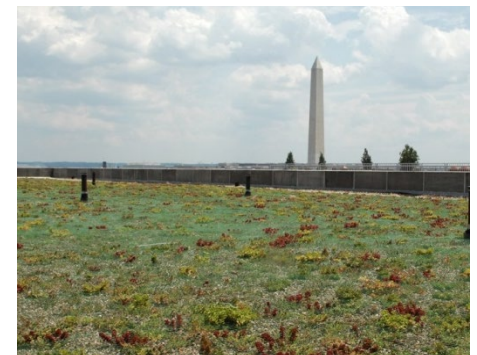


# Water Resources Regulatory Update District of Columbia

Maryland-DC Utilities Association  
Environmental Conference  
October 13, 2023

**Meredith Upchurch, PE, ASLA**  
Associate Director, Regulatory Review Division



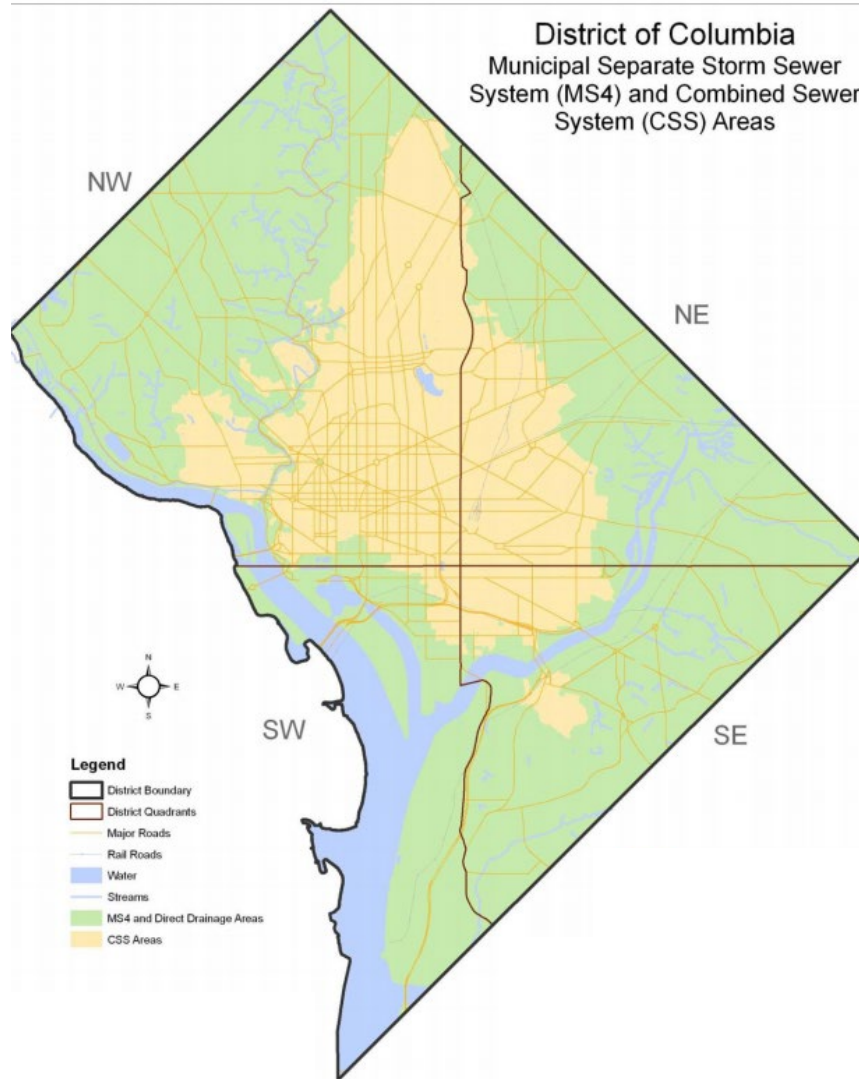
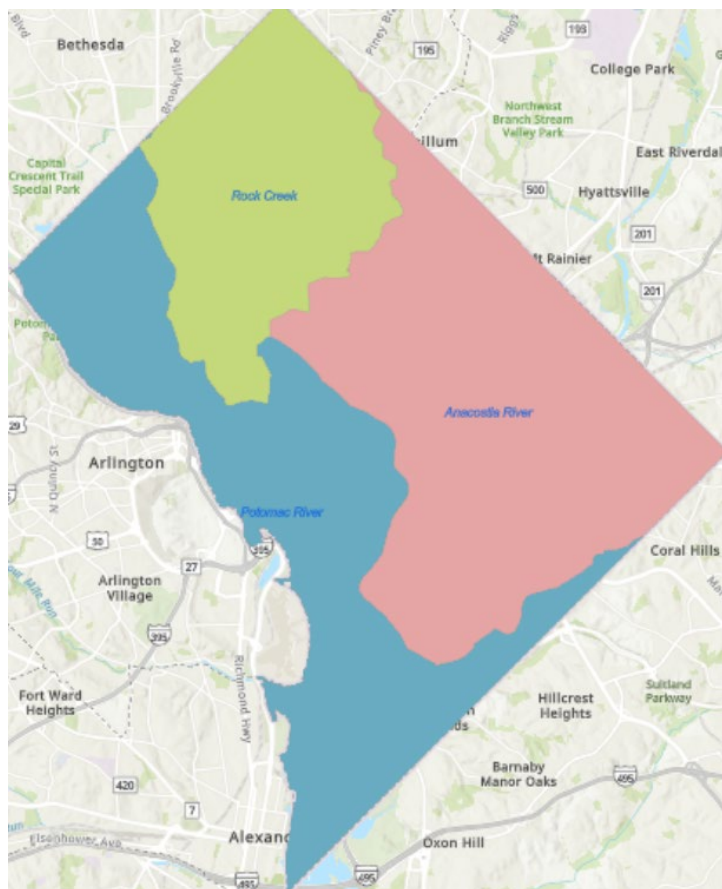
# OVERVIEW

- Water Resources Protection Drivers
- Wetlands & Streams
- Groundwater Discharge
- Floodplain
- Stormwater Management
- Climate Change



DEPARTMENT  
OF **ENERGY &  
ENVIRONMENT**

# Washington, DC – Watersheds



# Regulatory and Policy Background

DC Water Pollution Control Act

Clean Water Act

NPDES Permits

Water Quality Standards

District Municipal Regulations

MS4 Permit

TMDLs Implementation

Permits & Plan Approvals

Erosion & Sediment Control

Stormwater Management

Wetlands

Groundwater Discharge

Compliance Activities

Major Land Disturbing Activities

Substantial Construction

Construction in Right-of-Way

Work in or over stream or wetland

Applies to: Stormwater, ESC, Water Quality Certification & Soil Borings



A Great Egret stands in a shallow wetland, surrounded by dense green vegetation and tall grasses. The bird is positioned in the lower-left quadrant of the frame, facing right. The background is a thick wall of green foliage, with some purple flowers visible in the foreground. The water is calm, reflecting the surrounding greenery.

# Wetlands & Stream Regulations

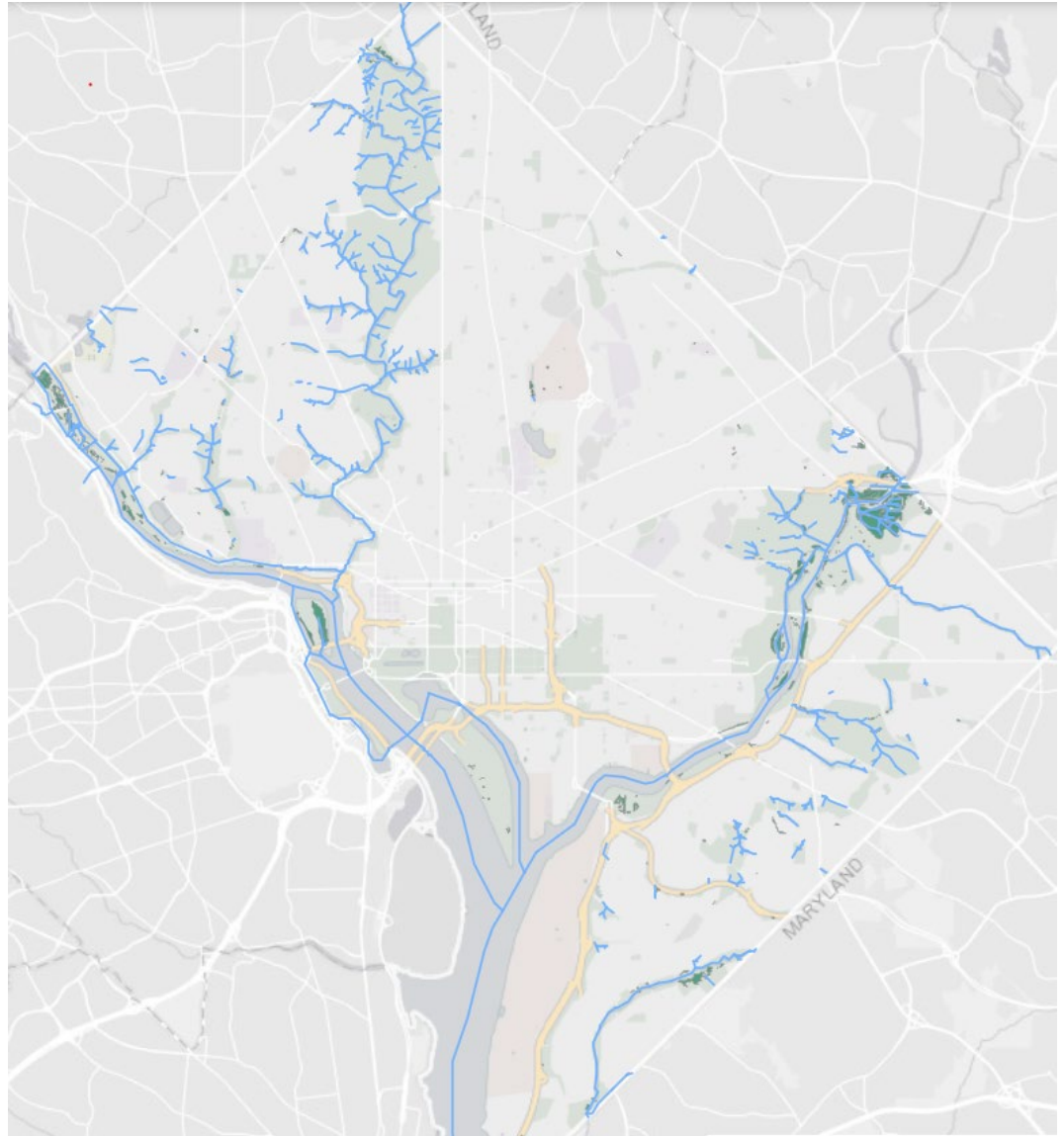


# Waters in the District

Waters of the US  
Federally regulated

Waters of the District  
District regulated

Wetland Conservation  
Plan, 2020



# Regulatory Requirements: Wetlands & Streams

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## Waters of the US (WOTUS)

- Navigable waters; rivers; perennial, some intermittent streams; wetlands with surface connection to waters
- 2023 WOTUS definition (Sackett)
- Regardless of landownership
- Regulated under Clean Water Act and DC Wetland and Stream regulations

## Waters of the District (WOTD)

- All streams and wetlands
- Isolated ephemeral streams (flowing in and out of pipes), vernal pools or other wetlands not connected to or abutting rivers or streams
- Regardless of landownership
- DC Wetland and Stream regulations only

# Wetland & Streams Requirements

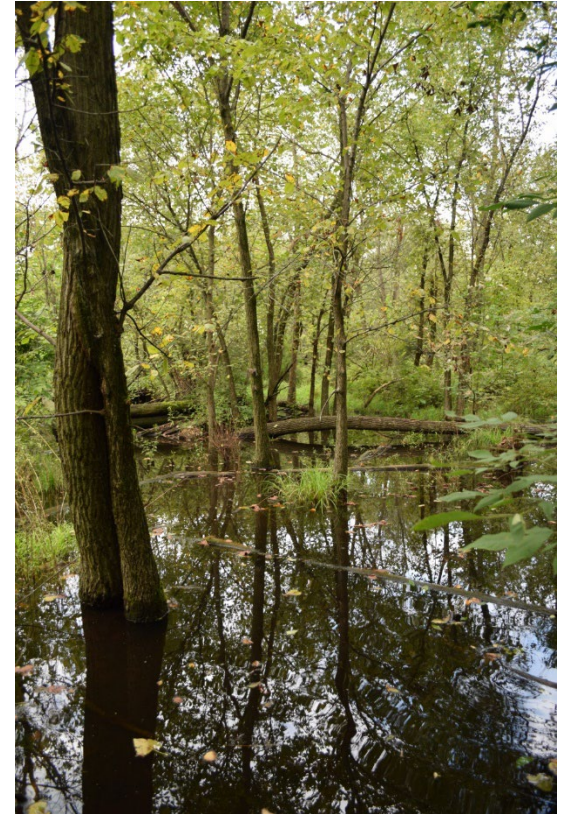
**Triggers:** Any activities in, under, or over Waters of the US or District

District Regulations Finalized May 2021

- 21 DCMR, Chapter 26
- Protect areas under District jurisdiction
- Avoidance and minimization analyses
- Water dependency and analysis of practicable alternatives
- Mitigation Fees
- District Wetland and Stream Permit

WOTUS Clean Water Act Authorizations

- USACE 404 Dredge & Fill Permit
- DOEE 401 Water Quality Certification







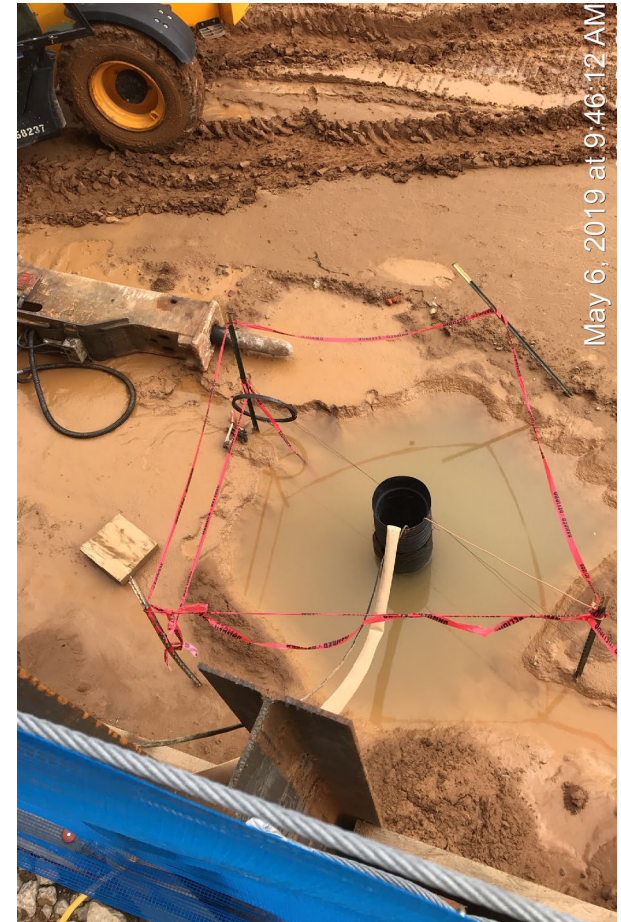
# Groundwater Discharge Regulations



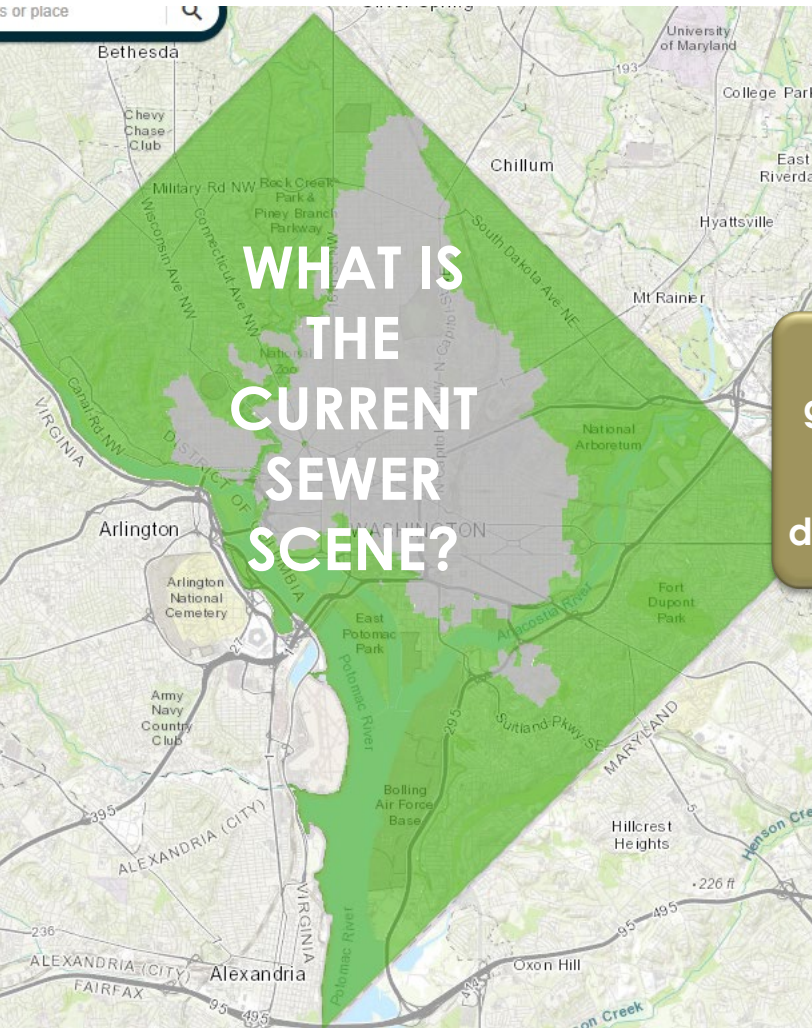
# Groundwater Discharge

## New Regulations Needed

- Construction activities dewater groundwater
- All groundwater is potentially contaminated
- DC's MS4 EPA permit prohibits the discharge of contaminated groundwater
- No regulations govern current discharge approval process
- Stakeholders asked for consistency concerns



# Groundwater Discharge



Prospective groundwater dewatering. Where can discharge go?

Are you in the combined sewer system?

Apply to DC Water for authorization

Haul off-site

Are you in the separate sewer system?

Apply to DOE for discharge authorization to the MS4

Haul off-site

Apply to DC Water for authorization to discharge to the sanitary sewer



# Groundwater discharge

## New Regulations Needed

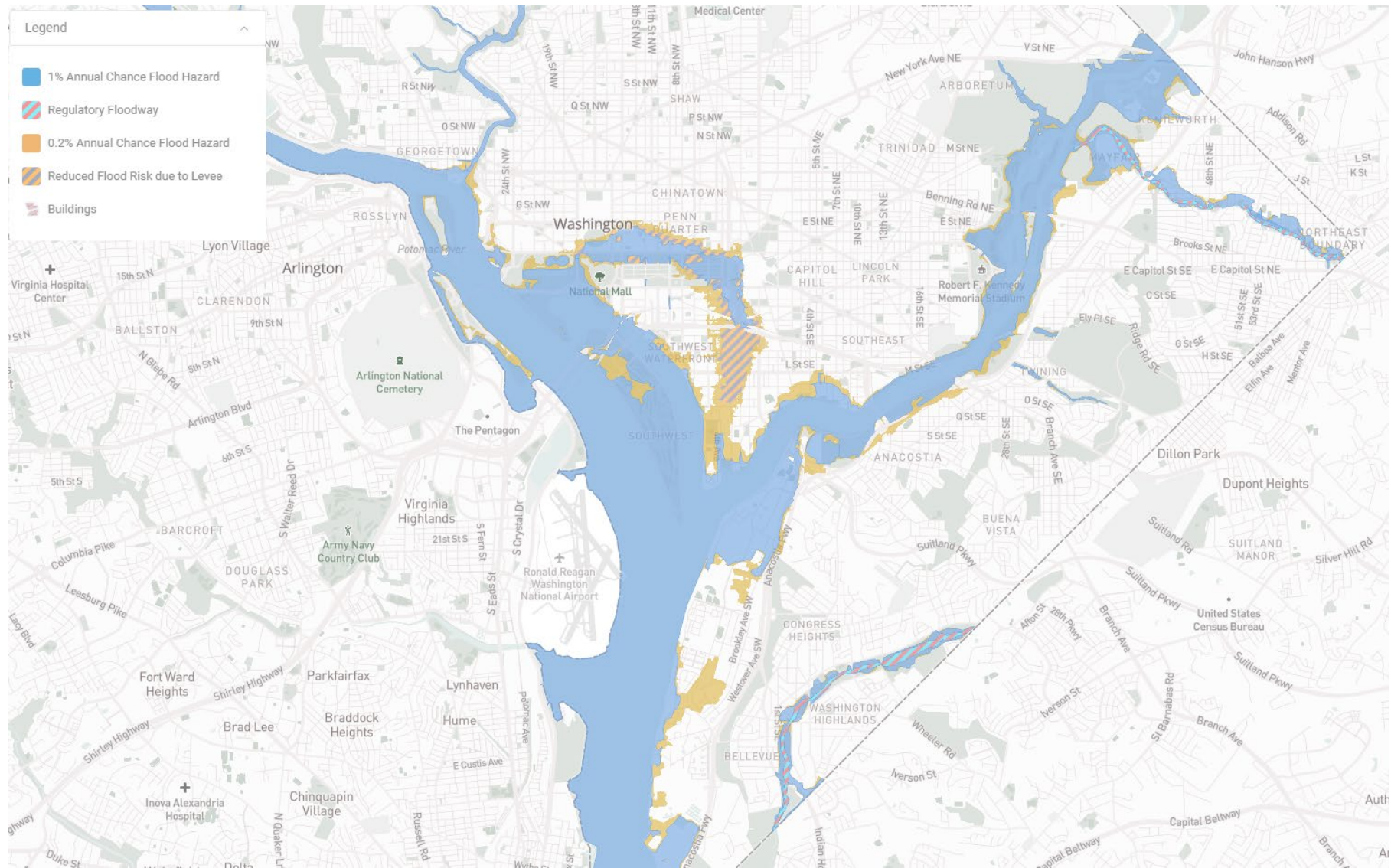
- DRAFT Regulations Published May 2023
- 21 DCMR Chapter 16
- **Applicable to Pumped groundwater:**
  - Dewatering of groundwater during construction
  - Via wells, well points systems, or sump pumps
  - Dewatering of utility vaults and underground structures
  - Foundation or footing drains
- FINAL Regulations expected Winter 2023-24



A black and white photograph showing a flooded area. In the foreground, there is a body of water reflecting the sky. A fence runs across the middle ground, with several trees and bushes behind it. The background shows more trees and a building. The overall scene suggests a floodplain or a coastal area affected by flooding.

# Floodplain Regulations

# The District's Floodplains





# Flood Hazard Regulations

Required by FEMA for participation in NFIP program

- DC Floodplain governed by DC Construction Code & DOEE Flood Hazard Regulations
- Applies to sites in the 100-year floodplain
- New & Substantial Construction

Why update Flood Regs?

- FEMA noted updates needed
- Comprehensive Plan
- Building Code changes
- Plan for Climate Change



Preparing to publish draft in winter 2023-24

# Flood Regulation Updates

## Expand regulated area

- FEMA 100- and 500-year floodplains

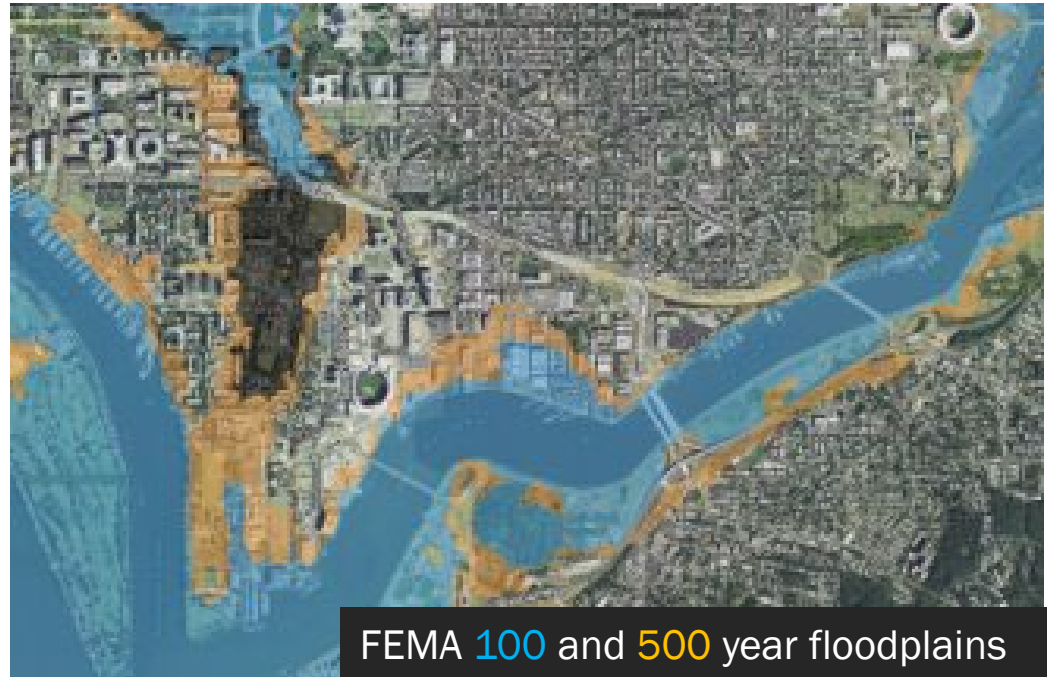
## New & Substantial Construction

## Current Requirements

- Protect to 100-yr flood elevation +1.5 ft

## New Protection Elevation

- Base flood elevation (100-yr) + 2 feet, OR
- or High flood elevation (500-yr), whichever is higher



# Critical Facilities in Floodplain

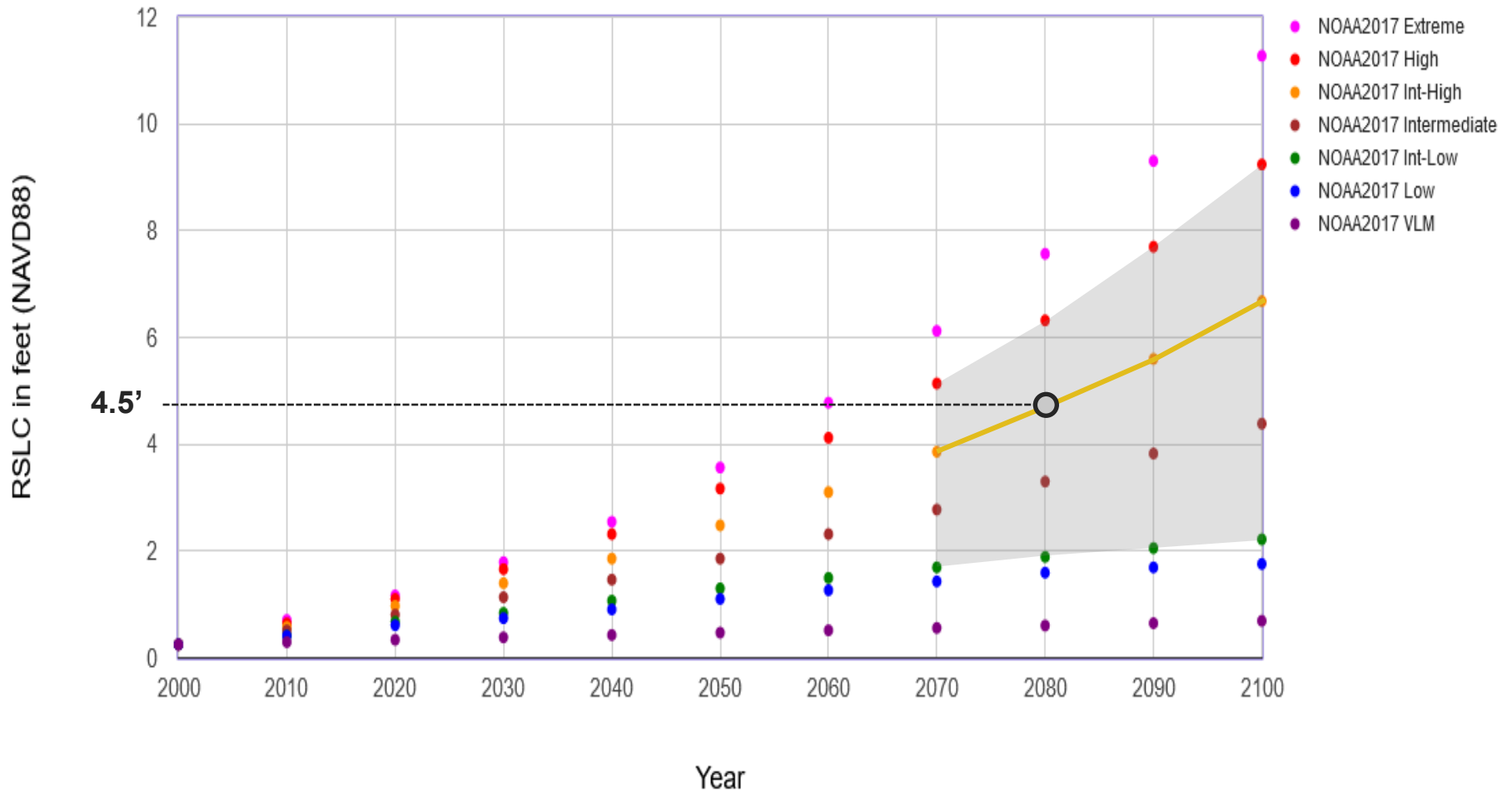
## **Proposed Update:**

- Prohibit new or substantially improved critical facilities in flood hazard areas
  - Require alternatives analysis, stringent protective measures, and variance approval
- **Critical Facilities defined**
  - ASCE 24 Flood Design Class 4 structures
  - Some Flood Design Class 3 structures
- **Critical Facilities include:**
  - Power generating stations, communication towers, electrical substations, fuel or water storage tanks
  - Public utility facilities and structure required in emergencies
  - Required for continued functioning of a critical facility in emergency



# Sea Level Change Scenarios

NOAA et al. 2017 Relative Sea Level Change Scenarios for : WASHINGTON DC



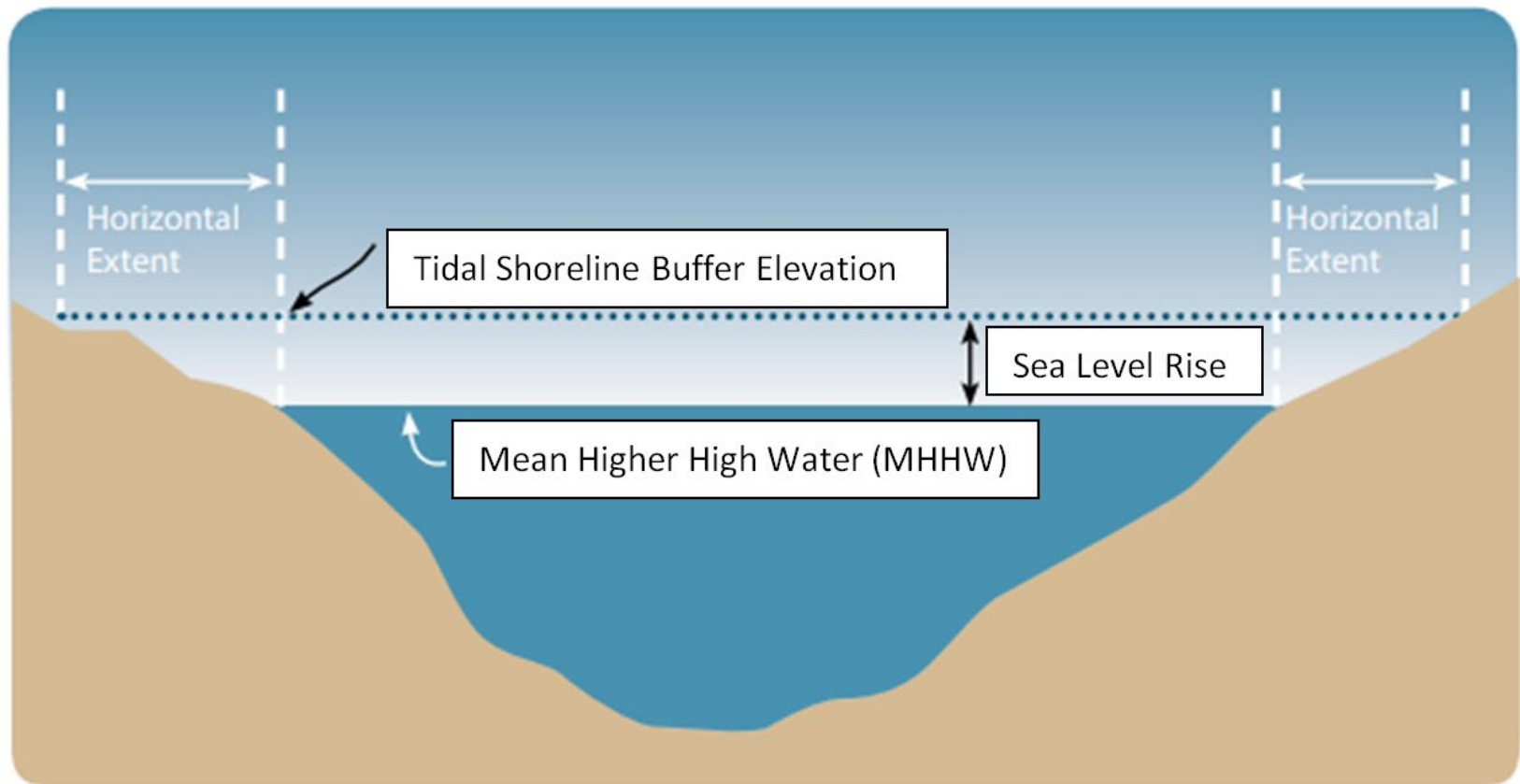
# Tidal Shoreline Buffer

## **Proposed elevation for Tidal Shoreline Buffer Area – inundated in high tide**

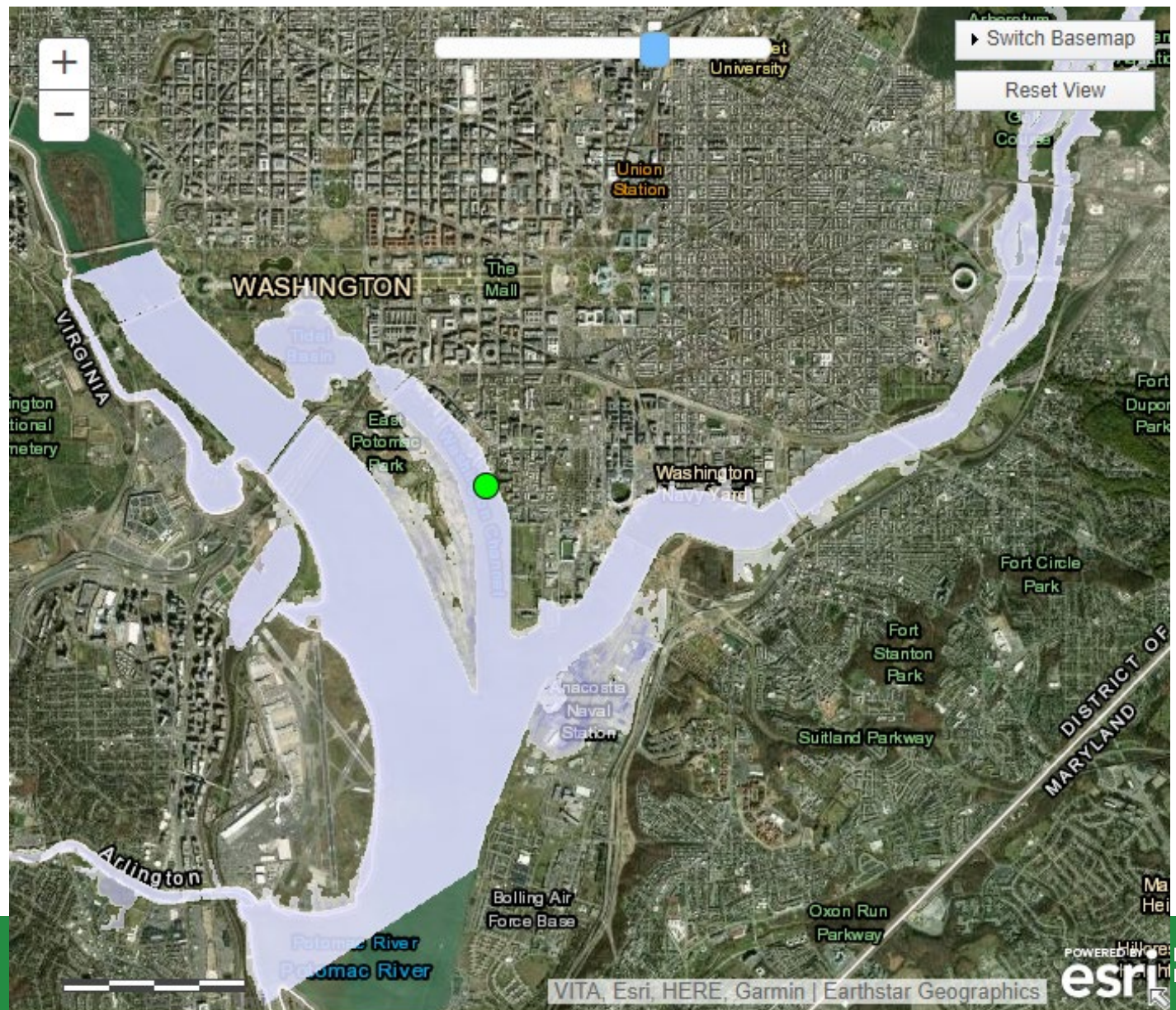
Mean Higher High Water (MHHW) in the year 2000: **2.0' NAVD88**

+ Relative Sea Level Rise between the year 2000 and 2100: **4.5**

= Tidal Shoreline Buffer Elevation (MHHW in the year 2100): **6.5' NAVD88**



# Tidal Shoreline Buffer Calculation







# Stormwater Management Regulations

# Stormwater Management Requirements

Enacted in 2013:

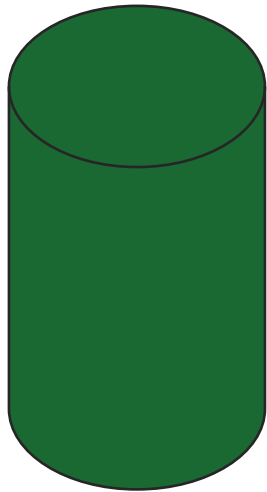
- Stormwater **Retention** Requirements
  - Major Land Disturbing Projects ( $\geq 5000$  sf) **1.2 inch**
  - Major Substantial Improvement Projects **0.8 inch**
  - Public Right-of-Way to the MEP
  - Prioritize Green Infrastructure retention practices
  - Utility Trenching exception to disturbance calculation
- Stormwater **Detention** Requirements
  - Maintain peak discharge
  - **2-year storm** to pre-development conditions (meadow)
  - **15-year storm** to pre-project conditions
- Off-site Compliance Options
  - Stormwater Retention Credits

# Stormwater Management Offsite Option

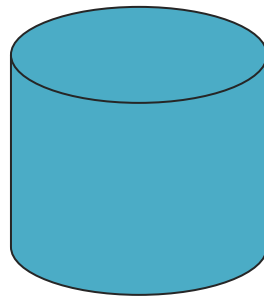
## Provide Compliance Flexibility to use Offsite stormwater management

On-site retention  $\geq 50\%^*$  of the retention requirement = Offsite Allowed  
(\*on-site requirement varies)

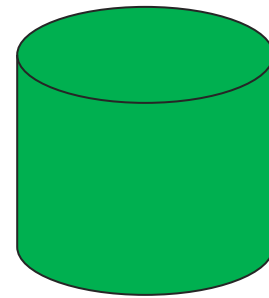
$$\text{SWRv} - \frac{\text{On-Site Retention}}{\text{Retention}} = \text{Offv}$$



10,000 GALLONS



5,000 GALLONS



5,000 GALLONS



# Stormwater Retention Credits

## Stormwater Retention Credits (SRCs):

- 1 SRC corresponds to 1 gallon of retention for 1 year
- 1 SRC achieves 1 gallon of Offv for 1 year
- Each SRC has a unique serial number
- Privately tradable
- Buyer and seller negotiate price (average range ~ \$2.00)

## SRC Generation:

- “Voluntary” or “unregulated” green infrastructure (GI) in the MS4 area generate High Impact Credits
- Generate and sell SRCs to earn revenue
- Sell SRCs in an open market to properties that requirements



# OUTCOMES OF THE 2013 STORMWATER RULE

Regulations have set the District on a long-term path to fishable and swimmable waterbodies

- Retrofit over 2300 acres with green infrastructure (GI)
- The Stormwater Retention Credit (SRC) program has motivated private investment to retrofit over 150 acres with GI

# Using SRC's

## MS4 or Green CSS<sup>1</sup>:

- **Must use MS4 SRCs**
- Less than 50% on-site requires approval

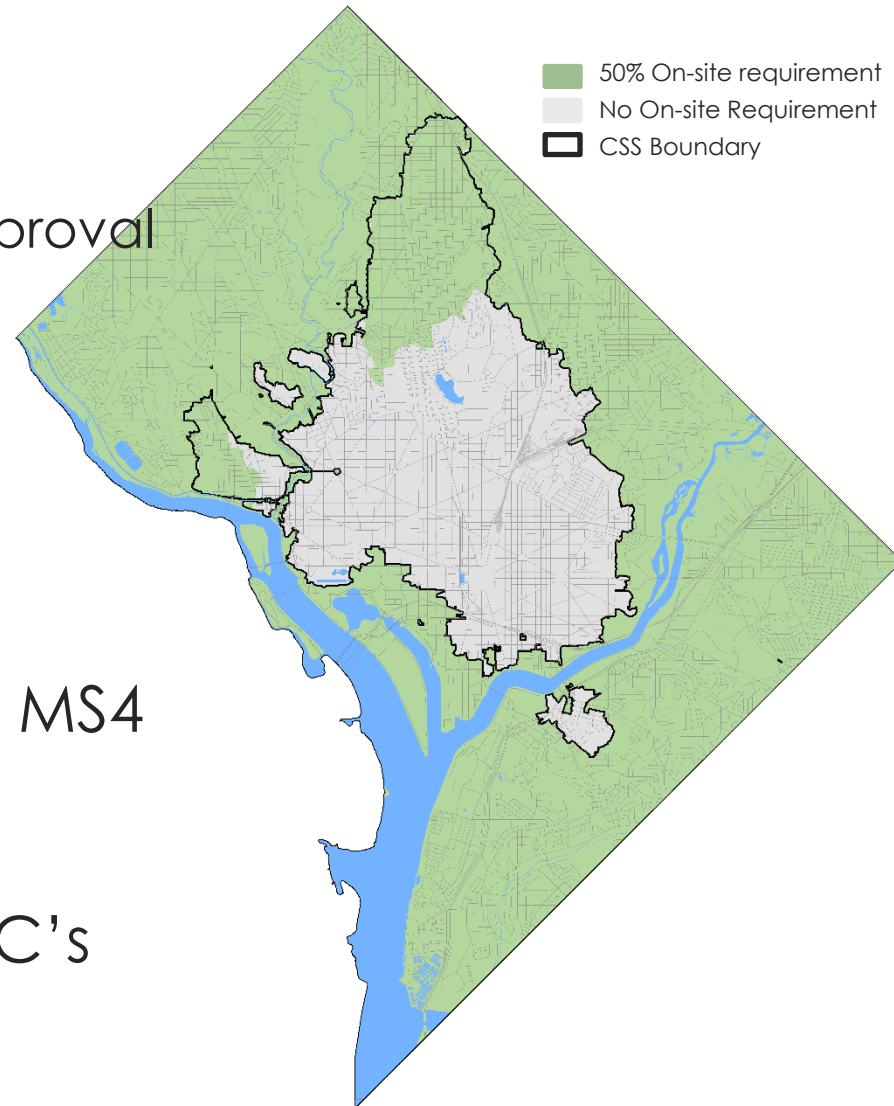
## Grey CSS<sup>2</sup>

- **Must use MS4 SRCs**
- No minimum on-site retention

## Proposed changes in 2024

Continue to prioritize voluntary MS4 SRCs – **High Impact SRC's**

Flexibility for Self-generated SRC's



<sup>1</sup> Green CSS - Areas of CSS where CSOs are reduced with GI (can use Green CSS SRCs)

<sup>2</sup> Grey CSS - Areas of CSS where CSOs are reduced by storage tunnels



# Stormwater Management & Climate Change

- Planning for Climate Change
  - Multiple research efforts: Chesapeake Bay, NOAA, ASCE

Storm	Baseline	MARISA	Climate Ready DC
2-year storm (in)	3.2	3.6 (+12.5%)	4.0 (+25.0%)
15-year storm (in)	5.2	6.1 (+17.3%)	8.0 (+53.8%)

High Emissions RCP 8.5, end of century

- Stormwater Retention
  - Current: 1.2" retention requirement
  - 90<sup>th</sup> percentile storm not expected to drastically change
- Stormwater Detention
  - 15-year storm expected to significantly increase and contribute to property & street flooding
  - Exploring changes to peak discharge requirements





For more information:

**Floodplain Regulations:** [doee.dc.gov/service/flooding](https://doee.dc.gov/service/flooding)

**Wetland Regulations:** [doee.dc.gov/service/wetlands-and-streams-district](https://doee.dc.gov/service/wetlands-and-streams-district)

**Stormwater Regulations:** [doee.dc.gov/swregs](https://doee.dc.gov/swregs)

**SRC Program:** [doee.dc.gov/src](https://doee.dc.gov/src)

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