HICKEY LANE
STORMWATER RETROFIT PROJECT

PUBLIC STAKEHOLDER SEMI-FINAL DESIGN PUBLIC MEETING

January 27, 2021

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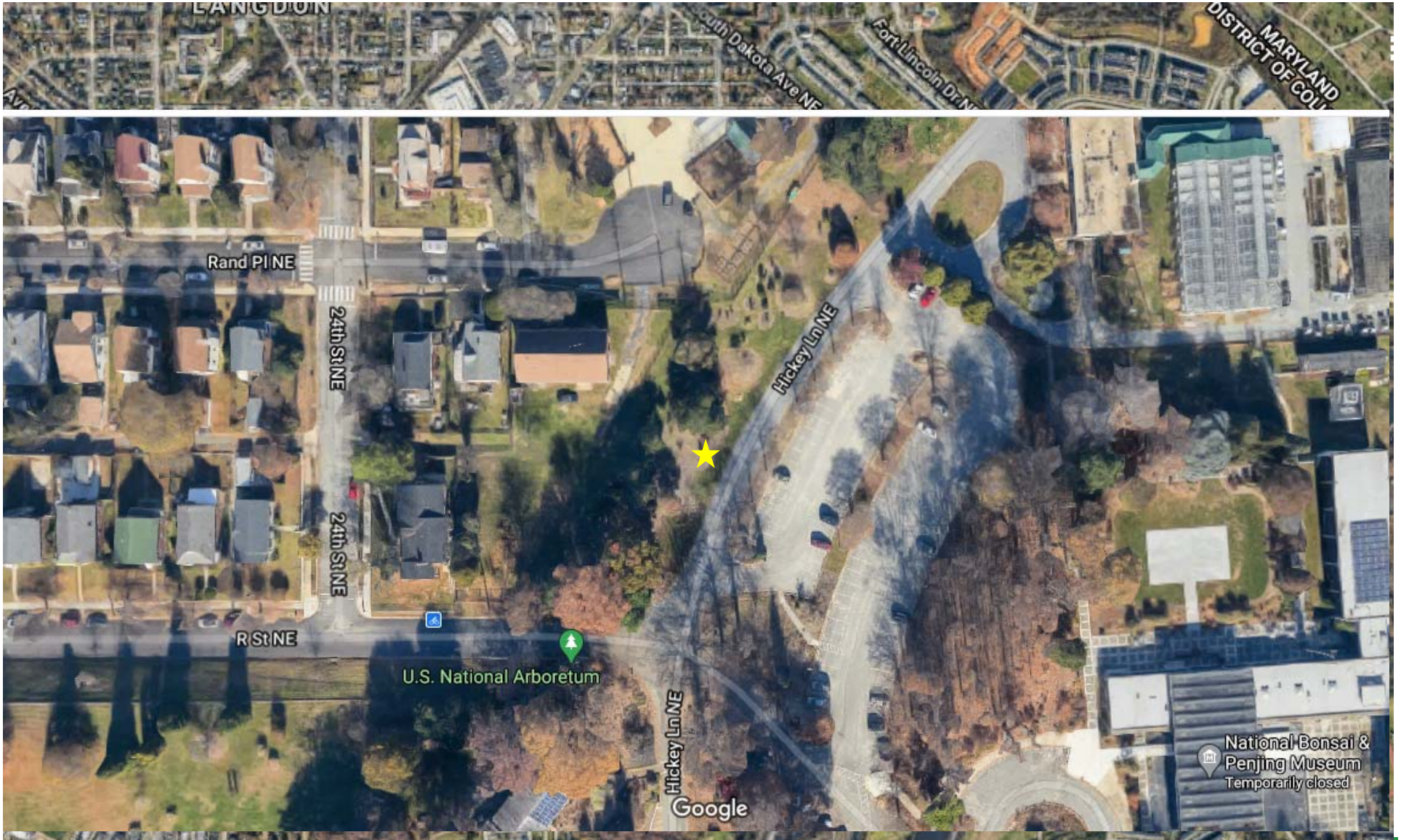
U.S. NATIONAL ARBORETUM
DEPARTMENT OF ENERGY & ENVIRONMENT
WE ARE WASHINGTON DC
GOVERNMENT OF THE DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

AGENDA

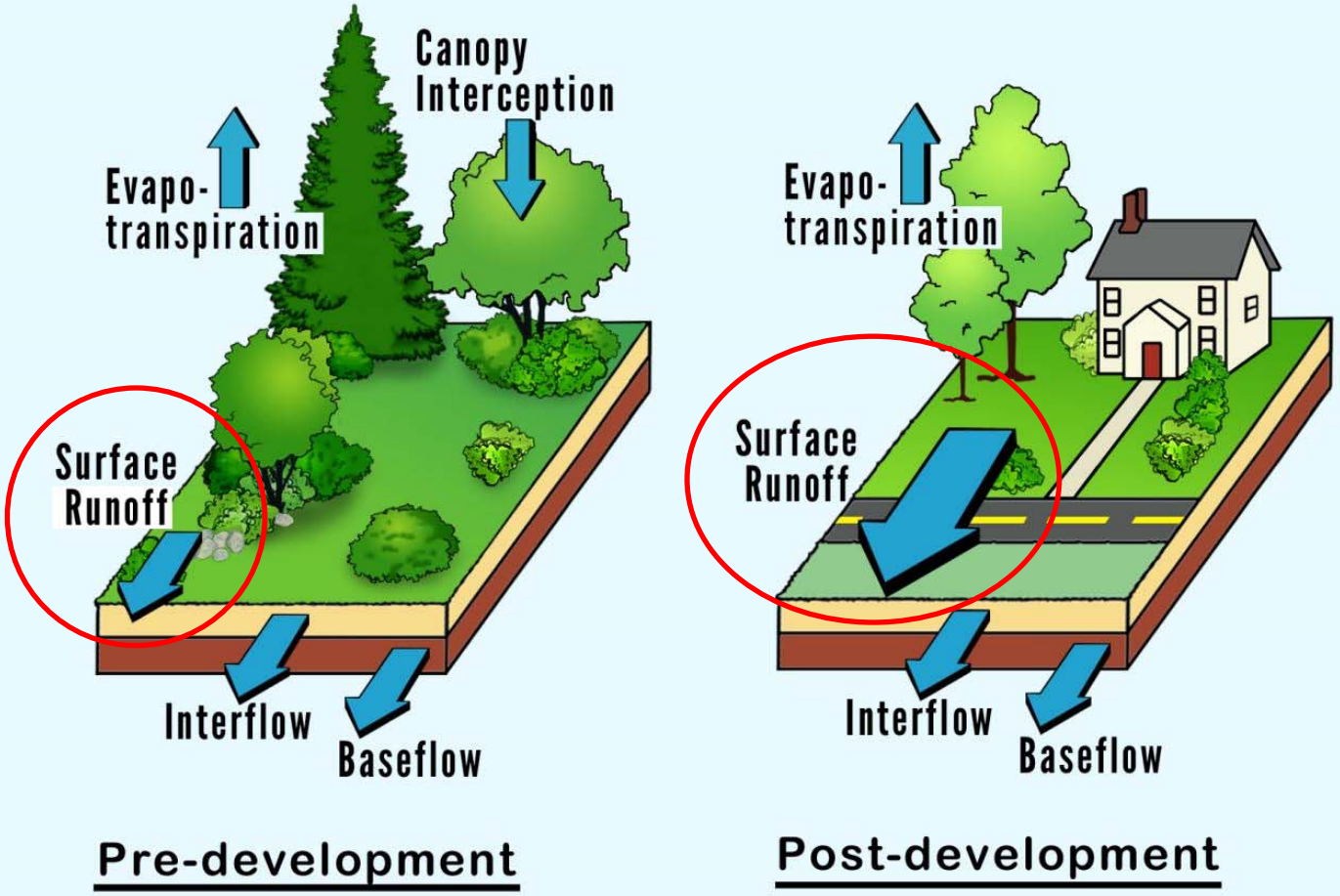
- Project Area & Background
- Existing Conditions
- Project Objectives
- Restoration Approaches
- Semi-Final Design
- Timeline
- FAQs
- Q&A

PROJECT LOCATION



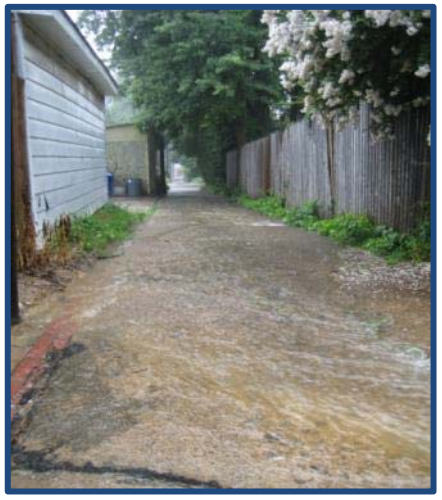
BACKGROUND

Figure 1.1 Water Balance at a Developed and Underdeveloped Site
(Source: Schueler, 1987)



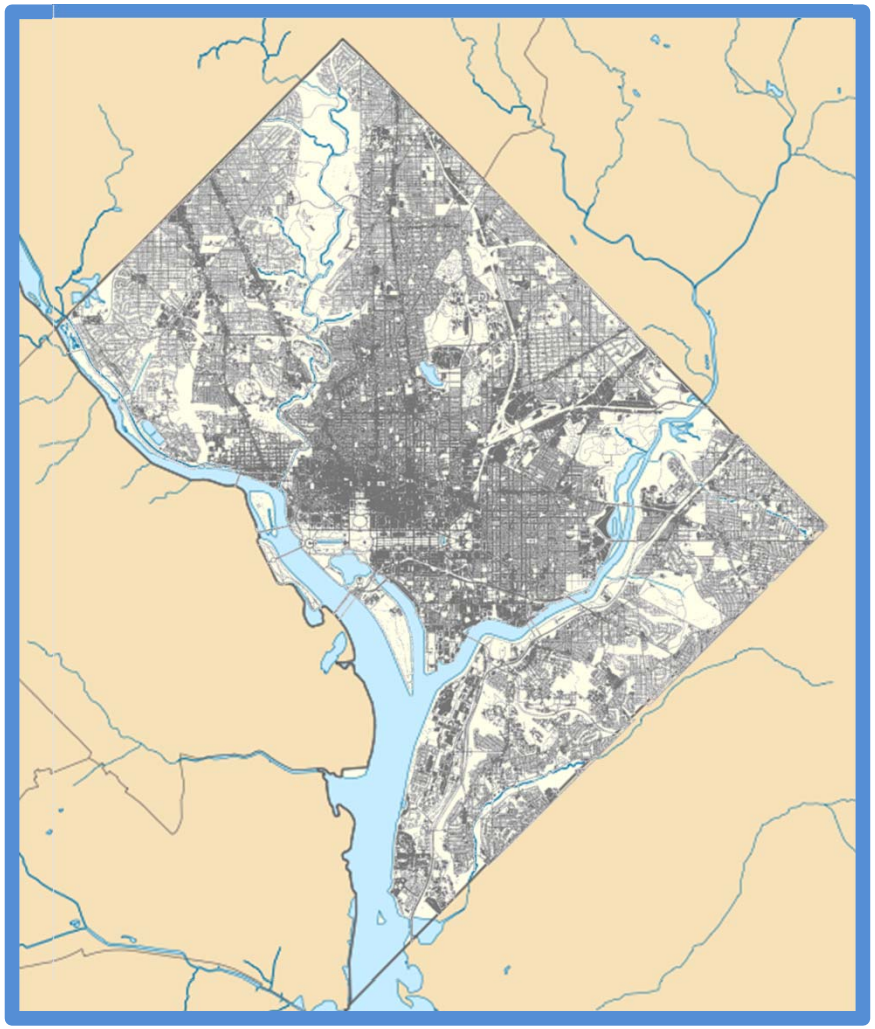
Surface runoff is minimal in an undeveloped site, but dominates the water balance at a highly impervious site.

PROBLEM OF STORMWATER POLLUTION



DISTRICT OF COLUMBIA LAND USE



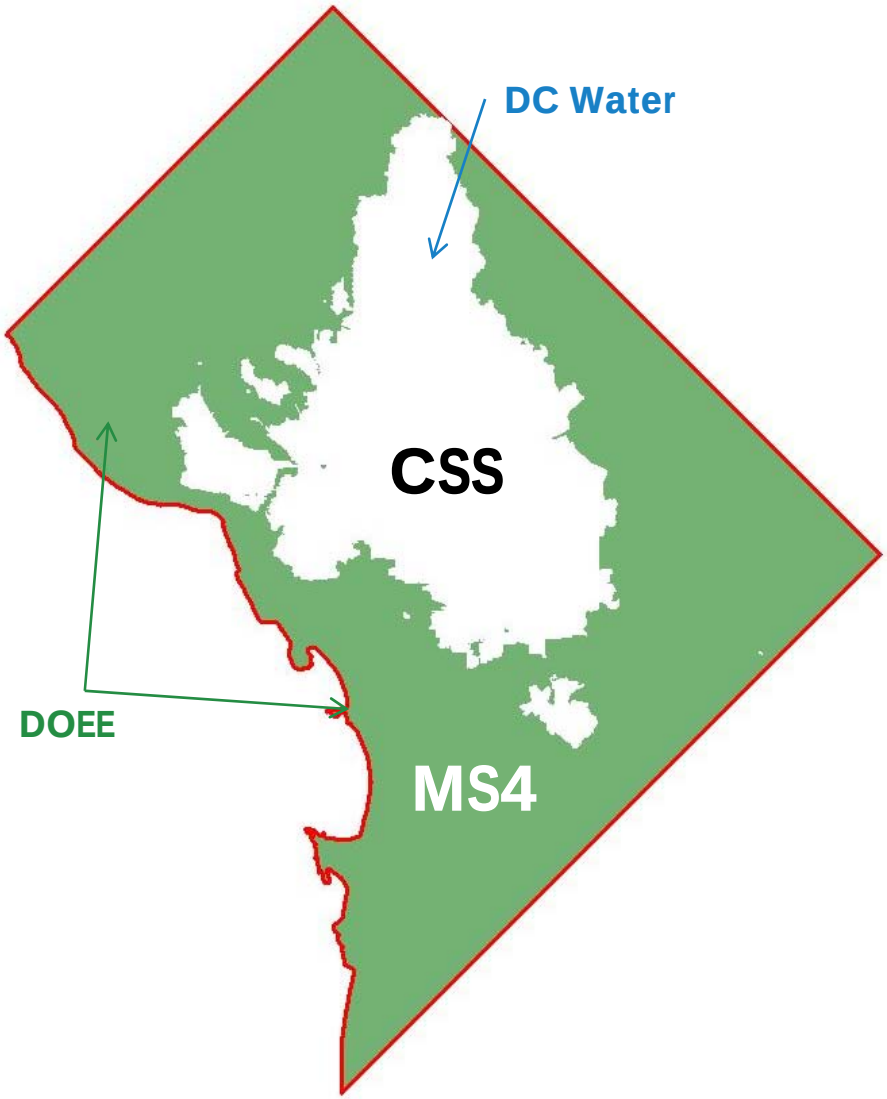
Total Area
68.3 mi^2

Land Area
61.3 mi^2

Impervious Area
26.6 mi^2
Approx 43%
of Land Area

A single 1.2 inch storm falling on this area produces about 525 million gallons of stormwater runoff.

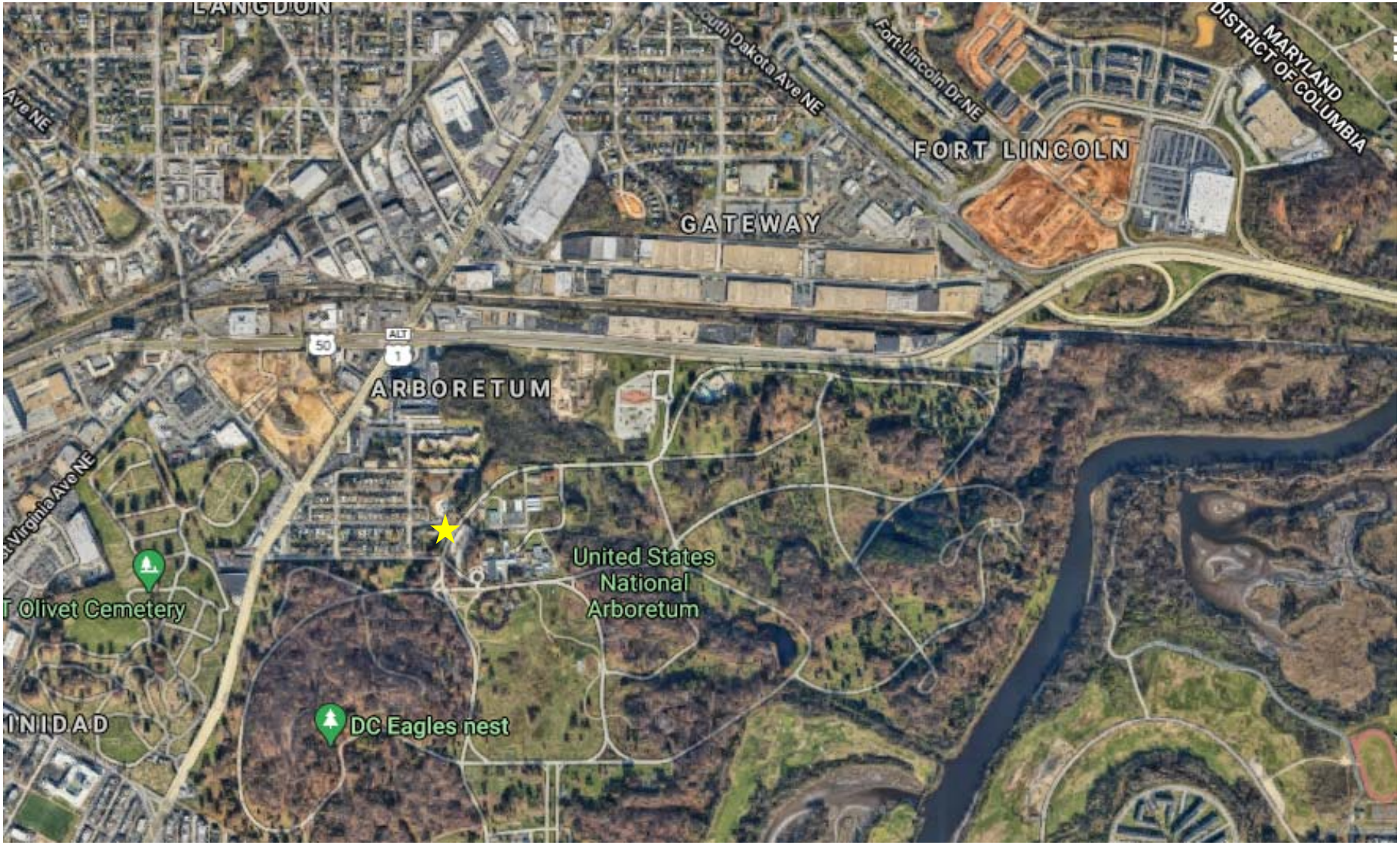
DC'S RESTORATION APPROACHES



EXISTING CONDITIONS

@DOEE_DC

EXISTING CONDITIONS



CLIENT

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DATE ISSUES/REVISIONS

WE ARE WASHINGTON DC

DC.gov

NOT FOR CONSTRUCTION

TRIANGLE CONTRACTING L.L.C.

Biohabitats

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Restore the Earth & Inspire Ecological Stewardship

HICKEY LANE LID RETROFITS

DRAINAGE AREA MAP

20013.07 | 1" = 60'

T3 | 3A

DA-01

5 OF 5

PROJECT OBJECTIVES

- Treat maximum amount of stormwater from the site in the most cost effective way
- Support previous stormwater management efforts on site
- Minimal impacts to the community
- Development of a community amenity
- Educational opportunities

RESTORATION APPROACHES

Most stormwater practices all work the same way: “they collect stormwater runoff and use or mimic natural processes that result in the infiltration, evapotranspiration or use of stormwater in order to protect water quality and associated aquatic habitat” (EPA).

Slow it down, Spread it Out, Soak it In !

SUBMERGED GRAVEL WETLANDS

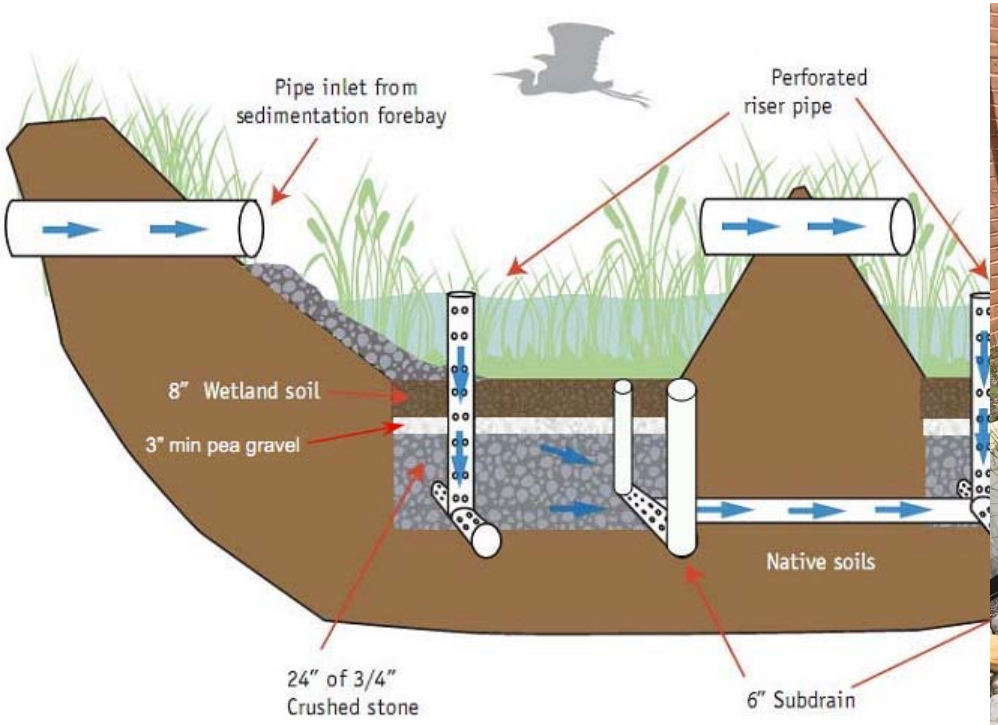
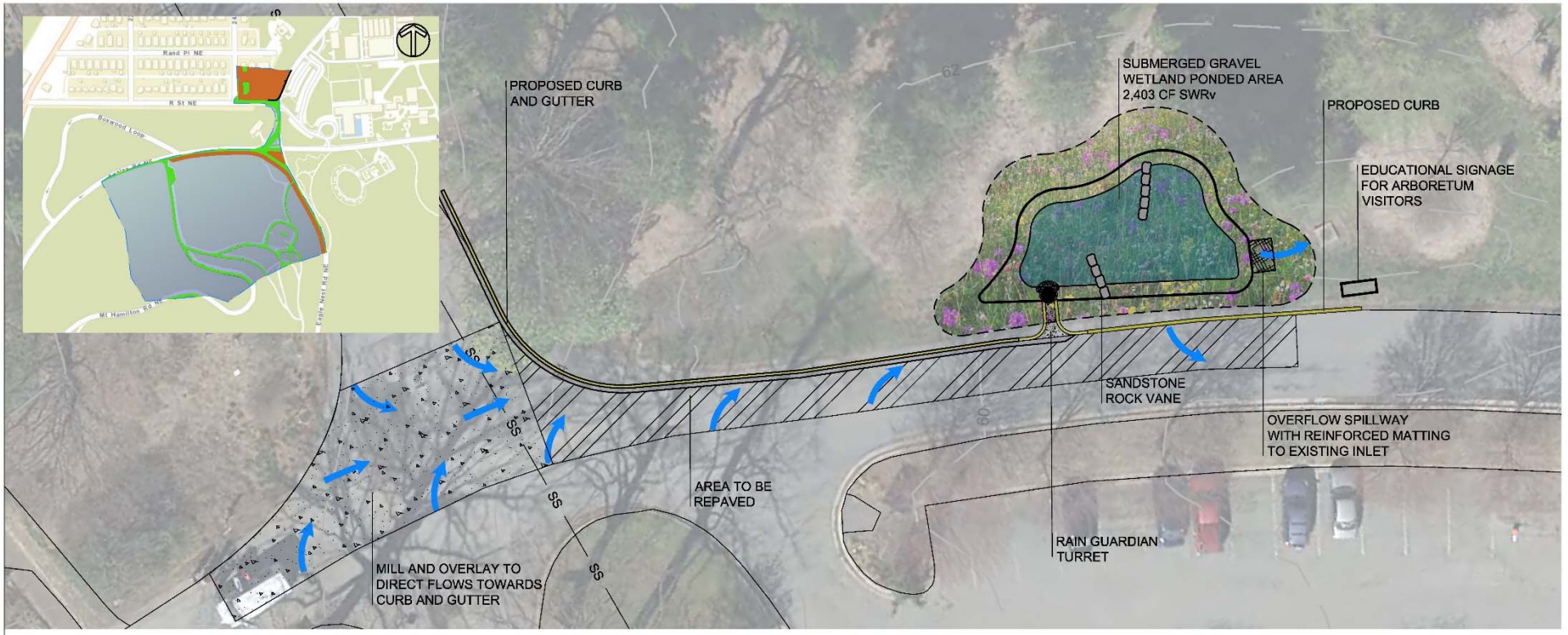
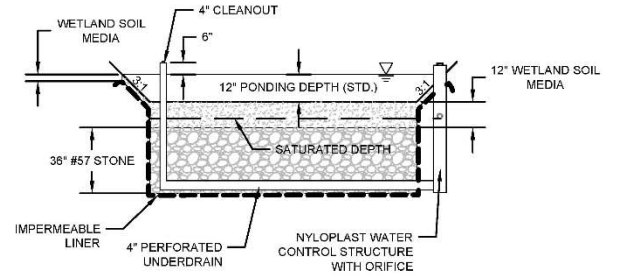


Figure: Diagram of a gravel wetland. Source: UNH

- Pollutant removal is achieved thr
  - Biological uptake from algae an filter media
  - Wetland plants provide addition physical and chemical treatmen absorption of organic matter
  - Allows for distinct plant palette

PROJECT CONCEPT





SUBMERGED GRAVEL WETLAND
TYPICAL SECTION

NOT TO SCALE

HORIZONTAL SCALE
0 20 40

SUMMARY TABLE

BMP	Bioretention Version	SWR_v (P = 1.2") CF	SWR_v (P = 1.7") CF	Areas SA_{top} SF	Areas Sa_{bottom} SF	Areas $SA_{average}$ SF	Depths $d_{ponding}$ IN	Depths d_{media} IN	Depths Gravel Underdrain IN	Depths Infiltration Sump IN	Sv CF	Retention Volume Provided %	Retention Volume Provided CF
1	Standard	8,558	12,124	1,332	891	1,112	12	12	36	0	2,403	60%	1,442
										Total	**2,403**		**1,442**

DOEE
Washington, D.C.

HICKEY LANE NE LID RETROFIT
60% Design
January 2021

Legend

- Existing Drainage Area
- SD — Existing Storm Drain
- SS — Exisitng Sanitary Sewer
- Proposed Submerged Gravel Wetland
- Proposed Curb

Biohabitats

PROJECT TIMELINE

- March 2020: contract awarded
- April – July 2020: field assessment (topographic survey, geotechnical investigations etc.)
- August – January 2021: design development
- 3 public meetings:
  - Concept designs on 10/26/2020
  - Semi-final designs (~65%): 1/27/21
  - Construction kickoff meeting (timeline): TBD
    - Construction to begin in June ‘21 or after

FAQs

- How do we find our project sites?
  - Enthusiastic landowners!
  - Funding sources
  - Large areas of untreated impervious cover
  - More impactful locations
- What can I do?
  - RiverSmart Homes
    - Rain Gardens
    - Permeable Pavers
    - Rain Barrels
    - Tree Planting
    - “BayScaping”

RIVERSMART
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QUESTIONS