

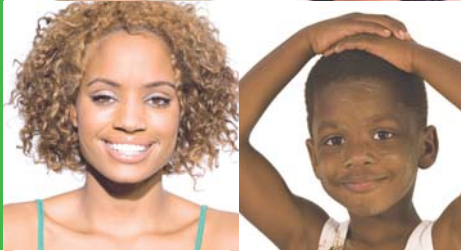
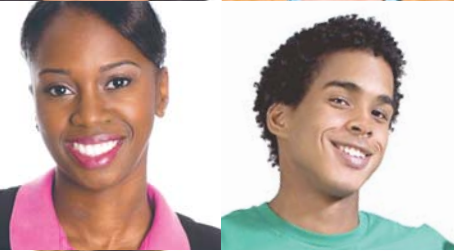


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SUSTAIN  
ABILITY

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DC



# SUSTAINABLE DC PLAN



SUSTAIN  
ABILITY



DC



## FROM MAYOR VINCENT C. GRAY

Washington, DC is a rapidly changing city. Construction cranes dot the skyline, new families are joining longtime residents in vibrant neighborhoods, and emerging businesses are adding new services and jobs. With this change comes the opportunity to grow our economy and provide more employment, close the gap between the wealthy and those struggling to pay their bills, and ensure that our children and grandchildren have the same or better quality of life than we enjoy today. Making the most of these opportunities requires vision and taking action. That is why, along with an economic development plan, an affordable housing plan, and other complementary strategies, I have developed this sustainability plan for the city.

When I first launched Sustainable DC in July 2011, I announced that I wanted to make the District the healthiest, greenest, and most livable city in the nation. We are well on our way to realizing that vision. The District has more than 300 LEED certified projects with another 700 in the pipeline and we have just announced plans to adopt a new green building code that will dramatically reduce the future environmental footprint of our built environment. Across the city, residents and businesses have installed more than 750 solar energy systems and the District government now purchases 100% green electric power. With more capital investment in parkland per capita than any other city in the country, the District has nearly 7,500 acres of parks and open space. The city is connected by a robust 56 miles of bike lanes and 55 additional miles of trails.

We are on our way to becoming truly sustainable, but there is much more to be done. This plan is the playbook that our team—city government, private sector, and residents working together—will use to move from vision to reality. As we progress, we must constantly assess our efforts to determine whether or not they are working to improve the quality of life, increase economic prosperity, and ensure everyone is sharing in the benefits.

This Sustainable DC implementation plan lays out the challenges we face in: creating jobs and economic growth, improving health and wellness, increasing equity and opportunity, and preserving and protecting our environment in the face of a changing climate.

This plan also provides solutions in the areas of built environment, energy, food, nature, transportation, waste, and water. Based on broad public input, forward-thinking agencies, and best practices from around the globe, this plan offers more than 100 specific actions to deliver results for our city.

Not every proposal will work out just as envisioned; some details will be refined over time and some actions may fail, but with this implementation plan we will move forward with clear goals in sight. The end game will be a victory for our city and for this generation of Washingtonians and the next.

I am grateful to the thousands of residents and representatives of District agencies, businesses, and institutions who have given generously of their time, expertise, and passion to envision a bright and sustainable future for our residents, our natural environment, and the growth of our economy.

I thank you for your interest in a Sustainable DC and ask you to join with me, our families, friends, co-workers, and neighbors as we build a better future for the District of Columbia.

Vincent C. Gray  
Mayor, District of Columbia



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# BACKGROUND

In July 2011, Mayor Gray announced his intention to make the District of Columbia the **healthiest, greenest, and most livable city in the United States**. After decades of population decline, the District has seen a solid decade of population growth as people discover all that the District of Columbia has to offer. Since April 2010, the District's population has grown by more than 30,600 residents<sup>1</sup>, and all signs point to steady growth for years to come.

As our population expands, we have an important decision to make. We can take decisive action now to ensure that our residents—particularly the most vulnerable among us—benefit from increasing innovation and amenities, a broader tax base, a growing and diversified economy, and a wide range of new and accessible jobs or we can ignore this opportunity and allow historic gaps in education, income, housing, and access to transportation further divide our city.

The choice is clear. We must plan for a city that is sustainable—not just environmentally, but economically and socially as well. We must continue our investments to revitalize neighborhoods, expand transportation choices, better our health, restore rivers and parks, and improve our schools.

By setting ambitious goals for our built environment, energy, food, nature, transportation, waste, and water as well as for our economy, public health, community equality, and climate, we strengthen the District's commitment to the core values of quality of life, economic growth, and equal access to opportunity. With our vision for a sustainable city and strategic action to achieve our goals, we will continue to attract employers, investment, and job growth in existing fields and emerging sectors of a green economy. We also will ensure that the District is a healthier, more livable place for our families to grow and thrive for generations to come.

The vision for the District's more sustainable future is one that we can all work together to achieve:

**In just one generation—20 years—the District of Columbia will be the healthiest, greenest, and most livable city in the United States. An international destination for people and investment, the District will be a model of innovative policies and practices that improve quality of life and economic opportunity. We will demonstrate how enhancing our natural and built environments, investing in a diverse clean economy, and reducing disparities among residents can create an educated, equitable and prosperous society.**



# INTRODUCTION

## *WHAT IS SUSTAINABILITY?*

Sustainability means meeting our economic, social, and environmental needs while ensuring that future generations will also be able to meet their own needs. Economically, sustainability means growing the economy and ensuring that all residents have access to jobs; socially, it means ensuring fairness and providing equal opportunities for our entire population. For the health of our residents and the environment, we must protect the quality of our air and water and enhance our natural resources. A sustainable future will ensure equity and prosperity for every District resident.

## *WHY PLAN FOR A SUSTAINABLE CITY?*

The District is a great place to live, work, and play, but faces persistent challenges from unemployment, poor health, and inequalities that may hinder a stable, prosperous, and healthy future. Over the course of one generation—20 years—the District will address these and other critical issues affecting residents, businesses, neighborhoods, and our natural environment. To achieve ambitious long-term goals and targets, the District must plan ahead and get started now—and everyone must pitch in.

## *WHAT DOES SUSTAINABLE DC MEAN FOR YOU?*

A more sustainable city benefits everyone—young and old—across the District by growing the economy, improving people’s health, and providing improved transportation, buildings, neighborhoods, and parks. There are thousands of ways that Sustainable DC will change the District for the better between today and 2032, including:

- A stronger local economy with improved access to jobs, services, and neighborhood amenities
- Healthier and more mobile residents who benefit from active transportation, nutritious foods, and walkable neighborhoods
- More efficient resource use to reduce costs for energy, clean water, and other utilities
- Protection from the negative impacts of climate change that may damage life and property
- Continued diversity and increased opportunity for residents to positively influence their future

## *HOW DO WE MAKE IT HAPPEN?*

Each of us has a role to play in creating a Sustainable DC. The District government is leading this implementation effort, but only with the help of residents and the private sector will we achieve our most important goals. We need everyone to take part; individual actions can—and will—add up to big change.







# PROCESS & ENGAGEMENT

When the Mayor called for an ambitious sustainability plan, he made outreach to District residents and workers a priority from the start. The planning team began an intensive community involvement campaign in September 2011. Over the next 18 months, the team collected ideas from thousands of residents and stakeholders, assessed current District government initiatives, and researched best practices in sustainability from around the world.

## *GATHERING AND EVALUATING IDEAS*

The Sustainable DC planning effort kicked off in September 2011 with a month-long community outreach campaign called **Start in September** that included 24 public meetings and events. The planning team met with community members in all eight wards at events that ranged from small group conversations to large neighborhood festivals and citywide celebrations. The ideas gathered from these events and through the [sustainable.dc.gov](http://sustainable.dc.gov) website became the foundation for further dialogue with the community.

Two key advisory groups provided direction and leadership during this plan's development. The **Green Ribbon Committee**, comprised of community leaders from public, private, and non-profit sectors, was asked to take a big picture view of the planning effort and represent the interests of our diverse community. The **Green Cabinet**, a committee of agency directors led by the City Administrator, was tasked with promoting inter-agency coordination and determining how the District government can align each agency's individual—and shared—missions to achieve the plan's ambitious goals.

Since September 2011, the planning team talked with over 4,700 people at more than 180 events across the city. From senior citizens at *Seniors Going Green* in Ward 5 to youth in the *Green Zone Employment Program* in Ward 8, people across the District had a lot to say about sustainability. In fact, when asked for ways to make the District more sustainable, they submitted more than 1,300 unique ideas!

To gather more ideas and refine the public input, the Mayor kicked off **nine working groups** focused on different areas of sustainability—the built environment, climate, energy, food, nature, transportation, waste, water, and the green economy. More than 700 community members volunteered their time, meeting every other week during the winter of 2011-2012, to develop more than 900 recommendations that informed Mayor Gray's release of ***A Vision for a Sustainable DC*** for Earth Day 2012. The Vision set broad goals for the city that are further defined in this implementation plan.

In addition to the original nine working group topic areas, each working group independently identified jobs, health, equity, and education as critical factors to make the city more sustainable. To address these cross-cutting issues, a series of four community conversations took place during the summer of 2012. **Conversations on education, jobs, health, and equity** helped further refine visions and goals, identify underlying barriers to sustainable outcomes, and define better ways of connecting with hard to reach communities.

To better understand the District government's existing baseline of sustainability initiatives, meetings were held with each agency in the Mayor's Green Cabinet to review their ongoing programs and new ideas to create a more sustainable city. Every agency had achievements to report and many significant programs to enhance sustainability were well underway. The Governance section of the plan identifies some of these on-going efforts as well as the recently announced projects under the Mayor's Sustainable DC Budget Challenge.





Finally, Mayor Gray held focus groups in Wards 7 and 8 and with Spanish speakers, youth, and seniors to solicit additional feedback and identify issues of concern and recommendations for sustainability.

The extensive input from government agencies, community meetings, best practices, and the nine working groups was further analyzed to understand their economic, social, and environmental costs and benefits. **The goals, targets and actions included in this plan emphasize short-term projects ready for immediate implementation; the medium and long-term actions will involve active consultation with stakeholders and affected parties to craft the specifics of new policies, programs, regulations, or other proposals that may be five to twenty years away.** After careful consideration, a combination of short-, medium- and long-term actions were selected as priorities in this plan to make the District the greenest, healthiest, most livable city in the nation.

## ***SPREADING THE WORD AND TAKING ACTION***

Since the release of the Vision, the planning team expanded outreach efforts to minority populations and areas of the city that had not been involved in the earlier discussions. Coordination

through the Office of Neighborhood Engagement, Office of Religious Affairs, Office of Latino Affairs, Office of African Affairs, and Office of Asian and Pacific Islander Affairs led to additional outreach and improved connections with their constituents.

Sustainable DC organized a series of **volunteer events** to start taking action around sustainability. Volunteers prepared the farm at Walker Jones Education Campus for its fall planting, helped renovate the Congress Heights Recreation Center with the DC Building Industry Association, planted trees in Emerson Park with Casey Trees, and cleaned up Marvin Gaye Park with Washington Parks & People. Connecting city residents with real, hands-on volunteer opportunities is an important part of engaging the community in sustainability and helping people realize the importance of community collaboration to achieve big goals.

As the final implementation plan was taking shape, the city recruited a team of local resident **organizers** to spread the word about Sustainable DC in their own communities. These volunteers will begin their work in 2013, attending events and giving presentations to neighborhood and community groups throughout the District as the Sustainable DC effort moves into the implementation phase.

# 2032 GOALS & TARGETS

## CHALLENGES



### *JOBS & THE ECONOMY*

#### GOALS

Grow and diversify DC's business sectors for sustained economic prosperity.

Expand the number and range of jobs available to District residents and ensure access to new jobs through appropriate skills training.

#### TARGETS

Develop 3 times as many small District-based businesses.

Cut citywide unemployment by 50% and increase by 5 times the number of jobs providing green goods and services.



### *HEALTH & WELLNESS*

#### GOALS

Inspire healthy, active lifestyles for all residents, regardless of income, ability, or employment.

Create safe environments that are conducive to healthy living.

#### TARGETS

Cut the citywide obesity rate by 50%

Require all new housing projects in the District to meet "Healthy by Design" standards.



### *EQUITY & DIVERSITY*

#### GOALS

Ensure that all school-age children in the District are educated in sustainability and prepared for a changing green economy.

Ensure transparency in the District's sustainability agenda including future plans and past progress.

#### TARGETS

Teach at least 50% of children in the District about sustainability concepts.

Expose 100% of District residents to Sustainable DC events and initiatives in their neighborhood.



### *CLIMATE & ENVIRONMENT*

#### GOALS

Minimize the generation of greenhouse gas emissions from all sources.

Advance physical adaptation and human preparedness to increase the District's resilience to future climate change.

#### TARGETS

Reduce greenhouse gas emissions by 50%.

Require all new building and major infrastructure projects to undergo climate change impact assessment as part of the regulatory planning process.

# SOLUTIONS



## BUILT ENVIRONMENT

### GOALS

Increase urban density to accommodate future population growth within the District's existing urban area.

Develop active and vibrant neighborhoods to create new economic opportunity and support a high quality of life.

Improve the sustainability performance of existing buildings.

Ensure the highest standards of green building design for new construction.

### TARGETS

Increase the District population by a net of 250,000 residents.

Provide a variety of amenities and services within a 20-minute walk of all residents.

Retrofit 100% of existing commercial and multi-family buildings to achieve net-zero energy standards.

Meet net-zero energy use standards with all new construction projects.



## ENERGY

### GOALS

Improve the efficiency of energy use to reduce overall consumption.

Increase the proportion of energy sourced from clean and renewable supplies.

Modernize energy infrastructure for improved efficiency and reliability.

### TARGETS

Cut citywide energy use by 50%.

Increase the use of renewable energy to make up 50% of the District's energy supply.

Reduce annual power outages to between 0 and 2 events of less than 100 minutes per year.



# SOLUTIONS



## FOOD GOALS

## TARGETS

Increase agricultural land uses within the District.

Put 20 additional acres of land under cultivation for growing food.

Ensure universal access to secure, nutritious, and affordable food supplies.

Ensure 75% of residents live within ¼ mile of a community garden, farmers' market or healthy corner store.

Develop the food industry into a strong and viable economic sector.

Produce or obtain 25% of food within a 100-mile radius.



## NATURE GOALS

## TARGETS

Protect and restore wetlands, waterways, and aquatic ecosystems.

Increase the acreage of wetlands along the Anacostia and Potomac Rivers by 50%.

Protect and expand tree cover and green landscapes, creating an integrated District-wide ecosystem.

Cover 40% of the District with a healthy tree canopy.

Enhance access to parks and open spaces for all residents.

Provide parkland or natural space within a 10-minute walk of all residents.



## TRANSPORTATION GOALS

## TARGETS

Improve connectivity and accessibility through efficient, integrated, and affordable transit systems.

Increase use of public transit to 50% of all commuter trips.

Expand provision of safe, secure infrastructure for cyclists and pedestrians.

Increase biking and walking to 25% of all commuter trips.

Reduce traffic congestion to improve mobility.

Reduce commuter trips made by car or taxi to 25%.

Improve air quality along major transportation routes.

Eliminate all "unhealthy" air quality index days, including "unhealthy for sensitive groups."

# SOLUTIONS



## WASTE

### GOALS

Reduce the volume of waste generated and disposed.

Reuse materials to capture their economic value.

Increase the citywide recycling rate.

### TARGETS

Send zero solid waste to landfills per year and reduce total waste generation by 15%.

Reuse 20% of all construction and demolition waste.

Achieve a total waste diversion rate (recycling, composting, and conversion) of 80%.



## WATER

### GOALS

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

Relieve pressure on stormwater infrastructure and reduce long-term flood risk.

Reduce demands for potable water and increase rainwater reuse.

### TARGETS

Make 100% of District waterways fishable and swimmable.

Use 75% of the landscape to capture rainwater for filtration or reuse.

Decrease total water use by 40%.

# ONGOING SUSTAINABILITY INITIATIVES IN THE DISTRICT

In addition to the individual actions identified throughout this implementation plan and the initiatives funded under the Sustainable DC Budget Challenge, there are many programs already underway to promote sustainable practices within the District government and private sector. The initiatives below will contribute significantly to the city's efforts to reach Sustainable DC's ambitious goals:

- **Green Power Purchasing:** DC buys 100% of the energy used by District government from renewable sources.
- **Renewable Portfolio Standard:** Energy suppliers in DC must meet gradually increasing minimums of renewable energy. By 2023, 20% of energy must be from renewable sources with at least 2.4% coming from solar power generated in DC.
- **Energy Star Benchmarking:** DC was the first city in the nation to pass a law requiring public and private buildings to track and report energy and water performance data using standard metrics which incentivizes efficiency improvement projects.
- **Live Well DC:** DC is encouraging residents to be more active, eat more nutritiously, and be healthier through an awareness campaign.
- **Blue Plains Advanced Wastewater Treatment Plant:** Blue Plains is being retrofitted to become the largest thermal hydrolysis plant in the world, saving enough energy to power 8,000 homes annually.
- **Green Building Act:** DC was the first city in the nation to require green building standards in both public and private buildings, mandating LEED certification for the commercial sector and Enterprise's Green Communities standard for residences.
- **Healthy Corner Store Program:** DC worked with small neighborhood stores to help them make fresh fruits and vegetables available in underserved neighborhoods.
- **Weatherization programs:** The District Weatherization Assistance Program, along with the Sustainable Energy Utility, provides technical and financial assistance to weatherize hundreds of homes each year, most of which are low-income households.
- **Anacostia Waterfront Initiative:** DC is revitalizing the Anacostia River—both environmentally and economically—through projects such as new parks, pedestrian crossings, and enhanced transportation infrastructure.
- **Disposable bag law:** Through the Anacostia River Clean Up and Protection Act, a five-cent fee on disposable plastic and paper bags has reduced residential bag use in the city by approximately 75%. Anecdotal evidence also indicates a 60% reduction in the number of plastic bags found in the Anacostia River.
- **Healthy Schools Act:** DC is improving the health of children attending DC public schools by promoting healthy eating, including healthier school lunches made with locally sourced ingredients when possible.



# SIGNIFICANT PLANS TO IMPROVE DISTRICT SUSTAINABILITY

Because sustainability involves many agencies there are a number of complete or pending plans that are referenced throughout the text of this implementation plan. The following plans have either been completed or are in process to help DC achieve its sustainability goals:

- **One City Action Plan:** Mayor Gray's agenda to grow and diversify the District economy, educate and prepare the District workforce, and improve the quality of life for all of DC. <http://mayor.dc.gov/page/one-city-action-plan>.
- **Five-Year Economic Development Strategy:** The strategic roadmap to transform the District by creating 100,000 new jobs and generating \$1 billion in new tax revenue to support city services over the next five years. <http://dmped.dc.gov/DC/DMPED/Programs+and+Initiatives/The+Five-Year+Economic+Development+Strategy+for+DC>.
- **Comprehensive Housing Strategy:** A strategy currently being developed to create and retain more affordable housing throughout the city: [www.taskforce2012.org](http://www.taskforce2012.org).
- **Anacostia 2032 Plan:** DC's plan to make the Anacostia River swimmable and fishable by 2032: <http://green.dc.gov/publication/anacostia-2032-plan-fishable-and-swimmable-anacostia-river>.
- **Parks and Recreation Master Plan:** DC is updating its 2005 plan to comprehensively develop DC recreational facilities and programs to include more opportunities for physical activity and environmental education.
- **Bicycle Master Plan:** DC is updating its 2005 plan to accommodate bike lanes and infrastructure in the city. 2005 Plan: <http://www.dc.gov/DC/DDOT/On+Your+Street/Bicycles+and+Pedestrians/Bicycles/Bicycle+Master+Plan/DC+Bicycle+Master+Plan+-+April+2005>.
- **Transportation Sustainability Plan:** 2010 plan to incorporate sustainability into DC's transportation planning and policy-making. <http://dc.gov/DC/DDOT/Projects+and+Planning/Environment/Sustainability+Plan>.

# GOVERNANCE



Although the Vision for a Sustainable DC will be implemented over the course of 20 years, our immediate actions are critical to put us on a path to success. The District government has already started to integrate sustainability into decision-making. It has also made financial and staff commitments to jump start action and enable us to track and monitor progress towards our goals. Other sectors, such as District colleges and universities, international institutions including embassies, and federal agencies have already made firm commitments to do their part. Achieving ambitious goals will require a combined effort from the District and federal governments, community organizations, businesses and institutions, and residents of all ages.

## Goal 1: Expand District government leadership to implement the Sustainable DC plan.

**Action 1.1: Dedicate District government staff and funding to implement the Sustainable DC plan, track progress, and make results publicly available. (Short Term)**

The District government has built significant capacity to implement Sustainable DC across more than a dozen agencies. Coordination and management functions will continue to be housed at the Office of Planning (OP) and the District Department of the Environment (DDOE). Sustainable DC staff will work with sustainability leads in Green Cabinet agencies to develop work plans and metrics for the actions described in this implementation plan. Short-term actions and key performance indicators will be reflected in agency performance plans. Measures defined in this implementation plan, agency-specific work plans, and agency performance plans will be the basis for biannual progress reports.

The importance of strong leadership from agencies in the Green Cabinet cannot be overstated. Already, Sustainable DC planning efforts have changed the way the District does business and agencies are incorporating sustainability into their core missions and budgets beginning with Fiscal Year

2014. City agencies are pursuing cutting edge sustainable building practices, greener procurement processes, and programs to expand energy efficiency and renewable energy. In Fiscal Year 2013, these efforts are being further catalyzed by a \$4.5 million Sustainable DC Budget Challenge supported by the Mayor and DC Council.

**Action 1.2: Implement a process to collect, analyze, and report data to ensure progress toward goals and targets by prescribed dates. (Short Term)**

Sustainable DC is a broad and ambitious plan. To ensure targets and goals are met, the District will need to collect and monitor data on a regular basis. The District has tools such as TrackDC that could be used to gauge the annual progress of Sustainable DC actions taken by individual agencies. The city is partnering with STAR Communities, a District-based national non-profit, to pilot an evaluation system that measures outcomes against a set of national sustainability benchmarks. The metrics included in the STAR Community Rating System chart progress that can be compared to more than 30 leading cities across the United States and Canada.

The outcomes of Sustainable DC monitoring and tracking will be transparent and publicly available. Where possible, progress will be made available in real time through web sites

such as TrackDC ([track.dc.gov](http://track.dc.gov)) or the beta Green Dashboard ([greendashboard.dc.gov](http://greendashboard.dc.gov)). Every two years, OP and DDOE will release a report on the District's progress toward achieving the vision and goals in this plan. The urban sustainability field is constantly evolving as cities around the world test new and innovative practices so the Sustainable DC plan will need to be reviewed and updated to reflect progress, changing conditions, and new opportunities that arise. Review of the plan will be coordinated with the progress reports to make sure the District remains a leader in sustainability and is taking advantage of the most advanced strategies and technologies.

### **Action 1.3: Identify existing laws, regulations, and policies that conflict with sustainability goals and areas where new authority is required. (Short Term)**

Some new and innovative practices will conflict with existing laws or regulations while others may not even be possible in the District without new legal authority. Working with agencies, businesses, community stakeholders, and the DC Council, Sustainable DC staff will identify problem areas and develop solutions that pave the way for implementation of sustainable practices.

### **Action 1.4: Expand public/private collaboration to meet sustainability goals. (Short Term)**

In addition to the community engagement that helped create both *A Vision for a Sustainable DC* and this implementation plan, Sustainable DC staff will facilitate ongoing public/private dialogue and working groups to explore specific implementation challenges in greater depth. For example, a working group on finance will help harness new and innovative funding mechanisms and sources to advance public and private sector sustainability projects. A communications team will focus on engaging residents and institutions citywide and sharing information about the initiative across the District. A policy committee will identify where current District laws, regulations, and operations create barriers to sustainability projects and explore new policies to move the city forward.

### **Action 1.5: Expand sector-based sustainability pledges and challenges to promote adoption of sustainable practices. (Short Term)**

By leveraging existing community networks and relationships, the city can expand adoption of sustainable practices through strategic partnerships to advance community-wide goals.

There are already countless groups doing groundbreaking work throughout the District and some are proving themselves to be local and even national leaders in sustainability.

#### *Higher Education*

Universities and colleges in the District have committed to making their campuses, operations, and educational missions more sustainable. LEED-certified buildings, solar panels, green roofs, and stormwater management are common and several campuses have announced carbon neutrality plans to reduce their carbon footprint. In February 2012, nine District-based colleges and universities signed the *District of Columbia Mayor's College and University Sustainability Pledge* to pursue aggressive measures related to energy use and buildings, green education, transportation, waste reduction, grounds maintenance, purchasing, and monitoring and reporting of progress.

#### *International Institutions*

The international community in the District has showcased international best practices here in its adopted home. More than 50 embassies and other international institutions such as the World Bank have pledged to pursue sustainability in their design, construction, operations, and communications. Specific efforts include encouraging the local workforce to use mass transit, achieving green building standards in major renovations or new construction, and partnering with local schools to educate District youth in environmental sustainability.

#### *Businesses and Business Improvement Districts*

Adoption of sustainable practices by private businesses has made the District a national leader in green building, energy efficiency, stormwater management, and use of mass transit. Cutting-edge leadership from business improvement districts (BIDs) has significantly reduced litter, brought recycling bins to street corners,



and supported creation of the Downtown DC ecoDistrict. The DowntownDC BID is now piloting a Smarter Business Challenge to promote efficiency and sustainability among building owners and tenants in a program that could expand citywide.

### *Communities of Faith*

Houses of worship in the District have long been leaders in sustainability. From solar panels at Florida Avenue Baptist Church to the Blessing of the Bikes at All Souls Unitarian Church, Ohav Sholom Synagogue's ENERGY STAR certification, the Green Muslim group, or the growth of Greater Washington Interfaith Power & Light, the local faith community has embraced dozens of ways to green buildings and operations and work with members to encourage sustainable decisions at home.

## *INDIVIDUAL ACTION*

You are a part of Sustainable DC. Each day we make hundreds of small decisions: drive or take Metro, lights on or lights off, recycle or throw away, faucet on or faucet off, and thermostat up or thermostat down. Taken together, these decisions have a real impact on the amount of resources we consume and the amount of money we spend. Did you know:

- A five minute shower is equal to 20-35 gallons of water.<sup>2</sup> If every District resident cut their current shower length by just five minutes, we would save 15 *million* gallons of water each *day*.
- Recycling one glass bottle saves enough energy to power a 100-watt light bulb for four hours.<sup>3</sup>
- Setting your thermostat just two degrees lower in the winter (or higher in the summer) saves about 2,000 pounds of carbon dioxide greenhouse gases each year—and saves *you* money.<sup>4</sup>
- Compared to paper made directly from trees, one ton of 100% recycled paper saves the equivalent of 4,100 kilowatt hours of energy, 7,000 gallons of water, 60 pounds of air pollution, and three cubic yards of landfill space.<sup>5</sup>

To help us make informed choices and track the results of our combined effort, **Sustainable DC** has launched a website, <http://sustainable.dc.gov>, to provide useful information on what you can do to help achieve our big goals.

## *COMMUNICATING SUSTAINABILITY*

The Sustainable DC planning team conducted a series of focus groups with residents to better understand their perspectives on sustainability. The conversations showed that sustainability was not well understood as a concept, but that the benefits of money saved, improved health, and stronger communities were extremely important to community members. Residents appreciated an inclusive effort that touched their neighborhood or community directly, such as targeting youth with a mix of new and traditional media. They wanted to see immediate actions rather than just long-term goals.

Based on this input, community outreach around the plan will focus on taking quick action and relating the benefits from these projects directly to local communities. To most effectively communicate sustainability, the benefits need to be tangible, urgent, inclusive, and personal. This plan is structured not only to identify the steps the city is taking to become more sustainable, but also to describe how sustainable practices benefit you, your family, your neighborhood, and the District as a whole.

## *JUMPSTARTING PROGRESS*

This year, the Mayor and DC Council committed \$4.5 million dollars to jumpstart innovative sustainability projects by District agencies. A competitive Sustainable DC Budget Challenge among agencies drew more than 30 proposals to test new sustainability projects and plan for longer term needs. The following twelve projects funded for 2013 represent a significant early investment to advance the Sustainable DC plan and demonstrate how the District government is leading by example on the path to becoming the greenest, healthiest, most livable city in the nation.

### **Action 1.6: Continue annual “Budget Challenge” competition for innovative sustainability projects within District government. (Medium Term)**

The District will continue to support innovative sustainability demonstration projects in future fiscal budgets. Projects will focus on specific issues that need further study and will have a medium term timeframe in order to transition from best practices to institutionalized practices.

## **2013 BUDGET CHALLENGE PROJECTS**

### **SMART ROOFS FOR DISTRICT-OWNED BUILDINGS**

The Smart Roof Initiative will include structural assessments of existing District-owned buildings to see if they can be retrofitted with cool, green, or solar roofs. Roof retrofits provide a cost-effective opportunity to reduce District energy use while simultaneously improving thermal comfort and air quality.

### **SAVING GAS AND MONEY WITH ANTI-IDLING DEVICES ON POLICE CARS**

The Metropolitan Police Department will install and evaluate on-board batteries and idling controls in police cars that are stationary for long periods. This technology permits stationary cruisers to use required electronics without running their engines, saving fuel and reducing vehicle emissions. These installations will be targeted at areas of the city with high asthma rates.

### **SUSTAINABLE POWER PLANT AT LANGSTON DWELLINGS**

The DC Housing Authority will undertake a bold and innovative effort to redevelop an idle power plant once fueled by coal at the Langston Dwellings in Northeast Washington into a model for renewable energy generation.

### **WASTE LIFE CYCLE STUDY**

The city will conduct a life-cycle assessment study of the District's waste system, including the possibility of waste-to-energy facility within the District.

### **PARKING SPOTS TO PARK STOPS**

Within the constraints of a 9-foot-by-19-foot public parking space boundary, the city proposes to swiftly and efficiently design and construct 10 mini-parks in this pilot program. The parks will be movable and include wi-fi access.

### **COMPOST SITE PILOT PROJECTS**

The city will design and build three to four compost sites co-located with urban farms or community gardens to test different

methods of composting for residential drop-off. Sites will be managed by an external contractor and include community education and tracking mechanisms.

### **MINIMIZING FOOD DESERTS WITH AN URBAN FOOD NETWORK**

The city will create an urban food network to minimize food deserts and provide local food within one half mile of all District residents. Working closely with many partners, this pilot project will implement one demonstration garden at a recreation center within each of the District's eight wards.

### **LIVING BUILDING CHALLENGE**

Using the international Living Building Challenge model, the city will explore the practicality of constructing zero energy, zero water, zero waste buildings in the District by testing these methods on a District building needing modernization.

### **CLIMATE ADAPTATION PLAN STUDY**

The city will conduct a three-phase climate change impact analysis that will form the basis of a District-wide climate resiliency and adaptation plan.

### **TREE CANOPY IMPLEMENTATION PLANS FOR PARK AND SCHOOL LANDS**

The city will develop and implement tree canopy plans for public parks and school yards to expand tree canopy in support of the Mayor's vision of a 40% canopy by 2032.

### **GREEN PURCHASING PROGRAM**

The city will start a Green Purchasing Program to promote sustainable purchasing by District agencies by working in coordination with the local vendor community and like-minded institutional purchasers based in the District.

### **IMPLEMENTING THE ENVIRONMENTAL LITERACY PLAN IN DC PUBLIC SCHOOLS**

The city will build capacity for the systemic implementation of the DC Environmental Literacy Plan in District schools by funding sustainability educators.



# PRIORITY CHALLENGES

This section outlines the four core concerns of this plan—Jobs and the Economy; Health and Wellness; Equity and Diversity; and Climate and Environment—and explains the difficulties and opportunities presented by each. Effectively addressing these challenges is the plan’s highest priority.

For each of these four challenges, the plan describes:

- *Our current situation, both local and (where appropriate) global;*
- *What the challenge means for the District;*
- *A broad vision for how the plan will respond;*
- *Some specific and high-priority areas of concern;*
- *How those specific concerns are addressed by the plan;*
- *Where in the plan to find specific actions that help solve the challenge; and*
- *Timeframes for each action.*



# JOBS & THE ECONOMY



We envision a District that capitalizes on our economic growth by supporting businesses in the clean economy and training residents to fill the demand for skilled workers. Existing businesses will adopt healthier and more environmentally conscious practices to improve efficiency and the bottom line. Residents in all neighborhoods will be able to compete in the new economy and benefit from a transformed foundation for the city's future economic prosperity.

## *DEFINING THE CHALLENGE*

The District is the economic engine of the Washington metropolitan region. To maintain its vitality and stake its claim in the economy of the future, the District must innovate and change over the next 20 years. Growing our sustainable economy will create new businesses and job opportunities and increase demand for green services and goods to generate economic benefits for all residents. Businesses and city services will need workers who can design, build, and maintain green infrastructure, green buildings, green supply chains, and renewable energy systems. To prepare for this shift, we need to train our local workforce with the skills they will need to prosper in a new and innovative economy.

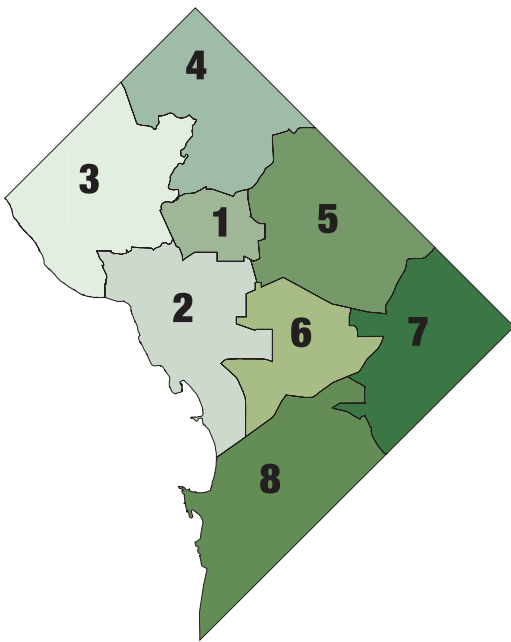
Many more people work in the District than live here. As a result, city residents compete for jobs with people from surrounding areas. Ensuring that future jobs are accessible to District residents will require new strategies to provide the skills needed for employment.

Although growing the green economy will create many entrepreneurial opportunities, small businesses face a number of challenges related to start-up capital, expansion financing, affordable workspace, specialized services, complex regulatory systems, and permit and licensing requirements.

Removing barriers and supporting small businesses with the resources they need to be successful is critical. With the release of The Five-Year Economic Development Strategy, the city has set out on a course to create the nation's most business-friendly economy. Establishing an ecosystem that supports local businesses and entrepreneurs requires a concerted effort to remove barriers to doing business in DC so that the city's economy can continue to diversify and grow while creating new jobs for residents.


Many residents face challenges juggling the daily logistics of getting to work and caring for their families. Lower-skill jobs such as cleaning, maintenance, restaurant and security work often require irregular work schedules that can be incompatible with public transit and childcare. Housing options near Metro rail facilities tend to be more expensive and transit is less accessible in more affordable neighborhoods. Lack of access to affordable and reliable childcare creates problems for all parents, particularly those with irregular schedules. Developing support services such as more affordable, transit-accessible housing and childcare is critical to ensuring that all District residents can participate in employment opportunities.

## UNEMPLOYMENT BY WARD (2005-2009)<sup>6</sup>

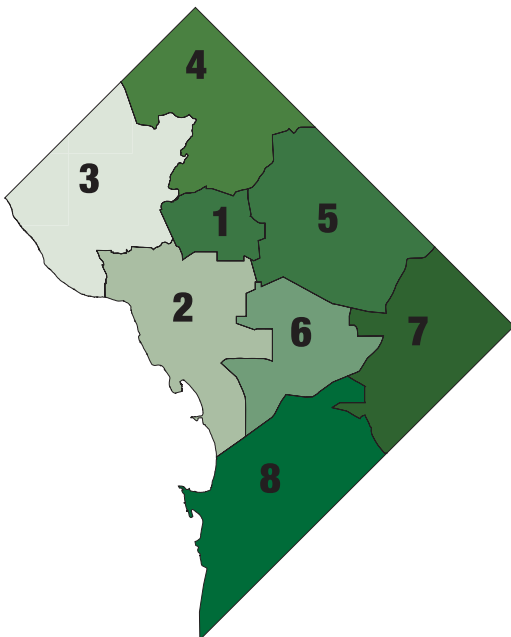


Ward 1: 7.2%	Ward 5: 13.0%
Ward 2: 4.0%	Ward 6: 8.4%
Ward 3: 3.4%	Ward 7: 19.0%
Ward 4: 7.6%	Ward 8: 17.0%


**LESS THAN  
30%  
OF ALL JOBS  
IN DC ARE HELD  
BY DC  
RESIDENTS<sup>8</sup>**



## PERSONS WITHOUT HIGH SCHOOL DIPLOMA BY WARD (2005-2009)<sup>7</sup>



Ward 1: 19.0%	Ward 5: 19.0%
Ward 2: 8.1%	Ward 6: 12.0%
Ward 3: 3.4%	Ward 7: 20.0%
Ward 4: 17.0%	Ward 8: 21.0%

 **50% OF  
JOBS IN  
DC REQUIRE  
AT LEAST  
A BACHELOR'S DEGREE<sup>9</sup>**

## *OVERCOMING THE CHALLENGE*

Transforming our economy will require the District to optimize existing programs for education, entrepreneurship, and workforce support as well as incorporate new and innovative strategies.

### **EDUCATION GAP**

The District will continue its efforts to give all residents access to high quality education in District schools, resources for college, and skills training for new jobs. By partnering with the labor and business communities, the District is already ensuring that programs for continuing education and job training tie jobs seekers directly to new job opportunities. The District's One City – One Hire program matches residents with workforce training and certifications tied to specific employers and job opportunities. School reform and universal pre-K educational policies will also increase opportunities for new graduates and for parents, particularly single parents, to work while their 3- and 4-year old children are in school. The District's First Source Employment Agreement will also play a role by requiring businesses working on District contracts to hire District residents to fill at least 51 percent of jobs and 35 percent of all apprenticeship hours as well as use referrals from the Department of Employment Services (DOES).

### **NEW BUSINESS GROWTH**

The District is committed to supporting public and private incubators for entrepreneurs and businesses. The Department of Small & Local Business Development (DSLBD) is already helping local businesses develop new skills, make contacts with prospective partners and clients, and bid on District contracts. DSLBD launched a FastTrac program in 2012 to support aspiring entrepreneurs launch new or expand existing businesses. The District will continue to identify and remove barriers that impede new businesses from entering the marketplace by providing technical assistance for permitting and licensing and working with the private sector to develop sources of small business capital.

The Five-Year Economic Development Strategy for the District further emphasizes the importance of business growth and retention for the city's economy. Enabling businesses and entrepreneurs to prosper is a top priority. Several strategic initiatives expand opportunities for technology entrepreneurs using business incubators and accelerators, including one focused on culinary enterprises. The DC-China Center, another core part of the strategy, is supporting local businesses interested in entering international markets. Through the economic strategy, the District is actively taking steps to ensure that the city's economy continues to grow in a balanced and healthy way.

### **SUPPORT NETWORK**

To improve access to green jobs for District residents, the District is committed to expanding support for District workers through transit access, affordable housing, childcare, and other services that will facilitate their employment. Two important examples of the many ways the District supports District workers include the Housing Production Trust Fund that allocates 15% of the District's deed recordation and real estate transfer taxes to preserve and develop affordable housing with transit access and the Green Preservation of Affordable Transit-Oriented Housing (Green PATH) initiative to acquire apartment buildings near Metro rail stations for long-term affordable housing.

## *GOALS, TARGETS, AND ACTIONS*

The city has established goals, targets, and actions that focus primarily on efforts to achieve a green economy. In addition to addressing the economy, the actions discussed below relate to and influence actions in each of the other challenges and solutions chapters of this plan. The goals, targets, and actions presented emphasize short-term projects ready for immediate implementation. Medium- and long-term actions will involve active consultation with stakeholders to craft the details surrounding new policies, programs, regulations, and other proposals that may be five to 20 years away.

## Goal 1: Grow and diversify DC's business sectors for sustained economic prosperity.

*Target: By 2032, develop 3 times as many small District-based businesses.*

### Action 1.1: Complete a review of regulatory reform options to make it easier to do business in the District. (Short Term)

Despite the range of business incentives available in the District, it can be difficult for new businesses and industries to establish in the city. To create a more attractive business environment and to remove ineffective regulations, the District will complete a regulatory review that will address the challenges of doing business in the District, the health of our residents, and the preservation of our natural environment. The city will seek input from key industry and community leaders, policymakers, and strategists to provide a balanced and comprehensive approach that encourages new opportunities for investment.

### Action 1.2: Formally recognize corporations that meet independent social and environmental performance standards. (Medium Term)

Throughout the US and internationally, a sustainable economy is emerging. The sustainable economy promises jobs, entrepreneurial opportunities, and new business models that prioritize positive social and environmental outcomes in addition to a financial bottom line. Increasingly, “green” and “good” are the defining characteristics of how business is done in progressive economies. We will recognize and promote corporations, businesses, and companies that meet rigorous independent social and environmental performance standards.

### Action 1.3: Use anchor institutions to create local markets for sustainable enterprises. (Medium Term)

To inspire new local markets for sustainable industry, the District will leverage local anchor institutions to create demand and stimulate growth in supply. Anchor institutions are the

major stable organizations or corporations in the city that are unlikely to relocate and serve as substantial sources of economic activity. In the District these institutions include federal agencies, international institutions, universities, and large health service providers. Collectively, these institutions spend billions of dollars per year on salaries, procurement, and real estate. They have the ability to influence markets by directing their investments and expenditure to green suppliers. The District will work with key anchor institutions in the city to grow local green and sustainable enterprises.

## Goal 2: Expand the number and range of jobs available to District residents and ensure access to new jobs through appropriate skills training.

*Target: By 2032, cut citywide unemployment by 50% and increase by 5 times the number of jobs providing green goods and services.*

### Action 2.1: Improve integration of sustainable jobs training into school curricula to expose schoolchildren to new careers. (Short Term)

A number of programs are already in place to raise awareness of green and sustainable jobs among young people and cultivate early skills for these new careers. The Department of Employment Services has partnered with local high schools, the University of the District of Columbia, and local trade organizations to offer the Career Technical Education job training program which focuses on green construction, energy efficiency, carpentry, and hospitality vocational training. The Green Zone Environmental Program—part of the District's Summer Youth Employment Program—engages young people ages 14 to 21 in field-based environmental projects to develop the skills and professionalism to compete successfully in the green and sustainable job market.

Many of the existing programs are focused largely on older teenagers. To ensure that all children have a strong understanding of career opportunities in the sustainable economy, the District will enhance school curriculums and community youth programs to educate young children about sustainability and environmental practices.



## Action 2.2: Partner with the Workforce Investment Council to develop targeted workforce development strategies. (Medium Term)

The recently revitalized Workforce Investment Council (WIC) is a private sector-led board responsible for advising the Mayor, DC Council, and District government on the development, implementation, and continuous improvement of the District's workforce investment system. The WIC recently released the Mayor's five-year plan for workforce development that supports the Mayor's vision of "a city where all residents can participate fully in the region's economy, all businesses can find the skilled workforce they need to compete, and all communities are contributing to, and benefitting from, economic prosperity."<sup>10</sup>

The WIC will help expand the District's sustainable economy by working with business leaders to identify immediate and long-term green job opportunities, and building a cohesive network of training programs and services that help residents enter into, and advance in, sustainable career pathways.

### **JOB CREATION**

Over the next five years, actions included in this Sustainable DC Plan will:

- Create 19,500 new permanent jobs in the District, primarily through new DC businesses;
- Generate 5,400 temporary one-year jobs, for an average of 1,080 jobs annually;
- Give 17,050 unemployed and underemployed residents access to permanent employment through direct training or tax credits to support employers who provide on-the-job training.

These jobs include positions from actions that directly result from this Sustainable DC plan and "spin-off" jobs created indirectly in other District businesses and organizations. Spin-off jobs are created when workers spend their paychecks and businesses buy supplies and services.

Sustainable DC is not just about short-term economic improvements—the plan has a 20-year horizon with ambitious goals that will involve complex actions and require careful

planning. These long-term actions will have large impacts on employment, creating many permanent jobs for District residents. Some of the short-term actions are studies and plans for implementing mid- and long-term programs that will have far-reaching impacts on jobs, but because those programs will not be fully implemented in the next five years, their associated jobs are not included in this estimate of short-term jobs. As sustainability initiatives reduce the costs of energy and transportation and improve citizens' health, many DC residents will have more money to spend on goods and services. Those extra dollars will support even more jobs in the District, jobs that are not included in this estimate.

Part of this plan includes adding to the 632,000 residents who already call the District home. New residents mean new jobs, a larger local economy, and more local businesses to support a growing city. As new residents move into the city and pay for the everyday costs of living, their dollars will support new jobs throughout the city. Adding 250,000 new residents would itself create at least 7,250 new jobs among local retailers, service providers, hospitals, and other organizations – 1,450 new jobs for every additional 50,000 new residents.

### **JOB FOR ALL RESIDENTS**

Creating new jobs is critical to the economic success of the District, but it is equally important that those jobs benefit residents most in need. Many of these new jobs will target unemployed and underemployed residents through the District's One City – One Hire, which connects unemployed DC residents to local jobs. Of the permanent jobs created by the plan, 170 will be subject to First Source agreements. Among the 5,400 short-term jobs created through construction and other one-time expenditures, 3,400 will be First Source eligible, an average of 680 jobs per year.

### **CONCLUSION**

The primary barrier to the employment of District residents in local jobs is the imbalance between the education level attained by District residents and the education level required by local jobs. As a city, we will work to bridge this gap by providing a strong foundation for the workforce and encouraging entrepreneurs in green and innovative fields that have low barriers to entry, on-the-job training, and real career ladders.





# HEALTH & WELLNESS



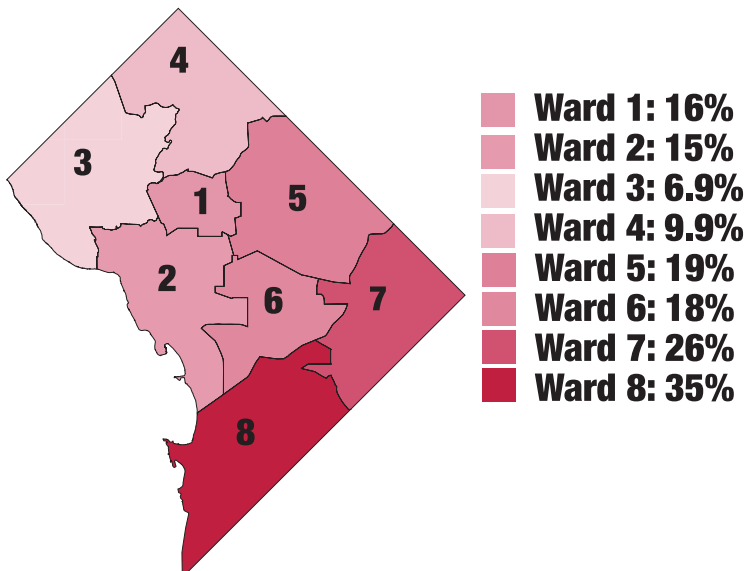
We envision a District where all residents have equal opportunity to live healthy, active lifestyles and where no neighborhood is unfairly exposed to health risks. Our homes and neighborhoods must provide the highest quality environmental conditions and have easy access to active recreation, nutritious foods, and health services.

## DEFINING THE CHALLENGE

The health and well-being of every District resident is closely connected to the design of our neighborhoods, our access to nutritious foods, the ability to live active lifestyles, and the quality of the air we breathe and water we drink. Within the District, some of our most pressing health risks stem from hunger, obesity, asthma, and exposure to lead and other toxic substances. These risks are experienced differently by residents in different wards with sometimes large disparities across the District. The root cause of many health concerns in the District is poverty and major health problems are disproportionately higher in lower-income areas. With careful planning, we can improve health across the District through both public and private efforts.

The ability to reduce the health risks created by asthma and exposure to lead and other toxic substances is linked to curbing local and regional pollution emissions and to making sure homes are free from mold, allergens, and other indoor hazards. Lead exposure is tied to historic use of lead pipes and lead-based paint that generates dust in homes and can contaminate soils. The accumulation of lead in the bloodstream presents particular health risks for children including developmental delays, lower IQs, and behavioral disorders at relatively low lead levels and seizures and possible death at higher levels. In adults, lead causes increased risk of high blood pressure, cardiovascular disorders, and endangers fetuses in pregnant women.<sup>11</sup>

## POVERTY PREVALENCE BY WARD (2005-2009)<sup>12</sup>

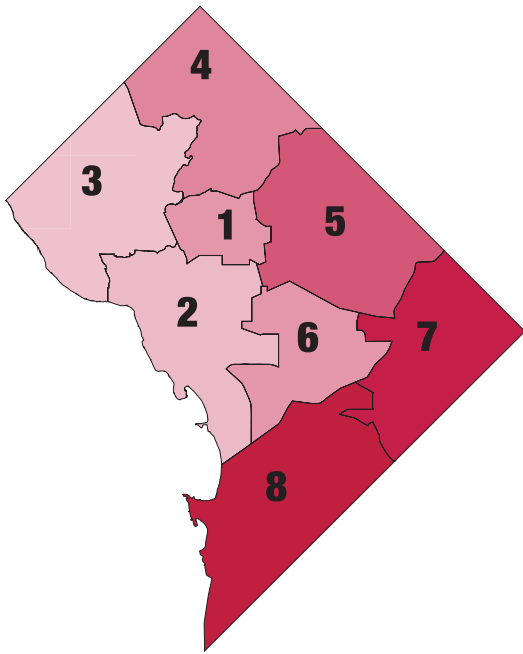


**1 IN 3: DC RESIDENTS AT RISK OF HUNGER**<sup>13</sup>

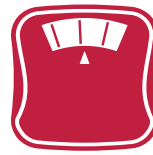


**49.9%: THE POVERTY RATE FOR CHILDREN UNDER 18 IN DC. THIS COMPARES TO 37.9% NATIONALLY**<sup>14</sup>

## OBESITY PREVALENCE BY WARD (2007)<sup>15</sup>



Ward 1: 18.8%	Ward 5: 30.1%
Ward 2: 12.5%	Ward 6: 19.1%
Ward 3: 11.7%	Ward 7: 39.9%
Ward 4: 22.0%	Ward 8: 41.9%



**1 IN 3:**  
DC CHILDREN  
AT RISK OF BECOMING  
OVERWEIGHT OR OBESE<sup>17</sup>

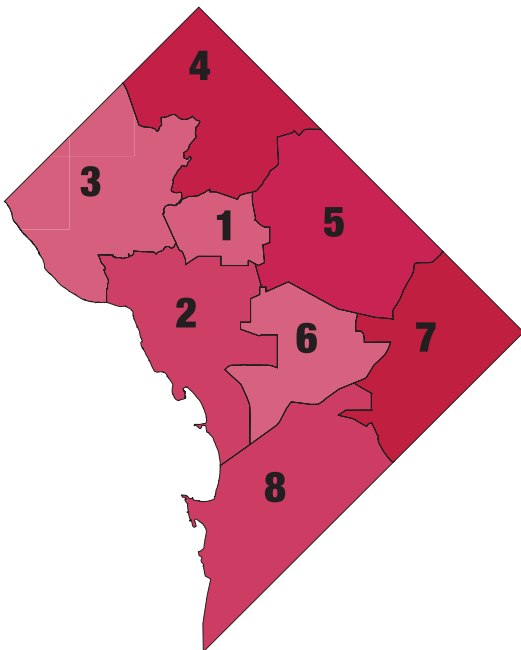


**\$400 MILLION:**  
TREATMENT COST FOR  
OVERWEIGHT AND OBESE  
RESIDENTS IN 2004<sup>18</sup>



**300:**  
KNOWN JOBSITES IN  
DC THAT AT ONE TIME  
CONTAINED ASBESTOS<sup>19</sup>

## ADULT ASTHMA PREVALENCE BY WARD<sup>16</sup>



Ward 1: 8.4%	Ward 5: 10.8%
Ward 2: 9.7%	Ward 6: 8.2%
Ward 3: 8.3%	Ward 7: 12.2%
Ward 4: 11.6%	Ward 8: 9.9%

**1 IN 6:**  
DC KIDS AFFECTED  
BY ASTHMA<sup>20</sup>







## ***OVERCOMING THE CHALLENGE***

Current efforts to improve the health of District residents include Healthy People 2020, Live Well DC, and Healthy by Design. We need to build on existing programs that are tackling environmental quality and promoting healthier lifestyles by focusing on at-risk groups across the city. New actions to improve health are explained in the different solutions of this plan.

### ***HUNGER AND NUTRITION***

Several existing programs aim to reduce the prevalence of hunger and better balance access to nutritional resources across the city. The District is taking steps to bring new food retailers into areas with poor food access, known as food deserts, including financial and legal incentives introduced by the DC Food, Environment, and Economic Development (FEED DC) Act of 2010. The DC Food Stamp Expansion Act of 2010 increased financial support for food purchases by 4,000 households.<sup>21</sup> Additionally, more than 70% of school-aged children in the District are receiving free or reduced-price school meals that meet higher nutritional standards.<sup>22</sup> Partners in the non-profit sector have been instrumental in efforts to tackle the hunger challenge.

The District will continue to improve access to healthy foods and reduce their costs. Residents will also be able to participate in a sustainable system of urban food production to reduce hunger, malnutrition, and food-related health conditions across all wards.

### ***OBESITY AND PHYSICAL ACTIVITY***

The DC Overweight and Obesity Action Plan 2010-15 sets goals for improving healthy-eating and increasing levels of physical activity.<sup>23</sup> The Child Health Action Plan 2008 presents a more targeted program for increasing healthy living options for children.<sup>24</sup> Live Well DC educates the public and increases public awareness of the importance of choosing healthy lifestyles.<sup>25</sup> These are strong starting points, but access to parks and recreational facilities and fresh and healthy foods also affect obesity trends.

With continued diligence and long-term commitment to improving city health, the District will cut the citywide obesity rate by 50% and double the number of physically active residents to reduce rates of obesity, heart disease, and other conditions directly attributed to sedentary lifestyles. By promoting day-to-day activity in walkable neighborhoods and

recreational facilities, residents will be more able to incorporate physical activity into their daily lives.

### **ASTHMA AND RESPIRATORY ILLNESS**

Air quality is regularly monitored and assessed through government programs such as engine anti-idling, vapor recovery at gas stations, and emissions trading for nitrogen oxides. Nevertheless, air quality problems persist and asthma rates are high. The Strategic Plan for Addressing Asthma in the District of Columbia 2009-2013 focuses on reducing asthma rates by improving access to healthcare, developing asthma-friendly environments, and raising awareness of asthmatic risks.

Adopting renewable and cleaner energy technology, shifting to cleaner forms of transportation, and enhancing our capacity to prevent air pollution will improve our ability to manage asthma and respiratory disorders. The District will focus on reducing air pollution in parts of the city with the poorest air quality.

### **EXPOSURE TO LEAD AND OTHER CONTAMINANTS**

Existing programs, such as the Healthy Homes Program and Lead Safe Washington, are available to reduce health risks in older buildings from lead, asbestos, and other contaminants. To protect drinking water, significant investments have been made by DC Water and the Washington Aqueduct to improve water infrastructure and water quality as well as ensure compliance with federal standards.

## **GOALS, TARGETS, AND ACTIONS**

The city has established goals, targets, and actions that focus primarily on efforts to improve the health and wellness of the District. In addition to addressing health, the actions discussed below relate to and influence actions in each of the other challenges and solutions chapters of this plan. The goals, targets and actions presented emphasize short-term projects ready for immediate implementation. Medium- and long-term actions will involve active consultation with stakeholders to craft the details surrounding new policies, programs, regulations, and other proposals that may be five to twenty years away.

## **Goal 1: Inspire healthy, active lifestyles for all residents regardless of income, ability, or employment.**

*Target: By 2032, cut the citywide obesity rate by 50%.*

### **Action 1.1: Expand public park access and programming to promote healthy lifestyles through physical exercise. (Short Term)**

One way to support healthier lifestyles is to improve residents' access to parks and open spaces. Some neighborhoods have better access to parks than others due to variations in the distribution of entry points, transit links, and safe pedestrian or bicycle routes. The District will invest in improving access to outdoor recreational amenities such as parks, paths, and open spaces, particularly for areas that are poorly connected to these amenities. In addition, the District will expand the program of activities and services in the District's public parks to ensure all residents have the option of participating in sports, exercise, and outdoor leisure. By improving access to these opportunities, the District will actively encourage and support healthier and more active lifestyles for all.

### **Action 1.2: Invest in a public health campaign to promote the benefits of healthy eating and active living. (Short Term)**

Ensuring residents have access to secure and nutritious food is another way to encourage healthy lifestyles. Throughout this plan, there are many actions that will improve access to physical activity and nutritious foods. To raise awareness of better access to healthy lifestyles, the District will support these actions with a coordinated public campaign to promote the benefits of healthy eating and active living.

## Goal 2: Create safe environments that are conducive to healthy living.

*Target: By 2032, require all new housing projects in the District to meet “Healthy by Design” standards.*

### Action 2.1: Develop a “Healthy by Design” program for new affordable housing projects, with priority focus in low-income and underserved neighborhoods. (Medium Term)

Urban design can significantly influence the ability to live an active and healthy lifestyle. When people feel unsafe in their environment, they are unlikely to engage in outdoor physical activity. If the urban setting does not provide access to green space or fresh food retailers, people are unlikely to spend time in the outdoors or select nutritious foods. Neighborhood design that incorporates parks, grocery stores, sidewalks, and pedestrian and bicycle routes can improve the overall well-being of a community by making healthy lifestyle choices convenient, affordable, and accessible to all.

Healthy by Design programs provide guidance for the planning and design of communities that make it easier for people to live well. Healthy community design links traditional concepts of planning (such as land use, transportation, community facilities, parks, and open space) with health priorities (such as physical activity, public safety, healthy

food access, psychological health, air and water quality, and social equity issues). The District will develop guidelines for future residential projects, prioritizing the needs of low-income neighborhoods and areas of the city with the poorest health.

### Action 2.2: Complete a feasibility study to understand the environmental, economic, and social barriers to healthy lifestyles that are specific to the District. (Short Term)

Providing opportunities to engage in healthy lifestyles is only the first step towards ensuring a healthier and more active community. By first recognizing the barriers that prevent people from making healthy decisions such as environmental issues, social or cultural constraints, and/or economic factors such as affordability, the District will have a better understanding of how to encourage healthier lifestyles. Knowing what barriers exist will enable the District to make targeted investments to enable more people to choose healthier lifestyles.

## CONCLUSION

The District will continue to support existing programs that promote healthier lifestyles. New actions to improve health will prioritize at-risk groups across the city and can be found in the different solutions of this plan.







# EQUITY & DIVERSITY



We envision a District that supports an inclusive and dynamic society where opportunities for personal growth and development are abundant regardless of income, cultural identity, age, ability, gender, or sexual preference. Sustainable DC will ensure that the costs and benefits of sustainability are distributed fairly and equitably among all our diverse communities and neighborhoods.

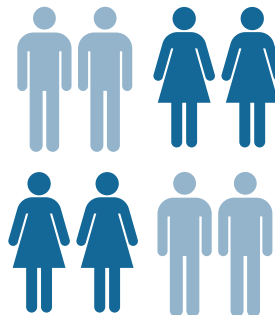
## DEFINING THE CHALLENGE

One of the city's greatest assets is the incredible diversity of its people, but providing equitable access to services and resources among racial, economic, and social groups is an ongoing challenge. District planning, policy, laws, and regulations support equitable distribution of resources and fair treatment for individuals and community groups, but historically, neighborhood amenities and environmental and health benefits have favored affluent rather than impoverished communities. In the past, playgrounds, parks, and schools were better maintained in wealthier neighborhoods while neighborhoods with industrial sites, highways, and other heavy infrastructure were places that became home to low income residents or where those activities otherwise became concentrated. Now is our chance to address these long-standing disparities.

Within the District, housing conditions, standards of living, and personal circumstances vary widely from block to block. A huge margin of more than \$200,000 separates the highest and lowest average household income by ward. Variation in culture, race, age, gender, physical ability, and languages spoken provide a unique richness to District life, but it also challenges us to ensure our city grows more tolerant and fair. The benefits of sustainability can create a more equitable community, correcting past disparities and celebrating our differences instead of letting them divide us.

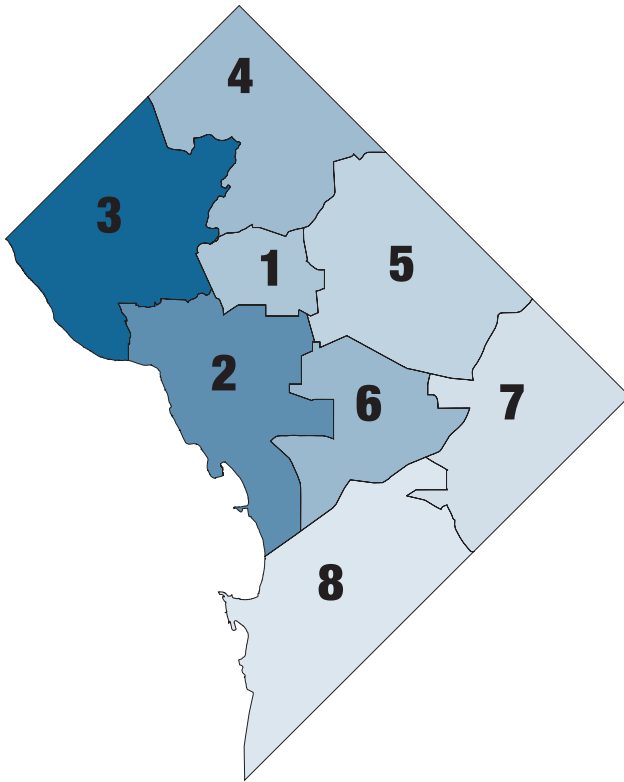


**15% OF DC RESIDENTS OVER AGE 5 SPEAK A LANGUAGE OTHER THAN ENGLISH AT HOME COMPARED TO 21% OF US POPULATION<sup>26</sup>**



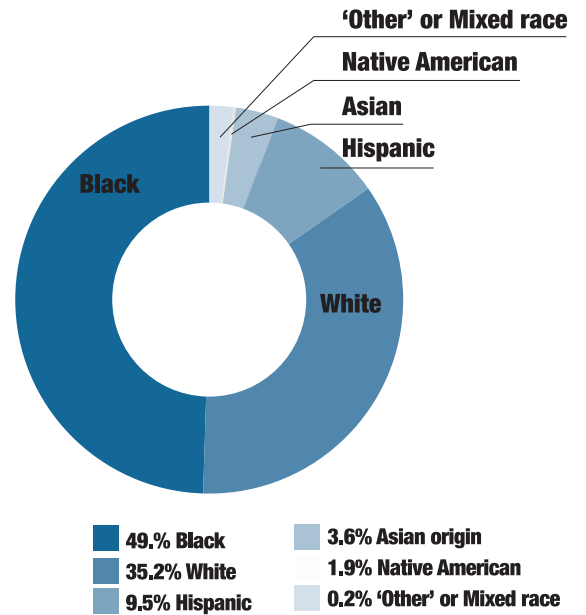
**IN 2000, DC RANKED FIRST IN THE NATION FOR ITS % OF SAME-SEX COUPLES<sup>27</sup>**

## AVERAGE HOUSEHOLD INCOME BY WARD<sup>28</sup>



Ward 1: \$98,485	Ward 5: \$78,559
Ward 2: \$190,692	Ward 6: \$120,526
Ward 3: \$257,386	Ward 7: \$54,667
Ward 4: \$116,668	Ward 8: \$44,076

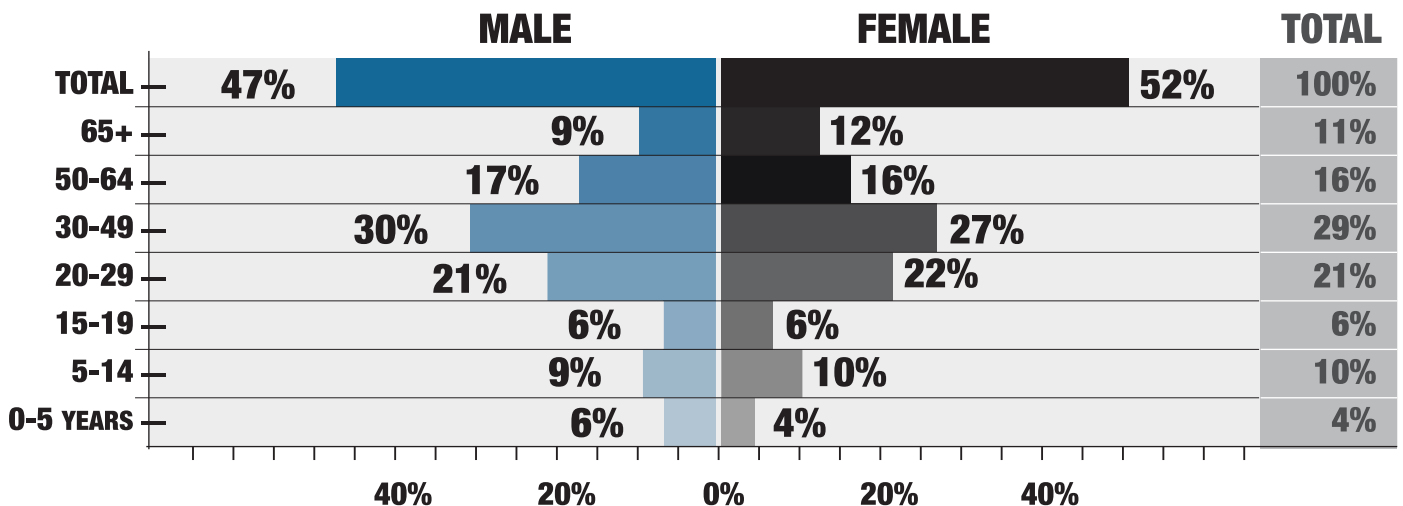
## ETHNIC DIVERSITY AS % OF DC'S TOTAL POPULATION<sup>29</sup>



**632,232:**  
TOTAL POPULATION OF THE DISTRICT<sup>30</sup>



## PERCENTAGE OF RESIDENTS BY GENDER AND AGE (2011)<sup>31</sup>



## OVERCOMING THE CHALLENGE

Through Sustainable DC, we can build on existing efforts to address our equity and diversity challenges. The One City Action Plan, the Five-Year Economic Development Strategy, DC Public Schools' five-year strategy, and recommendations from the affordable housing task force will help reduce inequities in the city through new job opportunities, higher educational achievement, and protected housing affordability.

The District already has established several progressive policies to protect the rights of residents and help rectify inequities. The DC Human Rights Act of 1977 helps combat discrimination on the basis of race, color, religion, national origin, sex, age, marital status, personal appearance, sexual orientation, family status, family responsibilities, matriculation, political affiliation, disability, source of income, and place of residence or business. The DC Language Access Act of 2004 provides the District's limited and non-English proficient residents with greater access to programs, services, and activities by requiring translation services for six core languages for those who request them.

## GOALS, TARGETS, AND ACTIONS

The city has established goals, targets, and actions that focus primarily on efforts to achieve more equitable outcomes across all individuals and community groups. In addition to addressing equity, the actions discussed below relate to and influence actions in each of the other challenges and solutions chapters of this plan. The goals, targets and actions presented emphasize short-term projects ready for immediate implementation. Medium- and long-term actions will involve active consultation with stakeholders to craft the details surrounding new policies, programs, regulations, and other proposals that may be five to twenty years away.

### **Goal 1: Ensure that all school-age children in the District are educated in sustainability and prepared for a changing green economy.**

*Target: By 2032, teach at least 50% of children in the District about sustainability concepts.*

#### **Action 1.1: Modernize all public school buildings. (Medium Term)**

To provide our youth the best educational environments possible, the District is currently implementing a comprehensive schools modernization initiative. So far, more than \$2 billion has been invested and an additional investment of \$1.5 billion during the next six years will modernize all public elementary, middle, and high school facilities.

#### **Action 1.2: Increase the quality and number of Early Childhood Development Centers. (Short Term)**

Intensive, high quality early education can close the achievement gap and ensure better educational outcomes for all children. In April 2012, Mayor Gray launched Early Success, a plan to provide all children with access to high quality early learning and development opportunities. The District has already increased funding to allow more children to be served in child development centers and at the same time the Office of the State Superintendent for Education plans to enhance the Quality Rating and Improvement System to assess and improve the quality of early and school age care and education programs.

### Action 1.3: Launch the implementation of the Environmental Literacy Plan (ELP) in school curriculum. (Short Term)

In 2010, the Healthy Schools Act called for an environmental literacy plan to integrate environmental education into the K-12 curriculum. The plan includes professional development opportunities for teachers, ideas on how to measure environmental literacy, and identifies governmental and nongovernmental entities that can assist schools. To launch the implementation of the ELP, sustainability educators will be identified in schools as part of the Budget Challenge. However, continued implementation of the ELP beyond this initial action will be required to ensure District students are truly environmentally literate.

## Goal 2: Ensure transparency in the District's sustainability agenda including future plans and past progress.

*Target: By 2032, expose 100% of District residents to Sustainable DC events and initiatives in their neighborhood.*

### Action 2.1: Reach community members in their daily lives with sustainability information. (Short Term)

Throughout the development of the Sustainable DC initiative, the planning team has used public events, meetings, focus groups, web sites, and email to communicate with as many residents and stakeholders as possible. As the implementation

plan is rolled out, the District will expand efforts to inform residents, workers, students, and visitors over the course of their daily lives. To get every resident involved and make information widely accessible, the District will continue existing outreach activities and develop new methods through public art installations, community hubs, smartphone applications, and a dedicated website celebrating green services, products, and businesses.

### Action 2.2: Feature the actions and impacts of residents and local community leaders in public sustainability campaigns. (Short Term)

People and organizations from all wards and every neighborhood of the District are making efforts to build a more sustainable city and world. Their passion to improving their communities is powerful and can inspire others. Many actions are simple, targeted at correcting past injustices and inequalities, and informed by diverse personal experiences. Sustainable DC will feature the stories of these leaders in community outreach and public campaigns, allowing people to share their motivations and experiences in implementing sustainable practices.

## CONCLUSION

Sustainable DC embraces our entire population in its goals, targets, and actions to bring the benefits of sustainable practices to all city residents, particularly those communities that need it most. New actions to improve equity are identified here and included in the different solutions throughout this plan.



# CLIMATE & ENVIRONMENT



We envision a District that will help rather than harm the environment at the local and global scales. We will reduce pollutants in the air and water to restore our natural environment and protect people's health. To combat global climate change, we will minimize and offset greenhouse gas emissions and achieve a net-zero carbon footprint. We will also adapt and prepare for potential hazards caused by variable temperatures and water levels to protect our residents and our economy.

## DEFINING THE CHALLENGE

The District faces long-standing challenges with water and air pollution, contamination of lands, and the preservation of natural spaces, tree canopy, and parks. Some issues, such as removing legacy pollution from the Anacostia River and contaminated soil, are highly complex and require technical expertise, time, and money to resolve. Other important issues such as caring for trees, picking up trash before it flows into our streams, or choosing to leave the car at home are simple opportunities for each of us to do our part for the environment. The solutions outlined in this plan focus on efforts to address environmental challenges and improve the quality of our environment for all District residents.

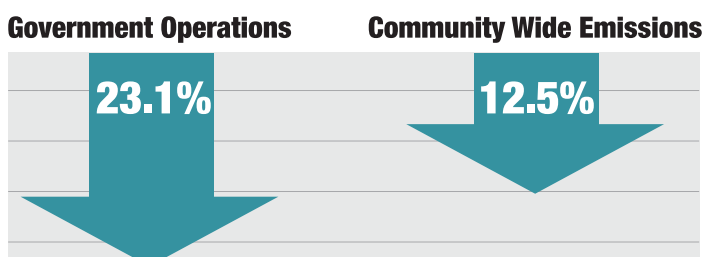
Locally and internationally, we must recognize that the effects of climate change are no longer theoretical. We are already experiencing the results of uncontrolled greenhouse gas emissions into the atmosphere and the impacts of a changing climate. Ten of the warmest years in the District's recorded history have

occurred since 1998.<sup>32</sup> Severe storms, such as Hurricane Sandy in 2012, cause millions of dollars of damage, disrupt services and daily life, and endanger our citizens.

Changing weather patterns and other environmental challenges are likely to become more severe as our climate changes. Hotter summer temperatures and more concentrated rainfall could result in poorer air and water quality. Intense storms and rising sea levels increase the risk of flooding across the city, particularly in low-lying areas near our rivers, including the National Mall. Higher winds topple trees and power lines, leaving neighborhoods without power for days—or more—at a time. Wildlife and their habitats are also highly vulnerable to climate change as these variations impact the ability of plant, fish, and animal species to survive.

By addressing local environmental threats, lowering our greenhouse gas emissions, and preparing for more extreme climate conditions, we will protect the District and keep our city healthy and beautiful.

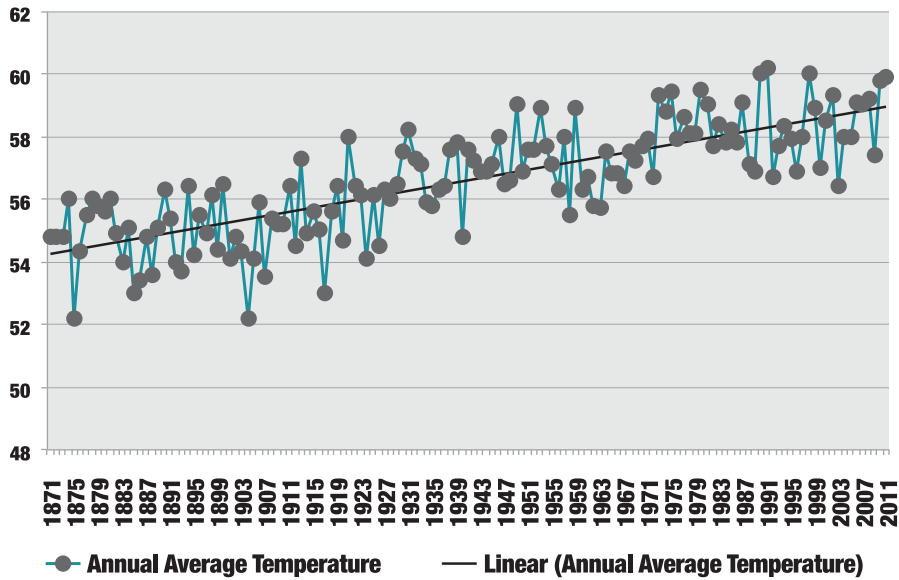
## GREENHOUSE GAS EMISSION REDUCTIONS IN DC<sup>33</sup> BETWEEN 2006 AND 2011



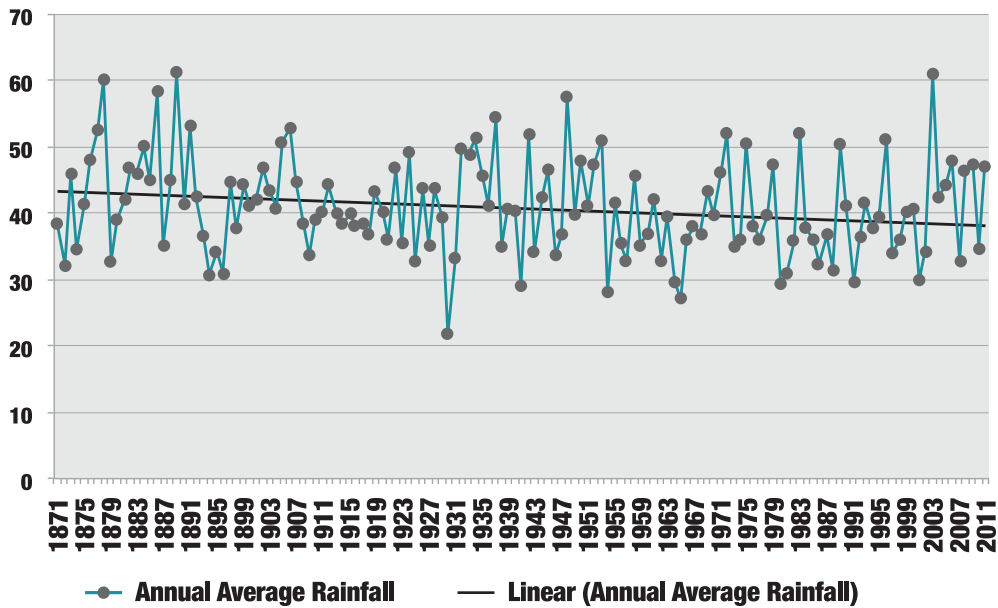
**8.9 MILLION:  
METRIC TONS OF  
CO<sub>2</sub>e PRODUCED  
IN DC IN 2011<sup>34</sup>**



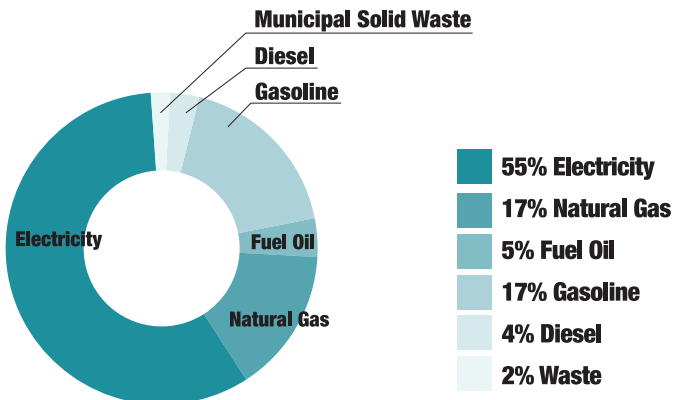
## INCREASING AVERAGE ANNUAL TEMPERATURE<sup>35</sup>



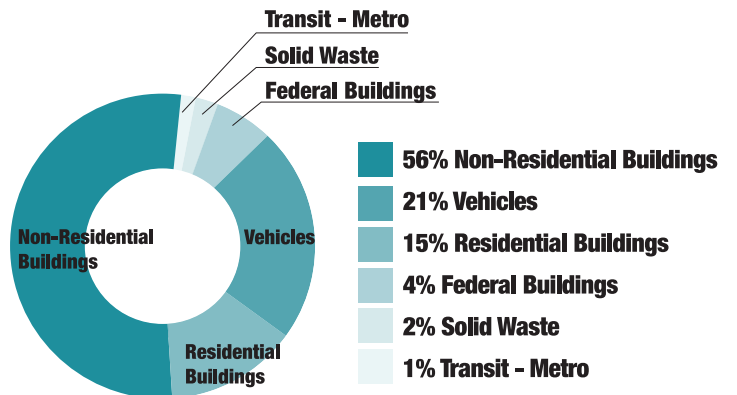
## DECREASING AVERAGE ANNUAL PRECIPITATION<sup>36</sup>



## DC GREENHOUSE GAS EMISSIONS BY SOURCE (2011)<sup>37</sup>



## DC GREENHOUSE GAS EMISSIONS BY SECTOR (2011)<sup>38</sup>



## *OVERCOMING THE CHALLENGE*

Improving environmental conditions locally and globally may seem daunting, but it is not too late to act. When added together, the individual actions of residents, District government, and private businesses and institutions will have a meaningful impact on local conditions and perhaps the global climate. The city has already begun taking action to improve air quality, reduce greenhouse gas emissions, and preserve water resources, biodiversity, and green space to protect the health of our residents and our environment.

### ***AIR QUALITY & EMISSIONS***

Air quality in the District is affected by emissions from vehicles, generators, boilers, industrial equipment, and sources of chemical pollution such as paints and aerosols. The District has regulations in place to minimize harmful effects, including requirements that all gasoline-fueled vehicles up to 26,000 pounds must pass an emissions test for vehicle registration. The District's engine idling law reduces vehicle emissions by controlling the amount of time a gasoline or diesel-powered commercial vehicle may be left running while parked, stopped, or standing. Other requirements, permits, and licenses are in place for stationary sources, such as power plants and generators.

### ***WATER RESOURCES***

The District is taking steps to improve our water quality and mitigate the risk of flooding. The city's strict Municipal Separate Storm Sewer Systems (MS4) Permit, issued by the US Environmental Protection Agency (EPA), tightens control of stormwater runoff from impervious surfaces and sets new requirements for on-site stormwater management for new and renovated developments using green roofs, tree planting, and a range of other landscape solutions. The RiverSmart Homes and RiverSmart Schools programs, together with green roof incentives, are encouraging the use of green infrastructure to manage stormwater. These measures also reduce our risk of flooding and the risk of combined sewer overflows, a major cause of pollution in our rivers. The Anacostia 2032 Plan for a Fishable and Swimmable Anacostia River includes real-time water quality information to monitor the health of our waterways.

## ***BIODIVERSITY & GREEN SPACE***

The Fisheries and Wildlife Division of the District Department of the Environment surveys, manages, and conserves fish and wildlife populations, and their habitats. To accomplish this effort, the District has implemented a comprehensive survey to understand the species that call the District home. The 2006 Wildlife Action Plan identifies priority species for conservation and long-term strategies to protect habitats. The District is also taking steps to expand green space by developing environmentally sensitive infrastructure networks throughout the city and to increase our tree canopy for the benefit of birds and other migratory species.

### ***CLIMATE CHANGE***

In 2006, the District calculated its carbon footprint to understand where greenhouse gas emissions are coming from and how to best reduce impacts on the climate. The city recalculated its emissions in 2011 to see what has changed over the last five years and found that we have reduced our emissions by 12.5%. The District will issue a Climate Action Plan that, in coordination with Sustainable DC, outlines specific measures to reduce emissions 50% below 2006 levels by 2032 and 80% by 2050. This plan will address the ways residents, businesses, and the District government can reduce our climate impact by limiting greenhouse gas emissions and ensuring the ongoing efficiency and competitiveness of our economy. The District is also starting to outline ways to adapt buildings, land use policies and wastewater, transportation, and energy infrastructures to respond to a changing climate.

## *GOALS, TARGETS, AND ACTIONS*

The city has established goals, targets, and actions that focus primarily on efforts to improve our climate and environment. In addition to addressing the climate and the environment, the actions discussed below relate to and influence actions in each of the other challenges and solutions chapters of this plan. The goals, targets and actions presented emphasize short-term projects ready for immediate implementation. Medium- and long-term actions will involve active consultation with stakeholders to craft the details surrounding new policies, programs, regulations, and other proposals that may be five to twenty years away.





## Goal 1: Minimize the generation of greenhouse gas emissions from all sources.

*Target: By 2032, reduce greenhouse gas emissions by 50%.*

**Action 1.1: Create online tools that allow people to view and share greenhouse gas emissions data and make more informed choices. (Short Term)**

Through the release of the Climate Action Plan and greenhouse gas inventory, the District will increase its transparency of climate change related information for residents, researchers, and others to view and share. Efforts to implement climate plans will include a series of interactive online tools such as user-friendly carbon calculators, online information portals, and forums that will enable people to

explore our District carbon data over time, calculate personal carbon footprints, and contribute ideas for District carbon reduction initiatives.

**Action 1.2: Create financial tools that support climate protection programs by capturing the environmental costs of products and services. (Short Term)**

The products and services that we buy, whether as organizations or individuals, have an environmental cost beyond the economic price we pay. The environmental cost reflects the use of scarce natural resources, the emission of greenhouse gases, and the impacts of pollution from industrial processes. These costs are not currently captured within financial accounting procedures and there is therefore no economic incentive for manufacturers and service providers to reduce environmental damages.

The District will incentivize reductions in greenhouse gas emissions by developing financial tools to capture the “true” costs of products and services, including their costs of environmental impacts. One incentive could be in the form of a fee-and-dividend carbon tax that would first require a feasibility study to understand how to design and implement such a progressive tool. This tax would place a fee on all energy use; fossil fuels, with the highest carbon content, would incur the highest fees, while cleaner fuels would incur the lowest fees. As fees increase over time, users would be encouraged to switch to cleaner fuels and reduce their emissions. The revenue generated by the carbon tax would be reinvested in future climate protection, preparedness, and adaptation programs.

**Action 1.3: Report District emissions on a regular basis to track the reductions that can be attributed to specific initiatives. (Short Term)**

If the District is going to make cost-effective investments to reduce greenhouse gas emissions, it needs to understand how each of its efforts is affecting the city’s carbon footprint. To do so, the District will monitor its emissions in greater detail each year to ensure reduction strategies are targeted and scaled appropriately. The District will collaborate with regional planning organizations, public utilities, and federal partners to ensure that an accurate District-wide greenhouse gas inventory is calculated on a consistent basis to help inform carbon reduction strategies.

**Goal 2: Advance physical adaptation and human preparedness to increase the District’s resilience to future climate change.**

*Target: By 2032, require all new building and major infrastructure projects to undergo climate change impact analysis as part of the regulatory planning process.*

**Action 2.1: Evaluate the vulnerability of the District’s energy infrastructure to the anticipated impacts of climate change. (Short Term)**

Recent severe weather has led to prolonged power outages for many residents and businesses. As climate change leads to more frequent severe storms, higher average temperatures, and greater extremes of heat, the city must be prepared to provide reliable power. The District will complete a comprehensive evaluation of the vulnerability of our energy infrastructure, working in tandem with existing efforts on climate adaptation.

**Action 2.2: Prepare District emergency services to respond to severe climate-related events, such as extreme heat, storms, and flooding. (Medium Term)**

As the global climate changes, the District is likely to witness more frequent and more severe weather events including major storms, hurricanes, floods, and temperature extremes. The city’s emergency services, utilities, and disaster preparedness plans will need to be strengthened in response to the projected increase in emergencies which may cause property damage, utility failures, and human health risks. The District will plan for these changes now to ensure that emergency services are able to respond rapidly and efficiently to potential disasters.

**Action 2.3: Require adaptation solutions as part of planning consent for new developments. (Medium Term)**

The buildings we construct and sites we develop today will still be with us in 50 years. By then, the prevailing climate conditions may be very different. The District must ensure





that new developments begin to integrate climate adaptation solutions to protect future residents and businesses from severe events and provide adaptive comfort for the long term. The City will adjust planning procedures and project review to require an evaluation of conditions related to climate change and implementation of adaptation solutions. Through this action, the District will ensure that cost-effective adaptation strategies are rolled out progressively throughout the city.

### **Action 2.4: Ensure transportation infrastructure can withstand the upper ranges of projected climate change impacts. (Long Term)**

The success of our city depends on transportation networks that move people and goods between key locations. The city's existing transportation infrastructure is growing old and increasingly vulnerable to extreme temperatures and storms.

A resilient transportation system is necessary to support a growing city and growing economy. The District Department of Transportation has begun a citywide assessment of climate impacts and opportunities to create more resilient infrastructure. The District will incorporate climate change projections into the designs of future transportation projects so that our future transportation infrastructure can withstand more intense climate change impacts.

### **CONCLUSION**

A dedicated focus on our local and global environmental challenges, improved cross-agency and public/private coordination, and strategic planning for a secure future are needed to reflect the complexity of our climate and environment challenges.





# SOLUTIONS

This section discusses specific goals, targets, and actions for the seven distinct topics being addressed by this plan: Built Environment, Energy, Food, Nature, Transportation, Waste, and Water. The actions described in each solution respond to areas of concern in the challenges.

For each solution, the plan describes:

- *A definition of the issue and the District's current conditions;*
- *A broad vision for what we can achieve over time;*
- *Relationships among each solution and the plan's four priority challenges;*
- *Specific actions that the plan will initiate or continue;*
- *A list of ways in which District residents can get involved;*
- *What these achievements will mean to the District and its residents.*



# BUILT ENVIRONMENT



We envision a District where innovative design and technology are applied to buildings and neighborhoods to create a vibrant and resilient urban environment. Our neighborhoods will provide safe, comfortable homes and access to essential services so all residents can lead healthy and prosperous lives. Future growth will be strategically targeted to preserve the character and identity of our neighborhoods. Our buildings and neighborhoods will improve our quality of life, economic competitiveness, and natural environment.

## INTRODUCTION

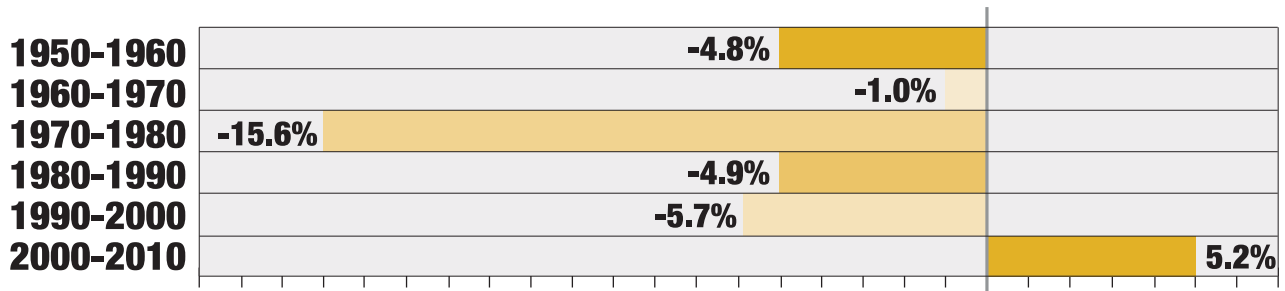
The built environment includes the human-made components of our city and includes everything from housing, offices, and stores, to highways, utility networks, and rail lines. Because it surrounds us, the built environment is fundamental to the way our city operates and how we live our lives.

The District is already an attractive place to live, work, and play – a major reason why our city has begun to reverse a 50-plus-year decline in population. At our current growth rate, we anticipate 250,000 new residents over the next 20 years who will bring increased resources, talent, and diversity to an already vibrant and active community. As the city grows, we need to ensure both existing and new residents have access to opportunities and resources so that everyone enjoys the benefits of growth that is sustainable. To embrace the

opportunities and challenges of growing our economy and population, Sustainable DC presents integrated strategies to drive growth that is sustainable through high-performance buildings and infrastructure.

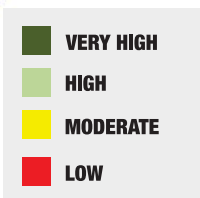
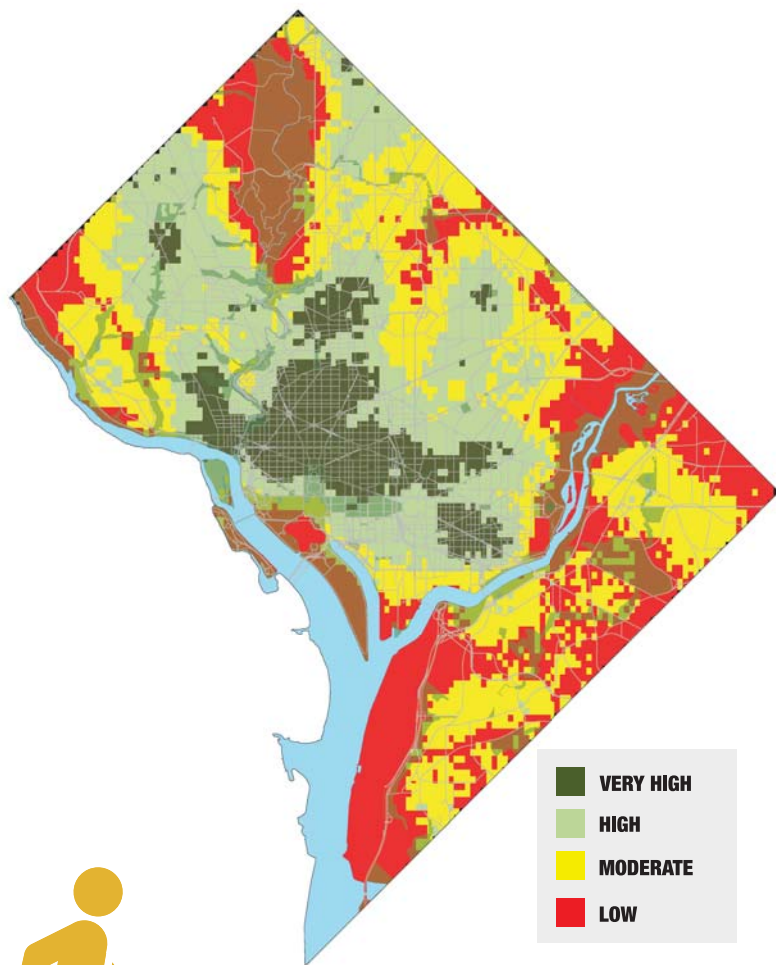
Smart new building design and upgrades to infrastructure are needed to improve the quality of life for our current population and direct future growth. Currently, the District has a large, complex, and aging infrastructure system that presents both opportunities and challenges. Reducing energy, water, and infrastructure costs through better building and infrastructure performance will result in huge financial savings across the city, lowering operating costs and improving affordability for residents and businesses alike. Innovative development strategies will create healthier places to live and work and expand opportunities for jobs and recreation.

## Historic Population Growth Rates for DC<sup>39</sup>



Percentage Population Change by Decade

# WALKABILITY WASHINGTON, DC<sup>40</sup>



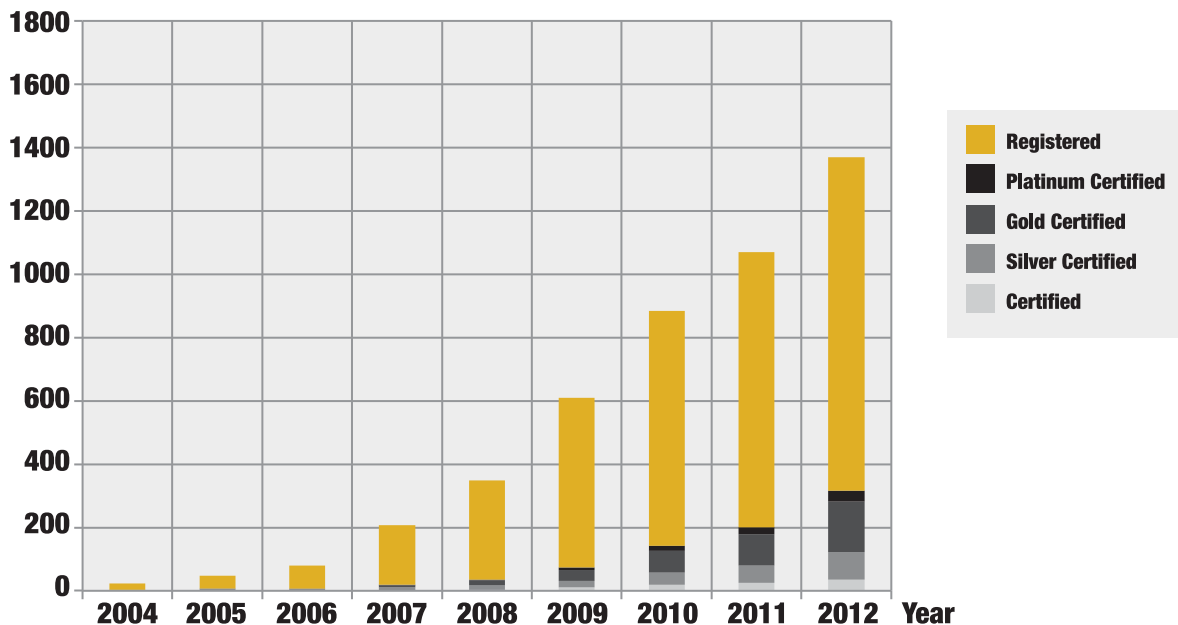
**THE DISTRICT RANKED AS THE 7<sup>TH</sup> MOST WALKABLE CITY IN THE US<sup>41</sup>**

**OVER 50% OF PROPERTY IN THE DISTRICT IS OWNED BY FEDERAL GOVERNMENT OR OTHER TAX-EXEMPT ENTITIES<sup>42</sup>**



**300,000: APPROXIMATE NUMBER OF RESIDENTIAL UNITS IN DC, INCLUDING HOUSES, CONDOS, COOPERATIVES, AND APARTMENTS<sup>43</sup>**

## LEED PROJECTS PER YEAR IN THE DISTRICT<sup>44</sup>





## HOW DO ACTIONS IN THE BUILT ENVIRONMENT HELP MEET OUR CHALLENGES?

**Jobs & Economy** – By investing in the built environment, we can encourage growth and diversification in our economy by making sure businesses and institutions have the specialized resources they need to expand locally using greener goods and services. Our commitment to enhance the quality and resilience of our built environment will create new jobs by increasing demand for new skills related to sustainable design, construction, and regeneration projects.

**Health & Wellness** – Improving the quality of our buildings will help create healthier conditions for residents to live, work, and play. Infrastructure improvements will improve health-related environmental conditions (such as poor air quality) and encourage more physical activity in our daily lives.

**Equity & Diversity** – Effective planning for the built environment will deliver improvements in all neighborhoods while prioritizing help to disadvantaged communities. Incorporating sustainable practices in large, city-led projects and future growth will ensure the city is affordable for existing residents while bringing new services to underserved areas. Affordability of and accessibility to the facilities and services in our community are central to our approach.

**Climate & Environment** – The way we build and operate our buildings and infrastructure literally shapes our surroundings and directly affects the quality of the air we breathe and water we drink as well as the health of our rivers and natural habitat. Because buildings generate 75% of all greenhouse gas emissions in the District<sup>45</sup>, better building performance can have an enormous impact on our carbon footprint. Carefully designed buildings and well planned neighborhoods can also prepare us for increasingly variable temperatures, rising waters, and extreme weather events.

## WHAT DOES THIS MEAN FOR YOU?

Engaging in the actions described below will bring many benefits to our city. Some of the outcomes for residents include:

### **DENSITY**

Higher density neighborhoods use land and resources more efficiently, bringing people closer to transportation, services, and jobs and saving money through lower utility bills and greater walkability. Increased density can also promote social participation, connectedness, and increased physical activity within the local community.

### **MIXED USE**

Providing a greater diversity of facilities in all wards will ensure walkable access, reducing the costs of travel around the city. Mixed uses means greater availability of essential services such as fresh food retail, healthcare, and recreation. Sustainable DC will diversify uses and create new opportunities for employment and innovation within the existing urban fabric.

### **RESILIENCE**

Climate change means our buildings and infrastructure must withstand new environmental pressures. To reduce the risk and cost of serious damage or injury caused by extreme weather events, increasingly hot summers, and rising sea levels we must appropriately renovate existing buildings and develop new ones. As larger, unpredictable storms cost our city millions of dollars, we must also make sure our infrastructure can provide reliable utility and transportation services during environmental disruptions. Convenient, mixed-use urban neighborhoods come with the added benefits of walkability and lower energy consumption that can lower the costs of living for more households in the city.

### **HIGH-PERFORMANCE**

Enhancing buildings and infrastructure performance ensures efficient resource use, saves money, reduces pollution, and improves the quality of indoor environments for overall health benefits. The District is already a leader in developing new high-performance, LEED-certified buildings. To ensure high performance in all buildings, the District will focus improvement and efficiency measures on existing homes and buildings currently unaffected by existing regulations.

## GOALS, TARGETS, AND ACTIONS

In order to solve our challenges, this plan lays out the following goals, targets, and actions targeted for the built environment.

While these actions are focused on increasing density, strengthening neighborhoods, greening existing buildings, and making new buildings sustainable, they also contribute to success in other areas of the plan. The goals, targets and actions emphasize short-term projects ready for immediate implementation. Medium- and long-term actions will involve active consultation with all stakeholders to carefully craft the details surrounding new policies, programs, regulations, and other proposals that may be five to twenty years away.

### **Goal 1: Increase urban density to accommodate future population growth within the District's existing urban area.**

*Target: By 2032, increase the District population by a net of 250,000 residents.*

#### **Action 1.1: Increase affordable housing in the District. (Long Term)**

Consistent and long-term financing for affordable housing comes from many sources including federal budgets, local funds, and other development projects. Because affordable housing investments cost as much as market-rate housing and can take many years to complete, a consistent, reliable source of funding needs to be in place to keep this important local priority moving forward. In order to secure funding for a long-term supply of affordable housing, the District, together with local housing partners, will complete a full review of available funding and develop an action plan for securing new funds to be allocated to necessary housing investments.

#### **Action 1.2: Expand brownfield redevelopment incentives and certification programs. (Long Term)**

Brownfield sites are vacant areas of land that have been previously developed and may be contaminated from industrial uses. Compared with many cities, the District has relatively few of these sites. The city government recommends remediation and reuse of these brownfield sites to improve environmental quality, maximize the productive use of land, and ensure the continued vitality of our neighborhoods.

The District Department of Environment (DDOE) is taking steps to clean contaminated sites and encourage brownfield reuse and will complete an economic analysis for implementing new tax credits for development on brownfield sites. The District will also evaluate the use of a certification program to assure high standards for clean-up efforts.

#### **Action 1.3: Reduce required parking minimums and restrict surface parking for large developments. (Short Term)**

Ground-level car parking creates a range of undesirable effects such as inactive street frontage, increased stormwater runoff and waterway pollution, and warmer urban heat islands. Currently, new developments are required to provide a certain amount of parking. To reduce the impact of parking surfaces, the District will reduce the minimum area of parking that developers must provide with the opportunity to provide zero parking in select areas near transit where private vehicles are less necessary. The updated zoning regulation will also encourage developers to construct underground parking in buildings that are at least 50,000 square feet in size.

### Action 1.4: Modify zoning regulations to allow accessory dwellings such as apartments over garages or in basements. (Short Term)

Accessory dwellings are small housing units constructed within or near existing homes, often next to alleys or atop garages. These units increase the supply of affordable housing and can provide homeowners with additional income. California, Massachusetts, Vermont, and Washington state have enacted laws encouraging or requiring localities to permit accessory dwellings that conform to design standards.

Updated zoning requirements will allow homeowners to add accessory dwellings in existing structures where the main building is greater than a certain size or where other small-scale structures exist on their property. The size of the accessory unit should be no more than 30% of the total habitable square footage of the main house and will require all other zoning and design requirements are met.

## Goal 2: Develop active and vibrant neighborhoods to create new economic opportunity and support a high quality of life.

*Target: By 2032, provide a variety of amenities and services within a 20-minute walk of all residents.*

### Action 2.1: Ease permitting requirements for temporary arts, community, and business uses. (Short Term)

The DC Office of Planning's Temporary Urbanism initiative transforms vacant spaces into vibrant places by encouraging temporary land uses that activate neighborhoods by adding new life to commercial corridors and providing residents with more shopping and entertainment options. The initiative is already being used to transform empty sites, including a former library kiosk on H Street NE that was transformed into a pop-up retail space with more than 1,600 visitors in a month. Arts and culture "temporiums" were developed in vacant storefronts and empty lots in Brookland, Anacostia, Deanwood, and 14th Street and have since been converted into active arts, performance, and retail spaces. To continue

upgrading vacant spaces into community amenities, the District will streamline the temporary development permit process available for arts, community, and business uses.

### Action 2.2: Create a government-backed revolving loan fund to support new businesses with a priority for those developed by District residents. (Medium Term)

The city already has taken action to support the growth of small businesses. DC tech incentives offer economic catalysts to reduce the cost of doing business for technology companies seeking to establish themselves or expand in the District. Other initiatives provide incentives for businesses to locate in particular Enterprise Zones or Historically Underutilized Business Zones (HUB Zones).

The District will expand incentives by creating a government-backed revolving loan fund to finance small business start-ups and expansion to create permanent jobs for District residents. By combining low-interest revolving loan funds with traditional bank financing, more borrowers can access financing at below-market rates to purchase land, property, and equipment, or for working capital.

### Action 2.3: Convert five vacant buildings into permanent cultural or business incubation centers. (Long Term)

Business incubators provide a place for small businesses to rent shared work area, open retail space, learn new skills, and network with like-minded entrepreneurs. Incubators can inspire the growth of new industry, jobs, and local cultural activity.

The District will partner with local stakeholders and community organizations to transform five vacant buildings into incubation centers for business or cultural activity, targeting areas east of the Anacostia River. Working with business leaders and training providers, the District will support a coaching and mentoring program for small businesses locating in incubator spaces.

Financial support for five community-based incubators could generate more than 18,500 jobs within five years.





#### **Action 2.4: Triple the number of Live Near Your Work grants. (Medium Term)**

Live Near Your Work grants encourage people to live within walking distance of their workplaces, reducing traffic congestion and pressure on public transit while creating dynamic full-service neighborhoods. Expanding a pilot project administered by the Office of Planning (OP), the District will provide grants of up to \$6,000 to employees who purchase new homes close to work. An additional \$6,000 would be provided by the employer. Employees who are already residents of the District would have the opportunity to combine this program with the Home Purchase Assistance Program (HPAP).

#### **Action 2.5: Locate new affordable housing in walkable neighborhoods. (Long Term)**

Living in walkable neighborhoods offers many health and economic benefits and makes life more convenient, but research in the District has revealed that walkable communities generally have the most costly housing. Ensuring expansion of affordable housing in walkable neighborhoods will allow lower-income households in the city to have better access to nearby amenities and public transit options. In the future, the District will prioritize funding for affordable housing developments in existing and emerging walkable neighborhoods. These areas may be closely correlated with existing and future transit services such as Metrorail or streetcar.



## Action 2.6: Implement the Southwest Ecodistrict Initiative and Maryland Avenue Small Area Plan. (Long Term)

The Southwest Ecodistrict Initiative and the Maryland Avenue Plan aims to transform a 15-block federal precinct south of the National Mall into a vibrant and walkable neighborhood. The development is intended to create such a neighborhood through energy and resource efficient design, expanded transportation options, and sustainable development of large-scale localized infrastructure systems. The Southwest Ecodistrict and Maryland Avenue Small Area Plan provide general development guidelines, suggested zoning changes, and roadmaps for reducing emissions, conserving resources, increasing transit capacity, and enhancing landscaping between the National Mall and Southwest waterfront. The District will coordinate with the federal government to implement the plan, creating a showcase for sustainable development.

### Goal 3: Improve the sustainability performance of existing buildings.

*Target: By 2032, retrofit 100% of existing commercial and multi-family buildings to achieve net-zero energy standards.*

#### Action 3.1: Rehabilitate all public housing to be green, healthy, and capable of meeting net-zero energy standards. (Long Term)

The DC Housing Authority (DCHA) is retrofitting public housing to improve energy and water efficiency and the health of residents through routine maintenance and special improvement projects. Energy conservation measures include exterior lighting retrofits, as well as the installation of efficient flue gas recovery systems at 11 properties. The new Sheridan Station property was recently awarded LEED Platinum certification, the highest green building rating available from the US Green Building Council. By 2032, the District will rehabilitate all public housing to be healthy, efficient, and prepared to meet net-zero energy standards through energy-saving measures and renewable energy generation technologies. The result will be healthier homes and lower energy bills for residents.

Rehabilitating all DC Housing Authority-owned housing to meet net-zero energy standards could support 250 one-year full-time jobs over the next five years.

#### FOR EXAMPLE...

**Empowerhouse** is the first passive house in DC, thanks to its air-tight building envelope, super-insulated walls, accessible green roof, and water and energy efficient technologies. While Empowerhouse started as a demonstration project for innovative green building techniques, it was recently converted into a duplex for two families in Deanwood. Not only is the house green and healthy, it provides enough energy to light, heat and cool itself, power appliances, and saves the residents \$2,300 annually! The benefits of Empowerhouse go beyond just those two families—the house is also used to educate the community on gardening, solar power, and sustainable lifestyles. This house is aptly named—it truly is empowering the District to build a better, greener future. Learn more at <http://parsit.parsons.edu>.

#### Action 3.2: Eliminate environmental health threats such as mold, lead, and carbon monoxide in at least 50% of the District's affordable housing. (Medium Term)

The Healthy Homes Program led by the District Department of Environment (DDOE) targets households with children suffering from severe asthma or with a blood lead concentration of concern as well as older properties in poor condition where a young child or a pregnant woman are present. After homes are assessed for threats such as mold, lead, and carbon monoxide the District works with property owners to reduce risks and provide an interim care plan. In addition, the District's Lead Safe Washington program provides funds from the Department of Housing and Community Development (DHCD) to identify and reduce lead-based paint hazards in low-income homes. The District will expand both programs to eliminate environmental health threats in at least 50% of the District's affordable housing stock by the year 2020.

#### Action 3.3: Expand existing programs to train 100 District residents in the latest green construction skills. (Medium Term)

The Department of Employment Services (DOES) is working with training providers to implement programs in green construction skills and to link training directly to city-managed development

projects through a workforce intermediary. The program will train 100 District residents and graduates from accredited training programs will be eligible to apply directly for secure long-term local employment on District projects.

### Action 3.4: Build public-private partnerships to expand best practices for building operations and maintenance. (Long Term)

The District will facilitate a network of building owners, managers, and tenants to promote best practice building operations and maintenance practices. Through public-private partnerships, the city will share knowledge and develop training and tools to implement best practices in commercial and public buildings. Tools including the Smarter Business Challenge developed by the DowntownDC Business Improvement District and DDOE will support networking, information sharing, and program adoption.

#### FOR EXAMPLE...

In **Helsinki, Finland**, the city government has introduced a certification process for businesses. Called EcoCompass, the program enables companies to:

- Demonstrate environmental performance;
- Improve awareness and transparency of information;
- Deliver environmental benefits such as reductions in energy, waste, water, and chemical use;
- Receive a comprehensive evaluation of operations and support in creating an environmental management program which is audited and certified after 6-12 months.

### Action 3.5: Retrofit and modernize all public buildings to at least the LEED Gold standard or equivalent green building certification. (Long Term)

Approximately 85% of the buildings that will exist in 2032 are already here today. The city has an obligation to ensure its public buildings are as efficient as possible and can withstand the resource and environmental challenges of the future. The city has already started to upgrade public buildings through initiatives such as DC Public Schools' modernization program. Over the next five years, the District will begin retrofitting all public buildings, including schools, libraries, and other municipal facilities, so that these buildings meet at least a

LEED Gold standard for existing buildings. This effort will set the city on a strong trajectory for continual improvement and will align with developing performance standards over time. Committing to making all public buildings meet more stringent environmental standards is an opportunity for the District government to lead by example.

Retrofitting and modernizing District public schools, libraries, and other public buildings to LEED Gold or higher standards will create more than 3,400 one-year full-time jobs.

### Goal 4: Ensure the highest standards of green building design for new construction.

*Target: By 2032, meet net-zero energy use standards with all new construction projects.*

### Action 4.1: Update the Green Building Act to require higher levels of LEED certification. (Medium Term)

Under the District's Green Building Act of 2006, all new government buildings and private commercial buildings of at least 50,000 square feet must meet LEED certified standards. The District will work with stakeholders to amend the scope of the Green Building Act to raise the level of LEED certification to Gold for public projects and Silver for all large private buildings or ensure equivalent standards of environmental performance are achieved through the building code.

### Action 4.2: Provide incentives for new building projects to achieve at least the LEED Gold standard certification or equivalent. (Medium Term)

Over the next five years, the District will offer new incentives to encourage all new building design and construction projects to achieve a minimum of LEED Gold certification or equivalent. In doing so, the city will ensure that future buildings are resource-efficient, environmentally sustainable, healthy, and resilient to a changing climate. Incentives may include expedited permitting processes or reduced permitting fees for qualifying buildings.

### Action 4.3: Incorporate best practice sustainability principles into neighborhood planning. (Short Term)

Through the ongoing revision of the District's zoning regulations, the city is integrating sustainability principles into neighborhood-scale planning and development. The District is also ensuring key planning documents reflect sustainable goals including the One City Action Plan and major redevelopment projects such as Saint Elizabeths East Campus and the Walter Reed Army Medical Center. The District will ensure that sustainability is fully integrated into planning and development processes including small area plans, planned-unit developments, and large-scale public projects.

### Action 4.4: Adopt the latest green construction codes for all new construction and major renovations. (Short Term)

The District will adopt a Green Construction Code based on the 2012 International Green Construction Code and other code updates to require greener practices in building design and construction. The codes will also remove barriers to adopting certain green practices. In the future, the city will ensure the timely adoption of future code updates to integrate new and emerging best practices, making the District's construction sector a global leader in high-performance green buildings.

### Action 4.5: Require all new buildings to be net-zero or net-positive. (Long Term)

Following the precedent set by governments around the world, the District may require all new buildings from 2025 onwards to achieve net-zero energy use. This law means that building designs will maximize energy efficiency through demand reduction strategies and incorporate renewable energy sources. Higher performing buildings that produce more energy than they consume (known as net-positive) could feed surplus energy back into the electrical grid to provide energy for others in the city. The District will work with stakeholders to implement this requirement in a phased approach to allow further development of industry practices and adoption of new performance standards.

#### **FOR EXAMPLE...**

In 2008, the **California Public Utilities Commission** prepared a strategic plan calling for net-zero energy commercial buildings by 2030 and net-zero energy residential construction by 2020. The action plan proposes strategies for moving the market toward those goals by raising minimum energy performance through codes, expanding energy codes to address all energy end uses, and developing financial tools for supporting net-zero energy construction. For existing buildings, the action plan suggests tightening code thresholds, requiring energy and carbon emissions labeling, and supporting occupant feedback and training.<sup>46</sup>

### **HOW CAN YOU HELP TODAY?**

Sustainable DC is making strides to make sure you—the residents, workers, and visitors of DC—have the opportunity to participate in making the District the healthiest, greenest, and most livable city in the country. The following actions outline how you can begin to get involved in this work.

#### **COMMUNITY ACTION 1: EDUCATION**

Community partners could reach out to schools, civic groups, and faith groups to teach them about sustainable building technologies and systems that people could retrofit into their own homes and apartments. Such strategies might include increased insulation, high-efficiency window replacements, and replacing gaskets and other sealants that tend to fail over time.

#### **COMMUNITY ACTION 2: WEATHERIZATION**

Building performance can be drastically improved with proper maintenance. Building maintenance staff and community partners could embark on weatherization projects across the city to improve building energy consumption.

### **CONCLUSION**

Creating a sustainable built environment will require renovation of existing buildings and infrastructure while ensuring the highest standards are met for new construction. Sustainable DC will ensure that our city leads the building and construction industry through a supportive regulatory environment.





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# ENERGY



We envision a District that will be a world leader in energy efficiency, reliability, and independence. The city will set an example for the nation in making the transition to affordable, clean, and locally generated renewable energy. By shifting to clean energy and smarter consumption, we will reduce resource use and greenhouse gas emissions while building new green industries and jobs for District residents.

## INTRODUCTION

We use energy to heat and cool our homes, light our living and working spaces, transport us from one place to another, clean our water, and power the many devices we rely on every day. As recent power outages have made clear, our lives are increasingly dependent on energy, making a clean and reliable supply more important than ever. The city has an enormous opportunity, and some requirements, to promote greater efficiency and local renewable energy production that will reduce the District's greenhouse gas emissions and curb the impacts of climate change. A highly efficient city with a reliable supply of locally and regionally produced clean energy will be prepared to face future energy price fluctuations and unreliability.


As our city continues to grow, our demand for energy also increases. Among major US cities, the District has one of the highest rates of energy consumption per capita.<sup>47</sup>

Many buildings leak heat and air conditioning, and lights and computers stay on even when they are not in use. We can save money, reduce our carbon footprint, and reduce demand just by identifying where we can conserve energy.

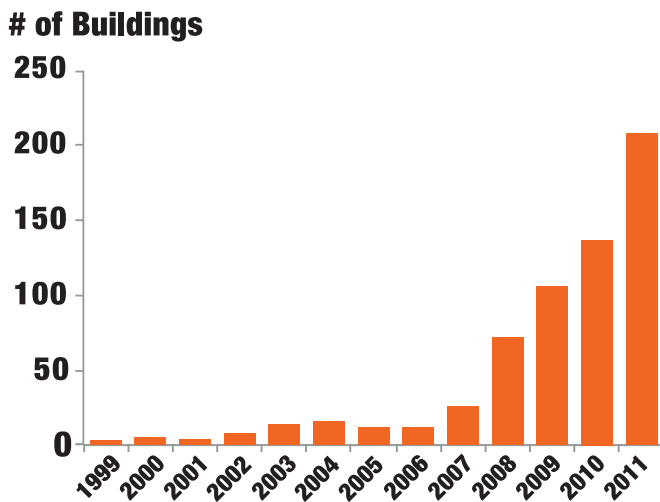
Currently, the majority of the District's electricity is transmitted from distant coal-burning power plants that produce enormous amounts of pollutants and greenhouse gases. Renewable energy takes advantage of resources already available within the District's borders—heat and light from the sun and heating or cooling from the earth are some of the sources we can tap locally. Expanding diverse sources of local generation will create a robust energy system that is more secure and keeps the money spent on energy here to support a stronger economy within the District.

Our city also has an aging power infrastructure that is vulnerable to extreme weather and excessive demand. Every season poses threats from extreme weather such as hurricanes, snow storms, and high temperatures that can cut off power. We need to ensure that our future demand for energy is satisfied with clean, efficient sources and reliable energy infrastructure.

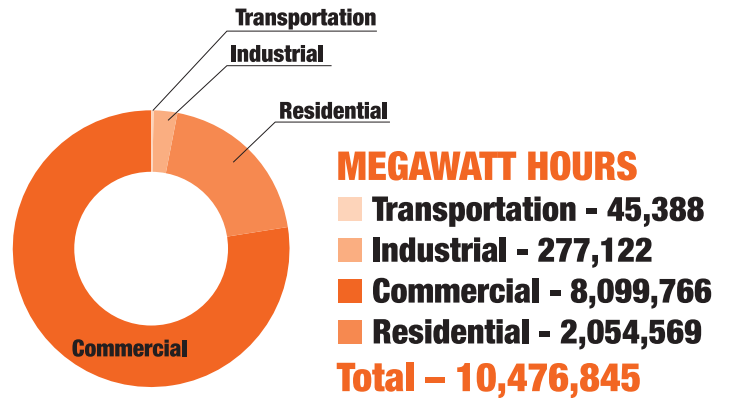
**13.35¢**   
**AVERAGE RETAIL PRICE  
PER kWh OF ENERGY IN DC<sup>48</sup>**

**129,000**   
**RESIDENTS LEFT WITHOUT POWER  
DURING HURRICANE ISABEL (2003) BECAUSE  
OF DOWNED ELECTRICITY LINES<sup>49</sup>**

## ENERGY STAR LABELED BUILDINGS<sup>50</sup>



# RETAIL SALES OF ELECTRICITY TO END-USE SECTORS<sup>51</sup>



## HOW DO ACTIONS IN ENERGY HELP MEET OUR CHALLENGES?

**Jobs & Economy** – Improving our energy efficiency will contribute to a more competitive, innovative, and sustainable economy for the District. Adopting smarter, more efficient energy strategies will create demand for new skills and jobs in energy auditing, monitoring, and maintenance. Clean energy jobs will be available to residents at all levels of education and skill sets and allow workers to move up a career ladder. Ultimately, more sustainable energy systems will help us do more with less, maintain, and improve our quality of life while expanding job opportunities in the District.

**Health & Wellness** – By shifting away from burning fossil fuels, we will move to low and no-carbon energy supplies that reduce greenhouse gas emissions and air pollutants that lead to chronic health conditions such as cardiovascular and respiratory diseases including asthma. Reducing reliance on fossil fuels will improve the health and well-being of residents.

**Equity & Diversity** – Energy bills account for a large and increasing portion of housing costs, especially for low-income families. Improved energy efficiency and on-site renewable energy help households save money by stabilizing energy prices. Increasing the use of renewable energy will also improve air quality across the city for all residents.

**Climate & Environment** – By shifting away from fossil fuels such as oil and coal, we will reduce the negative environmental consequences of mining, drilling, and the pollution that results from burning fossil fuels. Low carbon and renewable energy supplies will reduce our impact on climate

change by reducing carbon emissions and making better use of natural resources.

## WHAT DOES THIS MEAN FOR YOU?

Engaging in the actions described below will bring many benefits to our city. Some of the outcomes for residents include:

### LOWER ENERGY COSTS

Improving energy efficiency and reducing energy demand in our buildings and infrastructure will help reduce the amount of money we spend on energy. Reducing demand on the electrical grid will make our energy system more reliable and less expensive to run and upgrade.

### CLEANER AIR

Increasing energy efficiency and expanding renewable energy use will reduce emissions of greenhouse gases and toxic pollutants, improving air quality while helping curb future climate change. Since our electricity use generates the greatest quantity of greenhouse gas emissions for the District,<sup>52</sup> we can substantially reduce our carbon footprint by more efficiently using electricity.

### ENERGY SECURITY

More than any other element of our city, our energy network enables the District to achieve a modern, competitive economy. Maintaining a reliable energy supply is critical to ensure we can withstand sudden shock events such as price fluctuations, resource scarcity, and severe weather. Reducing

our energy use will allow us to increase density without overburdening our infrastructure. Increasing the supply of locally produced energy will generate a stronger economy and job market in the District.

## GOALS, TARGETS, AND ACTIONS

In order to solve our challenges, this plan lays out the following goals, targets, and actions that focus on energy. While these actions are aimed at improving energy efficiency, increasing renewable energy use, and modernizing energy infrastructure, they also contribute to success in other areas of the plan. The goals, targets and actions emphasize short-term projects ready for immediate implementation. Medium- and long-term actions will involve active consultation with all stakeholders to craft the details surrounding new policies, programs, regulations, and other proposals that may be five to twenty years away.

### Goal 1: Improve the efficiency of energy use to reduce overall consumption.

*Target: By 2032, cut citywide energy use by 50%.*

#### Action 1.1: Require building energy audits and disclosure of energy performance. (Long Term)

Almost three-quarters of energy consumed in the District is used to operate buildings,<sup>53</sup> including heating, lighting, and air-conditioning. To improve our efficiency and reduce energy use, we need to monitor and manage building energy performance more closely.

The District has already taken steps to make building energy use more transparent with programs such as ENERGY STAR benchmarking disclosure for large buildings, the DC Sustainable Energy Utility that supports home and commercial energy audits and efficiency retrofits, and a low-income multifamily Weatherization Assistance Program (WAP).

To encourage building owners, tenants, and potential buyers to invest in efficiency, the District will phase in a requirement for energy audits throughout the District on a periodic basis and disclose results to owners, tenants, and prospective buyers.

#### Action 1.2: Establish Minimum Energy Performance Standard for buildings, phased in by building size. (Long Term)

The city already has incentive and voluntary programs in place to encourage energy efficiency improvements in private buildings and is undertaking systematic retrofits to public buildings. Once financing tools are publicly available, the city can begin to phase in minimum energy performance standards and require retrofits and upgrades based on building size, taking into consideration cost savings and returns on investment. The use of “energy conservation ordinance” models for multi-residential and commercial buildings could be used to cover lighting, heating and cooling systems, and energy metering at the point of use.

#### Action 1.3: Replace all street and public lighting with high-efficiency fixtures. (Short Term)

The District Department of Transportation (DDOT) and Department of Parks and Recreation (DPR) have piloted initiatives to convert alley, street, and other public lighting to high-efficiency fixtures that will significantly reduce energy use. New technologies such as light emitting diodes (LEDs) can reduce energy use and costs by around 60% compared with standard street lights. So far, 1,700 existing alley lights have been converted. Over the next five years, this initiative will be rolled out to convert all streetlights and public lighting to LEDs.

Replacing all street and public lights with high-efficiency fixtures will generate 80 one-year jobs over the next five years.

#### Action 1.4: Fund \$500 million of renewable energy and efficiency retrofits. (Medium Term)

The DC Sustainable Energy Utility (DC SEU) was established to create effective renewable and energy efficiency programs for single-family homes, multifamily buildings, and businesses with an emphasis on services for low-income families. The DC SEU has a goal of improving energy efficiency by 1% per year backed by a budget of \$20



million. In 2010, DDOE introduced Property-Assessed Clean Energy (PACE) as a financing structure for clean energy improvements. When operational, qualified property owners will be able to receive financing for efficiency retrofits that will be repaid over time through their property taxes.

Using mechanisms such as the DC SEU, PACE, and other incentives for on-site renewables, the District will fund \$500 million of renewable energy installation and energy efficiency retrofits during the next five years. Working with stakeholders, the city will continue to identify further innovative financing mechanisms to support this target.

Providing \$500 million in funding for renewable energy and efficiency retrofits in existing buildings will support 820 one-year, full-time jobs.

#### **FOR EXAMPLE...**

The DC SEU helped Ben's Chili Bowl, the iconic DC restaurant, to switch to energy-efficient lighting at no cost through the Fluorescent Lighting Upgrade Program. The restaurant's new lighting will reduce energy use by up to 50 percent over the old lighting; the bulbs will last 4,000 to 10,000 hours longer, and save roughly \$1,200 in annual energy costs. Learn more at <http://www.dcseu.com>.

### **Action 1.5: Complete a Comprehensive Energy Plan by 2014. (Short Term)**

The District will develop a Comprehensive Energy Plan to better understand the use, distribution, sources, and economic markets of energy. The plan will provide a vision, strategies, key initiatives, and energy reduction plans to achieve the city's energy goals. The District's plan will use energy market and technical analysis to further define programs and policies to maximize energy efficiency, renewable energy use, and new technologies for innovative transportation alternatives to secure the District's energy future and promote green job creation.

### **Action 1.6: Launch a citywide educational campaign to lower citywide energy use. (Short Term)**

Because personal actions and behavior greatly influence building efficiency, the District will expand its educational efforts to ensure residents, workers, and visitors understand the necessity of conserving energy. By taking simple steps such as switching off lights and computers and adjusting thermostats, we will dramatically lower citywide energy use.

Leveraging the outcomes of the Comprehensive Energy Plan and experience of the DC Sustainable Energy Utility (DCSEU), the District will work with local community partners to launch an educational campaign to promote conservation, starting with schools and universities. The city will leverage the existing public schools' modernization program to teach students about the efficiency measures implemented within their school buildings and use the DC Mayor's College and University Sustainability Pledge (CUSP) to promote energy awareness at all nine universities in the city.

#### **DID YOU KNOW?**

The DC Mayor's College and University Sustainability Pledge (CUSP) was signed by nine universities in February 2012 with the goal of making DC the "greenest college town in America." The pledge established commitments for each university such as the achievement of LEED certified buildings, the purchase of renewable energy, and providing sustainability-related service learning opportunities in the District. Participating institutions include:

- American University
- Corcoran College of Art & Design
- The Catholic University of America
- Gallaudet University
- Georgetown University
- George Washington University
- Howard University
- Trinity Washington University
- University of the District of Columbia

## Goal 2: Increase the proportion of energy sourced from clean and renewable supplies.

*Target: By 2032, increase the use of renewable energy to make up 50% of the District's energy supply.*

### Action 2.1: Introduce legislation to reduce fossil fuel-based power use. (Long Term)

The District's Renewable Portfolio Standard (RPS) requires all suppliers selling electricity into the District to use renewable energy sources, rising to a total of 20% renewable supply by 2020. The District will complement these efforts to increase the supply of renewable energy by introducing new measures to reduce coal and fossil fuel-based power such as a Clean Alternative Technologies Standard (CATS). The CATS model would offer incentives for the installation of eligible renewable energy systems and require a certain percentage of a project's electric load to be met by fossil-free power generation.

### Action 2.2: Complete a feasibility study to identify opportunities for neighborhood-scale renewable energy systems. (Short Term)

The efficiency of energy systems can be significantly increased by building at a larger scale and serving multiple users. Many institutions across the city have central power plants and shared energy systems including the US Capitol, US General Services Administration, and university district energy systems that supply heating and cooling efficiently to multiple buildings. Well-run, district-scale energy systems can achieve very high levels of efficiency and reliability.

The District will complete a feasibility study to identify further opportunities for neighborhood-scale energy generation including large new developments and existing neighborhoods. This study will help prioritize future investments and identify appropriate planning requirements to expand highly efficient, district systems.

### Action 2.3: Build 1,000 additional residential and commercial renewable energy projects. (Medium Term)

The District currently oversees hundreds of renewable energy projects, largely made up of solar photovoltaic and solar water heating at the building scale. Through incentives and expansion of market-based financing tools such as power purchase agreements (PPAs), the city will install 1,000 additional renewable energy projects at residential and commercial buildings in the District, focusing especially on solar technologies.

More than 500 projects have already benefited from the DDOE Renewable Energy Incentive Program (REIP) which offers rebates to defray the cost of system installation. PPAs fund on-site energy generation by allowing owners to lease their roof space for energy installations, diversifying the range of private financing mechanisms available.

Building 1,000 residential and commercial renewable energy projects could generate 130 one-year, full-time jobs.

### Action 2.4: Allow community solar and renewable energy systems through legislation. (Short Term)

The Community Renewables Act, introduced in 2012, would allow shared ownership of renewable energy projects, providing access to renewable energy for residents or businesses that may not have good sites for solar installation or not enough money to finance the upfront costs of a renewable system. The model of shared ownership, already in place in other jurisdictions, would allow many more residents and businesses across the District to benefit from renewable systems and help the District meet its local solar energy requirements. The concept builds on the success and considerable community interest in the city's 16 solar cooperatives. Legislation for developing regulatory structures to enable these models throughout the District is before the Council now.

### FOR EXAMPLE...

Low-income families spend a larger proportion of their paychecks on utilities, so reducing energy bills is a matter of equity as well as economics. Recognizing this imbalance, **Groundswell**, a local community organization, works with individuals and institutions to coordinate bulk purchasing of energy-efficiency technologies and clean energy. The small non-profit organization has mobilized nearly \$7 million in investments to clean energy in the region. The participating 250 families and 100 non-profit organizations save up to 20% on energy bills and are supporting local clean energy businesses. Learn more about Groundswell at [www.groundswell.org](http://www.groundswell.org).

### Action 2.5: Develop a wind farm in the region to power District government and private facilities. (Long Term)

To expand the use of local and regional green power in the city, the District will combine with private partners to develop utility-scale wind resources in a neighboring state. These windmills will have enough capacity to provide at least one-third of the power needs of buildings operated by the DC Department of General Services. The wind farm will lock in long-term electric rates for the District and support the expansion of the local wind energy industry. The city will explore aggregating the purchase with private partners and community organizations in the District, similar to the wind farm shared by the US State Department and Peace Corps.

### Goal 3: Modernize energy infrastructure for improved efficiency and reliability.

*Target: By 2032, reduce annual power outages to between 0 and 2 events of less than 100 minutes per year.*

### Action 3.1: Develop a plan for citywide rollout of smart meters and smart grid infrastructure. (Medium Term)

Since the DC Council enacted legislation in 2009 to approve the use of advanced metering, PEPCO has installed smart meters in 98% of District buildings.<sup>54</sup> The District will be one of the first cities in the nation to be fully equipped with smart meters and we need to take full advantage of their usefulness to better understand our collective energy use.

The District will build on large-scale smart meter installation by developing a comprehensive plan for the citywide management of smart meters and smart grid infrastructure. This plan will be prepared in collaboration with PEPCO, the Public Service Commission, and other local stakeholders to identify the optimal strategy for implementation over a defined timeframe.

### Action 3.2: Work with utility companies to improve the reliability of energy transmission and distribution. (Medium Term)

An ongoing, collaborative effort among government agencies, utilities, and resident groups will review the implications of moving electricity infrastructure underground to protect it from storm and weather damage. PEPCO has already identified locations to receive initial investments for “undergrounding” power cables, but a citywide analysis of critical infrastructure is needed to plan necessary upgrades and changes to ensure maximum reliability. The District will work with utility companies to identify the most effective and cost-efficient strategies to improve the reliability of the energy distribution system.



### Action 3.3: Modernize electricity infrastructure to enable expansion of local energy generation projects. (Medium Term)

Expanding the scale and diversity of energy generation is vital to promoting secure and reliable energy supplies. The city wants to encourage renewable energy projects across the city at the building and neighborhood scale, but the power grid must be equipped to handle these energy inputs. Instead of distributing energy from a small number of large, distant power plants the city now needs the electricity grid to support a more decentralized network of local energy sources.

Working together with utilities, the District will identify changes that are needed in our infrastructure to support our vision for local, renewable energy and incorporate expanded energy storage within the grid. The District will work with stakeholders to ensure that the required retrofits take place in parallel with the growth of our local energy supplies to enable the scale of expansion needed by the city.

#### **FOR EXAMPLE...**

**The Drake Landing Solar Community in Alberta, Canada** was designed as an energy showcase to model how an environmentally-friendly residential community can be created. Ninety percent of space heating needs for the community's 52 detached homes is met by solar thermal energy. To ensure that this heat is available year round, a borehole thermal energy storage system has been designed to store large quantities of heat collected during the summer for use in the winter. The storage system consists of 144 boreholes, each reaching a depth of 37 meters. When solar-heated water is available to be stored, it is pumped through a series of underground pipes where heat is transferred to the surrounding soil and rock. When homes require heat, cooler water is pumped through the pipes where it picks up heat and is circulated back to homes through a district heating loop. This system enables solar heat to be stored for use year round, regardless of the weather and air temperature on any day.

### Action 3.4: Work with local educational and workforce development institutions to train District residents for work in the renewable energy and energy efficiency industry. (Short Term)

For the District to thrive in a changing economy, it must diversify the local economy and capture new economic opportunities in green industries. The District has begun to promote jobs and skills in green sectors through public initiatives such as the training program for green jobs run by the Department of Employment Services (DOES) and the DC Sustainable Energy Utility. The District will continue to develop the range of training programs available to residents to provide increased access to green jobs and skills. The city will work with local educational and workforce development institutions to train residents for jobs in clean energy installation, maintenance and repair, roles that are fundamental to the city's future growth.

### **HOW CAN YOU HELP TODAY?**

Sustainable DC is making strides to make sure you—the residents, workers, and visitors of DC—have the opportunity to participate in making the District the healthiest, greenest, and most livable city in the country. The following actions outline how you can begin to get involved in the work.

#### **COMMUNITY ACTION 1: REPLACE INEFFICIENT STANDARD LIGHT BULBS**

Replacing outdated light bulbs with high-efficiency fixtures is an effective way to reduce energy consumption and save money. Community groups could coordinate trade-outs and offer collection of old bulbs for recycling.

#### **COMMUNITY ACTION 2: ENERGY COMPETITIONS**

Neighborhood associations could host friendly competitions among residents to decrease energy usage. Neighbors could track their energy expenses through utility bills, change their habits by using light timers and replacing old bulbs with new efficient ones, and then compare their bills with their neighbors post-intervention to see which choices were most effective.

### **CONCLUSION**

Our long-term energy priorities are focused on reducing consumption in buildings and infrastructure through demand reduction, efficient systems, and creation of a robust, low-carbon energy grid that supports our growing economy. The considerable level of investment to date and the goals, targets, and actions outlined here will position the District as one of the nation's leading green energy cities.

**TOW AWAY**  
**24 HOUR CHARGING**



**PLUG-IN VEHICLES ONLY**



**IF TOWED CALL 311**





# FOOD



We envision a District with healthier residents and a more diverse economy fueled by access to a local, self-sustaining food production and distribution system. Grocery stores, commercial urban farms, and community gardens will distribute a secure supply of safe, nutritious, affordable foods and residents will be knowledgeable about and participate in growing, harvesting, and processing their own food.

## INTRODUCTION

In the District, we have many options when it comes to food; grocery stores, restaurants, farmers' markets, community gardens, corner stores, and food trucks keep District residents fed and pantries stocked. Unfortunately, this bounty is more available in some areas of the city than in others. Some neighborhoods do not have easy access to a convenient grocery store and must rely too heavily on fast food restaurants or convenience stores.

To make sure our city has equitable access to healthy foods, the District needs to build culture around local, fresh, and healthy food and a local supply chain that starts with cultivation and continues through processing, transporting, distributing, cooking, eating, and eventually disposing of food. Each stage in the process has economic, social, and environmental implications for the District's future: untapped economic opportunities; public health issues associated with poor access to high quality and nutritious produce; and long-term security of food supplies due to threats from climate change. Being able to grow or access inexpensive fresh and healthy food in personal or community gardens could

reduce food and healthcare costs over time. Including food as a cornerstone of sustainability policy is part of ensuring our health, security, and prosperity now and in the future.

Unfortunately, our lowest-income households—the most at-risk for food-related health problems such as malnutrition and obesity—often do not have access to fresh, healthy, affordable food. Making sure fresh, healthy, affordable food is available to low-income families is essential to improving the health and welfare of our city as a whole.

As an urban area, the city can produce very little food in the District relative to our demand which is why the city depends on daily deliveries from outside the city to keep residents fed. Transportation and refrigeration of food over long distances, however, leads to higher consumer prices, lower nutritional content, and higher greenhouse gas emissions than locally produced foods. Further, as the climate changes, we can expect to see rising food prices,<sup>55</sup> changing patterns of production, and more frequent failures in long-distance supply chains. Producing and sourcing foods locally will help us secure our food supply, eat healthier, and reduce our carbon footprint.



**DC HAS 43**  
FULL-SERVICE GROCERY STORES<sup>56</sup>



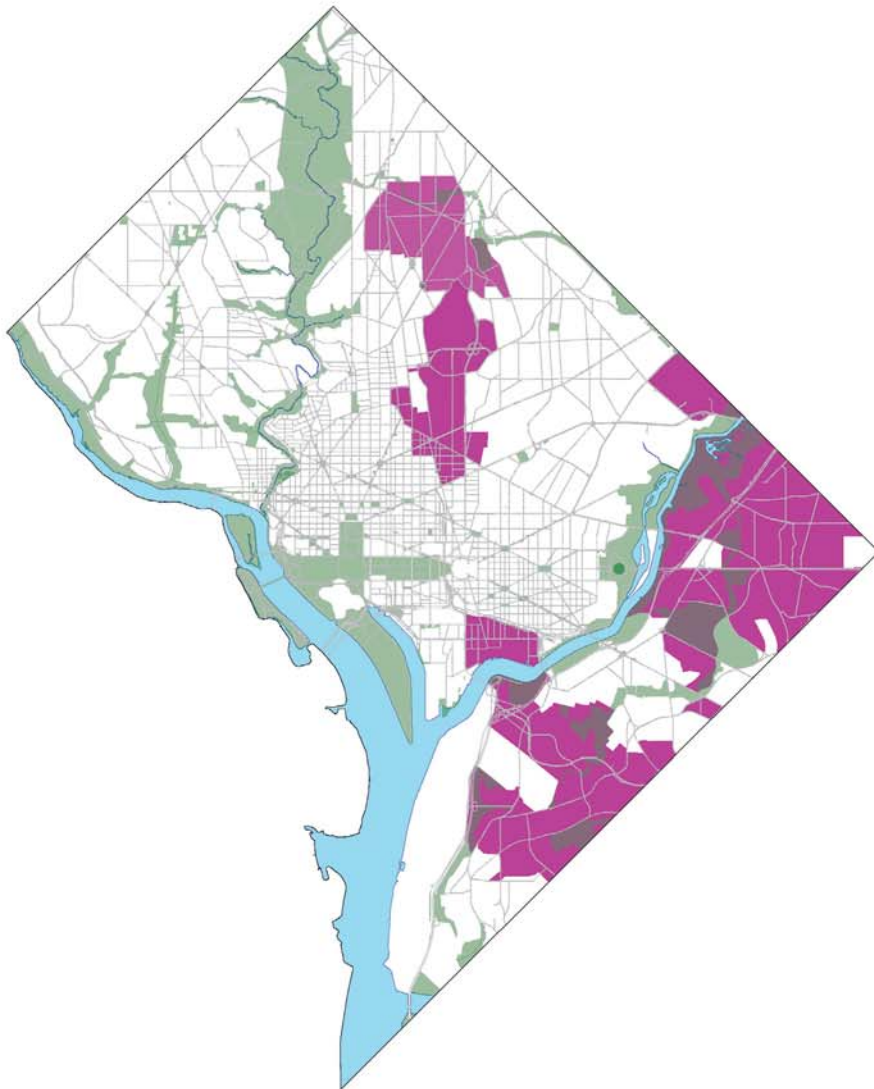
**DC HAS 29**  
FARMERS' MARKETS<sup>57</sup>



**12.2%**  
**OF ALL HOUSEHOLDS IN DC**  
**REPORT DIFFICULTIES IN AFFORDABILITY**  
**AND ACCESS TO FRUITS AND VEGETABLES<sup>58</sup>**

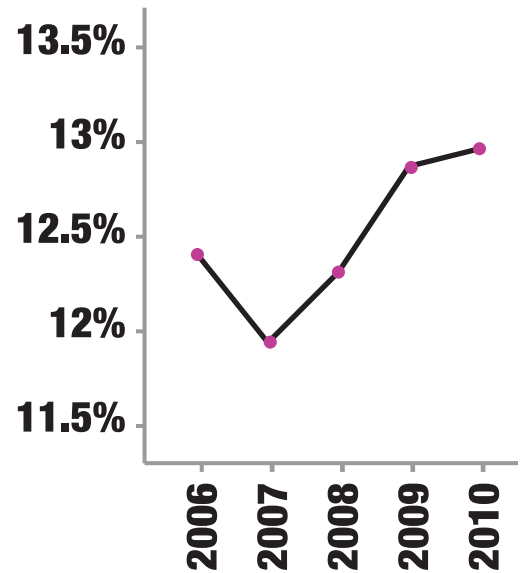


# AREAS OF DC WITH LIMITED SUPERMARKET ACCESS (2011)<sup>59</sup>



LIMITED SUPERMARKET ACCESS  
 NOT LIMITED SUPERMARKET ACCESS

# % OF DC HOUSEHOLDS THAT ARE FOOD INSECURE<sup>60</sup>



**26.5 ACRES** OF COMMUNITY GARDENS ARE GROWING FOOD, WHICH IS LESS THAN **1%** OF THE CITY'S TOTAL AREA<sup>61</sup>

An illustration of a purple watering can pouring water onto a small purple plant with three leaves growing out of a mound of soil.



DC RESIDENTS SPEND **\$920 MILLION** ON GROCERIES EVERY YEAR. **\$112 MILLION** OF THAT IS LOST TO NEIGHBORING JURISDICTIONS<sup>62</sup>

## HOW DO ACTIONS IN FOOD HELP MEET OUR CHALLENGES?

**Jobs & Economy** – A local food industry will help the District increase economic diversity and attract innovation. Community-led agriculture can foster new skills while local commercial agriculture generates jobs. Increasing access to healthy food in underserved neighborhoods reduces household expenses for low-income residents and stimulates local economic development.

**Health & Wellness** – Expanding community agriculture projects enables people of all ages and communities to participate in outdoor physical activity that reduces the risk of obesity. Participating in these programs, along with making healthy, fresh foods more available and affordable will increase our understanding of nutrition and lead to healthy eating.

**Equity & Diversity** – Providing more equitable access to fresh and affordable foods helps reduce health disparities across DC communities, reducing the risk of poor nutrition and obesity in high-risk groups. Expanding food access also creates new employment opportunities in currently underserved neighborhoods.

**Climate & Environment** – Local food supplies are better for the environment because they require less transportation and refrigeration than foods that are shipped over long distances. As transportation and refrigeration decrease so does energy and fuel consumption and pollution. A local food supply chain will improve our food security and resilience to climate change effects such as severe weather events and droughts that threaten agricultural productivity and long-distance supply chains.

## WHAT DOES THIS MEAN FOR YOU?

Engaging in the actions described below will bring many benefits to our city. Some of the outcomes for residents include:

### ACCESS AND AFFORDABILITY

A stronger local food supply and distribution system will ensure that District residents have better access to healthy and affordable food from full-service grocery stores, farmers' markets, and community and commercial agriculture projects within their neighborhoods.

### HEALTH

Growing food in a community garden or a backyard is a great way to increase physical activity and reduce the risk of certain chronic health conditions. A better supply of local fresh produce is the first step in choosing more nutritious foods and avoiding overly processed foods that contribute to weight gain without providing essential nutrients.

### NEW ECONOMIC OPPORTUNITY

Our local food industry has significant growth potential. By encouraging commercial urban agriculture, increasing our regional food purchasing, and expanding the range of local food retailers, we can foster innovation and entrepreneurs, create small businesses, use food-based enterprises to enliven our neighborhoods, grow our economy, keep money in the District, and generate new jobs.

### SECURITY

By increasing the proportion of food we source locally, we can build resilience to climate change impacts and prepare for disturbances in global supply chains such as drought, precipitation fluctuations, and severe weather.

## GOALS, TARGETS, AND ACTIONS

In order to solve our challenges, this plan lays out the following goals, targets, and actions that focus on food in the District. While these actions are aimed at increasing agricultural land use, providing equal access to nutritious foods, and developing the food industry, they also contribute to success in other areas of this plan. The goals, targets, and actions emphasize short-term projects ready for immediate implementation. Medium- and long-term actions will involve active consultation with all stakeholders to craft the details surrounding new policies, programs, regulations, and other proposals that may be five to twenty years away.

## Goal 1: Increase agricultural land uses within the District.

*Target: By 2032, put 20 additional acres of land under cultivation for growing food.*

### Action 1.1: Adopt the Sustainable Urban Agriculture Act and zoning amendments for expanded urban agriculture. (Short Term)

The proposed Sustainable Urban Agriculture legislation will expand the range of agricultural activities allowed in the District and specifically allow the keeping of honeybees. Proposed updates to the zoning code recommend the allowance of urban agriculture and greenhouses in all land use zones provided they meet design and zoning standards.

### Action 1.2: Streamline the process to find and use land for community agriculture projects. (Long Term)

All District-owned lands and rooftops will be studied to evaluate potential use for commercial or community-scale agriculture and public and commercial access to the most suitable spaces will be facilitated. The Department of Parks and Recreation (DPR) is developing guidance and regulations for using public land for agriculture that will be rolled out across all newly-designated public growing spaces.

Agricultural opportunities on District land will be promoted through an online tool available from the DC Office of Planning (OP) that will inform the public about available agricultural plots. Private landowners will also be invited to include their growing spaces in the map, whether for temporary or permanent agricultural uses.

### Action 1.3: Install educational gardens at 50% of DC Public Schools. (Medium Term)

Through the joint efforts of the Office of the Superintendent for Education, DC Public Schools (DCPS), the Department of Health (DOH), and the District Department of the Environment (DDOE), school gardens will be grown on at least 50% of public school sites. As part of a comprehensive plan for school gardens, partnerships will be developed with non-profit and community groups to support garden maintenance outside of the school

year. In keeping with the Healthy Schools Act, agricultural and gardening activities will be integrated into the K-12 school curriculum and combined with nutritional education.

### Action 1.4: Develop orchards or other food-producing landscaping on 5 acres of DC's public spaces. (Long Term)

Potential sites to plant fruit and nut trees will be identified on public lands throughout the District. Developing orchards will both contribute to our tree canopy target and increase the agricultural productivity of District land. Spaces suitable for other types of food-producing landscaping, such as berry bushes, will also be studied for viability.

### Action 1.5: Develop permitting for pop-up agriculture. (Short Term)

Temporary urbanism initiatives will be expanded beyond pop-up retail to develop a permitting system for pop-up agricultural landscapes, temporary food installations, and community gardens. To encourage such temporary agriculture sites, the District will prepare an inventory of available sites and partner with local organizations and individuals to promote local foods, entrepreneurship, and agricultural skills throughout the District.

## Goal 2: Ensure universal access to secure, nutritious, and affordable food supplies.

*Target: By 2032, ensure 75% of residents live within ¼ mile of a community garden, farmers' market and/or healthy corner store.*

### Action 2.1: Expand the DC Healthy Corner Store initiative. (Medium Term)

The Department of Health has worked with DC Central Kitchen and Kaiser Permanente to pilot the Healthy Corner Store initiative with 30 local stores in Wards 5, 7, and 8 where access to full-service grocery stores is insufficient. The initiative encourages corner stores to sell fresh local produce and several participating stores held cooking demonstrations and tasting events to promote healthy eating. Building on this initiative, a Healthy Corner Store program will be expanded to cover all areas with little or no access to grocery stores and fresh produce in the District.



## Action 2.2: Introduce fresh food circulators and mobile vendors in neighborhoods with poor access to fresh foods. (Medium Term)

Between September and November 2012, the Department of Health's DC Fresh! pilot initiative funded three mobile food carts to sell fresh produce and minimally-processed foods from static locations near Metrorail stations in Wards 5, 7, and 8. In order to improve access to healthy foods, the District will partner with community non-profits to use carts or trucks to distribute healthy meals and fresh groceries to elderly, less mobile, and low-income households, focusing primarily on households in food deserts.

## Action 2.3: Expand the Double Dollars program to farmers' markets and corner stores citywide. (Medium Term)

The Double Dollars program uses philanthropic grants to double the value of food stamps—including Women, Infant, and Children (WIC), Supplemental Nutrition Assistance Program (SNAP), and senior coupons—when used to purchase fresh produce in specific District farmers' markets. The program is currently supported in part by the Wholesome Wave Foundation's Double Value Coupon Initiative with the goal of making fresh fruits and vegetables more affordable for food stamp clients. The District will work with partners to expand the Double Dollars program to farmers' markets and corner stores throughout the District.

## Action 2.4: Incorporate best practices in healthy and local menus in all DC Public Schools. (Medium Term)

A range of initiatives have been introduced in DC Public Schools to increase the nutritional and locally sourced content of school meals. These include Salad Bar Schools, which installs salad bars in elementary and high school cafeterias; Revolution Foods' Portable Meals pilot program, which brings nutritious meals to

schools with limited kitchen facilities; and the US Department of Agriculture's Chefs Move to Schools program, which educates students and teachers about health and nutrition. In line with DC's Healthy Schools Act and Child Healthy Action Plans, the District will permanently incorporate best practices in healthy and local menus in all DC Public School cafeterias. Daily menus will be significantly improved with more nutritious offerings while unique initiatives will continue to raise healthy nutrition awareness in our schools.

## Action 2.5: Increase transparency about the nutritional content of food. (Long Term)

To enable residents, workers, and visitors in the District to make more informed choices about the foods they eat, all chain restaurants above a certain size will be required to display the nutritional content of their foods. This information will include calories, fat, sugar, and salt content, all of which present serious health risks for our population. Signage in restaurants will be supported by a public education and awareness campaign to explain the health consequences of over-consumption.

### FOR EXAMPLE...

In 2008, **New York City** became the first US city to mandate that fast-food chains post nutrition information on their menus.<sup>63</sup> The city also banned trans fats, a move that appears to have lowered the amount of those fats in fast foods.

## Action 2.6: Develop cooperative food purchasing systems. (Medium Term)

By working with community partners, the District will facilitate cooperative food purchasing groups—or “buying clubs”—in low-income communities, focusing on food desert areas. Buying clubs are groups of people who come together to buy food in bulk for discounted prices. A community partner with supplies sourced from regional healthy food distributors will administer the co-op.

### FOR EXAMPLE...

**The La Fresa Feliz Buying Club in Corvallis, Oregon** developed through the partnership of the Ecumenical Ministries of Oregon, Deep Roots Farm, and St. Mary's Catholic Church. The club began in 2008 because the Latino community wanted to shop for fresh, local produce at a venue that was bilingual and more affordable than the local farmers' market. Deep Roots Farm delivers produce to St. Mary's church where club members are required to help out at least twice per year to foster a sense of ownership in the scheme. The club has also been registered to accept SNAP benefits, making healthy foods more accessible to low-income households.<sup>64</sup>

## Goal 3: Develop the food industry into a strong and viable economic sector.

*Target: By 2032, produce or obtain 25% of food within a 100-mile radius.*

### Action 3.1: Complete a comprehensive study of DC food supply systems. (Short Term)

In order to build on and strengthen our local food systems, the District must first understand the baseline of our food industry by answering the questions: How much and what types of food do we consume in DC? Where is this food coming from? Who is producing it, and how? Where is our food processed, packaged, and distributed? How much of this can we do within the District? How will our city's food supplies be affected by climate change?

To better understand the growth potential of our local food sector, the District will conduct a comprehensive study of DC's food supply system. This analysis will inform a strategic action plan for developing the city's food industry and expanding urban agriculture.

### Action 3.2: Create a Local Food Hub for consolidation and distribution of local produce. (Medium Term)

Small and mid-sized producers face difficulties in entering the general food market and reaching large or influential food buyers. Expanding into regional food sales is a vital step for the growth of these businesses.

By creating a local food hub, the District will be able to aggregate and sell locally grown produce from farms in Maryland, Virginia, West Virginia, Delaware, Pennsylvania, and North Carolina. The food hub will market and distribute these products to institutions, restaurants, and grocers in the District. This model has gained traction in other cities, providing small producers with better access to large buyers, and buyers with access to local foods in large enough volumes to compete with agribusiness prices.

### FOR EXAMPLE...

The **Food Hub in Charlottesville, Virginia**, aggregates products from more than 70 farms in Virginia and distributes them to more than 150 locations in the region, including the cafeteria at the US Department of Agriculture.<sup>65</sup>

### Action 3.3: Develop small business food processing incubator center in DC. (Short Term).

To stimulate our local food industry, the District will work with community partners to develop a small business food processing incubator in DC. Through partnerships with academic, commercial, and non-profit organizations, the incubator will accommodate research, business, and warehousing activities. Small businesses will have access to guidance and mentoring from industry experts and be able to network and collaborate in a supportive environment.

### FOR EXAMPLE...

In **West Oakland, California**, a former candy factory was renovated to provide homes for small start-up food companies. After five years in operation, the building now houses an organic soy bean company, a pet food maker, a kale and granola superfood producer, and a bakery, among others. Cheap rent, shared equipment, and warehouse space attract businesses to the building and mentoring is provided by the landlord. More than 100 people are now employed in the building and local residents benefit from cooking classes and school tours.<sup>66</sup>

### Action 3.4: Permit incidental sales of food from community gardens. (Short Term)

The District will introduce a permitting procedure to allow residents, community groups, non-profits, and small businesses to sell produce grown in community or private gardens. This permitting system will encourage small business growth and enable community groups to become self-sustaining enterprises while providing fresh local produce to their communities.

### Action 3.5: Designate staff to actively participate in a new Food Policy Council. (Short Term)

DC has an active non-profit and research community focused on the food sector. Recently, a group of advocates and service providers met to lay the foundation for a local Food Policy Council. The Council will work to ensure that all District residents can enjoy a nutritious diet provided by a sustainable food system that fosters health, equity, interdependence, and self-sufficiency. The Council will bring together community stakeholders, policymakers, non-profit service providers, and other sectors of the food system to develop and re-define DC's food sector.

This initiative acts as a driver for renewed organization around food policy in DC and improved government leadership. The District will take a proactive position in the new Food Policy Council and support its important work as the Council deems appropriate.

### Action 3.6: Increase government and institutional procurement of local foods. (Short Term)

Government agencies and major institutions in DC spend millions of dollars each year on food and together these entities have a major influence on supply and demand in the food industry. By requiring the use of local foods and service providers, these institutions can help support a more robust local industry within the city.

The District will develop training programs to educate government and institutional procurement officials in the selection of local produce. The District will also expand its own procurement procedures to ensure that suppliers and food service providers procured by our government are committed to the sourcing of local foods. Through the distribution of local foods in our school cafeterias and at public events, we will raise awareness among staff and communities about the range of foods available from producers in our region.

## *HOW CAN YOU HELP TODAY?*

Sustainable DC is making strides to make sure you—the residents, workers, and visitors of DC—have the opportunity to participate in making the District the healthiest, greenest, and most livable city in the country. The following actions outline how you can begin to get involved in this work.

### ***COMMUNITY ACTION 1: YARD-POOLING PROGRAM***

Key community partners could play a leadership role by administering a garden-sharing, or “yard-pooling” program enabling small residential food growers to collaborate in the growing of food crops. Produce can be shared cooperatively among growers participating in the program. This way, if one gardener has more carrots than needed, he or she can swap them for the tomatoes grown by the neighbor next door.

### ***COMMUNITY ACTION 2: TOOL-SHARE PROGRAM***

Another community partner could establish a community tool-share program to lend tools and equipment to community gardeners and residential food growers. The program could operate in a similar way to the public libraries with residents joining the program and borrowing the needed tools for an agreed period of time. This practice will help reduce the costs of small gardening projects and enable more local residents to get involved.





### ***COMMUNITY ACTION 3: HEALTH AND NUTRITION EDUCATION***

Building on past work by government and non-profit groups, members of the community are already planning a huge range of health and nutrition education programs for all of our residents. The DC Public Schools' Foodprint initiative to build edible schoolyard gardens and integrate them into school curriculum could be used as a model to provide targeted educational programs to a variety of audiences. These programs will raise awareness about nutrition and health issues, educating residents to make better choices.

### ***COMMUNITY ACTION 4: COMMUNITY FOOD EVENTS***

Community, cultural, and faith groups could host neighborhood events that celebrate local food cultures and relevant festivals at appropriate times of the year. A range of organizations and

institutions could develop a full year-long program of community food events. These events could be entirely self-organized and led by community and neighborhood organizations, similar to the annual Rooting DC conference.

### ***CONCLUSION***

The main objective of sustainability in food is to develop a strong and sustainable local food supply for all. With shared leadership from government and the non-profit community, we can take great strides to improve health, create new jobs, and ensure universal access to high-quality local foods.

# NATURE



We envision a District with high quality, well-connected habitats on land and water providing strong corridors and ecosystems for wildlife. The District will conserve and manage these natural resources to enhance biodiversity, control stormwater, reduce the urban heat island effect, become more resilient to changing climate conditions, and build people's connection to, understanding of, and appreciation for nature.

## INTRODUCTION

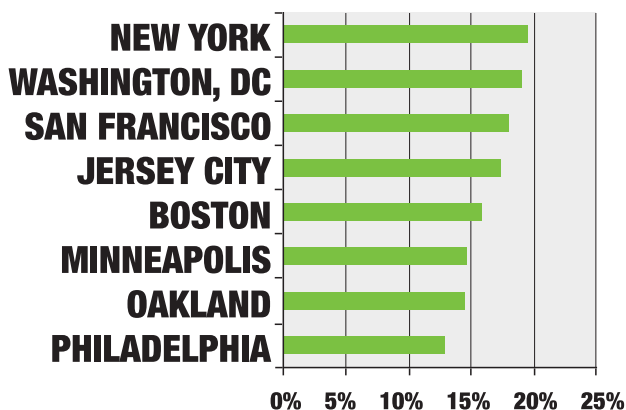
It can be easy to forget while living in the city, but nature is all around us. Our parks, rivers, streams, and even our trees and backyards can provide peaceful environments and habitats that add to our quality of life. Our natural areas are important not only because they are beautiful, but also because they support plant and animal species and ecosystems, some of which are unique to the District and need protection. Unfortunately, not all of our natural resources are well maintained and some areas are inaccessible to residents. The District needs to balance the maintenance and protection of natural resources with enhancing citywide access to green and open spaces so that all residents can enjoy the benefits of parks and natural areas.

The natural environment provides enormous benefits for the District's local wildlife and residents. Pervious areas filter our water to improve its quality and absorb large volumes of rainwater to reduce flooding. Wetlands provide natural protection against river inundation, avoiding the need for costly

investments such as seawalls and levees. In the summer, green spaces and trees mitigate urban heat islands and poor air quality while creating a healthier environment. The District is widely recognized for its iconic parks that attract visitors and contribute to our tourism industry. To support our future quality of life, it is important that the District conserves its natural resources and takes steps to rehabilitate the habitats it risks losing.

Climate change poses a special challenge. Changing temperatures, new patterns of precipitation, and extreme weather events are likely to alter living conditions for many plant and animal species. For example, Glover Archbold Park, a priority area under the District's Wildlife Action Plan, is currently classified as a mixed beech-oak forest, but will likely shift to a different forest type because of climate change. In the future, the District needs to monitor how parks and valuable natural environments respond to variable temperatures to ensure that healthy habitats are preserved as the climate changes.

## PARK ACRES AS % OF LAND AREA<sup>67</sup>

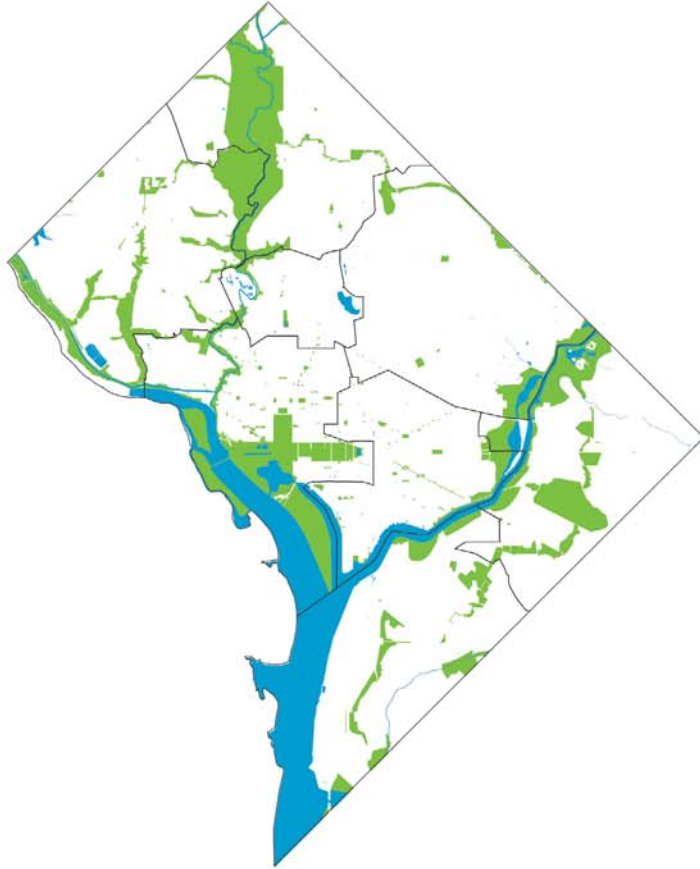


**THE NET COOLING EFFECT OF A YOUNG, HEALTHY TREE IS EQUIVALENT TO TEN ROOM-SIZE AIR CONDITIONERS OPERATING 20 HOURS PER DAY<sup>68</sup>**

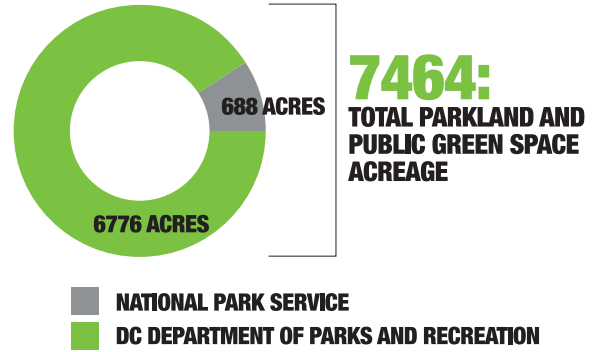
**90% OF WETLANDS ALONG THE ANACOSTIA HAVE BEEN LOST OR DEGRADED BY HUMAN ACTIVITY<sup>69</sup>**



# PARKS, WETLANDS, AND HARDWOOD FORESTS IN WASHINGTON, DC<sup>70</sup>



# PERMANENT PARKLAND AND PUBLIC GREEN SPACE<sup>73</sup>



DC HAS   
**280 ACRES**  
OF WETLANDS<sup>74</sup>

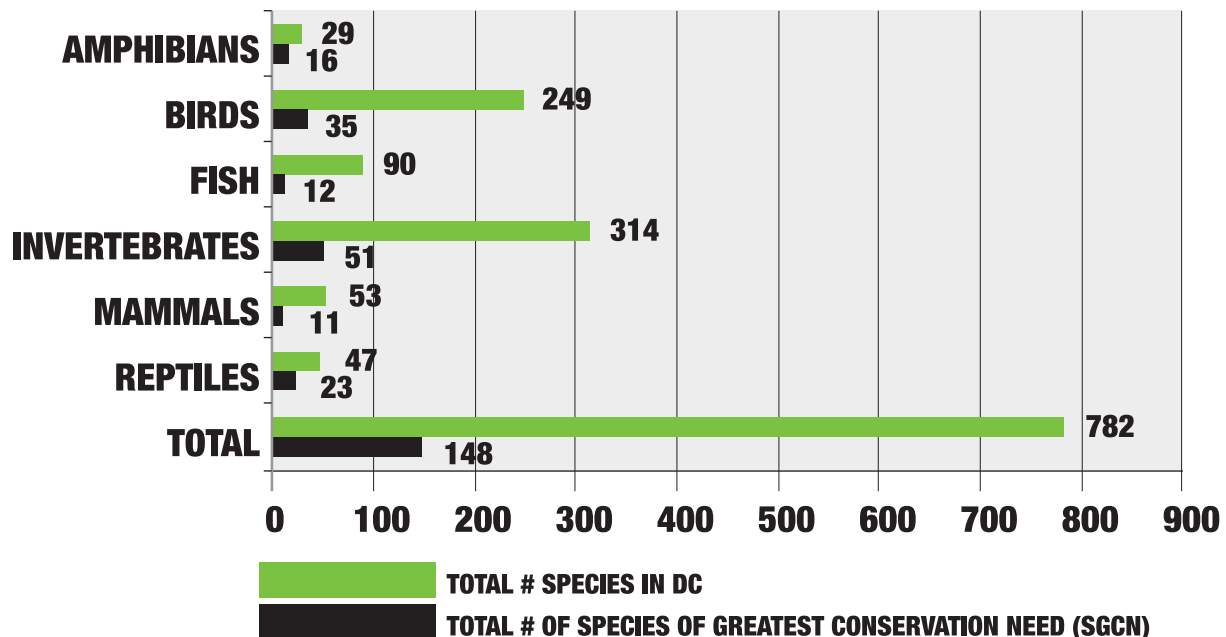


DC'S TREE CANOPY  
COVER IS **35%**<sup>75</sup>



THERE ARE **78 PARK**  
PLAYGROUNDS IN DC<sup>71</sup>

# WILDLIFE SPECIES IN DC (2011)<sup>72</sup>





## HOW DO ACTIONS IN NATURE HELP MEET OUR CHALLENGES?

**Jobs & Economy** – Enhancing parkland area and natural habitats in DC will generate employment for more people—in both the public and private sectors—through jobs in landscape maintenance, habitat management, and recreation. As the city gains expertise and becomes a national leader in these fields, we can grow the green economy as other cities look to the District for help in bolstering their own natural resource management strategies.

**Health & Wellness** – High quality natural spaces provide a place for outdoor activity and recreation that can help reduce our high levels of obesity, heart disease, and diabetes. Exposure to the natural environment also helps people recover more quickly from illness and improves the productivity of students and workers.

**Equity & Diversity** – Green and open spaces distributed more evenly in neighborhoods throughout the District enable greater access for residents in their local areas. Cleaner waterways offer greater amenities for neighborhoods bordering the Potomac and Anacostia Rivers.

**Climate & Environment** – Conserving, restoring, and expanding natural habitats in DC improves our air and water quality, helps manage our stormwater, and plays a critical role in safeguarding our biodiversity. Natural habitats and green spaces also protect the city against the urban heat island effect, floods, and other climate change impacts.

## WHAT DOES THIS MEAN FOR YOU?

Engaging in the actions described below will bring many benefits to our city. Some of the outcomes for residents include:

### ENVIRONMENTAL QUALITY

Restoring our rivers, wetlands, and forests will revitalize the natural resources that help define our city. This restoration will create healthier air, cleaner water, and better places for families and residents.

### RECREATION

By enhancing green space and access to parkland, new recreation opportunities will be within walking distance for many more residents. Restoring the District's healthy rivers and streams will also provide new opportunities for swimming, boating, and fishing.

### CLIMATE ADAPTATION

By restoring the wetlands along our rivers and creating green infrastructure for stormwater drainage, the District will be better protected against future flood risks. Rising temperatures will be tempered by expanding green areas and a more expansive tree canopy will provide better shade, making the urban environment healthier and more comfortable as our climate changes.

## GOALS, TARGETS, AND ACTIONS

In order to solve our challenges, this plan lays out the following goals, targets, and actions that are focused on nature in the District. While these actions are aimed at protecting aquatic ecosystems, connecting our land-based ecosystems, and improving access to parks, they also contribute to success in other areas of this plan. The goals, targets, and actions emphasize short-term projects ready for immediate implementation. Medium- and long-term actions will involve active consultation with all stakeholders to craft the details surrounding new policies, programs, regulations, and other proposals that may be five to twenty years away.

### Goal 1: Protect and restore wetlands, waterways and aquatic ecosystems.

*Target: By 2032, increase the acreage of wetlands along the Anacostia and Potomac Rivers by 50%.*

**Action 1.1: Work with the National Park Service to update open space guidelines and management policies. (Long Term)**

The District Department of the Environment will work with the National Park Service to update guidelines for managing and

maintaining open spaces. A particular priority for this update will be to control invasive and nuisance species, such as Canada Geese, that compromise efforts to restore habitat and environmental quality in parts of the District.

### **Action 1.2: Develop an Urban Wetland Registry to facilitate restoration or creation of wetland habitat. (Medium Term)**

The District Department of the Environment and Department of Parks and Recreation are coordinating the Habitat Restoration Program to fund and manage activities to protect and restore DC's river, stream, and wetland habitats to improve biodiversity. Restoration projects are currently in design for Watts Branch, Broad Branch, and Pope Branch. This program supports DC's delivery of the Wetlands Conservation Plan, created in 1997 and updated in 2010.

Building on these existing initiatives, the District will develop an Urban Wetland Registry to document sites in DC that are targeted for wetland regeneration. The registry will detail restoration, design, and planting specifications and projects can be used to compensate for environmental damage caused by development elsewhere in the District.

### **Action 1.3: Plant and maintain an additional 140 acres of wetlands along the Anacostia and Potomac Rivers and smaller streams. (Long Term)**

The District Department of Environment is working with the National Park Service and US Army Corps of Engineers to create fringe wetland sites near Fort Dupont, the National Arboretum, Poplar Point, and other locations within the Anacostia watershed. Additional wetlands will also be created at Kingman Lake, helping to reduce erosion, improve water quality, and provide valuable wildlife habitat while also

controlling the excessive resident Canada Geese population. Sustainable DC will coordinate efforts to expand wetland regeneration and maintenance programs, creating balanced and viable habitats along our rivers.

### **Action 1.4: Require new waterfront developments and renovations to incorporate Low Impact Development strategies. (Medium Term)**

In coordination with the Habitat Restoration Program, Wetlands Conservation Plan, and the fringe wetlands initiative, District government will develop legislation requiring Low Impact Development strategies at all new developments and major renovations greater than 50,000 square feet in floor area along riverfronts. In order to secure zoning approvals, developers will be required to submit proposals for green infrastructure and stormwater management that protect and enhance river ecosystems by using native plant species to regenerate habitats for local wildlife, fish, and birds.

### **Action 1.5: Implement a Fisheries Management Plan to restore DC's native fisheries. (Medium Term)**

Together with upstream jurisdictions in neighboring states, the District will develop a shared Fisheries Management Plan for the Anacostia and Potomac watersheds. The plan will restore native fisheries in the District and provide a collective vision and strategy for regenerating fisheries, including goals for managing fisheries and improving angler access as well as restoring and protecting habitats. The plan will also provide overarching guidance to river users and decision-makers to set the context for future regulation and planning policy development.

## Goal 2: Protect and expand tree cover and green landscapes, creating an integrated District-wide ecosystem.

*Target: By 2032, cover 40% of the District with a healthy tree canopy.*

### Action 2.1: Plant 8,600 new trees citywide per year until 2032. (Short Term)

In collaboration with Casey Trees, the District estimates it will need to plant 8,600 new trees per year until 2032 to achieve our goal of a 40% tree canopy. This means at least 216,300 new trees will be planted over the next 20 years. To minimize tree mortality of new plantings, ongoing maintenance, and replanting will be part of the initial planting strategy. In preparation for climate changes, an altered range of species that are more heat-tolerant will be adopted.

The Urban Forestry Administration will review prime planting locations for trees across all neighborhoods. Planting may take place on either public or private land and through the successful RiverSmart Homes program and other initiatives. The District will work with private landowners to identify partnership opportunities for this effort and will commit to enhancing maintenance activities to ensure all new and existing trees are sustainably maintained. The District will continue to seek the participation of residents and businesses in the cultivation of trees through the District Department of Transportation's Canopy Keepers' Program.

### Action 2.2: Replace 75% of public lighting with fixtures that reduce light pollution. (Long Term)

Within the next five years, the District Department of Transportation will convert all alley and street lighting in the District—aside from those fixtures covered by federal highway or historic preservation guidance—to high efficiency light emitting diode (LED) fixtures. Additionally, the DC Department of Parks and Recreation, together with the DC Department of General Services, is installing high-efficiency lighting on recreation and sports fields.

These initiatives will be expanded to reduce the District's light pollution which can be harmful to wildlife and habitats. To reduce light pollution, existing lighting retrofit projects will be updated to require the use of full cut-off light fixtures for 75% of public lighting fixtures. Cut-off fixtures provide more controlled illumination within a specific area in keeping with guidance from the International Dark-Sky Association.<sup>76</sup>

### Action 2.3: Create a connectivity map to guide development of viable habitats throughout the District. (Short Term)

The District strives to develop a robust and sustainable system of habitats that supports a range of plant and animal species. To accomplish this goal we must ensure that species have the opportunity to move safely between habitats along green corridors.

Working with ecology specialists, the District will prepare a citywide assessment and map of essential habitat connections using best available science, ecological data, and spatial analyses. The map will be used to inform policy for integrating habitats and green space into future development projects throughout the District. This effort will be coordinated with the Wildlife Action Plan and programs to roll out green streetscapes, alleys, and roofs.

### Action 2.4: Require trees and green space on all new development sites. (Medium Term)

Through amendments to the zoning code, the District will require developers to incorporate a specific area of green space or tree cover on all development sites. This change will be part of the Green Area Ratio (GAR) requirement which will define a minimum area of green landscaping according to the land use zoning. The landscaped area could include features that contribute to stormwater management, air quality improvements, and mitigation of urban heat island effects such as permeable paving, green roofs and walls, water features, and tree cover.



## Action 2.5: Stipulate use of native plant varieties for District government plantings and landscaping. (Medium Term)

To support objectives for conserving biodiversity and removing invasive species, the District will require the use of native plant varieties for all landscaping and plantings on District-owned property, including parks and public spaces. The use of native species will also help reduce the need for landscape irrigation since native species are better adapted to our local climate conditions.

The District will develop an inventory of appropriate plant species for reference on all District government landscaping projects that takes into account the anticipated effects of future climate change on plant viability.

## Goal 3: Enhance access to parks and open spaces for all residents.

*Target: By 2032, provide parkland or natural space within a 10-minute walk of all residents.*

### Action 3.1: Prepare an open space plan to increase residential connections to green space and the rivers. (Short Term)

While updating the existing District Parks and Recreation Master Plan, the District will incorporate comprehensive open space planning for increasing connectivity between homes, parks, and green recreational spaces, ensuring that all residents can access safe and high-quality outdoor recreation within a 10-minute walk of their homes. This initiative will also lead to improved and more frequent access to the rivers and contributes to objectives in the Capital Space Plan.

### Action 3.2: Expand the formal trail network for hiking and biking. (Medium Term)

A federal grant is currently funding the construction of bridges and pathways that will tie Anacostia's Riverwalk Trail to a network of Maryland trails and bikeways. Building on existing efforts by the District Department of Transportation and the District Department of Parks and Recreation, the city's

networks of trails for hiking and biking will be expanded across the city. Formal signage will be installed across the network, providing essential wayfinding information and educational information on the surrounding natural area. Future expansion of the network will focus on connecting cyclists, runners, and hikers to green spaces and waterfront areas around the city. Working with authorities in neighboring states, this initiative will integrate our respective trail systems to create an interstate system of trails and paths to support our health objectives.

#### **FOR EXAMPLE...**

**Dallas** has invested in the health of its residents with a series of recreational hiking and biking trails. The 110-mile system incorporates a comprehensive wayfinding system which displays connections to local landmarks, major streets, and transit stops using the same style and language as the public transit network. This system has made what was once an invisible network into a great resource for Dallas residents.<sup>77</sup>

### Action 3.3: Renovate and improve all District playgrounds. (Short Term)

Through the Mayor's playground initiative, all 78 District park playground spaces will be renovated and modernized, starting with those most in need. Where appropriate, adult fitness equipment, smart technologies such as wi-fi, and interactive arts will be built into play spaces for enhanced user experience, contributing to the DC Statewide Comprehensive Outdoor Recreation Plan.

### Action 3.4: Improve transit linkages to parks and natural areas. (Long Term)

The District Department of Transportation will lead a review of existing transit and bicycle access to parks and natural open spaces from neighborhoods across the District with the objective of ensuring that everyone can benefit from our valuable natural environment. The review will consider the proximity, route, affordability, and frequency of existing connections and prioritize future service improvements within a phased program of works.

### Action 3.5: Create small parks and green spaces in areas with inadequate open space. (Short Term)

As part of a Temporary Urbanism initiative, the Department for General Services (DGS) will invest in mobile “parklets” – small, designed green spaces that can be moved to vacant spaces around the District as a temporary solution to deficiencies in open space. Initially, eight small parks and green spaces around the District will be created, primarily in underserved neighborhoods.

### *HOW CAN YOU HELP TODAY?*

Sustainable DC is making strides to make sure you—the residents, workers, and visitors of DC—have the opportunity to participate in making the District the healthiest, greenest, and most livable city in the country. The following actions outline how you can begin to get involved in this work.

#### ***COMMUNITY ACTION 1: DC SUMMER YOUTH EMPLOYMENT PROGRAM***

The Summer Youth Employment Program is led by the Department of Employment Services to provide District youth aged between ages 14-21 with paid summer work experiences. Within this program, the District will expand the opportunities for young people to engage with DC’s natural resources. The cooperation and support of District businesses and non-profits in sponsoring participants and providing a high quality experience for youth will be instrumental to the success of the program.

#### ***COMMUNITY ACTION 2: PUBLIC DESIGN COMPETITION FOR PARKLETS***

The District wants to hear your ideas about what you want to see in the small temporary parks that will be introduced around the city (Action 3.5). The District will create a design competition for local universities and will invite design submissions. The DC Department for General Services will fund the construction of three winning designs.

#### ***COMMUNITY ACTION 3: EDUCATIONAL WETLAND RESTORATION TOURS***

As the District works to revive our wetlands, we will be inviting you to tour our restoration projects and learn about the habitat and wildlife rehabilitation activities undertaken by the city. The District will share how our historic wetlands used to look, what happened to them, and how new wetland areas will replicate the natural ecosystem. Learning about our wetlands is an excellent first step in being an advocate for this critical natural resource. If you are already an expert or advocate, we need your help in providing these tours.

### *CONCLUSION*

The District’s priority for the natural environment is to restore DC’s impaired ecosystems for the benefit of our future biodiversity, environmental quality, climate resilience, and recreation. Renewed access to high-quality open spaces will improve quality of life for all people throughout the District.







# TRANSPORTATION



We envision a District with an accessible, convenient, and resilient transportation system serving residents of every neighborhood. This system will encourage active and healthy travel modes, such as walking and biking, and provide links to extensive and efficient public transit. As we reduce dependence on private vehicles, our streets will become safer, our air cleaner, and our neighborhoods and people better connected.

## INTRODUCTION

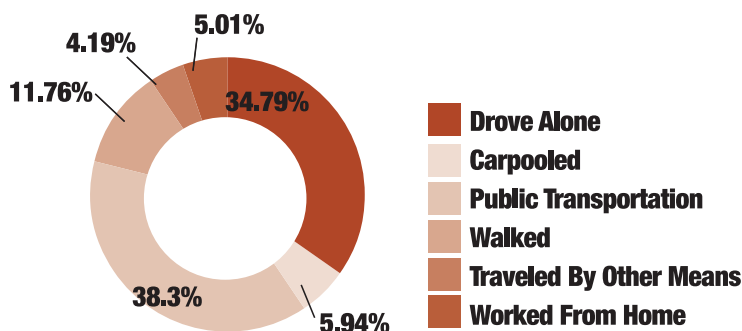
An efficient transportation system connects people and places, and allows us to reach our destinations quickly, conveniently, and safely. The District's transportation system is robust and includes many forms: trains, buses, bicycles, private and shared cars, trucks, and our own two feet. While cars remain an important option for traveling around the city, we increasingly need to make other forms of transportation convenient, affordable, and accessible. Enhancing bicycle infrastructure, adding transit modes such as streetcar, and making sidewalks safe and pleasant will expand travel options and make moving around the District safer and more sustainable.


As our population grows, so does demand for transportation. Our existing transit systems are already under strain and during peak hours our congested roadways can make vehicle commuting frustrating and inconvenient. Heavy reliance on personal vehicles

contributes significantly to air pollution and health problems such as obesity, heart disease, and diabetes due to lack of everyday exercise such as walking or biking.<sup>78</sup> Failure to make significant transportation infrastructure investments and expand travel options also leads to further congestion and stifled economic growth. Fortunately, even as our population grows, more people are choosing to leave their cars behind.<sup>79</sup> Increasing rates of biking, walking, and public transit use have positioned the District among leading cities when it comes to transportation choices.

Sustainable DC will focus on providing more options to continue this trend and realize the additional benefits of a well maintained and enhanced transportation system. Efficient and reliable transportation will support a growing, diverse, and resilient economy while lowering greenhouse gas emissions, obesity, and cardiovascular disease rates as well as traffic congestion.

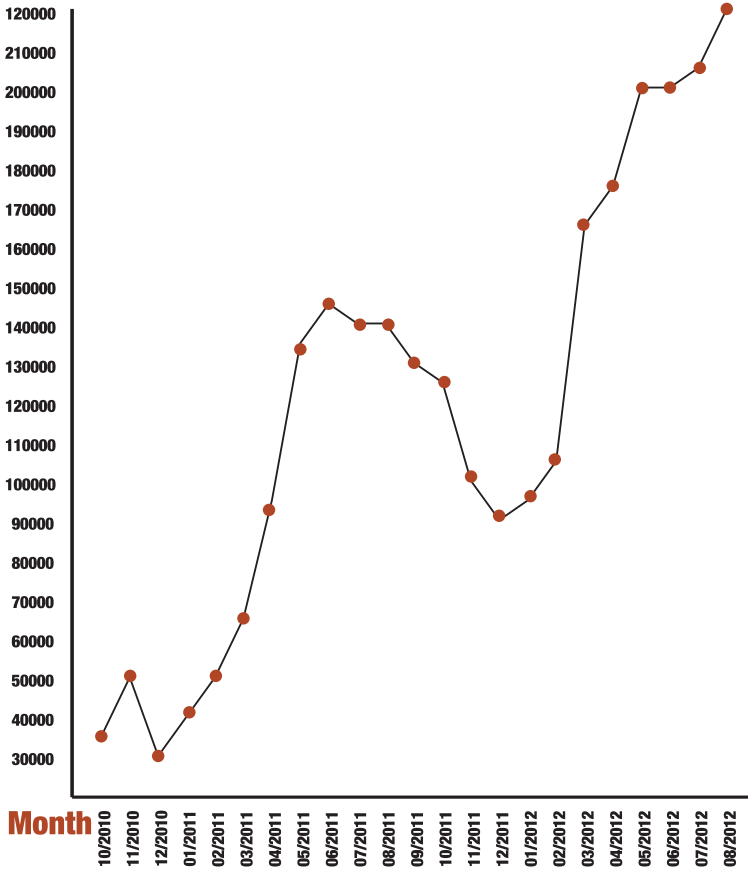
## COMMUTE MODE SHARE IN DC (2010)<sup>80</sup>



**\$1,495:**   
**THE AVERAGE COST PER DRIVER AT THE PUMP AND IN LOST WAGES PER YEAR BECAUSE OF DC CONGESTION<sup>81</sup>**

## MONTHLY CAPITOL BIKESHARE TRIPS <sup>82</sup>

Trips



## HOUSEHOLDS WITHOUT PRIVATE VEHICLE OWNERSHIP <sup>84</sup>

**37% VS 10%**  
IN DC US AS A WHOLE

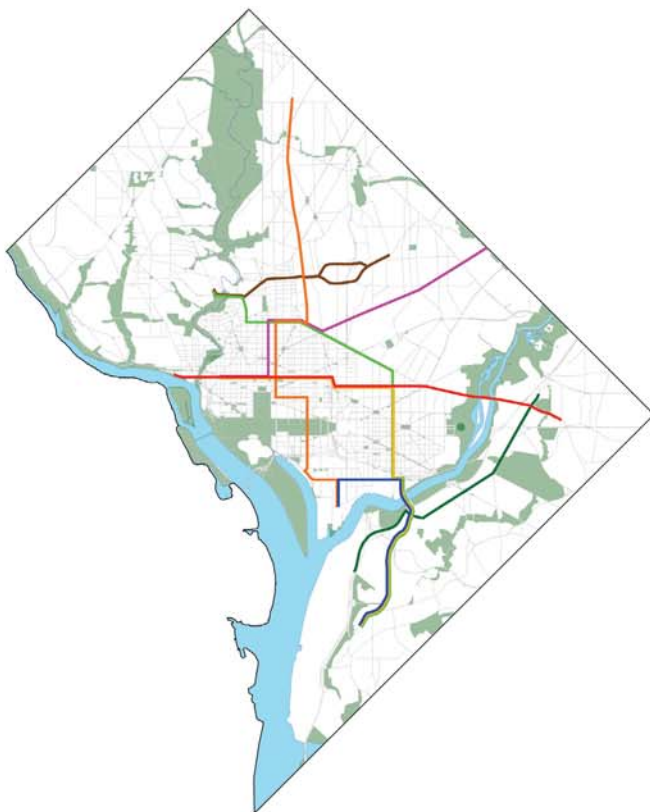


**EACH WORKDAY, DC'S POPULATION GROWS BY 400,000 PEOPLE DUE TO REGIONAL COMMUTERS <sup>85</sup>**



**DC INTRODUCED THE FIRST LARGE SCALE PUBLIC BICYCLE-SHARING PROGRAM IN THE COUNTRY <sup>86</sup>**

**DC HAS 56 MILES OF BIKE LANES AND 55 MILES OF TRAILS <sup>87</sup>**



**THE PLANNED 37-MILE STREETCAR SYSTEM WILL SERVE 150,000 PEOPLE DAILY <sup>83</sup>**

## HOW DO ACTIONS IN TRANSPORTATION HELP MEET OUR CHALLENGES?

**Jobs & Economy** – Reducing congestion and providing efficient transportation alternatives will increase opportunities for business growth and innovation. It will also provide better access to a larger number of jobs. Additionally, many transportation choices translate into lower average transportation costs making the city attractive to new and existing residents while enhancing affordability for all.

**Health & Wellness** – Reducing vehicle emissions will improve air quality and reduce the effects of asthma and other respiratory diseases. Expanding opportunities for safe walking and bicycling throughout the city promotes physical activity to reduce obesity and related health risks.

**Equity & Diversity** – Improving transit options and frequency will provide residents in all neighborhoods with better access to jobs and services. Strategic improvements will target areas of the District less well-served by today's transit infrastructure and provide alternatives to reduce transportation costs which are typically the second largest household expense.

**Climate & Environment** – Reducing the use of private vehicles will improve air quality in the short term and reduce greenhouse gas emissions contributing to long-term climate change. Promoting active modes of transportation such as walking, bicycling, and public transit as well as shifting to cleaner vehicles and fuels will improve our environment today and in the future.

## WHAT DOES THIS MEAN FOR YOU?

Engaging in the actions described below will bring many benefits to our city. Some of the outcomes for residents include:

### CONNECTIVITY

Sustainable DC will expand the range of affordable transportation options—including streetcar, walking, and biking—in neighborhoods across the District. Residents, commuters, and visitors will be better connected and transit will be more convenient and evenly distributed.

### ACTIVITY

By integrating physical activity into daily life, residents can improve heart health and reduce the risk of weight gain and obesity. By making the District safer for walking and biking, Sustainable DC will help expand travel options and encourage more active lifestyles.

### REDUCED CONGESTION

Traffic congestion is noisy, frustrating, dangerous, and unhealthy, but our growing economy depends on the ability to move goods and people. By expanding the range of transportation options and improving the way we manage traffic, we will reduce congestion and support economic growth.

### CLEANER AIR

Sustainable DC will help the District balance private vehicle travel with other modes such as walking and biking, significantly improving air quality over time and reducing our high rates of asthma and respiratory disease.

## GOALS, TARGETS, AND ACTIONS

In order to solve our challenges, this plan lays out the following goals, targets, and actions that focus on transportation in the District. While these actions are aimed at improving connectivity, expanding cycling and pedestrian infrastructure, reducing traffic congestion, and improving air quality, they also contribute to success in other areas of the plan. The goals, targets, and actions emphasize short-term projects ready for immediate implementation. Medium- and long-term actions will involve active consultation with all stakeholders to craft the details surrounding new policies, programs, regulations, and other proposals that may be five to twenty years away.

### Goal 1: Improve connectivity and accessibility through efficient, integrated, and affordable transit systems.

*Target: By 2032, increase use of public transit to 50% of all commuter trips.*



### **Action 1.1: Complete 37 miles of streetcar or premium bus service such as Circulator. (Long Term)**

Work is already underway to modernize and increase the capacity of DC's transit system. After years of planning, DC's streetcar system is under construction and there are plans to extend transit services to currently underserved portions of the District. Between 2008 and 2009, two new Circulator routes were introduced to the existing system.

To expand transit options and connectivity between transit networks, the District will develop a 37-mile network of streetcar services (or potentially premium bus service such as Circulator where streetcar is cost prohibitive), completing the first line by 2014. This network will connect neighborhoods and improve integration between different transportation modes.

### **Action 1.2: Improve transit connections to employment and activity centers from underserved areas. (Medium Term)**

Connectivity will be a central principle for planning future transit investments. The District will make transit services more accessible and more frequent for users, focusing on connecting low-income riders in underserved areas to DC's employment and activity centers. To increase access, service hours could be extended to allow for travel outside of core hours. This extension will aid in expanding employment opportunities for residents in underserved areas and reducing citywide levels of unemployment.

### **Action 1.3: Define and secure permanent funding for transit planning and improvements. (Long Term)**

Consistent and long-term financing for transit planning and improvements comes from many sources including federal budgets, transit revenues, parking revenues, traffic tickets, fuel taxes, and advertising revenue. Because transportation infrastructure investments are extremely costly and can take many years to complete, there needs to be a consistent, reliable source of funding that can keep long-term projects moving forward. In order to secure funding for long-term

transit planning and improvements, the District, together with transit partners, will complete a full review of available funding and an action plan for securing new funds to be allocated to necessary transit investments.

### **Action 1.4: Design transit systems for resilience to extreme weather events. (Medium Term)**

Climate resilience is a critical aspect of our future transit planning and design. Our transit infrastructure has already suffered the consequences of severe weather including buckling rail lines, traffic light outages, and cracks in street pavements due to intense heat and storms. This damage has already cost the District millions of dollars and the ill effects of climate change are expected to worsen. If transit infrastructure cannot reliably withstand these conditions, moving around in the city will become more frustrating, costly, and dangerous. To combat this, the District will ensure that transit systems are resilient to climate change by planning for future flooding, sea level rise, urban heat, and severe storms. An important component of this work will include scheduling regular maintenance and designing resilient transit improvements.

## **Goal 2: Expand provision of safe, secure infrastructure for cyclists and pedestrians.**

*Target: By 2032, increase biking and walking to 25% of all commuter trips.*

### **Action 2.1: Develop a citywide, 100 mile bicycle lane network. (Medium Term)**

The District currently has 4 miles of protected bicycle lanes, 56 miles of bicycle lanes, and another 55 miles of separated multi-use trails. Still, not everyone has easy or convenient access to this infrastructure and there are many more people who would like to bike as long as there are safe routes to and from their homes and destinations. Improving dedicated bicycle access around the city will encourage more people to travel by bicycle.

The District will expand the existing bicycle lane network to include 100 miles of connected lanes. These new bicycle routes will be prioritized in neighborhoods east of the Anacostia River where bicycle infrastructure is currently insufficient.

## Action 2.2: Expand the Capital Bikeshare program by 200 stations. (Medium Term)

The Capital Bikeshare program has been extremely popular since it began and has grown to nearly two million riders in just two years. To maintain this momentum, the District will expand Capital Bikeshare by an additional 200 stations in the city with a specific objective of incorporating neighborhoods further from downtown into the program. In the future, Bikeshare will be a viable travel option both within and between all wards. These additional Bikeshare locations will be coordinated with District and regional transit services to support ease of transfer from one mode of travel to another. In particular, new Bikeshare stations will be prioritized near new Streetcar and Circulator bus stops.

## Action 2.3: Partner with community organizations to deliver bike and pedestrian safety education. (Short Term)

The District already benefits from initiatives such as the DC Bike Ambassadors who attend community events across DC to encourage more people to bike for fun, fitness, and transportation. Bike Ambassadors educate residents about bicycle commuting and distribute bicycle maps. They also collaborate with drivers, cyclists, and pedestrians to promote the safe use of roads, sidewalks, and trails.

To improve public safety, the District will expand the coverage of bicycle and pedestrian safety education to ensure that more drivers, community groups, and public transit operators are aware of pedestrian and bicycle safety measures. Every road user—including bus, car, and taxi drivers—has an influence on the safety of non-motorized travelers. The District plays an important part in ensuring that everyone understands their role in creating a safe environment for pedestrians and cyclists.

## Action 2.4: Collect data to improve understanding of cyclist and pedestrian travel patterns. (Short Term)

One of the biggest challenges in planning for bicycle and pedestrian access, infrastructure, and safety is the availability of biking and walking travel patterns throughout the District. Without this valuable information to form a baseline or predict future changes, it is difficult to plan for future users, allocate funding, or design and build new infrastructure. Currently, there is a lack of robust, high quality data on bicycle and pedestrian travel patterns in DC.

The District Department of Transportation (DDOT) will take the lead on improving data collection and analysis about cyclist and pedestrian travel in DC. This data will be reviewed on an annual or biannual basis and used to prioritize investments in future infrastructure design for cyclists and pedestrians.

## Action 2.5: Program crosswalks and traffic lights for improved safety and convenience of pedestrians and cyclists. (Medium Term)

Crosswalks and traffic lights can be risky places for pedestrians and cyclists. Some of our crosswalks do not provide walkers with enough time to cross the road safely, especially those with reduced mobility such as seniors or people with disabilities. DDOT will complete a full review of crosswalk timings to ensure that all of our pedestrian facilities are programmed for the safety of all potential users.

For cyclists, traffic light cycles will be analyzed along major avenues in the central city and business districts to ensure safe and convenient travel for both cyclists and vehicle traffic. In some cases along major routes, traffic lights may be able to be adjusted so that cyclists and vehicles can both travel unimpeded through green lights on their way through the city. Phasing of lights may be adjusted for different times of day for consistent traffic flow.

### FOR EXAMPLE...

In **Copenhagen, Denmark**, “Greenwave” technology times traffic lights during morning and evening rush hour to meet the needs of cyclists. Outside of rush hour, the timing is adjusted for the predominant type of traffic at that point in time.

## Goal 3: Reduce traffic congestion to improve mobility.

*Target: By 2032, reduce commuter trips made by car or taxi to 25%.*

### Action 3.1: Implement an expanded Performance-Based Parking program. (Short Term)

Since 2008, DDOT has been implementing the Performance-Based Parking Pilot Zone Act in two District neighborhoods. A third pilot was introduced in March 2012 on all meters along the H Street, NE corridor. The pilots are intended to manage demand for parking by adopting variable parking meter rates and expanding residential parking permits. These programs were introduced to protect resident parking, help businesses by increasing car turnover in local neighborhoods, reduce congestion, and promote non-automotive transportation.

Following the success of the pilot programs, performance-based parking in new areas of the city will be expanded to further reduce congestion, increase residential parking availability, and encourage active modes of transportation. New performance parking areas will be based on existing traffic congestion and parking availability.

### Action 3.2: Expand car-sharing programs to low-income residents using financial tools. (Short Term)

The District was an early adopter of car-sharing and already provides several different car-sharing options including round trip and one-way trip types. In fact, DC was the first city in the nation to designate on-street parking spaces for car-share vehicles. To further expand options throughout the city, the District will develop a set of financial tools to encourage users and car-sharing businesses to grow both supply and demand of car-sharing vehicles, particularly in low-income areas.

One financial tool that could expand car-sharing is available through Bank On DC, a collaborative effort among the District government, financial institutions, and non-profit partners that provides access to financial services and products to households who are unable to access conventional banking services. By enabling access to financing, the District will open opportunities for more people in DC, primarily low-income residents, to participate in car-sharing programs.

### Action 3.3: Encourage private businesses to offer incentives for employee travel by transit, walking, or biking. (Medium Term)

A large part of the District’s heavy traffic congestion is due to the high number of commuters using private vehicles to commute into the city every day. Large employers in the District can help change this habit and encourage employees to adopt alternative modes of transit. To improve congestion by having fewer people driving to work, the District will promote strategies that private businesses can adopt to incentivize staff to use transit, bike, or walk to work.

These programs could include initiatives where staff members trade a parking space benefit at the office for a financial offset that covers the cost of commuting by transit. Another popular option used by many businesses is tax-free bicycle purchasing, in which employees take a loan from their company to purchase a bike for commuting purposes. The loan is repaid directly from the employee’s pay check before tax is deducted. The District will consider a range of employer-based incentives that could be used to help reduce congestion by private vehicle commuters.

### Action 3.4: Encourage and promote telecommuting and alternative work schedules for employees. (Short Term)

Many large employers in the District already offer work from home options for employees that reduce the need for employees to commute to work. Some employers also offer telecommuting options to allow staff to work remotely while still accessing professional resources. Alternative scheduling options could also reduce the number of days that staff commute to work that could have significant results on congestion if enough companies participate. For example,



some employers allow staff to condense their 40 hours into fewer days so employees don't need to commute every day. The District will work with large employers to offer more scheduling options for staff to reduce the need to commute to work every day of the week or during the conventional peak travel times.

### Action 3.5: Study the feasibility of a regional congestion fee for travel during peak hours. (Short Term)

The District has explored charging fees and tolls to reduce travel into the central business areas at peak hours, but a congestion fee will only be successful with coordination from surrounding regional governments. In partnership with neighboring jurisdictions, the District will carefully analyze the feasibility and impact of a congestion fee structure that targets people traveling into the District during peak hours by vehicle. This analysis will explore the economic, social, and environmental costs and benefits of introducing some form of a congestion fee on a regional scale.

## Goal 4: Improve air quality along major transportation routes.

*Target: By 2032, eliminate all “unhealthy” air quality index days, including “unhealthy for sensitive groups.”*

### Action 4.1: Strictly limit idling engines. (Short Term)

Cars, trucks, buses, and other motor vehicles are a large source of toxic air contaminants such as carbon monoxide, nitrogen oxides, and other volatile organic compounds in the District.<sup>88</sup> These pollutants damage human health and deteriorate buildings and infrastructure. To reduce these emissions, the District operates a law to limit engine idling, preventing cars and other vehicles from running their engines while stationary. To expand on this regulation, the District will strictly enforce “no idling” zones in targeted neighborhoods with concentrations of idling vehicles or high incidences of asthma. There will be zero tolerance for vehicle idling in these zones. Public campaigns will help make drivers aware of new enforcement policies and encourage more people to turn off their engines when not in use throughout the city.

### Action 4.2: Require District government, and encourage private businesses, to purchase clean fuel, low-emission fleet vehicles. (Long Term)

The District government has introduced low-emission hybrid vehicles into the government fleet including electric vehicles currently used by the Department of Public Works and DC Water. The District will create a policy to continue to procure low-emission and fuel-efficient vehicles as fleet vehicles are replaced. It will be accompanied by targeted training to procurement staff on selecting low-emission vehicle models, supplying clean fuels, and encouraging cleaner travel options for business activity. This requirement will enable the District to lead by example, showcasing the District's commitment to cleaner, more efficient vehicles.

#### FOR EXAMPLE...

In **Reykjavik, Iceland**, 48% of the city's fleet vehicles and all city waste collection trucks now run on bio-methane captured from city landfill sites. Bio-methane is a clean, renewable source of energy, generated during the decomposition of organic materials. Chemically, it is the same as natural gas and it can be used in the same ways. Capturing bio-methane directly from waste helps avoid the release of greenhouse gases into the atmosphere and produces a renewable source of fuel for municipal fleet vehicles.

### Action 4.3: Expand electric vehicle charging infrastructure throughout the city. (Medium Term)

The DC metropolitan area is ranked as the tenth “most ready” city in the United States for electric vehicles. The city currently has about 4.7 public charging locations for every 100,000 residents.<sup>89</sup> The District will install 500 charging stations throughout the city to expand electric vehicle infrastructure, in keeping with demand and encouraging more car-owners to choose electric vehicles. In the mid-term, this number of charging stations is expected to align with the increase in demand to ensure infrastructure matches the needs of vehicles as they appear on the streets.

## Action 4.4: Offer incentives to avoid driving and other emission-generating activities on predicted Code Red and Orange air quality days. (Medium Term)

Code Red and Orange air quality days occur when the level of pollution in our air is the greatest risk for human health. These days are forecast in advance by the US Environmental Protection Agency based on the concentration of harmful substances in the air including ozone, particulate matter, and other toxins.

In the future, when Code Red and Orange days are predicted, the District will offer incentives to DC residents and businesses to avoid activities that generate additional air emissions. These incentives could focus on encouraging people to work from home so that commuting activities do not add more emissions to already unhealthy air quality. Incentives to change behavior will help avoid unnecessary air pollution and associated health risks.

### **FOR EXAMPLE...**

In **Jakarta, Indonesia**, the provincial government holds twice-monthly Car Free Days, which have been warmly received by the city's residents. On a Car Free Day, all motorized vehicles are barred from entering the city in a bid to improve air quality. During these days, city streets are dedicated to cyclists, joggers and pedestrians. In addition, every Sunday vehicles are banned from the city's two busiest streets between the hours of 6am and 11am.

## Action 4.5: Track and report mileage data from clean fuel, low-emission, and electric vehicles. (Long Term)

The District does not currently track the number of clean fuel, low-emission and electric vehicles registered in the city. Without a better understanding of current purchasing choices, driving habits, or supplying clean fuel for more efficient vehicles, it is difficult to plan for future users of these vehicles.

In order to prepare for and encourage cleaner and efficient vehicles, DDOT will gather better data on the use of clean fuel, low-emission and electric vehicles in DC. This data will be reviewed on an annual basis and used to prioritize investments in future infrastructure design for low-emission vehicle owners.

## **HOW CAN YOU HELP TODAY?**

Sustainable DC is making strides to make sure you—the residents, workers, and visitors of DC—have the opportunity to participate in making the District the healthiest, greenest, and most livable city in the country. The following actions outline how you can begin to get involved in this work.

### **COMMUNITY ACTION 1: TRANSPORTATION CLUBS**

Community partners could start groups to encourage walking, cycling, even bus riding clubs. Groups of commuters could agree to meet at central locations and travel to work together to build community around transportation. These clubs could help increase awareness of alternate means of transportation and educate their membership about safety.

### **COMMUNITY ACTION 2: ALTERNATIVE TRANSIT DAYS**

Businesses could sponsor alternative transit days, encouraging commuting by walking, biking, or public transportation by providing breakfast on certain days of the month to employees who travel to and from work without using a personal vehicle.

## **CONCLUSION**

Our priority for transportation is to reduce traffic congestion and improve air quality on DC's streets by encouraging people to drive less and opt for alternative transportation modes. We will ensure that this goal is achieved through the provision of incentives and supportive, resilient transportation infrastructure.

# WASTE



We envision a District that generates zero waste. This means reducing the amount of waste we create and reusing or recycling waste that we do produce. The District will re-capture the value of waste through urban agriculture or composting, recycling, material reuse, and potentially even energy production, creating a “closed loop” waste management system.

## INTRODUCTION

“Waste” no longer describes the many materials we currently use and discard each day. Much of the paper, plastic, glass, uneaten food, unused chemicals, and building materials we currently put into the waste stream still have important value. These items can be used again or repurposed into new products. Of the materials that are actually “waste,” the District has a responsibility to dispose of them in a manner that minimizes their environmental, social, and economic impacts. Sustainable DC actions target the reduction, reuse, and recycling of the resources and waste resulting from human activities in the District.

Waste is the result of using materials and resources inefficiently. Food waste is created when we grow, buy, or cook more than we

need. Packaging waste is the excessive wrapping that comes with most of the products we buy. As natural resources become scarcer and waste disposal becomes more expensive, it is increasingly important for the District to find new ways of making former waste part of a new and economically beneficial process.

Landfills often contaminate soil, groundwater, and surface waters. They also release methane gas, which has climate effects even more potent than those from carbon dioxide. On top of these serious problems, the high economic cost and emissions associated with transporting waste over long distances, the inefficient use of valuable land, and the inequity of low-income communities disproportionately affected by these sites make it clear that landfills are an unsustainable way to manage waste in the long term.



**TO HAUL AND  
DISPOSE OF WASTE**



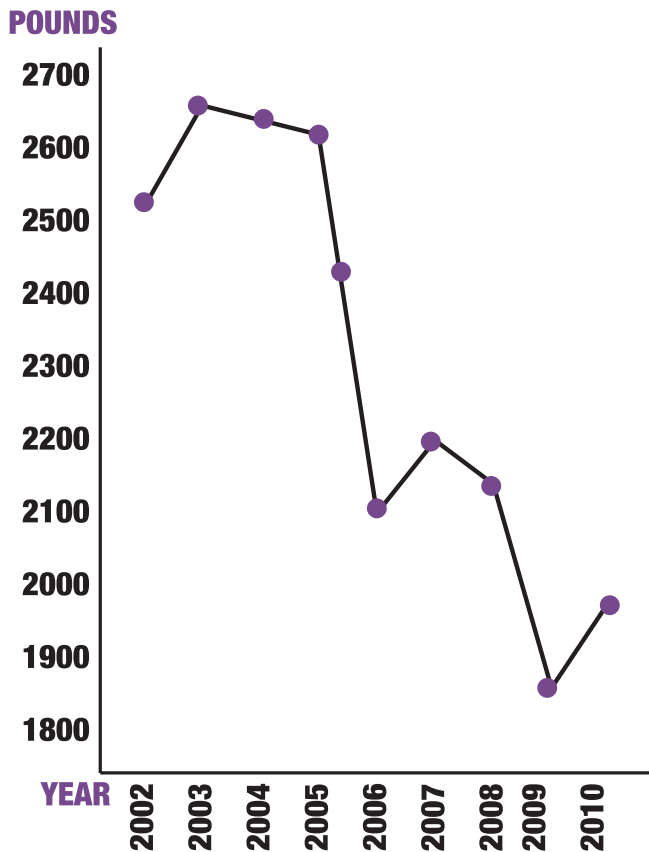
**TO HAUL AND  
PROCESS RECYCLING.**

**IF DC RESIDENTS RECYCLED 30%  
OF WHAT IS CURRENTLY THROWN AWAY,  
WE COULD SAVE \$250,800<sup>90</sup>**

 **DC  
GENERATES  
800,000  
TONS OF WASTE  
ANNUALLY<sup>91</sup>**



## POUNDS OF TRASH GENERATED PER RESIDENCE<sup>92</sup>



**21%**  
OF HOUSEHOLD WASTE RECYCLED IN 2010<sup>93</sup>

**NATIONALLY,  
RECYCLING AND  
REUSE** 

**EMPLOYS 1,250,000  
WASTE MANAGEMENT  
EMPLOYS ONLY 250,000**<sup>94</sup>

### HOW DO ACTIONS IN WASTE HELP MEET OUR CHALLENGES?

**Jobs & Economy** – Hundreds of thousands of tons of materials from the District are dumped in landfills each year. Many of these materials could help expand our local sustainable processing and manufacturing industries, which could create jobs. Current methods of waste disposal are extremely costly when much of that material still has economic value and usable potential. Effective waste recycling and reuse can capture new economic value from discarded or dangerous materials.

**Health & Wellness** – Landfill sites create health and safety risks in surrounding communities; waste transportation also negatively affects air quality and traffic. Minimizing and eliminating waste will significantly reduce these risks.

**Equity & Diversity** – Exporting waste from one community to another raises serious questions of environmental justice. A sustainable society manages its own waste stream without negatively affecting the quality of life for others. A more robust resource management approach (e.g., more recycling and composting) would create new permanent employment and keep more local dollars recirculating in our economy.

**Climate & Environment** – Natural resources are already limited and becoming increasingly difficult to access. Using less and reusing what we already have will help balance our consumption and waste management patterns. Current waste disposal methods also generate greenhouse gas emissions, so reuse and other alternatives will have positive climate change benefits as well.

## WHAT DOES THIS MEAN FOR YOU?

Engaging in the actions described below will bring many benefits to our city. Some of the outcomes for residents include:

### **REDUCED COSTS OF WASTE MANAGEMENT**

Sustainable DC actions will help the District reduce the cost and increase the efficiency of our waste management system. These savings will free funds for the District to spend on other municipal needs such as schools, transportation, and infrastructure. By wasting less, residents can also save more for other necessary expenses.

### **IMPROVED WASTE COLLECTION SERVICES**

To help achieve our zero waste vision, the District is improving our waste collection at the point of pickup and as waste is transferred and processed. To ensure that every resident and business can effectively reduce, reuse, and recycle, this plan will create new and better options for managing waste at home, at work, and at school.

### **NEW ECONOMIC OPPORTUNITY**

Better recognizing the value of the materials we throw away will allow the District of Columbia to save money by buying less, recapturing lost value, and spending less on remediation from expensive waste management processes. Improving our waste stream will ultimately build economic opportunities and human and environmental health across the city.

## GOALS, TARGETS, AND ACTIONS

In order to solve our challenges, this plan lays out the following goals, targets, and actions that focus on waste in the District. While these actions are aimed at reducing the volume of waste, reusing materials, and increasing recycling, they also contribute to success in other areas of this plan. The goals, targets, and actions emphasize short-term projects ready for immediate implementation. Medium- and long-term actions will involve active consultation with all stakeholders to craft the details surrounding new policies, programs, regulations and other proposals that may be five to twenty years away.

## Goal 1: Reduce the volume of waste generated and disposed.

*Target: By 2032, send zero solid waste to landfills per year and reduce total waste generation by 15%.*

### Action 1.1: Develop a robust Waste Action Plan with the objective of decreasing all citywide waste streams. (Medium Term)

The Department of Public Works (DPW) and the District Department of the Environment (DDOE) will develop a comprehensive Waste Action Plan to define an integrated strategy for reaching zero waste while reducing emissions and building new economic opportunities in recycling and reuse. The Waste Action Plan will better understand existing waste baselines, prioritize waste reduction measures, promote reuse, and encourage recycling (including composting and potentially waste-to-energy conversion).

### Action 1.2: Introduce a Pay-As-You-Throw pricing structure for waste collection services. (Long Term)

The District will change the way residents and businesses are charged for waste collection by introducing a Pay-As-You-Throw (PAYT) program. This initiative means that those who generate less waste will pay less than those who generate more. The concept is similar to utility bills in that you only pay for the water and electricity that you use. Thousands of US cities charge for waste this way because PAYT creates a direct incentive to recycle more and generate less waste.<sup>95</sup>

The new system will apply to all households served by District waste collection services. Residents will be charged a fee for each can of waste they generate.

#### **FOR EXAMPLE...**

Since 1996, **Fort Collins, Colorado**, has used a Pay-As-You-Throw program for its residential waste management. The system has significantly increased households' recycling efforts and increased awareness of the need to reduce waste. Residents have demanded new opportunities to recycle materials, including cardboard, office paper, and compostable items.<sup>96</sup>

### **Action 1.3: Ban Styrofoam and non-recyclable plastic containers from food and retail outlets. (Medium Term)**

Styrofoam, or polystyrene, is a common packaging material, particularly for food and drinks from fast food outlets.

Styrofoam presents some serious environmental risks because toxic chemicals are used in its manufacturing, the material cannot be recycled, and it is not biodegradable.

When Styrofoam is burned, it releases noxious gases into the air. These challenges can be avoided by reducing the use of Styrofoam altogether. A number of US cities have already introduced restrictions on the use of Styrofoam in restaurants, including Portland and San Francisco.

The District plans to introduce new legislation to ban Styrofoam and non-recyclable plastic containers from all food and retail outlets that are currently covered by the District's "bag law" (Anacostia River Clean Up and Protection Act). This law will encourage retailers and suppliers to find alternative, affordable, environmentally-preferable materials for packaging and help reduce the District's total volume of non-recyclable waste.

### **Action 1.4: Introduce a bottle deposit law. (Long Term)**

Under the bag law, retailers charge five cents to customers for each disposable plastic or paper bag they use in order to reduce the litter that ends up in our waterways. With this small charge, 75% of District residents reported a reduction in the number of bags used and the majority of businesses surveyed reported at least a 50% drop in the amount of bags used.<sup>97</sup> The decrease in plastic bags used correlated with a decrease in the amount of plastic bags collected as trash from the Anacostia River.

Building on the success of this law, the District will study and introduce a container deposit law for all glass and plastic bottles (a "bottle bill"). Bottle bills have been proven an

effective means of recovering glass and plastic containers for recycling. Similar initiatives have already been adopted in other states, including Maine and Hawaii. Successful legislation will require coordination with neighboring states to ensure regional agreement on the specifics of such a law.

### **Action 1.5: Implement Sustainable Sites Initiative (SITES) guidelines for park maintenance. (Medium Term)**

The District has an objective to eliminate 100% of organic waste generated from District government parks through strategic landscape maintenance and composting. Using guidelines from the Sustainable Sites Initiative (SITES), the District will use a range of tools to manage organic waste. SITES provides best practice guidelines and performance benchmarks for the design, construction, and maintenance of sustainable landscapes. The guidelines cover water management, soil, vegetation, materials, and human health issues related to landscaped areas. Projects meeting certain sustainability standards can achieve a certification which could be applied to District parks. To be successful, the District will first need to identify appropriate sites for composting large volumes of organic waste.

### **Action 1.6: Allow nearby businesses to share containers for landfill waste, recycling, and composting. (Short Term)**

The District will introduce permits to allow neighboring businesses to share waste, recycling, and composting containers. In doing so, the cost of waste collection as well as the numbers of trips that haulers need to take will be reduced for these businesses. Some businesses who could not otherwise afford composting or enhanced recycling services will be able to do so through cost sharing. In addition, many businesses may be able to reduce the volume of waste they generate through solar compacting technologies to ensure there is sufficient capacity within one container.

## Goal 2: Reuse materials to capture their economic value.

*Target: By 2032, reuse 20% of all construction and demolition waste.*

### Action 2.1: Establish a District product stewardship program. (Long Term)

Product stewardship is an approach to environmental protection that focuses on the products we buy and calls on every manufacturer, distributor, and others in the supply chain to share responsibility for reducing the negative environmental effects of consumer products. This responsibility means manufacturers must consider reducing the use of toxic substances, designing for reuse and recyclability, or create take-back programs for consumers to return products when no longer useable. On the consumer side, it means encouraging people to buy products that have minimized environmental impacts, using those products efficiently, and recycling or reusing them wherever possible.

The District will incorporate product stewardship principles and programs into the city's waste management and purchasing plans. District government will also explore partnerships with manufacturers, retailers, and others to increase the rate of product recycling. Part of this action will include a new manufacturers' take-back program for electronic waste, paints, and other hazardous materials.

### Action 2.2: Introduce construction waste management requirements. (Medium Term)

Through new legislation, the District will require new large construction and major renovation projects to prepare a comprehensive construction waste management plan before any work begins on site. The plan will explain how waste will be managed so that 75% of construction and demolition waste is reused or recycled. It will also describe each category of waste material that will be generated on the site, the estimated quantity of each type, and how each will be managed. To ensure proper management of construction and demolition waste, the District will establish a certification program for waste haulers that confirms proper disposal through a comprehensive audit of the waste management process.

### Action 2.3: Require the use of recycled and salvaged building materials. (Long Term)

The District will introduce new legislation requiring new large building projects to replace at least 50% of core construction materials and materials for commercial interiors with recycled or salvaged alternatives. This law will include materials such as steel, concrete, bricks, gypsum, timber, glass, and others.

The legislation will help create a new market for recycled construction materials and materials salvaged from construction sites. It will complement Action 2.2, explained above, by creating a clear outlet for contractors to divert construction wastes away from landfills.

### Action 2.4: Complete a waste life-cycle study. (Short Term)

The District will explore the feasibility of different waste management options to better capture the costs of waste life cycles, including waste-to-energy conversion options. Waste-to-energy conversion is the process of creating electricity or heat from trash and would help divert a significant volume of waste away from landfills while providing a secure alternative energy source. While potential hazards of this process need to be carefully examined, there are several known benefits to consider, such as reducing the distances waste is transported and decreasing transportation costs and emissions.

The city needs to fully understand alternative waste management options to achieve zero waste. By understanding the costs, benefits and details of different options, the District will be able to implement economically viable approaches to reduce waste volumes. The District will complete a feasibility study to weigh the environmental, social and economic costs of waste management options, including waste-to-energy facility conversions.

### Action 2.5: Reuse 50% of biosolids treated in the District (Short Term)

Biosolids are the nutrient-rich materials that are produced during wastewater treatment. In the District, our wastewater is treated at the Blue Plains Advanced Wastewater Treatment Plant which treats more than 330 million gallons of raw





sewage per day. Of that total, 1,200 wet tons of biosolids are produced each day and reused as fertilizers for agricultural and landscaping uses.

DC Water has developed a long-range management program focused on recycling biosolids in an environmentally safe and beneficial way. As part of this program, the District will increase the amount of biosolids reused to 50 percent of all biosolids waste treated at Blue Plains. Through partnerships with commercial, government, and academic institutions, biosolids could be used as a soil amendment product in urban soil restoration, tree planting, and green roofs.

#### ***FOR EXAMPLE...***

**The Melbourne Water Corporation (MWC)** is a public utility providing water and sewage treatment services in and around Melbourne, Australia. A research study conducted by MWC in 2005 considered the reuse options for its growing supply of biosolids. Evaluation of the material's geotechnical, chemical, microbiological, and biodegradability characteristics showed many similarities with natural clay. A test embankment at a Melbourne Water facility demonstrated the feasibility of using the material in construction and also provided performance data which was of interest to highway construction contractors. Since the study, Melbourne Water has been working with state regulators to reclassify the clay-rich biosolids from "waste" material to "resource" for commercial reuse.<sup>98</sup>



## Goal 3: Increase the citywide recycling rate.

*Target: By 2032, achieve a total waste diversion rate (recycling, composting, and conversion) of 80%.*

### Action 3.1: Provide all households with a three-track waste collection process. (Long Term)

To facilitate diversion of residential waste away from landfill, the District will expand existing waste collection services to provide a three-track system for all households. This practice will supply curbside collection facilities for general waste, mixed recyclables, and compostable organic waste (food and landscape waste). By providing a service for compostable materials, the District can significantly reduce the volume of general waste sent to regional landfills which would also reduce emissions from hauling and decomposition. The real success of this initiative, however, will depend on the full participation of residents.

### Action 3.2: Establish a new organics transfer station in the District. (Short Term)

The District will facilitate the development of a new waste transfer facility in the District for organic waste. The transfer station will receive organic waste collected from or deposited by residents for later transfer to a composting facility or other organic waste operation (e.g. anaerobic digestion). The new transfer station may be either an entirely new site or part of an existing waste transfer site. This infrastructure will be essential to ensure the District's ability to manage organic waste effectively after it is removed from the general waste stream.

### Action 3.3: Increase the size of recycling bins. (Medium Term)

Some of the District's current waste and recycle bins are the wrong sizes proportionally for how we want people to use them; waste bins are often larger than recycling bins, encouraging residents to generate more garbage than recycling each week.

To combat this problem, the District will introduce new sizes of recycling and waste containers for the next generation of "supercans" (large trash cans) for residential waste collection. The new bins will provide more capacity for recyclables, and

less capacity for general waste. The switch will encourage residents to recycle all their cans, bottles, and paper while introducing less material into the waste stream.

### Action 3.4: Increase recycling receptacles in the public realm. (Long Term)

There are currently only a few recycling pilot programs in place for public spaces in the District. These programs are usually a partnership between private sponsors and business improvement districts or the federal government, in the case of the National Mall. Blue recycling containers are located next to standard trash receptacles for recyclable paper, aluminum cans, plastic, and glass bottles. The private partnership then pays for collecting and hauling the recyclables.

The District will expand the current coverage of public realm recycling containers to additional neighborhoods, especially in commercial and tourist areas of the city where foot traffic is concentrated and where the most litter is generated.

#### FOR EXAMPLE...

After discovering that downtown trash cans contained between 15% to 90% recyclable material, the **DowntownDC Business Improvement District (BID)** decided to take action. In partnership with PepsiCo, the Downtown BID installed 360 public recycling bins downtown concentrated in high traffic public spaces. This transformation of downtown's waste system is a key result of the Downtown "ecodistrict," where the BID committed to neighborhood-scale sustainability. Learn more at <http://www.downtowndc.org/programs/greening-downtown>.

### Action 3.5: Provide incentives for residential composting and recycling. (Medium Term)

To increase the rate of residential recycling and composting, the District will launch a suite of incentives for households receiving waste collection services from the DC Department of Public Works. Incentives will be targeted toward specific waste streams to encourage diversion of certain materials. For example, payments could be made to households for large items such as televisions and other electronics that are collected for recycling. The District may also introduce short-term incentives for households to reach a target proportion of recyclables in their total waste. District government will also explore neighborhood-scale projects to encourage



collaboration between households in meeting shared waste targets. These types of programs have proven successful in other cities, including Philadelphia and Dallas.<sup>99</sup>

## HOW CAN YOU HELP TODAY?

Sustainable DC is making strides to make sure you—the residents, workers, and visitors of DC—have the opportunity to participate in making the District the healthiest, greenest, and most livable city in the country. The following actions outline how you can begin to get involved in this work.

### **COMMUNITY ACTION 1: COMMUNITY ORGANIZATIONS**

Community, cultural, and faith groups generate waste too. They could encourage recycling at events by providing temporary containers for collection that can be transferred into the larger waste collection network. By encouraging these practices at events, community and neighborhood organizations can encourage similar practices at home.

### **COMMUNITY ACTION 2: DONATION AND REUSE**

Community partners could play a leadership role in our waste diversion activities by making alternative outlets such as consignment shops and donation more enticing for products that are no longer useful to their original purchasers. Selling or donating clean, useful clothing, household goods, and possessions such as books can give them a new lease on life and make their value available to others.

## CONCLUSION

Our overall goal is to achieve zero waste by increasing the proportion of materials diverted for reuse, recycling, or composting. Sustainable DC proposes a series of actions focused on improving our waste management infrastructure, changing the behavior of residents and businesses, and generating new economic opportunity for recycled and reused materials.



# WATER



We envision a District in which our water resources—all water falling in and flowing through the city—will be clean and accessible to support good health, thriving ecosystems, and an innovative economy. The water we return to the environment will be of equal or better quality than the water we take out. Stormwater will be properly managed through green infrastructure and thriving native ecosystems.


## INTRODUCTION

Water brings life to our city, but also washes away dirt and other pollutants that end up in our rivers and streams. The Potomac and Anacostia Rivers—as well as our many smaller streams and creeks—are in poor health and need to be restored. Sustainable DC focuses on the elements of the water cycle that we can improve and influence: flooding caused when sewers and creeks are overwhelmed by water flow from streets and roofs; contamination from road runoff; and the increasing demand our city puts on limited water resources.

Poor water quality makes rivers and streams unsuitable for recreation, threatens wildlife and aquatic ecosystems, exposes people to dangerous contaminants, and requires costly and energy-intensive treatment. The two main waterways in the District, the Potomac and Anacostia Rivers, routinely fall below water quality standards established to protect humans and the environment.

Water consumption in the District is higher than in the average US city.<sup>100</sup> As our population and economy grow and changing weather patterns introduce more variable temperatures and rainfall, future water demand could exceed available supplies. Water efficiency, recycling, and reuse are smart practices that are essential to a healthy city and will ensure this vital resource stays affordable for District residents.

As our city developed and natural landscapes were replaced by buildings and pavement, the ability of the landscape to absorb rainwater significantly decreased. When it rains, hard surfaces send water pouring into sewers and flood-prone neighborhoods. Add to this our location at the junction of the Potomac and Anacostia Rivers and our elevation just above sea level, many low-lying areas of the city will be at increased risk of flooding as sea levels continue to rise. Considering all this, the city must consider—and address—these vulnerabilities in future planning and development or face more costly, dangerous, and wide-ranging damage in the future.

**BETWEEN 2 TO 3**  **BILLION GALLONS OF UNTREATED SEWAGE OVERFLOWS FROM DC'S COMBINED SEWERS INTO THE ANACOSTIA RIVER EACH YEAR<sup>101</sup>**

**20,000 TONS OF TRASH AND DEBRIS ENTER THE ANACOSTIA RIVER EACH YEAR<sup>102</sup>**





# WASHINGTON, DC HYDROLOGIC SYSTEM PART OF THE CHESAPEAKE BAY WATERSHED<sup>103,104</sup>

## GREAT FALLS INTAKE AND LITTLE FALLS INTAKE

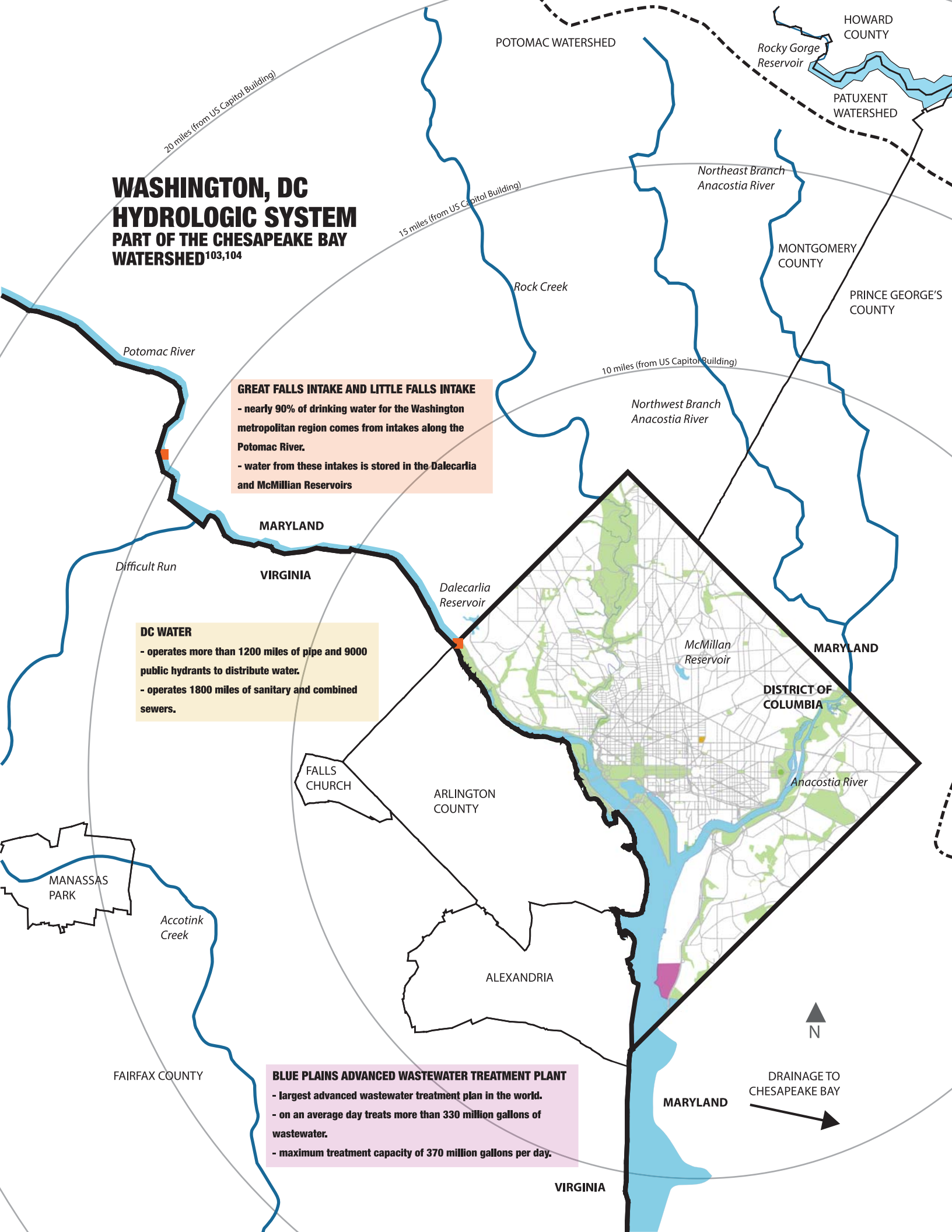
- nearly 90% of drinking water for the Washington metropolitan region comes from intakes along the Potomac River.
- water from these intakes is stored in the Dalecarlia and McMillan Reservoirs

## DC WATER

- operates more than 1200 miles of pipe and 9000 public hydrants to distribute water.
- operates 1800 miles of sanitary and combined sewers.

## BLUE PLAINS ADVANCED WASTEWATER TREATMENT PLANT

- largest advanced wastewater treatment plan in the world.
- on an average day treats more than 330 million gallons of wastewater.
- maximum treatment capacity of 370 million gallons per day.



20 miles (from US Capitol Building)

15 miles (from US Capitol Building)

10 miles (from US Capitol Building)

POTOMAC WATERSHED

HOWARD COUNTY

Rocky Gorge Reservoir

PATUXENT WATERSHED

Northeast Branch Anacostia River

MONTGOMERY COUNTY

PRINCE GEORGE'S COUNTY

Potomac River

Rock Creek

Northwest Branch Anacostia River

MARYLAND

VIRGINIA

Difficult Run

Dalecarlia Reservoir

McMillan Reservoir

MARYLAND

DISTRICT OF COLUMBIA

Anacostia River

FALLS CHURCH

ARLINGTON COUNTY

MANASSAS PARK

Accotink Creek

ALEXANDRIA



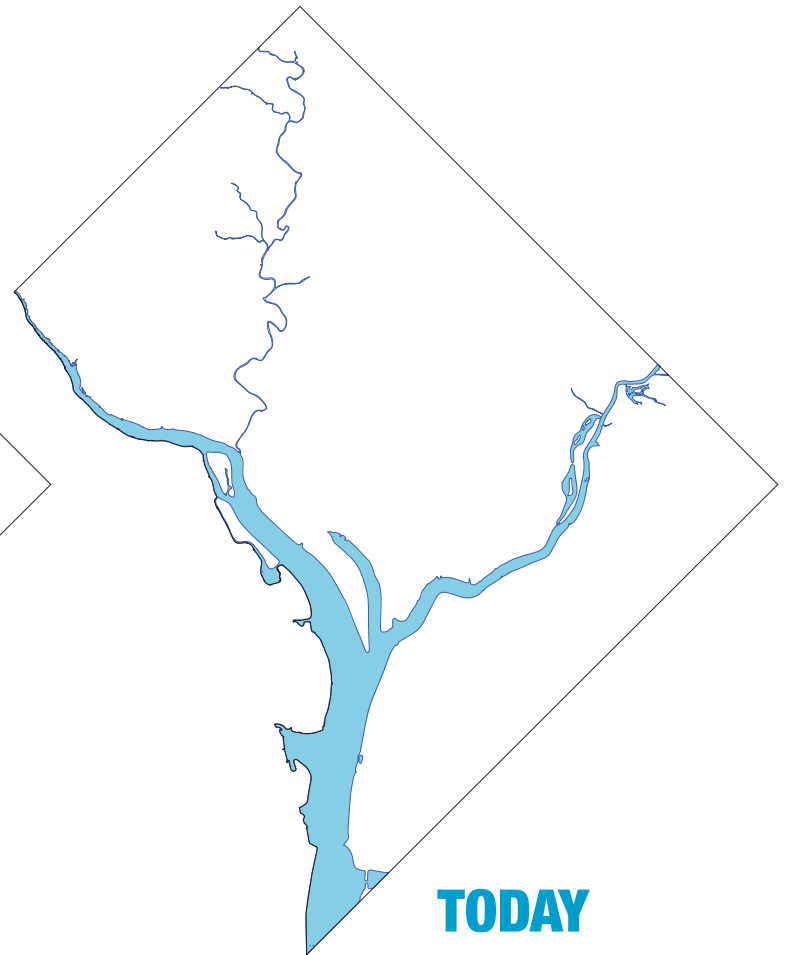
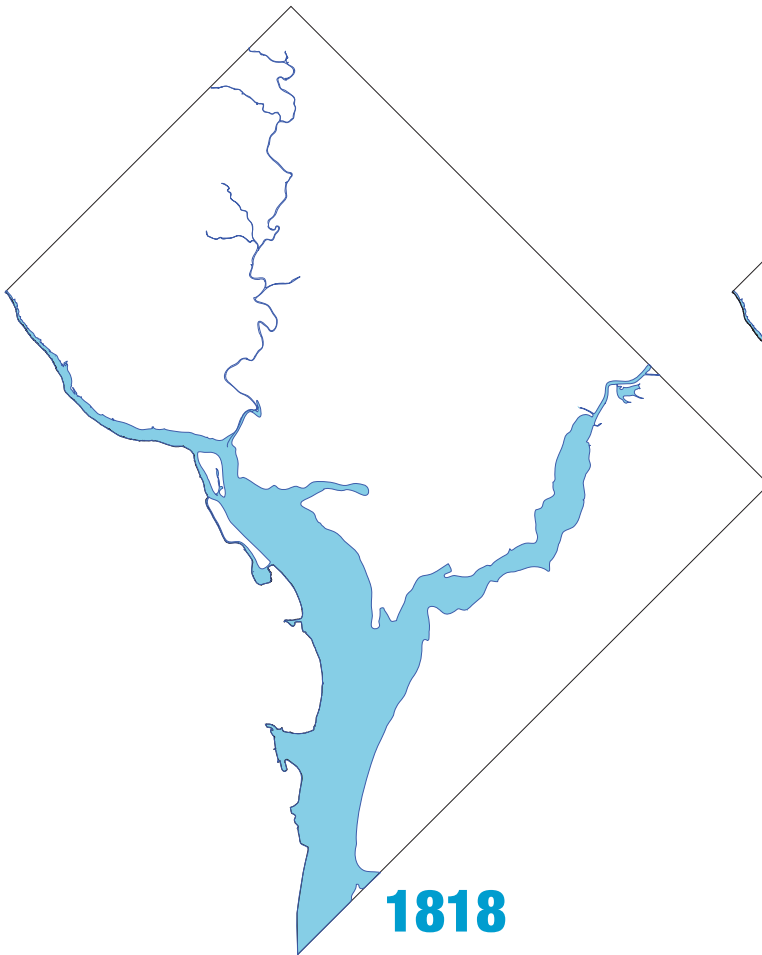
FAIRFAX COUNTY

MARYLAND

DRAINAGE TO CHESAPEAKE BAY

VIRGINIA

## LAND AREA IN 1818 AND LAND AREA TODAY <sup>105</sup>



**LAND BELOW 40 INCHES IN ELEVATION IS HIGHLY VULNERABLE TO SEA LEVEL RISE AND COULD BECOME INUNDATED BY 2100 IF SEA LEVEL CONTINUES TO RISE**<sup>106</sup>

**ALMOST 3.5 SQUARE MILES OF LAND ARE BELOW 140 INCHES IN ELEVATION AND WILL BE MORE SUSCEPTIBLE TO EPISODIC FLOODING AND STORM SURGES**<sup>107</sup>

**\$14,325,000**

**COULD BE SAVED ANNUALLY ACROSS THE DISTRICT THROUGH ROOFTOP RAINWATER CAPTURE AND REUSE**<sup>109</sup>



**ROUGHLY 2 SQUARE MILES OF DC LAND LIES BELOW 40 INCHES IN ELEVATION – ROUGHLY HALF THE SIZE OF ROCK CREEK PARK**<sup>108</sup>

**75%-90%**  
**OF THE ANACOSTIA'S POLLUTION IS CAUSED BY STORMWATER RUNOFF FROM URBAN AREAS**<sup>110</sup>

## HOW DO ACTIONS IN WATER HELP MEET OUR CHALLENGES?

**Jobs & Economy** – Focusing on water efficiency and green infrastructure, the District will help stimulate permanent jobs and new economic growth in industries designing, installing, and maintaining green roofs, raingardens, and other green infrastructure that help the urban landscape manage water. New economic activity will also develop in association with recreation in and along clean and restored waterways.

**Health & Wellness** – Conserving water will help ensure its long-term availability. Improved water quality will decrease human exposure to toxins and associated risks of illness. Cleaner rivers will also expand opportunities for healthy recreation and physical activities such as fishing, swimming, and boating.

**Equity & Diversity** – By using water more efficiently and reusing rainwater, District residents and businesses can buffer themselves against future price increases. Cleaner rivers and creeks will reduce environmental and health risks for some of the District's most vulnerable communities along the Anacostia River and for people who rely on fish for food.

**Climate & Environment** – With improved stormwater control, we can better manage the risk of neighborhood flooding and make the District more resilient to climate change. Green infrastructure will also help build and restore local animal habitats, clean rivers, and restore valuable aquatic ecosystems.

## WHAT DOES THIS MEAN FOR YOU?

Engaging in the actions described below will bring many benefits to our city. Some of the outcomes for residents include:

### **CLEANER WATERWAYS**

Our rivers are not suitable for many recreational uses right now, but they should become a resource for everyone to enjoy. Cleaning our waterways will create new and expand current water-based recreational activities such as boating, fishing, and swimming.

### **REDUCED FLOOD RISK**

Many District residents and businesses have experienced significant and costly flooding during recent years. Climate change projections suggest that flooding may become more frequent and severe. Enhanced stormwater control strategies are needed to protect us against future risks.

### **WATER SECURITY AND WATER BILLS**

By increasing water efficiency across the District and finding new ways to capture and reuse water, we can significantly reduce municipal water and wastewater bills and the risks and costs of water scarcity in the future.

## GOALS, TARGETS, AND ACTIONS

In order to solve our challenges, this plan lays out the following goals, targets, and actions that focus on water in the District. While these actions are aimed at improving water quality, relieving pressure on stormwater infrastructure, and reducing the demand for potable water, they also contribute to success in other areas of this plan. The goals, targets, and actions emphasize short-term projects ready for immediate implementation. Medium- and long-term actions will involve active consultation with all stakeholders to craft the details surrounding new policies, programs, regulations, and other proposals that may be five to twenty years away.

### **Goal 1: Improve the quality of waterways to standards suitable for fishing and swimming.**

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

#### **Action 1.1: Field test innovative technologies to improve river water quality. (Medium Term)**

Together with academic leaders, the District will identify and field test innovative technologies to improve the quality of our waterways including biologically-based approaches that use



living plants and micro-organisms to treat wastewater. In-river solutions may include the development of plant or shellfish colonies to filter water naturally. An oyster, for example, can filter up to 50 gallons of water per day. Biological and other innovative techniques that improve water quality while supporting aquatic ecosystems and habitat can complement more traditional approaches to removing pollution and legacy toxics such as sediment removal and dredging.

#### **FOR EXAMPLE...**

**The city of Copenhagen, Denmark** revitalized an abandoned harbor into a public amenity, creating recreational space, improving water quality, and enhancing property values. The city physically removed heavy metals from the riverbed, modernized the sewer system, and improved water treatment with physical, biological, and chemical cleaning. Sewer overflow channels were closed and automatic warning systems put in place to detect bacteria levels and indicate when the water is safe for swimming. The amount of sewage and rainwater flowing into the harbor has been reduced by around 50%.

### **Action 1.2: Restrict the use of cosmetic pesticides and chemical fertilizers. (Medium Term)**

The application of pesticides and fertilizers to gardens and parks contributes to water pollution as rainfall washes these chemicals into the ground, rivers, and streams. Pesticides and fertilizers are a major source of pollution for the Anacostia and Potomac Rivers and Rock Creek.

Restricting the sale and use of cosmetic pesticides and chemical fertilizers will help decrease this water quality risk and protect our natural ecosystems. This new regulation will allow only specific lower-risk pesticides for controlling weeds and pests in lawns and gardens with limited public health and safety exceptions such as preventing West Nile Virus or controlling stinging insects. Only organic fertilizers will be permitted, creating a healthy soil condition and increasing demand for locally sourced compost and mulch from food and plant waste.

### **Action 1.3: Restrict the use of harmful salts on roads in winter. (Medium Term)**

Research has shown that the application of rock salt to roads in winter harms trees and pollutes waterways. Up to 70% of

the salt applied to our roads ends up in aquatic ecosystems, damaging wildlife habitats and drinking water supplies.<sup>11</sup> With exceptions for salting strategic roadways for safe travel, restricting the use of road salt would limit pollution in snowmelt. Wherever possible, alternative anti-icing agents will be used on roads before snow falls and supplemented with chemical de-icers. Similar strategies are used in other cities including Seattle, Portland, and Denver.

### **Action 1.4: Study the feasibility of implementing nutrient and water quality trading programs. (Short Term)**

By recognizing the varying costs of controlling pollutants at different places within a watershed, water quality trading can promote the most efficient and cost-effective ways of improving our rivers and streams. Trading programs allow polluters facing high costs of remediation to meet their regulatory requirements by paying for equivalent (or greater) pollution reductions elsewhere at a lower cost.

A feasibility study will help the District assess the implications of a water quality trading program and identify the most effective options for program design. Such a trading program could enable the District to meet Total Maximum Daily Load (TMDL) targets for key pollutants while working with partners in neighboring states.

### **Goal 2: Relieve pressure on stormwater infrastructure and reduce long-term flood risk.**

*Target: By 2032, use 75% of the landscape to capture rainwater for filtration or reuse.*

### **Action 2.1: Install 2 million new square feet of green roofs. (Medium Term)**

Green roofs provide a habitat for birds and insects, insulate buildings to reduce energy use, and cool neighborhoods by reducing heat absorption. Green roofs also retain rainfall to reduce the volume and rate of stormwater running into the sewer system. Increasing the installation of green roofs can be another tool in the suite of strategies to reduce the risk of combined sewer overflows and flash floods.

Due partly to the District's Green Roof Rebate Program, the city already has almost 1.5 million square feet of green roofs and installed more green roof area than any other city in 2011. Given the wide range of benefits and the relatively low costs of green roofs, the District will install 2 million additional square feet of such planted surfaces on public and private buildings by 2018.

### Action 2.2: Increase the use of green infrastructure along public rights of way. (Short Term)

Highways, streets, and parking lots are sources of water pollution such as oils, greases, and other chemicals that wash into soils, rivers, and streams during rainfall events, lowering water quality and harming wildlife. Green infrastructure such as permeable pavement, bioswales, dense tree plantings, and other low impact development techniques can capture pollutants before they reach our rivers.

Using green infrastructure elements along public rights-of-way including streets, alleys, and sidewalks will help reduce damage caused by polluted stormwater runoff.

### Action 2.3: Double the number of homes participating in the RiverSmart Homes program. (Medium Term)

The RiverSmart Homes program offers incentives to homeowners who want to reduce stormwater runoff from their properties. Homeowners receive up to \$1,200 to help manage stormwater onsite through rain barrels, pervious pavers, rain gardens, trees, and specialized landscaping. These tools help naturally treat and drain stormwater onsite which reduces the amount of polluted stormwater reaching rivers.

RiverSmart Homes has been hugely popular with residents across the District. In order to encourage more homeowners to treat stormwater onsite, the District will double the current number of homes participating in the RiverSmart Homes program through additional funding and staff.

#### FOR EXAMPLE...

Every year, 25 billion gallons of stormwater runoff from our streets and roofs carry oils and dirt into our streams and rivers. Recognizing an opportunity to help his community and lower his water bills, **Andrew Wible** signed up for the District Department of the Environment's RiverSmart Homes program to reduce stormwater runoff on his property. Through the program, Andrew's yard was studied and a plan was developed to collect the stormwater. The Riversmart Homes Program provided him with technical expertise and financial assistance he put toward a rain garden, native landscaping, pervious pavers, and trees. Andrew now enjoys a beautifully landscaped space, not to mention lower water bills and a higher property value. Learn more at [www.ddoe.dc.gov/riversmarthomes](http://www.ddoe.dc.gov/riversmarthomes).

### Action 2.4: Build 25 miles of green alleys. (Long Term)

The District has 360 miles of alleys, most of which are covered by hard, impermeable surfaces that produce large volumes of stormwater runoff. Green alleys, on the other hand, use low-impact development techniques to keep stormwater and pollutants from entering the sewer system, streams, and rivers. In July 2012, the District Department of Transportation (DDOT) and DDOE unveiled the city's first three green alleys in the Watts Branch Watershed in Ward 7 where gravel and impervious surfaces were replaced with permeable concrete to allow water to soak into the soil. Eight additional green alley sites are now being designed in Wards 3, 4, and 5, that will bring the total to four miles.

### Action 2.5: Establish pervious surface minimums for targeted zoning districts. (Short Term)

As zoning regulations are updated to respond to growing sustainability challenges, the District will establish standards that require minimum amounts of pervious surfaces for low density residential development. To reduce stormwater and pollution runoff, new development sites (and large renovation projects) will be required to maintain or create a certain proportion of pervious land area. The minimum pervious area will be calculated for each zone in accordance with building footprint limits and consideration of local flood risks to ensure that stormwater volumes are reduced in line with

local conditions. This initiative will be aligned with the Green Area Ratio requirement for new commercial and larger scale residential development sites.

### Goal 3: Reduce demands for potable water and increase rainwater reuse.

*Target: By 2032, decrease total water use by 40%.*

#### Action 3.1: Update water-efficiency standards in District building codes. (Short Term)

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 showerheads, toilets, faucets, and high efficiency washing machines significantly reduce water use.

The Department of Consumer and Regulatory Affairs (DCRA), DDOE, and industry representatives on the Construction Code Coordinating Board (CCCB) have proposed a new Green Building Code for the District based on the model International Green Construction Code of 2012. The District will be one of the first jurisdictions in the nation to adopt the new green code. Proposed updates to the plumbing code will raise water efficiency standards by 30% for commercial and multifamily residential compared to existing codes, aligning District standards more closely with requirements found in the US Green Building Council's LEED program.

#### **FOR EXAMPLE...**

**The City of San Francisco** enacted the Commercial Water Conservation Ordinance in 2009 requiring all commercial property owners to provide certain water conservation measures for their buildings by January 1, 2017. Measures include low-flow showerheads, low-flow faucets and faucet aerators, high-efficiency toilets and urinals, and repairs to all plumbing leaks. Building owners are required to comply with the ordinance when executing building additions, alterations, or improvements greater than a specific size.

#### Action 3.2: Revise building codes to allow the use of alternative water systems. (Short Term)

While building codes are being revised to promote green design and construction, the District will provide more flexibility for developers and building owners to use new technologies to collect and reuse rainwater and gray water for non-potable uses such as building systems, toilets, cleaning, and irrigation. Promoting rainwater and gray water reuse systems will allow building owners to capture “free” rainwater, reducing costs of potable water and helping to manage stormwater runoff.

#### Action 3.3: Expand use of neighborhood-scale water collection networks. (Long Term)

Collecting rainwater from a single rooftop in a backyard rain barrel is an easy way to reduce the use of energy-intensive potable water. To capture more rainwater, collection systems could be installed across neighboring buildings and shared for landscaping or cleaning purposes. By sharing a system, a project that might be too expensive for one property to undertake becomes a cost-effective improvement.

Building on the success of shared water collection at Canal Park in Ward 6 and other sites, the District and private development partners will replicate neighborhood scale rainwater collection systems to capture, treat, and store rainwater from multiple neighboring properties for use by local residents and property-owners.

#### Action 3.4: Develop incentives for water-efficiency measures in landscaping and building design. (Long Term)

The District has instituted a number of financial incentives to promote energy efficiency and clean energy technologies and is developing stormwater regulations, building codes, and water fee structures that promote efficiency. The city will coordinate and expand water efficiency incentives to reduce consumption, encourage low and zero-water technologies (e.g. waterless urinals, composting toilets), and promote water-efficient landscape design using native species and green infrastructure.



### Action 3.5: Expand the use of water monitoring technologies. (Long Term)

All residential and commercial customers in the city have meters to track water usage and many meters provide hourly or minute-by-minute consumption information that allow customers to identify leaks and wasteful practices. Expanding the use of these water monitoring technologies, leak detection, and alert systems in public and private buildings will provide greater transparency about where water could be saved.

#### *HOW CAN YOU HELP TODAY?*

Sustainable DC is making strides to make sure you—the residents, workers, and visitors of DC—have the opportunity to participate in making the District the healthiest, greenest, and most livable city in the country. The following actions outline how you can begin to get involved in this work.

#### **COMMUNITY ACTION 1: WATER EDUCATION**

Members of the community and non-profit organizations could work to further educate our community about the easy ways all residents can make more efficient use of water and save money. Strategies such as fixing leaks from outdoor fixtures including

irrigation systems, fountains, and water features and from indoor appliances, plumbing fixtures, and heating and cooling devices can substantially decrease our city's water usage while saving homeowners money on their water bills.

#### **COMMUNITY ACTION 2: FIXTURE INCENTIVES**

Similar to the DC Sustainable Energy Utility's work with energy-efficient appliances, a community partner could encourage homeowners through financial incentivizes to replace water-hogging fixtures such as toilets and showerheads with newer, more efficient models. The program could then partner with private industry to recycle the old fixtures into new products.

#### *CONCLUSION*

To clean our rivers and streams and protect the health of city residents and the environment, we need to improve how we manage stormwater and wastewater, prevent waste, and ensure clean and reliable water supplies to support a growing population. Achieving these objectives will also enhance our ability to react to the risks of climate change.

# ACTIONS SUMMARY



## GOVERNANCE

### GOAL 1: Expand District government leadership to implement the Sustainable DC plan.

- 1.1 Dedicate District government staff and funding to implement the Sustainable DC plan, track progress, and make results publicly available.
- 1.2 Implement a process to collect, analyze, and report data to ensure progress toward goals and targets by prescribed dates.
- 1.3 Identify existing laws, regulations, and policies that conflict with sustainability goals and areas where new authority is required.
- 1.4 Expand public/private collaboration to meet sustainability goals.
- 1.5 Expand sector-based sustainability pledges and challenges to promote adoption of sustainable practices.
- 1.6 Continue annual “Budget Challenge” competition for innovative sustainability projects within District government.



## JOBS & THE ECONOMY

### Goal 1: Grow and diversify DC’s business sectors for sustained economic prosperity.

Target: By 2032, develop 3 times as many small District-based businesses.

- 1.1 Complete a review of regulatory reform options to make it easier to do business in the District.
- 1.2 Formally recognize corporations that meet independent social and environmental performance standards.
- 1.3 Use anchor institutions to create local markets for sustainable enterprises.

### Goal 2: Expand the number and range of jobs available to District residents and ensure access to new jobs through appropriate skills training.

Target: By 2032, cut citywide unemployment by 50% and increase by 5 times the number of jobs providing green goods and services.

- 2.1 Improve integration of sustainable jobs training into school curricula to expose schoolchildren to new careers.
- 2.2 Partner with the Workforce Investment Council to develop targeted workforce development strategies.



	TIMEFRAME	LEAD AGENCY	PARTNER AGENCIES
	Short	EOM	DDOE, OP
	Short	EOM	DDOE, OP
	Short	DDOE	DDOE, OP, DCRA, DOES, DPW, DC Water, DDOT, DSLBD, DGS
	Short	EOM	DDOE, OP
	Short	DDOE	EOM, OP, Office of Religious Affairs, Office of Neighborhood Engagement, Community Partners
	Medium	OP	All District government

	TIMEFRAME	LEAD AGENCY	PARTNER AGENCIES
	Short	DSLBD	DCRA, DMPED, DDOE, OP, DOES
	Medium	DSLBD	DCRA, DMPED, DDOE, OP
	Medium	OCP	EOM, DDOE, OP
	Short	DCPS	DDOE, DOES
	Short	DOES	DMPED



## HEALTH & WELLNESS

### Goal 1: Inspire healthy, active lifestyles for all residents, regardless of income, ability, or employment.

Target: By 2032, cut the citywide obesity rate by 50%.

**1.1** Expand public park access and programming to promote healthy lifestyles through physical exercise.

**1.2** Invest in a public health campaign to promote the benefits of healthy eating and active living.

### Goal 2: Create safe environments that are conducive to healthy living.

Target: By 2032, require all new housing projects in the District to meet “Healthy by Design” standards.

**2.1** Develop a “Healthy by Design” program for new affordable housing projects, with priority focus in low-income and underserved neighborhoods.

**2.2** Complete a feasibility study to understand the environmental, economic, and social barriers to healthy lifestyles that are specific to the District.



## EQUITY & DIVERSITY

### Goal 1: Ensure that all school-age children in the District are educated in sustainability and prepared for a changing green economy.

Target: By 2032, Teach at least 50% of children in the District about sustainability concepts.

**1.1** Modernize all public school buildings.

**1.2** Increase the quality and number of Early Childhood Development Centers.

**1.3** Launch the implementation of the Environmental Literacy Plan (ELP) in school curriculum.

### Goal 2: Ensure transparency in the District’s sustainability agenda including future plans and past progress.

Target: By 2032, expose 100% of District residents to Sustainable DC events and initiatives in their neighborhood.

**2.1** Reach community members in their daily lives with sustainability information.

**2.2** Feature the actions and impacts of residents and local community leaders in public sustainability campaigns.



## CLIMATE & ENVIRONMENT

### Goal 1: Minimize the generation of greenhouse gas emissions from all sources.

Target: By 2032, reduce greenhouse gas emissions by 50%.

**1.1** Create online tools that allow people to view and share greenhouse gas emissions data and make more informed choices.

**1.2** Create financial tools that support climate protection programs by capturing the environmental costs of products and services.

**1.3** Report District emissions on a regular basis to track the reductions that can be attributed to specific initiatives.



	TIMEFRAME	LEAD AGENCY	PARTNER AGENCIES
	Short	DPR	DOH
	Short	DOH	DPR, DCPS, DSLBD
	Medium	DCHA	DHCD, DOH, DDOE, OP
	Short	DOH	OP

	TIMEFRAME	LEAD AGENCY	PARTNER AGENCIES
	Medium	DGS	DCPS
	Short	DME	OSSE, DCPS
	Short	DDOE	OSSE, DCPS
	Short	EOM	DDOE, OP
	Short	EOM	DDOE, OP

	TIMEFRAME	LEAD AGENCY	PARTNER AGENCIES
	Short	DDOE	OCTO
	Short	DDOE	OCTO, OP
	Short	DDOE	DGS, DPW



## CLIMATE & ENVIRONMENT (CONTINUED)

### Goal 2: Advance physical adaptation and human preparedness to increase the District's resilience to future climate change.

Target: By 2032, require all new building and major infrastructure projects to undergo climate change impact analysis as part of the regulatory planning process.

- 2.1 Evaluate the vulnerability of the District's energy infrastructure to the anticipated impacts of climate change.
- 2.2 Prepare District emergency services to respond to severe climate-related events such as extreme heat, storms, and flooding.
- 2.3 Require adaptation solutions as part of planning consent for new developments.
- 2.4 Ensure transportation infrastructure can withstand the upper ranges of projected climate change impacts.



## BUILT ENVIRONMENT

### Goal 1: Increase urban density to accommodate future population growth within the District's existing urban area.

Target: By 2032, increase the District population by a net of 250,000 residents.











- 1.1 Increase affordable housing in the District.
- 1.2 Expand brownfield redevelopment incentives and certification programs.
- 1.3 Reduce required parking minimums and restrict surface parking for large developments.
- 1.4 Modify zoning regulations to allow accessory dwellings such as apartments over garages or in basements.

### Goal 2: Develop active and vibrant neighborhoods to create new economic opportunity and support a high quality of life.

Target: By 2032, provide a variety of amenities and services within a 20-minute walk of all residents.

- 2.1 Ease permitting requirements for temporary arts, community, and business uses.
- 2.2 Create a government-backed revolving loan fund to support new businesses with a priority for those developed by District residents.
- 2.3 Convert five vacant buildings into permanent cultural or business incubation centers.
- 2.4 Triple the number of Live Near Your Work grants.
- 2.5 Locate new affordable housing in walkable neighborhoods.
- 2.6 Implement the Southwest Ecodistrict Initiative and Maryland Avenue Small Area Plan.

	TIMEFRAME	LEAD AGENCY	PARTNER AGENCIES
	Short	DDOE	OP
	Medium	HSEMA	MPD, DCFD, DDOE, OP
	Medium	OP	DDOE
	Long	DDOT	DDOE, OP, DGS

ADDRESSES CHALLENGES	TIMEFRAME	LEAD AGENCY	PARTNER AGENCIES
	Long	EOM	OP, DCHD, DCHA
	Long	DDOE	DMPED
	Short	OP	DDOT
	Short	OP	
	Short	DCRA	OP
	Medium	DSLBD	
	Long	DMPED	DGS, DHCD
	Medium	OP	
	Long	DHCD	DCHFA, DMPED
	Long	OP	DDOE, DMPED



## **BUILT ENVIRONMENT (CONTINUED)**

### **Goal 3: Improve the sustainability performance of existing buildings.**

Target: By 2032, retrofit 100% of existing commercial and multi-family buildings to achieve net-zero energy standards.

**3.1** Rehabilitate all public housing to be green, healthy, and capable of meeting net-zero energy standards.

**3.2** Eliminate environmental health threats such as mold, lead, and carbon monoxide in at least 50% of the District's affordable housing.

**3.3** Expand existing programs to train 100 District residents in the latest green construction skills.

**3.4** Build public-private partnerships to expand best practices for building operations and maintenance.

**3.5** Retrofit and modernize all public buildings to at least the LEED Gold standard or equivalent green building certification.

### **Goal 4: Ensure the highest standards of green building design for new construction.**

Target: By 2032, meet net-zero energy use standards with all new construction projects.

**4.1** Update the Green Building Act to require higher levels of LEED certification.

**4.2** Provide incentives for new building projects to achieve at least the LEED Gold standard certification or equivalent.

**4.3** Incorporate best practice sustainability principles into neighborhood planning.

**4.4** Adopt the latest green construction codes for all new construction and major renovations.

**4.5** Require all new buildings to be net-zero or net-positive.



## **ENERGY**

### **Goal 1: Improve the efficiency of energy use to reduce overall consumption.**

Target: By 2032, cut citywide energy use by 50%.

**1.1** Require building energy audits and disclosure of energy performance.

**1.2** Establish Minimum Energy Performance Standard for buildings, phased in by building size.











**1.3** Replace all street and public lighting with high-efficiency fixtures.







**1.4** Fund \$500 million of renewable energy and efficiency retrofits.

**1.5** Complete a Comprehensive Energy Plan by 2014.

**1.6** Launch a citywide educational campaign to lower citywide energy use.



ADDRESSES CHALLENGES	TIMEFRAME	LEAD AGENCY	PARTNER AGENCIES
	Long	DCHA	DHCD
	Medium	DDOE, DHCD	DOH
	Medium	DOES	DMPED, DSLBD
	Long	DGS	DDOE
	Long	DGS	DDOE
	Medium	DDOE	EOM
	Medium	DMPED	DDOE
	Short	OP	
	Short	DCRA	DDOE, DGS
	Long	DDOE	EOM

ADDRESSES CHALLENGES	TIMEFRAME	LEAD AGENCY	PARTNER AGENCIES
	Long	EOM	DDOE
	Long	EOM	DC SEU
	Short	DDOT	DGS, DCPS
	Medium	DDOE	DC SEU
	Short	DDOE	
	Short	DDOE	DCPS



## ENERGY (CONTINUED)

### **Goal 2: Increase the proportion of energy sourced from clean and renewable supplies.**

Target: By 2032, increase the use of renewable energy to make up 50% of the District's energy supply.

- 2.1 Introduce legislation to reduce fossil fuel-based power use.
- 2.2 Complete a feasibility study to identify opportunities for neighborhood-scale renewable energy systems.
- 2.3 Build 1,000 additional residential and commercial renewable energy projects.
- 2.4 Allow community solar and renewable energy systems through legislation.
- 2.5 Develop a wind farm in the region to power District government and private facilities.

### **Goal 3: Modernize energy infrastructure for improved efficiency and reliability.**

Target: By 2032, reduce annual power outages to between 0 and 2 events of less than 100 minutes per year.

- 3.1 Develop a plan for citywide rollout of smart meters and smart grid infrastructure.
- 3.2 Work with utility companies to improve the reliability of energy transmission and distribution.
- 3.3 Modernize electricity infrastructure to enable expansion of local energy generation projects.
- 3.4 Work with local educational and workforce development institutions to train District residents for work in the renewable energy and energy efficiency industry.




























## FOOD

### **Goal 1: Increase agricultural land uses within the District.**

Target: By 2032, put 20 additional acres of land under cultivation for growing food.

- 1.1 Adopt the Sustainable Urban Agriculture Act and zoning amendments for expanded urban agriculture.
- 1.2 Streamline the process to find and use land for community agriculture projects.
- 1.3 Install educational gardens at 50% of DC Public Schools.
- 1.4 Develop orchards or other food-producing landscaping on 5 acres of DC's public spaces.
- 1.5 Develop permitting for pop-up agriculture.

ADDRESSES CHALLENGES	TIMEFRAME	LEAD AGENCY	PARTNER AGENCIES
	Long	DDOE	
 	Short	DDOE	
 	Medium	DDOE	
 	Short	DDOE	
	Long	DDOE	
 	Medium	DDOE	PEPCO, Washington Gas
	Medium	DDOE	PEPCO, Washington Gas
 	Medium	PEPCO	
	Short	DOES	DMPED, DSLBD

ADDRESSES CHALLENGES	TIMEFRAME	LEAD AGENCY	PARTNER AGENCIES
 	Short	DDOE	EOM, OP
 	Long	OP	DGS
	Medium	DCPS	OSSE, DME, DDOE
  	Long	DGS	DDOT UFA, DCPS, DPR
  	Short	DCRA	OP



## FOOD (CONTINUED)

### Goal 2: Ensure universal access to secure, nutritious, and affordable food supplies.

Target: By 2032, ensure 75% of DC residents live within ¼ mile of a community garden, farmers' market or healthy corner store.

- 2.1 Expand the DC Healthy Corner Store initiative.
- 2.2 Introduce fresh food circulators and mobile vendors in neighborhoods with poor access to fresh foods.
- 2.3 Expand the Double Dollars program to farmers' markets and corner stores citywide.
- 2.4 Incorporate best practices in healthy and local menus in all DC Public Schools.
- 2.5 Increase transparency about the nutritional content of food.
- 2.6 Develop cooperative food purchasing systems.

### Goal 3: Develop the food industry into a strong and viable economic sector.

Target: By 2032, produce or obtain 25% of food within a 100-mile radius.

- 3.1 Complete a comprehensive study of DC food supply systems.
- 3.2 Create a Local Food Hub for consolidation and distribution of local produce.
- 3.3 Develop small business food processing incubator center in DC.
- 3.4 Permit incidental sales of food from community gardens.
- 3.5 Designate staff to actively participate in a new Food Policy Council.
- 3.6 Increase government and institutional procurement of local foods.















## NATURE






### Goal 1: Protect and restore wetlands, waterways, and aquatic ecosystems.

Target: By 2032, increase the acreage of wetlands along the Anacostia and Potomac Rivers by 50%.

- 1.1 Work with the National Park Service to update open space guidelines and management policies.
- 1.2 Develop an Urban Wetland Registry to facilitate restoration or creation of wetland habitat.
- 1.3 Plant and maintain an additional 140 acres of wetlands along the Anacostia and Potomac Rivers and smaller streams.
- 1.4 Require new waterfront developments and renovations to incorporate Low Impact Development strategies.
- 1.5 Implement a Fisheries Management Plan to restore DC's native fisheries.



ADDRESSES CHALLENGES	TIMEFRAME	LEAD AGENCY	PARTNER AGENCIES
	Medium	DOH	DCCK, KP, OP
	Medium	DOH	DCRA
	Medium	DOH	OP
	Medium	DCPS	DME
	Long	DOH	EOM
	Medium	Community	DDOE, OP
	Short	OP	DOH
	Medium	DMPED	OP, DSLBD, DCRA
	Short	DSLBD	DMPED, OP, DOES
	Short	OP	DCRA
	Short	OP	DOH
	Short	OCP	DCPS

ADDRESSES CHALLENGES	TIMEFRAME	LEAD AGENCY	PARTNER AGENCIES
	Long	DDOE	NPS
	Medium	DDOE	DPR
	Long	DDOE	NPS, USACE
	Medium	DDOE	OP
	Medium	DDOE	



## NATURE (CONTINUED)

### Goal 2: Protect and expand tree cover and green landscapes, creating an integrated District-wide ecosystem.

Target: By 2032, cover 40% of the District with a healthy tree canopy.

- 2.1 Plant 8,600 new trees citywide per year until 2032.
- 2.2 Replace 75% of public lighting with fixtures that reduce light pollution.
- 2.3 Create a connectivity map to guide development of viable habitats throughout the District.
- 2.4 Require trees and green space on all new development sites.
- 2.5 Stipulate use of native plant varieties for District government plantings and landscaping.

### Goal 3: Enhance access to parks and open spaces for all residents.

Target: By 2032, provide parkland or natural space within a 10-minute walk of all residents.

- 3.1 Prepare an open space plan to increase residential connections to green space and the rivers.
- 3.2 Expand the formal trail network for hiking and biking.
- 3.3 Renovate and improve all District playgrounds.
- 3.4 Improve transit linkages to parks and natural areas.
- 3.5 Create small parks and green spaces in areas with inadequate open space.

















## TRANSPORTATION

### Goal 1: Improve connectivity and accessibility through efficient, integrated, and affordable transit systems.

Target: By 2032, increase use of public transit to 50% of all commuter trips.

- 1.1 Complete 37 miles of streetcar networks.
- 1.2 Improve transit connections to employment and activity centers from underserved areas.
- 1.3 Define and secure permanent funding for transit planning and improvements.
- 1.4 Design transit systems for resilience to extreme weather events.

ADDRESSES CHALLENGES	TIMEFRAME	LEAD AGENCY	PARTNER AGENCIES
	Short	DDOT UFA	DDOE, DGS, DCPS, Casey Trees
	Long	DDOT	DPR, DGS
	Short	DDOE	
	Medium	OP	DDOE
	Medium	DDOT UFA	DGS, DCPS, DDOE
	Short	DPR	OP, DGS
	Medium	DDOT	DDOT, DPR
	Short	DPR	DCPS
	Long	DDOT	DPR
	Short	DGS	DPR

ADDRESSES CHALLENGES	TIMEFRAME	LEAD AGENCY	PARTNER AGENCIES
	Long	DDOT	WMATA
	Medium	DDOT	
	Long	DDOT	WMATA
	Medium	DDOT	DDOE



## TRANSPORTATION (CONTINUED)

### **Goal 2: Expand provision of safe, secure infrastructure for cyclists and pedestrians.**

Target: By 2032, increase biking and walking to 25% of all commuter trips.

**2.1** Develop a citywide, 100 mile bicycle lane network.

**2.2** Expand the Capital Bikeshare program by 200 stations.

**2.3** Partner with community organizations to deliver bike and pedestrian safety education.

**2.4** Collect data to improve understanding of cyclist and pedestrian travel patterns.

**2.5** Program crosswalks and traffic lights for improved safety and convenience of pedestrians and cyclists.

### **Goal 3: Reduce traffic congestion to improve mobility.**

Target: By 2032, reduce commuter trips made by car or taxi to 25%.

**3.1** Implement an expanded Performance-Based Parking program.

**3.2** Expand car-sharing programs to low-income residents using financial tools.

**3.3** Encourage private businesses to offer incentives for employee travel by transit, walking, or biking.

**3.4** Encourage and promote telecommuting and alternative work schedules for employees.

**3.5** Study the feasibility of a regional congestion fee for travel during peak hours.

### **Goal 4: Improve air quality along major transportation routes.**

Target: By 2032, eliminate all “unhealthy” air quality index days, including “unhealthy for sensitive groups.”

**4.1** Strictly limit idling engines.

**4.2** Require District government, and encourage private businesses, to purchase clean fuel, low-emission fleet vehicles.

**4.3** Expand electric vehicle charging infrastructure throughout the city.

**4.4** Offer incentives to avoid driving and other emission-generating activities on predicted Code Red and Orange air quality days.

**4.5** Track and report mileage data from clean fuel, low-emission, and electric vehicles.



ADDRESSES CHALLENGES	TIMEFRAME	LEAD AGENCY	PARTNER AGENCIES
	Medium	DDOT	OP
	Medium	DDOT	WMATA
	Short	DDOT	WABA
	Short	DDOT	OP
	Medium	DDOT	
	Short	DDOT	
	Short	DDOT	DMPED
	Medium	DDOE, OP	Community Partners
	Short	DDOT	Community Partners
	Short	DDOT, OP, MWCOG	
	Short	DDOE	MPD
	Long	EOM	DGS, DDOT, DPW, MPD, DCFD, OCP
	Medium	DDOE	DGS
	Medium	EOM	DMPED, DDOT, WMATA
	Long	DDOE	DMV, DDOT



## WASTE

### **Goal 1: Reduce the volume of waste generated and disposed.**

Target: By 2032, send zero solid waste to landfills per year and reduce total waste generation by 15%.

**1.1** Develop a robust Waste Action Plan with the objective of decreasing all citywide waste streams.

**1.2** Introduce a Pay-As-You-Throw pricing structure for waste collection services.

**1.3** Ban Styrofoam and non-recyclable plastic containers from food and retail outlets.

**1.4** Introduce a bottle deposit law.

**1.5** Implement Sustainable Sites Initiative (SITES) guidelines for park maintenance.

**1.6** Allow nearby businesses to share containers for landfill waste, recycling, and composting.

### **Goal 2: Reuse materials to capture their economic value.**

Target: By 2032, reuse 20% of all construction and demolition waste.

**2.1** Establish a District product stewardship program.

**2.2** Introduce construction waste management requirements.

**2.3** Require the use of recycled and salvaged building materials.

**2.4** Complete a waste life cycle study.

**2.5** Reuse 50% of biosolids treated in the District.

### **Goal 3: Increase the citywide recycling rate.**

Target: By 2032, achieve a total waste diversion rate (recycling, composting, and conversion) of 80%.

**3.1** Provide all households with a three-track waste collection process.

**3.2** Establish a new organics transfer station in the District.

**3.3** Increase the size of recycling bins.

**3.4** Increase recycling receptacles in the public realm.

**3.5** Provide incentives for residential composting and recycling.

ADDRESSES CHALLENGES	TIMEFRAME	LEAD AGENCY	PARTNER AGENCIES
	Medium	DPW	DDOE, OP
	Long	DPW	DDOE
	Medium	DDOE	DPW, EOM
	Long	DDOE	DPW, EOM, MWCOG
	Medium	DPR	DGS
	Short	DCRA	DPW, DDOE
	Long	DPW	
	Medium	DDOE	DPW, DGS, DCRA
	Long	DDOE	DPW
	Short	DPW	
	Short	DC Water	
	Long	DPW	DDOE
	Short	DPW	DDOE, OP
	Medium	DPW	DDOE
	Long	DPW	DDOE, OP, BIDs
	Medium	DDOE	OP



## WATER

### **Goal 1: Improve the quality of waterways to standards suitable for fishing and swimming.**

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

- 1.1 Field test innovative technologies to improve river water quality.
- 1.2 Restrict the use of cosmetic pesticides and chemical fertilizers.
- 1.3 Restrict the use of harmful salts on roads in winter.
- 1.4 Study the feasibility of implementing nutrient and water quality trading programs.

### **Goal 2: Relieve pressure on stormwater infrastructure and reduce long-term flood risk.**

Target: By 2032, use 75% of the landscape to capture rainwater for filtration or reuse.












- 2.1 Install 2 million new square feet of green roofs.
- 2.2 Increase the use of green infrastructure along public rights of way.
- 2.3 Double the number of homes participating in the RiverSmart Homes program.
- 2.4 Build 25 miles of green alleys.
- 2.5 Establish pervious surface minimums for targeted zoning districts.

### **Goal 3: Reduce demands for potable water and increase rainwater reuse.**

Target: By 2032, decrease total water use by 40%.

- 3.1 Update water-efficiency standards in District building codes.
- 3.2 Revise building codes to allow the use of alternative water systems.
- 3.3 Expand use of neighborhood-scale water collection networks.
- 3.4 Develop incentives for water-efficiency measures in landscaping and building design.
- 3.5 Expand the use of water monitoring technologies.



ADDRESSES CHALLENGES	TIMEFRAME	LEAD AGENCY	PARTNER AGENCIES
	Medium	DDOE	
	Medium	DDOE	
	Medium	DDOE	
	Short	DDOE	
	Medium	DDOE	Community
	Short	DDOT	DDOE, DC Water
	Medium	DDOE	
	Long	DDOT	DDOE, PEPCO
	Short	OP	DDOE
	Short	DCRA	DDOE
	Short	DCRA	DGS, DDOE
	Long	DDOE	OP
	Long	DDOE	
	Long	DDOE	DCRA

## Acronyms and Abbreviations

BIDs	Business Improvement Districts
DCKK	DC Central Kitchen
DCFD	District of Columbia Fire Department
DCHA	District of Columbia Housing Authority
DCHFA	District of Columbia Housing Finance Agency
DCPS	DC Public Schools
DCRA	Department of Consumer and Regulatory Affairs
DC SEU	DC Sustainable Energy Utility
DDOE	District Department of the Environment
DDOT	District Department of Transportation
DDOT UFA	District Department of Transportation Urban Forestry Administration
DGS	Department of General Services
DHCD	Department of Housing and Community Development
DME	Office of the Deputy Mayor for Education
DMPED	Office of the Deputy Mayor for Planning and Economic Development
DMV	Department of Motor Vehicles
DOES	Department of Employment Services
DOH	Department of Health
DPR	Department of Parks and Recreation
DPW	Department of Public Works
DSLBD	Department of Small and Local Business Development
EOM	Executive Office of the Mayor
HSEMA	Homeland Security and Emergency Management Agency
KP	Kaiser Permanente
MPD	Metropolitan Police Department
MWCOG	Metropolitan Washington Council of Governments
NPS	National Park Service
OCP	Office of Contracting and Procurement
OCTO	Office of the Chief Technology Officer
OP	Office of Planning
OSSE	Office of the State Superintendent of Education
USACE	US Army Corps of Engineers
WABA	Washington Area Bicyclist Association
WMATA	Washington Metropolitan Area Transit Authority

## Timeframes

Short	0-5 years
Medium	4-15 years
Long	10-20 years

# REFERENCES

## BACKGROUND

1. <http://planning.dc.gov/DC/Planning/DC+Data+and+Maps/DC+Data/2012+Population+Estimates/Annual+Population+Estimates+April+1+2010+to+July+1+2012>

## GOVERNANCE

2. <http://www.pointpark.edu/About/Sustainability/GreenResources>
3. <http://www.epa.gov/osw/education/pdfs/toolkit/tools-m.pdf>
4. <http://www.ecy.wa.gov/climatechange/whatucando.htm>
5. <http://www.sustain.ucla.edu/handbook/article.asp?parentid=3465>

## JOBS & THE ECONOMY

6. <http://www.neighborhoodinfodc.org/wards/wards.html>
7. <http://www.neighborhoodinfodc.org/wards/wards.html>
8. <http://www.census.gov/population/www/cen2000/commuting/index.html#DC>
9. <http://dmped.dc.gov/DC/DMPED/Programs+and+Initiatives/DC+Workforce+Investment+Council/State+Integrated+Workforce+Plan+for+Workforce+Investment+Act+Title+I+Wagner-Peyser+Act>
10. <http://dmped.dc.gov/DC/DMPED/Programs+and+Initiatives/DC+Workforce+Investment+Council/DC+Workforce+Development+Strategic+Plan+2012-2016>

## HEALTH & WELLNESS

11. [http://www.washingtonpost.com/wp-srv/metro/documents/cdc\\_dc\\_water12012010.pdf](http://www.washingtonpost.com/wp-srv/metro/documents/cdc_dc_water12012010.pdf)
12. <http://www.neighborhoodinfodc.org/wards/wards.html>
13. <http://www.capitalareafoodbank.org/wp-content/uploads/2011/05/2011-fact-sheet-update05.24.11.pdf>
14. <http://www.capitalareafoodbank.org/wp-content/uploads/2011/05/2011-fact-sheet-update05.24.11.pdf>
15. <http://www.neighborhoodinfodc.org/wards/wards.html>
16. <http://www.neighborhoodinfodc.org/wards/wards.html>
17. <http://newsroom.dc.gov/show.aspx?agency=doh&section=2&release=19808&year=2010&file=file.aspx%2frelease%2f19808%2fOBESITY%2520ACTION%2520PLAN.pdf>
18. <http://newsroom.dc.gov/show.aspx?agency=doh&section=2&release=19808&year=2010&file=file.aspx%2frelease%2f19808%2fOBESITY%2520ACTION%2520PLAN.pdf>

19. <http://www.mesothelioma.com/asbestos-exposure/states/washington-dc/>
20. <http://www.dcasthmapartnership.org/asthma-strategic-plan/>
21. <http://www.dcasthmapartnership.org/asthma-strategic-plan/>
22. [http://www.cdc.gov/nceh/lead/data/State\\_Confirmed\\_ByYear\\_1997\\_2006.pdf#page=8](http://www.cdc.gov/nceh/lead/data/State_Confirmed_ByYear_1997_2006.pdf#page=8)
23. <http://newsroom.dc.gov/show.aspx?agency=doh&section=2&release=19808&year=2010&file=file.aspx%2frelease%2f19808%2fOBESITY%2520ACTION%2520PLAN.pdf>
24. <http://newsroom.dc.gov/file.aspx/release/12953/childhealthactionplan-FINAL3-07.pdf>
25. <http://mylivewelldc.com/>

## EQUITY & DIVERSITY

26. [http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_11\\_1YR\\_DP02&prodType=table22](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_11_1YR_DP02&prodType=table22)
27. <http://www.census.gov/prod/2003pubs/censr-5.pdf>
28. <http://www.neighborhoodinfodc.org/wards/wards.html>
29. <http://planning.dc.gov/DC/Planning/DC+Data+and+Maps/DC+Data/2011+ACS+1+Year+Estimates/Population+by+Sex,+Age,+Race,+and+Hispanic+or+Latino+Origin>
30. [http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_11\\_1YR\\_S0101&prodType=table](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_11_1YR_S0101&prodType=table)
31. [http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_11\\_1YR\\_S0101&prodType=table](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_11_1YR_S0101&prodType=table)

## CLIMATE & ENVIRONMENT

32. <http://www.erh.noaa.gov/lwx/climate/dca/dcatemps.txt>
33. <http://ddoe.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/GHGinventory-1205-.pdf>
34. <http://ddoe.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/GHGinventory-1205-.pdf>
35. <http://www.erh.noaa.gov/lwx/climate/dca/dcatemps.txt>
36. <http://www.erh.noaa.gov/lwx/climate/dca/dcaprecip.txt>
37. <http://ddoe.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/GHGinventory-1205-.pdf>
38. <http://ddoe.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/GHGinventory-1205-.pdf>

## BUILT ENVIRONMENT

39. <http://www.census.gov/>
40. <http://greendashboard.dc.gov/Transportation/Walkability>

41. <http://greendashboard.dc.gov/Transportation/Walkability>
42. <http://app.cfo.dc.gov/CFORUI/news/release.asp?id=96&mon=200401>
43. [http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_11\\_1YR\\_DP04&prodType=table](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_11_1YR_DP04&prodType=table)
44. <http://greendashboard.dc.gov/Energy/LEEDBuildings>
45. <http://ddoe.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/GHGinventory-1205-.pdf>
46. <http://www.cpuc.ca.gov/NR/rdonlyres/6C2310FE-AFE0-48E4-AF03-530A99D28FCE/0/ZNEActionPlanFINAL83110.pdf>

## ENERGY

47. [http://www.siemens.com/entry/cc/features/greencityindex\\_international/all/en/pdf/report\\_northamerica\\_en.pdf](http://www.siemens.com/entry/cc/features/greencityindex_international/all/en/pdf/report_northamerica_en.pdf)
48. <http://www.eia.gov/electricity/state/pdf/sep2010.pdf>
49. <http://h-net.msu.edu/cgi-bin/logbrowse.pl?trx=vx&list=H-DC&month=1108&week=d&msg=tHcvGZh4B6fgKNKY7Q1e5A>
50. <http://greendashboard.dc.gov/Energy/EnergyStarBuildings>
51. <http://www.eia.gov/electricity/state/pdf/sep2010.pdf>
52. <http://ddoe.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/GHGinventory-1205-.pdf>
53. <http://www.eia.gov/electricity/state/pdf/sep2010.pdf>
54. <http://www.pepcoholdings.com/about/news/archives/2012/article.aspx?cid=2203>

## FOOD

55. <http://planning.dc.gov/DC/Planning/In+Your+Neighborhood/Wards/Ward+7/Comprehensive+Plan+Area+Elements/Far+Southeast+Southwest+Area+Element>
56. <http://www.dchunger.org/pdf/grocerygap.pdf>
57. [http://www.washingtonpost.com/blogs/all-we-can-eat/post/2012-dc-farmers-market-listings/2012/04/24/gIQAwwwuWeT\\_blog.html](http://www.washingtonpost.com/blogs/all-we-can-eat/post/2012-dc-farmers-market-listings/2012/04/24/gIQAwwwuWeT_blog.html)
58. [http://frac.org/pdf/half\\_empty\\_plate\\_dec2011.pdf](http://frac.org/pdf/half_empty_plate_dec2011.pdf)
59. <http://www.trfund.com/TRF-LAA-widjet.html>
60. <http://frac.org/reports-and-resources/reports-2/>
61. <http://fieldtoforknetwork.org/blog/first-ever-community-garden-census-finds-26-5-acres-of-dc%E2%80%99s-public-land-dedicated-to-food-production/>
62. <http://www.dchunger.org/pdf/grocerygap.pdf>
63. <http://www.nyc.gov/html/doh/html/inspect/insp-calorie-posting.shtml>
64. [http://www.emoregon.org/pdfs/IFFP/Food\\_Sovereignty\\_for\\_All\\_handbook.pdf](http://www.emoregon.org/pdfs/IFFP/Food_Sovereignty_for_All_handbook.pdf)
65. <http://www.theatlanticcities.com/jobs-and-economy/2012/09/keep-local-food-local-grocery-stores/3191/>
66. <http://www.good.is/posts/foodie-hub-kick-starts-one-west-oakland-neighborhood/>

## NATURE

67. <http://cloud.tpl.org/pubs/ccpe-city-park-facts-2011.pdf>
68. <http://greendashboard.dc.gov/Nature/Trees>
69. [http://green.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/District%20of%20Columbia%20Wetland%20Conservation%20Plan\\_1997.pdf](http://green.dc.gov/sites/default/files/dc/sites/ddoe/publication/attachments/District%20of%20Columbia%20Wetland%20Conservation%20Plan_1997.pdf)
70. [http://www.ncpc.gov/DocumentDepot/Publications/CapitalSpace/CapitalSpace\\_Plan.pdf](http://www.ncpc.gov/DocumentDepot/Publications/CapitalSpace/CapitalSpace_Plan.pdf)
71. <http://dpr.dc.gov/DC/DPR/Property+Improvements/Capital+Projects/Play+DC>
72. <http://greendashboard.dc.gov/Nature/Wildlife>
73. <http://cloud.tpl.org/pubs/ccpe-city-park-facts-2011.pdf>
74. <http://ddoe.dc.gov/publication/wetland-conservation-plan>
75. <http://caseytrees.org/programs/policyadvocacy/utc/>
76. <http://www.darksky.org/>
77. <http://www.good.is/posts/good-ideas-for-cities-transforming-urban-trail-wayfinding/>

## TRANSPORTATION

78. <http://www.apha.org/NR/rdonlyres/43F10382-FB68-4112-8C75-49DCB10F8ECF/0/TransportationBrief.pdf>
79. <http://greendashboard.dc.gov/Transportation/Cars>
80. <http://greendashboard.dc.gov/Transportation/CommuteModeShare>
81. [http://articles.washingtonpost.com/2011-09-27/local/35273941\\_1\\_traffic-congestion-texas-transportation-institute-average-commuter](http://articles.washingtonpost.com/2011-09-27/local/35273941_1_traffic-congestion-texas-transportation-institute-average-commuter)
82. <http://greendashboard.dc.gov/Transportation/CapitalBikeshare>
83. <http://ddot.dc.gov/DC/DDOT/On+Your+Street/Mass+Transit+in+DC/DC+Streetcar/DC+Streetcar+Proposed+System+Plan>
84. <http://www.dc.gov/DC/DDOT/About+DDOT/Who+We+Are/Action+Agenda/Action+Agenda+-+2010>
85. <http://www.welovedc.com/2010/02/16/dc-mythbusting-daytime-population/>
86. <http://www.capitalbikeshare.com/about>
87. [http://ddot.dc.gov/DC/DDOT/Publication%20Files/On%20Your%20Street/Bicycles%20and%20Pedestrians/Bicycles/BikeFactSheet\\_Summer2011.pdf](http://ddot.dc.gov/DC/DDOT/Publication%20Files/On%20Your%20Street/Bicycles%20and%20Pedestrians/Bicycles/BikeFactSheet_Summer2011.pdf)
88. <http://green.dc.gov/service/air-quality-improvement-plans>
89. <http://www.greentechmedia.com/articles/read/Top-10-EV-Ready-Cities>



## WASTE

90. [http://dpw.dc.gov/DC/DPW/Education+and+Outreach/Brochures+and+Fact+Sheets/Residential+Waste+Study+\(2008\)](http://dpw.dc.gov/DC/DPW/Education+and+Outreach/Brochures+and+Fact+Sheets/Residential+Waste+Study+(2008))
91. [http://dpw.dc.gov/DC/DPW/Publication%20Files/DC\\_Commercial\\_Recycling\\_Guide\\_Late\\_August\\_2008\\_v2.pdf](http://dpw.dc.gov/DC/DPW/Publication%20Files/DC_Commercial_Recycling_Guide_Late_August_2008_v2.pdf)
92. <http://greendashboard.dc.gov/Waste/WasteDivertedFromLandfills>
93. <http://greendashboard.dc.gov/Waste/WasteDivertedFromLandfills>
94. <http://www.epa.gov/osw/consERVE/rrr/>
95. <http://www.epa.gov/epawaste/consERVE/tools/payt/states/06comm.htm>
96. <http://www.epa.gov/epawaste/consERVE/tools/payt/tools/ssfortco.htm>
97. [http://www.sustainableplastics.org/files/documents/AFF%20litter\\_opinion\\_survey%20Press%20Release%20022311%20FINAL.pdf](http://www.sustainableplastics.org/files/documents/AFF%20litter_opinion_survey%20Press%20Release%20022311%20FINAL.pdf)
98. [http://www.golder.com/mz/en/modules.php?name=Newsletters&op=viewarticle&sp\\_id=113&page\\_id=1100&article\\_id=114](http://www.golder.com/mz/en/modules.php?name=Newsletters&op=viewarticle&sp_id=113&page_id=1100&article_id=114)
99. <https://www.recyclebank.com/corporate-info/newsroom>

## WATER

100. <http://www.siemens.com/press/pool/de/events/2011/corporate/2011-06-northamerican/northamerican-gci-report-e.pdf>
101. <http://www.nrdc.org/water/pollution/fanacost.asp>
102. <http://www.nrdc.org/water/pollution/fanacost.asp>
103. <http://www.dewater.com/about/facilities.cfm>
104. <http://www.mwco.org/environment/water/watersupply/lead/faq.asp>
105. <http://dcsymbols.com/maps/correct.htm>
106. <http://climatescience.gov/Library/sap/sap4-1/public-review-draft/>
107. <http://climatescience.gov/Library/sap/sap4-1/public-review-draft/>
108. <http://climatescience.gov/Library/sap/sap4-1/public-review-draft/>
109. <http://www.nrdc.org/water/files/rooftoprainwatercapture.pdf>
110. <http://www.nrdc.org/water/files/rooftoprainwatercapture.pdf>
111. <http://www.sciencedaily.com/releases/2009/02/090210125424.htm>

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