

DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY

Board of Directors

*Meeting of the
Environmental Quality and Sewerage Services
Committee*

*5000 Overlook Avenue, SW, Room 407
Thursday, March 21, 2013
9:30 a.m.*

- | | |
|--|----------------------------|
| I. Call to Order | Robert Hoyt
Chairperson |
| 9:30 a.m. II. AWTP Status Updates
1. BPAWTP Performance | Walt Bailey |
| 9:40 a.m. III. Status Updates: Potomac Interceptor Sewer
1. Potomac Pump Station
2. Odor Abatement Project | David McLaughlin |
| 9:50 a.m. IV. Action Items – Joint Use
1. Contract No. WAS-12-007-AA-SH – Nutri-Blend, Inc.
2. Contract No. DCFA #371-WSA – Hazen and Sawyer, PC
3. Contract No. 100020 – Ulliman Schutte Construction | Rosalind Inge/Len Benson |
| 10:00 a.m. V. Class A Biosolids Marketing Strategy | Chris Peot |
| 10:20 a.m. VI. Green infrastructure Performance Criteria | Carlton Ray |
| 10:35 a.m. VII. Permit Operations – Status Update | Brian McDermott |

10:50 a.m. VIII. Other Business/Emerging Issues

- | | |
|--|----------------|
| 1. GI Consent Decree Modification – Status Update | George Hawkins |
| 2. April Meeting Agenda – Blue Plains Construction Tour? | Len Benson |

11:00 a.m. IX. Adjournment

Robert Hoyt
Chairperson

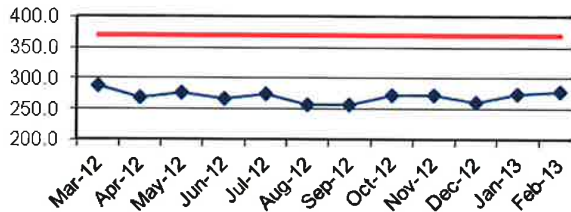
Follow-up Items from Prior Meetings:

1. Provide an update on the marketing strategy for Class A biosolids. ***{Scheduled for March 21, 2013 Committee Meeting}***
2. Provide an update on effect of new wastewater treatment projects on greenhouse gas emissions at Blue Plains. ***{Will provide at future Committee Meeting}***
3. Provide update on private-property sewer later replacement policy. ***{Will provide at future Committee meeting}***

DEPARTMENT OF WASTEWATER TREATMENT MONTHLY REPORT February 2013

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 278 MGD. There was no Excess Flow during this reporting period. The following Figures compare the plant performance with the corresponding NPDES permit limits.

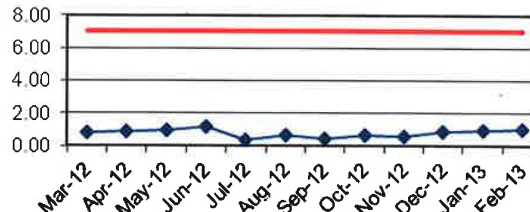
Plant Influent Flow (mgd)



■ Influent Flow — Average Design Capacity

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

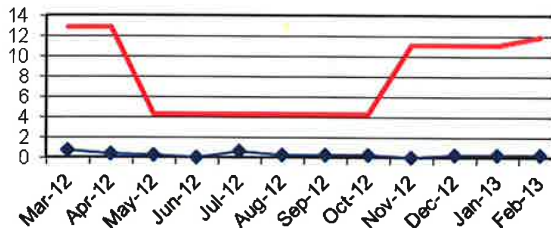
TSS (mg/l)



■ Effluent TSS — Permit Limit

Effluent Total Suspended Solids (TSS) is a measure of the amount of solid material that remains suspended after treatment. The effluent TSS concentration for the month averaged 1.03 mg/L, which is below the 7.0 mg/L permit limit.

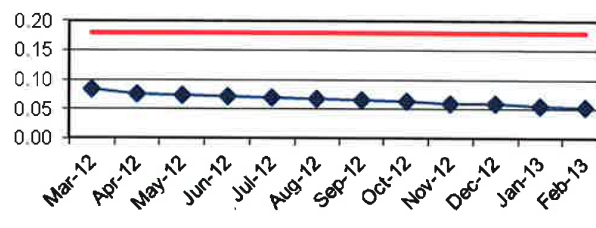
Ammonia (mg/l)



■ 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 0.25 mg/L and is below the average 11.1 mg/L limit.

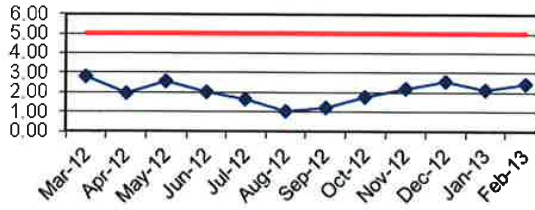
Total Phosphorus Annual Average (mg/l)



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

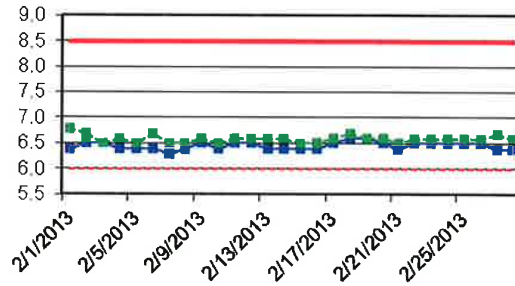
CBOD (mg/l)



■ 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 2.46 mg/L (partial month) which is below the 5.0 mg/L limit.

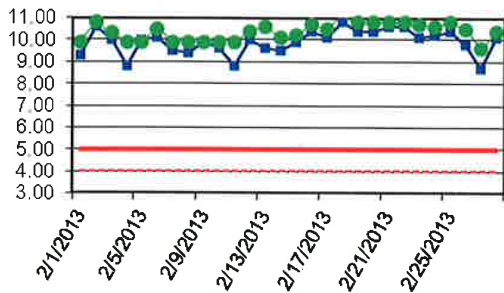
Min and Max Instantaneous pH



● 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 6.3 and 6.8 standard units respectively. The pH was within the permit limits of 6.0 and 8.5 for minimum and maximum respectively.

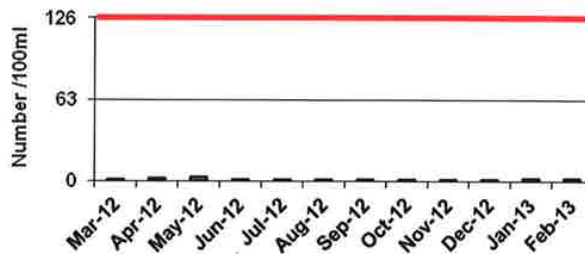
Daily and Instantaneous Min DO



● 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 9.6 mg/L. The minimum instantaneous DO reading is 8.7 mg/L. The minimum permit limits are 5.0 mg/L and 4.0 mg/L respectively.

E. coli



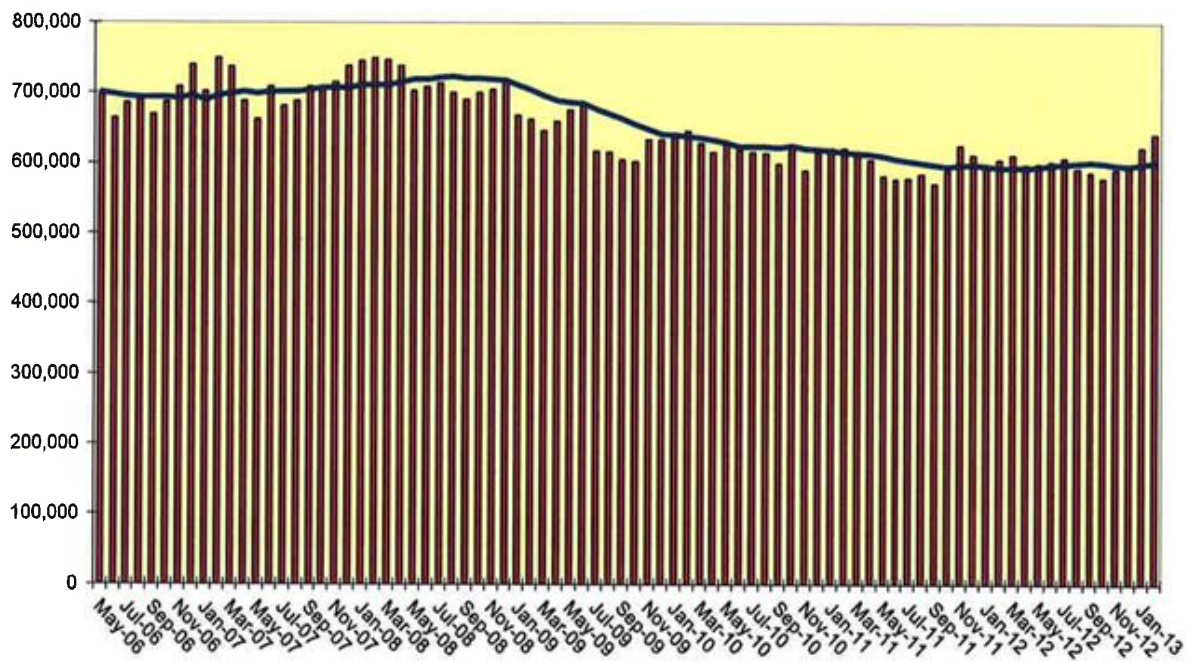
■ E. Coli Geomean — Permit Limit

E.coli is an indicator of disease causing organisms (pathogens). The E.coli permit limit is 126/100mL. The E coli geometric mean is 1.86/100mL, and well below the permit limit.

BLUE PLAINS ELECTRICITY USAGE

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

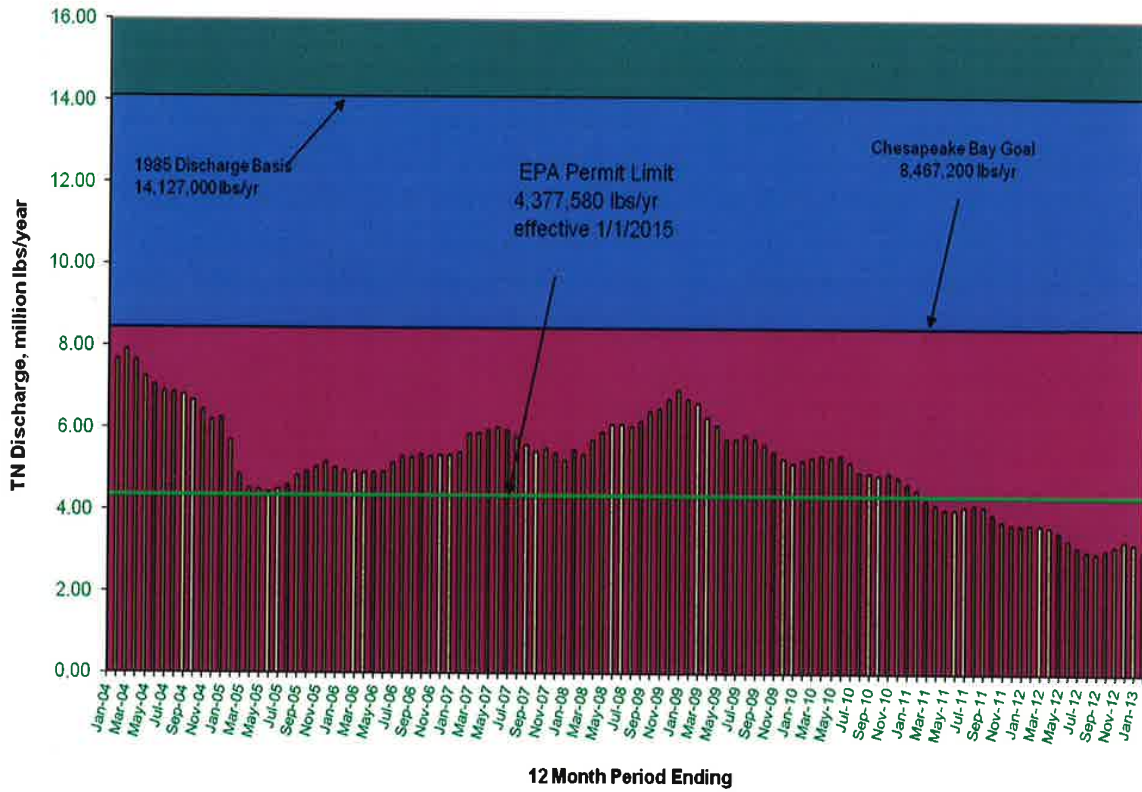
**Blue Plains
Electricity Used, kwh/day**



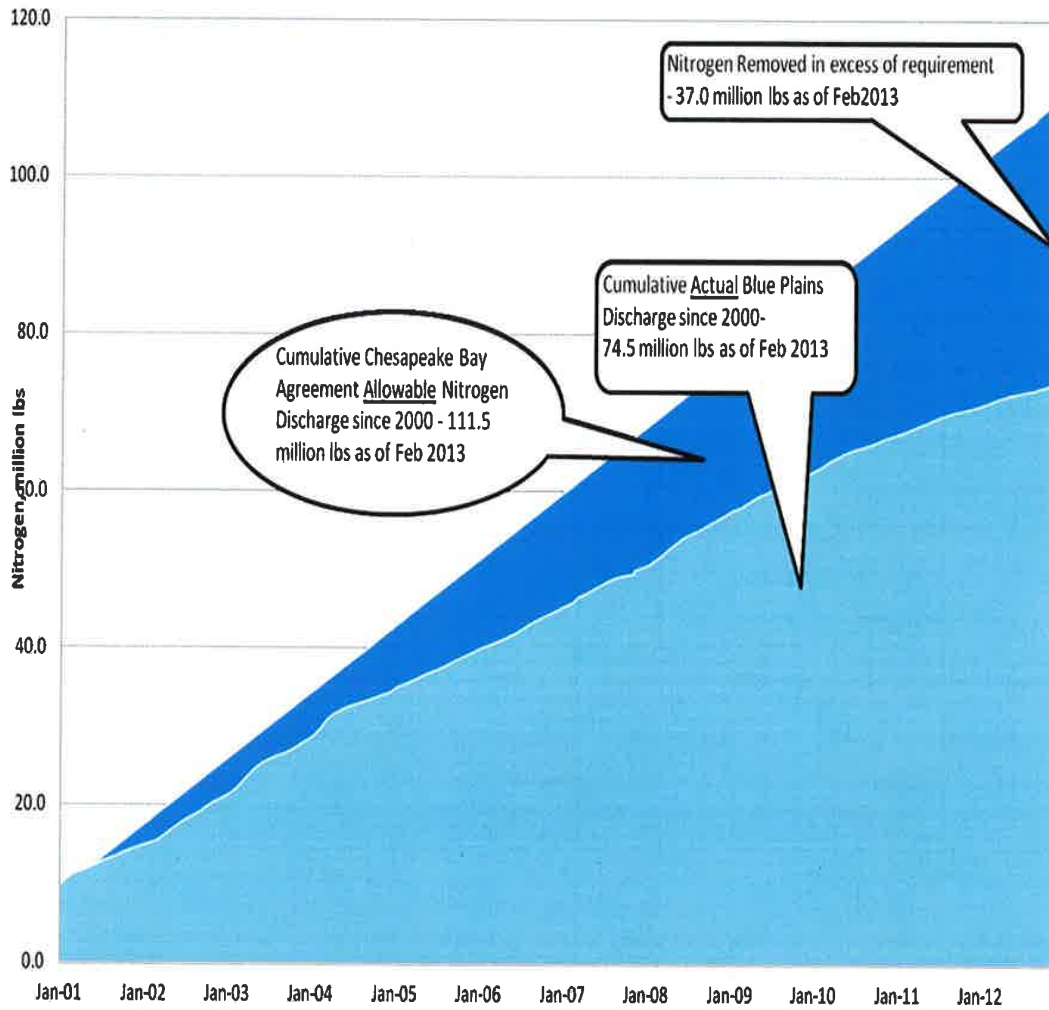
BIOLOGICAL NUTRIENT REMOVAL PERFORMANCE

During the month the full-scale BNR process produced an effluent with average total nitrogen concentration of 2.43 mg/l. The figure below shows Blue Plains effluent total nitrogen (TN) since the implementation of full scale BNR. The Figure shows Blue Plains meeting the Chesapeake Bay Goal of discharging less than 8,467,200 lbs/yr of TN.

Annual Total Nitrogen Load, lbs/yr



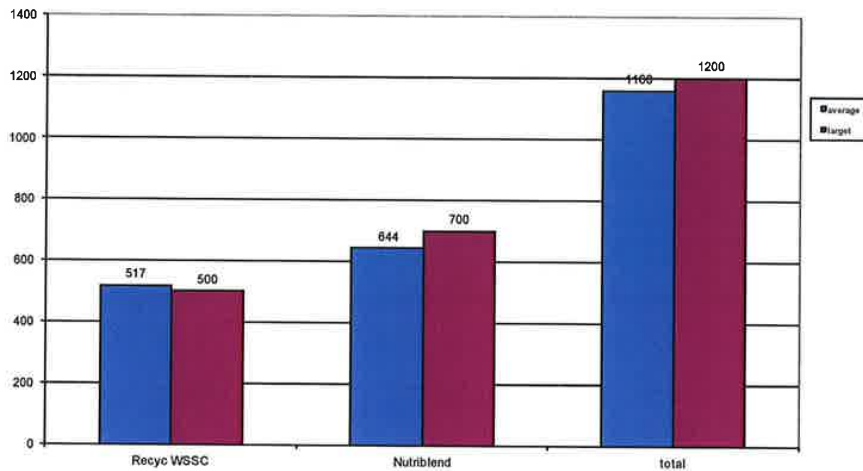
Cumulative Nitrogen Discharged Since 2000



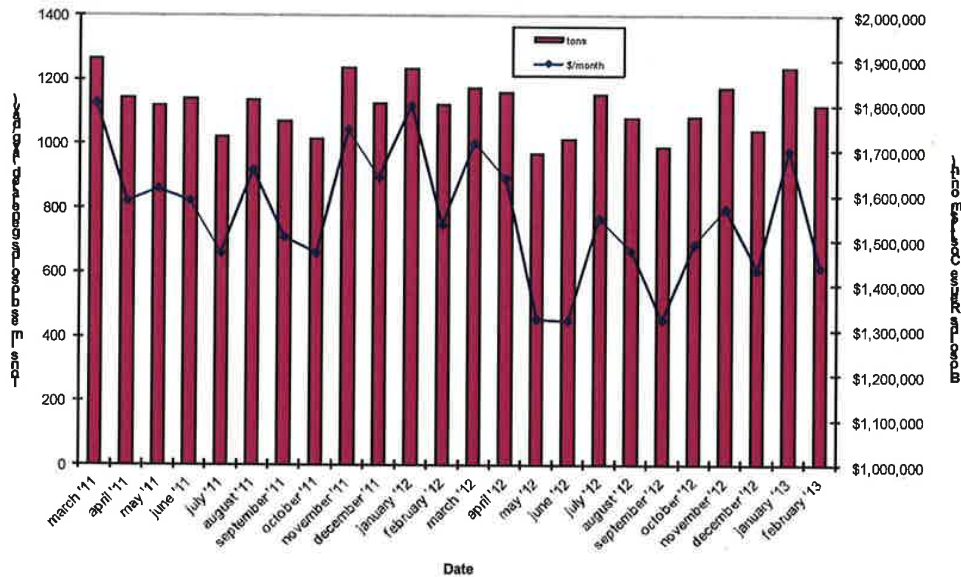
BLUE PLAINS BIOSOLIDS REPORT – JAN/FEB 2013

In February, biosolids hauling averaged 1160 wet tons per day. The graph below shows the hauling by contractor for the month of February. Average % solids for the unlimed cake was 25.4%. Average lime dose for the month was 23.3%. Nutriblend took 329.35 tons of biosolids to the Spottsylvania County compost facility. At the end of February the Cumberland County storage pad had 19,132 tons (~25,000 tons capacity), Ragsdale Pad had 3,093 tons, Harrison Pad had 1,585 tons, Wilmar Pad had 2,151 tons, and the Cedarville lagoon had 14,162 tons (~30,000 tons capacity).

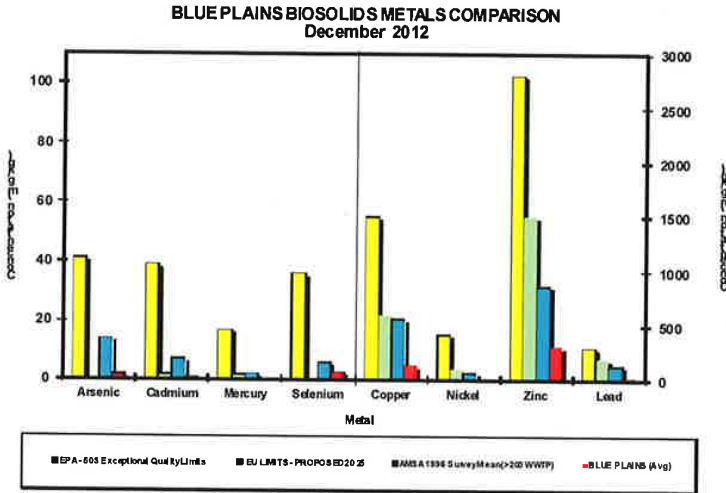
Average Daily Hauling by Contractor for February 2013



Average Daily Biosolids Production and Reuse Cost



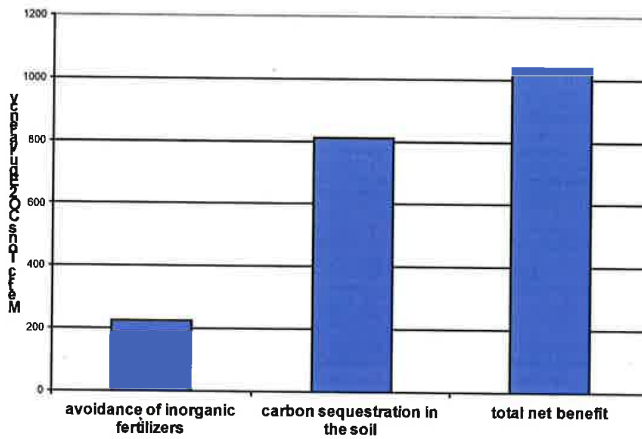
The graphs below show the EPA regulated heavy metals in the Blue Plains biosolids for the month of December 2012. As can be seen in the graphs, the Blue Plains levels are considerably below the regulated exceptional quality limits, the national average levels surveyed in 1996, and the European Union (EU) limits. The EU limits are more conservative than the USEPA limits, and Blue Plains biosolids metals content is lower than the EU standards as well.



Environmental Benefits

The quantity land applied coming directly from the plant and from storage facilities equaled 19,114 tons. Taking into account the fuel required to transport biosolids to the field, the net benefit of the land applied material is 1037 metric tons CO₂ equivalent avoided emissions. This is equivalent to taking 2,403,341 car miles off the road in the month of January (assumes 20 mpg, 19.4 lb CO₂ equivalent emissions/gallon gas – EPA estimate). The cumulative total avoided carbon emission since December, 2006 is 114,149 metric tons CO₂ equivalent.

DCWater Biosolids Recycling Program
Greenhouse Gas Balance Benefits
January 2013 Totals



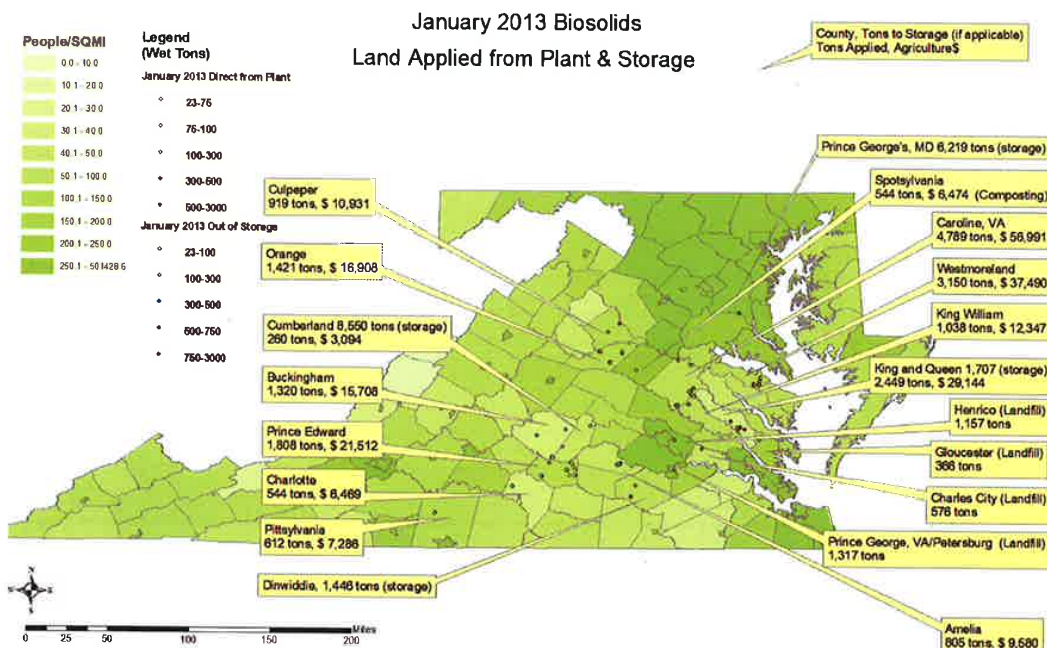
February Highlights

Staff attended the Water Energy Exchange (WEX) conference as a plenary speaker this month, presenting information on DC Water's current and future biosolids program, including the new thermal hydrolysis and digestion system, biosolids effect on crop drought resistance and yield, and the true value of the product we produce.

Staff attended a biosolids stakeholders meeting at the offices of the Water Environment Federation (WEF), during which WEF outlined its plans for moving forward in light of EPA ending its funding of the National Biosolids Partnership (NBP). WEF, at the urging of members, is going to help emphasize the value of biosolids, and help affect the paradigm shift of public perception from that of biosolids waste to biosolids product. The current industry paradigm is to pay someone to give it away for free to farmers, who later testify as to its monetary and agricultural value. WEF will help emphasize this value to regulators, members, and the public.

Staff attended a public meeting at the Stafford County Airport to discuss a permit to apply biosolids at the airport to help buffer pH and maintain vegetative cover. 10 years ago, DC Water applied lime stabilized biosolids (pH 12) to the airport to restore soils that had pH around 2.5, due to high pyrite (sulfur) concentrations. There is a small community to the north of the airport with whom we worked with last time, after they expressed some concerns. VA DEQ send notification letters to the neighbors inviting them to the meeting, and concern was low, as evidenced by the low turnout at the meeting.

Map of Blue Plains Biosolids Applications and Agricultural \$'s for January 2013



Clean Water Quality and Technology Group

Highlights of activities of the *research and development, laboratory and pretreatment* programs in the Clean Water Quality and Technology group are presented.

Research and Development Program

The research and development program started the first of two pilot trains for the mainstream deammonification process on February 4, 2013. The pilot capacity is about 600 L and will help demonstrate the feasibility of a new and more sustainable approach for nitrogen removal at the Blue Plains plant. The deammonification process uses the 'anammox' bacteria and its successful implementation can considerably reduce both methanol and energy requirements for the Blue Plains plant.

The pilot was built entirely by DC Water staff and will be operated by research associates and interns from several universities. Mr. Ahmed Al-Omari, the new R&D manager, developed the design criteria for the pilot to dimensionally replicate the full-scale nitrification/ denitrification process. A former DC Water intern, Mr. Norman Dockett supervised the planning and construction of the pilot. The pilot was fabricated in the maintenance shop by Mr. Fernando Daza and electrical connections were installed by Mr. Dmitri Valouiski. A new PhD intern, Mr. Joshua Mah constructed and implemented the complex process automation and control, and the programming in the LabVIEW™ computerized control system. The coordination represented an excellent team effort by DC Water staff. The process is fully automated using online analyzers and controllers.



If the pilot trial is successful, full-scale process modifications from conventional nitrification/ denitrification to deammonification can be achieved within existing tanks, with small modifications required to existing piping, mechanical and electrical equipment. Dr. Haydee de Clippeleir of Columbia University is the program lead for the implementation of the pilot. Several masters and PhD students are involved in this demonstration.

The DC Water research team will participate in three new Water Environment Research Foundation (WERF) projects that were awarded in February on topics related to mitigation of wastewater odor and sewer corrosion, optimized management of carbon in wastewater treatment, and improvements to nutrient removal process management. The wastewater odor and sewer corrosion research will be coordinated jointly with the sewer service staff.

Dr. Sudhir Murthy was invited to give a lecture at the annual WERF Research Forum in Chicago, January 28- February 1, 2013. The presentation was titled "*Full Plant Deammonification for Energy Neutral Wastewater Treatment*". Dr. Murthy also co-chaired the Utility Leaders Innovation Forum for Technology (LIFT) meeting that was co-hosted by WERF and WEF at the same venue. Water Innovation leaders from many utilities attended the meeting to discuss and share technology needs and R&D activities in the water sector with the intent to set-up joint 'Technology Evaluation Programs'.

The Water Environment Federation (WEF) and the Environmental Defense Fund (EDF) partnered with The Johnson Foundation at Wingspread to convene a small

group of experts to develop a vision and plan future steps for implementing smarter approaches for management of nutrients from urban wastewater. The event was titled "*Crafting A Vision for Nutrient Management in Wastewater Treatment*" and was hosted by the Johnson Foundation at Wingspread, Racine, WI, February 13-15, 2013. Dr. Sudhir Murthy was invited to participate in the workshop consisting of a small but diverse group of attendees from EPA, state regulator, water utilities and environmental groups. The goal is to develop a new vision and better approaches for managing nutrients in urban settings.

Dr. Sudhir Murthy was invited to give a 'Challenges Seminar' lecture at the University of Notre Dame on Feb 21, 2013. The title of his lecture was 'Advancing Sustainability at the World's Largest AWTP'. He also met with the faculty, staff, graduate and undergraduate students from the Department of Civil and Environmental Engineering and Earth Sciences.

Dr. Sudhir Murthy was invited to serve as a technical expert by Sydney Water in Australia to assist in development of the technology and research strategy to implement their biosolids management program for a population of 4 million residents. Sydney Water previously had sent several of their staff to DC Water in 2012 on a 4-6 week fellowship to understand research and technology approaches used at the Blue Plains plant. This follow up visit in February 24-March 1, 2013 was to assist Sydney Water plan their new biosolids program research.

Blue Plains Laboratory Program

Highlights of laboratory activities for the current month are as follows. Laboratory staff:

- Conducted routine analyses on effluent, biosolids, pretreatment, storm water runoff, and process samples (approximately 2,500 samples per month) for TSS, VSS, TS, TVS, NH₃, NO₂-N, NO₃-N, TP, TSP, ortho P, TKN, STKN, BOD, Carbonaceous BOD, COD, Alkalinity, Hardness, Fecal Coliform, and Enterococcus;
- Assisted Sewer Services in sample analysis including Fecal Coliform and Enterococcus;
- Assisted Biosolids Division with Odor Control and Lime Stabilization studies;
- Continued Biosolids pH monitoring for 40 CFR 503 Pathogen and Vector Attraction Reduction;
- Completed analysis of samples for the Trunk Sewer Sampling Program;
- Attended the USEPA/WEF Pretreatment Training Program in Pittsburgh, PA;
- Participated in the Northern Virginia Inter-laboratory Quality Control Program including Split Sample analysis;
- Participated in the WWOA Executive Board; and
- Incurred zero accidents in the lab.

Pretreatment Program

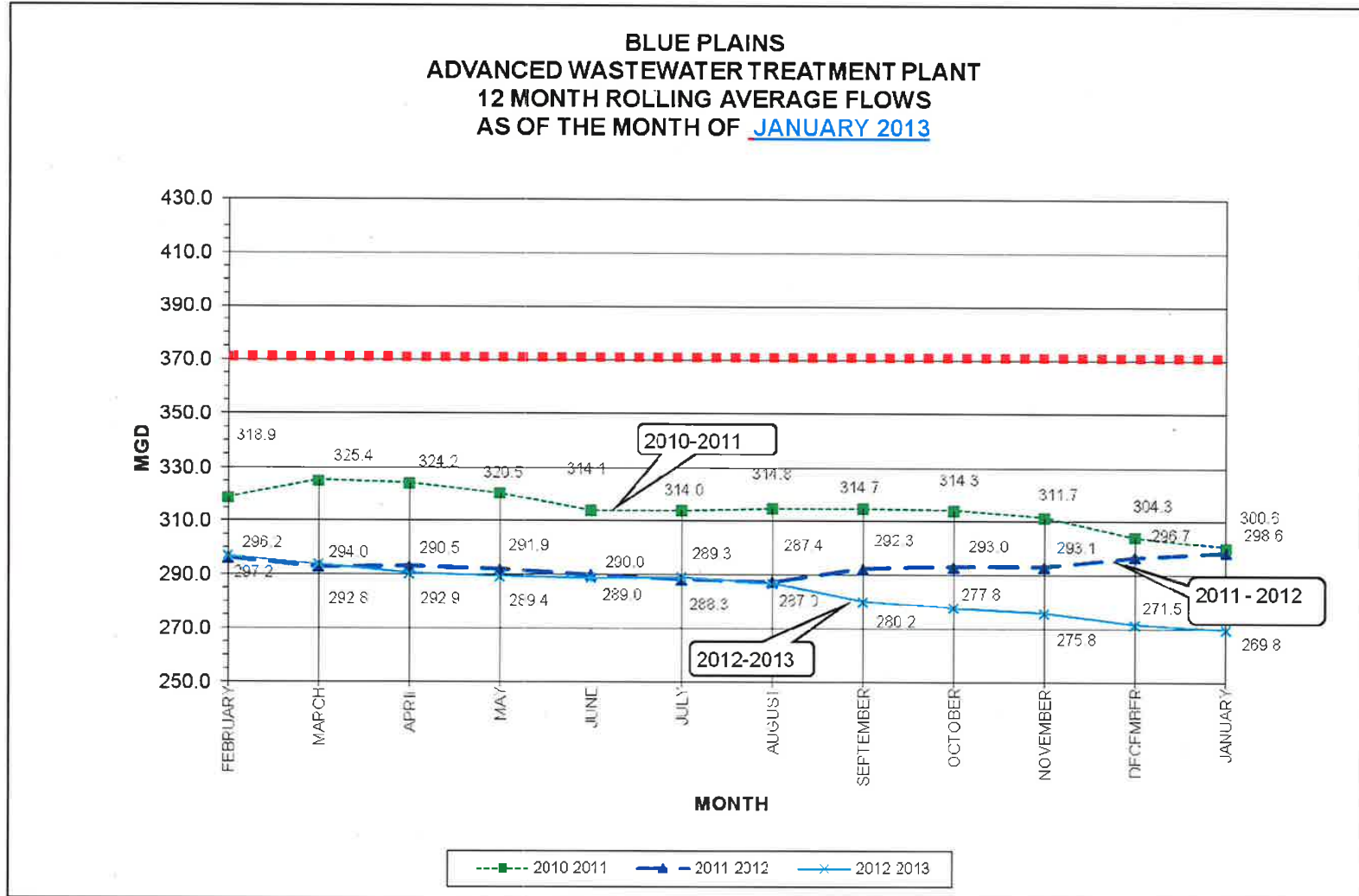
The DC Water Pretreatment Program currently includes the following permitted users:

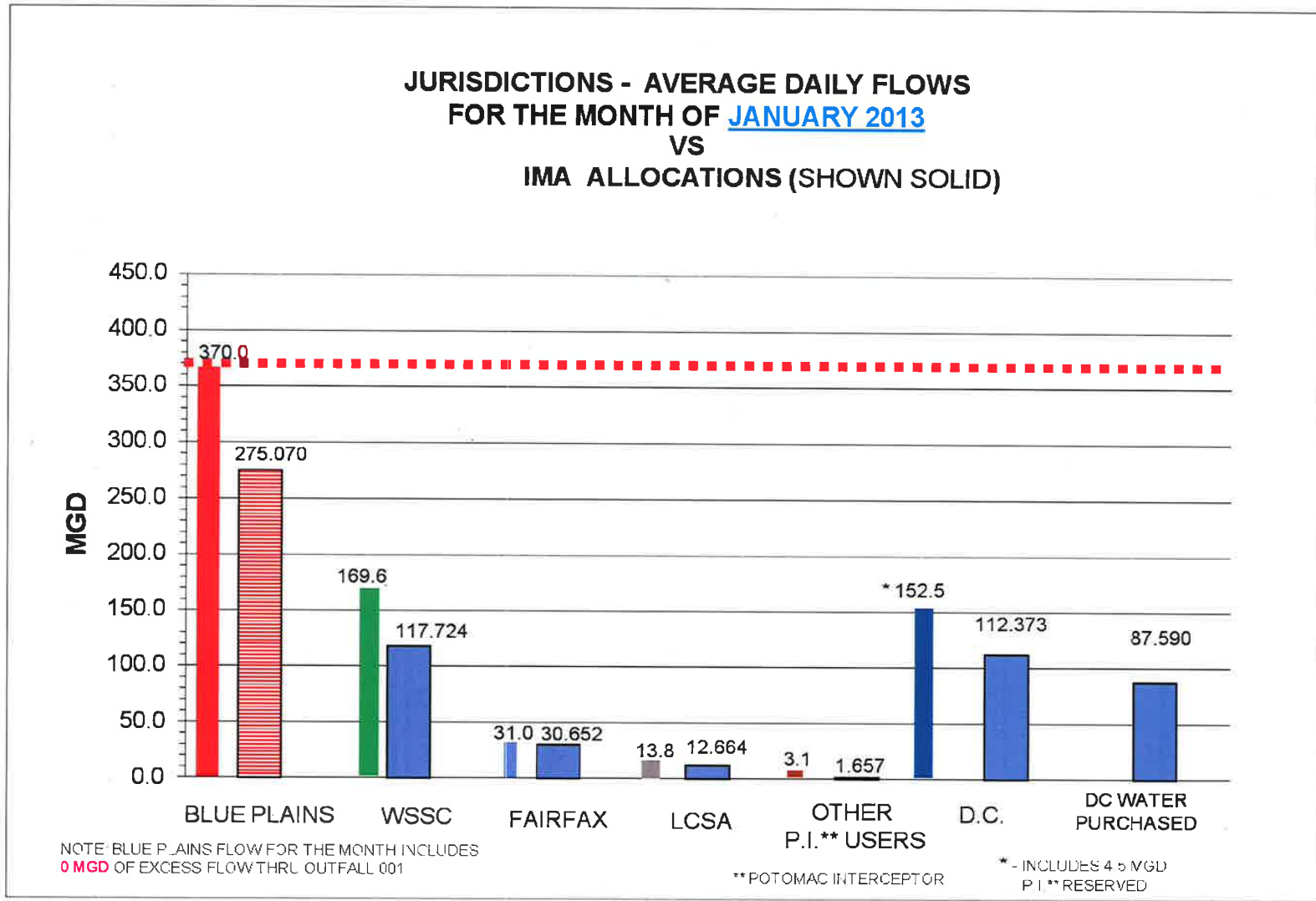
- 15 Significant Industrial User Permits;
- 16 Non-Significant Industrial User Permits;
- 57 Temporary Discharge Authorization Permits; and
- 16 Waste Hauler Permits.

Highlights of pretreatment activities for the current month include the following:

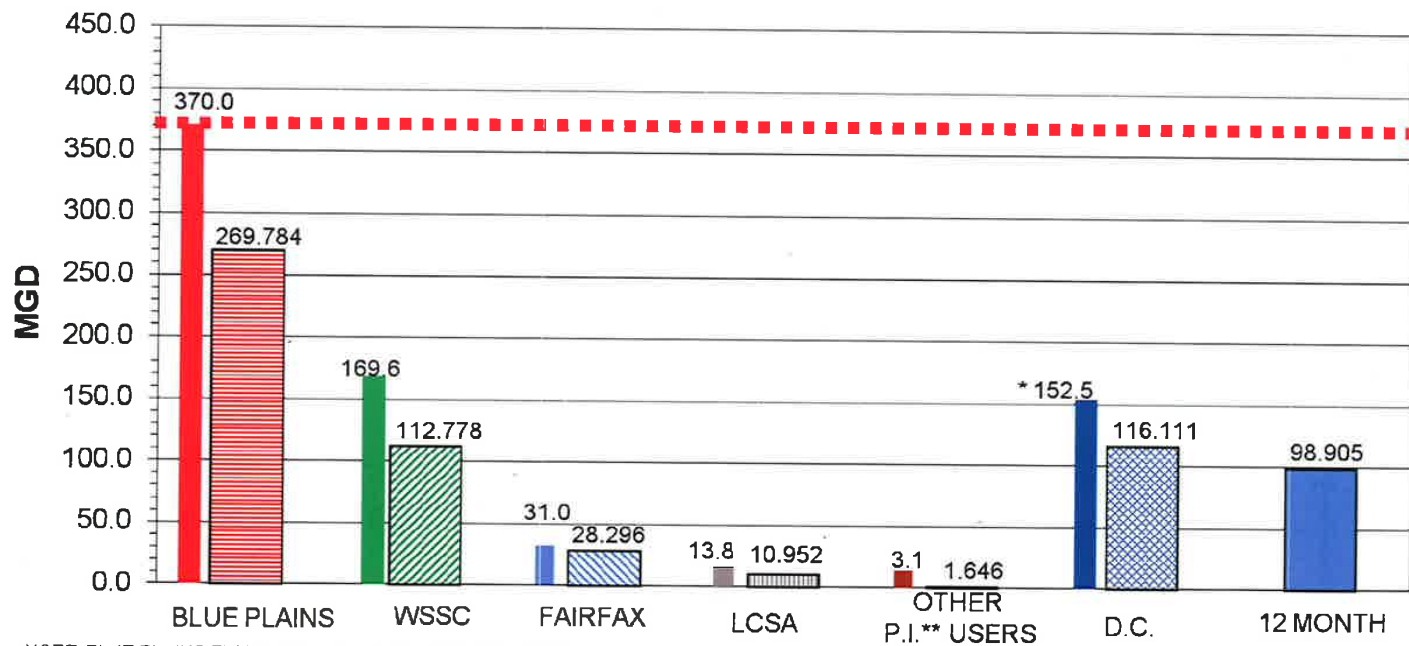
- Worked on the 2012 Pretreatment Program Annual Report to EPA;
- Issued three Temporary Discharge Authorization Permits;
- Received 298 hauled waste loads (863,650 gallons) from permitted haulers;
- Collected three hauled waste samples;
- Issued two Notices of Violation for hauled waste loads. Stillwater Septic had a copper violation and H&R Environmental had a pH violation.
- Collected bimonthly metals at outfall 002 including low-level mercury samples using clean techniques;
- Collected two dry weather and two wet weather low-level PCB samples at outfall 002 and collected two low-level PCB samples at outfall 001;
- Coordinated the quarterly storm water committee meeting and prepared minutes; and
- Updated the DC Water website content for the Pretreatment Program and Pretreatment Permits pages.

All permitted Industrial Users are currently in compliance with discharge standards.





**JURISDICTIONS - 12 MONTH ROLLING AVERAGE FLOWS
AS OF THE MONTH OF **JANUARY 2013** VS
IMA ALLOCATIONS (SHOWN SOLID)**



NOTE: BLUE PLAINS FLOW INCLUDES A 12 MONTH AVERAGE OF 1.020 MGD EXCESS FLOW THRU OUTFALL C01

**POTCMAC INTERCEPTOR

* - INCLUDES 4.5 MGD

**Potomac Interceptor Long-Term Odor Abatement
Status Report – February 2013**

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

Summary Status:

General

I&C issues at sites 1995 and 27 have been resolved and the contractor has started the 15 Day Operational Demonstration (Start-up).

DC Site

Site 1995 (Fletcher’s Boat House) – Under Construction, 99% complete. Punch list items are ongoing. DC Water and NPS are negotiating final MOU conditions prior to execution. Critical issue: none at this time.

Maryland Sites

Site 4 (Little Falls PS) - Under Construction, 91% complete. Punch list items are ongoing. Critical Issue: Primary electric and communication installation;

Site 17 (Beltway) – Under Construction, 92% complete. DC Pepco has completed the power connection at 83rd Place. The power connection has been completed and is waiting for Contractor to change out meter base so Pepco can install a meter. Punch list items are ongoing.

Site 27 (Old Angler’s Inn) - Under Construction, 99% complete. Punch list items are ongoing. DC Water and NPS are negotiating final MOU conditions prior to execution.

Virginia Sites

Site 31 (Fairfax) – Site prep, 4% complete. All permits and agreements are in place to commence construction. A Pre-construction meeting was conducted with Fairfax County, NVRPA and residents. Coordination with Dominion Power and Verizon is ongoing for site services and easements.

Site 46 (Loudoun) – Under Construction, 17% complete. Coordination with Dominion Power and Verizon is ongoing for site services and easements. Contractor’s Plumber has submitted revised plumbing plans for a permit and inspection of plumbing by Loudoun County.

Design & Construction Activities	Projected		Actual		Status
	Start	End	Start	End	
Fairfax County (Site 31) Construction	1/7/13	2/21/14			Onsite pre-construction meeting conducted on March 7, 2013
Loudoun County (Site 46) Construction	7/31/12	2/21/14	7/31/12		Building construction underway
Operational Start-up (Site 1995)	2/25/13	3/15/13	2/21/13		OS ongoing
Operational Start-up (Site 4)	4/30/13				OS delay due to communication and electric service issues
Operational Start-up (Site 17)	3/29/13				Closed In 4/20/12
Operational Start-up (Site 27)	2/22/13	3/15/13	2/19/13		OS ongoing

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

ACTION REQUESTED

GOODS AND SERVICES CONTRACT OPTION YEAR:

**Biosolids Management
(Joint Use)**

Approval to execute option year one (1) of a contract for biosolids management in the amount of \$11,457,422.

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME: Nutri-Blend, Inc. P.O. Box 38060 Richmond, VA 23231	SUBS: N/A	PARTICIPATION: N/A
--	---------------------	------------------------------

DESCRIPTION AND PURPOSE

Original Contract Value: \$11,457,422.00
 Original Contract Dates: May 1, 2012 – April 30, 2013
 No. of Option Years in Contract: #4
 First Option Year Value: \$11,457,422.00
 First Option Year Dates: May 1, 2013 – April 30, 2014

Purpose of the Contract:

The District of Columbia Water and Sewer Authority (DC Water) is contracting for biosolids management services (recycle biosolids on farms, compost facilities, and reclamation sites in the mid-Atlantic region).

Price Modifications:

None

Spending Previous Years:

Cumulative Contract Value: 05/01/12 to 04/30/13 —\$11,457,422.00
 Cumulative Contract Spending: 05/01/12 to 01/31/13— \$ 7,467,405.71

Contractor's Past Performance:

The contractor's past performance has been satisfactory.

Note: The price for option year one remains the same as for the base year at \$30.55 per wet ton, at an estimated annual quantity of 273,750 wet tons totaling \$8,363,062; the fuel costs for this tonnage is \$3,094,360.

PROCUREMENT INFORMATION

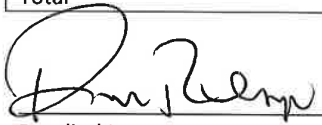
Contract Type:	Firm Fixed Unit Price	Award Based On:	Highest-Ranked Offer
Commodity:	Services	Contract Number:	WAS-12-007-AA-SH
Contractor Market:	Open Market with LSBE/LBE preference points		

BUDGET INFORMATION

Funding:	Operating	Department:	Wastewater Treatment - Operations
Project Area:	Blue Plains Advanced WTP	Department Head:	Aklile Tesfaye

USER SHARE INFORMATION

User	Share %	Dollar Amount
District of Columbia	43.67%	\$5,003,456.18
Washington Suburban Sanitary Commission	41.71%	\$4,778,890.72
Fairfax County	10.07%	\$1,153,762.40
Loudon County	3.91%	\$447,985.20
Potomac Interceptor	0.64%	\$73,327.50
Total	100.0%	\$11,457,422.00

 , 3/11/13
 Rosalind Inge Date

Acting Assistant General Manager
 Support Services

 , 3/11/13
 Yvette Downs Date

Director of Finance and Budget

 , 3/12/13
 Walter Bailey Date

Assistant General Manager
 Blue Plains

_____/_____
 George S. Hawkins Date
 General Manager

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

ACTION REQUESTED

ENGINEERING SERVICES SUPPLEMENTAL AGREEMENT:

**Nitrification – Denitrification Facilities Upgrade
(Joint Use)**

Approval to execute Supplemental Agreement No. 8 for \$339,766.00. The cumulative modifications will exceed the General Manager's approval authority.

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME:	SUBS:	PARTICIPATION:
Hazen and Sawyer, P.C 4035 Ridge Top Road Suite 400 Fairfax, VA 22030	Shah & Associates Gaithersburg, MD	MBE 21.7%
	Baker/Wohl Architects Boston, MA	WBE 0.2%
	National Reprographics Washington, DC	WBE 12.6%

DESCRIPTION AND PURPOSE

Original Contract Value:	\$1,010,455.00
Value of this Supplemental Agreement:	\$ 339,766.00
Cumulative SA Value, including this SA:	\$7,715,782.00
Current Contract Value, Including this SA:	\$8,726,237.00
Original Contract Time:	201 Days (0 Years, 7 Months)
Time extension, this SA:	0 Days
Total SA contract time extension:	4,444 Days (12 Years, 2 Months)
Contract Start Date:	11-30-2001
Contract Completion Date:	08-19-2014

Purpose of the Contract:

To improve plant reliability and operational efficiency by replacing facilities which have exceeded their useful lives.

Original Contract Scope:

- Preliminary design to identify required upgrades.

Previous Supplemental Agreement Scope:

- Final engineering design services for: reactor structural upgrades to increase nitrification oxygen transfer efficiency and provide dissolved oxygen control; nitrification sedimentation and sludge system improvements to replace the sludge and scum collectors in all 28 basins; blower upgrades to improve the starting, automated control, and mechanical reliability of the nitrification blowers; mixed liquor and effluent channel improvements to upgrade aeration capabilities; and, mechanical, electrical, control, and building improvements related to the nitrification facilities upgrade.
- Final design to prepare construction drawings and specifications
- Engineering design of additional electrical upgrades to replace outdated electrical equipment to improve operational reliability and reduce downtime because of electrical equipment failures.
- Provide engineering services during construction to assist the Construction Manager.

Current Supplemental Agreement Scope:

- Engineering design services for additional electrical upgrades not included in the original design.

- Engineering services during construction requested by DC Water's Department of Engineering and Technical Services for the nitrification-denitrification facilities, including safety modifications for the methanol feed system.

Future Supplemental Agreement Scope:

- No future supplemental agreements are anticipated.

PROCUREMENT INFORMATION

Contract Type:	Lump Sum and Cost plus FF	Award Based On:	Highest Ranking Score
Commodity:	Engineering Design Services	Contract Number:	DCFA #371-WSA
Contractor Market:	Open Market		

BUDGET INFORMATION

Funding:	Capital	Department:	Engineering and Technical Services
Service Area:	Wastewater Treatment	Department Head:	David McLaughlin
Project:	TK		

ESTIMATED USER SHARE INFORMATION

User	Share %	Dollar Amount
District of Columbia	41.22%	\$ 140,052.00
Washington Suburban Sanitary Commission	45.84%	\$ 155,749.00
Fairfax County	8.38%	\$ 28,472.00
Loudoun County & Potomac Interceptor	4.56%	\$ 15,493.00
Total Estimated Dollar Amount	100.00%	\$ 339,766.00

for Yvette Downs 3/12/13
 Director of Finance & Budget Date

Rosalind R. Inge 3/13/13
 Director of Procurement Date

Leonard R. Benson 3-13-13
 Chief Engineer Date

George S. Hawkins 1
 General Manager Date

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

ACTION REQUESTED

**CONSTRUCTION CONTRACT CHANGE ORDER:
Enhanced Nitrogen Removal Facilities Second Contract
(Joint Use)**

Approval to execute Change Order No. 18 for \$536,036.00. The modification exceeds the General Manager's approval authority.

CONTRACTOR/SUB/VENDOR INFORMATION

PRIME:	SUBS:	PARTICIPATION:
Ulliman Schutte Construction, LLC 7615 Standish Place Rockville, MD 20855	Hi-Mark Construction Group Inc. Washington, DC MBE	62.5%

DESCRIPTION AND PURPOSE

Original Contract Value:	\$97,118,000.00
Value of this Change Order:	\$536,036.00
Cumulative CO Value, including this CO:	\$2,566,243.00
Current Contract Value, including this CO:	\$99,684,243.00
Original Contract Time:	1440 Days (3 Years, 11 Months)
Time extension, this CO:	0 Days
Total CO contract time extension:	0 Days
Contract Start Date (NTP):	04-04-2011
Anticipated Contract Completion Date:	03-14-2015
Cumulative CO % of Original Contract:	2.64%
Contract completion %:	39.8%

Purpose of the Contract:

To build a pump station, buildings and process facilities for Enhanced Nitrogen Removal facilities.

This work is required by the BP AWWTP NPDES permit.

Contract Scope:

- Demolition of Lime Building
- Nitrification reactors effluent tunnel
- Pump station and channels
- Process facilities

Previous Change Order Scope:

- Nitrification Sedimentation Basin South Channel Modifications
- Pump Station Rebar Modifications at Elevation +17.0 Slab
- Denitrification control pump revisions
- Change anti-siphon valves on methanol tanks and provide actuators for valves
- Replace existing non-functional fire hydrants
- Procure and install an electric unit heater in the Denitrification Carbon Feed Building Fire Control Room

Current Change Order Scope:

- Add Instrumentation and Control devices, add electrical power and control wiring, revise and clarify control logic and schematics as necessary for the Methanol Vapor Scrubber, Denitrification Return Sludge Gallery Sump Pumps, Float Switches, and Surge Panels.
- Installation of ground grid inside the Denitrification Electric building

PROCUREMENT INFORMATION

Contract Type:	Fixed Price	Award Based On:	Lowest responsive, responsible bidder
Commodity:	Construction	Contract Number:	100020
Contractor Market:	Open Market		

BUDGET INFORMATION


Funding:	Capital	Department:	Engineering and Technical Services
Service Area:	Wastewater Treatment	Department Head:	David McLaughlin
Project:	E9		

USER SHARE INFORMATION

User	Share %	Dollar Amount
District of Columbia	41.22%	\$220,954.00
Washington Suburban Sanitary Commission	45.84%	\$245,719.00
Fairfax County	8.38%	\$44,920.00
Loudoun County & Potomac Interceptor	4.56 %	\$24,443.00
Total Estimated Dollar Amount	100.00%	\$536,036.00

for  3/12/13
 Yvette Downs Date
 Director of Finance & Budget

 3/13/13
 Rosalind R. Inge Date
 Director of Procurement Services

 3-13-13
 Leonard R. Benson Date
 Chief Engineer

 George S. Hawkins Date
 General Manager

Class A Biosolids Marketing Strategy

Presentation to the DC Water
Environmental Quality and Sewerage
Services Committee
March 21, 2013

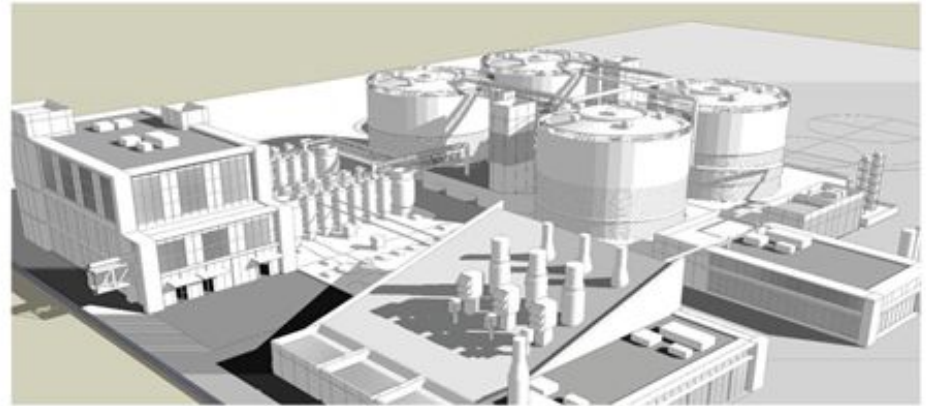
Reinventing Biosolids

at DC Water



Soil Blending Meeting
March 13, 9 am

Chris Peot, P.E., BCEE
DC Water



Marketing Class A Biosolids

1. Current program economics
2. Opportunities for Class A biosolids end use diversification
3. Digester pilot plant and Va Tech product research
4. Pilot soil blending project
5. Transitioning from pilot to full scale

NUTRIENTS and CARBON RECYCLING



BLUE PLAINS ADVANCED WASTEWATER TREATMENT PLANT: A RESOURCE RECOVERY FACILITY

GREEN ENERGY BIORENEWABLES

FARMING



Provides carbon and nutrients valued at \$300.00 per acre.

SILVICULTURE



Increases yield and improves understorey.

RECLAMATION



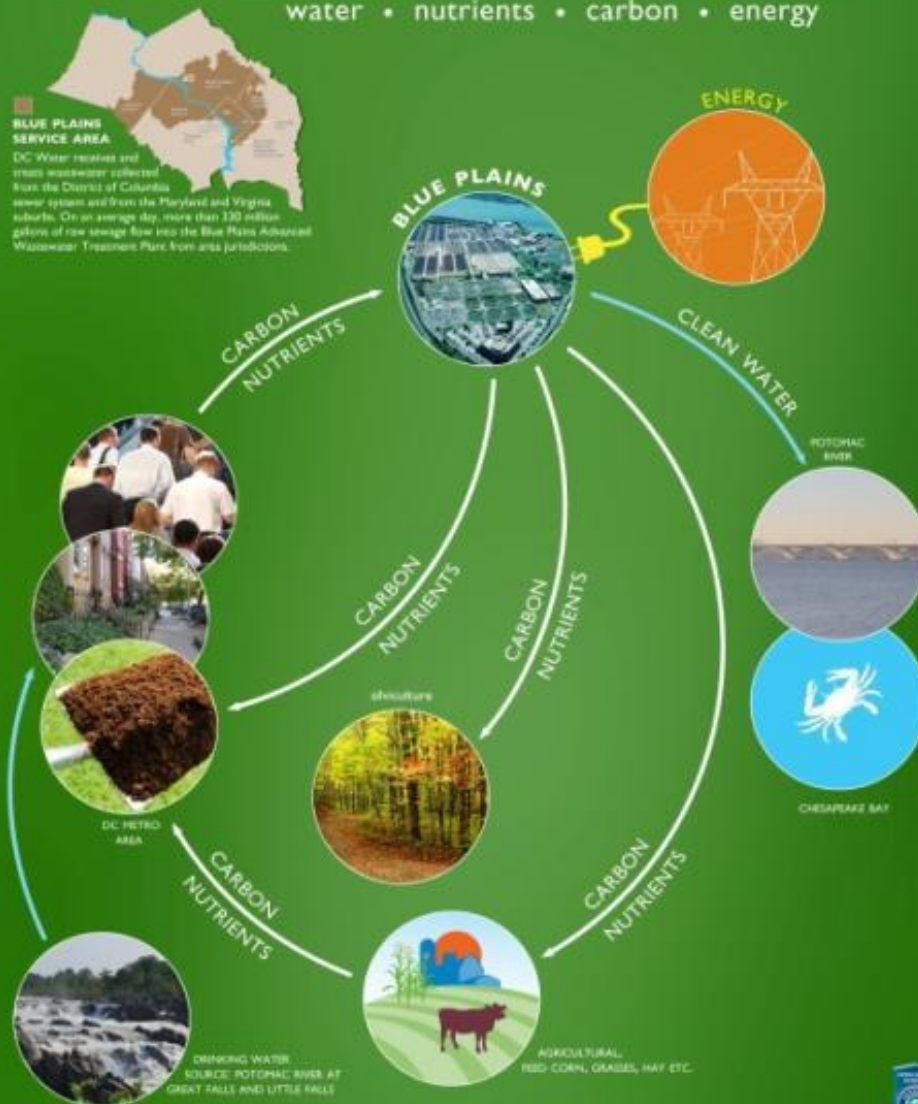
Restoring sites to their natural state and providing wildlife habitats.

URBAN RESTORATION



Grow trees and reduce runoff.

water • nutrients • carbon • energy



THERMAL HYDROLYSIS PROCESS (THP) AND DIGESTION FACILITY



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:

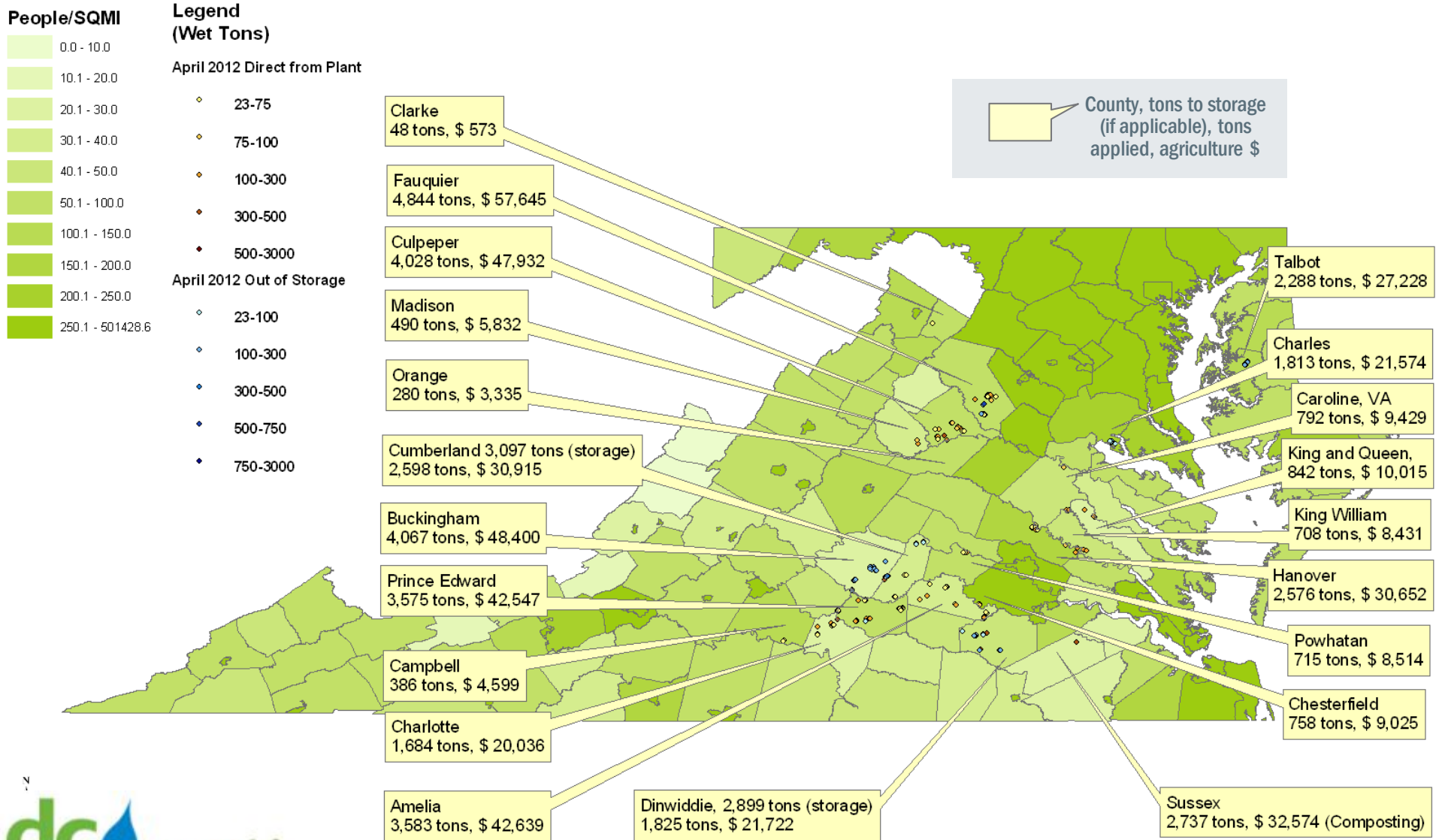
- Produce combined heat and power, generating 13 MW of electricity
- Save DC Water \$10 million annually cutting grid demand by a third (DC Water is the largest consumer of electricity in the District)
- Reduce carbon emissions by approximately 50,000 metric tons of CO₂e per year.
- Reduce trucking by 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.

dcwater.com/biosolids

Agriculture



Biosolids Land Applied from Plant and Storage



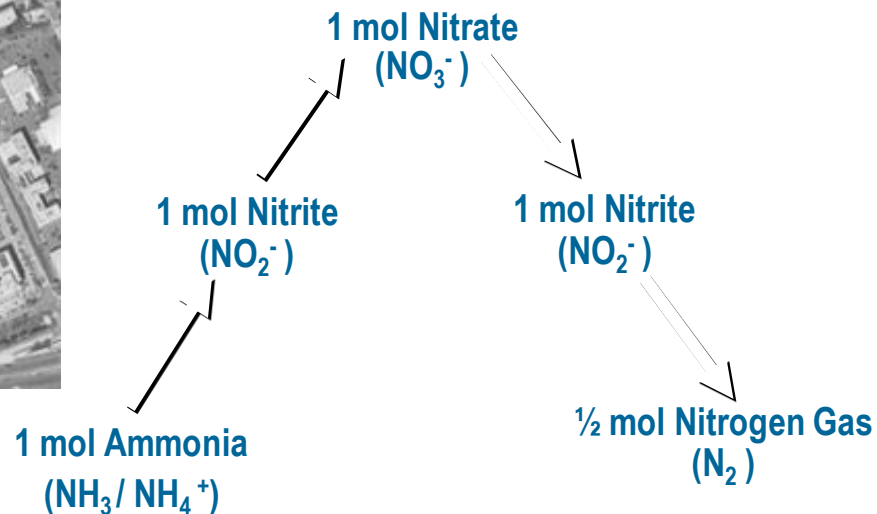
Va Tech Drought Resistance Research

- Anecdotal farmer evidence of drought resistance and yield improvements
- Always assumed it was water holding capacity
- Va Tech work on compost showed high levels of essential plant hormones
- Microbes at the treatment plant do the same work, converting organic N to inorganic N and N gas.
- Blue Plains biosolids has high levels of auxins and cytokinins
- Greenhouse and field studies found that plants show increased root growth and better resistance to drought

Blue Plains is a Microbial Facility



This microbial activity results in high levels of naturally occurring essential plant hormones (auxins, cytokinins, etc.)



**Nitrification /
Denitrification**

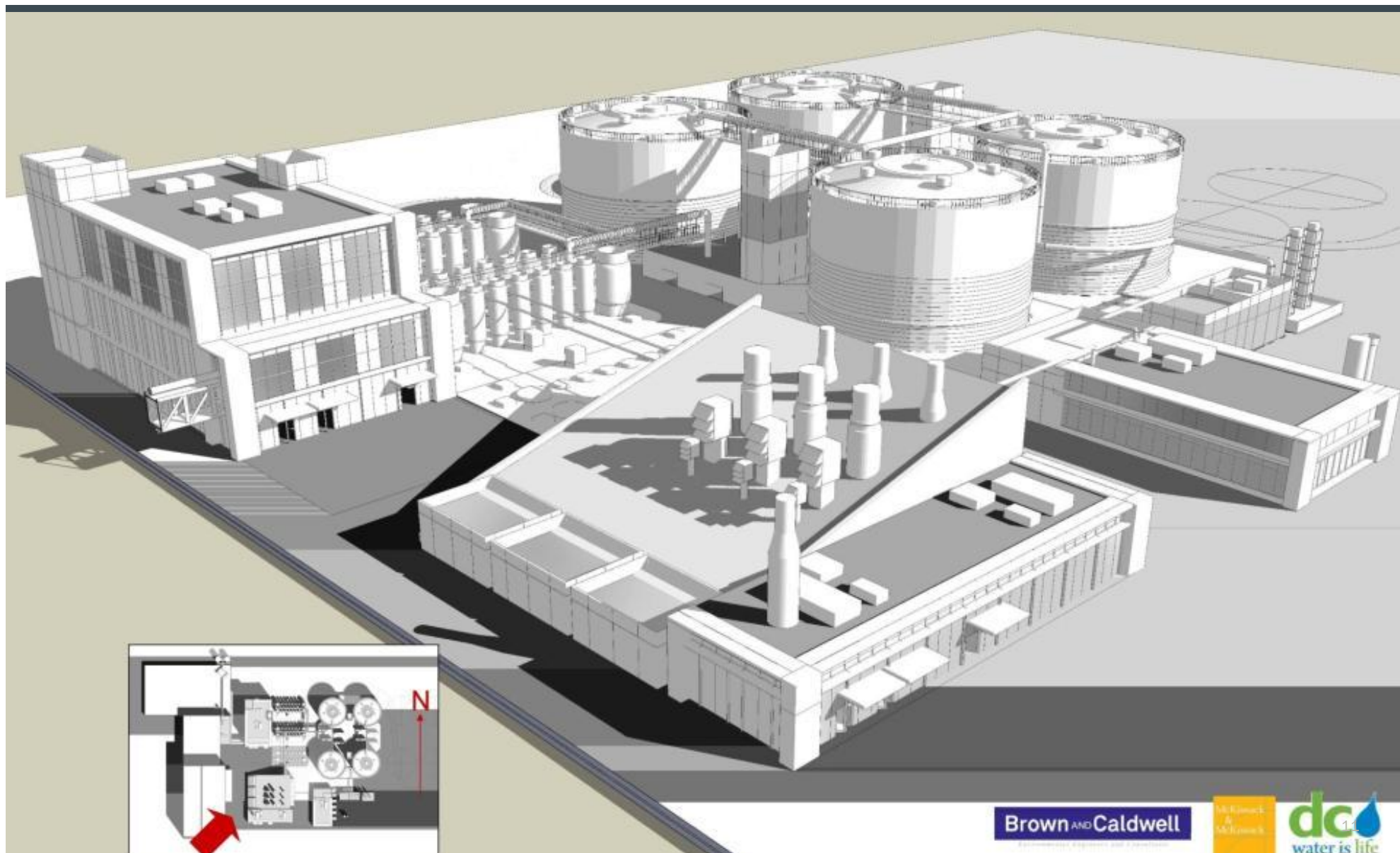
Economics of Current DC Water Biosolids Recycling Program

- Pay a third party ~\$43/wet ton for full service contract (transport, land app, reporting)
- \$18M/yr program cost =20% of the Blue Plains operating budget
- Delivered free to farmers
- Farmers value product at \$300/acre (nutrients, lime, etc.), approximately \$15/wet ton
- Nutrient rebate back to DC Water (\$2/wt), \$500K/yr designated for research and outreach.
- Value to farmers, 1200 wtpd = \$6,570,000/yr
- We do not extract this value because our program is not diversified and we do not control storage
- We need to treat the biosolids like the resource it is

We need storage

- Modeling after the steel industry, which markets it's waste ferric chloride to our industry
- Talking with soil blenders and quarries about partnering to blend soil products, using their sites
- Working with Va Tech to develop mixes that will maximize commercial potential
- Will pilot this concept in first yr of Class A production
- Gathering lists of potential bidders for our product

Digestion and Thermal Hydrolysis Project



Thermal Hydrolysis Digested Dewatered Products from the UK



30% solids



Very stable

Class A



No debris



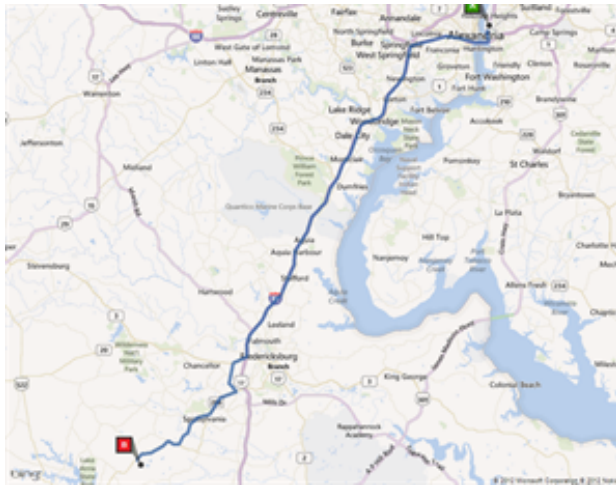
Low odor

Future Plans for Class A Biosolids

- Continue land application of remaining Class A dewatered biosolids
- Produce a blended soil product (similar to compost)
 - Use in tree planting (reduces runoff)
 - Restoration projects
 - Green roofs (reduces runoff)
 - Golf courses
 - Partnering with civic groups, DC and federal agencies, environmental groups, etc.
 - Carbon sequestration



Spotsylvania County Composting Facility – Covered, Biofilter Odor Control





Pilot Digester, Va Tech Product Research, and Soil Blending Pilot Project

- The pilot digester and thermal hydrolysis pilot plant, in the solids building, started operations last week.
- Staff will send Class A product from the pilot to Dr. Greg Evanylo at Va Tech for product blending research.
- Greg is helping develop marketable recipes for the blending pilot.
- We are in discussion with three soil blenders (in VA, MD, and PA) who have expressed interest in participating in a pilot project when we start full scale production of Class A biosolids.
- We will ask for a percentage of the final product.
- We envision a one-year pilot, followed by an opportunity for other blenders to use the material.
- Economics of this program will be developed as we determine demand. We will continue to land apply the remaining biosolids at a cost.

Class A Blending Example

- Digested, Class A biosolids blended with sand and sawdust
- Tagro mix sells for \$8/yard for residents, \$10/yard for non-residents and commercial customers
- Tagro potting soil sells for \$30/cy



TAGRO Mix components: sawdust, sand and Class A biosolids

Regulations (in brief) for PA, MD, and VA

Pennsylvania -

Obtain a General Permit from PA DEQ (done). PA DOA states that if distributed to blenders as a feedstock, and marketed as a “soil amendment”, DOA has no regulatory authority.

Maryland -

DC Water must obtain a treatment and distribution and marketing permit.

Must submit EPA Pathogen Equivalency Committee (PEC) letter (in possession).

Must be <5% P (we are). Some restrictions on lawn fertilizers, but there are exemptions for organic sources (biosolids qualify). We will work to register our “cake” product as a soil amendment to avoid other fertilizer regulations.

Virginia -

Need a Virginia Pollution Abatement (VPA) permit from DEQ, and we must register the product with Va Department of Agricultural and Consumer Services (VDACS) in order to distribute and market the product. If adequate controls are written into the DC Water permit, then blenders require no permit. VA has an exemption from P regulations for “products derived from sewage sludge”. DC Water will register the digested Class A biosolids as a soil amendment in VA.

Summary

1. We have a plan to get our product into the hands of those who value it.
2. The plan includes bench scale piloting for the next 1.5 yrs, followed by a year-long full scale blending pilot.
3. Land application will continue for the remaining product.
4. If demand is high enough, the product will command a price.
5. Great potential to save operating budget \$'s.

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



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

Briefing on:

*DC Clean Rivers Project
Green Infrastructure Performance Criteria*

Briefing for:

Environmental Quality and Sewerage Services Committee



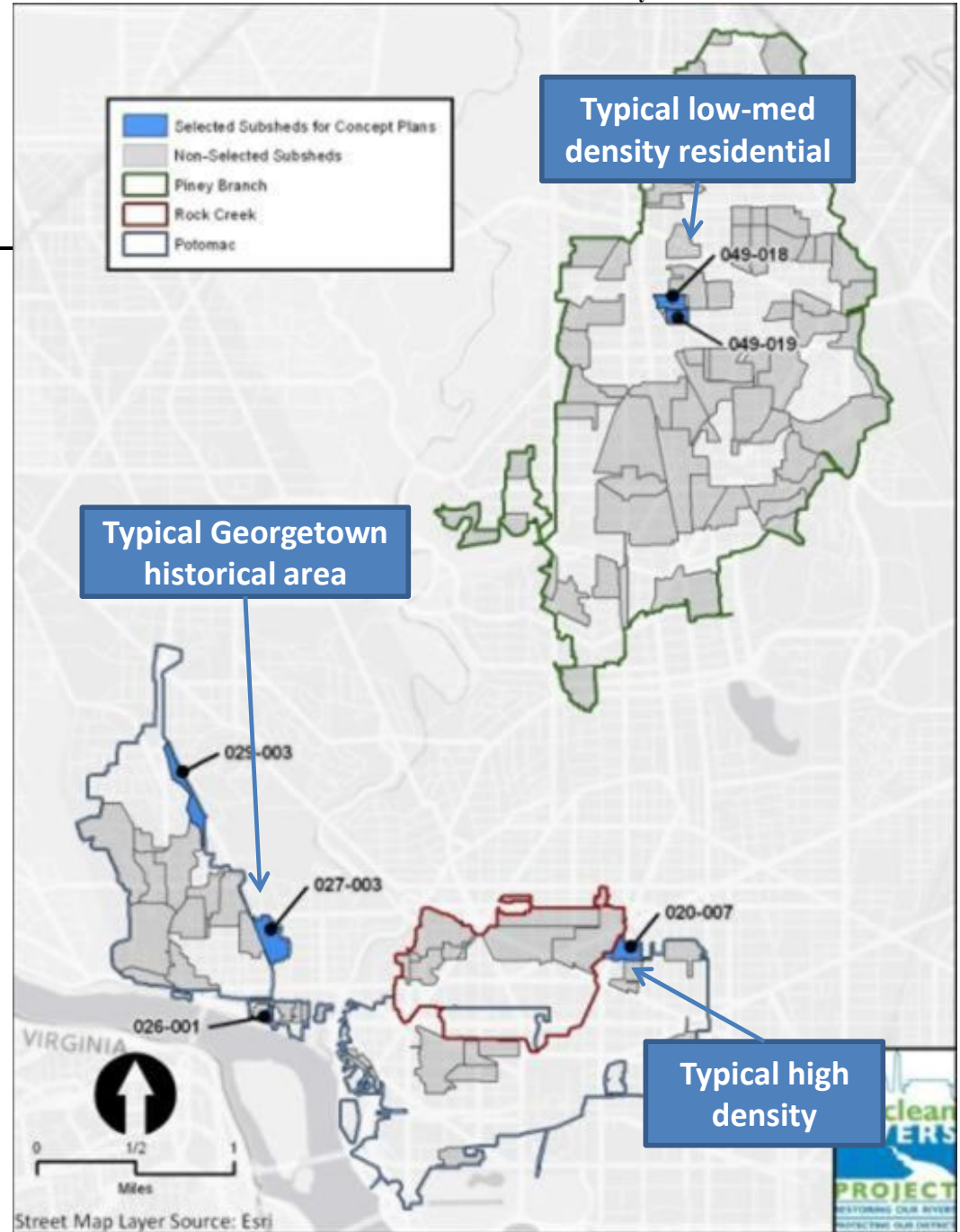
March 21, 2013

DCWATER.COM

Scope of Demonstration Project

Proposed subsheds:

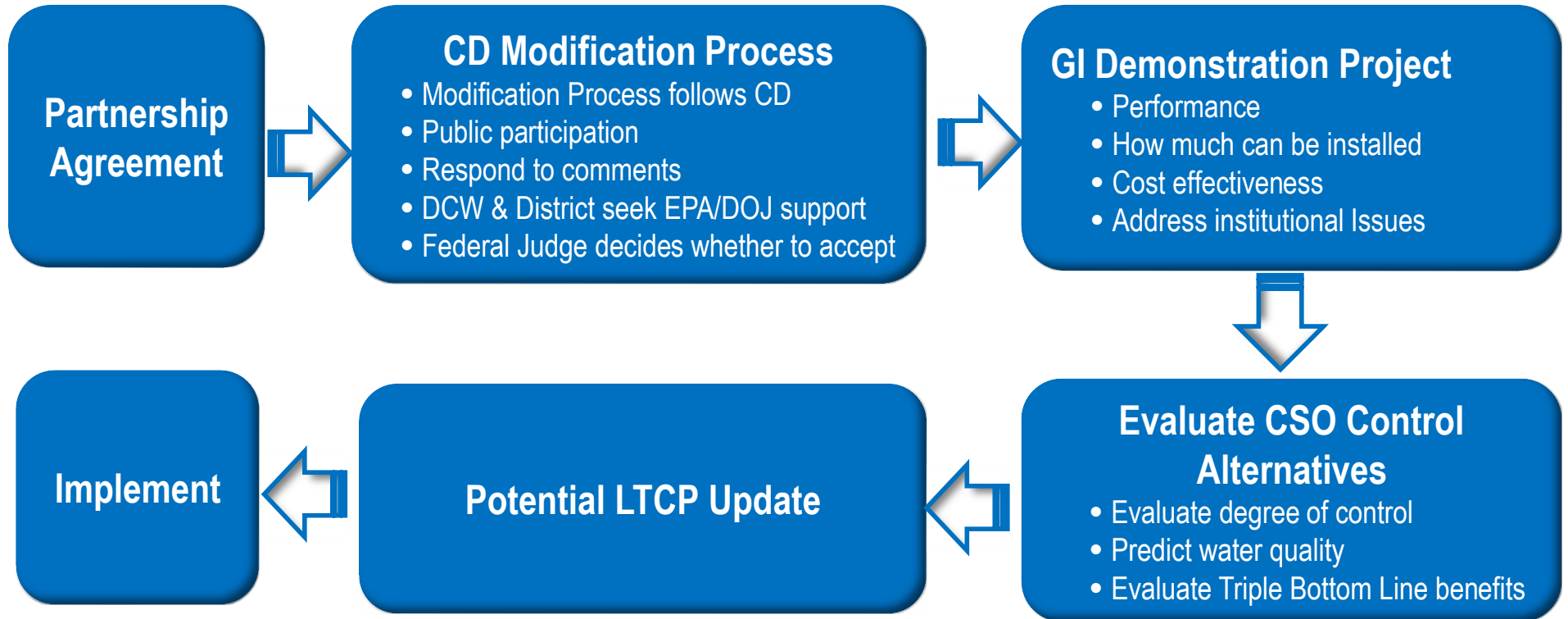
Rec. Water	Sub-shed	Total Acres	Imp. Acres	Description
Pot. River	020-007	10.0	8.1	High density "down town" land use
	026-001	1.8	1.6	High density Georgetown waterfront
	027-003	16.6	10.5	Georgetown historic area
	029-003	14.4	8.9	Medium density Georgetown commercial
Piney Branch (Rock Creek)	049-018	6.6	3.6	Low to medium density residential
	049-019	5.1	3.0	Low to medium density residential
		54.5	35.7	



- Includes GI in public and private space
- \$10-\$40 M investment



What is the Approach?



What is the Green Infrastructure (GI) Partnership Agreement?

■ What it IS

- An agreement that establishes a frame work and working relationship between EPA, the District and DC Water to advance GI
- Joint support for sustainable storm water management yielding multiple benefits for community livability
- An agreement that demonstrates the parties' commitment to GI



■ What it is NOT

- A commitment of funds
- A detailed plan or project agreement
- A commitment to modify the consent decree
- A public outreach plan

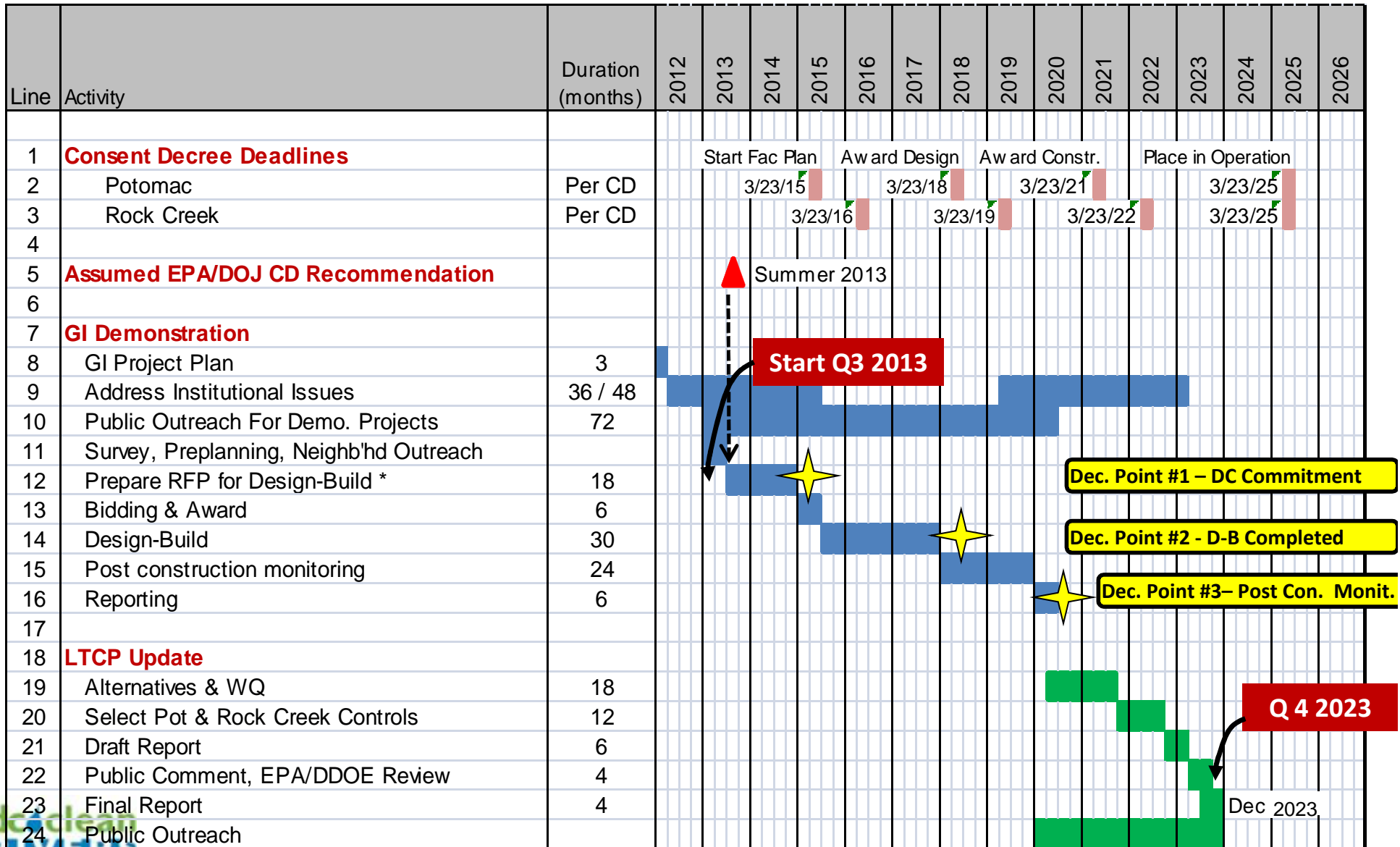


DC Water's Proposed Consent Decree Modifications Will Include

- Acceleration of Green Infrastructure Implementation
 - DCW will reinvest any savings from the schedule extension to GI projects
 - For a hybrid or green approach, supplemental GI projects will permit early compliance with water quality goals.
 - For existing approach, supplemental GI projects will provide greater certainty on achieving water quality goals.



Current Schedule



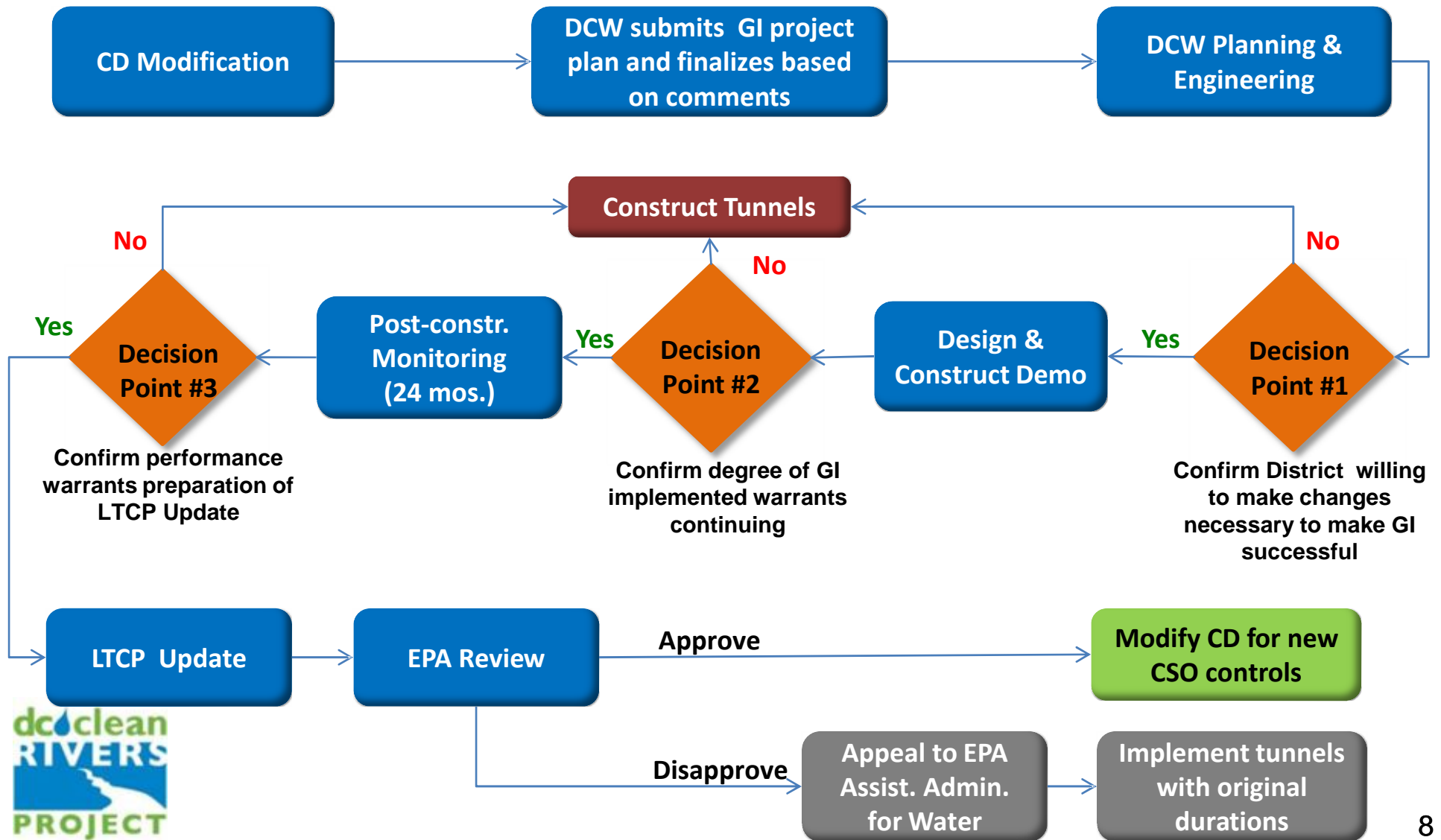
* Approx 90% location, geotech and site design, approx 30% overall final design

GI Modifications – Potomac and Rock Creek Controls in Decree

- Extend deadlines for Potomac & Rock Creek by up to 8 yrs (assumes CD Mod in mid 2013)
- If GI Demonstration Project is ended pursuant to decision points, resume tunnels using same durations as current decree
- Prepare EIS for the Potomac Tunnel while the GI Demonstration Project is underway



GI Demonstration Project: What Are the Steps after the CD Modification?



DC Water's Proposed Decision Points

Decision Point	When	Years after Mar. 23, 2015 (CD deadline for Start of Facility Plan)	Years after Mar 2013	Rationale	Example Criteria
#1 – District Commitment	Q1 – 2015	Zero	2 yrs	Confirm District willing to make changes necessary to make GI successful	<ul style="list-style-type: none"> • Agreements achieved for GI implementation on public or private property
#2 – After Construction	Q4 - 2017	2.75 yrs	4.75 yrs	Confirm degree of GI implemented warrants continuing	<ul style="list-style-type: none"> • Degree of implementation • Cost • Predicted benefits (CSO reduction and TBL benefits) • Other
#3 – After Post Construction Monitoring & Reporting	Q2 - 2020	5.25 yrs	7.25 yrs	Confirm performance warrants preparation of LTCP Update	<ul style="list-style-type: none"> • CSO reduction • Runoff quality performance • TBL benefits • O&M cost • Public satisfaction • Other



1. Decision Point calendar dates assume recommendation of CD modification to Court occurs Q3 2013.
2. TBL benefits include: social, economic and environmental benefits.

Decision Point #1 – Agreements in Place for Implementation

- MOUs in place with District Agencies such as DDOT
- A level of interest from residences for implementing practices
- Agreement with Agencies on appropriate standards
- Agreements on operations and maintenance

Decision Point #2 – Degree of Implementation Warrants Continuing

- Location and type of GI measures installed in the demonstration project areas compared to that originally planned
- Documentation of GI measures that DC Water was unable to install
- Percent of impervious area treated by the GI measures compared to the percent planned
- Quantity of rainfall treated per impervious acre of drainage area compared to the amount planned
- Actual construction and capital costs of the GI installed in terms of dollars per impervious acre compared to the unit costs estimated
- Unit runoff capture rate (\$/gal removed per average year) compared to the value estimated
- Unit CSO reduction (\$/gal of CSO removed per average year) compared to the value estimated
- Public acceptance of the GI measures compared to that expected during design.



Decision Point #3 – Performance Warrants Continuing

- Location and type of GI measures installed in the demonstration project areas
- Any GI measures that were removed or replaced
- Percent of impervious area treated by the GI measures compared to the percent planned
- Quantity of rainfall treated per impervious acre of drainage area compared to the quantity planned
- Unit runoff capture rate (\$/gal removed per average year) and unit CSO reduction (\$/gal of CSO removed per average year)
- Life cycle costs including O & M
- Improvement in water quality of runoff from areas treated by GI compared to areas not treated by GI;
- An assessment of the public acceptance of the GI measures compared to that observed after construction

Assessment of the triple bottom line benefits





water is life

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

Permit Operations Department Status Update

Presented to:
Environmental Quality and Sewerage
Services Committee

by: Brian T. McDermott

March 21, 2013



Right Here in Suite 310

Permit Operations

Waterfront Metro Station - 1100 4th Street SW, Washington, D.C. 20024



Open to the Public
since January 18, 2012

Located directly above the
DCRA Permitting Center

Within walking distance of
the new DC Water
Customer Service Office
(80 M Street SE)

Now serving...
Customer # 6,800+

Permit Operations Office, 1100 4th Street, SW, Suite 310, Washington D.C. 20024

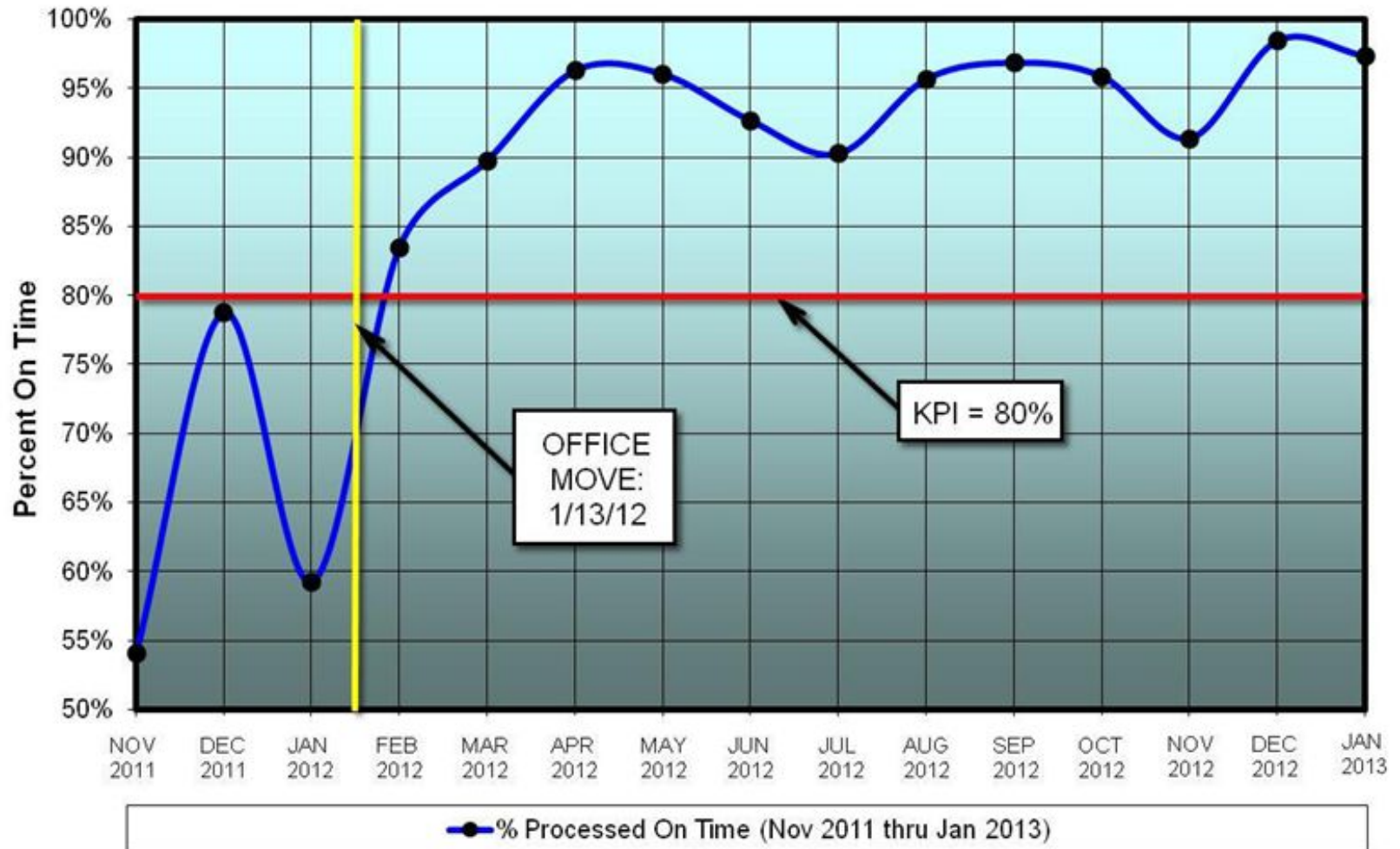


Department Status Update (Past 9 Months)

- Exceeded KPI every month
 - KPI Goal = 80% on-time percentage
 - Actual Performance average above 95%
- Reduced project review times
 - Bettered scheduled review times for several tasks by as much as 50%
- Increased scope of services
 - Easement covenant development and recordation
 - Backwater valve basic data requirement for DCRA review
- Members of two Mayoral Task Forces
 - Pepco Undergrounding
 - Business Regulatory Reform
- 100 % employee retention



Permit Processing Performance (Nov 2011 thru Jan 2013)





Permit Operations Numbers (Jan 2012 to Present)

- 6,800+ customers seen at new office (average 24/day);
- 700 new permit applications initiated (average 2.5/day);
- \$11.15 Million total collected in fees and services (average \$38,600/day);
 - \$ 9.25 Million inspection fees & deposits collected (average \$32,000/day)
 - \$ 1.9 Million permit review fees collected (average \$6,600/day)
- 1,900 financial transactions;
- 1,700 legal documents added to GIS;
- \$10 Million of developer-funded water main installation;
 - 22,500 ft of 8" water main
 - 8,700 ft of 12" water main
 - 1,750 ft of ≥ 16 " water main



Permit Operations Accomplishments (Jan 2012 to Present)

- Created separate GIS layer for easement & covenant documents;
- We now record the legal documents with the Recorder of Deeds for the applicant;
- Updated website to help better inform applicants;
- Standardized forms for more efficient and complete permit applications;
- 95% performance average for on-time permit review



Ten Interesting and Significant Projects that affect DC Water:

1. Southwest Waterfront Redevelopment (The Wharf)
2. Saint Elizabeth's West Campus Redevelopment (Coast Guard)
3. Walter Reed Army Medical Center Redevelopment
4. I-395 Air rights Tunnel Project (Capitol Crossing)
5. Irrigation and Stormwater Storage Systems on the National Mall
6. National Museum of African American History and Culture
7. CSX Virginia Avenue Tunnel
8. Canal Park (Public Skating Rink and stormwater reuse)
9. Square 737 (Low Area Sewer Relocation in SE)
10. DC United Soccer Stadium



THE WHARF

SOUTHWEST WATERFRONT

WATER STREET CLOSURE S.O. 10-15906



OCTOBER 18, 2010



Impacts to DC Water:

- Eliminates Water Street SW
- Demolishes all ex. buildings (Fish Market remains)
- New bulkhead, piers, marina
- New buildings to span from Washington Channel to Maine Ave SW
- Installation of over one mile of new water/sewer infrast. in Maine Ave SW
- Possible water supply/fire loop along the bulkhead
- Pocket park proposed on top of 90" storm sewer
- Underground storage cisterns for 2.4" of stormwater runoff
- Possible street cars on Maine Ave SW



Saint Elizabeth's West – Coast Guard Headquarters



Impacts to DC Water:

- Construction of new booster station for water distribution system
- Relining of approx. 3,000 LF of twin 9'-0" tunnels along I-295



Walter Reed Army Medical Center

Walter Reed Army Medical Center

Share Text Size: A A A

BACKGROUND INFORMATION

The federal government declared 67.5 acres on the main post of the Walter Reed Army Medical Center in Washington DC as surplus property, thereby making it available to a local redevelopment authority ("LRA") for re-use. As part of this process, the Local Redevelopment Authority (LRA) must prepare a plan for reuse of the site in order to acquire a portion of the site for local use.

Location: 6900 Georgia Avenue, NW, Washington, DC 20307

SUSTAINABILITY GOALS

General - Support "A Vision for a Sustainable DC"

Waste - 50% Landfill Waste Reduction by 2020 - Zero Waste by 2030

Energy - Net Zero by 2030 - Carbon Neutral 2040 - Carbon Positive 2050

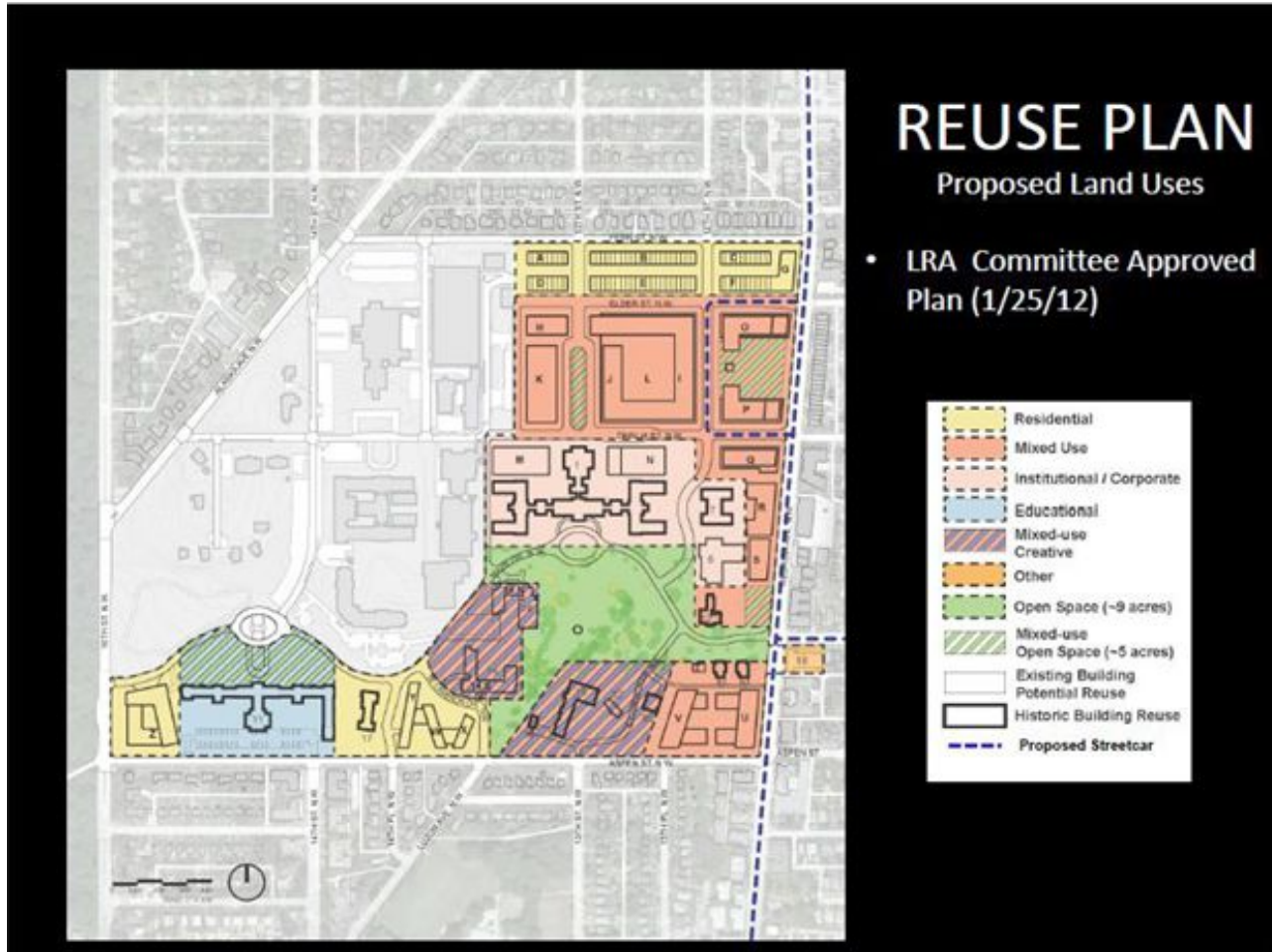
Water - Zero Site Storm Runoff - 100% Grey Reuse by 2020 - Black Water Treatment by 2030

- CISTERSNS** - Throughout the site. Water collected at air filter grids typical to each building on site.
- GREEN ROOFS** - On all new buildings.
- PHOTOVOLTAICS** - On all new buildings.
- SKYLIGHTS** - For naturally lit interiors.
- REUSE EXISTING PARKING GARAGE** - Reuse Grade.
- WATER TREATMENT & STORAGE** - Capture, treat and reuse stormwater and greywater to address full water reuse by 2020.
- REUSE FORMER HOSPITAL BASEMENT**
- RAIN GARDENS** - Throughout the site. Infiltration treatment by DCSD.
- WIDE ROWS** - Wide rights of way to allow sun light into the buildings.
- TOD** - Transit-Oriented Development with Structure.
- GREEN ROOF + LID SWM** - Allow Power Plants. Low Impact Development (LiD) and Storm Water Management (SWM).

WALTER REED LOCAL REDEVELOPMENT AUTHORITY - REUSE PLAN
WASHINGTON, D.C.



Walter Reed Army Medical Center



Impacts to DC Water:

- Existing private (Federal) water distribution system
- Proposed under Local Redevelopment Authority (RLA)
- Density increase with increased customer base



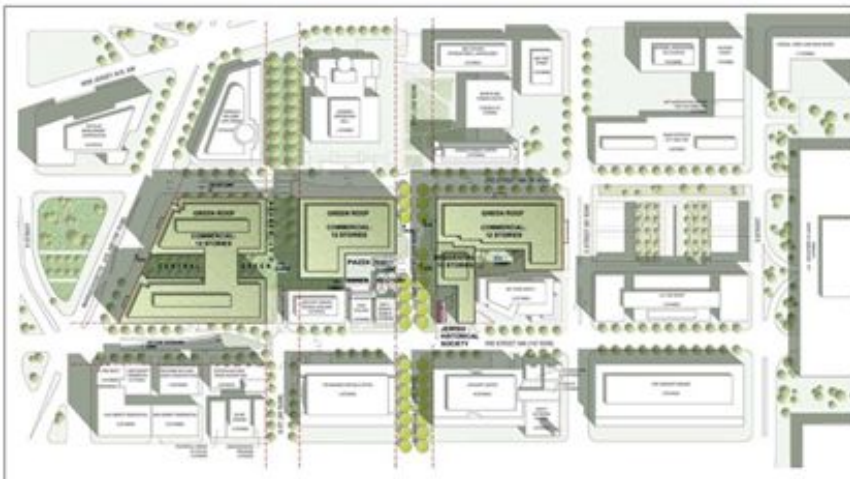
Current Site

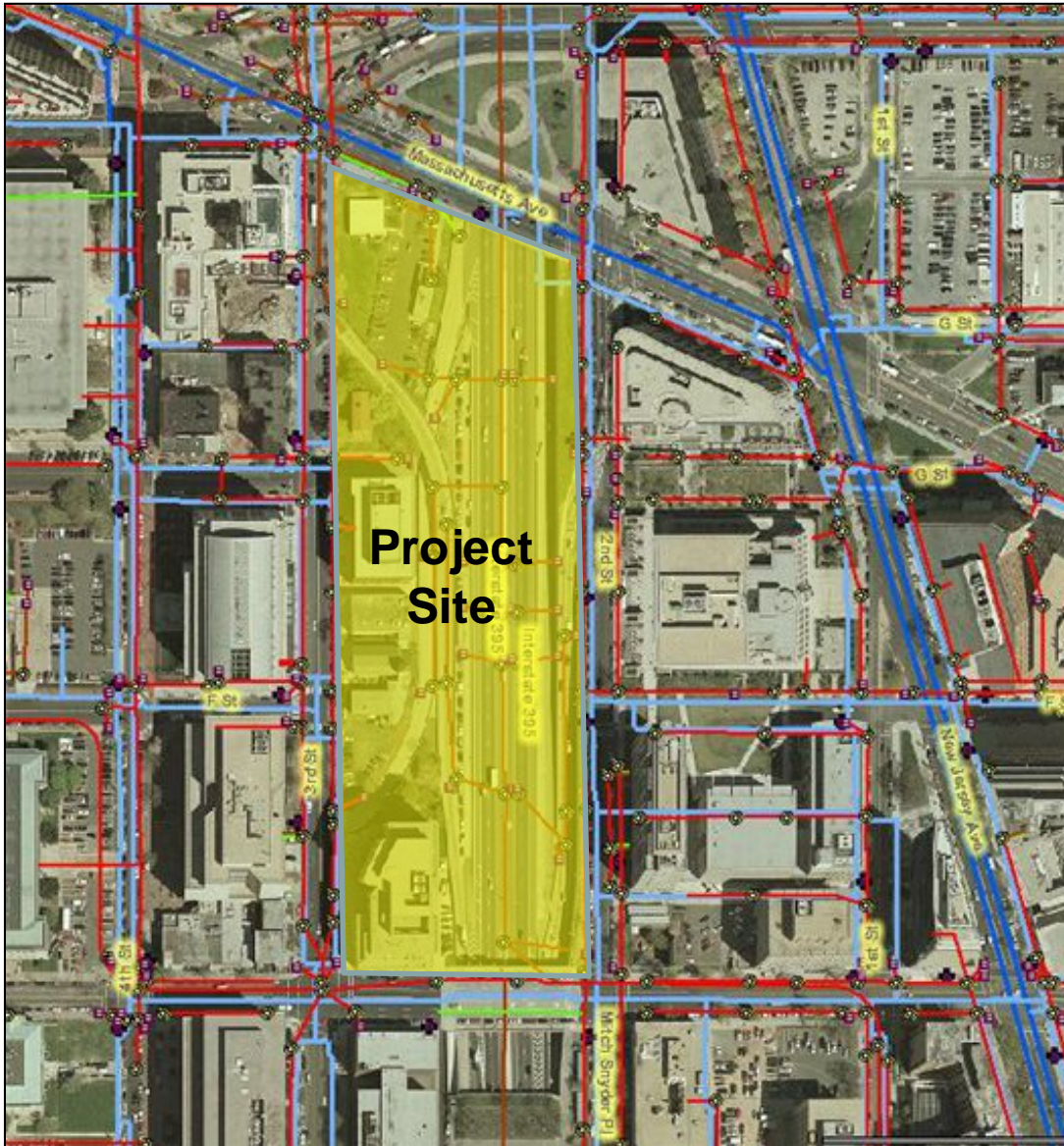


**I-395 Air Rights Tunnel
(Capitol Crossing)**



Project Site Plan





I-395 Air Rights Tunnel (Capitol Crossing)

Impacts to DC Water:

- Construction of three new city blocks over top of I-395 that never existed before
- Relocation of 30" water main in Mass Ave NW to facilitate new on-ramp to I-395
- Regional impact to water and sewer infrastructure due to upgrades, replacement and relocation
- Increased neighborhood density
- New customer base that did not exist previously



Irrigation and Stormwater Storage Systems on the National Mall

Impacts to DC Water:

- Provides more sustainable lawn through use of sandy soil, irrigation, and curbs delineating edge of grass panels
- Installation of subsurface drains, curb drains, and cisterns to collect and hold rain water runoff to be used for irrigation
- Reduction of storm flow to DC Water sewer system
- Connection to DC water potable water system for make-up water





National Museum of African American History and Culture (17th St. & Constitution Ave. NW)

Impacts to DC Water:

- Installation of 1,600 LF of new 12" ductile iron water main around project site
- Relocation of 200 LF of 24" water main





CSX Virginia Avenue Tunnel



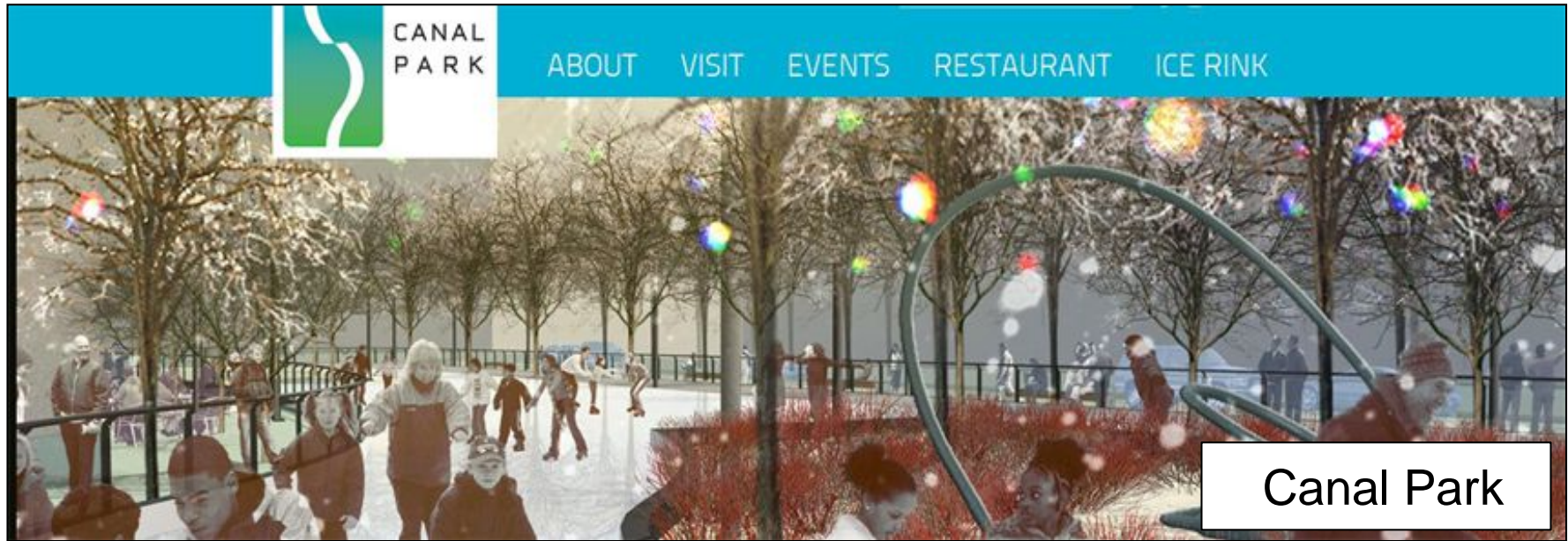


- Owned and maintained by CSX
- Located in SE beneath eastbound lanes of Virginia Avenue between 2nd St SE and 11th St SE
- Approximately 4,000' long
- Purpose is to provide CSX with ability to operate double-stack intermodal container freight trains on a vital segment of the nation's rail network;
- Vertical height will allow CSX to operate double-stack intermodal container freight trains, thus expanding its capacity to transport freight in an environmentally sensitive manner

CSX Virginia Avenue Tunnel

Impacts to DC Water:

- Will impact three major DC Water sewers
- Squeeze box on Tiber Creek Sewer
- Inverted siphon under the tunnel into Marine barracks
- Replacement of water distribution system will be required at locations both crossing and parallel to the construction zone



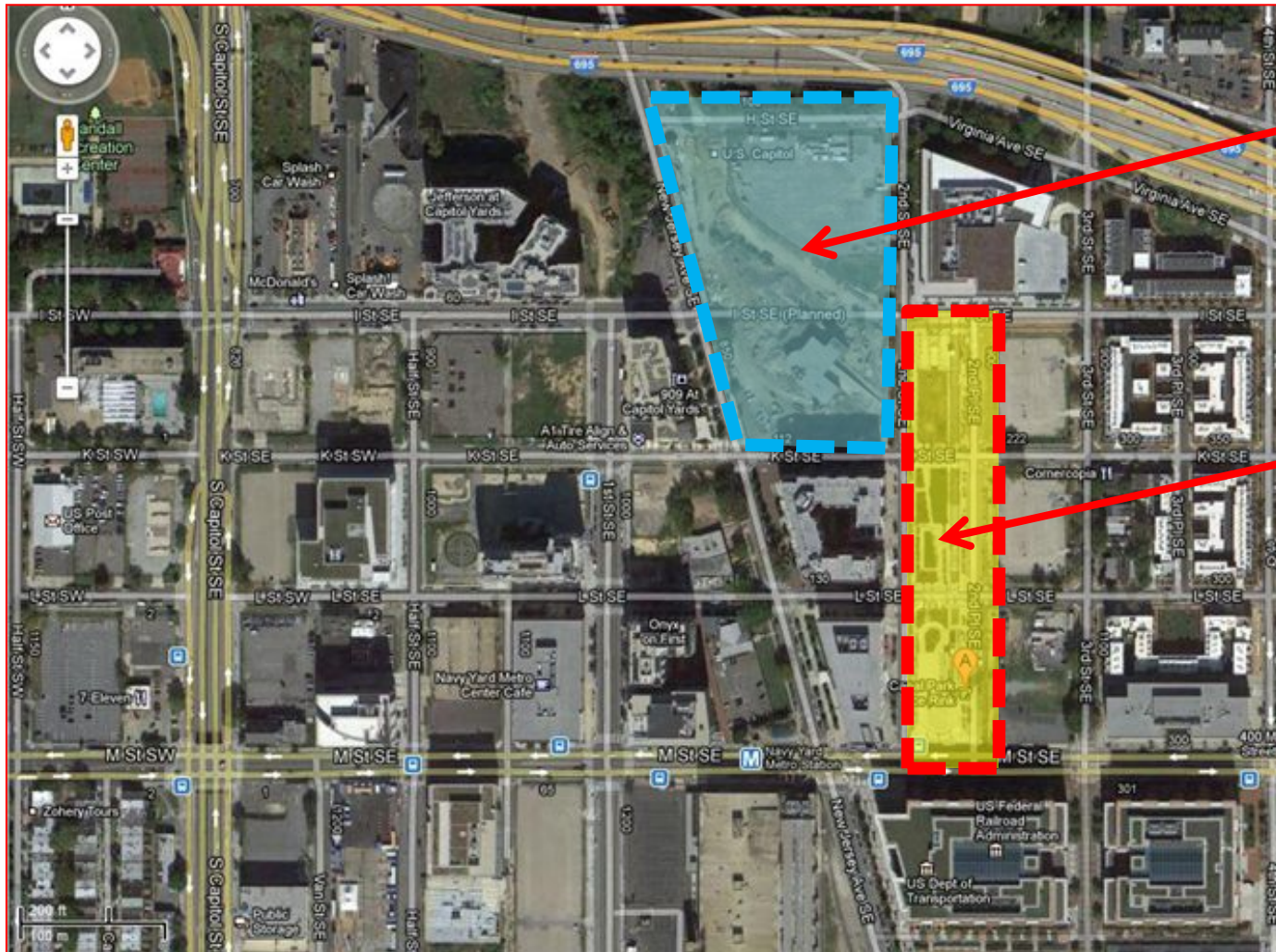
Rendering of the Park Chelsea apartment building as seen from the intersection of New Jersey and I St. NE. It is expected to have 433 units, two pools, a dog exercise area, gym, and green roof garden.

Planned building completion: Summer 2014



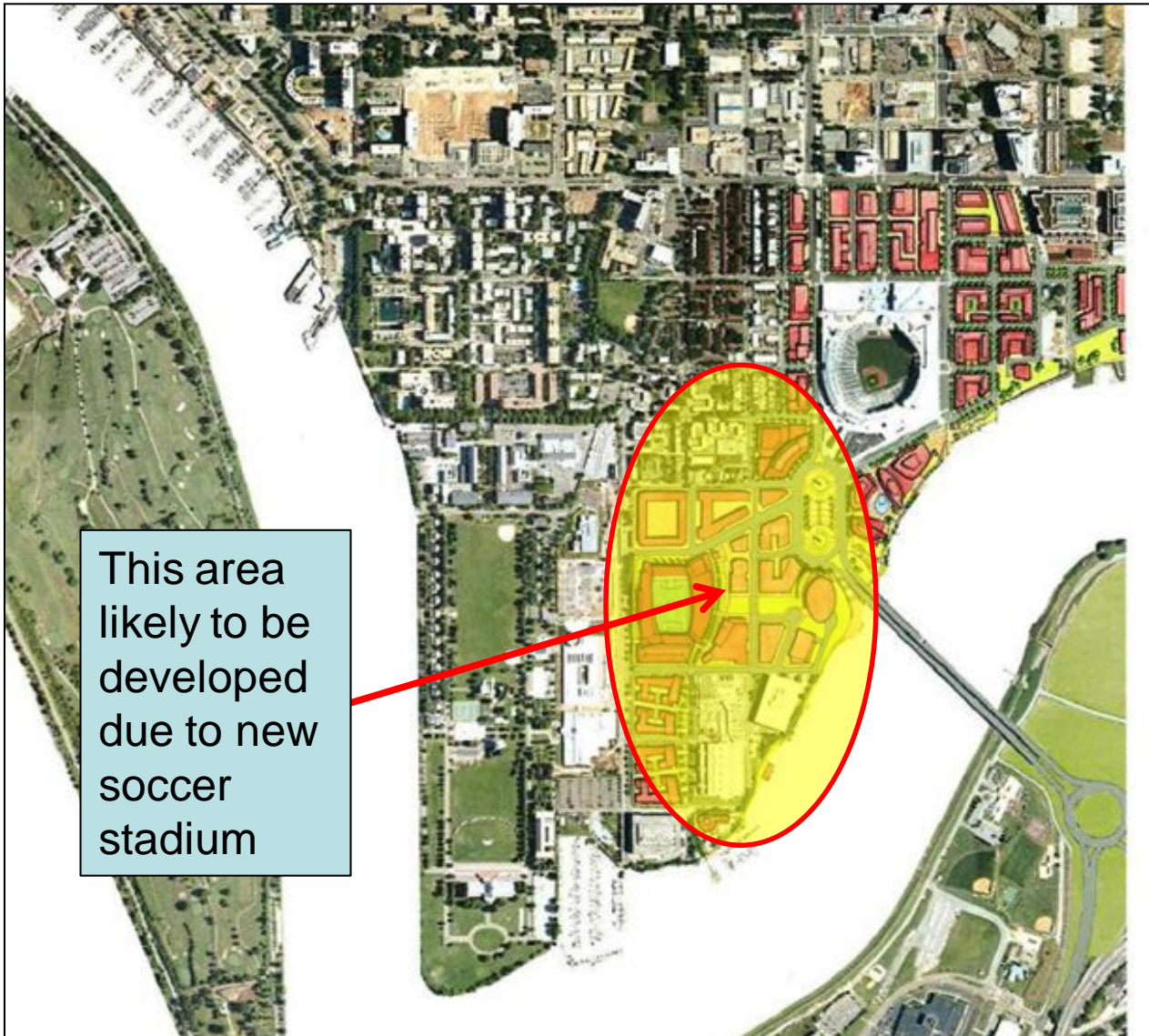


Square 737 and Canal Park



Square 737
Relocation of
3'-6" Low
Area Sewer

Canal Park
Sprayed
irrigation from
recycled
rainwater, off-
site stormwater
harvesting to
feed ice skating
rink



DC United Soccer Stadium

Impacts to DC Water:

- Still in planning stage
- Realignment of South Capitol Street bridge
- This area is being redeveloped due to Nationals Stadium
- Likely regional impact to water and sewer infrastructure due to upgrades, replacements and relocations



Cathedral Commons Giant (Wisconsin Ave and Idaho Ave NW)





Cathedral Commons Giant (Wisconsin Ave and Idaho Ave NW)



Impacts to DC Water:

- Replacement of 2,000 LF of 20" water main
- New, 56,000 SF Giant Food, 80,000 square feet of street front retail, 138 apartments and 8 THs



Organization Chart

