

WATER






WATER

Washington, DC is home to two tidal rivers, the Anacostia and the Potomac, and 47 miles of shoreline.⁶⁴ While the District's waterways have started to make a remarkable comeback, our rivers are still in poor health. Poor water quality makes rivers and streams unsuitable for recreation, threatens wildlife, exposes people to dangerous contaminants, and requires costly and energy-intensive treatment. The poor water quality of our rivers is largely to the District's large amounts of impervious surfaces that do not soak in water such as parking lots, streets, and buildings. Additionally, the pumping, treatment, and distribution of water is extremely energy-intensive—often 30 to 40 percent of a city's energy consumption.⁶⁵

The District Government is committed to improving the quality of its waterways and is at the forefront of implementing innovative technologies and programs to better manage our stormwater throughout the city. By improving the District's waterways, we are in turn improving the habitat and quality of life for the District's wildlife. In 2018, for the first time in ten years, the Anacostia River received a passing grade on an annual health check by a local advocacy group, the Anacostia Watershed Society.⁶⁶ DC Water's \$2.6 billion Clean Rivers Project is contributing to the river's improved quality by reducing the amount of combined sewer overflows by 96% through the construction of larger underground tunnel systems. In addition, under the District's Municipal Separate Storm Sewer System (MS4) permit, issued by the EPA, the District Government is required to manage and reduce stormwater pollution by installing green infrastructure, such as permeable pavements and rain gardens, and tracking pollutant loads. The District Government has also launched cutting edge programs, such as the Stormwater Retention Credit Trading Program, that allows property owners to earn revenue for projects that reduce harmful stormwater runoff by installing green infrastructure or removing impervious surfaces. In 2014, the District Government also launched a long-term project, "A Cleaner Anacostia River," to remediate the Anacostia River's contaminated sediments and has allocated \$45 million to this project.⁶⁷ The restoration of five streams that flow into the Anacostia River has also helped improve river water quality. Finally, the passage of multiple laws such as the foam ban and bag law, have all worked to improve the Anacostia River's water and recreational quality.



Sustainable DC 2.0's actions for water have real benefits for Washington, DC at all levels:

INDIVIDUAL

Actions in Sustainable DC 2.0's Water section focus on making the District's rivers a resource for everyone to enjoy. By restoring these waterways, residents will have more opportunities for healthy recreation and physical activities such as fishing, boating, and swimming.

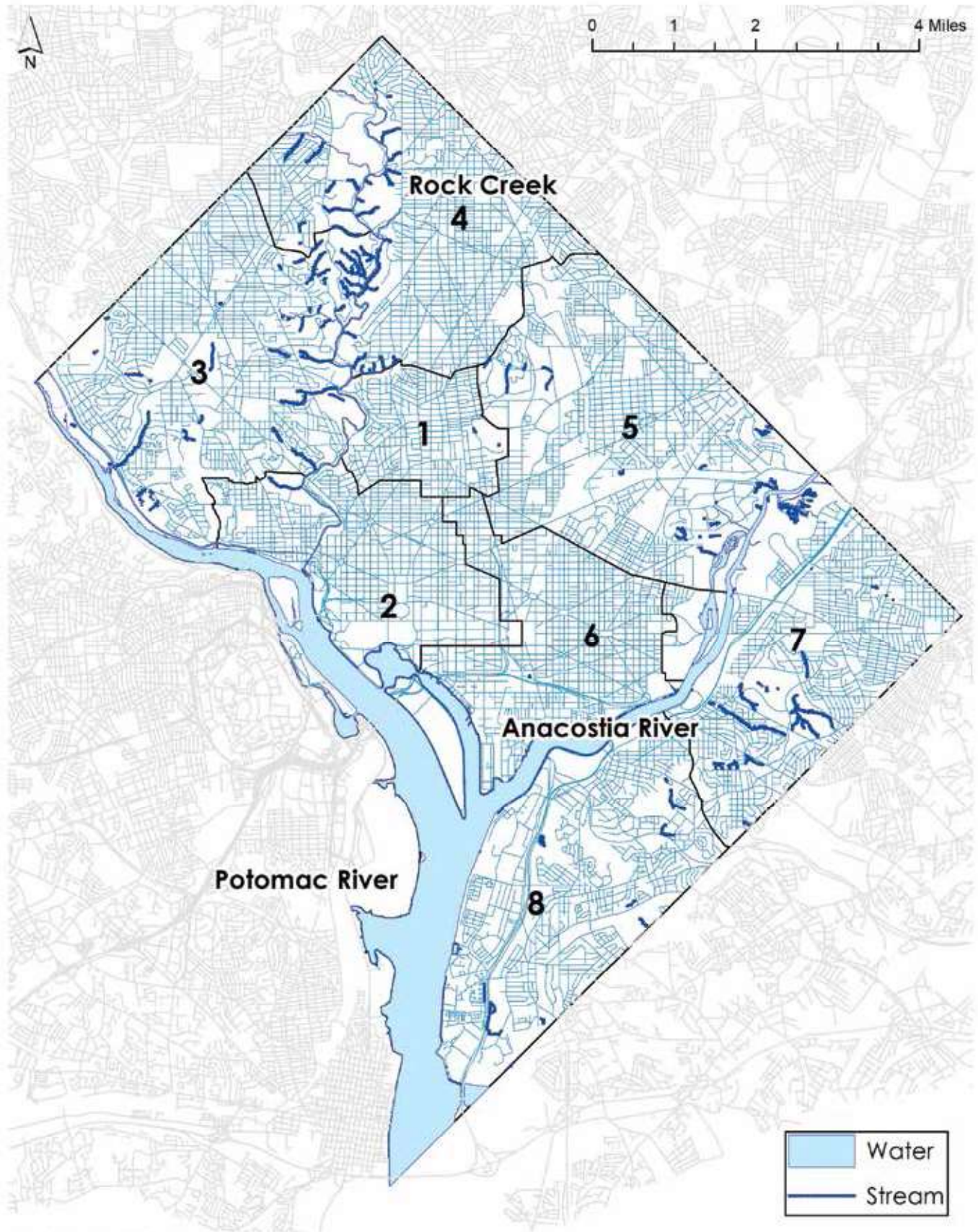
NEIGHBORHOOD

To better manage the risk of neighborhood flooding, Sustainable DC 2.0's water section pushes the District to innovate at the neighborhood level by incorporating more small-scale stormwater collection in order to more efficiently capture stormwater.

DISTRICT

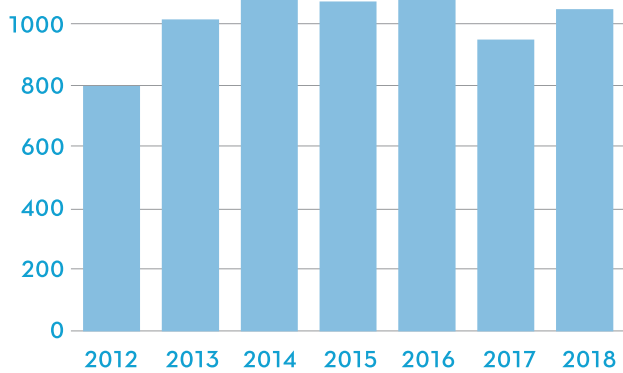
As the District continues to rapidly grow in population, innovative programs like the stormwater credit trading program help reduce stormwater runoff to keep our rivers and streams clean while allowing new housing and business to meet current demand.

STREAM RESTORATION SITES

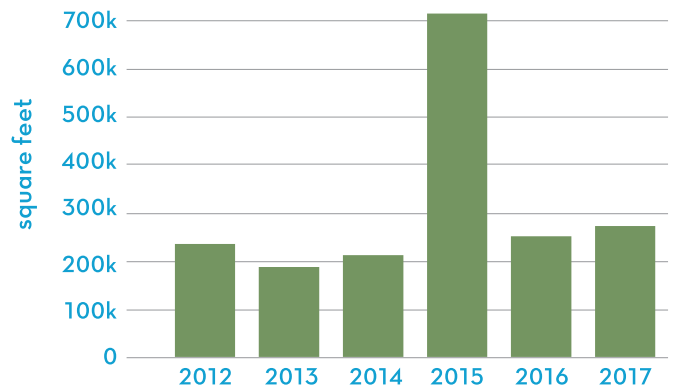


Data Source: DOEE & DC GIS

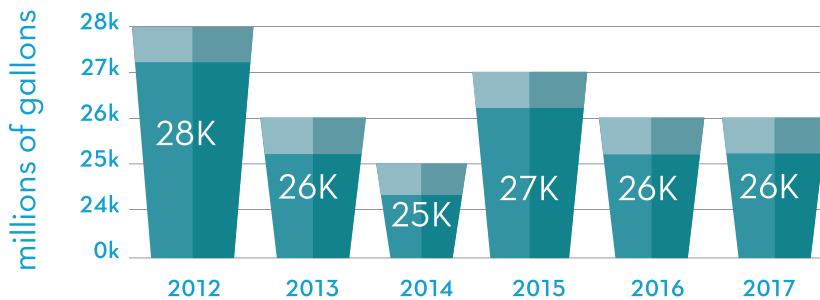
DC homes in RiverSmart Homes program^{lxviii}



Green roofs installed per year in DC^{lxx}



Community water consumption (in gallons)^{lxxii}



DC's **9** trash traps prevent over **10,000** lbs of trash from entering the Anacostia River each year.^{lxxi}



DC Water provides more than **100** million gallons of drinking water to DC region each day.^{lxxiv}

Since 2012, the RiverSmart Homes program has installed:^{lxxix}

Rain barrels:
3,953

Shade trees:
5,128

Rain gardens:
945



Conservation landscapes:
1,349

Permeable pavers:
371



Bottled water is **2,000** times more expensive than tap water.^{lxxiii}



GOAL 1

Improve the quality of waterways to standards suitable for fishing and swimming.



TARGET 1

By 2032, make 100% of District waterways fishable and swimmable.



TARGET 1 BASELINE

0%

WT1.1

Encourage reduced use of personal care products, pesticides, and fertilizers that contain existing and emerging contaminants.

Emerging contaminants are chemicals discovered in the water supply that had not previously been detected. These chemical contaminants pose a risk to human health and the environment and can be found in pharmaceuticals, personal care products, pesticides, and fertilizers. The District Government should develop an educational campaign to inform consumers about the health and environmental impacts of widespread use and improper disposal of these products and to identify less harmful alternative products. The District Government, in collaboration with other jurisdictions, should also consider banning the use of products of greatest impact that contain emerging or existing contaminants in order to improve overall water quality.

TIMEFRAME

Long term

LEAD

DOEE

PARTNERS

DC Water, DPW

WT1.2

Create and adopt a salt management strategy for snow and ice removal that minimizes the use of road salt, and study alternatives to reduce Washington, DC's reliance on road salt.

The application of rock salts to roads in winter harms trees and pollutes waterways. Reducing the road salt used per mile would limit pollution in snowmelt. In order to transition away from road salts, the District Government will study alternative products and technologies and develop an overall strategy for snow and ice removal that is more environmentally friendly. The District Government will also work with Business Improvement Districts, Main Streets, and large property owners to help them to refine their snow removal and salt strategies.

TIMEFRAME

Short term

LEAD

DOEE, DPW

PARTNERS

DC Water, DDOT

WT1.3

Provide education on how people can reduce stormwater pollution through good housekeeping, vehicle maintenance, property lawn care, and pet waste management.

A 2017 survey found that District residents want more information on how to live sustainable lifestyles. One practical way to do this is by equipping residents with the knowledge and skills on how to help reduce stormwater pollution (the rainwater that flows over the ground and into a waterbody) on their own properties. The District Government will work to improve the overall water quality of our rivers by providing resources and education to residents, such as tips on how to sustainably take care of a lawn by mowing higher and leaving grass clippings on top to allow for nitrogen and other nutrients to return to the soil, as an alternative to applying fertilizers.

TIMEFRAME

Medium term

LEAD

DOEE

WT1.4

Develop and implement an Anacostia River remediation work plan that restores fish and wildlife habitat while improving public access to the river.

Decades of industrial and urban activities throughout the Anacostia River watershed have increasingly compromised the water quality of the river. High concentrations of hazardous substances are present in sediment throughout the river, posing a risk to aquatic organisms and to humans. The District Government is leading an effort—the Anacostia River Sediment Project—to clean up the river and allow for better public access to the river for the public.

TIMEFRAME

Long term

LEAD

DOEE

WT1.5

Increase public access to water quality monitoring data for public waterways and develop partnerships to expand the scope of water quality monitoring.

The District Government should provide convenient access to up-to-date water quality monitoring data for public waterways for residents and visitors so that they can make informed decisions before swimming, fishing, and boating in District waterways. In order to expand the scope of monitoring data, the District Government should forge partnerships with residents, non-profits, and other partners to both sample and report on environmental water quality in the District.

TIMEFRAME

Medium term

LEAD

DOEE

WT1.6

Restore 10 miles of streams in the District.

Since 2012, the District has restored over two miles of streams including Pope Branch, Nash Run, Alger Park, Springhouse Run, Linnean Park, and Broad Branch. The District's stream projects aim to improve conditions within the stream related to hydrology, erosion, water quality, and aquatic life. Stream restoration projects often use stone, wood, and a variety of native plants to create a naturalized and stable stream within the District's urban environment. Restoration projects improve water quality as well as habitat conditions both within the project area and in downstream receiving water bodies.

TIMEFRAME

Long term

LEAD

DOEE



GOAL 2

Reduce the volume of stormwater runoff.



TARGET 2

By 2032, implement green infrastructure practices to capture, retain, or reuse stormwater from at least 10% of the District's land area.



TARGET 2 BASELINE

1.53%

WT2.1

Install and maintain four million new square feet of green roof.

In 2017, the Washington region had the greatest square footage of green roof installations in North America.⁶⁸ Green roofs retain rainfall to reduce the volume and rate of stormwater running into the sewer system. Green roofs also provide habitat for birds and insects, insulate buildings to reduce energy use, and cool neighborhoods by reducing heat absorption. Increasing the installation of green roofs across the city—and in creative ways such as row houses working together to share green roofs across rooftops—can be another tool in the suite of strategies to protect District streams and rivers from pollution and flooding.

TIMEFRAME

Medium term

LEAD

DCRA, DOEE, DGS

WT2.2

Audit 1,200 properties per year via the RiverSmart Homes program and increase participation in areas of the city where enrollment has been historically low.

The RiverSmart Homes program offers incentives to homeowners who want to reduce stormwater runoff (the rainwater that flows over the ground and into a waterbody) from their properties by offering low-cost rain barrel installations, planting trees and rain gardens, and removing impervious surfaces on properties. Demand for RiverSmart Homes has been high and must be expanded to reach participants from across the District, with a focus on areas where enrollment has been historically low. In order to increase participation in these areas, the District Government will devise population-specific strategies based on each community it is trying to reach and adapt the strategies over time to reflect lessons learned in the engagement process.

TIMEFRAME

Short term

LEAD

DOEE

WT2.3

Incorporate neighborhood-scale stormwater collection into large-scale planning efforts early in the redevelopment process, including public right of way and parks.

Stormwater is primarily managed through underground pipes across a city. Uncontrolled stormwater has many negative impacts on the environment, wildlife and humans, including flooding, eroding stream banks, damaging fish and aquatic life, and threatening public health. Instead of managing stormwater solely at the city level through pipes, the District Government will incorporate more small-scale stormwater collection technology into development projects, including adding green infrastructure to public right of ways (like medians and sidewalks) and developing multi-use spaces such as parks and basketball courts that can capture rainwater during large downfalls, in order to spread out and more efficiently capture stormwater across the District.

TIMEFRAME

Medium term

LEAD

DDOT

PARTNERS

DC Water, DGS,
DOEE, DPR, OP

WT2.4

Grow the Stormwater Retention Credit Trading program.

The District Government's Stormwater Retention Credit Trading (SRC) program is an innovative program where property owners can generate and sell credits to earn revenue for projects that reduce harmful stormwater runoff by installing green infrastructure or by removing impervious surfaces. Credits can be sold in an open market to properties that have regulatory requirements for managing stormwater, or sold to the Department of Energy & Environment (DOEE). To grow the program, the District Government will enhance and expand the use of the list of sites where property owners are willing to have green infrastructure installed on their property, including information about priority locations, in order to encourage partnerships between SRC-generating businesses and property owners, thereby reducing the volume of stormwater runoff.

TIMEFRAME

Short term

LEAD

DOEE

WT2.5

Streamline and coordinate incentive programs for combined green roofs and solar projects.

How can a rooftop in the District include both solar panels and a green roof? The District Government will provide new guidance and clarity and streamline the process for permitting both practices, so that a property owner can easily take advantage of emerging technology that integrates both green roofs and solar. By making this process clearer, more properties will be able to incorporate both environmental practices.

TIMEFRAME

Short term

LEAD

DOEE

PARTNER

DCRA

WT2.6

Pilot a large scale network of green infrastructure with smart controls to better understand performance and inform future project designs.

The District Government will pilot green infrastructure technologies that have smart controls, such as sensors, that can collect and analyze performance. The city of Chicago, for example, installed sensors in green infrastructure that allows for live collection and analysis of how the green infrastructure captures stormwater runoff when it rains. The green infrastructure sensors collect and transmit data on soil moisture while a weather station simultaneously collects rainfall data. By using smart sensors, the District Government can improve future green infrastructure designs and maximize their performance which will ultimately help reduce the volume of stormwater in Washington, DC.

TIMEFRAME

Medium term

LEAD

DOEE

PARTNER

DGS



GOAL 3

Reduce demands for potable water and increase rainwater reuse.



TARGET 3

By 2032, decrease per capita potable water use by 20%.



TARGET 3 BASELINE

44,262
gallons

WT3.1

Update the District building codes to increase water-efficiency standards and allow the use of alternative water systems.

The majority of the water we consume is used inside buildings for drinking, cooking, washing, air conditioning, and cleaning. Water efficiency technologies such as low-flow toilets, faucets, and high efficiency washing machines significantly reduce water use. The District Government should continue to update the Construction Code's water-efficiency standards to continue to reduce potable water consumption in the District. In addition, the District's building codes should continue to allow for the optional use of alternative water systems such as gray water (wastewater collected in buildings from showers, bathtubs, clothes washers, and lavatory faucets) in order to reduce demands for potable water consumption.

TIMEFRAME

Medium term

LEAD

DCRA

PARTNER

DOEE

WT3.2

Develop incentives for water-efficiency measures in landscaping and buildings.

The District Government will develop and institute water-efficiency incentives to reduce consumption, encourage low and zero-water technologies, and promote water-efficient landscape design using native species and green infrastructure.

TIMEFRAME

Long term

LEAD

DOEE

PARTNERS

DCRA, DC Water

WT3.3

Pilot water efficiency projects in the District Government to lead by example.

The District Government will lead by example by being at the forefront of testing new water efficiency technology such as rainwater harvesting systems. By taking the lead on these new technologies, the District Government will be able to share lessons learned and help spread adoption of these technologies across different sectors.

TIMEFRAME

Short term

LEAD

DGS

PARTNERS

DOEE, OCTO



GOAL 4

Ensure safe, accessible drinking water.



TARGET 4

By 2032, ensure 100% of District residents have access to clean, affordable drinking water.

WT4.1

Identify and implement the most effective steps to improve the resilience of the drinking water system to natural and human disasters.

District residents depend on clean and safe drinking water. With a rapidly changing climate, it is imperative for the District Government to increase the resilience of our drinking water system by ensuring that it is equipped to handle and bounce back from a range of natural and human disasters. It is also critical that District residents feel confident in the drinking water at all times, but particularly in times of emergency, to reduce use of plastic bottles.

TIMEFRAME

Medium term

LEAD

DC Water, DOEE

PARTNERS

EOM, HSEMA

WT4.2

Eliminate all lead service lines and plumbing from District Government-owned buildings.

Lead service lines were predominately installed prior to the mid-1950s in the District, but there are records of lead service lines being installed as late as 1977. Lead can cause serious health problems if too much enters the body from drinking water. The District Government should lead by example and remove all lead service lines and premise plumbing (all plumbing within the property line with direct connection to the potable water system) from its District-owned buildings to ensure the safety of water in these buildings. This will require additional funding and strong coordination with DC Water.

TIMEFRAME

Long term

LEAD

DGS

PARTNER

DC Water

WT4.3

Replace at least 1% of water pipes each year.

Pressurized water mains have an expected life of 100 years. In order to keep pace with aging water infrastructure, DC Water will commit to replacing at least 1% of the District's water pipes each year to keep pace with each pipe's 100-year lifespan. These efforts will improve water quality and system reliability, increase water pressure, and maintain adequate flows.

TIMEFRAME

Long term

LEAD

DC Water

WT4.4

Work with the Washington Aqueduct to ensure that the District's drinking water is of the highest possible quality by protecting source water, addressing emerging contaminants, and upgrading drinking water treatment processes.

The Potomac River, via the Washington Aqueduct, is the District's source of drinking water. DC Water, the water utility for the District, should work closely with the Aqueduct to examine the vulnerability of the system, determine if there is an opportunity to upgrade the Aqueduct's treatment process to a state-of-the-art facility, and develop strategic plans to ensure that the water source is protected from emerging contaminants and threats.

TIMEFRAME

Long term

LEAD

DC Water



THANK YOU!

The development of Sustainable DC 2.0 was a huge undertaking and the collective effort of the entire community. Hundreds of residents participated in working groups, community meetings, focus groups, and hundreds of others provided thoughtful comments on the Sustainable DC 2.0 Outline and Draft Plan. Twenty five District Government agencies participated in the development of the plan and provided constructive comments over four rounds of edits. All this time and effort has resulted in a strong, thoughtful updated sustainability plan for the District. Thank you! In order to make Washington, DC the healthiest, greenest, most livable city for all residents, the real work of implementing the Sustainable DC 2.0 plan is just getting started. We hope you will join us in working together to implement the 167 actions and 36 goals over the next 15 years. For more recommendations on how to get involved, please visit www.sustainabledc.org.

LESSONS LEARNED

Sustainable DC 2.0 was a 20 month process during which the planning team learned several valuable lessons that are worth sharing:

Lead with community engagement. Spend capacity hitting the streets and showing up where people are. This is especially true for those members of the community who are not familiar with sustainability. Their opinions matter.

Representation matters. It is important to be intentional about balancing the voice and priorities of the full District community with those of technical experts.

Equity is not equality. Equity requires giving people what they need to succeed. While sustainability is not the answer to all of the challenges, it is a lens through which solutions can be created. Sustainability should not compromise the ability for individuals and neighborhoods to sustain themselves in the place they call home.

Leverage the working groups. The foundation of Sustainable DC 1.0 and 2.0 were the working groups. For that reason, it is important that these groups are representative of the District's demographics.

Good planning take time matters. Good planning and strong community engagement takes a lot of time. Allotting more time than you think you will need for working with community partners, researching, editing, talking to implementing agencies, and repeating is critical to success.

Write everything down. Good thoughts are often lost and are not easily rediscovered once a meeting ends.

Ask for help. Enlist the support of partner agencies, fellows, interns, and colleagues early in the process.

Have fun. The update will take many months and can tire out everyone involved—staff, volunteers, and community participants—if you do not enjoy doing the work that matters!