

Lessons From Anacostia River Restoration Issues

Dealing with the CSO Problem

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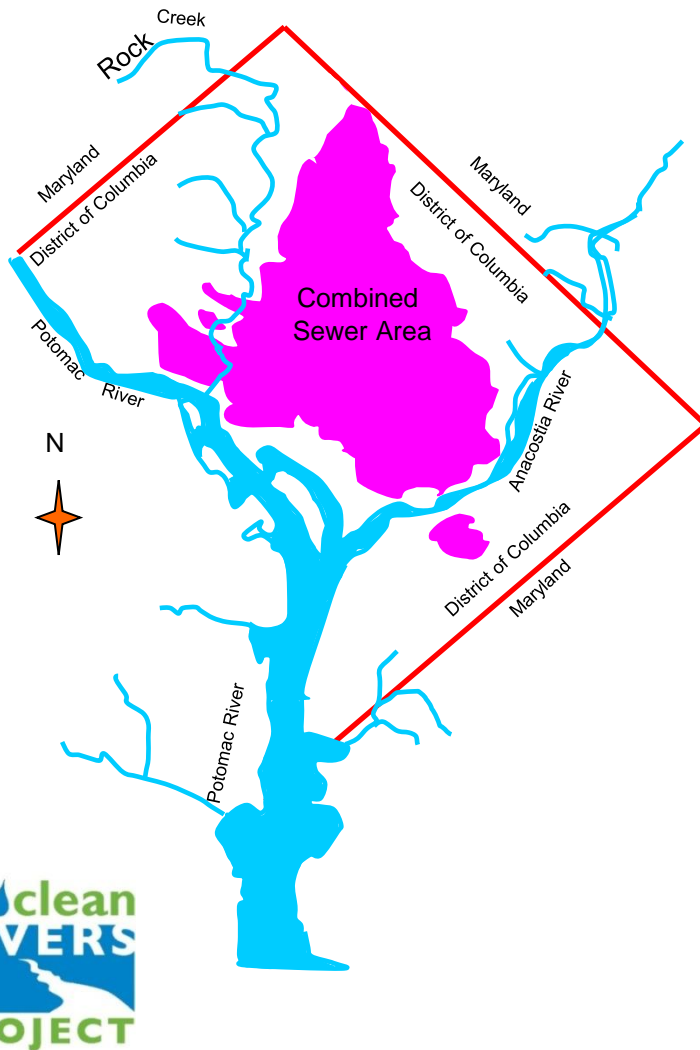
Supervisor, Environmental Planning, DC Water

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Program Implementation Manager

DC Clean Rivers

Background: Sewer System



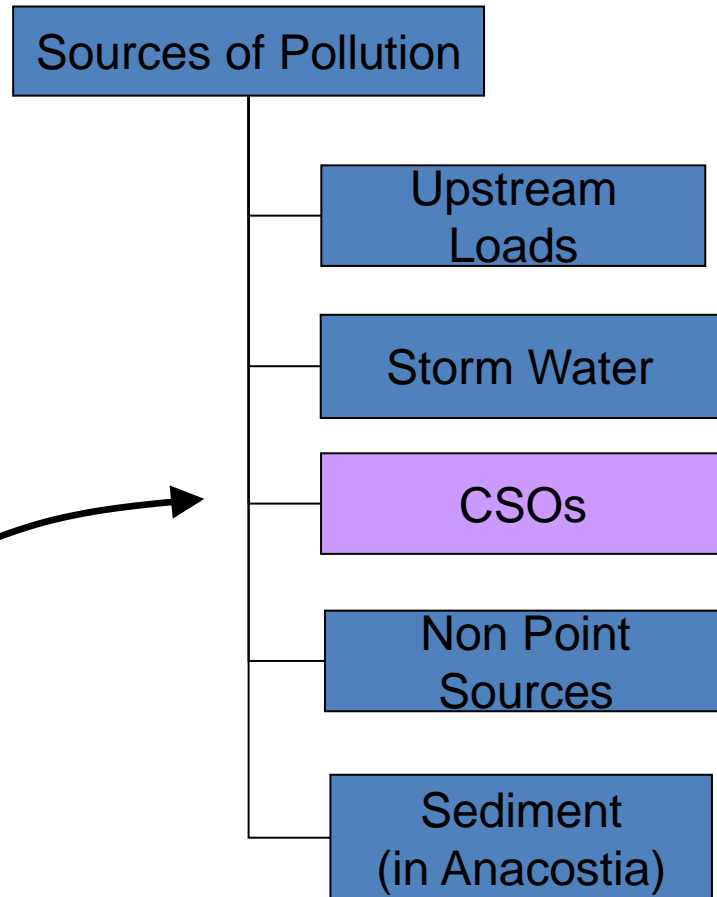
- 1/3 area is combined (12,478 ac)
- 53 CSO outfalls
- Three receiving waters
 - Anacostia River - 15
 - Potomac River - 10
 - Rock Creek - 28

Watershed Background: Overall Goal

■ Meet water quality standards:

- Anacostia River
- Potomac River
- Rock Creek

DC Water's CSOs are 1 of the many pollutant loads which affect water quality

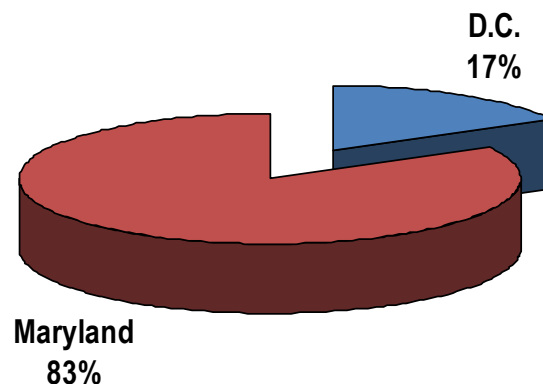


Watershed Background:

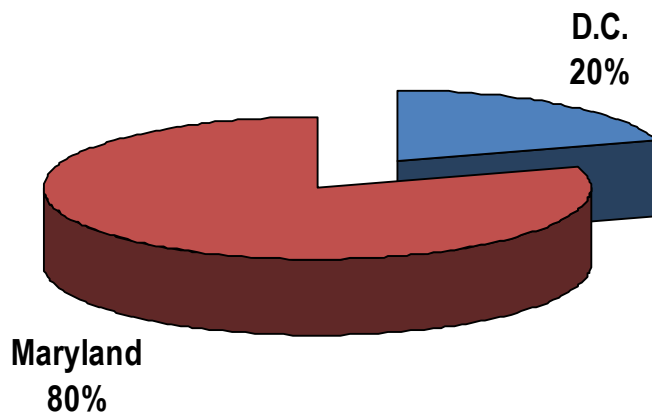
D.C. Comprises Small Part of Watershed

- Water Quality is impacted by activities throughout the watershed

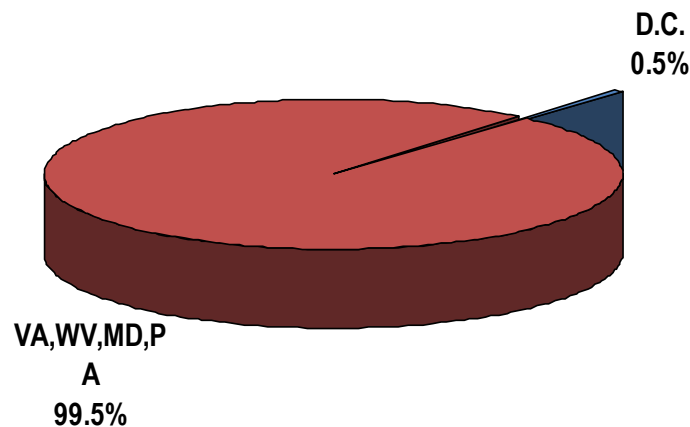
Anacostia Watershed Area



Rock Creek Watershed Area



Potomac Watershed Area



Watershed Background: Anacostia River

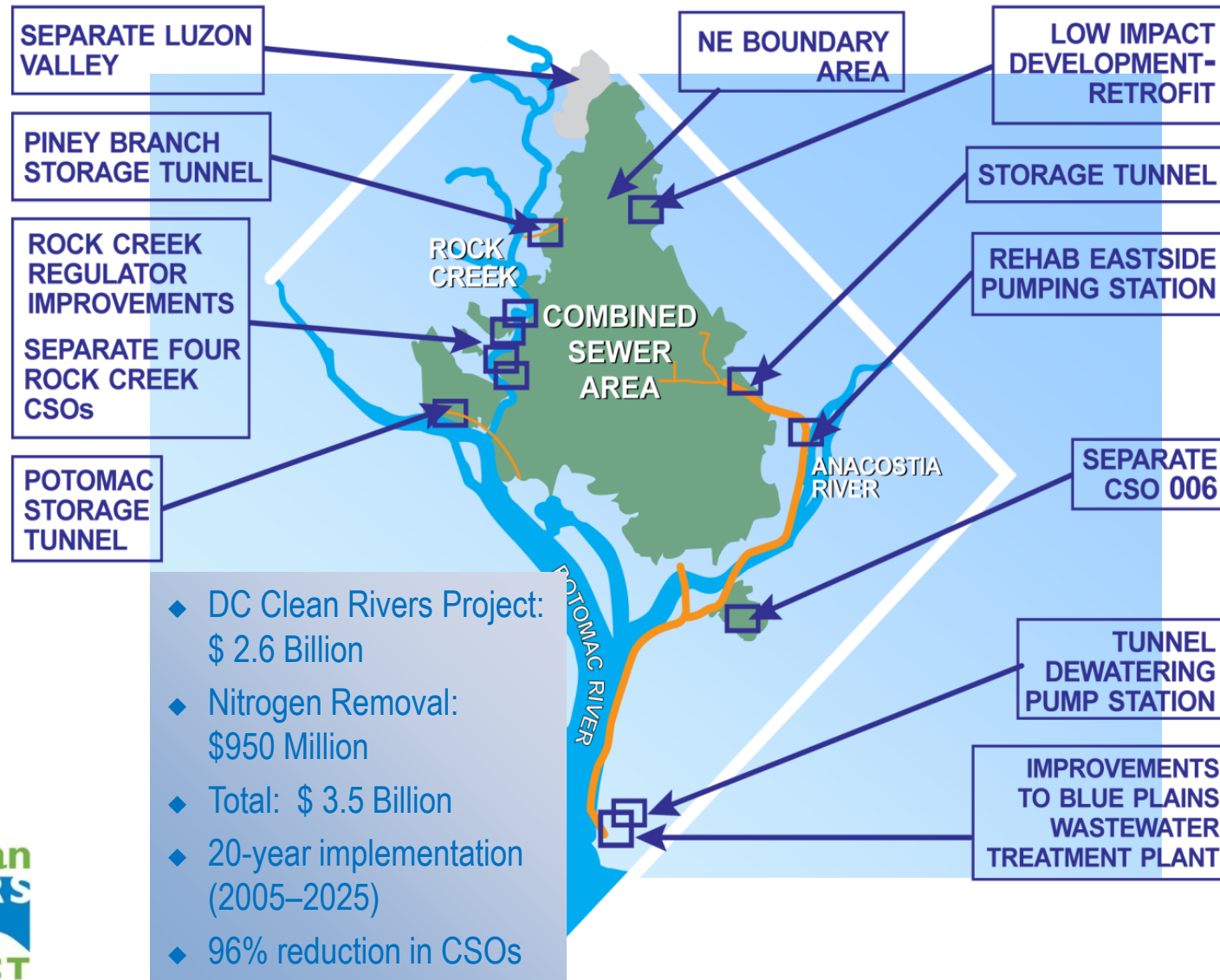
- Average flow rate: 89 mgd
 - (Compare to 330 mgd average Blue Plains flow)
- Characteristics:
 - Tidal
 - Sluggish
 - Long water residence times - average of 30 days, up to 100 days during low flow conditions



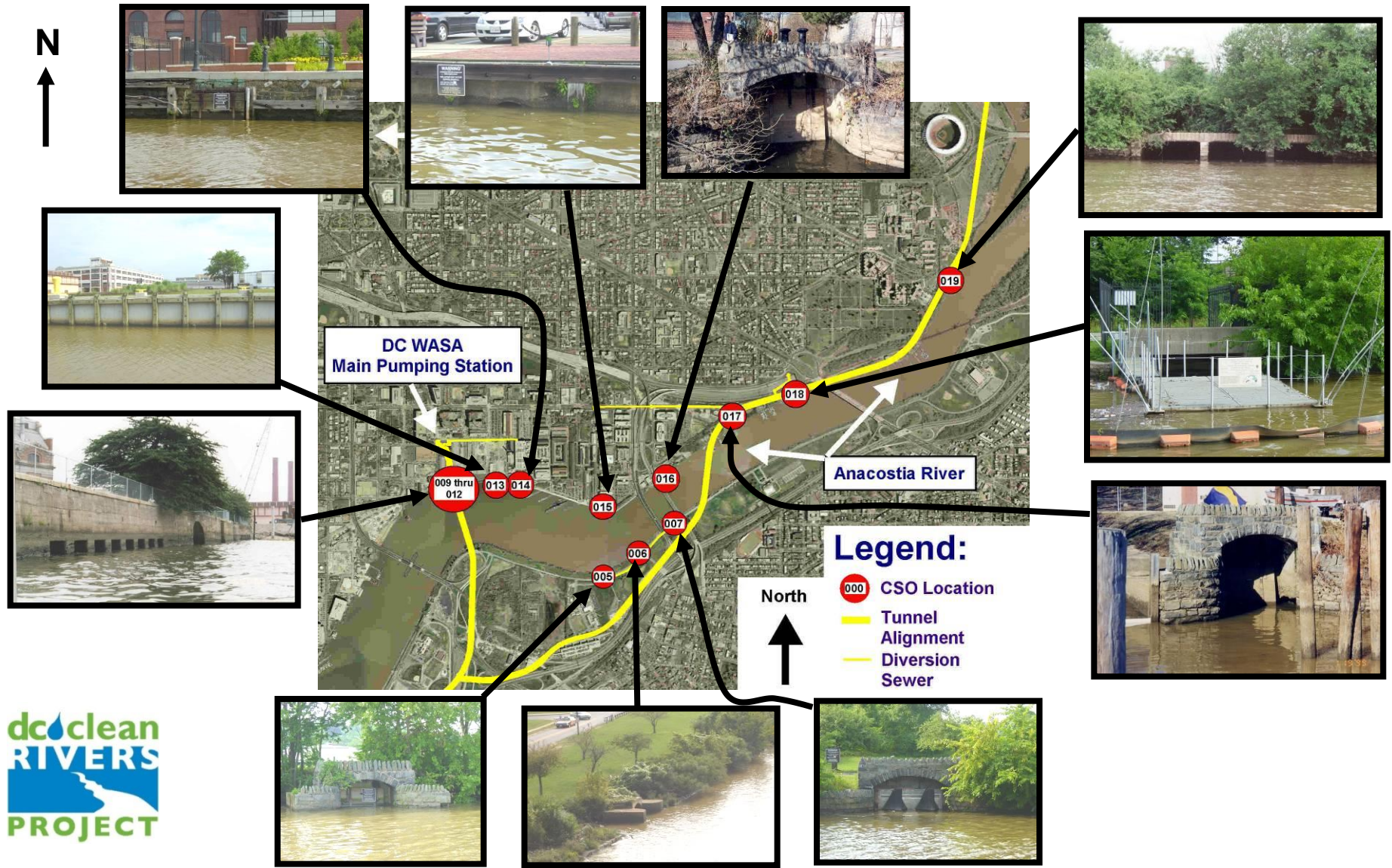
How is DC Water Addressing CSOs?

Item	Primary Benefit to:		
	Anacostia River	Potomac River	Rock Creek
Completed CSO Controls			
Pumping Station Rehabilitations	✓	✓	
Inflatable Dams	✓	✓	
Northeast Boundary Swirl Facility	✓		
Netting System at CSO 018	✓		
Anacostia River Floatable Debris Removal Program	✓	✓	
Excess Flow Treatment at Blue Plains	✓	✓	✓
Tide Gate replacement	✓	✓	
Catch Basin Cleaning	✓	✓	✓
CSO Controls Being Implemented			
Long Term Control Plan (LTCP)	✓	✓	✓

DC Clean Rivers Project Overview



Location of Anacostia CSOs



Progress so far: Predicted CSO Reduction in Average Rainfall Year

Item	Anacostia River	Potomac River	Rock Creek	Total
CSO Overflow Volume (mg/avg.yr)				
• 1996 – DC Water formed	2,142	1,063	49	3,254
• 2011 – After Inflatable Dams & Pump Sta. rehab (Current Predictions)	1,258	654	48	1,960
• 2025 – DC Clean Rivers Project in Place	54	79	5	138
• % Reduction	98%	93%	90%	96%
# of Overflows/Average Year				
• 1996 – DC Water formed	82	74	30	
• 2011 – After Inflatable Dams & Pump Sta. rehab	75	74	30	
• 2025 – DC Clean Rivers Project in Place	2	4	1 / 4 ¹	

Notes:

1. One overflow/avg. yr at Piney Branch (major CSO), 4 overflows/avg. yr at other small Rock Creek CSOs

DC Clean Rivers Schedule (major facilities only)

Receiving Water	Item	Place in Operation Deadline
System-Wide	LID at DC Water Facilities	March 18, 2014
Anacostia River	Anacostia Facility Plan	Completed
	Inflatable dam rehabilitations	Completed
	Main, O St, Eastside Pumping Station Rehab.	Completed
	CSO 006 Separation	Completed
	Tunnel & Conveyance System Improvements from Blue Plains to RFK Stadium	March 23, 2018
	Enhanced Clarification and Tunnel Dewatering Pumping Station	March 23, 2018
	Complete System	March 23, 2025
Potomac River	Inflatable dam rehabilitations	Completed
	Potomac Pumping Station Rehabilitation	In progress
	Potomac Tunnel	March 23, 2025
Rock Creek	Luzon Valley sewer Separation	Completed
	Separate CSO 031, 037, 053, 058	Completed
	Rock Creek Regulator Improvements	October 4, 2013
	Piney Branch Tunnel	March 23, 2025
All	Complete Final LTCP	March 23, 2025

Brief Overview of the Clean Rivers Program

By the year 2025, the \$2.6 billion fully constructed CSO program will relieve flooding in the northeast area of the city and reduce combined sewer overflows by 96% overall, and by 98% in the Anacostia River alone.



Anacostia River Projects: Implementation on Schedule

2011	2012	2013	2014	2015
	M St Diversion Sewers \$41M <i>Apr</i>	LID @ Various DC Water Facilities \$3.8M <i>Jan</i>	Main PS \$40M <i>Feb</i>	Blue Plains Tunnel PS \$333M <i>Sept</i>
				JBAB Overflow & Diversion \$34M <i>Aug</i>

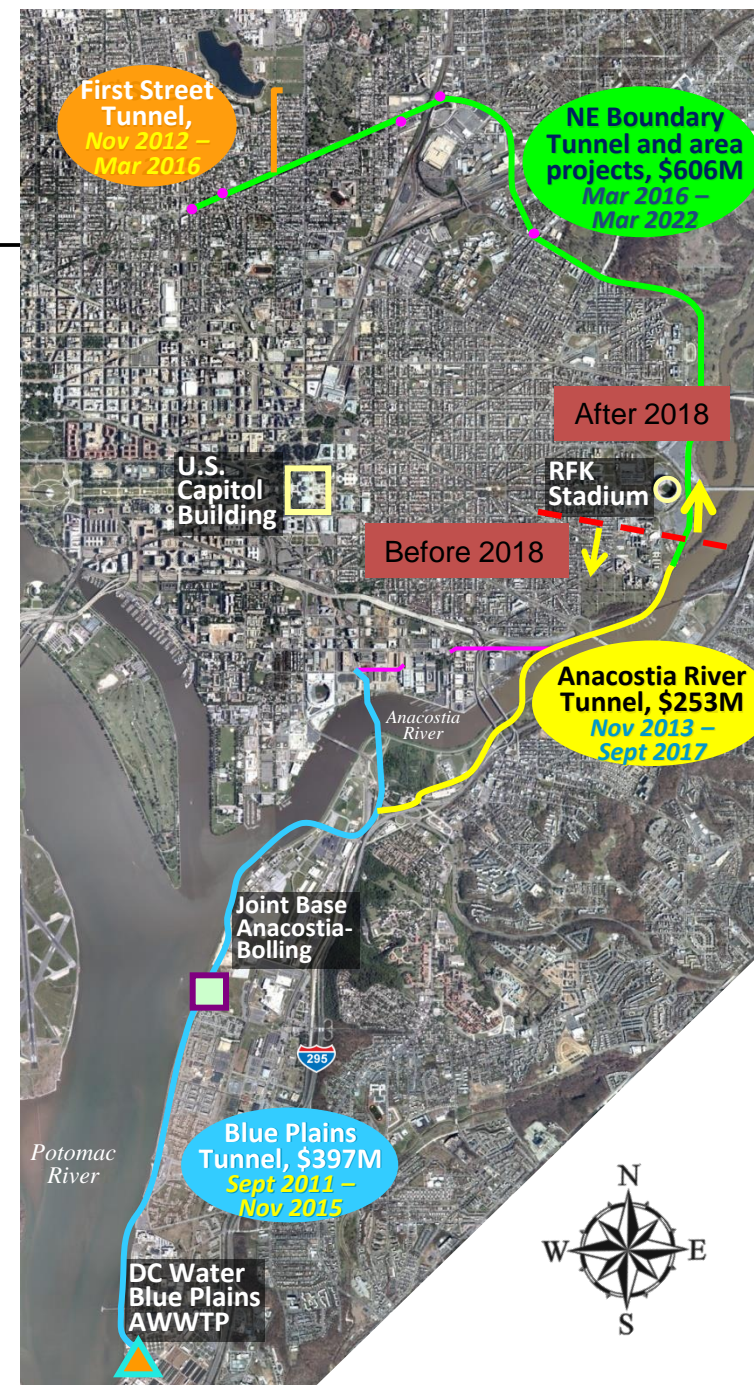
CSO
019
\$40M
Sept

CSO
007
\$6.5M
Apr
Const.
Complete
Jan 2013

**Tingey St
Diversion
Sewer**
\$17M
Jan

**Poplar
Point PS**
\$42M
Oct

Months shown on timeline indicate construction start dates.

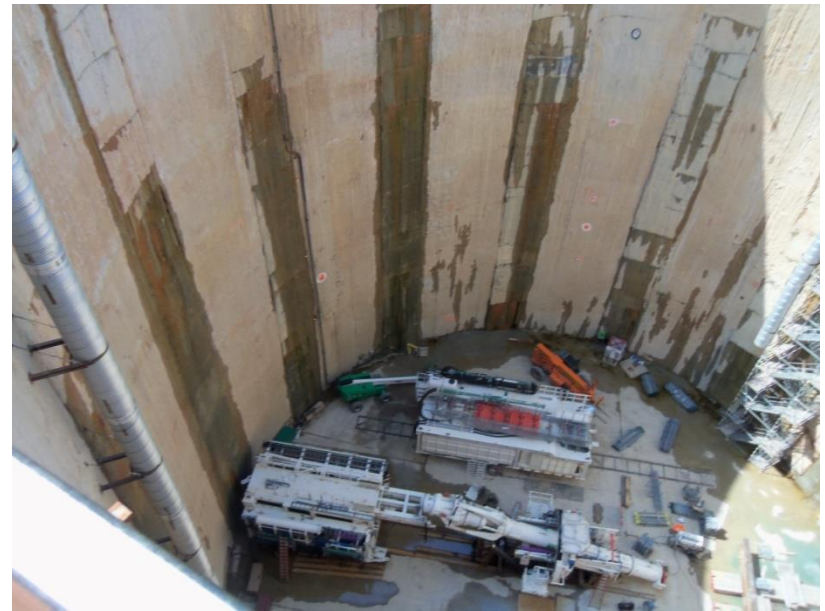


Div A – Blue Plains Tunnel

Blue Plains Site



Div A – Blue Plains Tunnel Tunnel Boring Machine Naming



Solids and Floatables Demonstration Projects at CSO 018 to Anacostia River

- Demonstration project on Anacostia River to remove solids and floatables
- Operational since April 2000
- Removes 400-1000 lbs/event



Anacostia River Floatable Debris Removal Program

- Continuing Program
- Remove about 400 tons/year
- Works cooperatively with U.S. Army Corps of Engineers

