit generated for one ethanol equivalent gallon of renewable fuel
- Each RIN has a D code, WWTP digester gas qualifies as D3 (cellulosic)
- D3 RINS valued at $25-35/MMBTUs

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RIN Designations

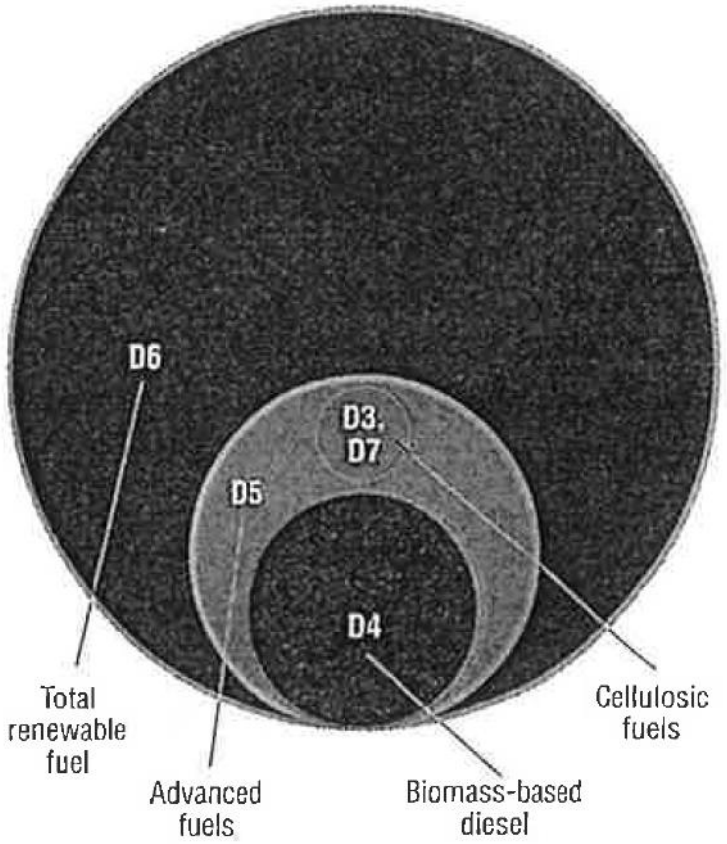

Figure 1. Renewable fuel and RIN nesting in the RFS

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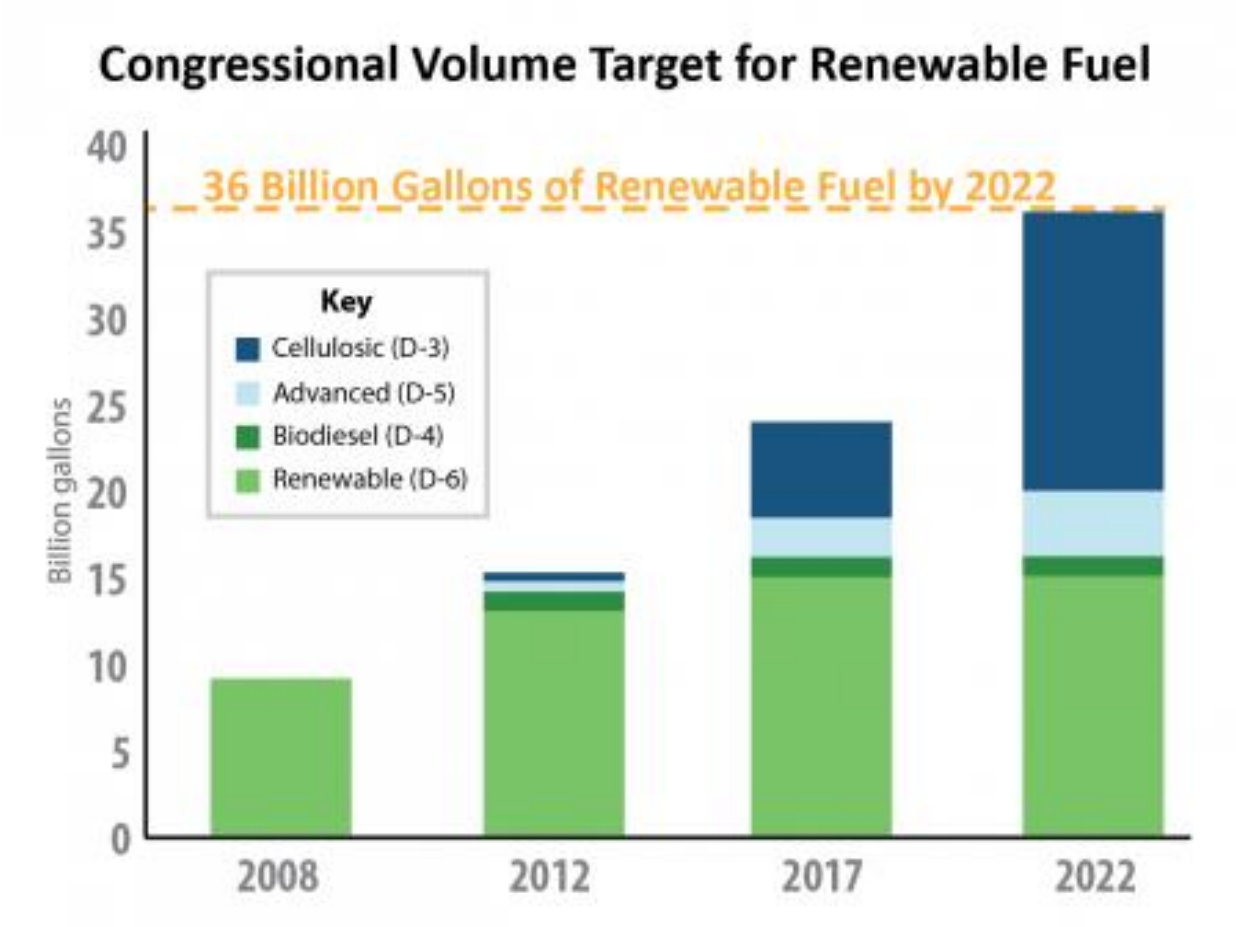
RIN D Code	Fuel Type	GHG Reduction Requirement	Fuel
D3 / D7	**Cellulosic Biofuels**	**60%**	**Cellulosic ethanol, cellulosic naphtha, cellulosic diesel, Renewable CNG/LNG, etc.**
D4	Biomass-based Diesel	50%	Biodiesel, renewable diesel, etc.
D5	Advanced Biofuels	50%	Sugarcane ethanol, renewable heating oil, biogas, etc.
D6	Renewable Fuel	20% or less	Corn ethanol, etc.

EPA RIN Volume Targets



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King County Example

- South Renton Plant – 75 MGD
- Solids treatment with digestion and biogas scrubbing since 1987 (7000 therm/day – we do 27,000 therm/day)
- Scrubbed gas registered as EPA "RIN certified"
- Contracted for 3rd party sale of RINs
- King County receives the value of the commodity and 70% of the RIN value
- $5.5 million in additional revenue in 2017
- Adding the 30% back for the RINs and extrapolating to our scale = $31.4M/yr

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Secondary Blowers

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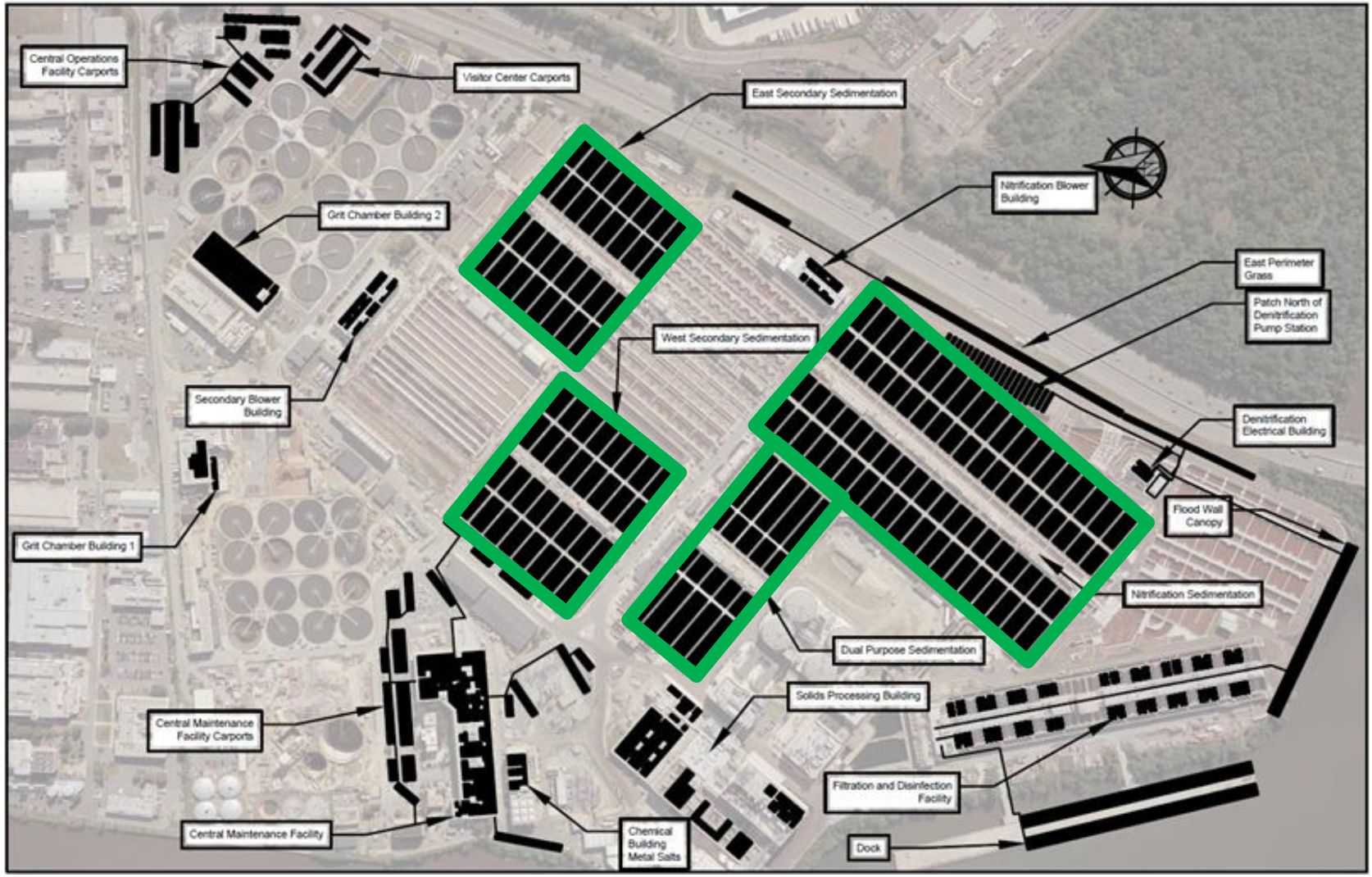
Solar Project for Blue Plains



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Offsite Solar Potential

FORT STANTON : 2.0-2.5 ACRES (500kW)

FORT RENO : 6.0-7.8 ACRES (1 MW+)

BRENTWOOD RESERVOIR: 2.0-2.75 ACRES (500kW+)

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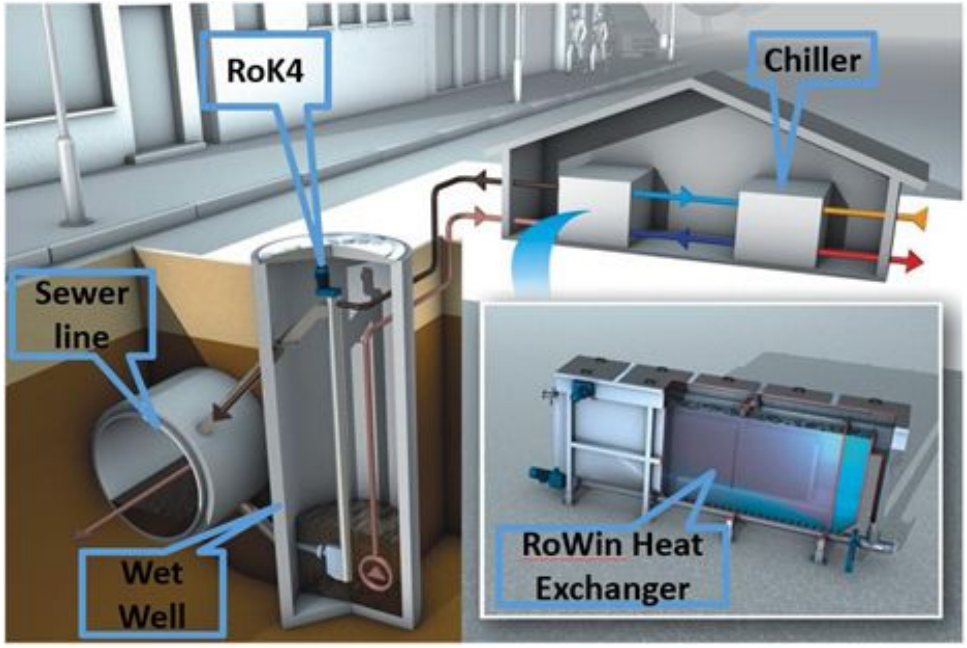
Sewer Heat Recovery Systems



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There is no such thing as waste, only wasted resources.

www.bloomsoil.com

Chris Peot PE, BCEE
cpeot@dcwater.com

Tier 1 REC vs RIN Values at Blue Plains

Tier 1 REC value – 1 REC = 1 MWhr

8 MW power = 70,000 MWhr/yr

$7/REC (MD) * 70,000 = $490,000/yr

RIN value ($2.50/RIN)

3000 mmBTU/day * 365 * 11.727 RINs/ mmBTU * $2.50/RIN = $32M/yr

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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 3 for the supply and delivery of Ferric Chloride in the amount of $4,900,000.00

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
Prior Modifications Value:	$1,100,000.00
Prior Modifications Dates:	01-10-2018—01-09-2019
Option Year 3 Value:	**$4,900,000.00**
Option Year 3 Dates:	**01-10-2019—01-09-2020**

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 2 companies with independent supply chains to minimize supply risk, 70% to Carter & Cater and 30% to PVS Technologies. Since Option Year 2 (and for this Option Year 3), 90% of DC Water's requirements is awarded to Carter & Carter, and the remaining 10% is awarded to PVS Technologies due to the significant price increases, especially by PVS. The market price of ferric chloride has increased significantly since 2018 prompted by increasing raw material pricing and availability (currently the demand is higher than the supply). Also, since Option year 2, the usage of ferric chloride has increased with Tunnel Dewatering Pumping Station.

Spending Previous Year:

Cumulative Contract Value:	01-10-2016 to 01-09-2019: $11,306,775.00
Cumulative Contract Spending:	01-10-2016 to 11-27-2018: $10,598,883.00

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:	Fixed price	**Award Based On:**	Best Value
Commodity:	Good and Services	**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:**	Aklile Tesfaye

ESTIMATED USER SHARE INFORMATION

User - Operating	Share %	Dollar Amount
District of Columbia	41.90%	$2,053,100.00
Washington Suburban Sanitary Commission	43.10%	$2,111,900.00
Fairfax County	9.59%	$469,910.00
Loudoun Water	4.64%	$227,360.00
Other (PI)	0.77%	$37,730.00
TOTAL ESTIMATED DOLLAR AMOUNT	**100.00%**	**$4,900,000.00**

12/6/18
Aklile Tesfaye Date
VP of Wastewater Operation

12/6/18
Dan Bae Date
VP of Procurement and Compliance

12/6/18
Matthew T. Brown Date
CFO and EVP of Finance and Procurement

_____/_____
David L. Gadis Date
President and CEO

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

ACTION REQUESTED

GOODS AND SERVICES CONTRACT OPTION YEAR

Repair and Rehabilitation of Various Process Assets
(Joint Use)

Approval to exercise option year two and add funding to the subject contract in the amount of $2,400,000

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME:	SUBS:	PARTICIPATION:
Electric Motor & Contracting Co., Inc.(EMC) 3728 Profit Way Chesapeake, VA 23323	M&M Electric Motor Repair, Inc. LSBE	29%

DESCRIPTION AND PURPOSE

Original Contract Value:	$2,150,000.00
Base Year Dates:	01-01-2017 - 12-31-2017
No. of Option Years in Contract:	2
Base Year Modification Value:	$700,000.00
Base Year Modification Dates:	05-05-2017 – 12-31-2017
Option Year 1 Value:	$2,076,186.00
Option Year 1 Dates:	01-01-2018 – 12-31-2018
Option Year 1 Modification Value:	$951,000.00
Option Year 1 Modification Dates:	06-08-2018 – 12-31-2018
Option Year 2 Value:	**$2,400,000.00**
Option Year 2 Dates:	**01-01-2019 – 12-31-2019**

Purpose of the Contract:

The Department of Maintenance Service (DMS) and Department of Pumping (DDCS) require the services of a qualified contractor to provide inspection, rehabilitation, replacement, and upgrade services for various process assets (pumps, motors, blowers, valves, etc.) located at all DC Water facilities.

Scope of the Contract:

The contract scope covers major overhauls, refurbishment, and upgrades necessary to ensure the availability of identified equipment for reliable operation. The requested funding will cover both previously-forecasted and emergency work on mechanical and electrical equipment at DC Water facilities.

DDCS is requesting $900,000 and DMS is requesting $1,500,000 out of the total requested amount of $2,400,000 to execute option year 2.

Savings:

Exercising the option year of the contract presents DC Water with projected cost savings of at least $120,000.00 based on previously-negotiated volume tier discounts.

Spending Previous Year:

Cumulative Contract Value:	01-01-2017 to 12-31-2018: $5,877,186.00
Cumulative Contract Spending:	01-01-2017 to 10-25-2017: $5,182,364.60

Contractor's Past Performance:

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

PROCUREMENT INFORMATION

Contract Type:	Fixed Price Requirement Contract	**Award Based On:**	Best Value
Commodity:	Goods and Services	**Contract Number:**	16-PR-DMS-43
Contractor Market:	Open Market with Preference Points for LBE and LSBE Participation		

BUDGET INFORMATION

Funding:	Capital Equipment	**Department:**	DMS
Service Area:	EQP 4830	**Department Head:**	Elkin Hernandez

ESTIMATED USER SHARE INFORMATION

User	Share %	Dollar Amount
District of Columbia	41.25%	$618,750.00
Washington Suburban Sanitary Commission	45.69%	$685,350.00
Fairfax County	8.45%	$126,750.00
Loudoun Water	3.78%	$56,700.00
Other (PI)	0.83%	$12,450.00
TOTAL ESTIMATED DOLLAR AMOUNT	**100.00%**	**$1,500,000.00**

BUDGET INFORMATION

Funding:	Capital Equipment	**Department:**	DDCS
Service Area:	EQP 4210	**Department Head:**	Kenrick St.Louis

ESTIMATED USER SHARE INFORMATION

User	Share %	Dollar Amount
District of Columbia	72.37%	$631,330.00
Washington Suburban Sanitary Commission	21.49%	$193,410.00
Fairfax County	3.97%	$35,730.00
Loudoun Water	1.78%	$16,020.00
Other (PI)	0.39%	$3,510.00
TOTAL ESTIMATED DOLLAR AMOUNT	**100.00%**	**$900,000.00**

Aklile Tesfaye / 12/6/18
Aklile Tesfaye — Date
VP of Wastewater Operations

Matthew T. Brown / 12/6/18
Matthew T. Brown — Date
CFO and EVP of Finance and Procurement

Dan Bae / 12/6/18
Dan Bae — Date
VP of Procurement and Compliance

David L. Gadis / _____
David L. Gadis — Date
President and CEO

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

ACTION REQUESTED

CONSTRUCTION CONTRACT CHANGE ORDER:

Spring Valley Water Main Rehabilitation and Replacement (Non-Joint Use)

Approval to execute Change Order No. 01 for $802,864.50. The modification exceeds the Chief Executive Officer's approval authority.

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME:	SUBS:		PARTICIPATION:
Fort Myer Construction Corporation 2237 33rd Street, NE Washington, DC 20018	V. Fernandes Construction Co Inc. Silver Spring, MD	MBE	74.0%
	ISSI UXO and Consulting, LLC Huntsville, AL	MBE	12.0%

DESCRIPTION AND PURPOSE

Original Contract Value:	$ 4,688,208.00	
Value of this Change Order:	$ 802,864.50	
Cumulative CO Value, including this CO:	$ 802,864.50	
Current Contract Value, including this CO:	$ 5,491,072.50	
Original Contract Time:	730 Days	(2 Years, 0 Months)
Time extension, this CO:	488 Days	
Total CO contract time extension:	488 Days	(1 Year, 4 Months)
Contract Start Date (NTP):	03-08-2017	
Anticipated Contract Completion Date:	07-07-2020	
Cumulative CO % of Original Contract:	17.1%	
Contract completion %:	30.0%	

Purpose of the Contract:

To replace water mains and associated appurtenances to improve water quality and performance of the distribution system.

Original Contract Scope:

- Install structural (Class IV) cured-in-place lining of approximately 3,400 linear feet (LF) of 8-inch through 12-inch water main,
- Install approximately 205 LF of new 12-inch water main interconnection between existing 12-inch and 16-inch water main,
- Replacement of same trench of approximately 1,300 LF of 8-inch water main with 12-inch water main,
- Provide temporary water system of approximately 10,700 LF of 4-inch pipe and appurtenances, and
- Replace associated paving, sidewalk, curb and gutter.

Current Change Order Scope:

- Work under this Change Order includes furnishing all labor, equipment, material and incidentals as required to identify and replace up to 80 lead water service lines and associated water meters and curb stops that were not included in the original scope of this project. Provide additional Unexploded Ordinance (UXO) monitoring and soil sampling for arsenic testing at the identified properties.

PROCUREMENT INFORMATION			
Contract Type:	Fixed Price	**Award Based On:**	Lowest responsive, responsible bidder
Commodity:	Construction	**Contract Number:**	130140
Contractor Market:	Open Market		

BUDGET INFORMATION			
Funding:	Capital	**Department:**	Engineering and Technical Services
Service Area:	Water	**Department Head:**	Craig Fricke
Project:	O2		

ESTIMATED USER SHARE INFORMATION		
User	**Share %**	**Dollar Amount**
District of Columbia	100.00%	$802,864.50
Washington Suburban Sanitary Commission	0.00%	$
Fairfax County	0.00%	$
Loudoun County & Potomac Interceptor	0.00%	$
Total Estimated Dollar Amount	**100.00%**	**$802,864.50**

Leonard R. Benson / 12-11-18 Date
Senior VP and Chief Engineer

Dan Bae / 12/11/18 Date
VP of Procurement and Compliance

Matthew T. Brown / 12/11/18 Date
CFO and EVP of Finance and Procurement

David L. Gadis / Date
President and CEO

District of Columbia Water and Sewer Authority
David L. Gadis, President and CEO

Briefing on:

DC Clean Rivers Project Quarterly Update

Briefing for:

Environmental Quality & Operations Committee Meeting

December 20, 2018

DCWATER.COM

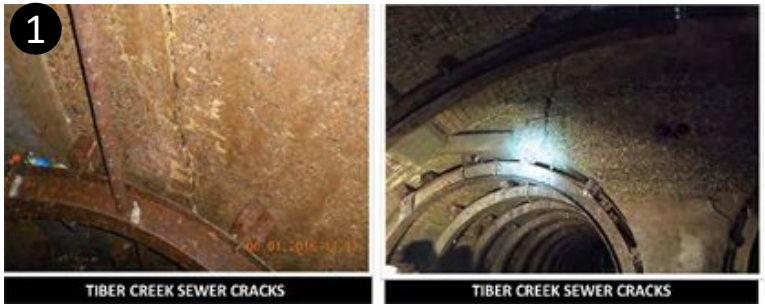
Agenda

- Overview
- Progress Summary – March 2018 Consent Decree
- Progress Summary – Remaining Projects
- A Song About a Sewer Pipe??

Anacostia River Tunnel System Receives Awards

american shotcrete association | asa

Tiber Creek Sewer Rehabilitation won the **American Shotcrete Association 2018 Outstanding Project of The Year** in the Underground category



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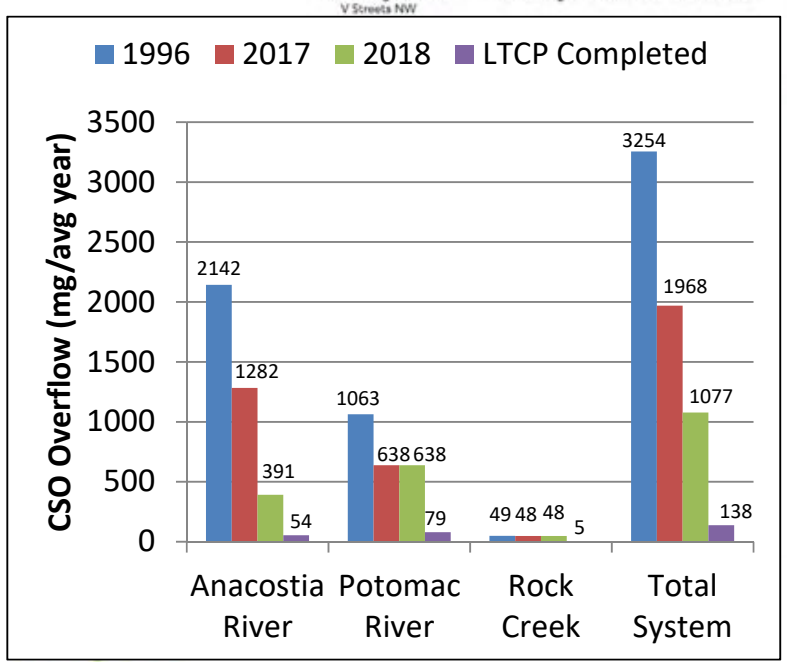
DC Clean Rivers Project Overview

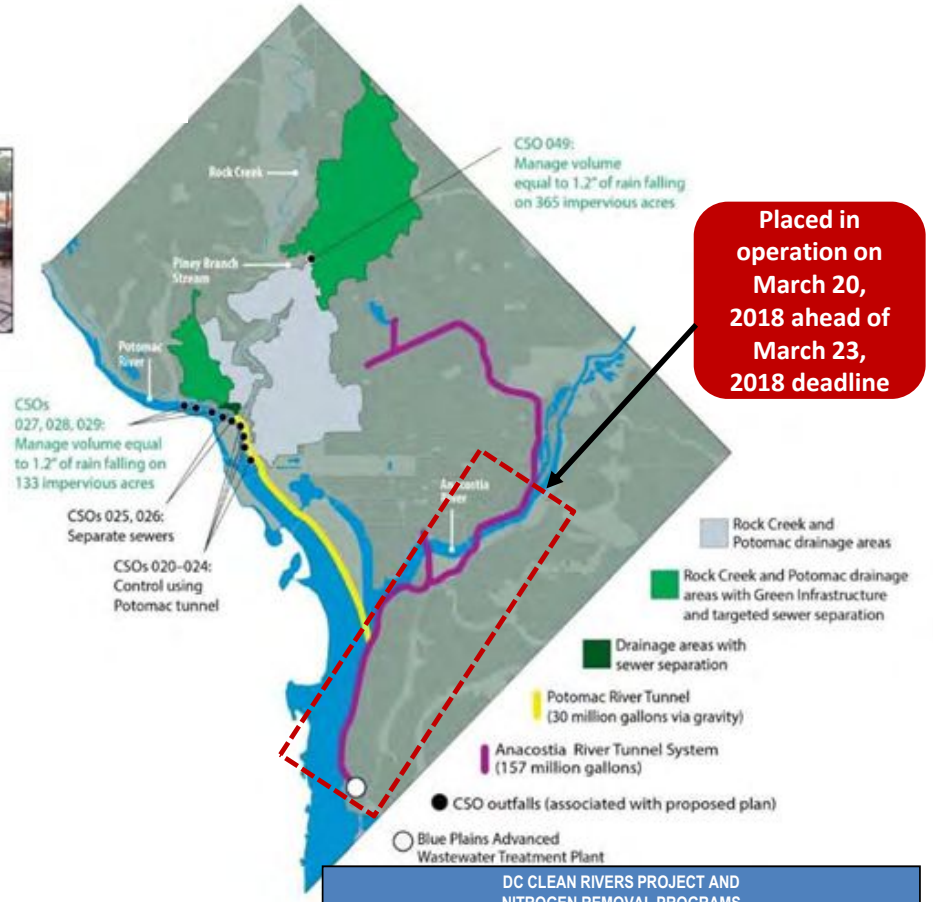
Controls Combined Sewer Overflows

Addresses Chronic Sewer Flooding

▲ Flooding at 1st and V Streets NW

▲ Flooding at 1st and Rhode Island Ave NW





Placed in operation on March 20, 2018 ahead of March 23, 2018 deadline

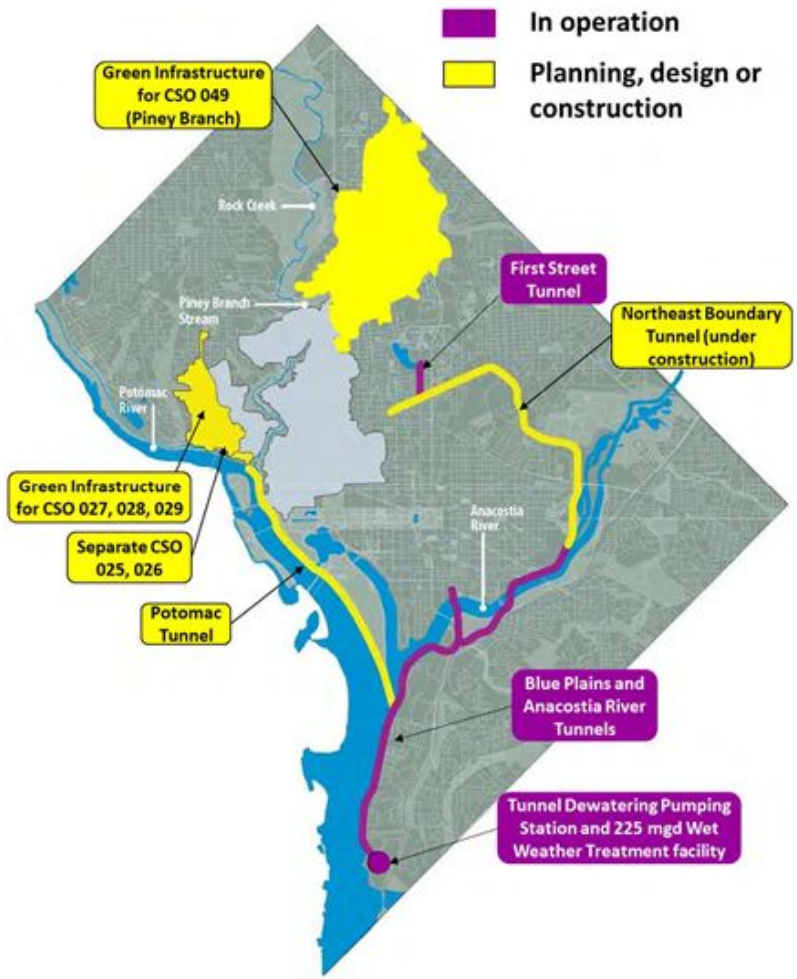
DC CLEAN RIVERS PROJECT AND NITROGEN REMOVAL PROGRAMS

- DC Clean Rivers Project: $2.7 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

4

Project Status

- First phase of Anacostia River tunnel system commissioned on March 20, 2018
  - Provides control for all CSOs along the Anacostia River
  - Provides about 100 million gallons of storage
- Northeast Boundary Tunnel, under construction, will increase CSO storage and flood risk mitigation
  - Adds about 90 million gallons of storage
- Green infrastructure (GI) project in Rock Creek is nearing completion while GI project in Potomac River will be completed in spring 2019.
- Potomac River Tunnel Facility Plan to be submitted to EPA by end of 2018



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Anacostia Tunnel System Performance Since March 20 1018

Captured More than 4BG at minimal Operations Cost

No.	Month	Rainfall, DCA Gauge (IN)	Volume Captured by Tunnel (MG)	Measured Overflow (MG)	% Captured	Solids Removed (TONS)
1	March 20 -31 2018	1.48	20	0	100%	0
2	April 2018	3.59	249	10	96%	8
3	May 2018	8.73	865	13	99%	73
4	June 2018	5.21	271	49	85%	55
5	July 2018	9.73	678	236	74%	11
6	August 2018	5.19	334	15	96%	226
7	September 2018	9.73	775	109	88%	94
8	October 2018	3.06	150	0	100%	151
9	November 1-28, 2018	7.56	780	6	99%	TBD
	Total	54.28	4122	438	90%	616

- November 20 marked 8 months in service
- Exceeding predicted capture rate (90%>80%)
- Volumes are high due to extremely rainy weather
  - 6th wettest May on record
  - 4th wettest July on record (all rain in second half of month)
  - 5th wettest September on record
  - Wettest November on record (broke record from 1877,
- <1-Inch from wettest year on record (1889)

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Trash and Debris Removed from CSO Captured by Tunnel at ECF Fine Screens

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PROGRESS SUMMARY
MARCH 2018 CONSENT DECREE

MAJOR ACCOMPLISHMENTS
FY 2018 3RD QUARTER UPDATE

Progress Summary – Nearly Completed Projects March 2018 Consent Decree

Contract Division	Title	Description	Substantially Complete	Substantial Completion Date	Remaining Work	Picture
D	JBAB Overflow and Diversion Structures	JBAB Overflow and Diversion Structures will capture flow from the Potomac Outfall Sewers and covey it to the Blue Plains AWWTP through the Blue Plain Tunnel	Yes	2/15/2018	Grass & turf stabilization and punch list	
I	Main Pumping Station Diversions	Division I consists of two major side-wier style diversion chambers (CSOs 009/011A and CSO 012). CSO 009/011A intercepts the Canal St. Sewer / New Jersey Ave Trunk Sewer while CSO 012 intercepts Tiber Creek and receives flows from Tingey St. Diversion Sewer. Flows are conveyed to the Blue Plains AWWTP through the Blue Plains Tunnel.	Yes	2/15/2018	None	
H	Anacostia River Tunnel (ART)	ART is a 2.4 miles tunnel starting from CSO 019 and connecting with the Blue Plains tunnel at Poplar Point. The tunnel recieves flows intercepted by diversion chambers located at CSOs 005/007, CSO 017, CSO 018 and CSO 019 through drop shafts to convey to the Blue Plains AWWTP	Yes	3/9/2018	Punch list	
Z	Poplar Point Pumping Station Replacement	Division Z consists of design and construction of a new Poplar Point Pumping Station. Additionally, it includes design and construction of Anacostia Main Interceptor Diversion Structure and Diversion Sewer, Force Main for the Main Outfall Sewers and Overflow, Approach Channel & Diversion and Main Outfall Sewers to the Poplar Point Junction Shaft.	No	On-going	Handrails, stairs, gratings and punch list	
PR-B	CSO 021 Diversions	The CSO 021 Outfall Sewer relieves excess flows from the East Rock Creek Diversion Sewer and will divert 230 MGD to the future Potomac River Tunnel	Yes	5/16/2018	None	

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PROGRESS SUMMARY
REMAINING PROJECTS

MAJOR ACCOMPLISHMENTS
FY 2018 3RD QUARTER UPDATE

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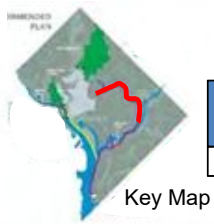
Division J – Northeast Boundary Tunnel


Key Map

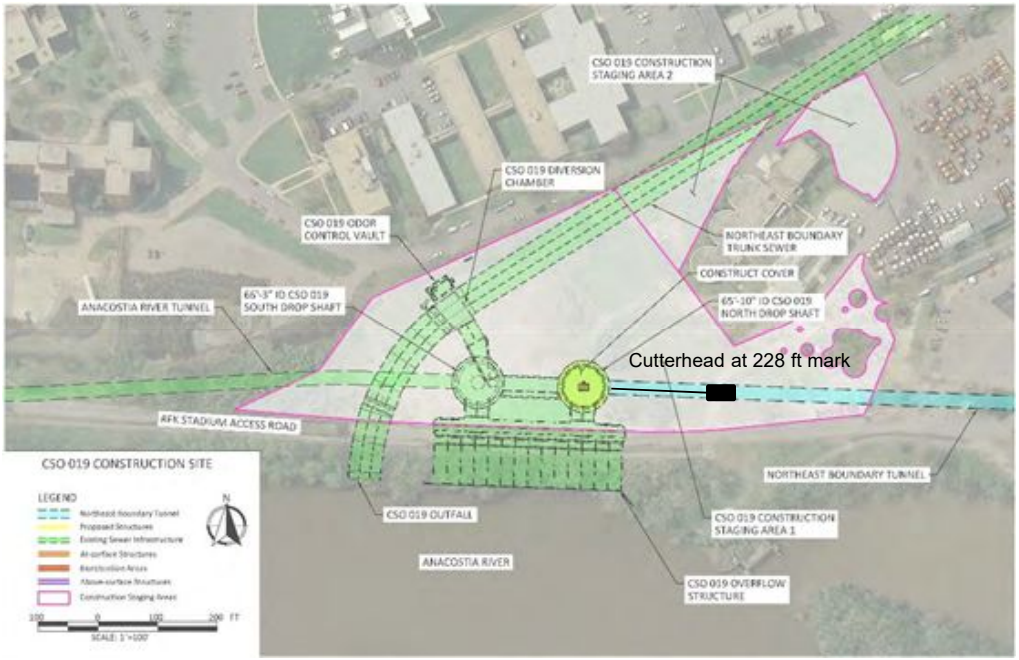
Design-Builder: Salini Impregilo Healy JV
Contract Price: $580M - Percent Complete: 18%
Financials as of November 1, 2018

- Approved major Design Packages including CSO 019 Tunnel Boring Machine (TBM) Breakout Release for Construction (RFC); Mt. Olivet Support of Excavation (SOE), Maintenance of Traffic (MOT) and Temp Site Work RFC; W Street SOE, MOT and Temp Site Work RFC; Rhode Island Ave. MOT and Temp Site Work RFC; and 4th Street SOE, MOT, and Temp Site Work RFC.

Milestone	Date
NTP	September 15, 2017
Construction Start	March 2018
Construction Complete	August 2023

- Tunneling is risky compared to other types of construction projects
  - Underground conditions
  - Safety
- Clean Rivers continuously works to manage risks to minimize impacts

Division J – Northeast Boundary Tunnel
CSO 019 Site



TBM Trailing Gear (View from Shaft)

CSO-019 Eastside Force Main Completed

- TBM “Chris” mined 228 feet
- CSO 019 Force Main Relocation work complete.
- Eastside Force Main put back in service.

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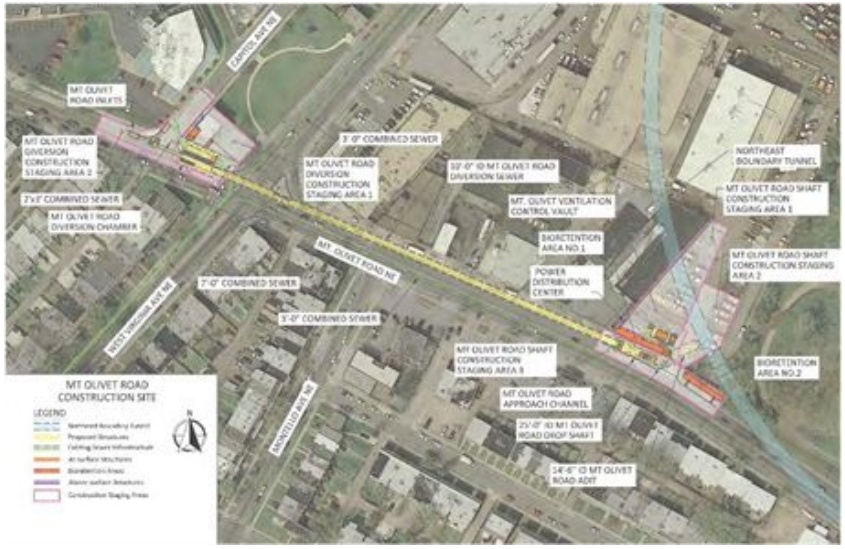
Division J – Northeast Boundary Tunnel
MOR Site



Mount Olivet Road Site View

- MOR Site: Jet Grout Test columns completed.
- Slurry wall panels completed
- Production columns work on-going.

Mount Olivet Road Jet Grouting

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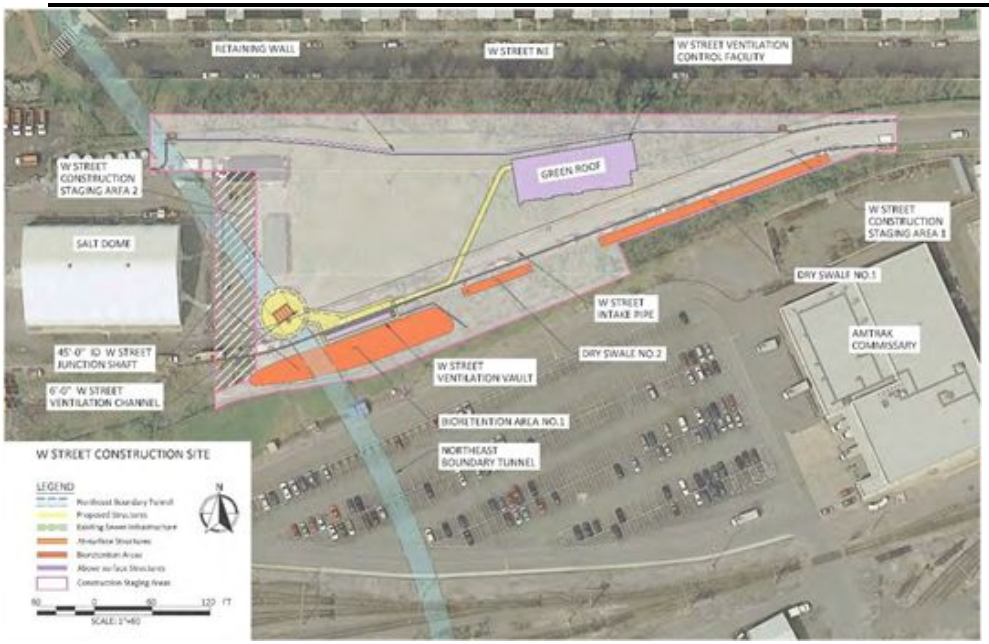
Division J – Northeast Boundary Tunnel
W Street Site



Ventilation Control Facility Excavation On-Going

W ST Slurry Wall Panels Completed

- W St. Site: Retaining wall piles work completed; 24-inch storm pipe completed. Slurry panels completed.
- VCF excavation work ongoing.
- Breakout of slurry wall ongoing

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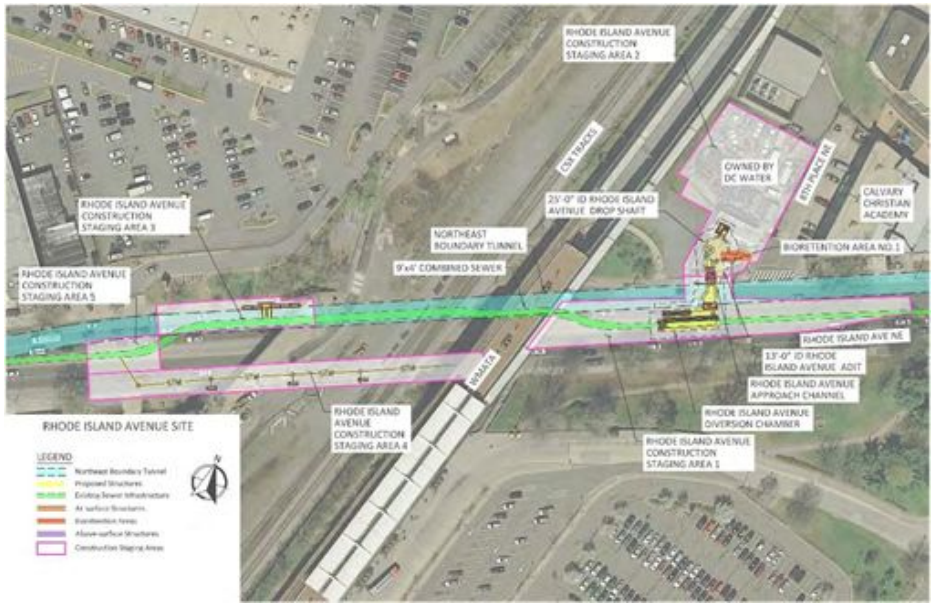
Division J – Northeast Boundary Tunnel
Rhode Island Ave Site

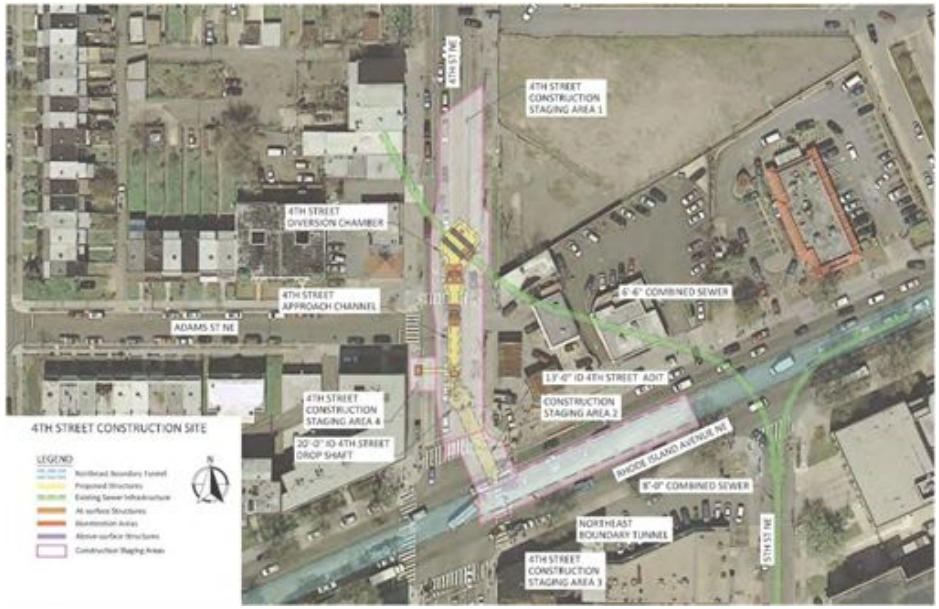


Site Setup

- Rhode Island Ave Site: Site setup ongoing
- Asbestos removal work completed.

Tire Shop Building to be Demolished

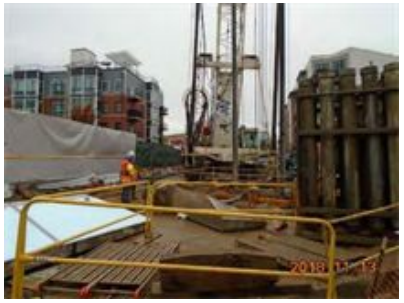
Division J – Northeast Boundary Tunnel
4th Street Site



4th Street Site

- Mobilized to 4th Street Site
- Performed site set-up
- Started slurry panel work (50% complete)
- Installed instrumentation
- Removed overhead lines

Installing Instrumentation



4th Street Slurry Panel Excavation

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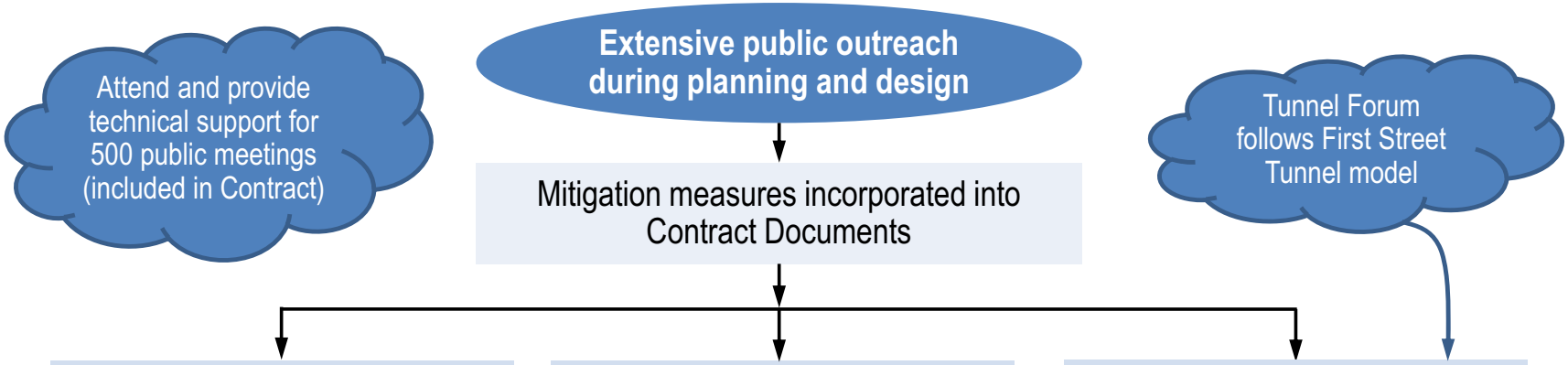
Community Impact Mitigation



MINIMIZE IMPACTS

- Advanced utility relocations
- Collaboration process
- DDOT approved Traffic Study
- Commuter Outreach Plan (radio, social media, print, television)
- Off-peak hauling
- Compact construction sites
- Maintain access/services
- Extensive coordination with District agencies
- Allowances considered for business and resident mitigation
- Acquire permits in advance of procuring Contractor

MAINTAIN QUALITY OF LIFE

- 24/7 hotline
- DC Water dedicated outreach staff
- Security service
- Vector control
- Street cleanings
- Noise attenuation
- Noise & vibration specialist
- Pre and post construction surveys

TUNNEL FORUM

- Two groups based on geographic area
- Neighborhood working group comprised of residents, businesses, District officials, civic association leaders
- Creates a true collaboration with the community
- Addresses construction issues such as street closures and work hours
- Assists with hotline
- Monthly meetings

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DC Water Partnering with 3 "Main Street Organizations" to Enhance Patronage of Local Businesses during Construction

Main Street Organizations

- 510(c)(3) non profits
- Goal is to support patronage of local business during construction

RIA-NE MAIN STREET

NORTH CAPITOL MAIN STREET

SHAW MAIN STREETS

Example Activities

- Direct compensation of individual or aggregate business losses would not be provided. Example activities:
  - Advertising, including radio campaigns, space in local magazines and media events to highlight area businesses
  - Business promotion efforts
  - Coupons, discount cards or reward programs that may be used by customers to receive discounts from businesses in the construction zone
  - Hosting "community day" or similar events to highlight and encourage patronage of business in construction zones
  - Providing free consultations to business owners in the construction corridor
  - Improved signage to direct the public to affected businesses in the construction zone
  - Information on alternative parking or other transportation alternates to access businesses in the construction zone

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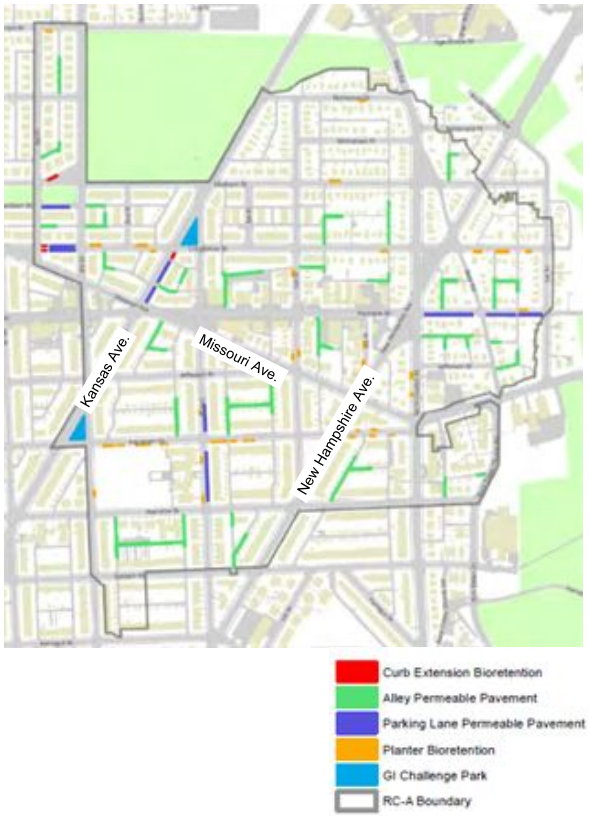
Division RC-A – Rock Creek GI Project A


Key Map

Design-Builder: Anchor Construction Contract Price: $27M - Percent Complete: 81%
Financials as of November 1, 2018

- Project facilities were designed, permitted, and constructed in three phases:
- Construction started in September 2017
- Substantial Completion achieved October 9, 2018
- One year maintenance period underway; Final Completion expected December 2019.

Project Boundary:



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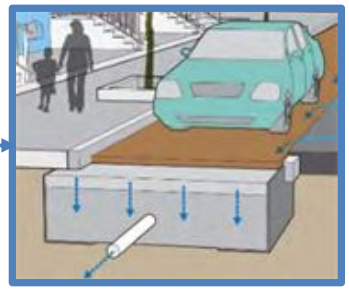
Division PR-A – Potomac River Project A


Key Map

Contractor: Ft Myer Construction
Contract Price: $6M - Percent Complete: 29%
Financials as of November 1, 2018

Item	Status
Contract Award	April 9, 2018
Construction NTP	April 30, 2018
Place in Operation	CD Deadline June 23, 2019

- **Construction underway with project approximately 50% complete.**
- **Project includes:**
  - Planter Bioretention
  - Alley Permeable Pavement
  - Parking Lane Permeable Pavement



Project Boundary:

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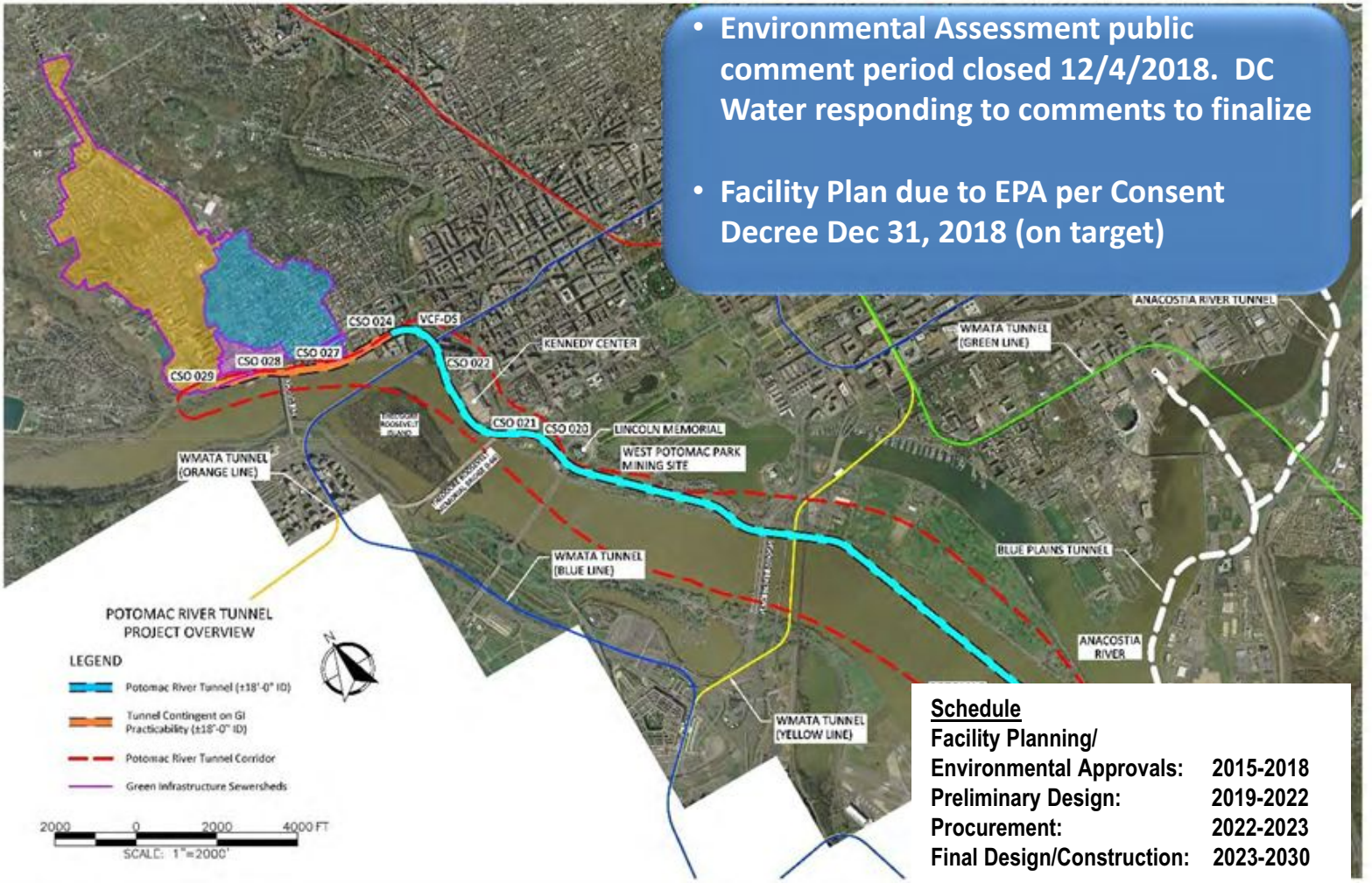
Potomac River Tunnel Facility Plan and Environmental Assessment

- Environmental Assessment public comment period closed 12/4/2018. DC Water responding to comments to finalize
- Facility Plan due to EPA per Consent Decree Dec 31, 2018 (on target)



Schedule

Facility Planning/ Environmental Approvals:	**2015-2018**
Preliminary Design:	**2019-2022**
Procurement:	**2022-2023**
Final Design/Construction:	**2023-2030**

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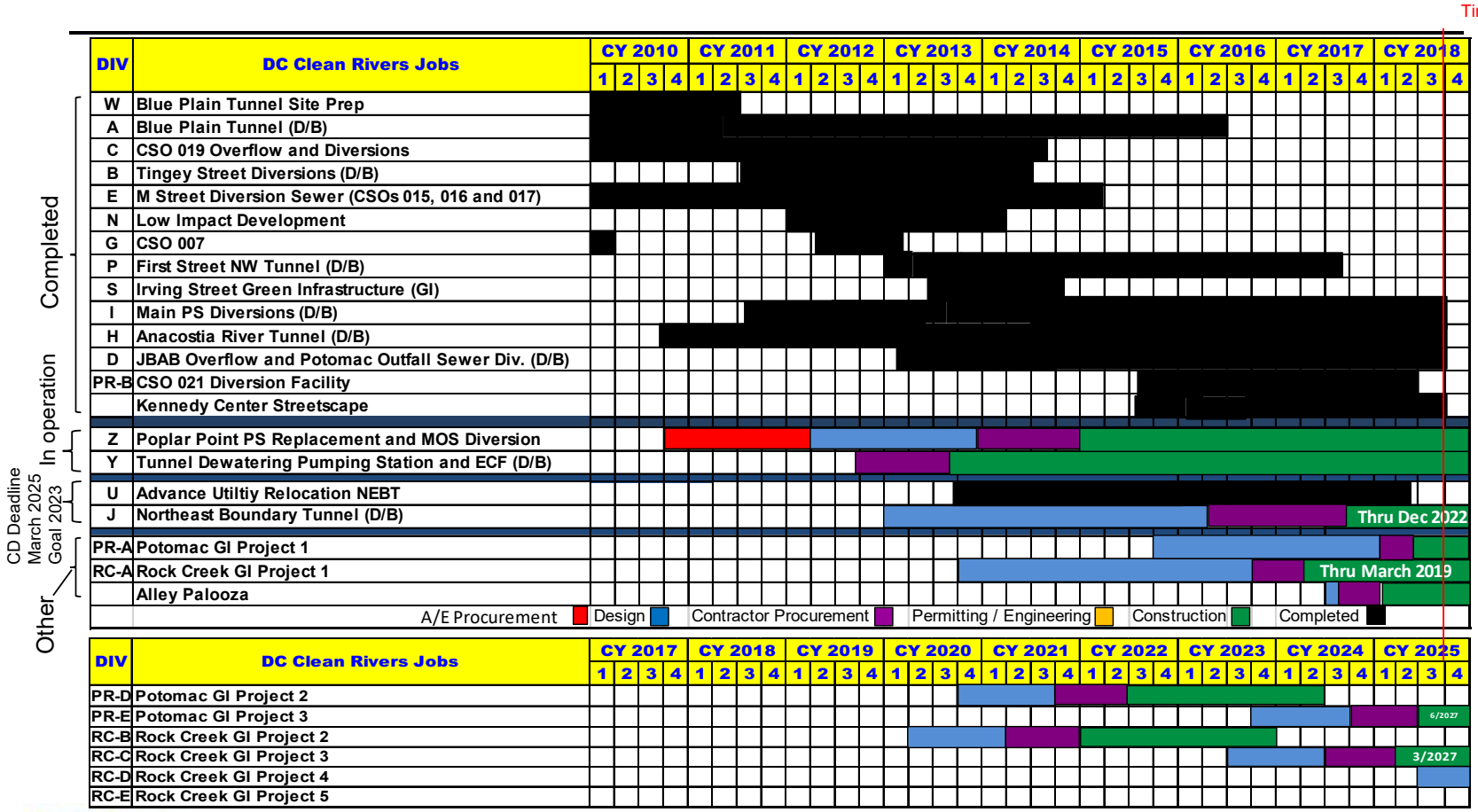
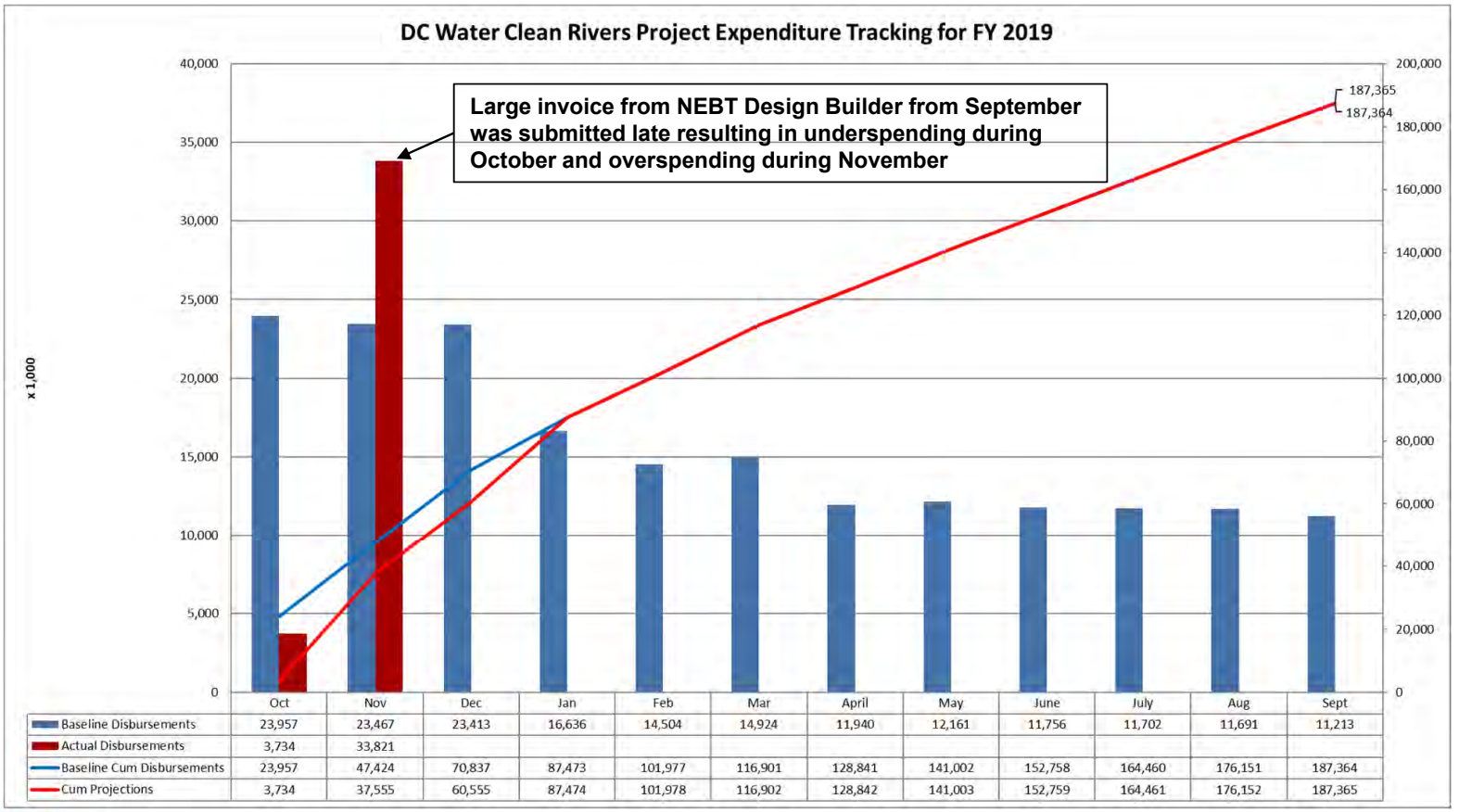
DC Clean Rivers Schedule



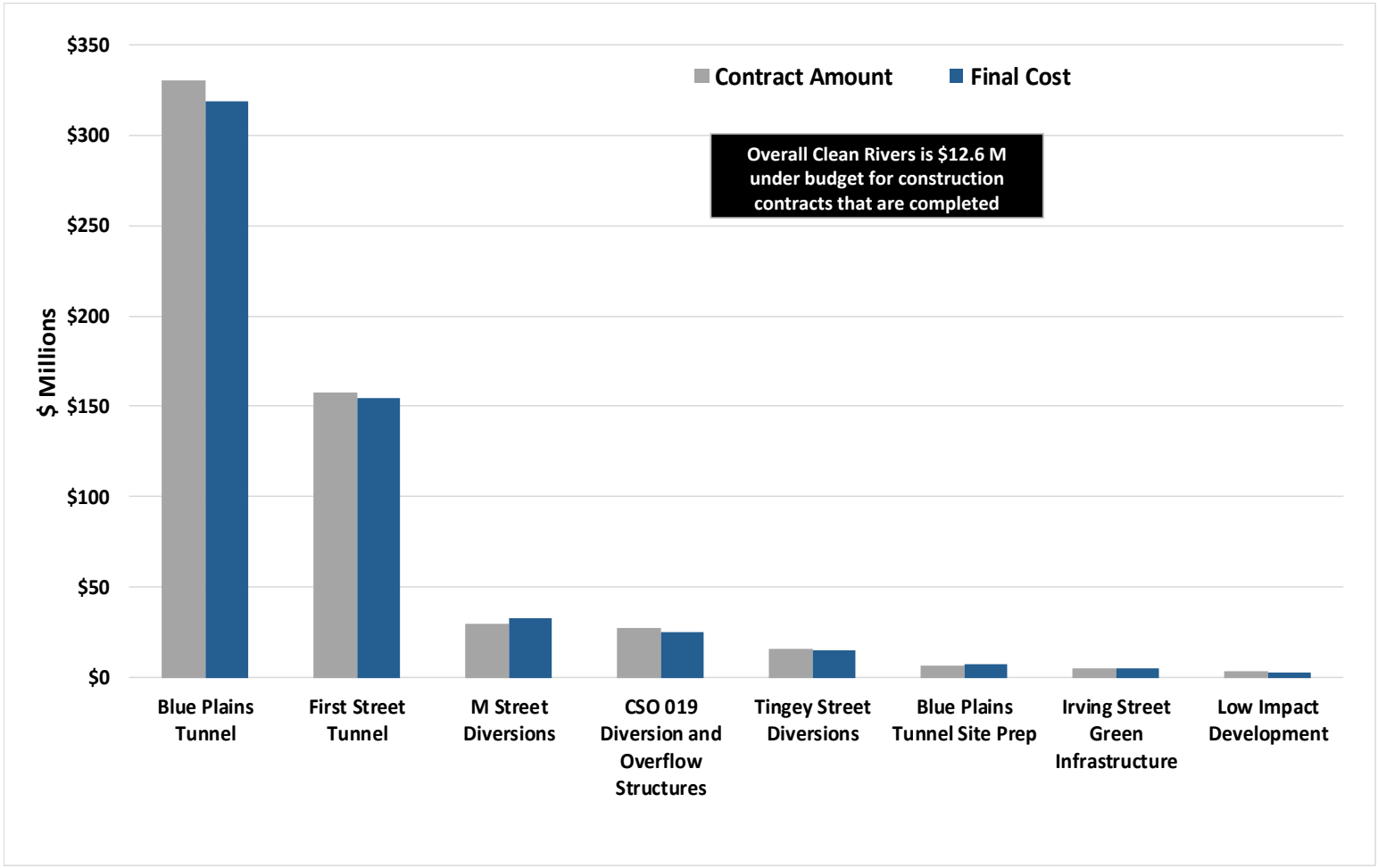
FY2018 Spending Status



	Oct	Nov	Dec	Jan	Feb	Mar	April	May	June	July	Aug	Sept
Baseline Disbursements	23,957	23,467	23,413	16,636	14,504	14,924	11,940	12,161	11,756	11,702	11,691	11,213
Actual Disbursements	3,734	33,821										
Baseline Cum Disbursements	23,957	47,424	70,837	87,473	101,977	116,901	128,841	141,002	152,758	164,460	176,151	187,364
Cum Projections	3,734	37,555	60,555	87,474	101,978	116,902	128,842	141,003	152,759	164,461	176,152	187,365

Clean Rivers expects to meet its FY2019 spending goal

Clean Rivers Budget for Completed Contracts



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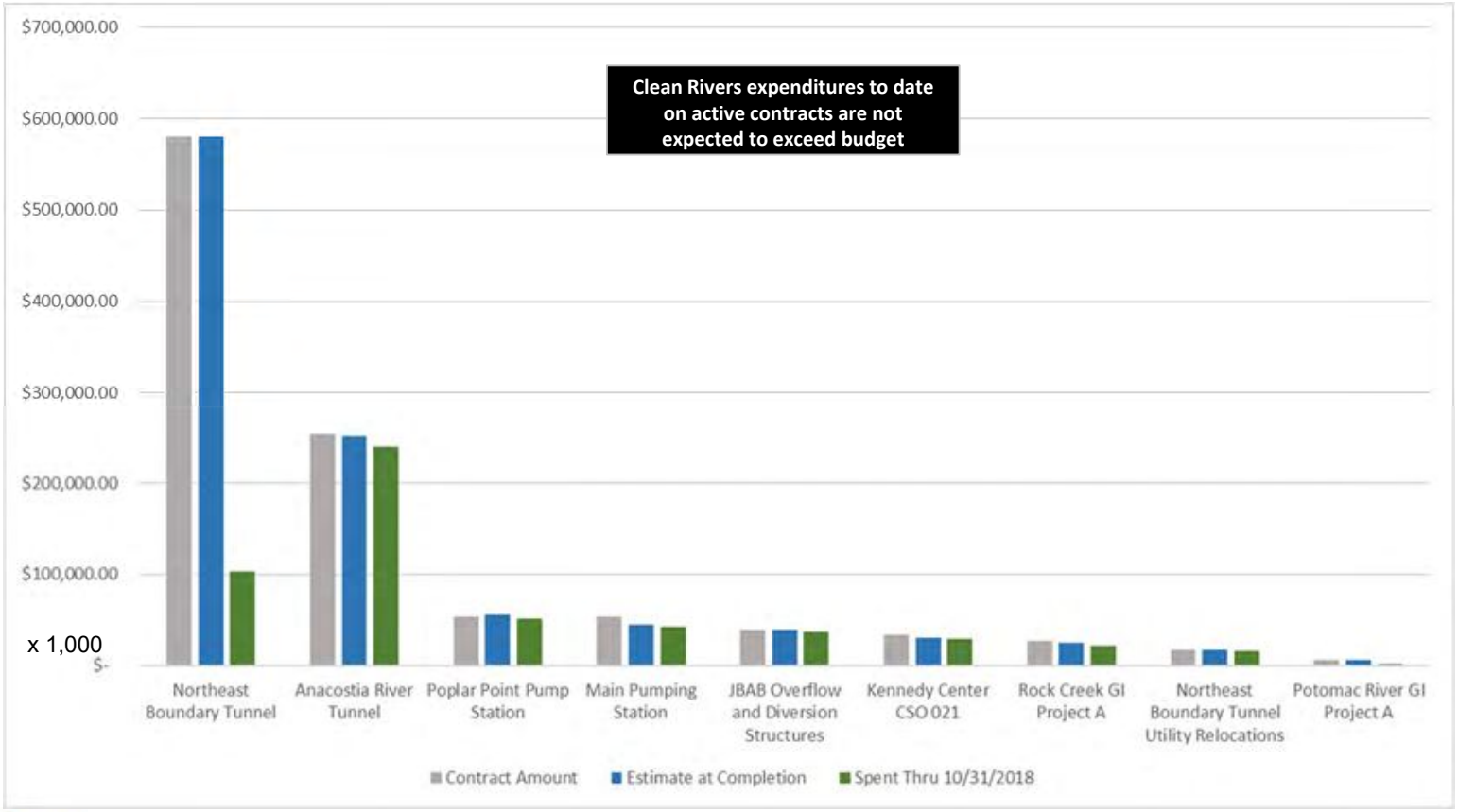
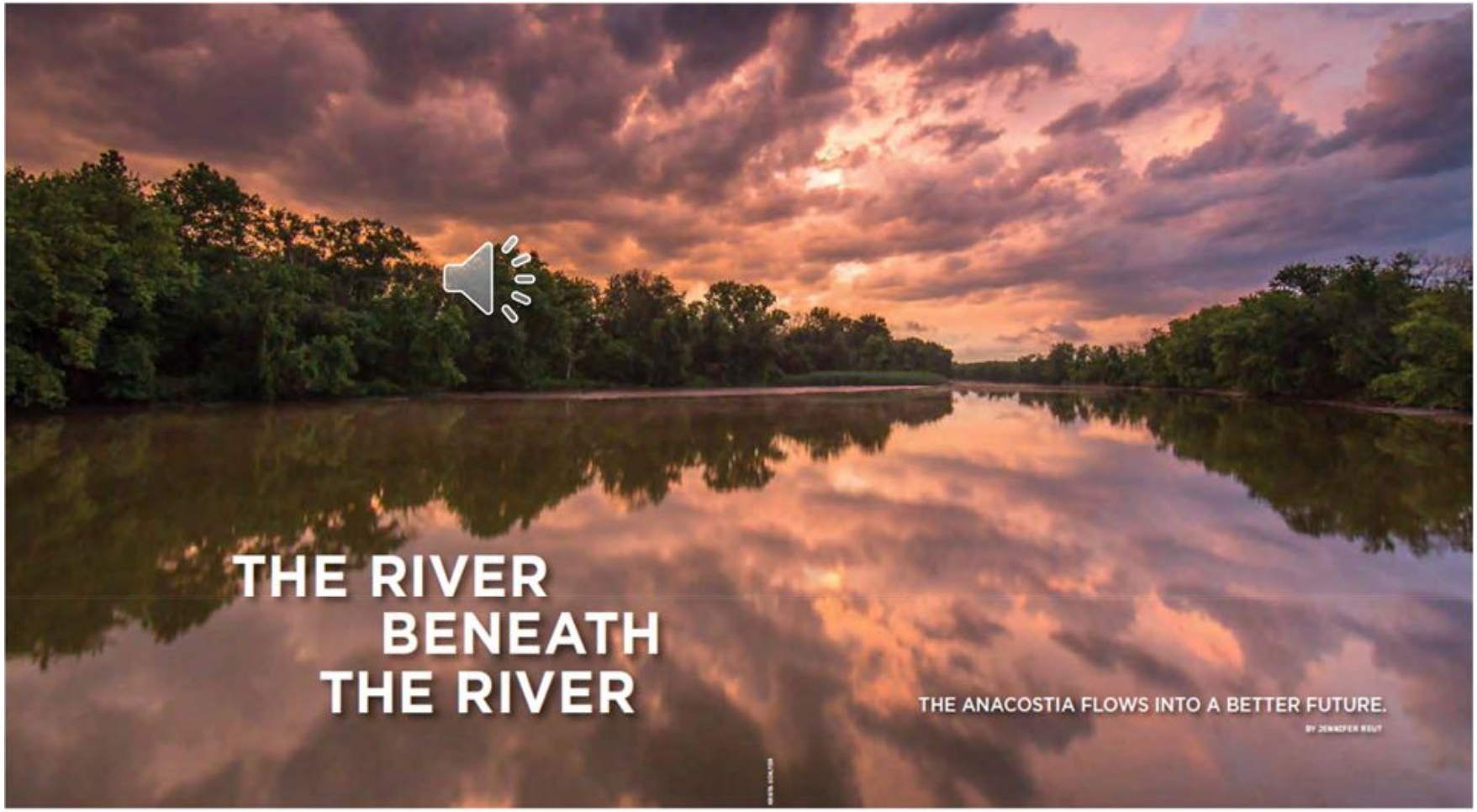
Clean Rivers Budget for Active Contracts



A Song About A Sewer Pipe ??

- The Anacostia River used to be a dumping ground for Washington's trash, sewage and industrial waste.
- Now there's a massive cleanup effort, and the city has declared 2018 "The Year of the Anacostia."
- Brent Peterson and his band debuted the 5 song album "Anacostia Songs, Vol. 1."
- The fifth song is called "Clean Rivers." It's an ode to a sewer pipe, and its dedicated to D.C. Water's Clean Rivers Project.

Thank You to All Who Made Clean Rivers a Success!



Courtesy: *Landscape Architecture Magazine*, Nov 2018

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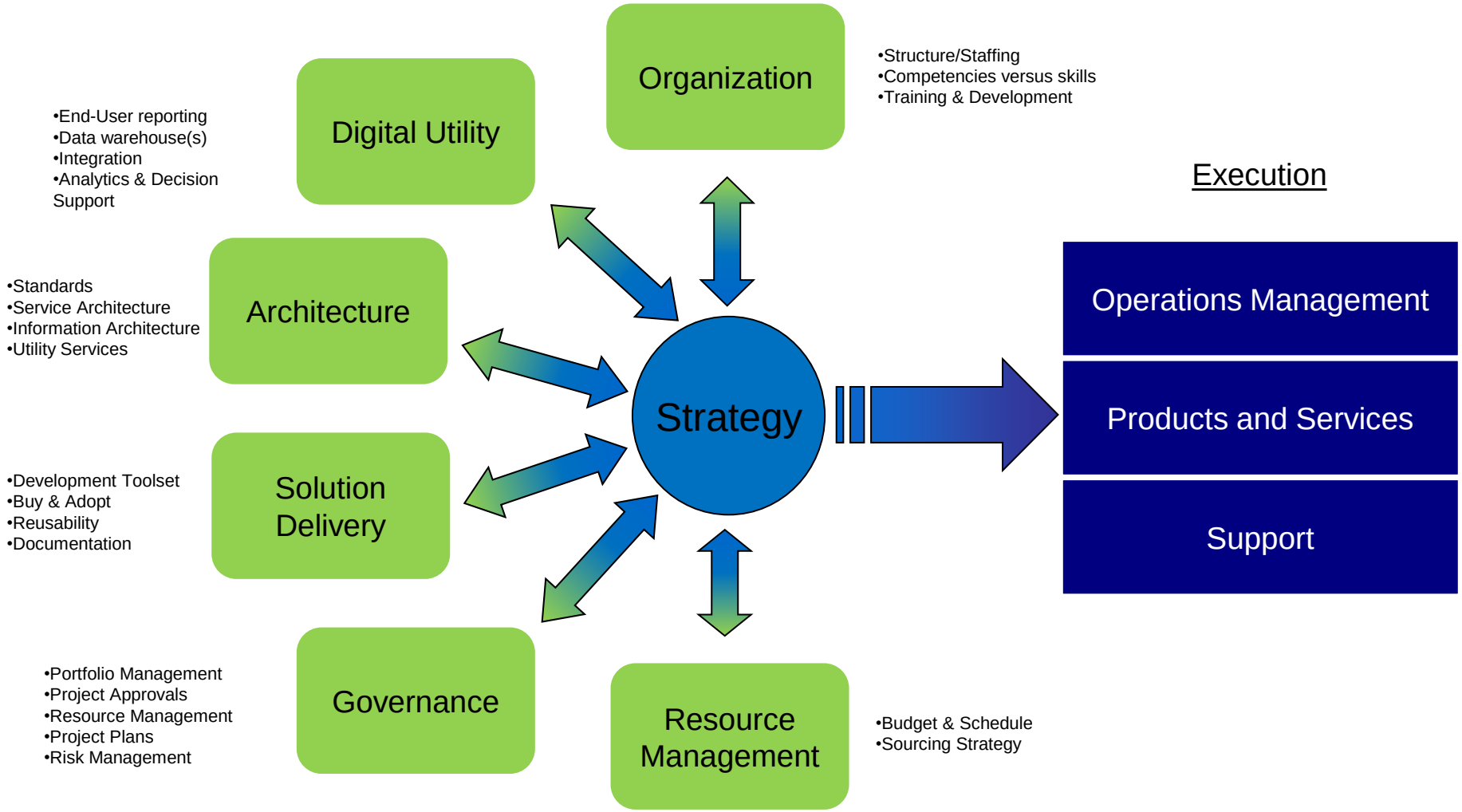
Making I.T. Happen

A Strategy for 2019 and beyond!

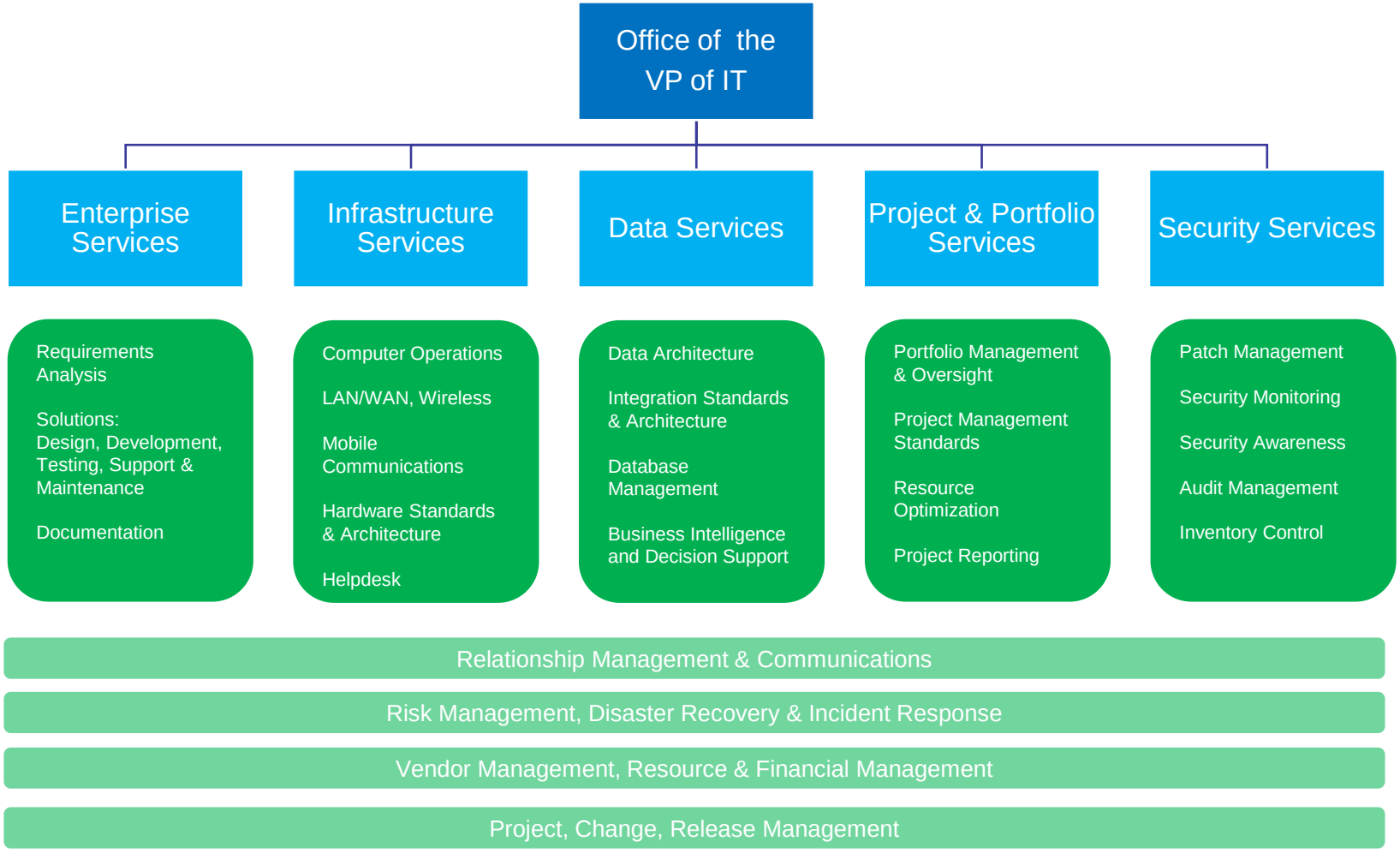
Board Summary

Six Focus Areas for the Strategy



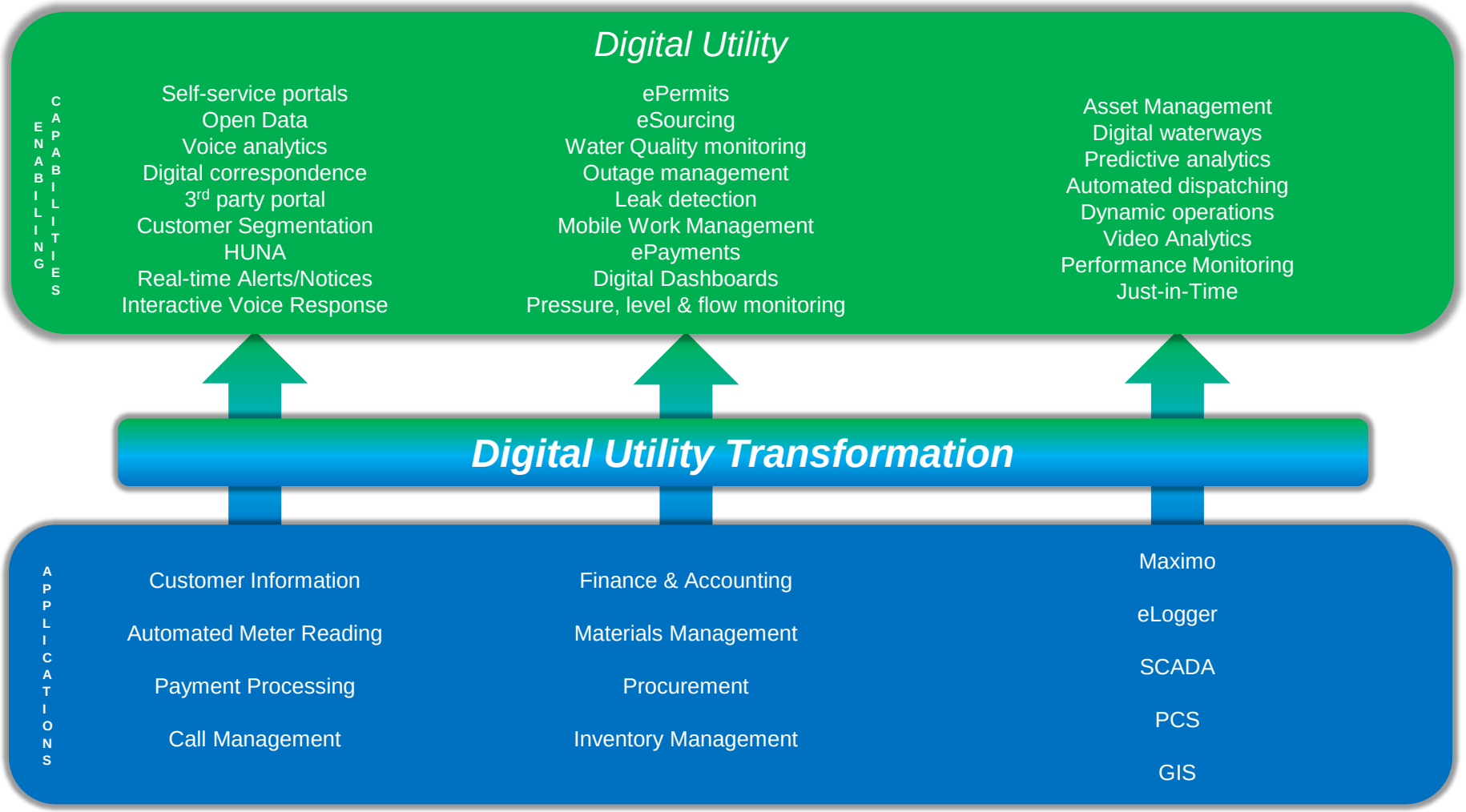
Organization Design

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

CIS
PCS
Lawson
MDM
SCADA
Ceridian
Social Media
GIS
Dayforce
3PP
Innoyze
Pipeline
Customer Portal
eLogger
Materials Mgmt
Website
Maximo
Fleetwave

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

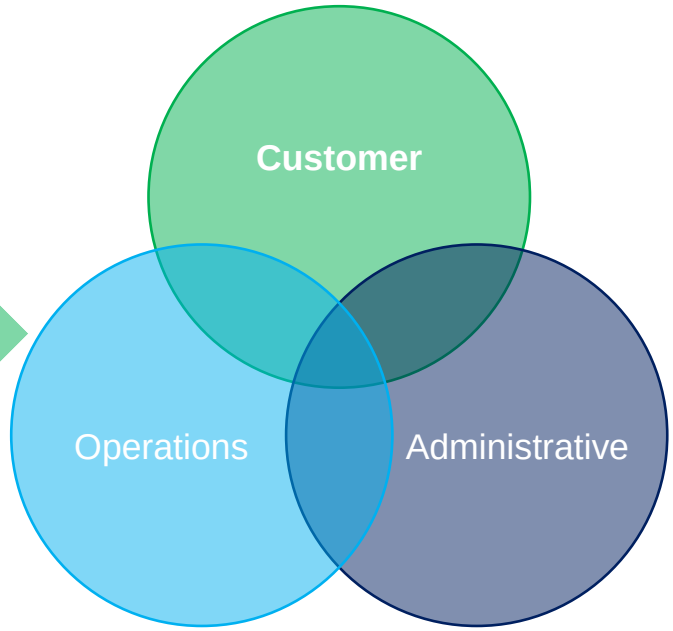
OPERATIONS
The information assets that define the operational activities the company performs. Systems that contain operational information include: PCS, SCADA, P16, Innovyze , eLogger, Maximo

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.

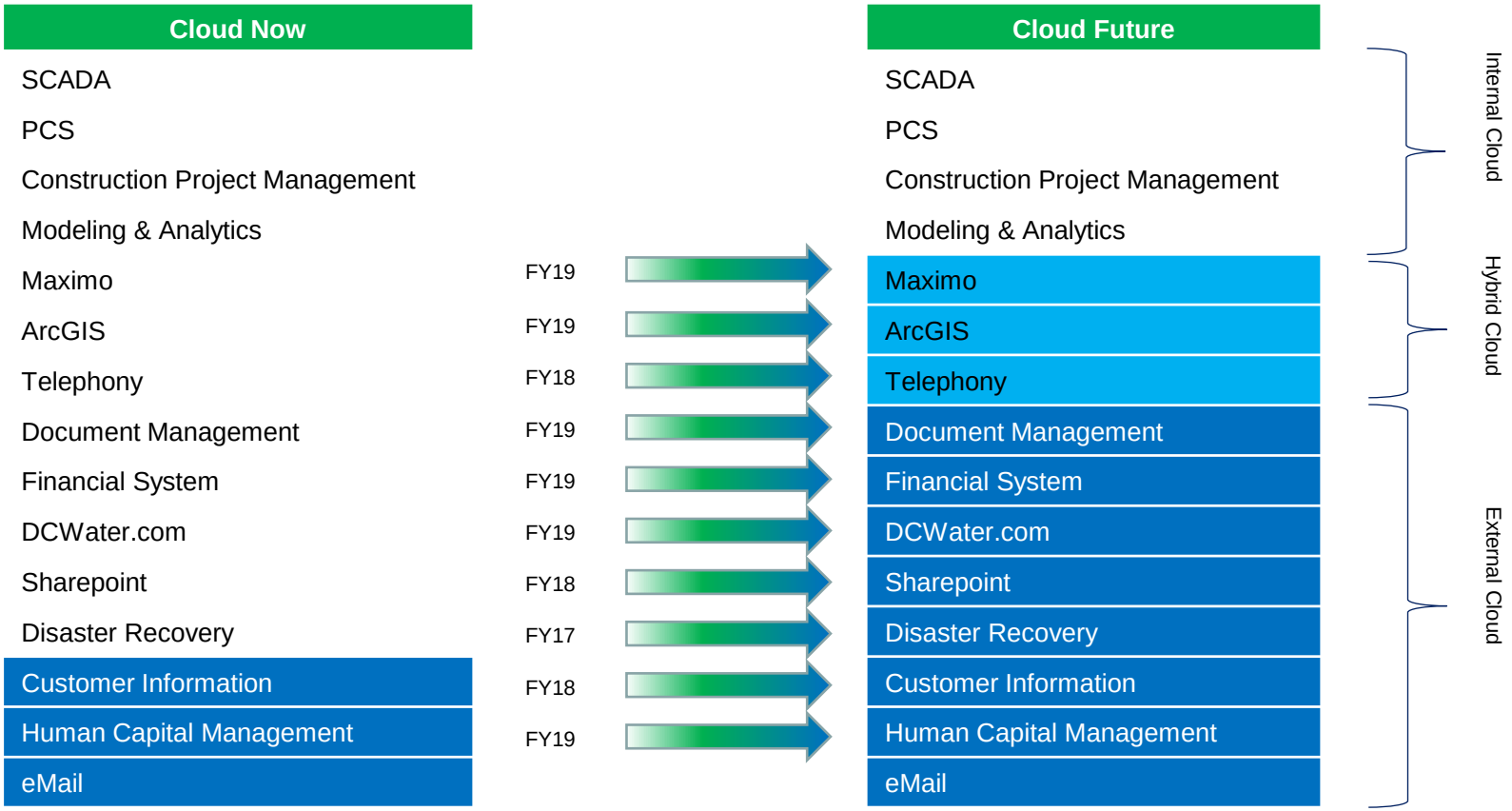
Digital Utility



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

Cloud First

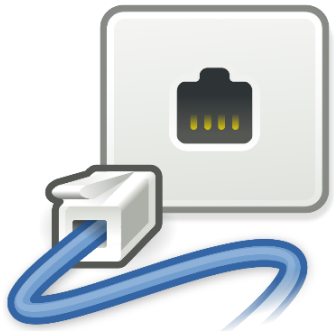
A Cloud First approach allows Information Technology to adapt quickly to changing organizational needs. Focusing internal solutions on the core business allows IT to reduce risk and increase overall system reliability at a lower Total Cost of Ownership (TCO).



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

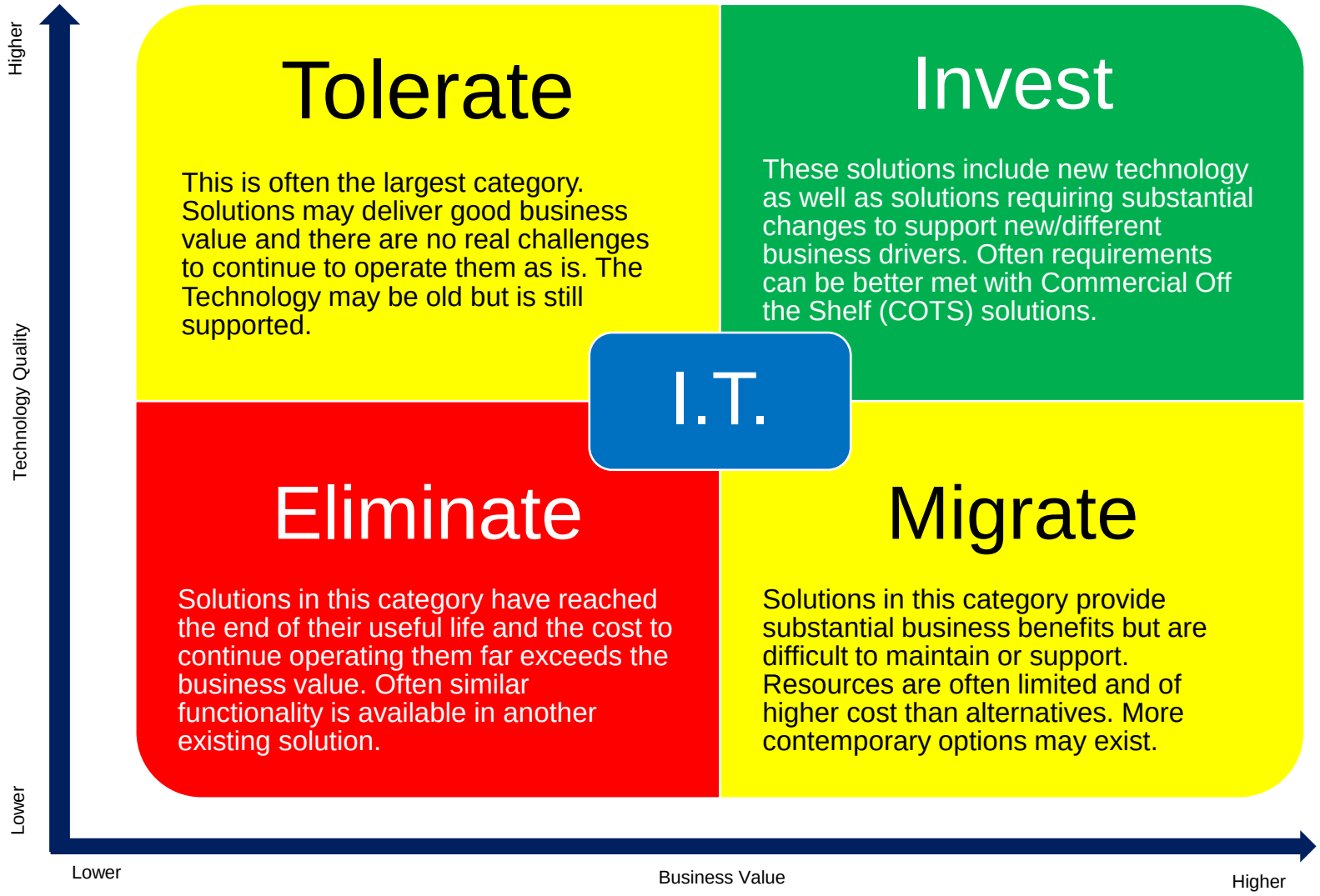
Advantages	Disadvantages
"Best Practices" can be adopted more quickly	Early resistance to change current practices may exist
Broader resource pool available to help with implementation, training & support	In demand resources can command a premium
Greater influence on new capabilities when a majority 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

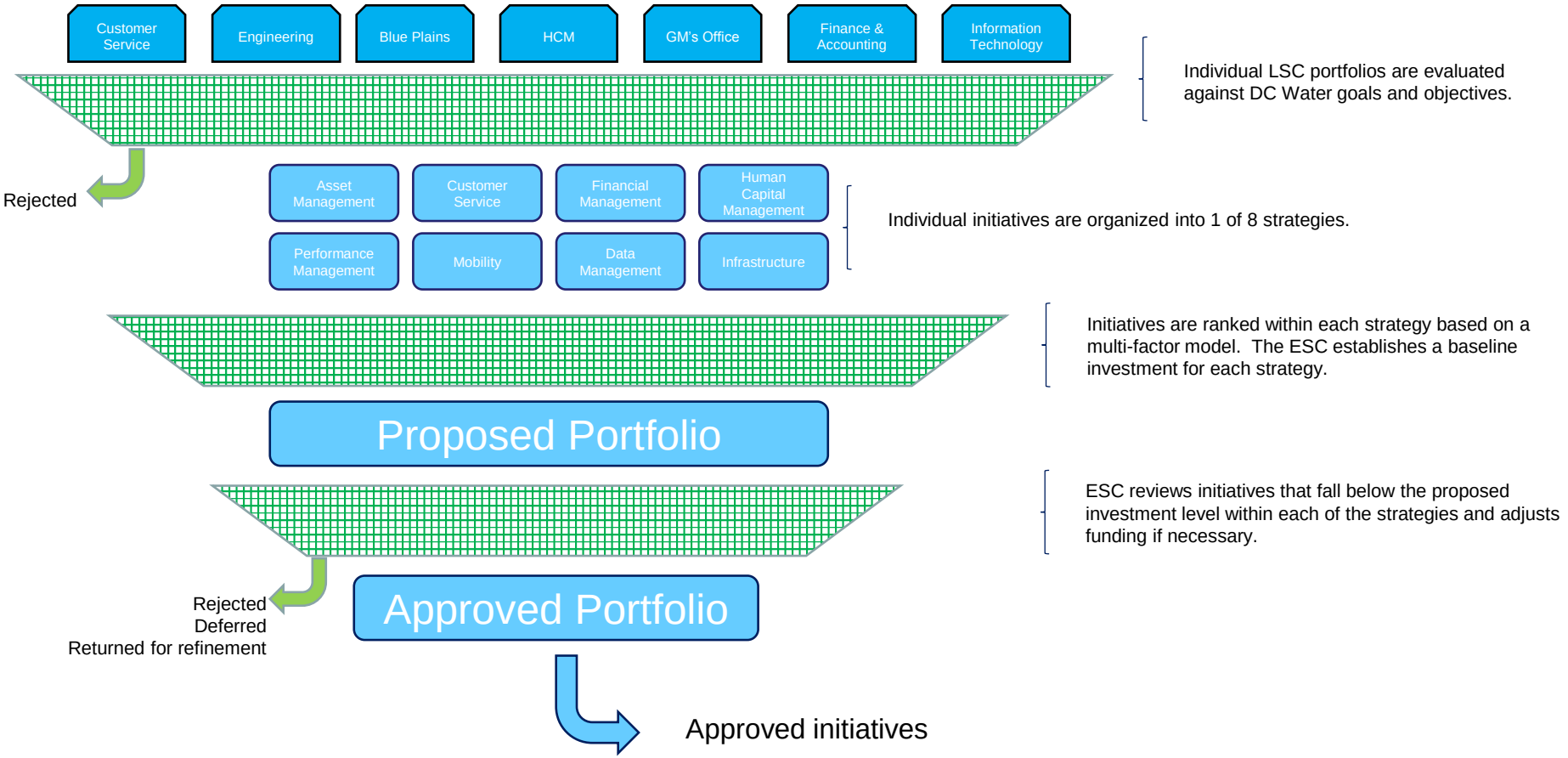
Mapping the Solution Landscape

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



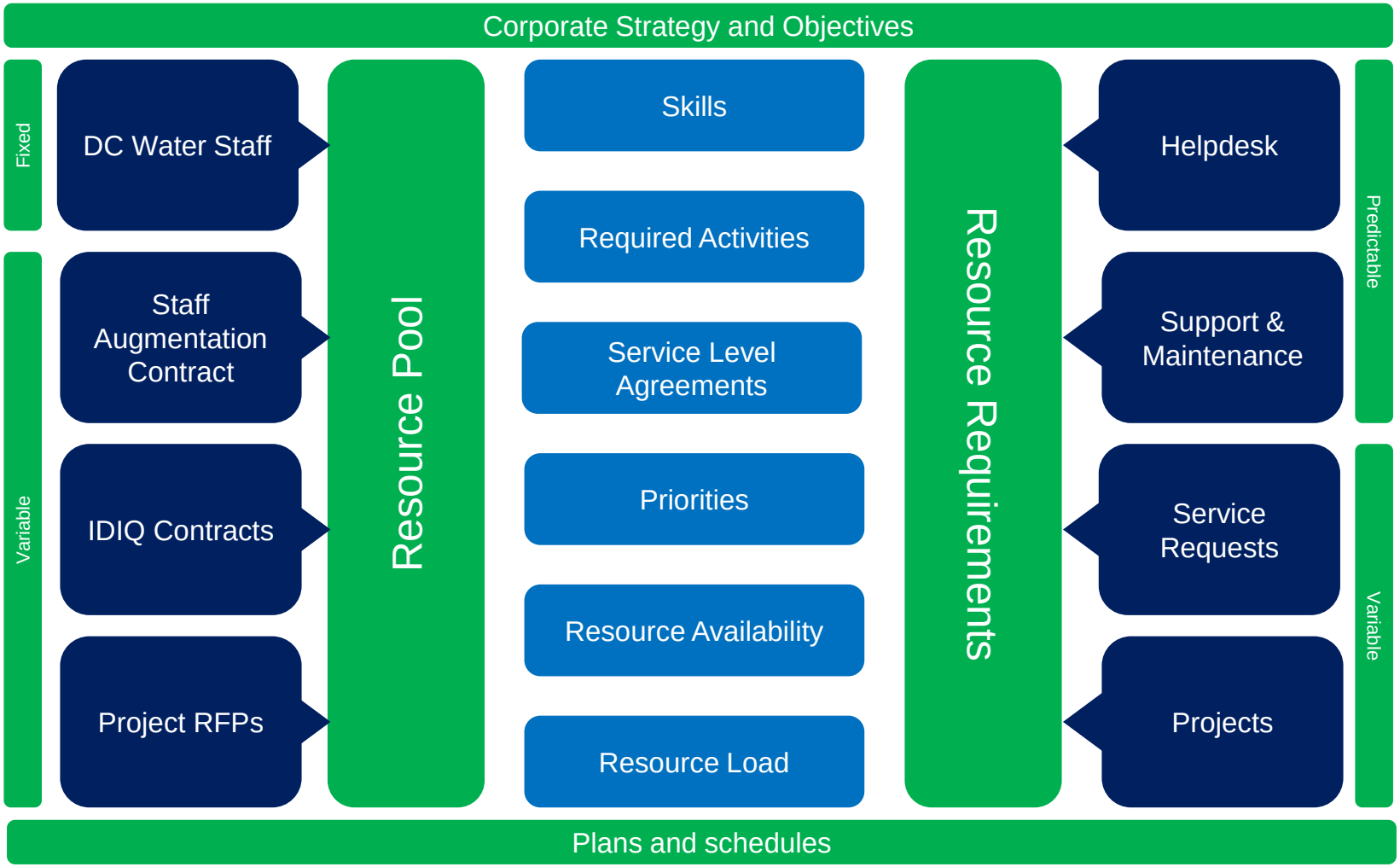
Achieving a Balanced Portfolio

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.



Major Project Roadmap

Reflects Top 10 major initiatives planned and/or underway.