Annual Report

2020 Nonpoint Source Management Program

District of Columbia

Department of Energy and Environment

Reporting Period:

October 1, 2019 – September 30, 2020

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Executive Summary

In accordance with Section 319 of the Federal Clean Water Act, this report documents the activities and accomplishments by the District of Columbia (District) 319 Nonpoint Source (NPS) Management Program during Fiscal Year (FY) 2020. The District's Department of Energy and Environment (DOEE) is the lead agency for administering Section 319, including 319(h) funding. DOEE helps to protect and improve District water quality by promoting and funding the implementation of best management practices (BMP) and tracking, stream restoration efforts, education and outreach, and other measures to reduce NPS pollutant loads

In FY 2020, the District received $1,024,000 through the Environmental Protection Agency (EPA) 319(h) grant and matched it with $682,667 to support the District's NPS pollution reduction efforts. Over the course of FY 2020, which runs from October 1, 2019 through September 30, 2020, some of the District's accomplishments include the completion of two stream restorations and two outfall repairs, beginning two new low-impact development (LID) retrofit projects in public space, and the award of 16 grants for community-oriented projects that raise awareness about urban watershed issues. The COVID-19 pandemic significantly limited DOEE's ability for in-person interaction and community-based NPS management efforts. While virtual interactions and alternative methods of organization were exercised, the pandemic still impacted the efficacy of implementing the District's 319 NPS Management Program.

Mission and Goals of the District of Columbia's NPS Management Program

The mission of the District's NPS Management Program is to prevent and control NPS pollution in District waterways. Implementing both regulatory and non-regulatory approaches, the NPS Management Program works to safeguard the District's water and soil resources as well as the health and welfare of citizens using those resources.

DOEE's *Nonpoint Source Management Plan for the District of Columbia, 2019* outlines a comprehensive strategy for managing NPS pollution in an urban environment in an effort to restore beneficial uses, and sets new goals and objectives, including specific milestones for when the goals and objectives will be achieved. The format and goals in this annual report were organized to reflect the goals outlined in the approved management plan. The plan is aimed at reducing NPS pollution from urban runoff, construction, and hydrologic/habitat modification, and includes:

- Supporting activities that reduce pollutant loads from urban runoff, litter prevention, and trash removal;
- Supporting and implementing activities that restore and maintain healthy habitat, species diversity, and water flows to all tributaries to the Anacostia River, Rock Creek, and Potomac River;
- Installing LID practices on public and private properties throughout the District to maximize reductions in stormwater runoff;
- Coordinating NPS Management Program efforts with other District, federal, and private sector programs and adjoining jurisdictions;

- Supporting programs that aim to prevent NPS pollution from individual actions by carrying out effective information and education campaigns; and
- Coordinating a pollution prevention program that reduces stormwater pollution from industrial and commercial facilities in the District by providing compliance assistance and encouraging the adoption of practices that will improve water quality in District waterways.

The District's NPS Management Program is administered by DOEE's Watershed Protection Division (WPD), which consists of the Restoration Branch and the Partnering and Environmental Conservation Branch. The mission of WPD is to protect and restore the environmental health of the District's watershed by restoring streams and wetlands, providing incentives to control NPS pollution, and conducting outreach and education. The Restoration Branch manages large-scale LID, stream, and restoration projects, as well as RiverSmart Homes, RiverSmart Communities, and other incentive programs included in the NPS Management Program that conserve the soil and water resources of the District and protect watersheds from pollution. The Partnering and Environmental Conservation Branch is responsible for RiverSmart Schools, the GreenWrench Technical Assistance Program, and other initiatives that cultivate partnerships through engagement, education, and financial, technical, and compliance assistance to enforce District laws that achieve clean water goals and support communities.

The District has also created an EPA-approved *Consolidated TMDL Implementation Plan* (2016), which supersedes the *Oxon Run WIP* (2010), the *Rock Creep WIP* (2010), the *Anacostia River WIP* (2011). The plan identifies water body impairments, technically appropriate implementation projects, and timelines that guide DOEE in its work. When prioritizing water quality improvement efforts, DOEE assesses the health of all significant waterbodies in the District and bases prioritization on data gathered from water quality monitoring. DOEE then characterizes waterbody impairments and threats that are included in the District's Section 305(b) reports as required by the federal Clean Water Act. The reports describe many of the District waterbodies as not supporting their swimmable (primary contact recreation) and fishable (fish consumption) designated uses.

Urban stormwater runoff is a prevalent source of pollutants to District waterbodies. Primary NPS pollutants of concern include nutrients, sediment, toxicants, pathogens, and hydrocarbons. The few waterbodies that partially or fully support a designated use are also threatened by NPS pollutants. Processes to prioritize subwatersheds for NPS implementation in the District can be found in the *Consolidated TMDL Implementation Plan* referenced above.

This annual report is written in response to *Sections 319 (h)(8) and (11) of the Clean Water Act (33 USC 1329)*, for the purpose of documenting progress made in FY 2020 by the District in implementing its *Nonpoint Source Management Plan for the District of Columbia, 2019*.

Goal One: Support Activities that Reduce Pollutant Loads from Urban Runoff, Litter Prevention, and Trash Removal

Inspection and Enforcement

Anacostia Clean Up and Protection Act (Bag Law)

The District continues to implement the Anacostia Clean Up and Protection Act of 2009 (Bag Law), which requires any business that is selling food or beverages to charge five cents for every disposable bag distributed, with limited exemptions. The Bag Law is working to keep trash out of District waterbodies by incentivizing residents to use reusable bags and reduce consumption of disposable bags. Additionally, funds from the disposable bag fee are funding important projects aimed at reducing NPS pollution, including the maintenance of trash traps, stream restoration, reusable bag distribution, and environmental education.

To improve Bag Law compliance and understanding, DOEE sent out targeted emails in July 2020 to 17 grocery and pharmacy businesses to remind them of the Bag Fee requirements. In FY 2020, DOEE inspected 217 businesses for Bag Law compliance and found a 76% compliance rate. The COVID-19 pandemic limited DOEE's ability to conduct Bag Law inspections during FY 2020. Currently, all routine Bag Law inspections are suspended until the District enters Phase III of the Mayor's reopening plan (throughout this reporting period, the District has been in Phase I and II of the Mayor's reopening plan).

Sustainable DC Omnibus Amendment Act (Food Service Ware Regulations)

In 2008, the Anacostia Watershed Society (AWS) determined through their monitoring that expanded polystyrene (more commonly referred to as Styrofoam™) was one of the top-four- most common types of trash found in the Anacostia River. As part of the Sustainable DC Omnibus Act of 2014 (Food Service Ware Regulations), the District passed a ban on disposable food service ware made of expanded polystyrene and other products that cannot be recycled or composted. The ban on expanded polystyrene became effective January 1, 2016 while the additional compostable/recyclable requirements became effective January 1, 2017. In October 2018, the list of acceptable recyclable items was updated to ban single-use plastic straws and stirrers. These bans affect all businesses and organizations in the District that serve food. The ban does not apply to prepackaged expanded polystyrene.

Figure 1 - Foam Free DC Campaign to Promote the Food Service Ware Regulations

In FY 2020, DOEE inspected 154 businesses for compliance with the Food Service Ware Regulations and found a compliance rate of 89%. Due to the COVID-19 pandemic, Food Service Ware inspections were suspended in the late spring/early summer of 2020. Inspections resumed in the fall of 2020 in a limited capacity.

Comprehensive Stormwater Management Enhancement Amendment Act (Coal Tar and High-PAH Sealant Ban)

The Comprehensive Stormwater Management Enhancement Amendment Act of 2008 (Coal Tar and High-PAH Sealant Ban), effective July 1, 2009, prohibits the sale, use, and permitting of coal tar-based pavement products in the District. The law was amended in March 2019 to expand the list of banned products to include other sealants that do not contain coal tar but contain high amounts of polycyclic aromatic hydrocarbons (PAH). When stormwater washes particles and dust from these sealants, down storm drains, and into local streams and rivers, it threatens aquatic life in the Anacostia River, Potomac River, and the Chesapeake Bay. The Coal Tar and High-PAH Sealant Ban helps to protect human health and the environment by reducing the amount of toxic PAHs in District communities and ecosystems.

In FY 2019, DOEE received funding from the Chesapeake Bay Program's Goal Implementation Team Toxic Contaminants Workgroup to hire a contractor and develop a protocol for determining PAH concentrations in pavement sealants and generate a list of low-PAH products. The project began in August 2019 and is still in progress. The testing protocol for determining PAH concentrations in pavement sealants is currently under its final round of review by the EPA and national experts. The protocol is expected to be finalized within FY 2021 and will be used to create a list of low-PAH sealant products.

In FY 2020, DOEE performed 45 coal tar inspections and found a compliance rate of 100%.

Trash Removal

In 2010, the District and the State of Maryland established a total maximum daily load (TMDL) for trash for the Anacostia River. These loads were calculated based on stream and shoreline transect sampling performed by AWS through a grant from DOEE. For the District's portion of watershed, an annual load allocation totaling 103,188 pounds of trash was assigned.

In FY 2020, DOEE continued to work with the Alice Ferguson Foundation (AFF) on implementing an education and outreach campaign throughout the District's portion of the Anacostia river watershed to inform residents and visitors of the challenges associated with trash in the city's waterways. DOEE also continued to work with the DC Metropolitan Police Department, the District Department of Public Works, and the National Park Service (Park Service) to implement the DumpBusters program.

In FY 2020, 534,972 pounds of trash were removed from District waterways. The breakdown of how much trash was collected through each method can be seen in Figure 2. While the COVID-19 pandemic did limit the capacity of volunteer clean-up events, these events remained successful throughout FY 2020 with the use of proper social distancing guidelines and personal protective equipment.

Collection Method	**Amount of Trash Collected in FY 2020 (lbs)**
Trash Traps	9,104
Shoreline Cleanups	20,152
Street Sweeping	2,444
Skimmer Boats	503,000
Bag Law	272
Total:	534,972

Figure 2 - Amount of Trash Collected in FY 2020 (lbs) by Collection Method

Table 1 - Goal One: Support Activities that Reduce Pollutant Loads from Urban Runoff, Litter Prevention, and Trash Removal

Objectives by 2023	Milestone	2019	2020	2021	2022	2023	Total
To complete at least 2,750 inspections of businesses regulated by the Anacostia Clean Up and Protection Act (Bag Law)	550 inspections per year	554 inspections	217 inspections				771 inspections
To complete at least 1,500 inspections of entities regulated by the Sustainable DC Omnibus Amendment Act 2014 (Food Service Ware Regulations)	300 inspections per year	319 inspections	154 inspections				473 inspections
To educate 1,000 businesses regulated by the Bag Law and Food Service Ware Regulations and the public about any changes in requirements in an effective and efficient manner	Educate 200 businesses per year	5,000 businesses	17 businesses				5,017 businesses
To complete at least 300 inspections of regulated properties to ensure compliance with the Comprehensive Stormwater Management Enhancement Amendment Act of 2008 (Coal Tar Pavement Sealant Ban)	60 inspections per year	63 inspections	45 inspections				108 inspections
To remove 600,000 pounds of trash through a combination of street, stream, and shoreline clean-up efforts; maintenance of trash traps; skimmer boat operations; street sweeping; and implementation of litter reduction policies (e.g. Bag Law)	120,000 pounds of trash removed per year	131,000 pounds	534,972 pounds				666,072 pounds

Goal Two: Support and Implement Activities that Restore and Maintain Healthy Habitat, Species Diversity, and Water Flows to all Tributaries to the Anacostia River, Rock Creek, and Potomac River

Stream and Wetland Restoration

Stream and wetland restoration is the act of modifying a waterway or marsh to improve its environmental health and habitat.

Due to urbanization, 65% of the District is impervious surface. This causes all District streams to face similar threats from high amounts of impervious surface runoff. Consequently, stormwater flows increase and the geomorphological flow of streams ultimately changes, eroding their banks and beds. Stream restoration attempts to alleviate the stress of the increased stormwater flow by creating a new channel to better manage stormwater runoff.

In FY 2020, DOEE awarded project design contracts, advanced the designs of several projects, performed pre- and post-restoration monitoring at multiple project sites, and completed two stream restoration projects at Branch Avenue Park and Congress Heights Recreation Center.

DOEE restored a total of 1,130 linear feet of stream channel and two outfalls in FY 2020, having restored 24,146 linear feet of stream reaches to date.

Alger Park Stream Restoration

The restoration of 1,540 linear feet of stream in Alger Park was completed in 2017. The project used regenerative stream restoration techniques and added more than half an acre of wetland to the stream corridor. The project planted over 3,000 wetland plants, 300 shrubs, and 300 trees. DOEE conducted outreach in the watershed related to our RiverSmart Homes program to maximize installation of private home LID practices in the area draining to Alger Park. Prior to restoration, conservative estimates showed that Alger Park had one of the most eroded stream beds in the District, losing more than 100 tons of sediment per year.

In FY 2019, the District Department of Transportation (DDOT) completed the construction of 28 upland LID projects in the watershed area that drains into Alger Park. The newly installed LID projects will reduce the volume and velocity of stormwater reaching the stream while also improving the quality of water reaching it. In FY 2020, the District's River Corps program participants performed photo monitoring of Alger Park which showed that the stream restoration project continued to remain structurally stable and native vegetation continued to mature. Additionally, the River Corps members organized a trash clean-up around Alger Park and performed routine maintenance on the 28 LID facilities that surround the park.

Branch Avenue Park Stream Restoration

Branch Avenue Park is a triangular wooded parcel in the District's southeast quadrant that is bound by major roads on each side. A stream flows through this park, entering from an enclosed storm drain system in the northwest region of the park and leaving through an enclosed storm

drain system in the southeast region. The downstream storm drain system discharges into Oxon Run, a tributary to the Potomac River.

DOEE completed designs for the Branch Avenue Park Stream Restoration project in FY 2019, with construction completed in FY 2020. This project restored 580 feet of perennial stream and 150 feet of an eroded ephemeral gully.

Figure 3 - Branch Avenue Park Stream Restoration

Congress Heights Stream Restoration

The Congress Heights Recreation Center is located in the Oxon Run watershed and is approximately 4 acres, 1 acre of which is impervious surface. In FY 2018, DOEE began the process of contracting to restore a woodland stormwater gully located on the south side of the Congress Heights Recreation Center by implementing a Regenerative Stormwater Conveyance (RSC) channel. The construction for this RSC technique was completed on October 3, 2019 and includes the use of boulder step pools that safely convey storm flows while encouraging stormwater treatment and infiltration in the gully along the existing conveyance channel. In total, 400 linear feet of stream were restored (figure 4). This site is under a one-year warranty and maintenance period with plant replacements to occur in May 2021 (for optimal plant health).

Fort Dupont Stream Restoration

The District has commenced a comprehensive project to restore the Fort Dupont watershed with five main components:

- Community outreach and educational activities focused on watershed restoration;
- Upland LID work on private property within the watershed through voluntary implementation efforts;
- Installation of LID on Park Service or public right of way areas;
- Stream restoration; and
- Wetland restoration

DOEE began efforts to achieve these goals in FY 2017. In FY 2018, DOEE partnered with Park Service and the Eastern Federal Lands Division of the Federal Highway Administration to install over 2,500 feet of bioswales along the roadways that transect Fort Dupont. These bioswales catch and filter roadway runoff before it enters the stream network, helping to reduce the velocity and improve the quality of water entering the Fort Dupont stream during a rain event. In FY 2019, DOEE worked on an Environmental Assessment (EA) to identify priority project areas for restoration at Fort Dupont Park. The EA identified 10 project areas to be included in the Fort Dupont Stream and Wetland Restoration Project. Project areas 1-9 will be stream design projects utilizing Regenerative Stream Design (RSD) as the primary approach to restoration, include approximately 13,000 feet of perennial stream restoration, and be exclusively comprised of

stream restoration combined with outfall stabilization. The tenth project area will consist of daylighting 425 feet of piped stream between the nearby bike trail and the Anacostia River, as well as designing the land around it to create a tidal wetland complex behind the seawall. DOEE anticipates up to 7 acres of wetlands to be restored in this area.

In FY 2020, DOEE awarded the stream design contract. The stream designer has been surveying the site and developing designs. As designs advance in 2021, DOEE expect to have the needed information to complete the EA at the end of the 30% design phase.

Oxon Run Stream Restoration

The District's upper portion of Oxon Run has natural streambanks that suffer from high rates of erosion due to the flashy nature of the stream during storm events. Severe bank erosion has caused massive tree loss, excessive downstream sedimentation, and the exposure of a large sanitary sewer line in multiple locations. The middle portion of this stream is a trapezoidal concrete structure installed in the 1960s to reduce flood risk in the nearby neighborhoods. The concrete channel provides little to no habitat areas for aquatic or terrestrial species and creates a barrier for larger fish. Additionally, the lower portion of Oxon Run has naturalized stream banks that are highly unstable.

Figure 4 - Congress Heights Stream Restoration

After a large community outreach effort, DOEE worked with Park Service, the District's Department of Parks and Recreation (DPR), DC Water, the State Historic Preservation Office, and DDOT in FY 2020 to develop a statement of work for a solicitation for stream design and environmental assessment services. The request for proposals was posted for bids in the fall of 2020.

Park Drive Gully Restoration

The Park Drive Gully Restoration project is in the southeast quadrant of the District and has two different restoration sites: Fort Davis and Texas Avenue. Both sites ultimately drain into the Anacostia River and are in Fort Davis Park (owned by Park Service).

In FY 2019, DOEE requested bids for a design-build project to restore a total of 1,300 feet in stream length through RSC restoration techniques at the Fort Davis and Texas Avenue gully sites. The contracting process progressed in FY 2020 and DOEE expects an award to be made in FY 2021.

Pinehurst Branch Stream Restoration

Pinehurst Branch originates at the District/Maryland border and flows approximately 1.3 miles east–southeast on Park Service property to its confluence with Rock Creek. The land use of Pinehurst Branch's 619-acre watershed is approximately 70% residential and commercial development and 30% parkland. Approximately 70% of the watershed lies within the District, with the remaining 30% in Montgomery County, Maryland. The large amount of impervious surfaces in the watershed has caused significant erosion in Pinehurst Branch, resulting in sediment transport to Rock Creek and exposed sanitary sewer lines throughout the stream. DC Water has abandoned or removed existing sanitary sewer lines in Pinehurst Branch and DOEE will coordinate with them to restore the stream over the next few years.

The Pinehurst Branch stream restoration project will restore approximately 7,900 feet of degraded stream reaches, create conditions suitable for wildlife habitat, and improve the conditions of existing wetlands.

In 2017, DOEE began an Environmental Assessment (EA) process to explore options on how to implement the restoration to achieve these objectives. A contract for the EA was awarded in FY 2019 with the actual assessment beginning in FY 2020. Archaeological survey work was conducted to confirm that archaeological artifacts are not located within the proposed restoration area. Both the EA and archaeological teams are working to complete their investigative efforts towards the larger stream restoration project. A scope of work is in development to award a design-building contract for the project.

Spring Valley Stream Restoration

The Spring Valley Park Stream is a 1,100-foot stream and tributary to the Potomac River. DOEE began collecting pre-restoration monitoring data in FY 2014 with the intent to replace the existing incised stream channel with a stable stream channel. In FY 2017, DOEE awarded a design-build contract for the restoration of the Spring Valley Park Stream. DOEE met with community members during the restoration to inform them about this project and encourage them to adopt practices on their properties to reduce stormwater runoff to the stream.

In September 2019, DOEE completed the Spring Valley Stream Restoration. The restored channel has been sized to convey increased stormwater flows at a shallower flow depth. This will reduce channel shear stress and minimize potential bank erosion in the future. In 2020, additional native planting occurred to help stabilize the project area, and maintenance was performed by the River Corps program.

Stickfoot Branch

In FY 2017, DOEE entered into an agreement with DC Water to restore a headwater tributary of Stickfoot Branch that drains into the Anacostia River. In FY 2019, DOEE issued a contract to execute an EA and develop stream designs for this restoration project. In FY 2020, DOEE advanced the designs to restore Stickfoot Branch to the 30% phase and completed all pre-National Environmental Policy Act (NEPA) compliance work. Restoration work will involve restoring over 850 feet of degraded urban stream, improving the protection of a sanitary sewer line, and restoring four storm sewer outfalls within the restoration area.

Outfall Repair

Branch Avenue Park Outfall Repair

In addition to the stream restoration at Branch Avenue Park, two degraded outfalls were repaired and stabilized in FY 2020. A recreational trail was also installed through the park for residents to have access to the restored stream.

Spring Valley Outfall Repair

As part of the Spring Valley Stream Restoration project, two outfalls within the project area were repaired and construction was completed in September 2019. A recreational trail was also installed through the park, creating a loop, allowing residents access to the restored stream. In 2020, additional native planting occurred to help stabilize the project area, and maintenance was performed by the River Corps program. Additionally, inspections of the outfalls in 2020 will result in additional, routine maintenance tentatively scheduled for 2021.

Stickfoot Branch Outfall Repair

In addition to the stream restoration occurring at Stickfoot branch, DOEE has issued a contract to conduct an EA and develop designs for the repair of four storm sewer outfalls within the restoration area. Designs for these outfall repairs were started in FY 2020.

Table 2 - Goal Two: Support and Implement Activities that Restore and Maintain Healthy Habitat, Species Diversity, and Water Flows to all Tributaries to the Anacosita

Objective by 2023	Milestone	2019	2020	2021	2022	2023	Total
To restore 4 miles of stream or 12 percent of the District's total stream/river length	0.8 miles of stream restored per year	.21 miles	.21 miles				.42 miles
To restore and maintain 10 acres of wetlands	2 acres of wetlands restored and maintained per year	0 acres	0 acres				0 acres
To repair 50 outfalls, or substitute a portion of outfall repairs with stream restoration with a demonstration that the in-stream water quality benefits of restoration exceed those derived from outfall repairs	Restore 10 outfalls per year (or substituted a portion of outfall repairs with stream restoration work)	2 outfalls	2 outfalls				4 outfalls

Goal Three: Install LID Practices on Public and Private Properties Throughout the District to Maximize Reductions in Stormwater Runoff

Public Property LID Installations

Parkland LID Retrofits

DOEE recently developed a new program to retrofit parkland sites around the District. These "Parkland LID Retrofits" aim to improve water quality in the Anacostia and Potomac Rivers for the benefit of District residents, visitors, wildlife, and the environment, while providing high quality outdoor recreational space and facilities for children and adults to learn, play, and connect with nature.

The partnership between DOEE and the Department of Parks and Recreation (DPR) continued into FY 2020 with the design of five LID retrofits at Benning Park, Douglass Community Center, Fort Greble, Palisades Recreation Center, and Fort Stevens Recreation Center. Due to the COVID-19 pandemic, the design process for these projects was delayed. Additionally, in the late spring of 2020, projects were put on hold to develop supplemental "safety plans" for conducting field work and construction during the pandemic. DOEE anticipates that the construction for these projects will be completed in FY 2021.

Carter Barron Stormwater Retrofit Project

The Carter Barron Stormwater Retrofit project area is a 30-acre site located in the northwest quadrant of the District. The project area was identified as a priority restoration area by U.S. Fish and Wildlife Service (FWS), Park Service, and DOEE due to its impact on the existing habitat along Rock Creek. Nestled within Rock Creek Park, the site is home to the Carter Barron Amphitheatre and the Rock Creek Tennis Center and sits at the headwaters of the Blagden Run watershed. The Blagden Run watershed averages 69% impervious cover and the project area includes 11 acres of impervious surface, or approximately 15% of the imperviousness in the whole watershed.

Before LID installation, the targeted 11-acre impervious area had no stormwater controls because it was developed prior to the promulgation of the District's stormwater regulations. During rain events, stormwater swiftly left the project area from drainage outfalls, concentrating flows into erodible gullies, lowering localized infiltration and the groundwater table, and therefore impacting and reducing native habitat along Rock Creek. Stormwater also left the project area through overland flow and a storm sewer that drains directly to Blagden Run.

The goal of the Carter Barron Stormwater Retrofit project was to fully retrofit the targeted 11-acre impervious area with green infrastructure (GI) to restore natural hydrology, prevent erosion, reduce stormwater pollution, and protect and restore existing natural habitat for federally listed endangered species and other species. The project was completed in August 2019 and

subsequently won the 2019 Best Retrofit in the Chesapeake Bay award. Retrofitting this 11-acre impervious area will capture more than 5,000,000 gallons of stormwater runoff annually.

Hamlin Street Stormwater Retrofit Project

Figure 5 - Proposed Location of the Hamlin Street Stormwater Retrofit Project

The Hamlin Street LID Stormwater Retrofit project is located within the District's Hickey Run watershed at the southeastern side of the 2000 block of Hamlin Street NE (Figure 5). This project site was identified as a priority LID retrofit area by DOEE due to the fact that it receives drainage from approximately 3.1 acres of land, with approximately 1.3 acres of it from impervious cover, and has a high potential for treating stormwater. Hamlin Street NE is a residential street with 15 homes adjacent to it, eight of which have had stormwater management practices installed through DOEE's RiverSmart Homes program. However, the street itself has no stormwater controls because it was developed prior to the promulgation of the District's stormwater regulations.

In FY 2020, DOEE issued a contract for the design of an LID stormwater retrofit at the Hamlin Street NE project site. Throughout the year, investigative techniques were used to determine the site conditions and influence the design approaches, with the design process beginning before the end of the year.

Due to the COVID-19 pandemic, the design process for this project was delayed. In the late spring of 2020, the project was put on hold to develop supplemental "safety plans" for conducting field work or construction during the pandemic.

Hickey Lane Stormwater Retrofit Project

The Hickey Lane LID Stormwater Retrofit project is located within the U.S. National Arboretum (USNA) at the intersection of R Street NE and Hickey Lane NE. This project site was identified as a priority LID retrofit area by USNA because it has a contributing drainage area of approximately 8.1 acres of land, with approximately 2.2 acres of it from impervious cover. The purpose of this project is to reduce stormwater runoff and pollution, prevent erosion, restore natural hydrology, and increase natural habitat in the Hickey Run watershed.

In FY 2020, DOEE issued a contract for the design of a LID stormwater retrofit at the Hickey Lane project site. Throughout the year, investigative techniques were used to determine the site conditions and influence the design approaches, with the design process beginning before the end of the year.

Due to the COVID-19 pandemic, the design process for this project was delayed. In the late spring of 2020, the project was put on hold to develop supplemental "safety plans" for conducting field work or construction during the pandemic.

RiverSmart Schools

RiverSmart Schools is a program that works with schools within the District to install LID practices in an effort to reduce runoff and NPS pollution while providing stormwater-related educational resources.

In FY 2020, DOEE completed the design and construction of the following RiverSmart Schools LID projects:

- The Friendship Public Charter School Technology Prep Campus project included an outdoor classroom, raised infiltration planter beds, rainwater cisterns, a large bioretention basin, removal of existing impervious surface, and conservation landscaping;
- The Turner Elementary project included an outdoor classroom, infiltration beds, permeable walkways, and conservation landscaping;
- The Cleveland Elementary project included improvement to an on-site gravel pad, and outdoor classroom, and the installation of 1,500 square feet of stormwater management BMPs;
- The John Burroughs Education Campus project included an outdoor classroom, a fruit tree grove (including persimmons, serviceberry, and eastern red bud trees), a small rain garden, rain barrels, and a pollinator meadow; and
- The Elsie Whitlow Stokes Public Charter School project included a large conservation landscaping area with repurposed tree stumps for seating, fruit trees, and cherry blossom trees.

Private Property LID Installations

RiverSmart Communities

RiverSmart Communities is a program aimed solely at installing LID retrofits on non-profit and religious institutional properties. The program provides full funding for design and construction costs to participants on the condition that the non-profit partner will perform outreach and education on watershed protection and relevant DOEE programs. In FY 2020, RiverSmart Communities had a total of eight project areas:

- Project Area 1: Nineteenth Street Baptist
- Project Area 2: Saint Paul's Rock Creek Cemetery
- Project Area 3: Universalist National Memorial
- Project Area 4: Saint Gabriel's Catholic Church
- Project Area 5: Our Lady of Victory Catholic Church
- Project Area 6: Allen Chapel AME
- Project Area 7: Whitefriers Hall
- Project Area 8: Rising Sun Baptist Churc

Figure 6 - Construction of a RiverSmart Communities Project

Project areas 1- 4 applied to the RiverSmart Communities program and were selected in FY 2019. The designs and implementation of these projects were completed in FY 2020 and included trees, rain barrels, BayScaping, and bioretention. As construction of these project areas was completed, RiverSmart Communities opened applications and competitively selected project areas 5-8 to receive DOEE funding for LID retrofits. The designs for these projects were completed in FY 2020 and permitting and construction is scheduled to be completed in FY 2021.

RiverSmart Homes

Because residential property is among the largest single land uses in the city and because the relatively small lot sizes make it the least likely to be regulatorily-required to install stormwater management practices, the District has recognized the importance of targeting and engaging homeowners for pollution reduction measures. In 2008, DOEE developed RiverSmart Homes, a LID retrofit program aimed at single-family homes. The program started with eight demonstration sites, one in each of the District's wards. It then expanded to a pilot program in the Pope Branch watershed and has been open to all District residents since 2009.

Through RiverSmart Homes, DOEE audits residential properties and provides feedback to the homeowners on what LID technologies can be safely installed to help manage stormwater.

DOEE also offers homeowners subsidized installations of any LID practices recommended by the audit, which can include rain barrels, shade trees, rain gardens, native landscaping to replace grass, and permeable pavement.

Accomplishments for the RiverSmart Homes program during FY 2020 include the following:

- 891 property audits;
- 447 rain barrel installations;
- 85 Rain garden installations;
- 221 BayScape garden installations; and

- 35 Impervious surface removal projects, totaling 24,000 square feet.

The COVID-19 pandemic significantly impacted the performance of the RiverSmart Homes program in FY 2020. All in-person audits were suspended from March until August, all LID installations (except for permeable pavers) were suspended until mid-July, and two-thirds of the auditing team was detailed to emergency relief assignments throughout the city. To remain productive and navigate new challenges, RiverSmart Homes began implementing virtual audits for the first time in the program's history.

Rain Barrel Installation and Rebate Program

The Rain Barrel Installation and Rebate Program is a component of RiverSmart Homes that allows District residents to have up to two rain barrels installed on their property for a small copayment, with DOEE subsidizing the rest of the cost. Alternatively, homeowners can purchase and install their own rain barrel and receive a rebate of $2 for every gallon of capacity in the rain barrel or cistern. This rebate program has a maximum of $1,000 in rebates per property.

In FY 2020, RiverSmart Homes installed 447 rain barrels on residential properties throughout the District and issued $13,657.25 in rebates to District homeowners. Throughout the year, DOEE was able to recruit and train additional rain barrel installers for the RiverSmart Home program.

This resulted in a higher-than-usual number of installations. The program also received a higher amount of rain barrel rebate applications.

Landscaping Installation and Rebate Program

The Landscaping Installation and Rebate Program is a component of RiverSmart Homes that allows District residents to have up to two conservation landscaping projects (e.g., rain gardens and BayScaping) installed on their property for a small copayment, with DOEE subsidizing the rest of the cost. Rain gardens are areas landscaped with native plants that are connected to a downspout in order to collect and absorb stormwater from a rooftop. BayScaping is native plant gardening with the goal of replacing sloped areas (or areas causing high stormwater runoff) with plants native to the Chesapeake Bay. Alternatively, homeowners are welcome to install their own rain gardens and apply for a rebate of $3 for every square foot of treatment area, with a maximum rebate of $2,200.

In FY 2020, RiverSmart Homes installed 85 rain gardens and 221 BayScape gardens, resulting in over 44,000 square feet of native plant landscapes. The average treatment area for rain gardens was 664 square feet. With rain gardens of this size, these projects will capture approximately 42,330 gallons of water for every 1.25 inch rainstorm.

Permeable Surface Rebate Program

The RiverSmart Permeable Surface Rebate Program is a component of RiverSmart Homes that allows District residents to receive a rebate to replace impervious surfaces with vegetation or permeable pavers.

Figure 7 - Completed Permeable Paver Project on Residential Property

In FY 2020, the program experienced an increase in interest and demand. In order to ensure that the grant program budget was not expended before the end of the grant period, the program modified its eligibility area to the Municipal Separate Storm Sewer System (MS4) service area. This eligibility modification brings this rebate program in line with the eligibility area for RiverSmart Rooftop rebates. Additionally, the program instituted a maximum, one-time rebate of $4,000 per property.

Properties within the service areas are eligible for rebates of $5 for every square foot of existing impervious surface converted into vegetation or for rebates of $10 for every square foot of existing impervious surface converted into permeable pavers.

In FY 2020, the Permeable Surface Rebate Program rebated 35 projects totaling 24,000 square feet of permeable areas and issued $103,240 to District residents in rebates. These permeable surface projects will treat approximately 791,330 gallons of stormwater annually.

RiverSmart Rooftops

Historically, the District has offered a rebate for the installation of a green roof on a new building or for the retrofit of an existing roof. The current RiverSmart Rooftops program has been in effect since FY 2012 and has given varying rebate amounts throughout the years. In the fall of 2020, the program changed its eligibility criteria to only include properties located within the MS4. This programmatic change was implemented with the goal to focus on installing projects where stormwater has a high impact on our streams. Currently, the program offers a $15 rebate for every square foot of green roof that is voluntarily installed within the MS4.

In FY 2020, 909 square feet of green roofs were installed through the RiverSmart Rooftops program (Figure 8). These green roofs will treat approximately 29,000 gallons of stormwater annually.

Due to the COVID-19 pandemic, program funding was officially paused between May 15th and July 15th, 2020. Although modest administrative efforts continued during these months, the number of green roofs installed was impacted.

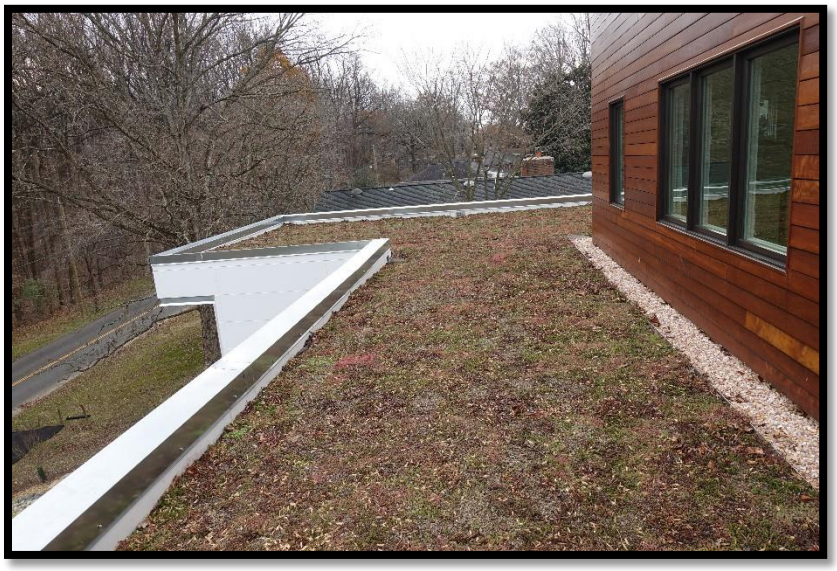

Figure 8 - New Green Roof Installed Through the RiverSmart Rooftops Program in FY 2020

Tree Planting

The District has been called "The City of Trees," in recognition of its significant tree canopy in a dense urban environment. The tree canopy in the District is currently at 38 percent. While this is considered high tree coverage for an urban area, it is lower than the District's canopy cover has been in the past, even at times of higher population density. To improve air and water quality, reduce the urban heat island effect, and offset greenhouse gas emissions, the District adopted a 40 percent tree canopy goal. Mayor Bowser adopted a Sustainability Plan that calls for achieving the tree canopy goal by 2032. To achieve that goal, the District will need to plant an average of 10,800 trees annually.

In FY 2020, the annual tree planting goal was exceeded with 12,974 trees being planted across the District by multiple stakeholders. DDOT's Urban Forestry Division planted 8,556 trees.

DOEE funded the planting of 2,952 trees on private, federal, and other District lands, including the following:

- 1,043 trees on private property through the RiverSmart Homes program;
- 50 trees on parkland and federal sites as a part of stream restoration projects; and
- 1,859 trees across District, federal, and private lands by the Large Parcel Tree Planting Program.

An additional 7,070 trees were planted District-wide through assorted other efforts, including the Potomac Electric Power Company's (PEPCO) Right Tree Right Place program, the National Cherry Blossom Festival, Trees for Georgetown, as well as individual efforts from the Park Service, the General Services Administration, and other partners and facilities. Each tree planted will harvest an average of 56 gallons of water per 1.25 inch rainstorm.

Table 3 - Goal Three: Install Low Impact Development Practices on Public and Private Properties Throughout the District to Maximize Reductions in Stormwater Runoff

Objective by 2023	Milestone	2019	2020	2021	2022	2023	Total
To retrofit 30 District facilities with LID projects	Install 6 LID retrofit projects on District facilities per year	8 projects	5 projects				13 projects
To retrofit 15 private facilities with LID projects through our RiverSmart Communities Program	Install 3 LID retrofit projects on private facilities per year	5 projects	4 projects				9 projects
To install 1,250,000 square feet of green roof between	Install 250,000 square feet of green roof per year	675,809 square feet	909 square feet				676,718 square feet
To audit 5,000 residential homes through the RiverSmart Homes Program	Audit 1,000 residential homes per year	1,226 audits	891 audits				2,117 audits
To plant 50,000 trees	Plant 10,000 trees in the District per year	15,692 trees	12,974 trees				28,666 trees
To install 3,000 rain barrels	Install 600 rain barrels per year	226 rain barrels	447 rain barrels				673 barrels
To install 500 rain gardens	Install 100 rain gardens per year	82 rain gardens	85 rain gardens				167 gardens

Goal Four: Coordinate NPS Management Program Efforts with Other District, Federal, and Private Sector Programs and Adjoining Jurisdictions

Partnerships and Coordination

The District comprises only a small portion of the watersheds that it resides in: 17 percent of the Anacostia River watershed, 0.5 percent of the Potomac River watershed, and 0.1 percent of the Chesapeake Bay watershed. Furthermore, DOEE is not a landowning or landholding agency.

Because of this, strategic regional partnerships and collaboration with both governmental and private entities have become vital to the successful implementation of the agency's watershed protection and restoration work.

Local and Regional Partners

Almost 30 percent of the District is federal land, so coordinating with federal agencies is a critical component of efforts to reduce urban runoff. Starting in FY 2018, DOEE began convening with major federal landholding agencies within the District to develop nitrogen and phosphorus reduction strategies as part of the process for developing the District's Phase III WIP for the Chesapeake Bay. These federal agencies are:

- United States Department of Agriculture
- United States Department of Defense
- General Services Administration
- National Park Service
- Smithsonian Institute

Additionally, DOEE worked with Park Service and DC Water throughout FY 2020 to address NPS issues within the District and coordinate projects to help prevent urban stormwater runoff, meeting a total of 6 times. DOEE's regular, recurring meetings with Park Service and DC Water were impacted by COVID-19.

Chesapeake Bay Program

The Chesapeake Bay Program (CBP) is a unique regional partnership that has led and directed the restoration of the Chesapeake Bay. The District has been a partner in this program since its inception in 1983. By working with other legislative bodies and participating advisory groups, the partners have committed to work together through a series of Chesapeake Agreements. The 2014 Chesapeake Watershed Agreement includes 10 goals to advance a vision of clean water, abundant life, conserved lands, public access to water, a vibrant cultural heritage, and a diversity of engaged citizens and stakeholders. DOEE is the agency responsible for carrying out the District's program activities related to the Chesapeake Bay.

In FY 2020, DOEE participated in:

- One executive council meeting;
- 12 CBP management board meetings; and
- 28 meetings on over 35 Region 3 CBP implementation teams, working groups, advisory committees or similar.

Partnership and Planning Meetings

In June 2006, the Metropolitan Washington Council of Governments (MWCOG) adopted a resolution that established the Anacostia Watershed Restoration Partnership (AWRP). The AWRP is comprised of a steering committee, management committee, and citizen's advisory committee that provide a cooperative framework to support the restoration of the Anacostia River and its tributaries. In FY 2020, DOEE participated in:

- Four Water Resources Technical Committee meetings;
- Three Anacostia Watershed Management Committee meetings; and
- Four Chesapeake Bay and Water Resources Policy Committee meetings.

Community Stormwater Solutions Grants

DOEE's Community Stormwater Solutions Grant Program provides start-up funding for community-oriented projects that raise awareness about urban watershed issues, particularly those associated with stormwater runoff. To qualify for the Community Stormwater Solutions Grant Program funding, projects must contain one or more of the following criteria:

- Installation of GI;
- Maintenance of Existing GI;
- Provide pathways to green jobs that are focused on stormwater solutions;
- Restore natural habitat;
- Clean up areas affected by high volumes of litter and address littering sources;
- Reduce sources of pollution to District waterbodies; and
- Engage communities, raise awareness, and bring about behavioral changes on issues impacting water quality.

In FY 2020, DOEE included two additional project criteria to this list to support the existing DOEE restoration and engagement efforts at Kingman and Heritage islands and education priorities at Anacostia High School.

This reporting period, DOEE partnered with the Chesapeake Bay Trust (the Trust) to administer the Community Stormwater Solutions Grant program by awarding the Trust $400,000 over two years. The Trust used that funding to evaluate the program and run a competitive grant selection process that resulted in awarding 16 grants totaling $295,002.

Table 4 - Goal Four: Coordinate NPS Management Program Efforts with Other District, Federal, and Private Sector Programs and Adjoining Jurisdictions

Objective by 2023	Milestone	2019	2020	2021	2022	2023	Total
To meet with DC Water, National Park Service, or other local and regional partners at least 30 times on NPS management issues	At least 6 coordination meetings on NPS management issues per year	6 meetings	6 meetings				12 meetings
To participate in 5 Chesapeake Bay Program Executive Council meetings	Participate in 1 Chesapeake Bay Program Executive Council meeting per year	1 meeting	1 meeting				2 meetings
To participate in 60 Chesapeake Bay Program Management Board meetings	Participate in 12 Chesapeake Bay Management Board meetings per year	11 meetings	12 meetings				23 meetings
To participate in at least 40 Region 3 and Chesapeake Bay Program Goal Implementation Team, Working Group, and Advisory Committee or similar meetings	Participate in at least 8 Region 3 and Chesapeake Bay Program Goal Implementation Team, Working Group, Advisory Committee, or similar meetings per year	8 meetings	28 meetings				36 meetings
To participate in at least 30 Metropolitan Washington Council of Governments meetings (including Anacostia Watershed Restoration Partnership, Chesapeake Bay Policy Committee, and Water Resourced Technical Committee) meetings	Participate in at least 6 Metropolitan Washington Council of Governments meetings per year	13 meetings	11 meetings				24 meetings
To issue 50 grants to entities to further NPS work in the District	Issue at least 10 grants per year to entities to further NPS work in the District	11 grants	16 grants				27 grants

Goal Five: Support Programs that Aim to Prevent NPS Pollution from Individual Actions by Carrying Out Effective Information and Education Campaigns

Education and Outreach

The District has a population of over 700,000 people, as well as millions of visitors each year. Without properly educated and engaged residents and visitors, the District would not be able to achieve its pollution reduction goals. Proper education and engagement on NPS issues within the District is important to modify public behavior, encourage the adoption of environmentally sensitive practices, advocate for stronger laws and regulations that help reduce NPS pollution, and more. Because education plays such a critical role in the District's efforts to reduce NPS pollution issues, DOEE sponsors and conducts environmental education and outreach activities that are targeted at teachers, environmental educators, and students throughout the District.

RiverSmart Schools

In addition to schoolyard LID projects, RiverSmart Schools provides training workshops in environmental education to teachers and informal educators with environmental curricula that support the District's teaching and learning standards, as well as training teachers on how to properly maintain the LID sites. In May 2020, RiverSmart Schools provided 15 new teachers with training workshops on RiverSmart School site usage and programming. These trainings were conducted virtually due to the COVID-19 pandemic.

Meaningful Watershed Educational Experiences (MWEE)

DOEE funded several initiatives in FY 2020 for nonprofit partners to create meaningful watershed educational experiences (MWEE) for hundreds of District students and youth. These experiences are multiday programs that teach students about their local watersheds and the Chesapeake Bay through classroom lessons, field experiences, action projects, and reflection activities. As a result, 925 students who were enrolled in District Public Schools and District Public Charter Schools were able to participate in the overnight MWEE program. Due to the COVID-19 pandemic, all MWEEs were suspended for the latter half of the 2019-2020 school year and for the beginning of the 2020-2021 school year, resulting in lower student participation numbers.

The MWEE program offers professional development training to all participating teachers. In FY 2020 17 teachers were trained on hands-on watershed education within system-wide standards of learning.

Anacostia River Explorers

Anacostia River Explorers are boat tours that educate the public about the Anacostia River through 1- and 2-hour motorized boat and canoe tours. Participants learn about the Anacostia River's human and natural history, the threats it faces, and what solutions are being undertaken to help the River realize its full potential as an invaluable asset for the District and its residents.

The two grantees undertaking this work for the District in FY 2020 held 90 in-person boat tours on the Anacostia River and engaged a total of 1,399 residents.

The Anacostia River Explorers program was impacted by the COVID-19 pandemic. All in-person boat tours were suspended indefinitely in March 2020. Smaller kayaking and canoe tours are still permitted, but participants and organizers are required to follow local safety protocol and social distancing guidelines. As an alternative to in-person boat tours, Anacostia River Explorers have started creating pre-recorded virtual boat tours. Additionally, the program grantees have started to discuss the possibility of live virtual boat tours starting in the spring of 2021.

Adopt-Your-District Program

Adopt-Your-District is a program implemented in FY 2018 that allows volunteers to adopt parks, blocks, or segments of streams throughout the District. This program is a collaboration effort between DOEE, DPR, Park Service, and the Office of the Clean City. Specifically, DOEE oversees the Adopt-A-Stream portion of the program.

Under the Trash Free Communities grant, DOEE extends funds to AFF to run the Adopt-A-Stream program. Through Adopt-A-Stream, volunteers collect data on the types of trash present at their adopted stream bank and then organize and complete clean-up events at least twice per year. In FY 2020, 45 volunteers were trained and 14 District stream segments were adopted.

Storm Drain Marking Program

In FY 2020, DOEE installed a total of 101 storm drain markers throughout the District. DOEE has maintained its geolocated database of marked storm drains. Since the majority of storm drain markers are installed through community events or organized in-person efforts, the COVID-19 pandemic significantly impacted DOEE's ability to install storm drain markers this year.

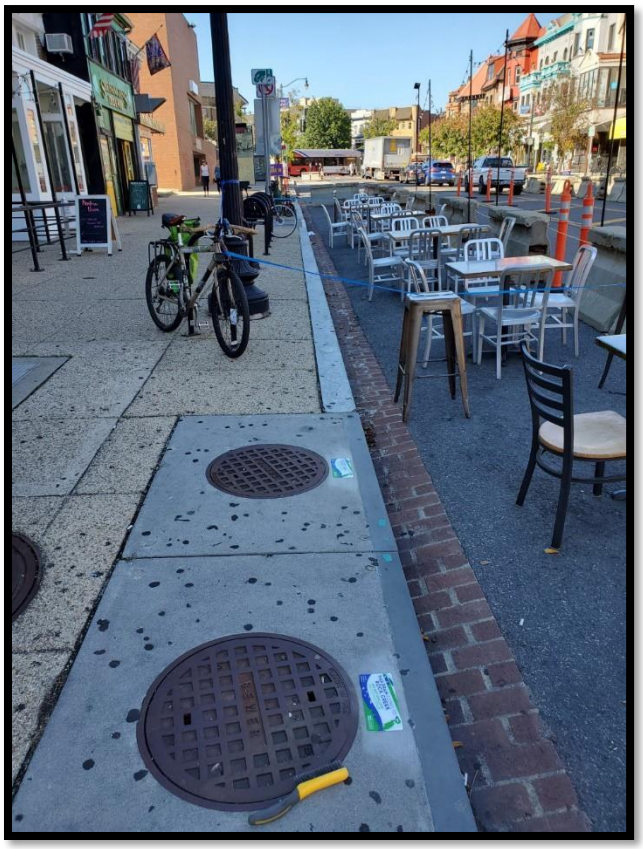

Figure 9 - Two Storm Drain Markers Installed on a District Storm Sewer

Watershed Stewards Academy

The Watershed Stewards Academy (WSA) is an 8-week course taught by DOEE and AWS staff for District residents who want to address pollution problems in their local watersheds. The program is funded by a DOEE grant to AWS and is part of the National Capital Region Watershed Stewards Academy, which is a coalition of watershed protection groups in the Potomac, Rock Creek, Anacostia, and East Patuxent watersheds. Once they have completed the course, these residents are considered to be Master Watershed Stewards in their local watersheds. These alumni then serve as resource people and community

leaders in the effort to clean up local waterways and coordinate efforts to infiltrate and reduce stormwater runoff.

In FY 2020, WSA hosted three cohorts and recruited a total of 78 participants. Stewards were trained on watershed pollution issues and restoration tactics, as well as connected with multiple watershed professionals and experts in the District and surrounding areas. Due to the COVID-19 pandemic, two of the cohorts were required to meet virtually and all in-person activities were cancelled.

Job Training Programs

Green Zone Environmental Program (GZEP)

Every summer, Green Zone Environmental Program (GZEP) partners with the Marion Barry Summer Youth Employment Program to provide youth and young adults, ages 14-24, with an opportunity to learn about energy and environmental issues, complete community-based environmental projects, and prepare for careers.

In the summer of 2020 DOEE administered GZEP virtually for the first time for 50 participants due to the COVID-19 pandemic. The WPD led virtual training to introduce youth to stormwater practices used to help reduce runoff and worked with participants to develop a stormwater management plan for a District school. Additionally, WPD led a career panel discussion featuring four environmental professionals who shared their experience with the class and discussed job requirements, education and job training, and work-life balance.

River Corps

River Corps is a 5-month long green infrastructure and job training program that DOEE initiated in 2017 and is administered by the Latin American Youth Center. In this program, young people learn how to maintain LID sites, inspect RiverSmart Homes installations, perform trash cleanups, remove invasive plant species, and photo monitor upcoming and existing stream restoration projects.

In FY 2020, 14 young people completed the River Corps program. In the face of the COVID-19 pandemic, River Corps members participated in a hybrid program model. This model allowed them to engage in workforce training and environmental education course virtually and to participate in hands-on training experience at 12 District streams. In addition to hands-on experience, trainees received certification in OSHA-10, First Aid/CPR, EPA watershed management, and erosion and sediment control. Additionally, the grantee provided additional support through wrap around services to River Corps members adversely impacted by COVID-19. The next River Corps cohort is scheduled to start in February 2021.

Table 5 - Goal Five: Support Programs that Aim to Prevent NPS Pollution from Individual Activity by Carrying Our Effective Information and Education Campaigns

Objective by 2023	Milestone	2019	2020	2021	2022	2023	Total
To provide 12,500 school students with an overnight meaningful watershed experience	Provide 2,500 school students with an overnight meaningful watershed experience per year	2,520 students	925 students				3,445 students
To train 100 teachers through training that integrates hands-on watershed education with system-wide standards of learning	Train 20 teachers per year	17 teachers	32 teachers				49 teachers
To implement the Anacostia River Explorers program to provide free boat tours to at least 5,000 residents on the importance of restoring the Anacostia River	Provide free boat tours on the importance of restoring the Anacostia River to at least 1,000 District residents per year	4,873 residents	1,399 residents				6,272 residents
To engage and train at least 75 volunteers in the Adopt-A-Stream Program	Engage and train at least 15 volunteers per year in Adopt-A-Stream Program	17 volunteers	45 volunteers				62 volunteers
To install 2,000 storm drain markers in the District	Install 400 storm drain markers in the District per year	135 markers	101 markers				236 markers
To train a minimum of 75 District residents on issues addressing watershed restoration and water quality through the Watershed Stewards Academy	Train 15 District residents per year in issues addressing watershed restoration and water quality	31 residents	78 residents				109 residents
To education 750 youth enrolled in job training programs on the importance of watershed protection activities	Education 150 youth per year	270 youth	64 youth				334 youth

Goal Six: Pollution Prevention: Coordinate a Pollution Prevention Program that Reduces Stormwater Pollution from Industrial and Commercial Facilities in the District by Providing Compliance Assistance and Encouraging the Adoption of Practices that will improve Water Quality in District Waterways

Pollution Prevention Team

DOEE developed a Pollution Prevention (P2) program to work with sister agencies to ensure that municipal facilities that have become critical sources of pollution are in compliance with federal and local stormwater regulations. In 2018, the program expanded from one to three personnel to be able to include other pollution prevention initiatives throughout the District. Today, the P2 program provides compliance assistance and education for entities and activities that pose the greatest threat to District waterways. These efforts target District facilities, entities on DOEE's National Pollutant Discharge Elimination System critical source list, snow and ice removal, and common household activities that affect NPS pollution.

Stormwater Pollution Prevention Plans

Figure 10 - Training a District Facility on Proper NPS Pollution Prevention Practices

To make all of District government compliant with reducing NPS, DOEE's stormwater P2 team helps other District agencies in developing and implementing Stormwater Pollution Prevention Plans (SWPPP). SWPPPs are facility-specific plans that aim to reduce or eliminate the creation of pollutants or wastes at the source through aggressive and practical pollution prevention methods. These SWPPPs are meant to address three primary objectives:

- Assure facility compliance with the District's MS4 permit;
- Identify potential sources of pollution associated with the activities at a facility that may affect the quality of stormwater discharges; and
- Provide detailed commitments for daily practices and good housekeeping at each facility to ensure that pollution prevention goals are reached.

In FY 2020, the P2 team reviewed and provided feedback on 17 SWPPPs for varying District facilities.

Snow and Ice Removal

DOEE works with the District snow team to address vehicle washing, snow disposal operations, and salt storage throughout the city. These efforts include developing the District's first snow plan in FY 2017, which included site maps for proper snow disposal sites throughout the city and salt dome and vehicle wash facility walkthroughs.

Presently, DOEE plays a role in snow and ice removal operations and emergency response management during winter weather events by developing and leading snow trainings for District employees, contractors, and downtown Business Improvement Districts. These presentations teach District light- and heavy-plow operators and manual street and bridge teams about stormwater permitting, how to minimize stormwater pollution from snow and ice removal operations, good housekeeping practices, and how to respond to spills, leaks, and drips.

In FY 2020, the P2 team held one training on snow and ice removal and trained 11 employees on good housekeeping, spill response, and techniques to reduce salt use.

Pollution Prevention Workshops

DOEE's P2 team also targets the automotive repair industry and commercial buildings by conducting workshops throughout the year to educate business owners and provide compliance assistance and stormwater pollution prevention strategies.

In FY 2020, DOEE conducted two workshops, one for the automotive repair industry and one for commercial buildings.

Table 6 - Goal Six: Pollution Prevention: Coordinate a Pollution Prevention Program that Reduces Stormwater Pollution from Industrial and Commercial Facilities in the District by Providing Compliance Assistance and Encouraging the Adoption of Practices that will Improve Water Quality in District Waterways

Objective by 2023	Milestone	2019	2020	2021	2022	2023	Total
To provide feedback on 100 Stormwater Pollution Prevention Plans (SWPPPs) for District facilities to ensure that are accurate and complete	Provide feedback on 20 Stormwater Pollution Prevention Plans (SWPPPs) for District facilities per year	28 SWPPPs	17 SWPPPs				45 SWPPs
To provide trainings for 1,000 municipal snow and ice removal staff on good housekeeping, spill response, and techniques that reduce salt use	Provide annual trainings to 200 municipal snow and ice removal staff per year	860 staff	11 staff				871 staff
To conduct 10 workshops for the automotive repair industry and commercial buildings, to provide compliance assistance and stormwater pollution prevention strategies	Conduct 2 workshops per year; 1 for the automotive repair industry and 1 for commercial buildings, to provide compliance assistance and stormwater pollution prevention strategies	3 workshops	2 workshops				5 workshops

All measurements are given in pounds (lbs) unless otherwise noted.

Table 7 - Annual Runoff Volume and Load Reduction for the FY 2020 BMP Inventory for the District of Columbia

Watershed	Area Treated (acres)	Number of Practices	TN	TP	TSS	Fecal Cloriform (billion MPN)	BOD	Oil and Grease	Arsenic	Copper	Lead	Mercury	Zinc	Chlordane	DDD	DDE	DDT	Dieldrin	Heptachlor Epoxide	PAH1	PAH2	PAH3	TPCB	E.*coli* (billion MPN)
Anacostia	78.028	1242	779.921	92.257	18065.1	14962.234	8064.871	1105.128	3.64E-01	1.26E+01	3.88E+00	4.49E-02	2.92E+01	2.23E-03	7.17E-04	3.21E-03	8.24E-03	6.43E-05	2.12E-04	1.46E-01	9.61E-01	6.59E-01	1.91E-02	6.00E+03
Broad Branch	0.081	19	1.60	0.185	31.369	30.516	9.235	1.619	7.15E-04	2.53E-02	8.09E-03	8.83E-05	5.00E-02	4.07E-06	1.44E-06	6.62E-06	1.68E-05	1.13E-07	3.73E-07	2.58E-04	1.79E-03	1.39E-03	3.78E-05	1.22E+01
Dumbarton Oaks	1.093	2	9.214	1.055	165.131	172.145	65.691	11.518	4.27E-03	1.47E-01	4.42E-02	5.27E-04	2.82E-01	2.73E-05	8.33E-06	3.69E-05	9.49E-05	8.05E-07	2.66E-06	1.83E-03	1.15E-02	7.44E-03	2.24E-04	6.91E+01
Fenwick Branch	0.011	2	.0232	0.030	4.702	4.902	1.871	0.328	1.22E-04	4.18E-03	1.26E-03	1.50E-05	8.04E-03	7.77E-07	2.37E-07	1.05E-06	2.70E-06	2.29E-08	7.56E-08	5.20E-05	3.29E-04	2.12E-04	6.37E-06	1.97E+00
Fort Chaplin	--	2	0.029	0.003	0.637	0.539	0.312	0.032	1.34E-05	4.59E-04	1.38E-04	1.65E-06	1.05E-03	8.53E-08	2.60E-08	1.15E-07	2.97E-07	2.52E-09	8.31E-09	5.72E-06	3.61E-05	2.33E-05	7.00E-07	2.16E-01
Fort Davis	0.011	4	0.272	0.031	6.003	5.077	2.941	0.299	1.26E-04	4.33E-03	1.30E-03	1.56E-05	9.90E-03	8.05E-07	2.46E-07	1.09E-06	2.80E-06	2.37E-08	7.83E-08	5.39E-05	3.40E-04	2.20E-04	6.60E-06	2.04E+00
Fort Dupont	--	2	0.029	0.003	0.637	0.539	0.312	0.032	1.34E-05	4.59E-05	1.38E-04	1.65E-06	1.05E-03	8.53E-08	2.60E-08	1.15E-07	2.97E-07	2.52E-09	8.31E-09	5.72E-06	3.61E-05	2.33E-05	7.00E-07	2.26E-01
Fort Stanton	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Hickey Run	2.344	35	29.767	3.441	667.627	560.415	315.093	35.658	1.38E-02	4.76E-01	1.45E-01	1.70E-03	1.09E+00	8.69E-05	2.70E-05	1.20E-04	3.09E-04	2.54E-06	8.39E-06	5.78E-03	3.70E-02	2.44E-02	7.23E-04	2.25E+02
Klingle Valley	0.499	13	9.176	1.052	166.698	171.970	63.632	11.156	4.23E-03	1.46E-01	4.44E-02	5.22E-04	2.82E-01	2.66E-05	8.29E-06	3.69E-05	9.48E-05	7.80E-07	2.57E-06	1.77E-03	1.13E-03	7.50E-03	2.22E-04	6.90E+01
Luzon Branch	1.897	32	20.869	2.389	374.015	389.902	148.789	26.087	9.68E-03	3.32E-01	1.00E-01	1.19E-03	6.39E-01	6.18E-05	1.89E-05	8.36E-05	2.15E-04	1.82E-06	6.02E-06	4.14E-03	2.61E-02	1.69E-02	5.07E-04	1.58E-02
Melvin Hazen	0.003	4	0.082	0.009	1.473	1.535	0.586	0.103	3.81E-05	1.31E-03	3.95E-04	4.70E-06	2.52E-03	2.43E-07	7.42E-08	3.29E-07	8.46E-07	7.18E-09	2.37E-08	1.63E-05	1.03E-04	6.64E-05	1.99E-06	6.16E-01
Nash Run	0.449	23	9.562	1.094	211.194	178.641	103.480	10.512	4.44E-03	1.52E-01	4.59E-02	5.47E-04	3.48E-01	2.83E-05	8.64E-06	3.83E-05	9.85E-05	8.35E-07	2.76E-06	1.90E-03	1.20E-02	7.72E-03	2.32E-04	7.17E+01
Normanstone	0.299	6	5.385	0.617	97.177	100.770	37.865	6.639	2.49E-03	8.57E-02	2.60E-02	3.07E-04	1.65E-01	1.58E-05	4.87E-06	2.16E-05	5.55E-05	4.64E-07	1.53E-06	1.05E-03	6.70E-03	4.38E-03	1.30E-04	4.04E+01
Oxon Run	10.155	409	153.243	17.550	1958.644	2856.030	1261.420	150.490	7.03E-02	2.42E+00	7.37E-01	8.67E-03	4.65E+00	4.44E-04	1.38E-04	6.14E-04	1.57E-03	1.30E-05	4.30E-05	2.96E-02	1.89E-01	1.25E-01	3.69E-03	1.15E+03
Pinehurst	0.608	7	3.906	0.449	71.689	73.371	26.496	4.646	1.80E-03	6.21E-02	1.90E-02	2.22E-04	1.20E-01	1.11E-05	3.53E-06	1.58E-05	4.04E-05	3.25E-07	1.07E-06	7.38E-04	4.76E-03	3.22E-03	9.42E-05	2.94E+01
Piney Branch	18.833	184	276.159	31.705	3573.739	5184.519	2236.370	266.803	1.27E-01	4.39E+00	1.34E+00	1.57E-02	8.43E+00	7.92E-04	2.49E-04	1.11E-03	2.86E-03	2.31E05	7.62E-05	5.25E-02	3.38E-01	2.27E-01	6.66E-03	2.08E+03
Pope Branch	0.022	4	.0499	0.057	11.016	9.318	5.397	0.548	2.31E-04	7.94E-03	2.39E-03	2.85E-05	1.82E-02	1.48E-06	4.51E-07	2.00E-06	5.14E-06	4.36E-08	1.44E-07	9.89E-05	6.25E-04	4.03E-04	1.21E-05	3.74E+00
Portal Branch	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Rock Creek	50.074	354	492.304	57.176	7710.541	9345.285	3738.238	514.978	2.27E-01	7.88E+00	2.43E+00	2.80E-02	1.53E+01	1.40E-03	4.48E-04	2.01E-03	5.14E-03	4.04E-05	1.33E-04	9.20E-02	5.99E-01	4.12E-01	1.19E-02	3.75E+03
Soapstone	0.750	29	13.176	1.520	249.323	249.292	83.526	14.644	5.99E-03	2.09E-01	6.53E-02	7.39E-04	4.09E-01	3.58E-05	1.19E-05	5.38E-05	1.37E-04	1.02E-06	3.38E-06	2.33E-03	1.55E-02	1.11E-02	3.15E-04	1.00E+02
Texas Avenue Tributary	0.011	1	0.206	0.024	4.561	3.858	2.235	0.227	9.58E-05	3.29E-03	9.91E-04	1.18E-05	7.52E-03	6.11E-07	1.87E-07	8.27E-07	2.13E-06	1.80E-08	5.95E-08	4.10E-05	2.59E-04	1.67E-04	5.01E-06	1.55E+00
Watts Branch	2.918	53	38.579	4.419	855.986	721.941	413.715	42.028	1.76E-02	6.15E-01	1.86E-01	2.21E-03	1.41E+00	1.14E-04	3.49E-05	1.55E-04	3.98E-04	3.34E-06	1.10E-05	7.59E-03	4.81E-02	3.13E-02	9.36E-04	2.90E+02

Summary

The District's NPS Management Program meets the challenges of the highly urbanized setting within the District by seeking and employing innovative solutions for reducing NPS pollution. With the help of creative partnerships and new technologies, the District will continue to make significant progress towards achieving its goals. In FY 2021, the District will work to strengthen its existing programs for regulation and enforcement, stream and wetland restoration, education and outreach, and pollution prevention. The NPS Management program will continue to provide technical assistance and resources that will improve the quality of the District's waterways.