

HAMLIN STREET STORMWATER RETROFIT PROJECT

PUBLIC STAKEHOLDER CONCEPT DESIGN PUBLIC MEETING

March 9, 2021

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U.S. NATIONAL
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DEPARTMENT
OF ENERGY &
ENVIRONMENT

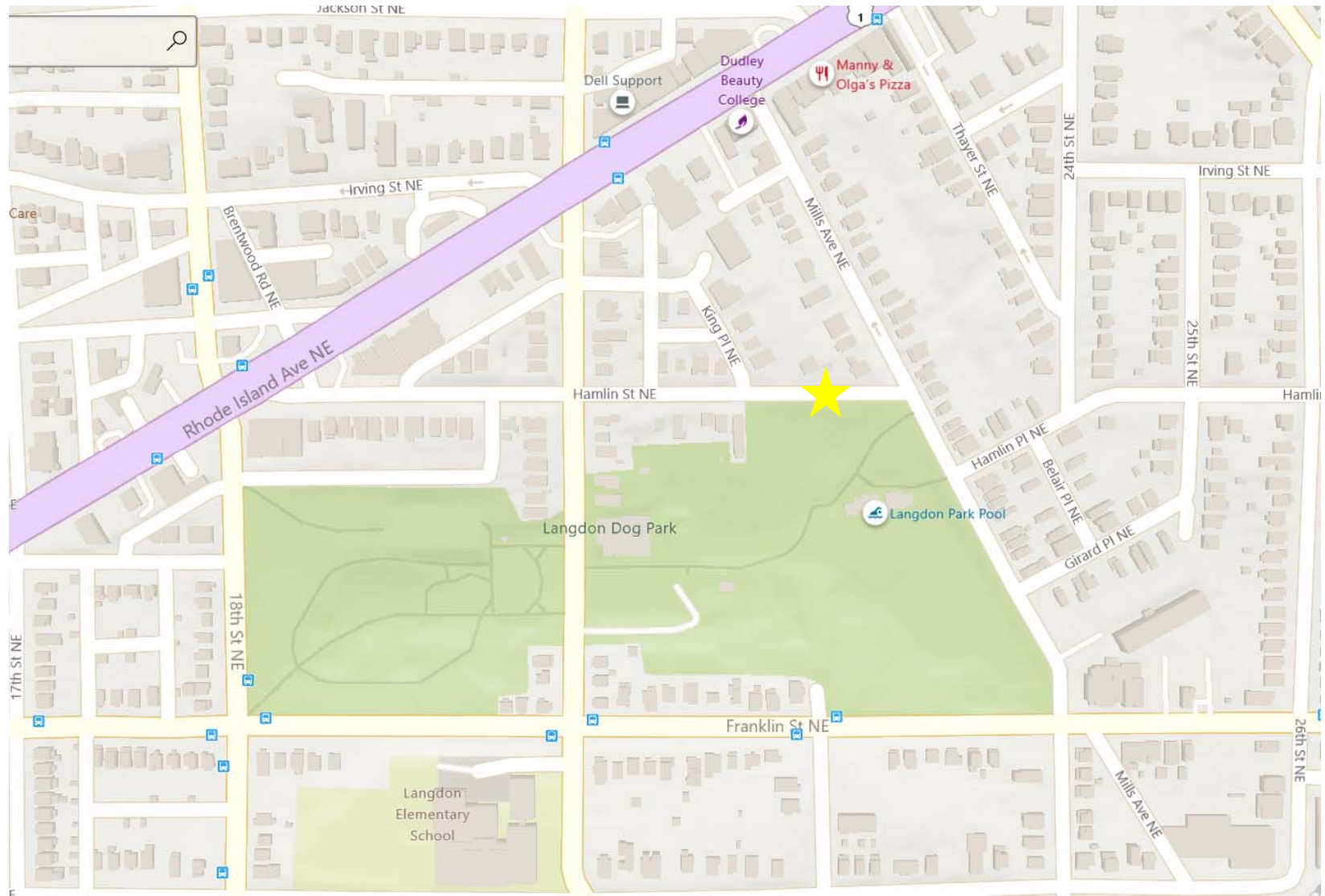


GOVERNMENT OF THE
DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

AGENDA

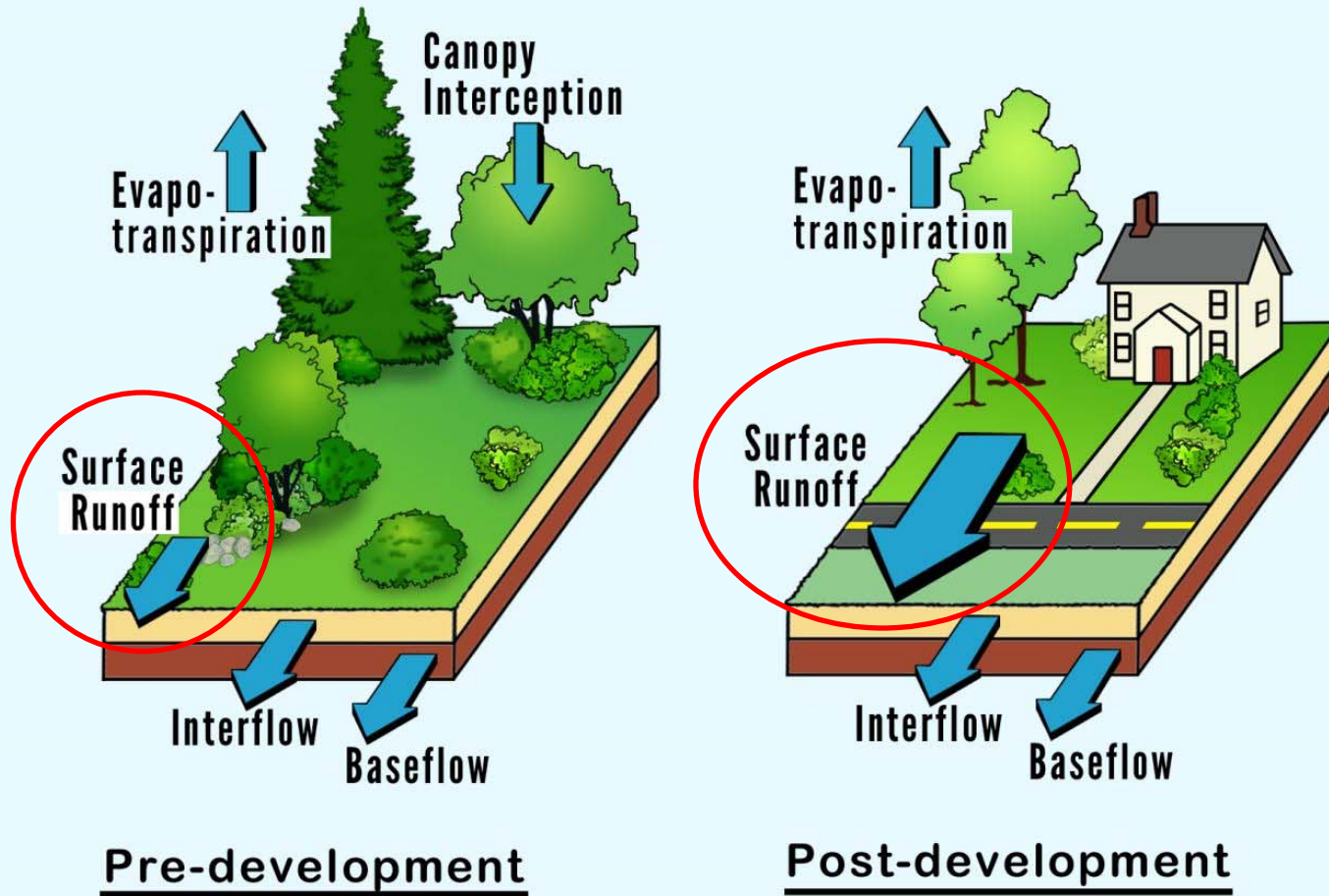
- Project Area & Background
- Existing Conditions
- Project Objectives
- Restoration Approaches
- Concept Design
- Timeline
- FAQs
- Q&A

PROJECT LOCATION



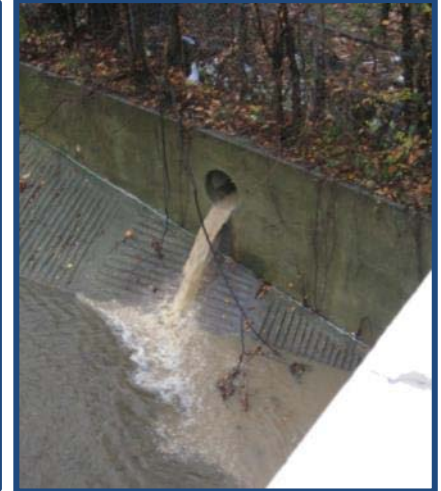
BACKGROUND

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

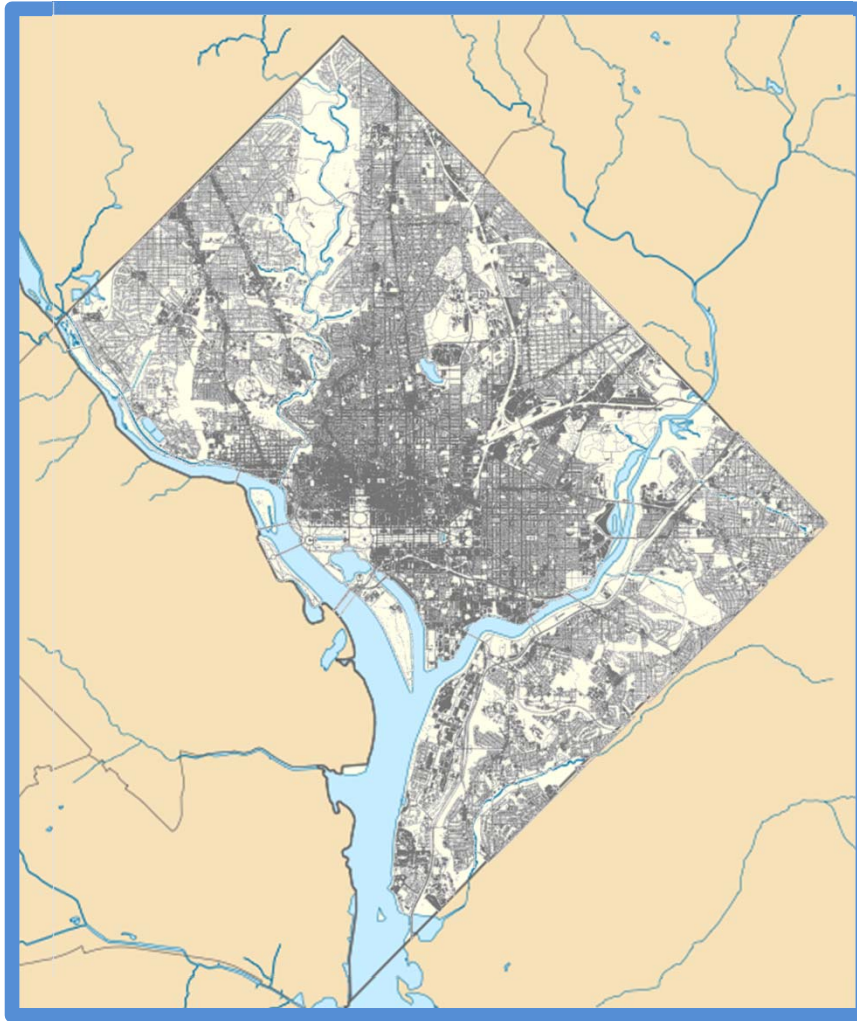


Surface runoff is minimal in an undeveloped site, but dominates the water balance at a highly impervious site.

PROBLEM OF STORMWATER POLLUTION



DISTRICT OF COLUMBIA LAND USE



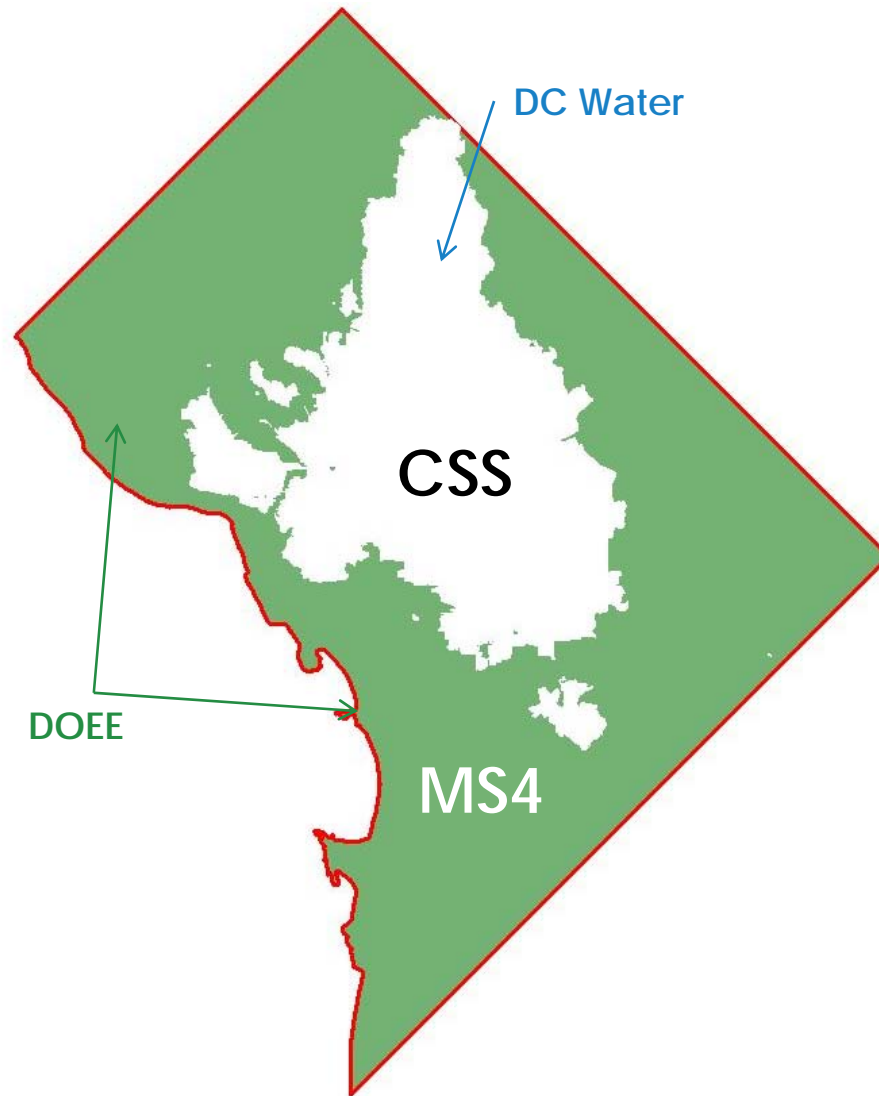
Total Area
68.3 mi²

Land Area
61.3 mi²

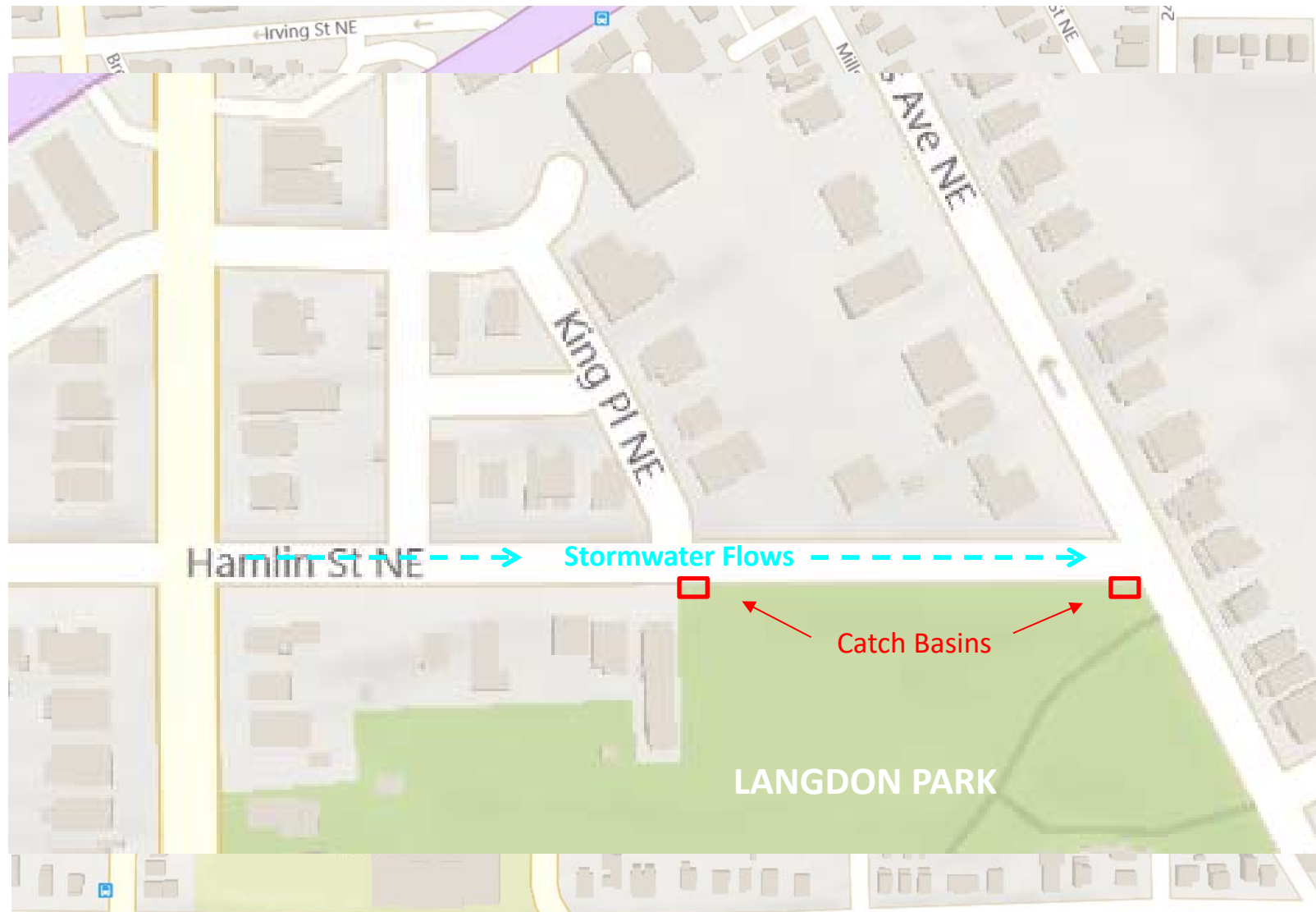
Impervious Area
26.6 mi²
*Approx 43%
of Land Area*

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

DC'S RESTORATION APPROACHES



EXISTING CONDITIONS



EXISTING CONDITIONS



EXISTING CONDITIONS - UPPER



PROJECT OBJECTIVES

- Treat maximum amount of stormwater from the site in the most cost effective way
- Create and enhance habitat within Langdon Park
- Minimal impacts to the community
- Development of a community amenity
- Educational opportunities



RESTORATION APPROACHES

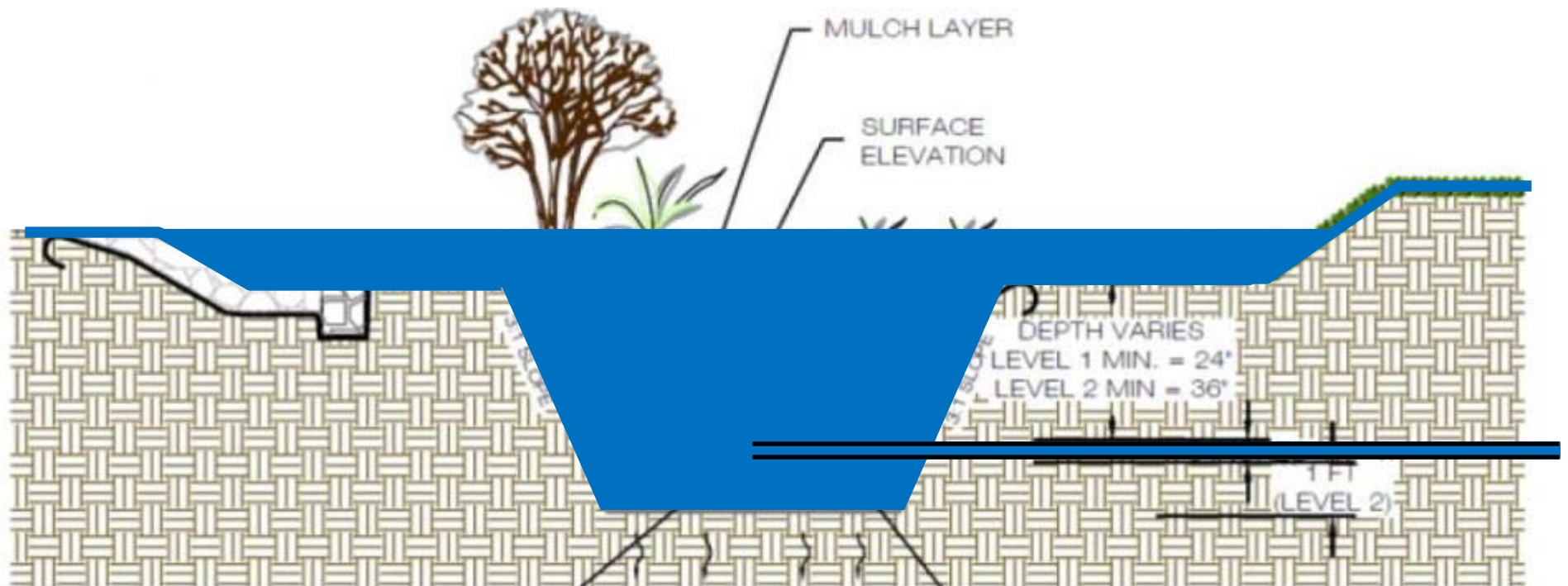
Most stormwater practices all work the same way: “they collect stormwater runoff and use or mimic natural processes that result in the infiltration, evapotranspiration or use of stormwater in order to protect water quality and associated aquatic habitat” (EPA).

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

BIORETENTION



BIORETENTION: HOW IT WORKS



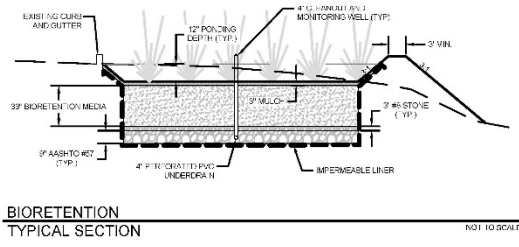
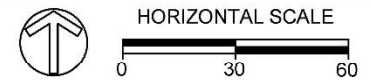
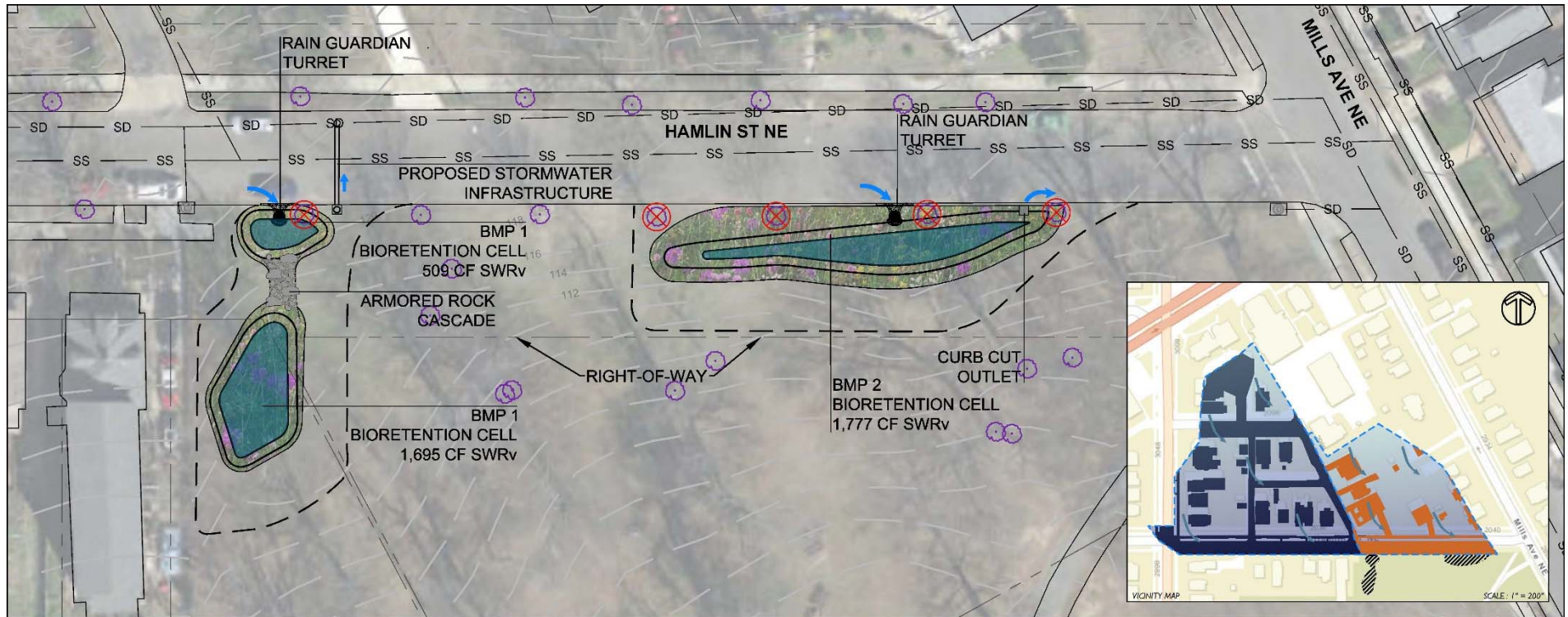
BIOSWALES



PROJECT CONCEPT



PROJECT CONCEPT



SUMMARY TABLE

BMP	Bioretention Version	Section	SWRV		Areas			Depths			Storm Chamber Sump IN	Sv CF	Retention Volume Provided %	Retention Volume Provided CF
			(P = 1.2") CF	(P = 1.7") CF	SA _{top} SF	Sabottom SF	SA _{average} SF	d _{ponding} IN	d _{media} IN	Gravel Underdrain IN				
1	Standard	Upper Cell			390	190	290	12	36	12	0	509	60%	305
1	Standard	Lower Cell			1,080	700	890	12	36	12	0	1,695	60%	1,017
1	Standard	TOTAL	6,796	9,628	1,470	885	1,178	12	36	12	0	2,195	60%	1,317
2	Standard	N/A	2,401	3,401	1,405	651	1,028	12	36	12	0	1,777	60%	1,066
Total											3,972		2,383	

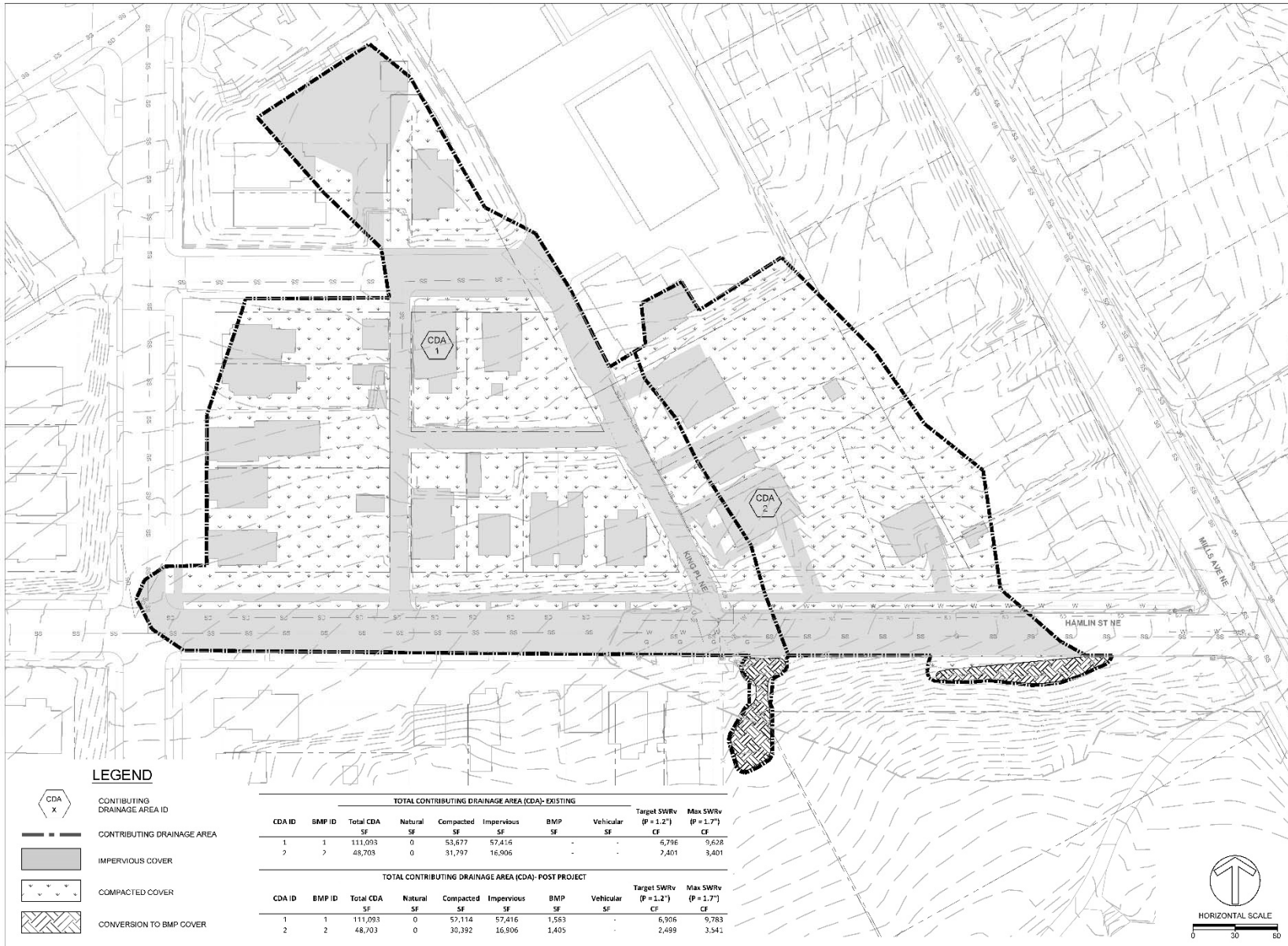
BIORETENTION TYPICAL SECTION NOT TO SCALE

DOEE
Washington, D.C.

HAMLIN STREET NE LID RETROFIT
Concept Design
FEBRUARY 2021

- Legend**
- Existing Drainage Area
 - Proposed Bioretention
 - Existing Storm Drain
 - Proposed Limits of Grading
 - Existing Sanitary Sewer
 - Proposed Armored Rock Cascade
 - Proposed Rain Guardian Turret





LEGEND

- CONTRIBUTING DRAINAGE AREA ID
- CONTRIBUTING DRAINAGE AREA
- IMPERVIOUS COVER
- COMPACTED COVER
- CONVERSION TO BMP COVER

TOTAL CONTRIBUTING DRAINAGE AREA (CDA)- EXISTING									
CDA ID	BMP ID	Total CDA SF	Natural SF	Compacted SF	Impervious SF	BMP SF	Vehicular SF	Target SWRv (P = 1.2') CF	Max SWRv (P = 1.7') CF
1	1	111,093	0	53,677	57,416	-	-	6,796	9,628
2	2	48,703	0	31,797	16,906	-	-	2,401	3,401

TOTAL CONTRIBUTING DRAINAGE AREA (CDA)- POST PROJECT									
CDA ID	BMP ID	Total CDA SF	Natural SF	Compacted SF	Impervious SF	BMP SF	Vehicular SF	Target SWRv (P = 1.2') CF	Max SWRv (P = 1.7') CF
1	1	111,093	0	57,114	57,416	1,563	-	6,906	9,783
2	2	48,703	0	30,392	16,906	1,405	-	2,499	3,541

CLIENT
 ★ ★ ★
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NOT FOR CONSTRUCTION



HAMLIN ST LID RETROFITS

FILE: DRAINAGE AREA MAP

Project No.:	20015.07	Scale:	1" = 30'
Sheet:	TS	Project:	BA
Sheet No.:	C600		

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PROJECT TIMELINE

- March 2020: contract awarded
- April – December 2020: field assessment (topographic survey, geotechnical investigations etc.), interagency coordination
- January – June 2021: design development
- 3 public meetings:
 - Concept designs on 3/9/2021
 - Semi-final designs (~65%): TBD
 - Construction kickoff meeting (timeline): TBD

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”



<https://www.riversmarthomes.org/>

QUESTIONS



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