DC WATER GREEN INFRASTRUCTURE
UTILITY PROTECTION GUIDELINES

PURPOSE
The DC Water Green Infrastructure Utility Protection Guidelines (Guidelines) provide guidance on the design and construction of green infrastructure adjacent or connected to DC Water utilities. The Guidelines provide information related to the following practices: street tree planting, trees and tree box filters; bioretention and bioswales; permeable pavements and pavers; alleys with bioretention; and underdrains adjacent to catch basins. DC Water utilities adjacent to, crossing, or connected to these green infrastructure practices include water mains, sewers, water services, sewer laterals, meters, shutoffs, valve boxes, cleanouts, hydrants and other structures.

DEVELOPMENT
The development of these Guidelines included consultation with other agencies, analysis of similar guidelines in other localities and a review of local regulations (including the District of Columbia Municipal Separate Storm Sewer System permit). The specific requirements outlined herein reflect the due diligence performed as part of the development process.

USE
This document should be used by professionals to assist in the design, siting and installation of green infrastructure without conflicting with DC Water-owned utilities. In addition to these Guidelines, users of this document should follow all applicable local and federal regulations associated with their project. Waivers from these Guidelines are subject to review and approval from DC Water. Granting of waivers is at the sole discretion of DC Water.

These guidelines represent a living document and will be updated as necessary to reflect the most current science and technology available.

AUTHORITY
DCMR – 12 (Construction Codes), Section 102.2 – Public Works Standards: Work performed in public space, not specifically addressed in the Construction Codes, shall conform to the pertinent standards of the District of Columbia Department of Transportation (DDOT) and the District of Columbia Water and Sewer Authority.

GENERAL
Proprietary materials removed by utility work performed by DC Water will be replaced with standard construction materials that have flow transmission capability (i.e. #57 stone). Structural / proprietary devices, including but not limited to, structural soil framing systems, precast concrete boxes, and cast in place walls, shall not be placed within 5’ horizontally of the outer edge of DC Water utilities.

DC Water Green Infrastructure Utility Protection Guidelines
July 2013, Version 1.0
NOTES:

1. GREEN INFRASTRUCTURE MEASURES SHALL MEET OTHER APPLICABLE DDOT, DDOE AND DC WATER STANDARDS.
2. HORIZONTAL CLEARANCE IS 3' MIN FOR TREES FROM OUTER EDGE OF TREE AT BREAST HEIGHT TO OUTER EDGE OF UTILITY. WHEN MIN DISTANCE CANNOT BE MET, EXCEPTIONS MAY BE GRANTED IF THE UTILITY IS GREATER THAN 15' BELOW FINISHED GRADE, OR OTHERWISE APPROVED BY DC WATER.

STANDARD DETAIL
WATER AND SEWER CLEARANCES
FOR TREES
DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

PROVIDE IMPERMEABLE MEMBRANE (AND UNDERDrAIN)
FOR THE FULL PERimeter OF THE FACILITY IF SEWERS (MAINS OR LATERALS) ARE WITHIN 3'
HORizontally OF FACILITY AND IF DEPTH REQUIREMENTS BELOW BIORETENTION ARE NOT MET

SIDEWALK

MAIN (SEWER)

CURB (TYP)

ROADWAY

CURB CUT (TYP)

PROVIDE IMPERMEABLE MEMBRANE (AND UNDERDrAIN)
ON 3' OF EACH SIDE OF THE PIPE FOR THE FULL WIDTH OF THE FACILITY

BIORETENTION OR BIOSWALE

PLAN

SIDEWALK

CURB (TYP)

ROADWAY

SOIL MEDIA

STORAGE LAYER

IMPERMEABLE MEMBRANE (IF REQ'D)

UNDERDrAIN (IF REQ'D)

12" MIN (FOR BOTH MAINS AND LATERALS)

SERVICE LATERAL

MAIN (SEWER)

PROVIDE IMPERMEABLE MEMBRANE (AND UNDERDrAIN)
FOR FULL PERimeter OF THE FACILITY IF THIS DISTANCE IS LESS THAN 5'

SECTION A-A

NOTES:
1. GREEN INFRASTRUCTURE MEASURES SHALL MEET OTHER APPLICABLE DDOT, DDOE AND DC WATER STANDARDS.
2. BIORETENTION OR BIOSWALES SHALL NOT DISTURB PIPE BEDDING AS IDENTIFIED IN DC WATER'S DESIGN MANUAL.
3. LINING SEWERS AND LATERALS FROM MANHOLE TO MANHOLE IS REQUIRED IF THE IMPERMEABLE MEMBRANE (AND UNDERDrAIN) IS NOT USED.

APPROVAL DATE: 7-19-13

REVISION NO.: 1

DATE: 07/19/13

PREPARED BY: OCCR

CHECKED BY: J. Cassidy

STANDARD DETAIL
SEWER CLEARANCES
FOR BIORETENTION AND BIOSWALEs
NOTES:
1. GREEN INFRASTRUCTURE MEASURES SHALL MEET OTHER APPLICABLE DDOT, DDOE AND DC WATER STANDARDS.
2. BIORETENTION OR BIOSWALES SHALL NOT DISTURB PIPE BEDDING AS IDENTIFIED IN DC WATER'S DESIGN MANUAL.
3. WATER SERVICE PIPES GREATER THAN 2" IN DIAMETER SHALL BE CONSIDERED AS WATER MAINS.
4. WATER SERVICE LATERALS SHALL NOT BE EXPOSED AND HAVE 18" SOIL COVER, MIN.
NOTE:
GREEN INFRASTRUCTURE MEASURES SHALL MEET OTHER APPLICABLE DOT, DDOE AND DC WATER STANDARDS.
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1. GREEN INFRASTRUCTURE MEASURES SHALL MEET OTHER APPLICABLE DDOT, DDOE AND DC WATER STANDARDS.
2. PERMEABLE PAVEMENT AND PAVER SYSTEMS SHALL NOT DISTURB PIPE BEDDING AS IDENTIFIED IN DC WATER'S DESIGN MANUAL.
3. LINING SEWERS AND LATERALS FROM MANHOLE TO MANHOLE IS REQUIRED IF THE IMPERMEABLE MEMBRANE (AND UNDERDRAIN) IS NOT USED.
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**NOTE:**

1. GREEN INFRASTRUCTURE MEASURES SHALL MEET OTHER APPLICABLE DDOT, DDOE AND DC WATER STANDARDS.

2. THIS DETAIL IS ONLY APPLICABLE FOR ALLEYS WITH WATER AND SEWER UTILITIES.

3. LARGE STRUCTURES WITH FOUNDATIONS SHALL NOT BE PLACED WITHIN 5' OF DC WATER UTILITIES.

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**SECTION A-A**

- PROVIDE CONTINUOUS SLOPE (NO STEPS)
- MEETING THE MOST RECENT APPLICABLE AASHTO STD AS REVIEWED AND APPROVED BY DC WATER

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**STANDARD DETAIL**

WATER AND SEWER CLEARANCES
FOR ALLEYS WITH BIORETENTION

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NOTES:
1. GREEN INFRASTRUCTURE MEASURES SHALL MEET OTHER APPLICABLE DDOT, DDOE, AND DC WATER STANDARDS.
2. THE PREFERRED LOCATIONS FOR CONNECTING UNDERDRAINS ARE AT MANHOLES AND SEWERS.
3. UNDERDRAIN CONNECTIONS TO CATCH BASINS ARE ONLY ALLOWED IF THE GREEN INFRASTRUCTURE FACILITY IS GREATER THAN 20' FROM AN EXISTING MANHOLE OR SEWER LINE OR IF TOTAL SURFACE AREA OF ALL GREEN INFRASTRUCTURE MEASURES IS LESS THAN 250 SQ FT.
4. CATCH BASIN CONNECTIONS FROM UNDERDRAINS SERVICING PRIVATE PROPERTY ARE PROHIBITED.
5. CLAY DAMS OR OTHER APPROVED WATERSTOPS SHALL BE PROVIDED AT 100' INTERVALS (MINIMUM ONE) ALONG THE LENGTH OF THE UNDERDRAIN TO PREVENT MIGRATION OF WATER ALONG THE LENGTH OF THE PIPE.
6. CLEAN OUTS SHALL BE PLACED AT 100 FOOT INTERVALS (MINIMUM ONE MUST BE LOCATED AT A MAX OF 5' FROM CATCH BASIN).
7. DC WATER IS NOT RESPONSIBLE FOR CLOGGING OF THE UNDERDRAIN OR FOR CLEANING.
8. THE UNDERDRAIN SYSTEM SHALL BE DESIGNED TO FILTER INCOMING WATER TO PREVENT THE MIGRATION OF SILT AND OR TURBIDITY TO THE SEWER SYSTEM.
9. UNDERDRAINS SHALL BE LOW-FLOW, SUBSURFACE PIPES THAT DRAIN ONLY THE GREEN INFRASTRUCTURE MEASURE.

STANDARD DETAIL
WATER AND SEWER CLEARANCES
FOR UNDERDRAINS ADJACENT TO
CATCH BASINS