

DISTRICT OF COLUMBIA
WATER AND SEWER AUTHORITY

DC CLEAN RIVERS PROJECT
GREEN INFRASTRUCTURE PROGRAM

**ROCK CREEK GI PROJECT C (RC-C)
PROJECT DESCRIPTION**

April 5, 2024

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Appendices

Appendix A – Joint Stipulation of Non-Material Modification to the Consent Decree

1 Introduction

1.1 Purpose

The District of Columbia Water and Sewer Authority (DC Water) is implementing a Long-Term Control Plan (LTCP), also referred to as the DC Clean Rivers Project (DCCR), to control combined sewer overflows (CSOs) to the District of Columbia's (District) waterways. DCCR is comprised of a variety of projects to control CSOs, including pumping station rehabilitations, targeted sewer separation, Green Infrastructure (GI), and a system of underground storage/conveyance tunnels. DCCR is being implemented in accordance with a first amendment to the Consent Decree (Amended Consent Decree), entered on January 14, 2016, which amends and supersedes the 2005 Consent Decree (Consent Decree).

In 2020, DCCR published the Rock Creek Practicability report. The report determined that it would be impracticable to utilize green infrastructure alone in the Rock Creek sewershed (CSO 049). Instead it proposed a hybrid gray/green approach to achieve the required storage volume (9.5 million gallons) in the CSO 049 sewershed by the March 23, 2030 deadline with a combination of GI and a storage facility. This "Hybrid" Approach consists of: (1) a 4.2 million gallon storage facility, (2) GI, targeted sewer separation, and downspout disconnection controlling at least 92 acres to the 1.2" retention standard (3.0 million gallons), and (3) credit for other GI-controlled acres in the CSO 049 sewershed. In 2020, EPA approved the Hybrid Approach and a Joint Stipulation of Non-Material Modification to Consent Decree (Non-Material Modification) was agreed upon between the parties amending Appendix F to the Decree to allow for the hybrid green-gray solution to control CSO 049. Construction of the remaining GI in the Rock Creek sewershed will occur under three separate projects: Rock Creek Project B (RC-B), Rock Creek Project C (RC-C), and Rock Creek Project D (RC-D). The Amended Consent Decree requirements are outlined in Section 1.2. A copy of the 2020 Joint Stipulation of Non-Material Modification to the Consent Decree is included in Appendix A.

The Amended Consent Decree requires submittal of a Project Description for EPA review and comment at least six months prior to the award of construction contract. This is the project description for the next Rock Creek GI project to be constructed, which is Rock Creek Project C.

This document includes the GI control measures and their locations, estimated acreage that will be controlled to a 1.2" retention standard, schedule for GI implementation, estimated cost of each type of GI control, total project cost, and post-construction monitoring and modeling program, as required by the Amended Consent Decree.

1.2 Non-Material Modification Consent Decree Requirements

The Non-Material Modification to the Consent Decree, as executed December 2020, specifies the required volume of runoff to be managed by GI, and the schedule for implementation of the DCCR GI projects. DC Water is required to place in operation GI, which may include targeted sewer separation and downspout disconnection in the CSO 049 sewershed area, which discharges during overflow conditions to Piney Branch, a tributary to Rock Creek, to manage 92 impervious acres to the 1.2" retention standard. The 1.2" retention standard is defined as the volume of runoff equivalent to

1.2” of rain falling on an impervious surface. The GI implementation area within the Rock Creek sewershed is known as the Rock Creek GI Area, which is broken down into several projects, which will be phased for planning and construction. Table 1-1 lists the four projects planned to satisfy the requirements of the Amended Consent Decree within the Rock Creek GI Area.

Table 1-1. Rock Creek Sewershed Project Requirements

Project No.	Impervious Acres to be Managed to 1.2”	Award Contract for Construction	Place in Operation
1 ¹	20	March 30, 2017	March 30, 2019
B	22	January 23, 2022	January 23, 2024
C	25	March 23, 2025	December 31, 2027
D	25	March 23, 2028	March 23, 2030

¹ Rock Creek Project 1 is also referred to as Rock Creek Project A. (RC-A)

2 Rock Creek GI Project C (RC-C)

This section includes details on the following items, as required by the First Amended Appendix F of the Amended Consent Decree Joint Stipulation:

- Identification of sewershed (CSO) area where Rock Creek GI Project C will be implemented
- Types of GI controls to be employed and the rationale for their use
- Approximate locations of GI controls
- Estimated acreage to be managed to a 1.2” retention standard
- Schedule for implementation of GI control measures for Rock Creek GI Project C
- Estimated cost for each type of GI control to be employed
- Total costs of Rock Creek GI Project C
- Post construction monitoring and modeling program for Rock Creek GI Project C to demonstrate the capture efficacy of the GI controls to be implemented.

2.1 Rock Creek GI Area

Figure 2-1 shows the various CSO sewersheds in the District. CSO 049, within the Rock Creek sewershed, is in the northwest quadrant of Washington DC.

The Rock Creek sewershed is comprised of 2,329 total acres, of which 52% is impervious (1,215 impervious acres). The CSO 049 outfall structure, which is located north of Piney Branch Parkway and 17th Street NW, discharges combined sewage to Rock Creek when the capacity of the system is exceeded during rainfall events.

As part of the Joint Stipulation, DC Water GI implemented in the CSO 049 drainage area in Rock Creek, must manage the equivalent volume of runoff produced by 1.2” of rain falling on 92 impervious acres in the sewershed. DC Water GI controls will be constructed to manage the stormwater volume required in the Joint Stipulation primarily in the public right-of way (ROW), allowing for some implementation on District and private property.

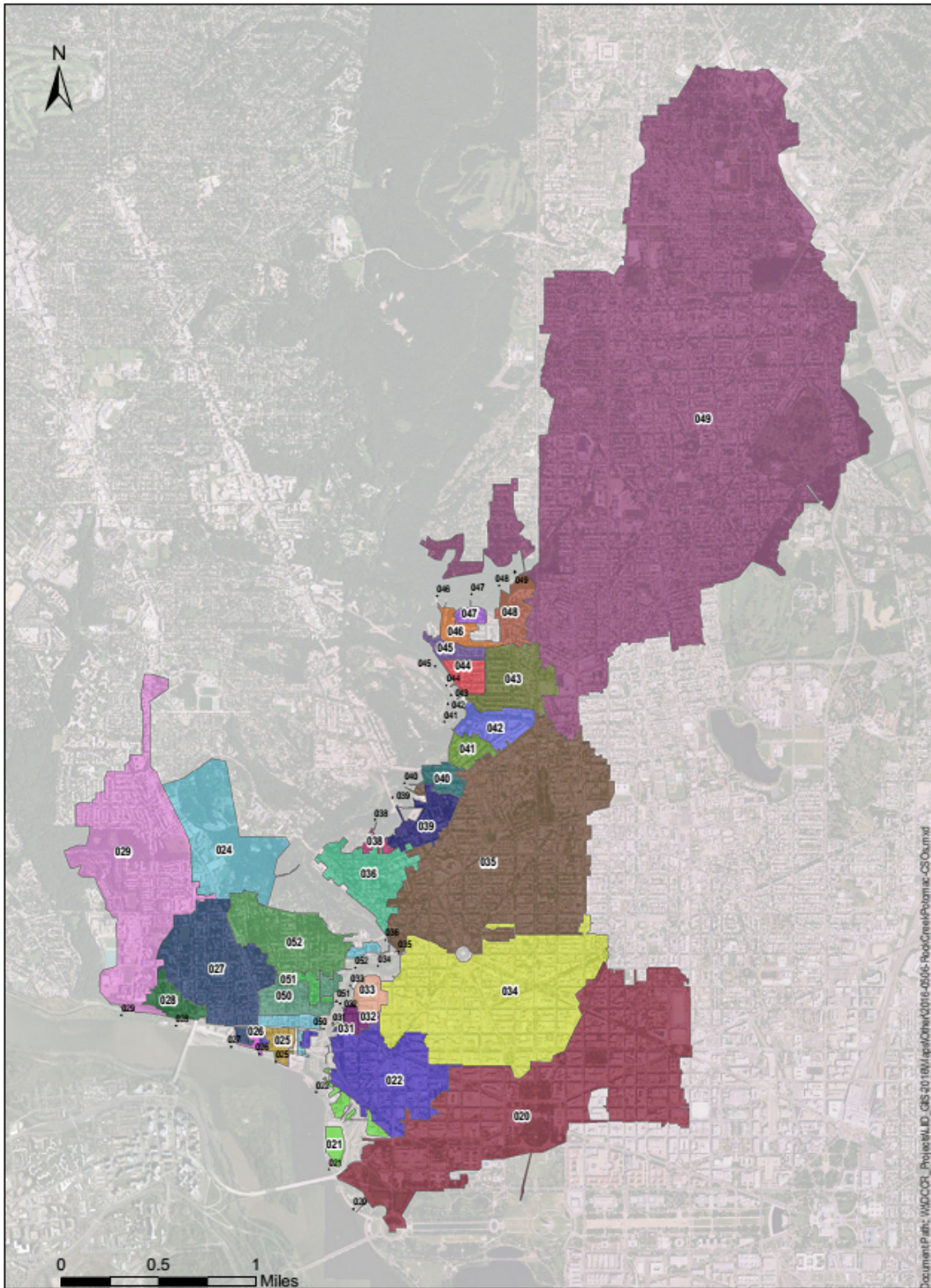


Figure 2-1. Rock Creek and Potomac River Sewersheds and CSO Outfalls

Source: DC Water (2015)

2.2 Rock Creek GI Project No. C Location

GI facilities constructed under Rock Creek Project C (RC-C) will be located throughout the sewershed in the public rights-of-way as shown in Figures 2-3 thru 2-10. The boundaries for RC-C (Figure 2-2) were selected for their feasibility of design and construction, cost-effective implementation, and ability to meet the required stormwater volume capture. Specific GI technologies to be implemented under the Project include only permeable pavements in alleys.

The GI facilities in this project will not be located on Federal properties. Sensitive historical or archeological sites will be avoided, as necessary.

2.2.1 RC-C Project Area 4B-1

The project area is located entirely in the Takoma neighborhood of northwest Washington, DC and within the limits of the Advisory Neighborhood Commission (ANC) 4B. The project area consists of residential zoning. The project area is bounded by Aspen Street NW and Tuckerman Street NW to the north and south, respectively, and 5th Street NW and Georgia Avenue NW to the east and west, respectively (refer to Rock Creek Project C: Area 4B-1 as shown in Figure 2-3). This area is northeast of the large 39-acre Takoma Community Center and is uniform with single family detached and semi-detached homes. This area experiences low pedestrian traffic while vehicular traffic is mostly residential.

2.2.2 RC-C Project Area 4B-2

The project area is located entirely in the Brightwood neighborhood of northwest Washington, DC and within the limits of the ANC 4B. The project area consists of residential zoning. The project area is bounded by Tuckerman Street NW and Missouri Avenue NW to the north and south, respectively, and 4th Street NW and 9th Street NW to the east and west, respectively (refer to Rock Creek Project C: Area 4B-2 as shown in Figure 2-4). This area is directly southwest of the large 39-acre Takoma Community Center and north of NPS Fort Circle Parks and is uniform with single family detached and semi-detached homes. This area experiences low pedestrian traffic while vehicular traffic is mostly residential.

2.2.3 RC-C Project Area 4B-3

The project area is located entirely in the Manor Park neighborhood of northwest Washington, DC and within the limits of the ANC 4B. The project area consists of residential zoning. The project area is bounded by Quackenbos Street NW and Longfellow Street NW to the north and south, respectively, and Blair Road NW and 4th Street NW to the east and west, respectively (refer to Rock Creek Project C: Area 4B-3 as shown in Figure 2-5). This area surrounds NPS Fort Slocum Park and includes single-family detached and semi-detached homes and some sections of row houses mixed with institutional/school buildings. This area experiences low pedestrian traffic while vehicular traffic is mostly residential.

2.2.4 RC-C Project Area 4B-4

The project area is located within both the Manor Park and Lamond Riggs neighborhoods of northwest Washington, DC and within the limits of the ANC 4B. The project area consists of residential zoning. The project area within the northern area of Manor Park is bounded by Van Buren Street NW and Tuckerman Street NW to the north and south, respectively, and Blair Road NW and 3rd Street NW to the east and west, respectively (refer to Rock Creek Project C: Area 4B-4 as shown in Figure 2-6). Within the Lamond Riggs neighborhood, the project area is bounded by Whittier Street NW and Van Buren Street NW to the north and south, respectively, and Sandy Spring Road NW and 1st Street NW to the east and west. This area is east of Takoma Recreation Fields and includes single-family detached and semi-detached homes and some sections of row houses mixed with institutional/school buildings. This area experiences low pedestrian traffic while vehicular traffic is mostly residential.

2.2.5 RC-C Project Area 4C-1

The project area is located entirely in the Petworth neighborhood of northwest Washington, DC. Project Area 4C-1 is within the limits of the ANC 4C. The project area consists of primarily residential zoning with some commercial properties along the western boundary along the 14th Street NW corridor. The project area is south of Upshur Park and west of Piney Branch Park and is bounded by Taylor Street NW and Quincy Street NW to the north and south, respectively, and Kansas Avenue NW and 14th Street NW to the east and west, respectively (refer to Rock Creek Project C: Area 4C-1 as shown in Figure 2-7). The project area is uniform, consisting almost entirely of residential row homes with small yards and medium-sized blocks. The commercial properties are located almost exclusively along the 14th Street corridor, which is where the higher volume of vehicular traffic exists.

2.2.6 RC-C Project Area 4D-1

The project area is located entirely in the Brightwood Park neighborhood of northwest Washington, DC and within the limits of the ANC 4D. The project area consists of primarily residential zoning with some institutional/school and open space areas. The project area is bounded by Jefferson Street NW and Farragut Street NW to the north and south, respectively, and North Capitol Street NW and 9th Street NW to the east and west, respectively (refer to Rock Creek Project C: Area 4D-1 as shown in Figure 2-8). The area is uniform consisting almost entirely of residential row homes with medium yards and long blocks. Washington Latin Public Charter School and various triangle parks are located within this project area. The pedestrian traffic in this area is low while most of the vehicular traffic is contained to Illinois Avenue NW and Kansas Avenue NW.

2.2.7 RC-C Project Area 4E-1

The project area is located entirely in the 16th Street Heights neighborhood of northwest Washington, DC and within the limits of the ANC 4E. The project area consists of primarily residential zoning with some commercial properties along the eastern boundary along Georgia Avenue NW. The project area is bounded by Ingraham Street NW and Hamilton Street NW to the north and south, respectively, and Georgia Avenue NW and 16th Street NW to the east and west, respectively (refer to Rock Creek Project C: Area 4E-1 as shown in Figure 2-9). The southeast portion contains long blocks with single-family properties and row homes with large front and backyards. The streets are lined with mature

trees in the planting strips adjacent to the sidewalk with wide alleys between streets. The north and east portions of this project area contain mostly single-family detached homes with some apartment buildings. Most vehicular and pedestrian traffic in this area is residential in nature apart from the portions along the 14th Street NW and Georgia Avenue corridors.

2.2.8 RC-C Project Area 4E-2

The project area is located within the 16th Street Heights and Petworth neighborhoods of northwest Washington, DC and within the limits of the ANC 4E. The project area consists of primarily residential zoning with some institutional/religious, and commercial properties. The project area is north of Upshur Park and is bounded by Crittenden Street NW and Webster Street NW to the north and south, respectively, and Georgia Avenue NW and 16th Street NW to the east and west, respectively (refer to Rock Creek Project C: Area 4E-2 as shown in Figure 2-10). This area contains mostly single-family semi-detached and row homes with some churches and commercial buildings. The streets are lined with mature trees in the planting strips adjacent to the sidewalk. This area experiences moderate pedestrian traffic while vehicular traffic is high given its location near the 16th Street NW, 14th Street NW and Georgia Avenue corridors.

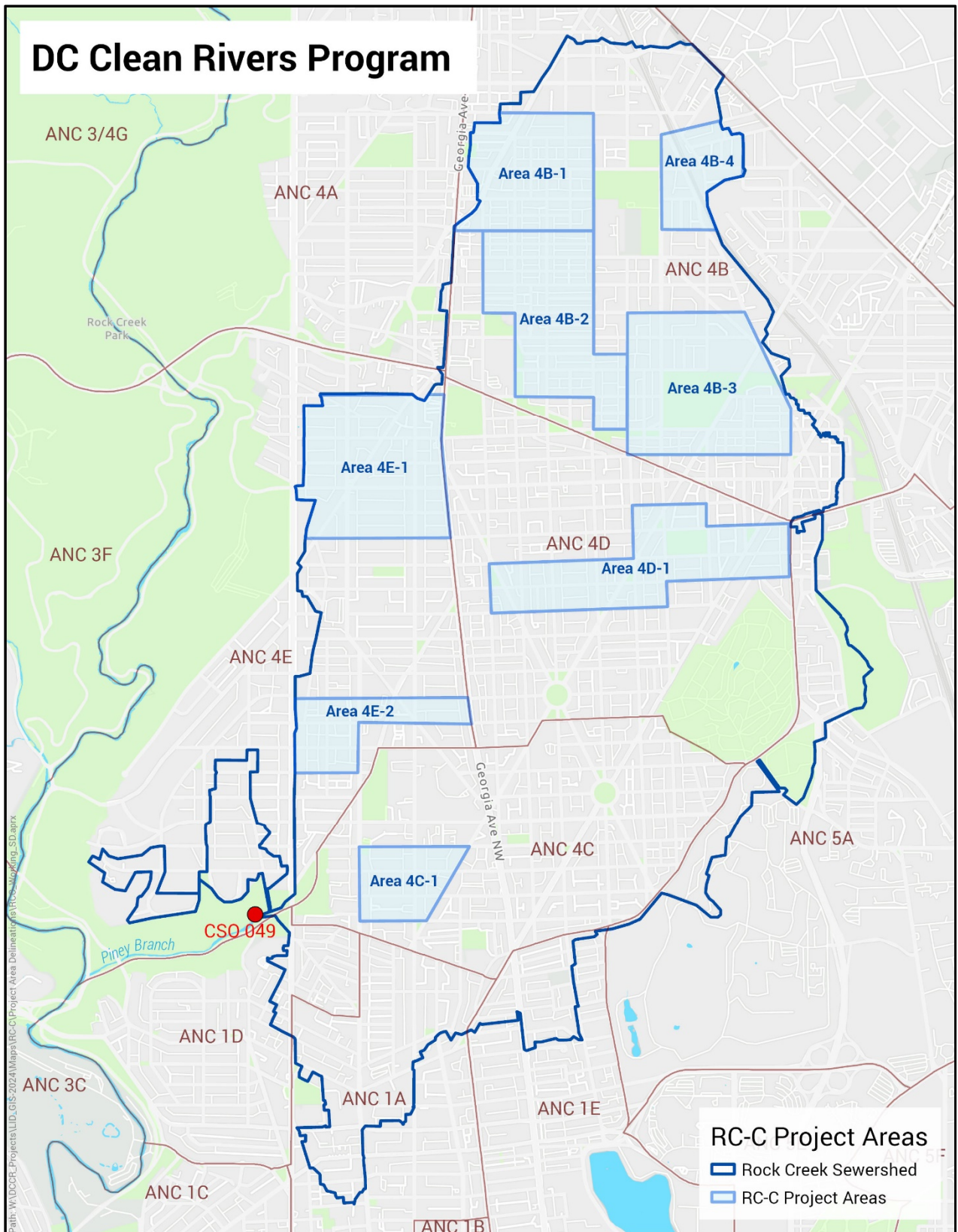


Figure 2-2. Rock Creek GI Area and Rock Creek GI Project No. C

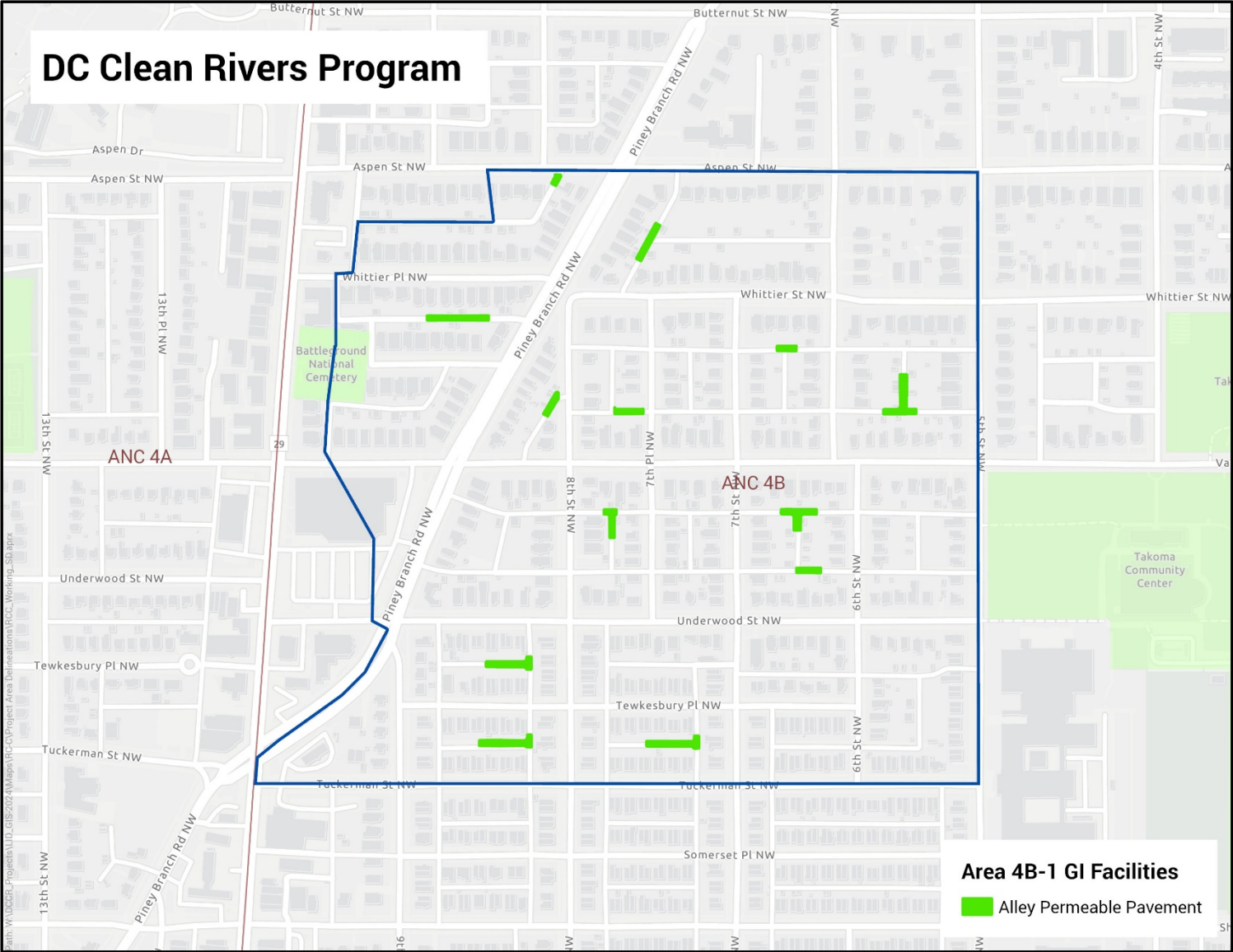


Figure 2-3. Rock Creek Project C: Area 4B-1

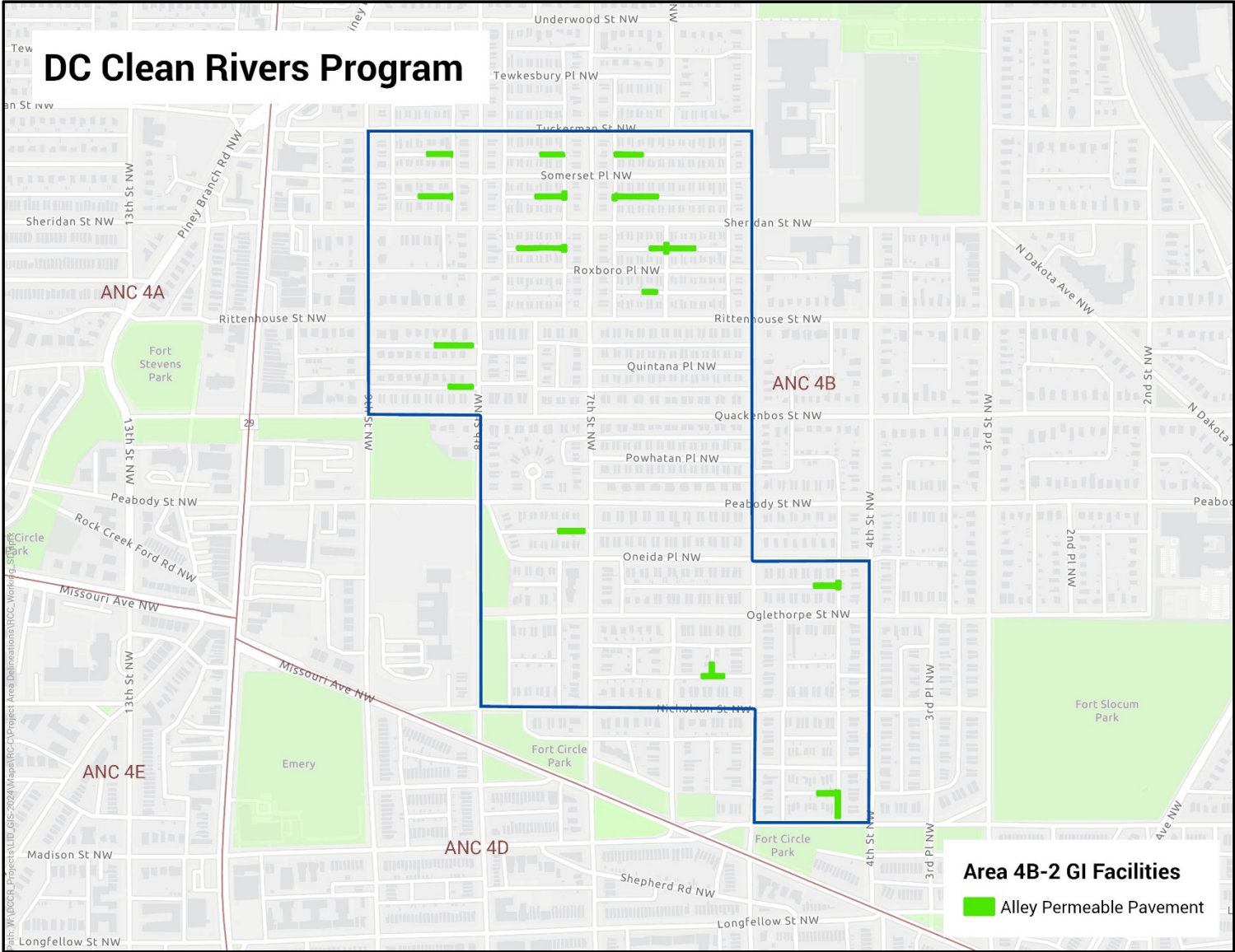


Figure 2-4. Rock Creek Project C: Area 4B-2

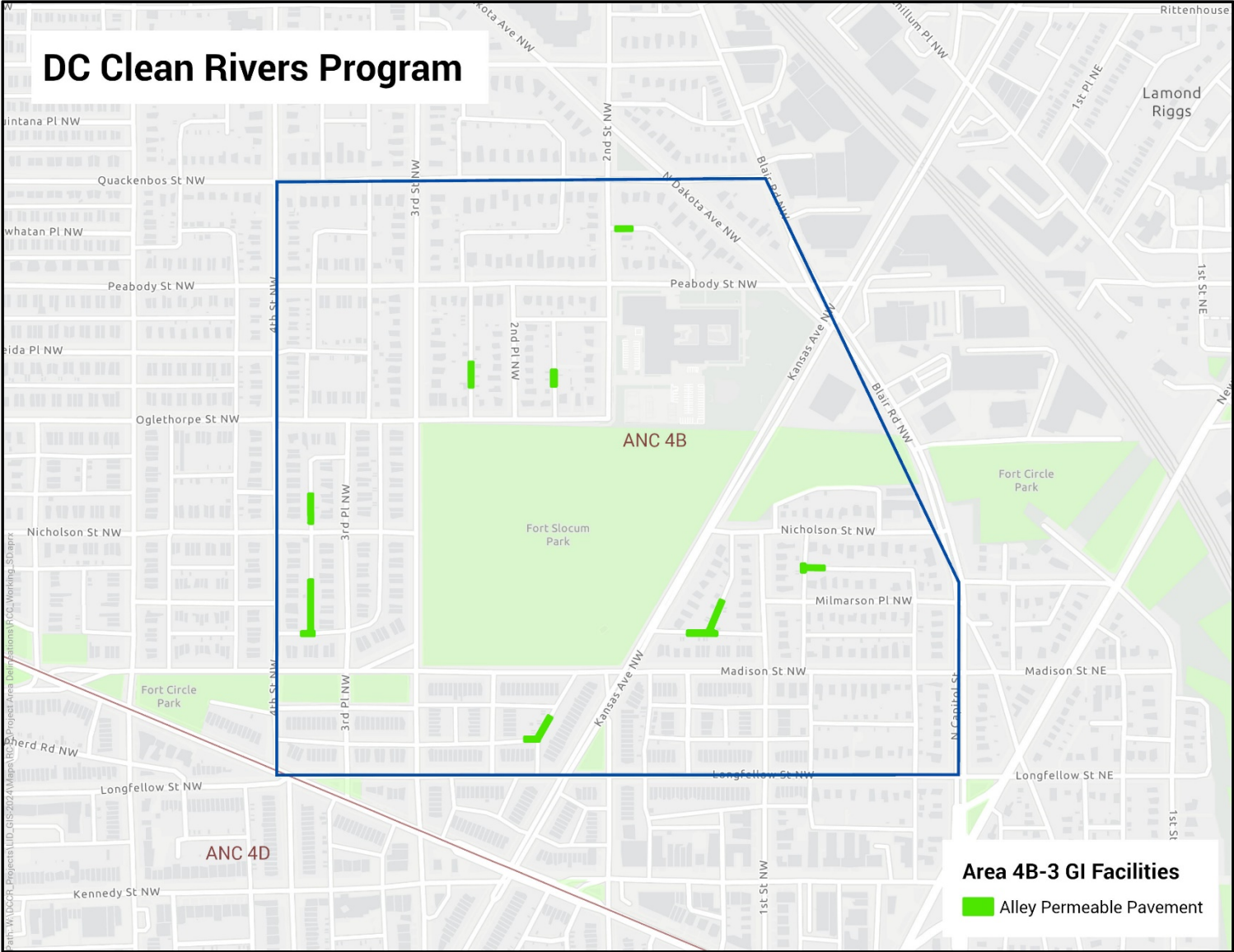


Figure 2-5. Rock Creek Project C: Area 4B-3



Figure 2-6. Rock Creek Project C: Area 4B-4

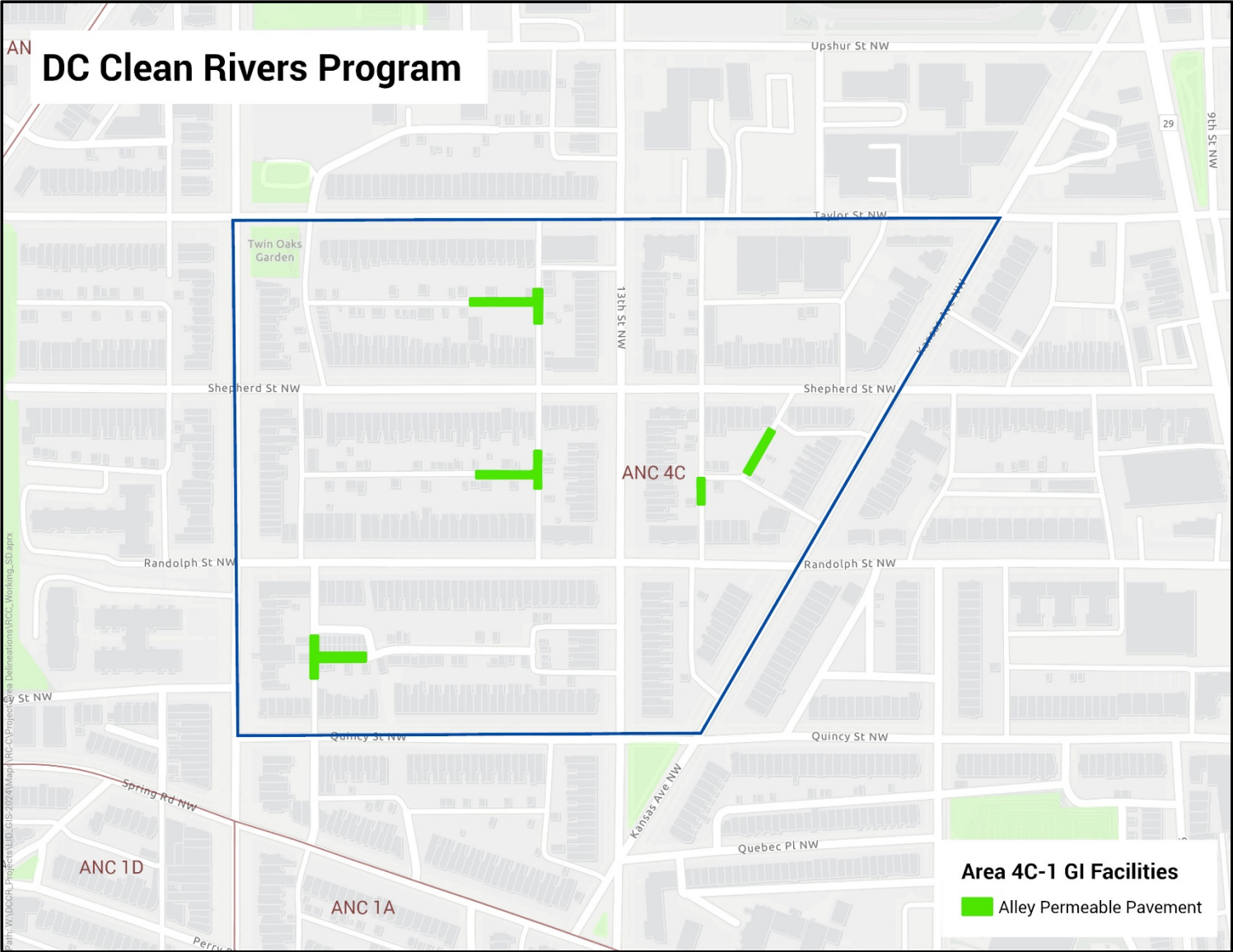


Figure 2-7. Rock Creek Project C: Area 4C-1

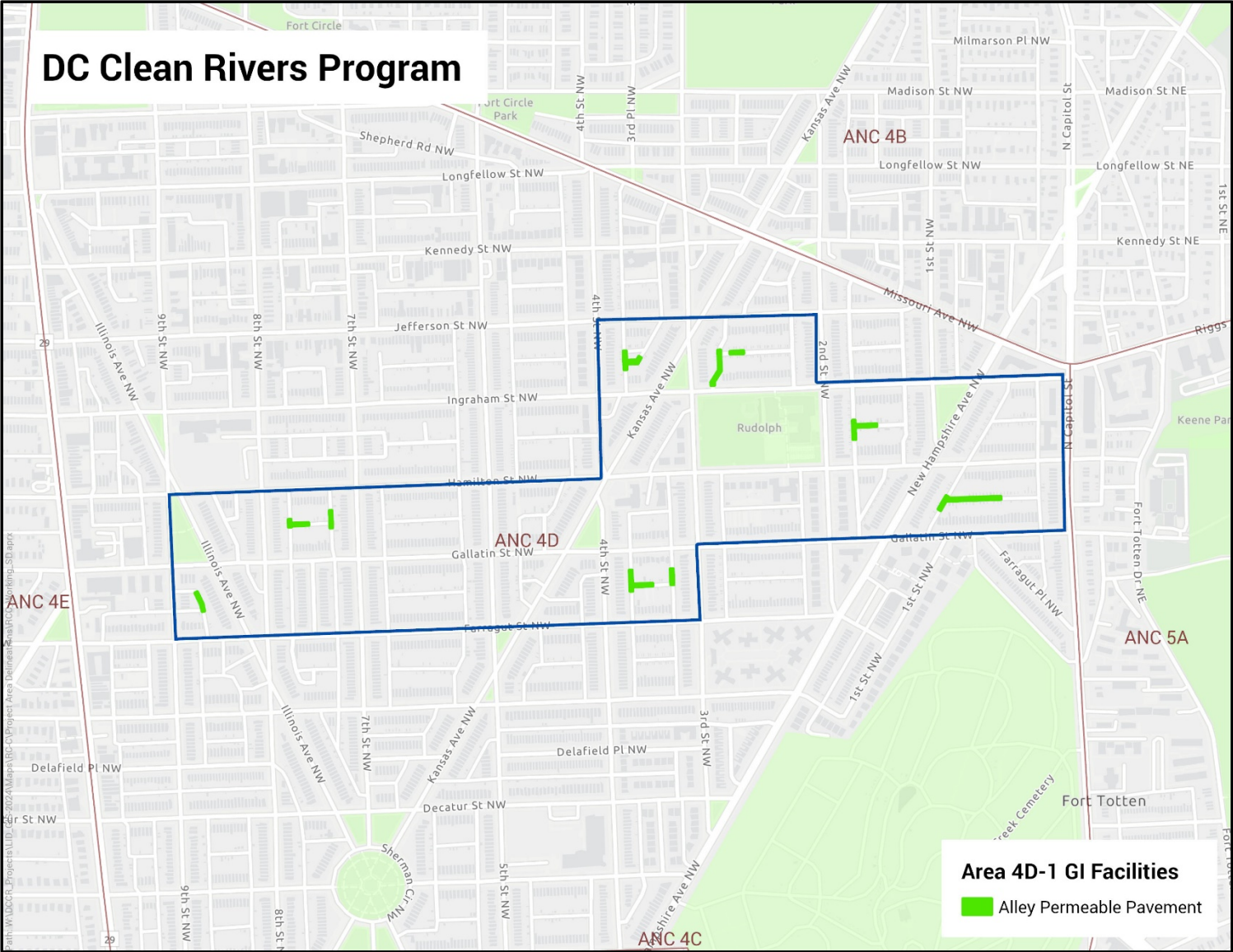


Figure 2-8. Rock Creek Project C: Area 4D-1



Figure 2-9. Rock Creek Project C: Area 4E-1

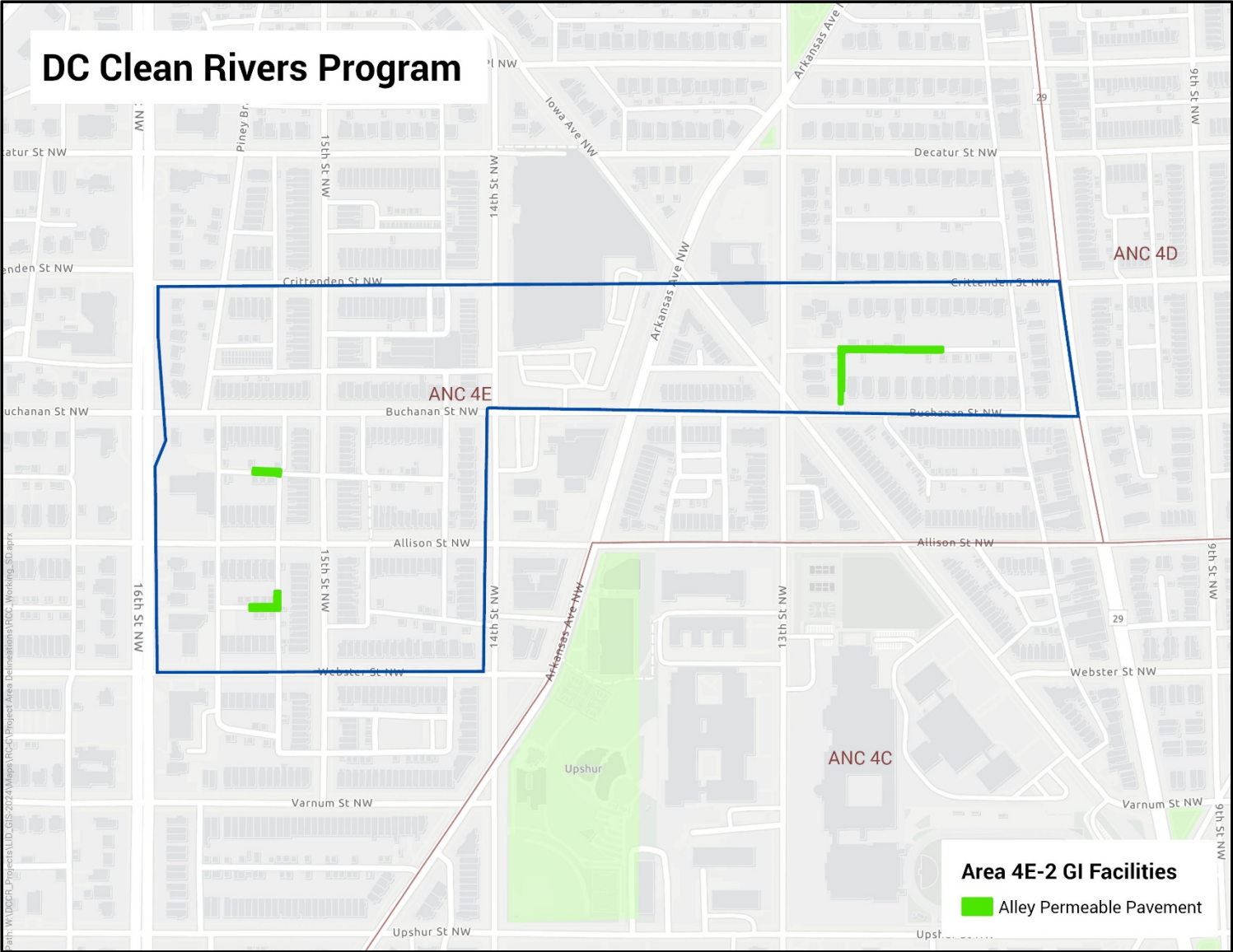
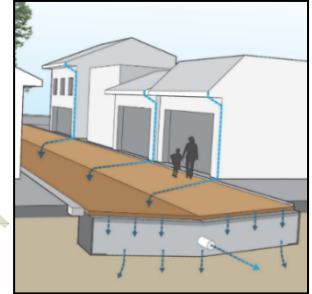


Figure 2-10. Rock Creek Project C: Area 4E-2

2.3 GI Control Measures

The GI control measures proposed within Rock Creek GI Project C consist of alley permeable pavement (APP) facilities in the public ROW.

Permeable pavement will be used to replace (or in lieu of) traditional impervious pavements in alleys as they offer similar functionality with respect to vehicle and pedestrian traffic. Permeable pavement control measures will include perforated underdrains tied to the existing underground sewer infrastructure. Permeable pavement installations in alleys include permeable interlocking unit pavers.



Alley Permeable Pavement

2.4 Impervious Area Managed

The Rock Creek GI Project C is designed to meet the Joint Stipulation requirement to manage 1.2” of stormwater runoff from at least 25 impervious acres, as outlined in Table 1-1. Table 2-1 shows the estimated range of volume capture for the proposed Alley Permeable Pavement (APP).

Table 2-1. Volume Capture by GI Control Measures

Minimum Impervious Acres Managed	Equivalent Volume Required by Amended Consent Decree at 1.2” (MG)	Approximate Location ¹	Approximate Mix of GI Technologies ^{1,2} (% of Impervious Acres Managed) – all values ± 20%				
			Bioretention	Permeable Pavement	Subsurface Storage in ROW (Parking Lane, Sidewalk, etc.)	Targeted Sewer Separation	Downspout Disconnections
25.0	0.81	Figures 2-3 to 2-10		100%	-	-	-

¹ Approximate project location area is identified, and approximate GI technologies and application rates are shown. Other GI technologies may be evaluated during design and construction and application rates will be adjusted accordingly.

² Per Consent Decree Appendix F, Sections II.E. and V, DC Water will track and report on additional stormwater controls constructed in Piney Branch pursuant to the District’s stormwater regulations to determine if crediting of additional acres is warranted.

To achieve the required impervious acres managed, the RC-C project is proposing to install APP facilities (Table 2.2) in each of the project boundaries as shown in Figures 2-3 to 2-10.

Table 2-2. Proposed Number of Facilities per Project Area

Project Area	Alley Permeable Pavement (#)
4B-1	13
4B-2	15
4B-3	8
4B-4	4
4C-1	5
4D-1	9
4E-1	8
4E-2	3

For this draft project description, the number of projects shown in Table 2.2 currently exceeds the required 25 impervious acres. The final determination of the proposed facility number and location needed to meet the required 25 impervious acres will be presented in the final project description, after comments from the public and other stakeholders are incorporated.

2.5 Implementation Schedule

Rock Creek GI Project C will meet the project implementation schedule as set forth in the Joint Stipulation:

- Award Contract for Construction: March 23, 2025
- Place in Operation: December 31, 2027

2.6 Estimated Cost

2.6.1 Cost of GI Controls

Table 2-3 summarizes the construction cost in dollars per impervious acre treated at 1.2” for APP included in the above project designs. These costs include labor using prevailing wage rates in Washington, D.C., all contractor mark-ups (overhead, permitting, general conditions, bonding, insurance), and contractor’s contingency. The costs do not include ongoing maintenance.

Table 2-3. Estimated Costs for Types of GI Controls

GI Control Measure	GI Control Measure Location	Construction Cost
Permeable Pavement	Alley	\$600K/acre - \$825K/acre

2.6.2 Total Project Cost

The total construction cost for Rock Creek GI Project No. C is currently estimated to be in the range of \$15 to \$21 million (in 2024 dollars).

2.7 Post-Construction Monitoring and Modeling Approach

The monitoring and modeling approach for RC-C has been developed based on the lessons learned in previous Rock Creek GI Project, RC-A. The following are the key lessons learned associated with monitoring and modeling:

- EPA suggested increasing the number of rain gages considering the CIWEM *Code of Practice for the Hydraulic Modelling of Sewer Systems* (2002). One rain gage was used in RC-A monitoring.
- The use of sewer flow meters to assess GI was challenging. Temporal rainfall and sewage variability can mask effect of GI. The RC-C project will construct GI over a relatively large area. The intensity of the application of GI will be lower, making it impractical to use flow meters in sewers to assess GI performance. In addition, upstream sheds in Piney Branch flow through downstream sheds, further making it impractical to use sewer meters.
- In RC-A, the analysis of level-sensor data proved to be an effective way of evaluating GI performance, since many of the same assumptions of practice performance (especially related to underdrain and infiltration rates) applied for both flow- and level-based data analysis.

2.7.1 RC-C Post Construction Monitoring and Modeling Approach

The approach for RC-C monitoring and modeling incorporates the lessons learned from the RC-A project described above. This includes the type and quantity of monitoring as well as the type of modeling being conducted to assess the GI effectivity and compare it to the facility design. In detail, this includes the following:

- Three (3) rain gages will be installed and operated for approximately twelve (12) months with a 5-minute logging interval. The rain gages will be installed in Project Area 4C-1 (the southernmost area), Project Area 4B-1 (the northernmost area), and Project Area 4D-1 (the middle of all planned facility installation areas). This leads to a maximum aerial distance between a rain gage and every practice of approximately 1 mile.
- Water level sensors will be installed in 10% of all APP practices. Water level loggers will be operated for approximately 12 months with a 5-minute logging interval.
- Facility testing data conducted during construction (filling test) will be used to better constrain the installed practice storage porosity as well as the underdrain performance (flow rating curve). This will require facility tests for all monitored practices.
- Sewer metering data will not be collected or used due to the lessons learned during the RC-A project as described above.
- A SWMM runoff model will be used to evaluate the performance of monitored practices. This model will consist of the runoff area for each practice (the Contributing Drainage Area (CDA)) as well as the practice itself. The modeling process will include the following steps:
 1. Setup of SWMM runoff model for planned practice drainage areas based on CDA drawing sets (pre-construction scenario).

2. Setup and parameterization of GI in SWMM model based on facility drawing sets (design scenario).
3. Calibration of the GI facility parameters using observed rainfall, water level logger data as well as information from the facility testing (calibrated scenario).
4. Application and comparison of the pre-construction scenario, the design scenario, and the calibrated scenario. For this evaluation, the model will be run for the LTCP average years 1988-1990. Runoff differences between the pre-construction scenario and the design scenario will be compared with the differences between the pre-construction scenario and the calibrated scenario to compare the performance of the installed practices with the design performance.

2.8 Public Comment Period

This draft project description document will be made available on the DC Water website for public comment through May 10, 2024. During the public comment period, DC Water will host two virtual public meetings and individual meetings with ANCs to present the proposed project within each of the ANC's limits and obtain input on the facility locations, configurations, and construction approach. Comments received during this period will be incorporated in the final project description and design, as applicable.

Appendix A

Joint Stipulation of Non-Material Modification to the Consent Decree

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**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA**

**ANACOSTIA WATERSHED SOCIETY, et al.,)
Plaintiffs,)**

v.)

**DISTRICT OF COLUMBIA WATER AND)
SEWER AUTHORITY, and THE DISTRICT)
OF COLUMBIA,)
Defendants,)**

**Consolidated
Civil Action No. 1:00CV00183TFH**

and)

**THE UNITED STATES OF AMERICA,)
Plaintiff,)**

v.)

**DISTRICT OF COLUMBIA WATER AND)
SEWER AUTHORITY, et al., and THE)
DISTRICT OF COLUMBIA,)
Defendants.)**

**JOINT STIPULATION OF NON-MATERIAL MODIFICATION
TO THE CONSENT DECREE**

WHEREAS, the United States of America (hereinafter “the United States”), the District of Columbia, and D.C. Water (hereinafter “Parties”) are parties to a Consent Decree entered by the United States District Court for the District of Columbia, Civil Action No. 1:00CV00183TFH, on October 10, 2003 and as subsequently amended on January 14, 2016 (hereinafter the “Consent Decree”);

WHEREAS, pursuant to Section II.D of Appendix F to the Decree, DC Water has constructed Green Infrastructure (“GI”) Project No. 1 in the CSO 049 sewershed of Rock Creek, performed post construction monitoring and submitted to U.S. Environmental Protection Agency

(“EPA”) and the District “Post Construction Monitoring Report No. 1” for the Rock Creek sewershed projects (“Rock Creek Report No.1”);

WHEREAS, DC Water determined in Post Construction Monitoring Report No. 1 that the All GI Approach was impracticable. However, DC Water also determined that it would be practicable to achieve the required storage volume (9.5 million gallons) in the CSO 049 sewershed by the March 23, 2030 deadline with a combination of GI and a storage facility (the “Hybrid Approach”) consisting of (1) a 4.2 million gallon storage facility, (2) GI, targeted sewer separation, and downspout disconnection controlling at least 92 acres to the 1.2” Retention Standard (3.0 million gallons), and (3) credit for other GI-controlled acres in the CSO 049 sewershed as permitted by Section II.E of Appendix F (2.3 million gallons). The Report requested that EPA approve the Hybrid Approach;

WHEREAS, EPA has approved the Hybrid Approach;

WHEREAS, the Hybrid Approach represents a modification to the non-material terms of Appendix F to the Consent Decree because it changes only the means and methods for achieving the required level of control for CSO 049 sewershed, not the level of control nor the deadline for achieving it;

WHEREAS, the non-material terms of the Decree may be modified by a subsequent written agreement signed by all the Parties;

WHEREAS, the Parties have provided an opportunity beyond the requirements of the Decree for interested non-governmental groups, including representatives from Citizen Plaintiffs in this action, to provide written comments on the DC Water Green Infrastructure Practicability Assessment, and meet and discuss those comments with the Parties;

WHEREAS, in accordance with Paragraph 102 of the Decree, the Parties agree that the proposed amendments to Appendix F of the Decree constitute a modification to the non-material terms of the Decree;

NOW THEREFORE,

1. The Parties agree upon and stipulate to the terms and conditions in the First Amended Appendix F to the Decree, which is Attachment A to this Joint Stipulation of Non-Material Modification to Consent Decree (“Joint Stipulation”).
2. The undersigned representatives are fully authorized to enter into the terms and conditions of this joint Stipulation. This Joint Stipulation may be executed in several counterparts, each of which will be considered an original.
3. This Joint Stipulation shall be effective after the Joint Stipulation is signed by the Deputy Section Chief for the Environmental Enforcement Section.

WE HEREBY CONSENT to the foregoing Joint Stipulation of Non-material Modification to the Consent Decree entered in United States of America v. District of Columbia Water and Sewer Authority et al. and the District of Columbia, Civil Action No. 1:00CV00183TFH, on October 10, 2003.

FOR PLAINTIFF THE UNITED STATES OF AMERICA:

Respectfully submitted,

12/22/20
DATE

Nathaniel Douglas
NATHANIEL DOUGLAS
Deputy Section Chief
Environmental Enforcement Section
Environment & Natural Resources Division

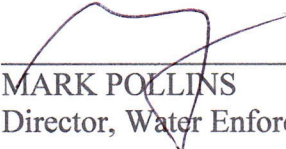
12/22/20
DATE

/s/ Bradley L. Levine
BRADLEY L. LEVINE (DC Bar No. 974925)
Senior Attorney
Environmental Enforcement Section
Environment & Natural Resources Division
U.S. Department of Justice
P.O. Box 7611
Washington, DC 20044
Phone: 202-514-1513

WE HEREBY CONSENT to the foregoing Joint Stipulation of Non-material Modification to the Consent Decree entered in United States of America v. District of Columbia Water and Sewer Authority et al. and the District of Columbia, Civil Action No. 1:00CV00183TFH, on October 10, 2003.

FOR PLAINTIFF THE U.S. ENVIRONMENTAL PROTECTION AGENCY:

12/3/2020
DATE



MARK POLLINS
Director, Water Enforcement Division

SUSHILA NANDA
Attorney-Advisor
Water Enforcement Division
Office of Enforcement and Compliance Assurance
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

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FOR DEFENDANT DISTRICT OF COLUMBIA WATER AND SEWER AUTHORITY:

12.4.2020
DATE



Kishia L. Powell, PE
Chief Operating Officer
District of Columbia Water
and Sewer Authority

DAVID L. GADIS
CEO and General Manager
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12-04-20
DATE



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12/03/2020
DATE



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WE HEREBY CONSENT to the foregoing Joint Stipulation of Non-material Modification to The Consent Decree entered in United States of America v. District of Columbia Water and Sewer Authority et al. and the District of Columbia, Civil Action No. 1:00CV00183TFH, on October 10, 2003.

FOR DEFENDANT DISTRICT OF COLUMBIA:

KARL A. RACINE
Attorney General for the District of Columbia

12/22/2020

DATE

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Attachment A to Stipulation of Non-Material Modification to Consent Decree

FIRST AMENDED APPENDIX F

GREEN INFRASTRUCTURE PROGRAM FOR THE POTOMAC AND ROCK CREEK SEWERSHEDS

I. Green Infrastructure Program Plan

Within 12 months after the Effective Date of the First Amendment to the Consent Decree, DC Water shall submit to EPA for approval pursuant to Section X (EPA Approval of Plans and Submissions) of this Consent Decree a Green Infrastructure Program Plan (the “GI Program Plan”). The GI Program Plan shall include the elements described in subsections A, B, and C below. DC Water submitted and EPA approved the Program Plan on July 29, 2016 and February 3, 2017, respectively.

A. Green Infrastructure Control Measures.

1. Identification and description of the GI control measures (including any targeted sewer separation projects) that DC Water intends to install (or have the District or other entities install on its behalf), the approximate locations of the sites for the measures, and the estimated cost to implement the measures.
2. The conceptual project location identifications and descriptions, and cost estimates for the measures that DC Water intends to install (or have the District or other entities install on its behalf), which shall correspond to the individual GI Projects set forth in the schedule in Section II of this Appendix F.
3. An estimate of the number of acres of land projected to be effectively retrofitted with GI in the Potomac and Rock Creek sewersheds prior to 2030 pursuant to the District’s MS4 permit and storm water regulations.

B. Preservation and Maintenance of Constructed Green Infrastructure Projects. A plan to (1) preserve and maintain the GI control measures installed pursuant to the GI Program Plan and (2) ensure that future site or land use changes do not result in the loss of the runoff reduction benefits of the GI control measures installed pursuant to the GI Program Plan, unless that loss is compensated for by other controls in the same CSO drainage area.

C. Public Outreach. A plan to engage property owners in the Potomac and Rock Creek sewersheds and interested stakeholders to promote and facilitate installation of GI on private property and to ensure public input into the site

selection process and concept design for the control measures that DC Water proposes to install as part of the GI Program Plan.

(a) Public Outreach shall include:

1. During GI Project Planning:

- (i) Develop a draft Project Description report, place it on DC Water's website and solicit comments for 30 calendar days;
- (ii) Advertise and hold at least one public meeting (virtual or in person) regarding the project described in the Project Description;
- (iii) Consider public comments received during comment period and at public meeting and revise the Project Description report as appropriate prior to submittal to EPA; and
- (iv) Post the final Project Description as submitted to EPA on DC Water's website;

2. During GI Project Design:

- (i) Meet with Advisory Neighborhood Commission ("ANC") in the area to present the proposed project, obtain comments on the facility locations, configuration and construction limitations and incorporate comments as appropriate;
- (ii) Use multiple media which may include door hangers, emails, in person visits or other means to advise adjacent property owners of planned projects;
- (iii) Maintain a website with information on the project, frequently asked questions and provide contact information for citizens to reach project staff with comments or questions; and
- (iv) Maintain a contact list of interested parties to distribute project information and notices about the project.

3. During GI Project Construction:

- (i) Meet with ANC in the area to prior to construction to provide an update on anticipated construction plans and timeframes;

- (ii) Maintain a hotline for construction questions and issues;
 - (iii) Use multiple media which may include door hangers, emails, in person visits or other means to advise adjacent property owners of planned construction;
 - (iv) Maintain a website with information on the project, frequently asked questions and provide contact information for citizens to reach project staff with comments or questions; and
 - (v) Respond to neighborhood questions and requests during construction as appropriate.
4. After Project Construction:
- (i) Post the Post Construction Report on DC Water's website; and
 - (ii) Solicit feedback on the implemented project from nearby property owners and incorporate feedback into subsequent designs as appropriate.

II. DC Water Implementation Schedule

DC Water shall construct and Place in Operation the GI control measures assigned to it in accordance with the following schedule:

- A.** Six months prior to the award contract for construction for each of the projects listed in this section, DC Water shall submit a Project Description to EPA for review and comment. The Project Description shall contain:
 - 1. An identification of the CSO areas where the projects are to be implemented
 - 2. The types of GI control that are to be employed and the rationale for their use
 - 3. The approximate location of the controls
 - 4. The estimated acreage that will be controlled to a 1.2" retention standard
 - 5. A schedule for implementation of the controls
 - 6. The estimated cost for each type of control to be employed

7. The total cost for the Project
8. Post Construction Monitoring and Modeling Program for this project to demonstrate the capture efficiency of the controls to be implemented

B. Six months following the completion of a project's post construction monitoring program, DC Water shall submit a Post Construction report for EPA review and comment. The Post Construction Report shall contain:

1. A comparison of planned projects under the Project Description and actual implemented projects:
 - (a) Costs
 - (b) Acreage treated to 1.2" retention standard
 - (c) Estimate of run-off control.
2. Identification of barriers to implementation of projects and steps taken by DC Water and the District to address any identified barriers for this and future projects
3. Post Construction Monitoring and Modeling Program results assessing the efficiency of the controls implemented
4. Changes proposed for future projects

C. Potomac Sewershed Projects: In accordance with the following schedule, construct GI, including targeted sewer separation, in the CSO 027, 028 and 029 sewersheds designed to:

1. Project No. 1: Control 44 acres to the 1.2" Retention Standard
 - (a) Award Contract for Construction: June 23, 2017
 - (b) Place in Operation: June 23, 2019
2. Project No. 2: Control 46 acres to the 1.2" Retention Standard
 - (a) Award Contract for Construction: June 23, 2022
 - (b) Place in Operation: June 23, 2024
3. Project No. 3: Control 43 acres to the 1.2" Retention Standard
 - (a) Award Contract for Construction: June 23, 2025
 - (b) Place in Operation: June 23, 2027

4. Controlled acres placed in operation in excess of those specified for a given project in this paragraph II.C may be credited against the acres required to be controlled on subsequent projects.
5. No later than 15 months following the Place in Operation date for Project No. 1 above, DC Water shall submit to EPA and the District Post Construction Monitoring Report No. 1 for the Potomac Sewershed Projects (Potomac Report No. 1). In addition to the information required in Subsection II.B above, the report shall contain DC Water's determination of the practicability of controlling at least 133 acres to the 1.2" Retention Standard in the CSO 027, 028 and 029 sewersheds by the Place in Operation deadline for Project No. 3 above based on its experience with implementing Project No. 1. Such determination shall consider the constructability, operability, efficacy, public acceptability and cost per impervious acre treated of the controls.
6. EPA shall either approve or disapprove of the determination required by Paragraph 5 above. If EPA fails to either approve or disapprove the determination within 180-days following receipt of Potomac Report No. 1, any subsequent deadline that is dependent upon such approval or disapproval shall be extended by the number of calendar days beyond the 180-day period that EPA uses to approve or disapprove the determination. The process for approving or disapproving the determination shall be governed by Paragraph 39 of the Consent Decree.
7. In the event DC Water determines that it is not practicable to control at least 133 acres to the 1.2" Retention Standard in the CSO 027, 028 and 029 sewersheds by the Place in Operation deadline for Project No. 3 above and such determination is approved by EPA, DC Water shall:
 - (a) Plan, design, and construct the Potomac River Storage/Conveyance Tunnel with a total storage volume of not less than 40 million gallons, at any time up to, but no later than the following schedule
 - (i) Award Contract for Detailed Design: Three (3) months after EPA approval
 - (ii) Award Contract for Construction: Two (2) years and six (6) months after EPA approval
 - (iii) Place in Operation: Nine (9) years after EPA approval
 - (b) Be relieved of its obligation to implement Project Nos. 2 and 3 above; and
 - (c) Operate and maintain the GI constructed in Project No. 1 in accordance with its NPDES Permit.

D. Rock Creek Sewershed Projects: In accordance with the following schedule, construct GI, including targeted sewer separation, in the CSO 049 (Piney Branch) sewershed designed to:

1. Project No. 1: Control 20 acres to the 1.2” Retention Standard
 - (a) Award Contract for Construction: March 30, 2017
 - (b) Place in Operation: March 30, 2019
2. Project No. 2: Control 75 acres to the 1.2” Retention Standard
 - (a) Award Contract for Construction: January 23, 2022
 - (b) Place in Operation: January 23, 2024
3. Project No. 3: Control 90 acres to the 1.2” Retention Standard
 - (a) Award Contract for Construction: March 23, 2025
 - (b) Place in Operation: March 23, 2027
4. Project No. 4: Control 90 acres to the 1.2” Retention Standard
 - (a) Award Contract for Construction: September 30, 2027
 - (b) Place in Operation: September 30, 2029
5. Project No. 5: Control 90 acres to the 1.2” Retention Standard
 - (a) Award Contract for Construction: March 23, 2028
 - (b) Place in Operation: March 23, 2030
6. Controlled acres placed in operation in excess of those specified for a given project in this paragraph II.D. may be credited against the acres required to be controlled on subsequent projects.
7. No later than 15 months following the Place in Operation date for Project No. 1 above, DC Water shall submit to EPA and the District Post Construction Monitoring Report No. 1 for the Rock Creek Sewershed Projects (Rock Creek Report No. 1). In addition to the information required in Subsection II.B above, the report shall contain DC Water’s determination of the practicability of controlling at least 365 acres to the 1.2” Retention Standard in the CSO 049 sewershed by the Place in Operation deadline for Project No. 5 above based on its experience with implementing Project No. 1. Such determination shall consider the

constructability, operability, efficacy, public acceptability and cost per impervious acre treated of the controls.

8. EPA shall either approve or disapprove of the determination required by Paragraph 7 above. If EPA fails to either approve or disapprove the determination within 180-days following receipt of Rock Creek Report No. 1, any subsequent deadline that is dependent upon such approval or disapproval shall be extended by the number of calendar days beyond the 180-day period that EPA uses to approve or disapprove the determination. The process for approving or disapproving the determination shall be governed by Paragraph 39 of the Consent Decree.
9. DC Water has determined that it is not practicable to control at least 365 acres to the 1.2” Retention Standard in the CSO 049 sewershed by March 23, 2030 using solely green infrastructure projects, and such determination has been approved by EPA. DC Water has determined that a hybrid approach of green and gray infrastructure projects will achieve control equivalent to managing at least 365 acres to the 1.2” Retention Standard in the CSO 049 watershed by March 23, 2030, and such determination has been approved by EPA. DC Water shall achieve a minimum of 9.5 million gallons of control in the CSO 049 sewershed by March 23, 2030 as follows:
 - (a) DC Water shall construct a Rock Creek Storage Facility (the “Facility”), which shall store combined sewer flow from the Piney Branch Outfall, CSO 049, in accordance with DC Water’s NPDES Permit. The storage capacity of the Facility will be at least four million two hundred thousand gallons (4.2 million gallons). After the Facility is Placed in Operation, in the event of wet weather causing the facility to be used for storage, DC Water shall dewater the Facility to the CSS as soon as practicable, but in no event longer than 59 hours, and shall convey the contents of the Facility to Blue Plains for treatment in accordance with DC Water’s NPDES permit. The location of the Facility will be finalized during Facility Planning and design, but it will be between CSO 049 and Rock Creek and its approximate location is depicted in Page ES-9 of Appendix A to this Decree.
 - (b) DC Water shall plan, design, construct and Place in Operation the Facility at any time up to, but no later than the following schedule:
 - (i) Award Contract for Detailed Design: Three (3) years six (6) months after EPA approval
 - (ii) Award Contract for Construction: Five (5) years six (6) months after EPA approval

- (iii) Place in Operation: Nine (9) years after EPA Approval
- (c) The Rock Creek Storage Facility shall be subject to the terms and requirements of Section VIII. (Control System Compliance and Post-Construction Monitoring) of this Decree.
- (d) DC Water shall place in operation GI which may include targeted sewer separation and downspout disconnection in the CSO 049 in accordance with the following schedule:
 - (i) DC Water certifies that it has placed in operation Rock Creek Project 1 controlling at least 20 acres to the 1.2” retention standard (652,000 gallons)
 - (ii) Project B: Control 22 acres to the 1.2” Retention Standard (717,000 gallons)
 - a. Award Contract for Construction: January 23, 2022
 - b. Place in Operation: January 23, 2024
 - (iii) Project C: Control 25 acres to the 1.2” Retention Standard (815,500 gallons)
 - a. Award Contract for Construction: March 23, 2025
 - b. Place in Operation: December 31, 2027
 - (iv) Project D: Control 25 acres to the 1.2” Retention Standard (815,500 gallons)
 - a. Award Contract for Construction: March 23, 2028
 - b. Place in Operation: March 23, 2030
- (e) As provided in Section II.E of Appendix F, DC Water has demonstrated that it is entitled to take credit for at least 2.3 million gallons (70.5 acres controlled to the 1.2” Retention Standard) from the implementation of the District’s MS4 Permit and Stormwater Regulations in the CSO 049 sewershed as of March 31, 2020.
- (f) DC Water is relieved of its obligation to implement Project Nos. 2, 3, 4, and 5 from this Section II.D.; and
- (g) DC Water shall operate and maintain the GI constructed in Project No. 1 in accordance with its NPDES Permit.

E. Credit for Other Controlled Acres. Controlled acres from the implementation of the District's MS4 Permit and Stormwater Regulations will be credited against DC Water's obligations to control acres in paragraphs II.C. and II.D. if:

1. They are located in the CSO areas targeted for GI implementation by DC Water; and
2. The design of the control measures and their level of control has been verified by DC Water to achieve the 1.2" retention standard or any portion thereof. Where green infrastructure installations by any party do not meet the full 1.2" design criterion and are counted towards meeting the requirements of this consent decree, DC Water may proportionally credit the control achieved; and
3. DC Water, the District or a private party has assumed operation and maintenance responsibilities in a legally binding document or as part of its statutory or regulatory authority.

F. DC Water Commitments to Coordinate with the District. The commitments of DC Water in coordinating with the District are:

1. DC Water shall consult with the District's Program Coordinator and relevant District agencies in selecting planned GI projects proposed for District property or rights of way to ensure coordination with District infrastructure policies and priorities;
2. DC Water shall submit draft GI construction staging packages identifying facilities to be constructed, including preliminary engineering plans and specifications, staging areas, estimated construction durations, work hours and traffic management plans for review by the District and shall do so sufficiently in advance of construction of the various GI contract divisions in order to allow adequate time for the District to review the packages, for the District and DC Water to resolve any issues, and for the District to issue the permits before the expected start date of construction;
3. DC Water shall prepare 30%, 60%, 90% and 100% documents each for RFP and design for District review and comment prepared in accordance with terms agreed to by the District and DC Water;
4. DC Water shall submit a maintenance and monitoring plan, including the funding methodology, for each GI Project to the District agencies having jurisdiction.
5. DC Water shall submit applications for public space, construction, and any other necessary permits for each project or facility;

6. DC Water shall submit the documents required by this section sufficiently in advance of construction in order to allow adequate time for the District to review the document, for the District and DC Water to resolve any issues, and for the District to issue the permits or other legal authority before the expected start date of construction of the project.
7. DC Water shall work with the District to coordinate and align capital projects and expenditures, where feasible and practical, to allow implementation of the GI projects in a manner that enables the efficient use of resources and minimizes costs to the taxpayers and rate-payers.
8. DC Water shall assure that GI credited towards meeting DC Water's obligations to control acres in paragraphs II.C. and II.D is inspected no less than once every three years and that any deficiencies are corrected.

III. District of Columbia Government Commitments

A. The commitments of the District in support of the GI Projects are:

1. The District agrees to provide the public space necessary for DC Water to construct GI to control 92 acres to the 1.2" Retention Standard in the CSO 049 sewershed. The District and DC Water will establish procedures for identifying GI locations, technologies, and issuance of permits for construction, operation and maintenance and other matters.
2. The District will appoint an executive-level District official as the District's Program Coordinator within 6 months of Effective Date of the First Amendment to the Consent Decree. The Coordinator will be charged with coordinating and expediting the work of the relevant District offices, departments and agencies;
3. After submission by DC Water of each construction staging package, the District shall review the proposed construction staging areas, construction durations, maintenance of traffic, parking mitigation, work hours and facilities to be constructed, and work with DC Water to resolve any concerns and issue approval letters identifying the conditions that must be met in order to obtain permits for construction;
4. The District shall issue permits for construction within thirty (30) business days of submittal of a complete application package prepared in accordance with an approval letter;
5. After submission and review of the maintenance and monitoring plan for a GI Project submitted by DC Water, the District shall issue permits or other legal authority to DC Water in advance of the completion of construction of the GI Projects allowing access for the maintenance and monitoring of the project; unless, as part of the maintenance and monitoring plan

submitted by DC Water and approved by the District, the District or private party will be responsible for the maintenance and monitoring of the project.

6. The District shall revise its storm water policies regarding in-lieu fees to include the following:
 - (a) In-lieu fees paid by regulated projects in the 049 sewershed will be used to fund construction of GI in those sewershed; and
 - (b) In-lieu fees paid by regulated projects in combined sewersheds will not be used to fund projects in combined sewersheds controlled by the Gray CSO Controls required by this Consent Decree.

7. The District shall submit a report to EPA for review and comment no later than March 1, 2016 identifying impediments to implementation of the GI Projects and identifying proposed changes to the regulations, codes, standards, guidelines and policies by reviewing the following items at a minimum:
 - (a) Storm water regulations and policies; including a review of the practicability of incentivizing storm water retention credits (SRCs) to maximize water quality benefits;
 - (b) District Department of Transportation (“DDOT”) Design and Engineering Manual;
 - (c) Zoning regulations;
 - (d) Plumbing and Building Codes;
 - (e) DDOT Urban Forestry Guidelines;
 - (f) DDOT Green Infrastructure Standards; and
 - (g) DC Water Utility Protection Guidelines.

8. The District shall take the following actions with respect to the proposed amendments to the regulations, codes, standards and guidelines included in the reports described in paragraphs above:
 - (a) For statutory amendments, the District shall submit to the Council by no later than March 1, 2017, proposed legislation to enact the statutory amendments;
 - (b) For regulatory amendments that require Council approval, the District shall publish a notice of proposed rulemaking by March 1,

2017, and shall submit to the Council by no later than January 1, 2018, a proposed resolution to approve the final rules;

- (c) For regulatory amendments that require Zoning Commission approval, the District shall submit proposed zoning language to the Zoning Commission for its approval by no later than March 1, 2017;
- (d) For regulatory amendments that do not require Council or Zoning Commission approval, the District shall issue a notice of proposed rulemaking by March 1, 2017;
- (e) For statutory amendments and for regulatory amendments that require Council approval, the District shall take such actions as are necessary to obtain the Council's approval of the proposed legislation by March 1, 2018;
- (f) For regulatory amendments that require Zoning Commission approval, the District shall take such actions as are necessary to obtain the Zoning Commission's adoption of the regulatory amendments by March 1, 2018; and
- (g) For regulatory amendments that do not require Council or Zoning Commission approval, the District shall issue a notice of final rulemaking no later than March 1, 2018.

B. Anti-Deficiency Act Events: Nothing in this Decree shall be construed to require an expenditure, obligation or contract in violation of the Anti-Deficiency Act, 31 U.S.C. §§ 1341 et seq. Where an expenditure, obligation or contract is subject to the Anti-Deficiency Act, the District's obligations shall be subject to the availability of appropriated funds.

IV. Additional Coordination between DC Water and District

DC Water and the District will work together to coordinate and align capital projects and expenditures, where feasible and practical, to allow implementation of the GI Projects in a manner that enables the efficient use of resources and minimizes costs to the taxpayers and rate-payers. As part of this process, the District and DC Water will identify capital projects in the sewershed for CSO 049 that are projected to be completed during the subsequent three (3) years and that provide an opportunity to include more than \$200,000 of green infrastructure in excess of that required by District law. DC Water may request the District to incorporate in one or more of these projects GI in excess of that required by District law. The District agrees to grant such requests if DC Water agrees to fund the incremental design, construction, monitoring and maintenance costs of GI implemented by the District in excess of GI required by District law, the amount of such funding is agreed to by the District and DC Water, and the proposed GI is consistent with the District's current and potential future

program for the project. Such excess GI will be credited to the acres required to be controlled in Subsections II.C and II.D of this Appendix F.

V. Reporting

- A. Following EPA's approval of the GI Program Plan, DC Water shall report on the status of implementation of the GI Program Plan in each Quarterly Report required by Section XI (Reporting) of this Decree. With respect to the hybrid approach for the 049 sewershed, DC Water shall report on the status of implementation of the Rock Creek Storage Facility in accordance with the terms and requirements of Section XI (Reporting) of this Decree. The reports shall describe the status (i.e., in design, in procurement, under construction, or completed) of the control measure projects identified in the GI Program Plan and the Rock Creek Storage Facility. As part of the First Quarterly Report of each calendar year, DC Water shall include the following information for the prior calendar year:
1. Total acres of impervious area treated by GI installed and by sewer separation since the Effective Date of the First Amendment to the Consent Decree in the sewershed for CSO 049 (Piney Branch);
 2. Acres of impervious area treated by GI pursuant to the District's MS4 permit and Stormwater Regulations installed since the Effective Date of the First Amendment to the Consent Decree in the sewershed for CSO 049 (Piney Branch); and the numbers of such acres credited in accordance with Section II.C of this Appendix F;
 3. The activities the District and DC Water have taken to coordinate and align capital projects to minimize costs associated with implementation of the GI Projects by DC Water; and
 4. After completion of the Rock Creek Storage Facility, DC Water shall provide reports in the first applicable quarter and annual reports which includes the total acres of impervious area treated by GI and the storage volume of the Rock Creek Storage Facility in the sewershed for CSO 049 (Piney Branch).