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, January 17, 2019
9:30 a.m.

	I.	**Call to Order**	Howard Gibbs Vice Chair
9:30 a.m.	II.	**AWTP Status Update** 1. **BPAWTP Performance**	Aklile Tesfaye
9:45 a.m.	III.	**Water Operation Updates** 1. **Winter Update** 2. **Fire Hydrants** 3. **Water Quality**	Jason Hughes
10:10 a.m.	IV.	**Action Items** ***Joint Use*** ***1.*** Contract No. 17-PR-DOS-38 – Protective Services, Allied Universal Security Services	Dan Bae
10:25 a.m.	V.	**DC Water IT Strategy – Board Summary**	Tom Kuczynski
10:45 a.m.	VI.	**Other Business / Emerging Issues**	
10:55 a.m.	VII.	**Executive Session***	
11:00 a.m.	VIII.	**Adjournment**	Howard Gibbs Vice Chair

* 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. 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, DWE: Provide additional detail regarding specific impacts to sewage pumping stations for both the 100-year and 500-year flood scenarios. **[Target: February 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: February 2019]**
4. Director, Procurement: Provide update to the Committee on the projected future consumption of Ferric Chloride by the Blue Plains Treatment Plant. **[Document forwarded to BOD Secretary on 1/8/19]**

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BLUE PLAINS ADVANCED WASTEWATER TREATMENT PLANT STATUS UPDATE

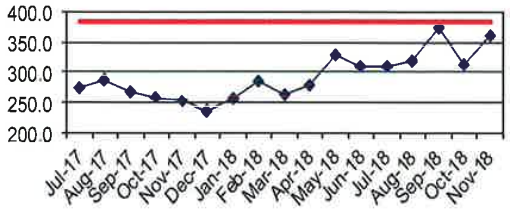
ENVIRONMENTAL QUALITY AND OPEATIONS COMMITTEE JANUARY 2019

Note: The Blue Plains Advanced Wastewater Treatment Plant (BPAWTP) status update includes a summary of performance during November 2018. The one-month delay is necessary to allow sufficient time to verify the quality of data required to prepare the performance report and complete internal review, prior to inclusion in the report to the Committee. This revised timeline will be adopted for future reports (i.e. December 2018 performance report will be included in the February 2019 Committee report, etc.)

BLUE PLAINS ADVANCED WASTEWATER TREATMENT PLANT
PERFORMANCE REPORT – NOVEMBER 2018

Average plant performance for the month of November, 2018 was excellent with all effluent parameters well below the seven-day and monthly NPDES permit requirements. The monthly average influent flow to complete treatment was 362 MGD. There was 318 million gallons of treated captured combined flows directed to Outfall 001 during this period. The following figures compare the plant performance with the corresponding NPDES permit limits.

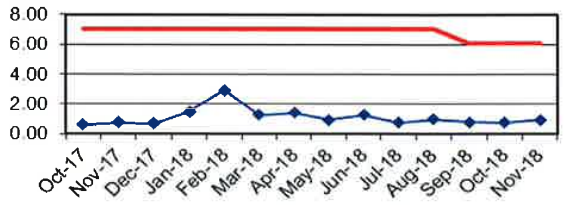
Plant Influent Flow (mgd)



Influent Flow — Average Design Capacity

This graph illustrates the monthly average influent flow to the plant. The design average flow is 384 MGD. Blue Plains has a 4-hour peak flow capacity of 555 MGD through complete treatment. Once the plant is at capacity, additional captured combined system flows from the tunnel up to 225 MGD receive enhanced clarification, disinfection and dechlorination.

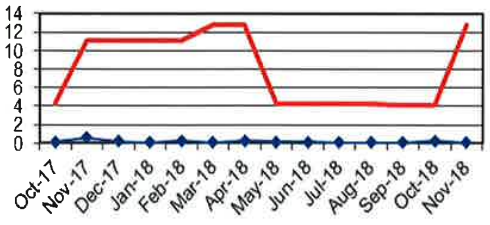
TSS (mg/l)



Effluent TSS — Permit Limit

Effluent Total Suspended Solids (TSS) is a measure of the amount of solid material that remains suspended after treatment. The effluent TSS concentration for the month averaged 0.93 mg/L, which is below the 6.1 mg/L permit limit.

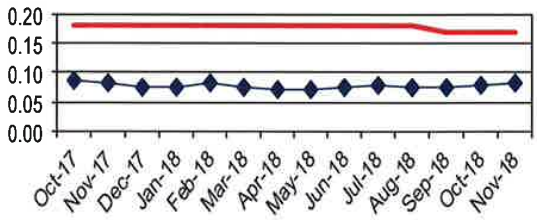
Ammonia (mg/l)



Effluent NH3 — Permit Limit

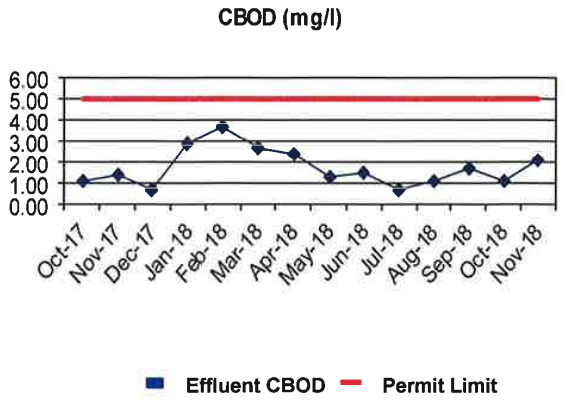
The Ammonia Nitrogen (NH3-N) is a measure of the nitrogen found in ammonia. For the month, effluent NH3-N concentration averaged 0.10 mg/L and is below the average 12.8 mg/L limit.

Total Phosphorus Annual Average (mg/l)

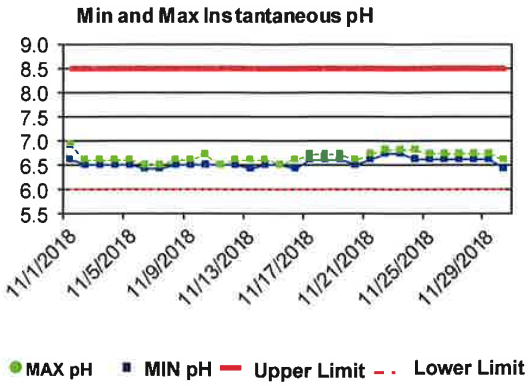


Effluent TP — Permit Limit

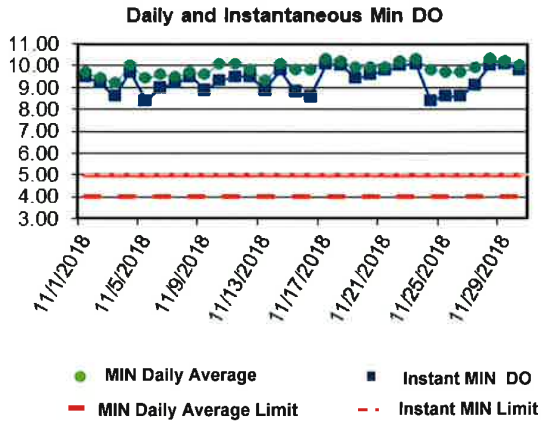
The Total Phosphorus (TP) is a measure of the particulate and dissolved phosphorus in the effluent. The annual average effluent TP concentration is 0.08 mg/L, which is below the 0.17 mg/L annual average limit.



Carbonaceous Biochemical Oxygen Demand (CBOD) is a measure of the amount of dissolved oxygen required for the decomposition of organic materials. The effluent CBOD concentration averaged 2.09 mg/L, which is below the 5.0 mg/L limit.

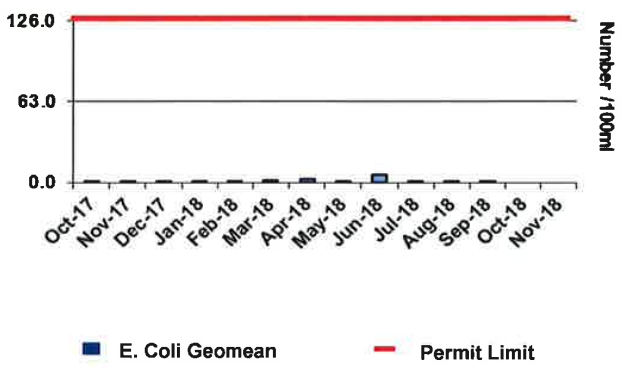


pH is a measure of the intensity of the alkalinity or acidity of the effluent. The minimum and maximum pH observed were 6.4 and 6.9 standard units, respectively. The pH was within the permit limits of 6.0 and 8.5 for minimum and maximum respectively.



Dissolved Oxygen (DO) is a measure of the atmospheric oxygen dissolved in wastewater. The DO readings for the month are within the permit limits. The minimum daily average is 9.2 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.

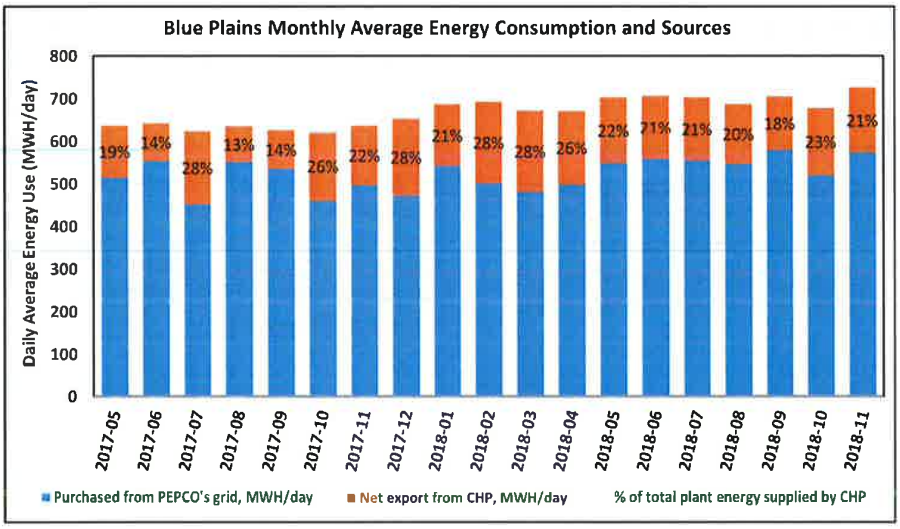
E. coli



E.coli is an indicator of disease causing organisms (pathogens). The E.coli permit limit is 126/100mL. The E coli geometric mean is 1.4 /100mL, and well below the permit limit.

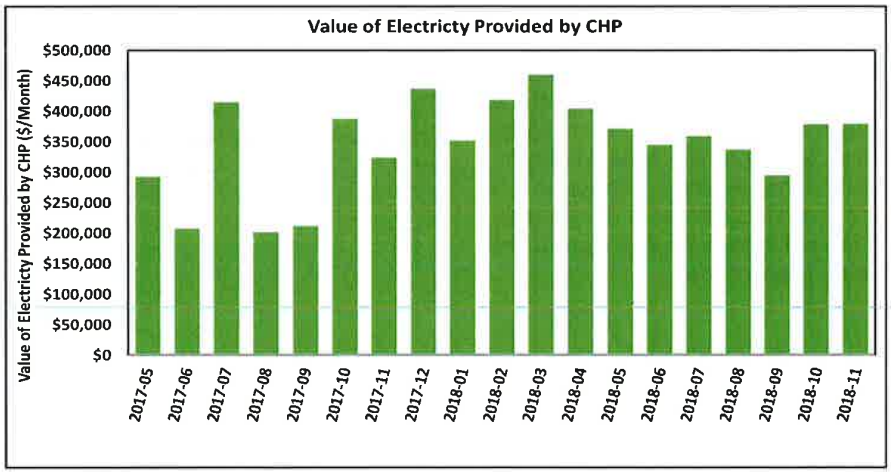
Blue Plains Electricity Generation and Usage

In November 2018, the average energy consumed at Blue Plains was 725 megawatt hours per day (MWH/day) or 2.00 MWH of electricity per million gallons of wastewater processed through complete treatment. The Combined Heat and Power (CHP) facility generated an average of 151.7 MWH/day, making up for 21% of total energy consumed at Blue Plains. The remaining 573.3 MWH/day was purchased from PEPCO.



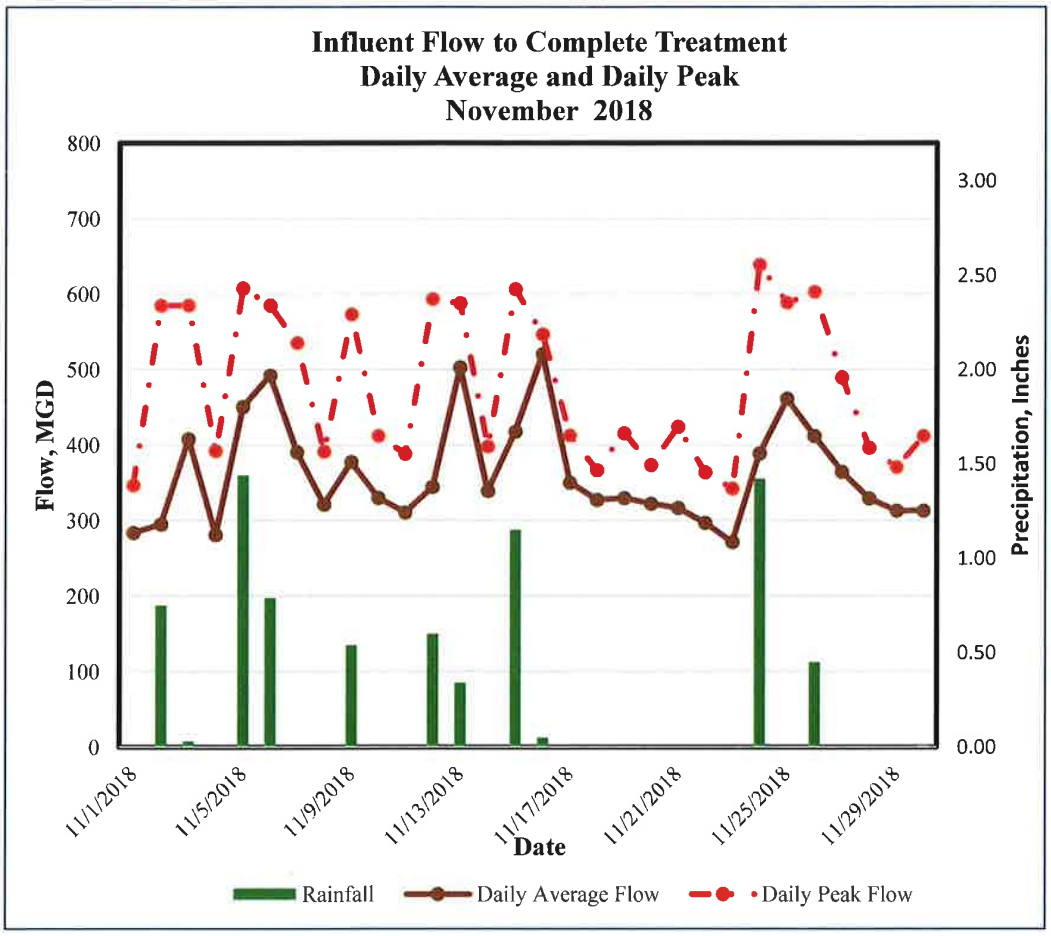
The graph above is based on power monitors installed at the Main Substation and CHP, and reflects average energy consumed at Blue Plains in MWH/day. Of the total use, the energy purchased from PEPCO and net energy supplied by CHP are indicated by the blue and orange highlights, respectively.

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



Wet Weather Impact on Plant Performance

During the month of November 2018, the Washington Metropolitan Region received record above average precipitation (7.57 inches vs normal of 3.17 inches) as measured at the National Airport. The wet weather event that occurred during the last week of November resulted in peak flows through complete treatment exceeding 640 MGD. The plant's performance was excellent and the event had minimal impact on the quality of the effluent discharge through the complete treatment outfall. All effluent quality parameters were below the weekly and monthly average NPDES permit limits.



Wet Weather Treatment Facility (WWTF) at Blue Plains

Brief Description

The Wet Weather Treatment Facility at Blue Plains provides treatment for Combined Sewer Overflows (CSO) conveyed through the Long Term Control Plan (LTCP) tunnel systems to Blue Plains. With a design capacity of 250 MGD, the facility consists of sub systems including- a flow surcharge wet well and coarse screens, upstream of five 3,000 Horse Power (HP) Tunnel Dewatering Pumps (TDPs). The TDPs lifts the flow 156 ft to the above ground Enhanced Clarification Facility (ECF), which comprises of fine screening, grit removal, and high rate clarification (HRC). The effluent from HRC is disinfected and dechlorinated before it's discharged through Outfall 001. When flow rates to the main plant are below the permitted peak flow rates of 555, the effluent from the HRC (or a portion of it) is directed to the main plant for complete treatment. On an average year, the facility is designed to receive approximately 2.6 billion gallons of CSOs and provide treatment with effluent total suspended solids quality comparable to that of Secondary Treatment effluent. The WWTF, along with the first section of the Anacostia Tunnel System were placed in operation, three days in advance of the March 23rd Consent Decree date.

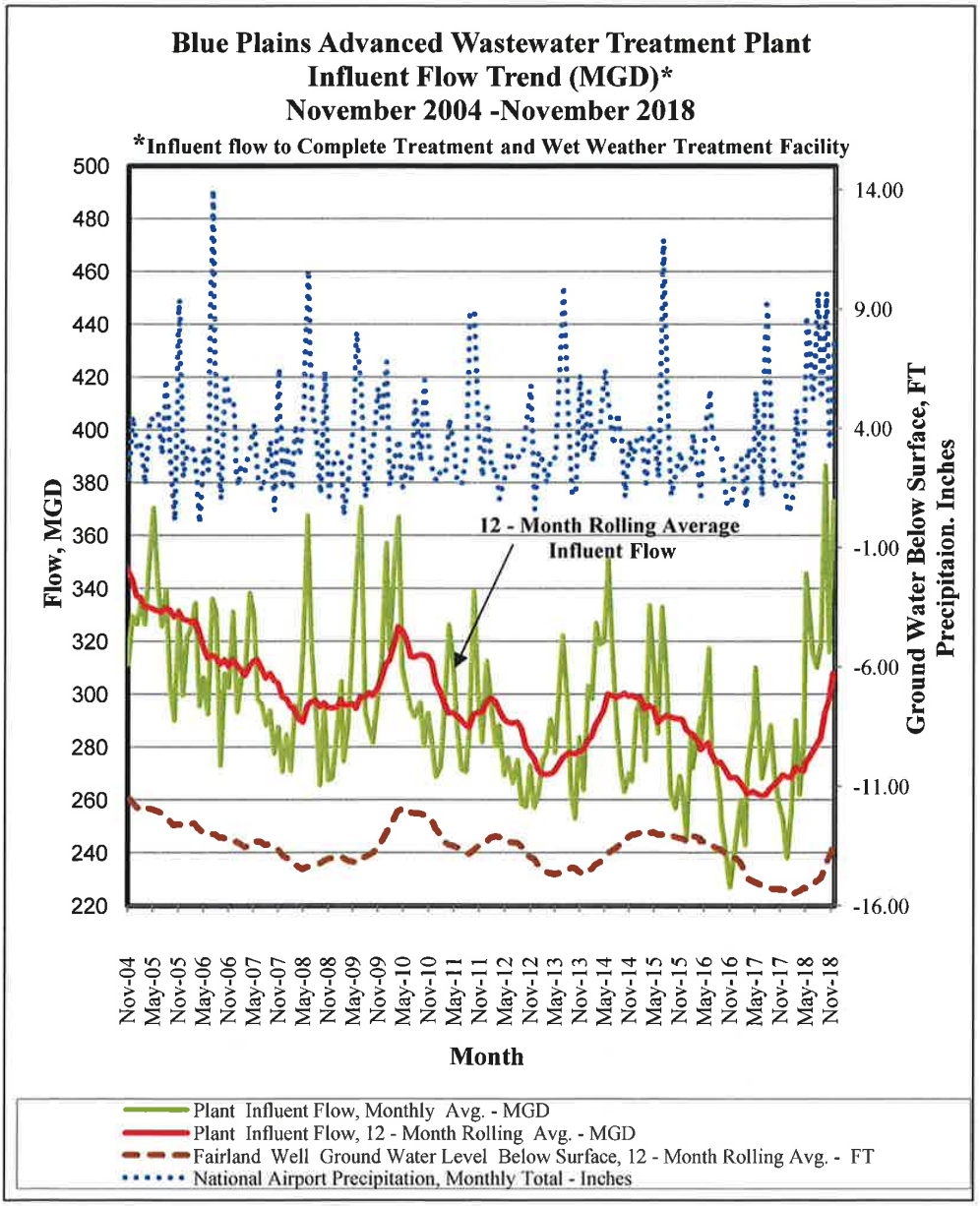
Aerial rendering of the Wet Weather Treatment Facility

Performance

During the month, a total of 735 million gallons (MG) of CSO captured in the tunnel system, was pumped, and treated using the ECF. A portion of the treated flow or 417 MG was directed to the main plant to maximize complete treatment and the remaining portion of the treated captured combined flow, or 318 MG, was disinfected, dechlorinated and discharged through Outfall 001. The quality of the effluent discharged was within anticipated ranges. Since the commissioning of the first section of the Anacostia River Tunnel Systems and the WWTF on March 20, 2018 and including the wet weather events that occurred in November 2018, the total volume pumped and treated through the WWTF is 4,140 MG. During the same period, over 800 wet tons of screenings and grit (trash, debris, sediment) were removed, that would otherwise have been discharged into the Ancostia River.

Plant Influent Flow Trend

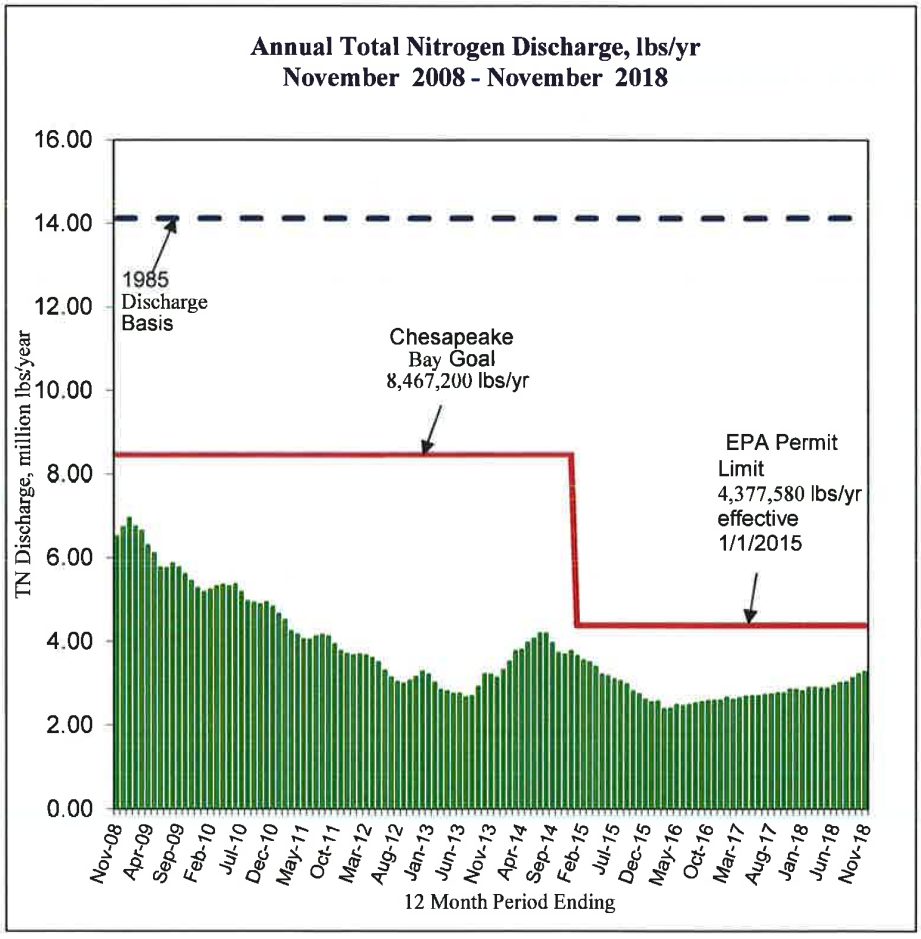
The graph below shows a long-term influent flow trend to the plant ending November 2018. While for any given month the flow is weather dependent, the 12-month rolling average influent flow exceeded 300 MGD for the first time since December 2010.



Blue Plains Total Nitrogen (TN) Removal – Performance

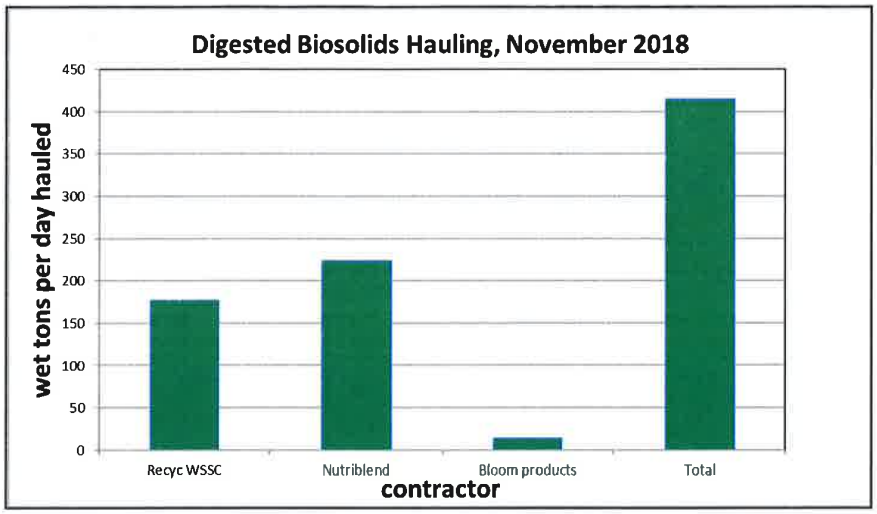
The graph below shows 12-month rolling TN discharge, in million pounds per year, over a 10-year period ending November 2018. In November 2018, the monthly average TN concentration and total load in the complete treatment effluent were 3.61 mg/L and 327,045 lbs., respectively.

The total pounds of nitrogen discharged in the complete treatment effluent during the current calendar year (through November 2018) is 3,065,796 lbs and on track to remain below the NPDES permit discharge limit of 4,377,580 lbs. /year. The performance corresponds to average flow of 309 MGD, maximum month flow of 372 MGD, and average wastewater temperature above 16 °C observed during the period. The Blue Plains Enhanced 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.

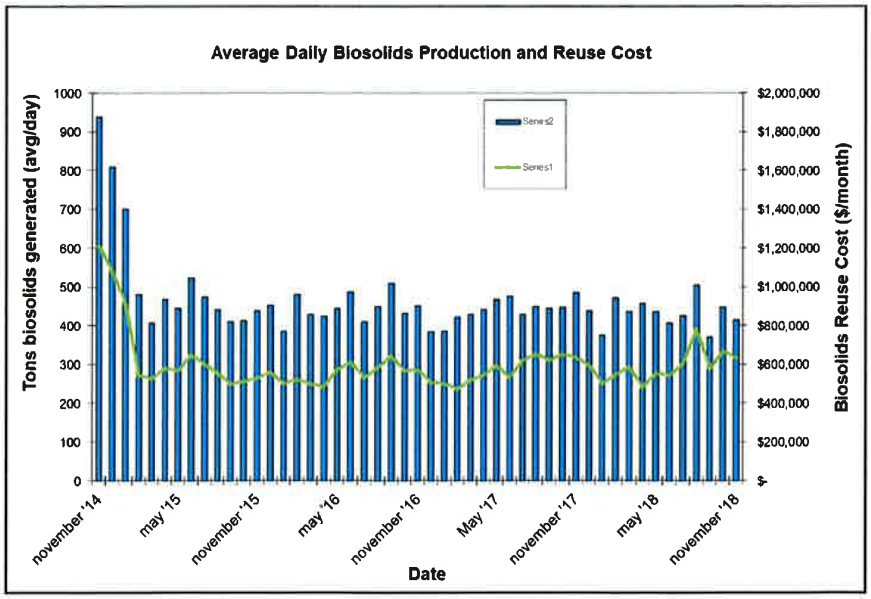


RESOURCE RECOVERY

In November, biosolids hauling averaged 414 wet tons per day (wtpd). The average percent solids for the Class A material was 32.4%. The average quanities of Class A biosolids transported and applied on farms by the two major contracts (WSSC's Recyc and DC Water's Nutriblend) and the quantites marketed as Bloom are shown on the graph below. In November, 410 wet tons of Bloom were distributed to 9 customers.



The graph below shows average daily biosolids produced and the associated monthly cost for reuse (transportation and application cost) for a four-year period ending November 2018. In November, diesel prices averaged $3.47/gallon, and with the contractual fuel surcharge, the weighted average biosolids reuse cost (considering the marketed material) was $43.81 per wet ton.

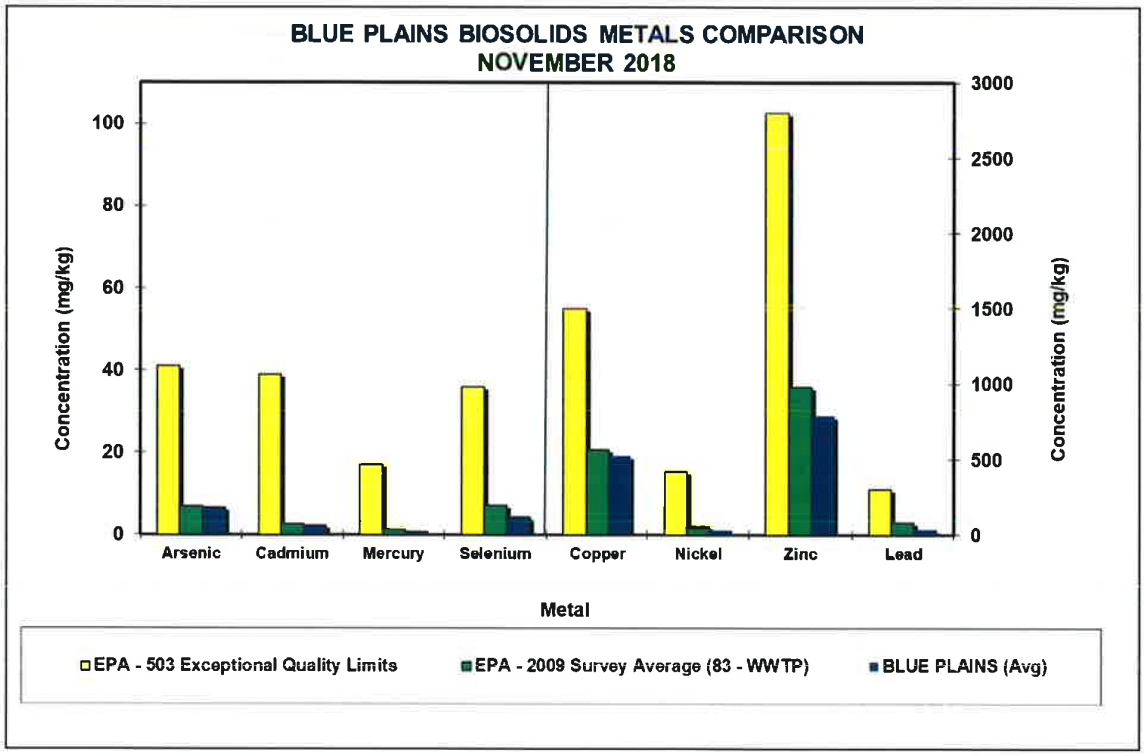


Product Quality

All biosolids produced during the month of November met Class A Exceptional Quality (EQ) requirements required by EPA.

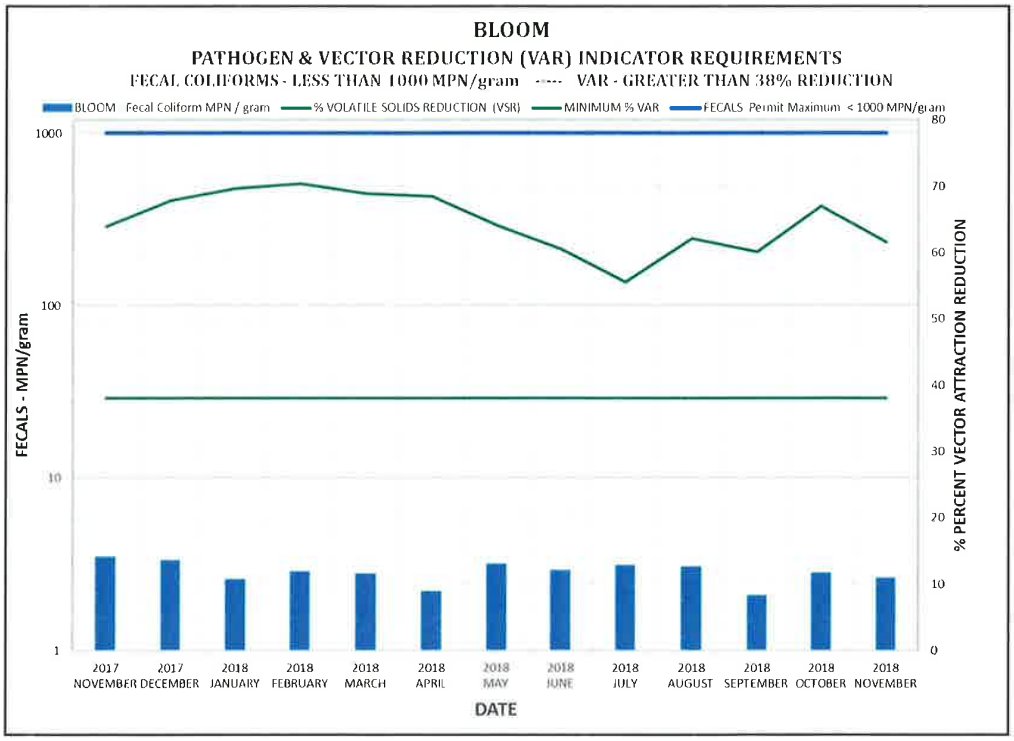
Heavy Metals

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).



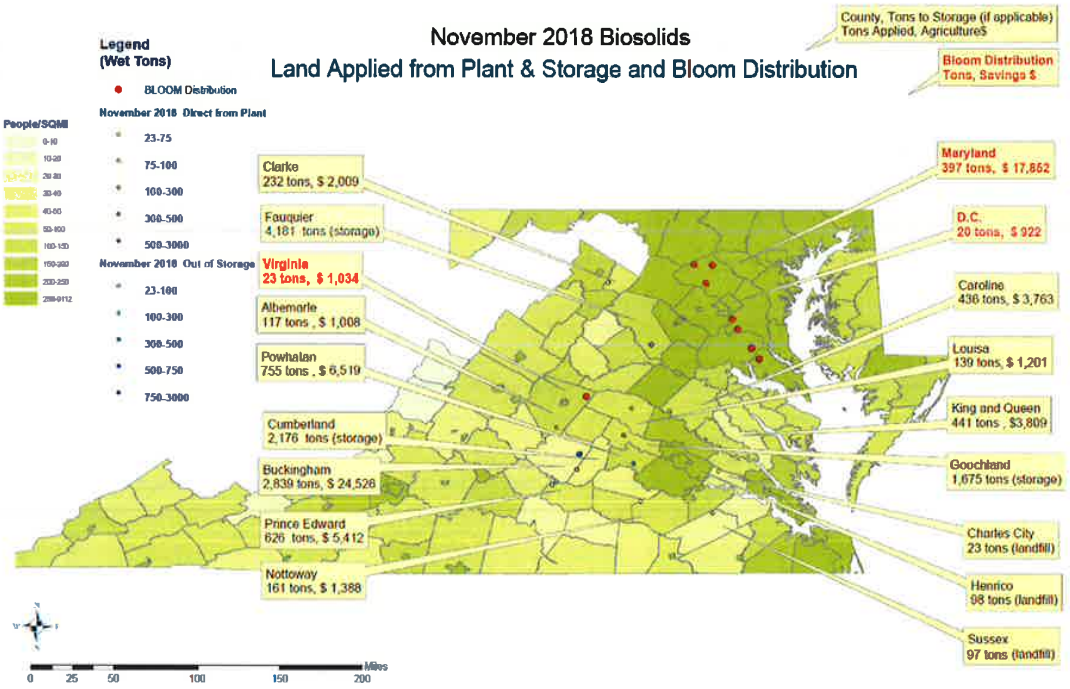
Vector Attraction Reduction and Fecal Coliform

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 Attrraction Reduction is measured by the reduction in Volatile Solids (VS) or organic compounds that are 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 organisim (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 Reuse and Value Map

This map shows where Bloom was reused on agricultural land and sold into the market as a soil amendment product. The numbers represent the value of the product applied in each county, which accounts for the nitrogen value in the biosolids.

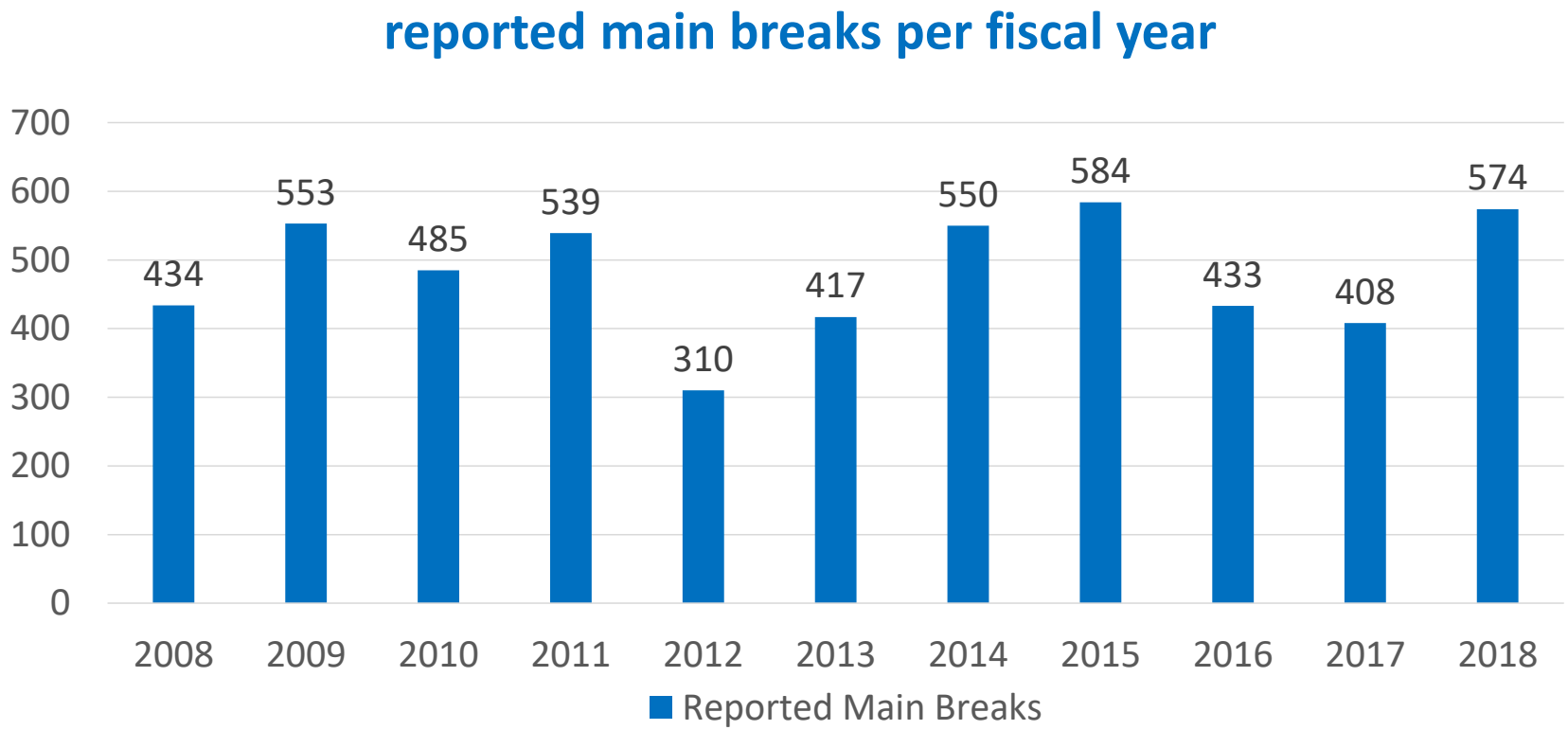


water operations winter preparedness

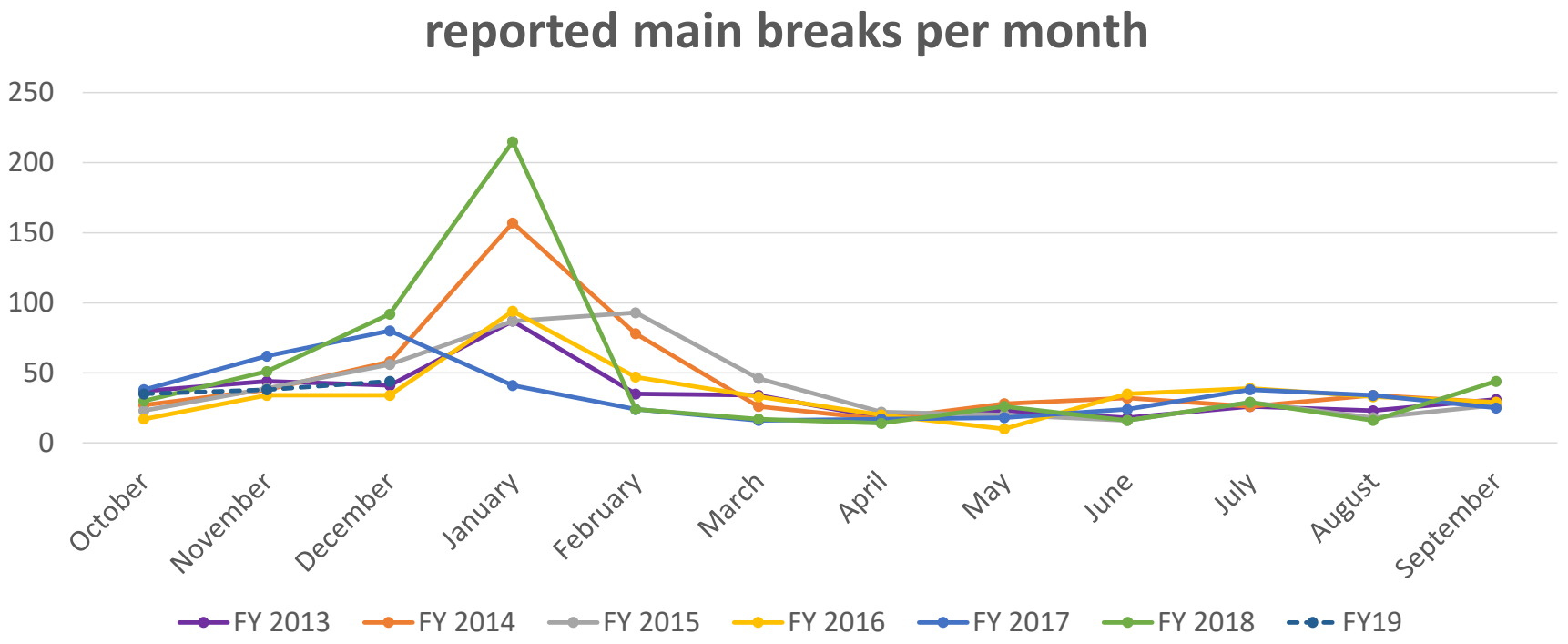
Environmental Quality and Operations Committee

Thursday January 17, 2019

historical glance: by the year



how many is too many?



preparedness

- shift staff to night operations (valve ops and system repairs)
  - normal tour of duty from 730am-400pm, 330pm-1200am, and 1200am-800am
  - additional winter tour of duties from 130pm-1000pm and 330pm-1200am
- coordinate winter PM schedules and repairs with Fleet Services
  - prioritization provided to operational vehicles
- coordinate material stock with Material Management
  - increased key inventory levels
- reaffirm additional support with DETS Construction
  - reviewed activation and processing SOP's
  - evaluated and confirmed funding sources
- Office of Emergency Management on high alert
  - incident management team

questions

Status Report of Public Fire Hydrants for DC Water Services Committee - January 2, 2019

	October Cmte. Report (Oct 01, 2018)	November Cmte. Report (Nov 02, 2018)	December Cmte. Report (Dec 03, 2018)	January Cmte. Report (Jan 02, 2019)
Public Fire Hydrants:	9,881	9,882	9,998	9,996
In Service:	9,833	9,834	9,933	9,919
Marked Out-of-Service (OOS)	48	48	65	77
OOS - defective requiring repair/replacement	34	27	49	46
% OOS requiring repair or replacement (DC Water goal is 1% or less OOS)	**0.34%**	**0.27%**	**0.49%**	**0.46%**
OOS - due to inaccessibility or temp construction work	14	21	16	31

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 January 2, 2019 77

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	0	0	3	8	3	0	6	20
Needs Valve Investigation for Low Flow/Pressure or Shut Test for Replacement	0	0	0	2	0	1	6	9
Needs Replacement	0	0	0	2	3	1	11	17
Defective								**46**

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	8	0	0	2	6	16
Construction* - OOS	0	0	0	0	0	1	6	7
Obstructed Hydrant – OOS hydrant due to operation impeded by an obstruction.	0	0	0	0	0	0	8	8
Others								**31**

**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.*

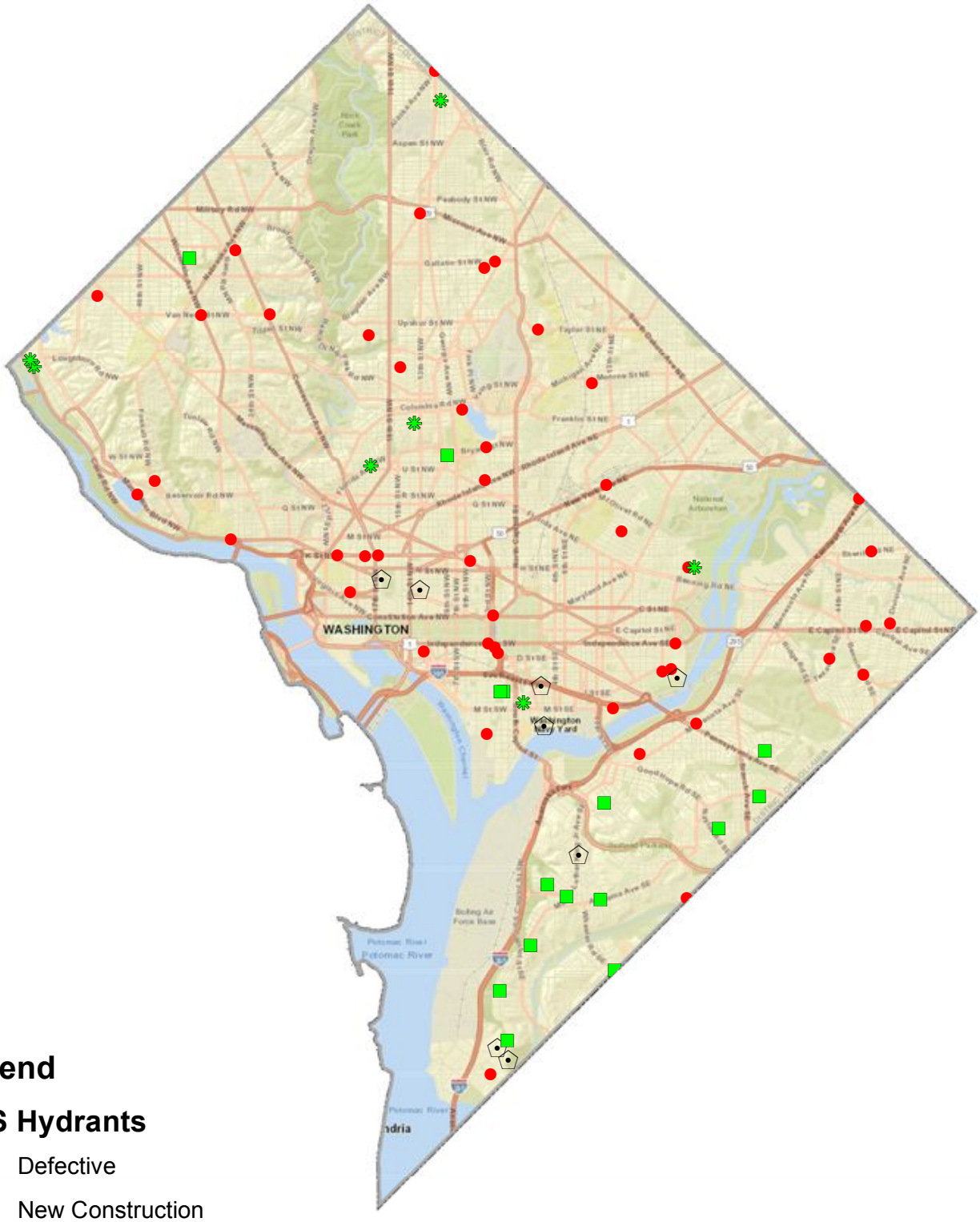
Status of Private Fire Hydrants-Based on FEMS Inspection Reporting

Private Hydrants: 1,300

- **In Service: 1,167**
- **Out-of-Service (OOS): 133**

Map of Public Out-of-Service Hydrants

January 02, 2019



Legend

OOS Hydrants

- Defective
- New Construction
- Obstructed
- Temporary

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

ACTION REQUESTED

GOODS AND SERVICES CONTRACT EXERCISE OPTION YEAR
Protective Services
(Joint Use)

Approval to execute option year one for protective services throughout all DC Water locations in the amount of **$5,300,000.00.**

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME:	SUBS:	PARTICIPATION:
Allied Universal Security Services 1551 N. Tustin Avenue Suite 650 Santa Ana, CA 92705	**Preeminent Protective Services Inc.** 1050 17th Street, NW, Suite 600 Washington, DC 20036 LSBE	21.3%

DESCRIPTION AND PURPOSE

Original Contract Value:	$5,857,481.76
Original Contract Dates:	02-15-2018 -– 02-14-2019
No. of Option Years in Contract:	4
Option Year 1 Value:	**$5,300,000.00**
Option Year 1 Dates:	**02-15-2019 – 02-14-2020**

Purpose of the Contract:

The purpose of this contract is to provide protective services for all of DC Water's facilities and personnel.

Contract Scope:

The contract will provide highly trained and reliable commissioned Special Police Officers (SPOs) to safeguard DC Water's property and personnel, to prevent and deter unauthorized access or removal of property, and to assist DC Water in all other security related matters.

Spending Previous Year:

Cumulative Contract Value:	02-14-2018 to 02-15-2019:	$5,847,481.76
Cumulative Contract Spending:	02-14-2018 to 12-31-2018:	$5,213,694.67

Contractor's Past Performance:

According to the COTR, the Contractor's quality of security services, timeliness of report and 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:**	Highest Rated Offeror
Commodity:	Goods and Services	**Contract Number:**	17-PR-DOS-38
Contractor Market:	Open Market with Preference Points for LBE and LSBE Participation		

BUDGET INFORMATION

Funding:	Operating	**Department:**	Department of Security
Service Area:	Blue Plains AWTP	**Department Head:**	Ivelisse Cassas

ESTIMATED USER SHARE INFORMATION

User	Share %	Dollar Amount
District of Columbia	83.75%	$4,438,750.00
Washington Suburban Sanitary Commission	12.09%	$640,770.00
Fairfax County	2.69%	$142,570.00
Loudoun Water	1.30%	$68,900.00
Other (PI)	0.17%	$9,010.00
TOTAL ESTIMATED DOLLAR AMOUNT	**100.00%**	**$5,300,000.00**

M Holman / 1/9/19
Maureen Holman Date
EVP of Administration

Dan Bae / 1/9/19
Dan Bae Date
VP of Procurement and Compliance

Matthew Brown / 1/11/19
Matthew Brown, Date
CFO and EVP of Finance & Procurement

_____ /_____
David L. Gadis, Date
CEO and General Manager

Making I.T. Happen

A Strategy for 2019 and beyond!

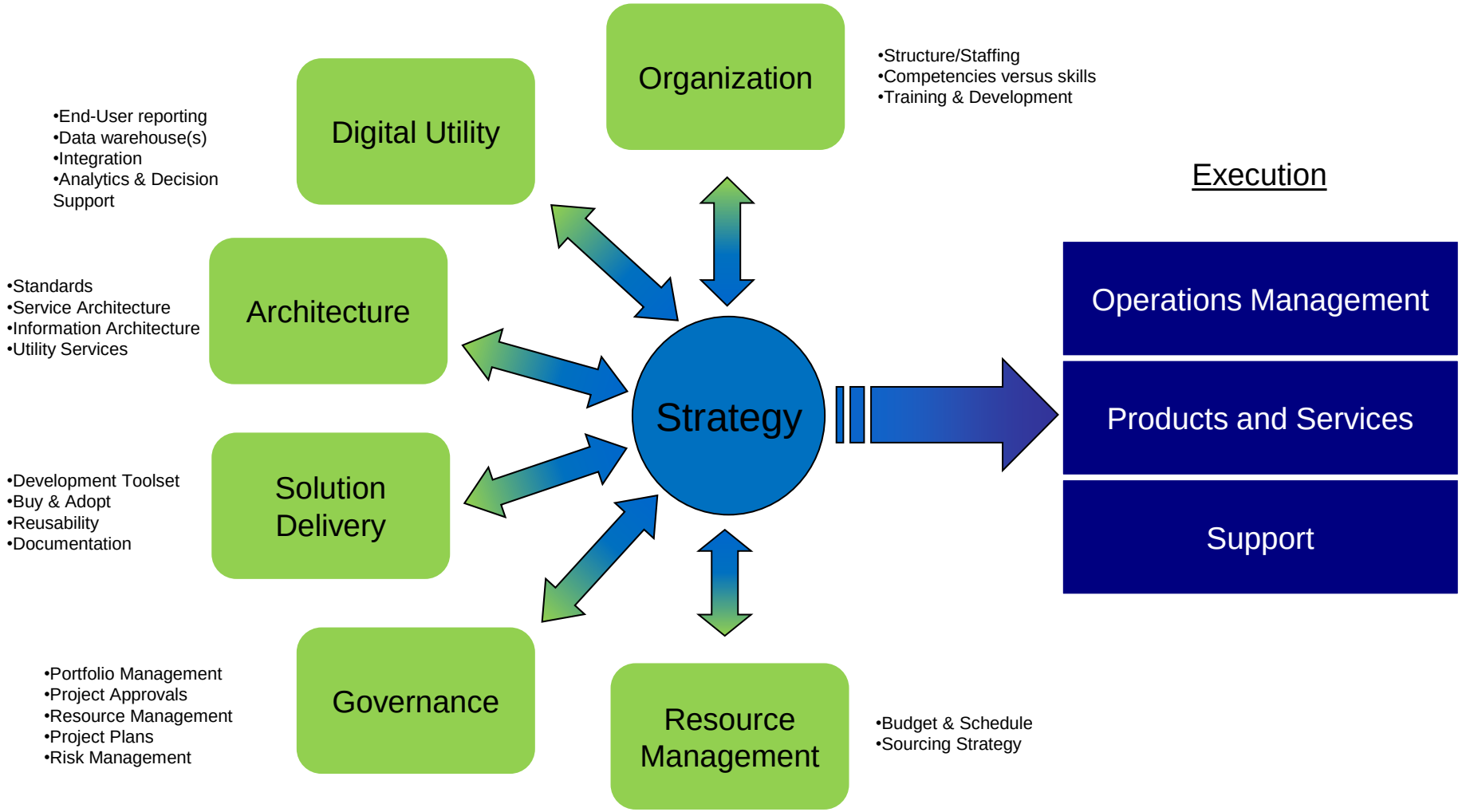
Board Summary

Presented to:

Environmental Quality and Operations Committee

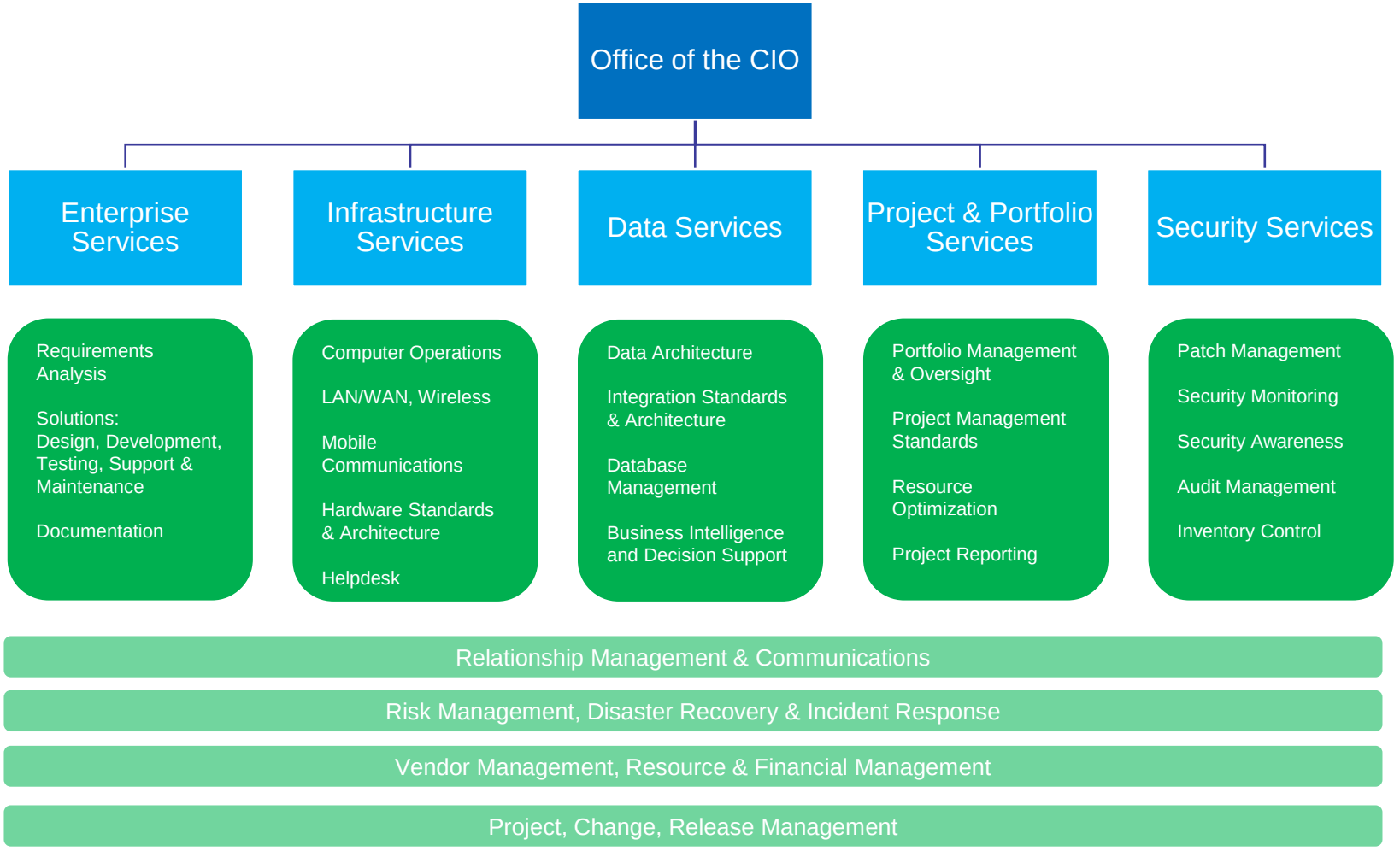
January 17, 2019

Six Focus Areas for the Strategy



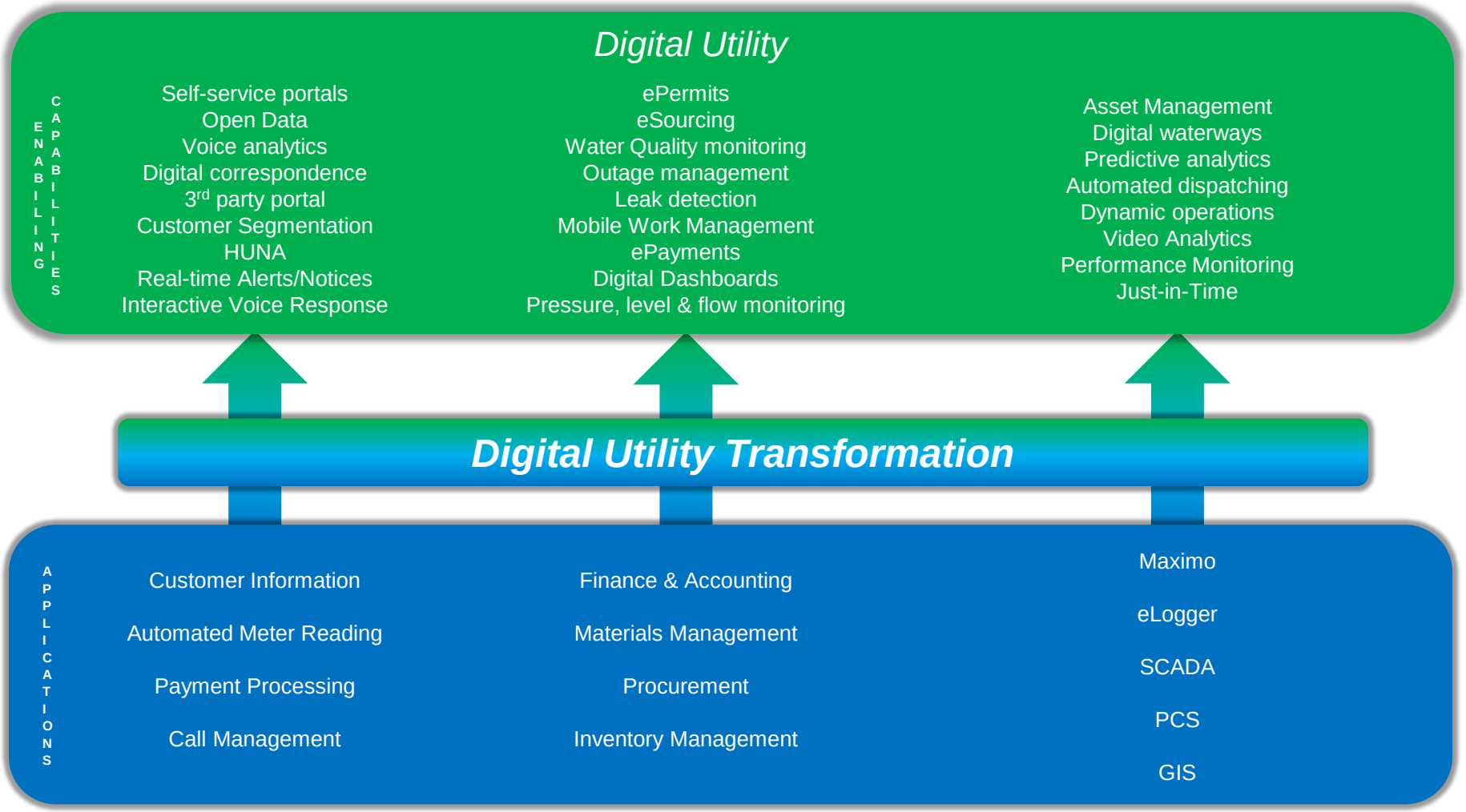
Organization Design

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

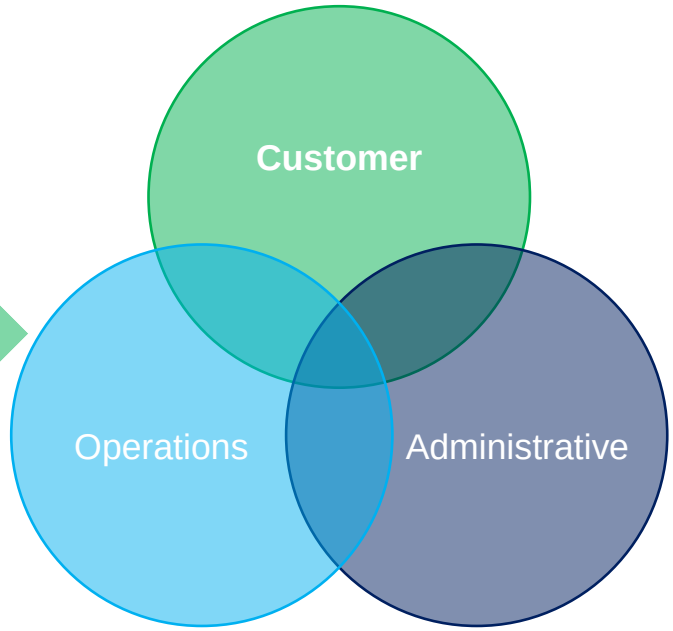
OPERATIONS
The information assets that define the operational activities the company performs. Systems that contain operational information include: PCS, SCADA, P16, Innovyze , eLogger, Maximo

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.

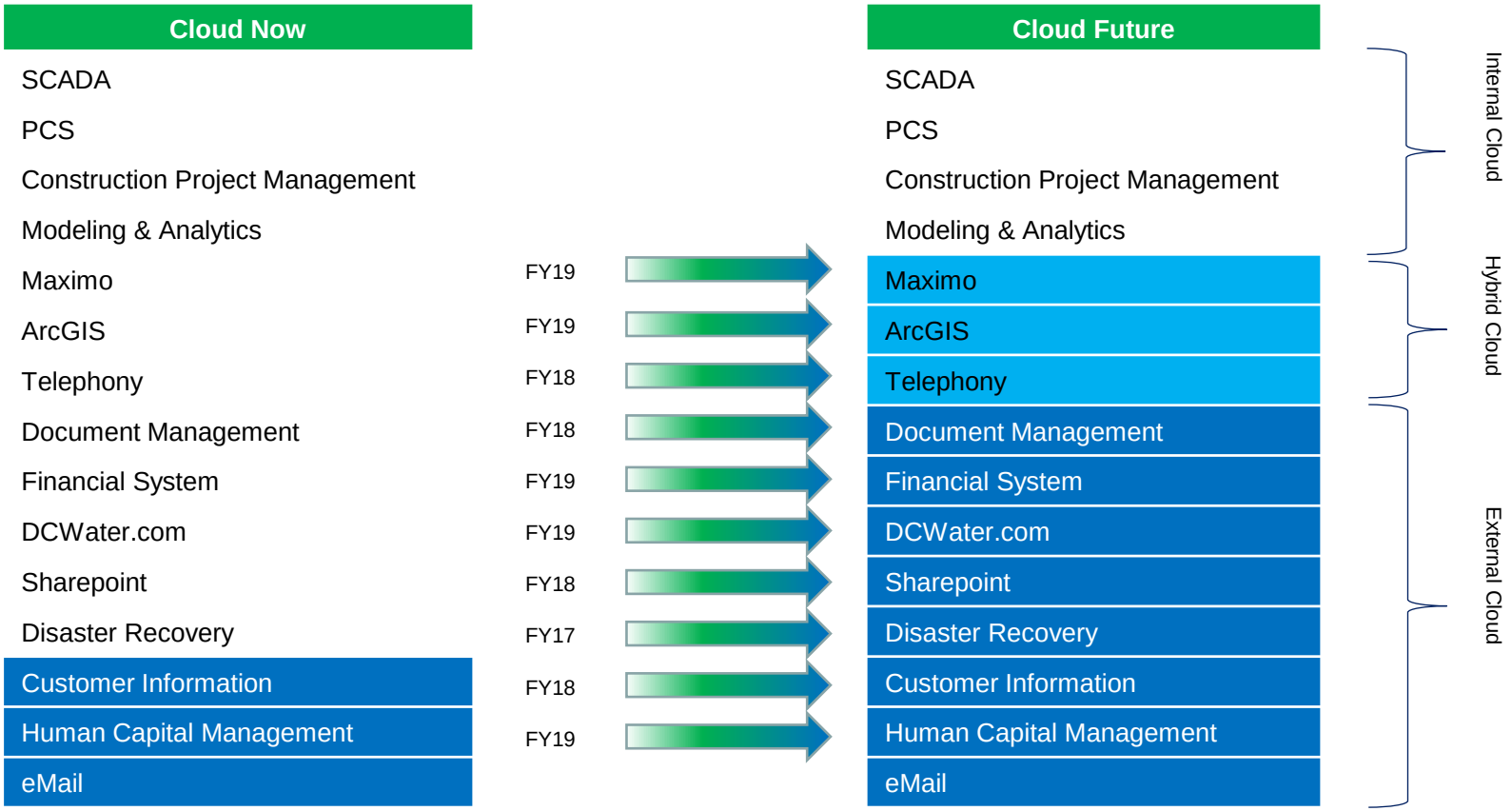
Digital Utility



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

Cloud First

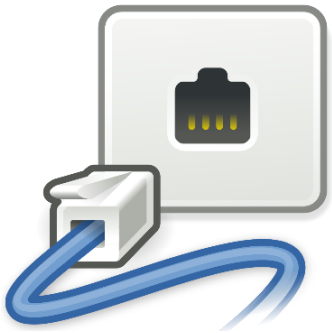
A Cloud First approach allows Information Technology to adapt quickly to changing organizational needs. Focusing internal solutions on the core business allows IT to reduce risk and increase overall system reliability at a lower Total Cost of Ownership (TCO).



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

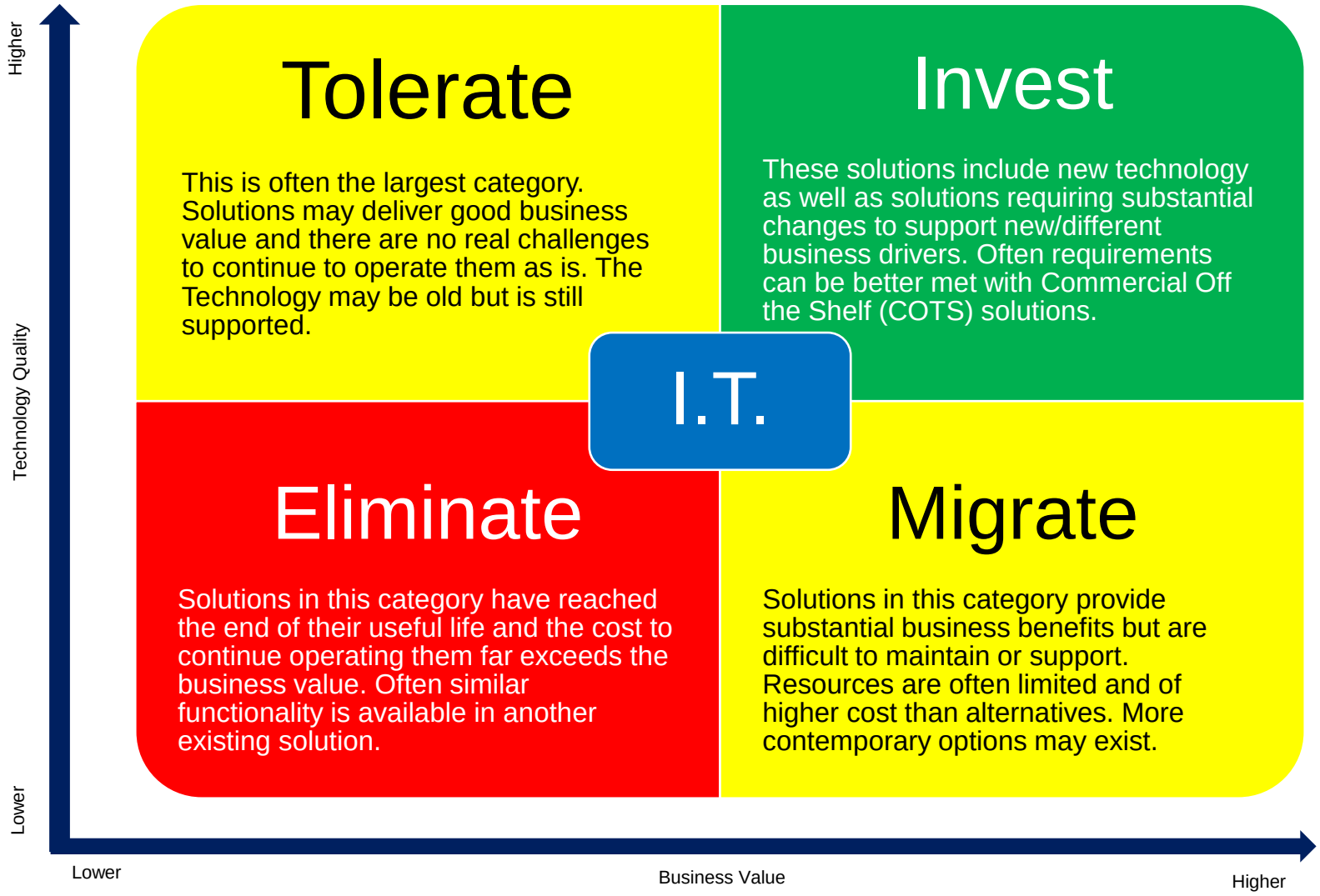
Advantages	Disadvantages
"Best Practices" can be adopted more quickly	Early resistance to change current practices may exist
Broader resource pool available to help with implementation, training & support	In demand resources can command a premium
Greater influence on new capabilities when a majority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

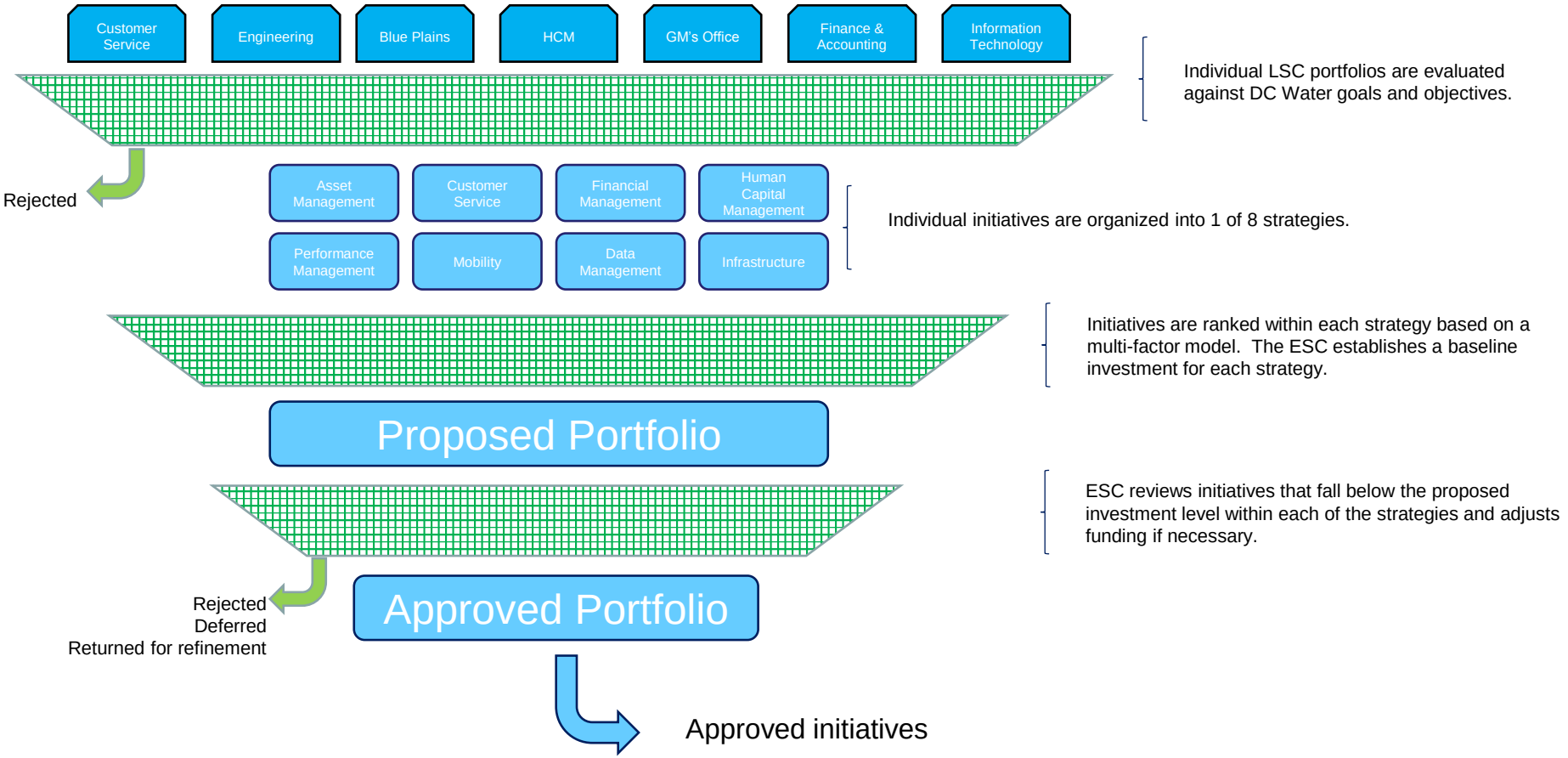
Mapping the Solution Landscape

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.