~~DELETIONS~~
ADDITIONS

CITATION	HEADING
CITATION	Narrative Text. Citation
NEW	**New text, policy, or action.**
CITATION	*Policy Element Abbreviation-Section Number.Policy Number: Policy Name*
CITATION	*Action Element Abbreviation-Section Number.Action Letter: Action Name*
Completed Action Text (at end of action and before citation):	**Completed – See Implementation Table.**

600 Overview 600

600.1 The Environmental Protection ~~-~~Element addresses the protection, restoration, and management of **Washington, DC's** ~~the District~~'s land, air, water, energy, and biologic resources. The Element provides policies and actions **for addressing** ~~on~~ important issues such as **climate change,** drinking water safety, the restoration of our tree canopy, energy conservation, air quality, watershed protection, pollution prevention, ~~and~~ waste management, ~~and~~ the remediation of contaminated sites**, and environmental justice**. ~~The health of Washington's environment is a key indicator of the quality of life in the city.~~ **The biological, chemical, and hydrologic integrity of the environment are key indicators of the quality of life in the city. Further, environmental sustainability is linked to resilience, population health, and community prosperity.** Good environmental management and pollution prevention are essential to sustain all living things and to safeguard the welfare of future generations. 600.1

The Environmental Protection Element is divided into the following sections:

E-1 Adapting to and Mitigating Climate Change
E-2 Protecting Natural and Green Areas
E-3 Conserving Natural Resources
E-4 Promoting Environmental Sustainability
E-5 Reducing Environmental Hazards
E-6 Environment, Education, and the Economy

600.2 The critical environmental issues facing **Washington, DC** ~~the District of Columbia~~ are addressed in this element. These include:

- **Reducing greenhouse gas emissions (GHG) and adapting to climate change**
- Restoring the city's tree canopy and **expanding** green infrastructure
- Improving our rivers, streams, and stream valleys
- Reducing erosion and stormwater run-off
- ~~Sustaining plant and animal habitat~~ **Conserving and restoring wildlife habitat and plant communities**
- Conserving water and energy
- Expanding recycling **and composting**
- Encouraging green building techniques **and facilitating compliance with green building mandates**
- **Growing access and use of clean, local energy**
- Reducing air pollution
- **Increasing the acreage of wetlands along the Anacostia and PotomacRivers**
- **Eliminating the harmful effects of environmental hazards on all residents**
- **Increasing resilience to flooding.** 600.2

600.3 Environmental protection has been part of planning in **Washington, DC** ~~the District~~ since the city's inception. In 1791, the L'Enfant Plan used the natural landscape to guide the location of avenues and principal buildings. Later plans in the 19th and 20th centuries created some of the most memorable parks in the country and designated thousands of acres for resource protection. In the 1870s, **Washington, DC** ~~the District~~ planted 60,000 trees, leading Harper's Magazine to dub Washington the "City of Trees." Today's ~~post-card~~ images of **Washington, DC** ~~the District~~ still portray a city of blue skies, pristine waters, and lush greenery. 600.3

600.4 But reality is another story. Washington's legacy as America's "greenest" city has been seriously challenged over the centuries by urbanization. **In recent years, Washington, DC has made great strides in incorporating sustainability measures; however, we must continue to learn, to plan, and to sustain this momentum to meet our city's goals. Although the region's air is cleaner than**

it has been in 20 years, ~~O~~**o**ur air quality does not meet federal standards **for ozone,** and our rivers and streams are polluted by raw sewage and urban runoff. Ninety percent of **Washington, DC's** ~~the District's~~ wetlands have disappeared since 1790. Some sites in the city face soil and groundwater contamination problems from former industrial uses and municipal waste disposal. ~~Perhaps most disturbing, the city has lost much of its tree cover in the last 35 years as trees have died or been removed at a much faster rate than they have been replaced~~.

600.5 The District **is** ~~has turned the corner and begun to~~ tackl**ing**~~e~~ these challenges head on. In 2005, legislation was passed creating a District Department of the Environment**, now called the Department of Energy and Environment (DOEE). In 2012, the Sustainable DC Plan was developed with the goal to make Washington, DC the healthiest, greenest, most livable city in the United States. After five years of implementation, 71 percent of the Sustainable DC plan's actions are underway and another 27 percent are complete. In 2019, the District released Sustainable DC 2.0, the comprehensive update to the plan.**

NEW **Critical sustainability issues, including transportation, water quality, air pollution, and waste are regional in scope. Washington, DC continues to work with the 24 jurisdictions that are part of the Metropolitan Washington Council of Governments (MWCOG). Additionally, about 29 percent of Washington, DC, including most of the parks and open space, is controlled by the federal government and 55 buildings in Washington, DC are managed directly by the U.S. General Services Administration, making the federal government a critical partner on sustainability. District government continues to work closely with the federal National Capital Planning Commission (NCPC), National Park Service (NPS), and U.S. General Services Administration (GSA) to maximize opportunities to meet the city's ambitious sustainability targets, including increased tree canopy coverage, habitat restoration, and stormwater management.**

Washington, DC, ~~The District~~, along with hundreds of other cities **from around the world,** has signed on to the **Global Covenant of Mayors for Climate and Energy** ~~U.S. Conference of Mayors Climate Protection Agreement and~~ has taken on climate change as the most pressing global environmental challenge of this century. **Washington, DC** ~~The District~~ is committed to meeting or beating the ~~greenhouse gas emissions~~ GHG reduction target**; in 2017, Washington, DC reaffirmed its commitment to the 2015 Paris Climate Accord and pledged to become carbon neutral and climate resilient by 2050. Further, Washington, DC adopted Climate Ready DC in 2016, its plan to prepare for and adapt to the impacts of climate change, and is now a member of 100 Resilient Cities, which is dedicated to helping cities around the world become more resilient to the physical, social and economic challenges that are increasingly a part of the 21st century. In addition, Washington, DC has joined the C40 Cities**

network, which is comprised of the world's cities committed to addressing climate change. ~~suggested for the United States in the Kyoto Protocol, which is a 7% reduction from 1990 levels by 2012.~~

NEW **Washington, DC's increased focus on environmental protection has begun to pay dividends. The city is a leader in green building and energy; Washington, DC leads the nation in LEED certified square feet per resident, ENERGY STAR certified buildings per capita, and total citywide green power usage. In 2017, the District was named the first LEED for Cities Platinum certified city in the world. Washington, DC was the first city in the nation to pass a law, the Green Building Act of 2006, requiring green building certification for both the public and private sectors. In 2015, Washington, DC announced a 20-year Power Purchase Agreement (PPA) that will supply 35 percent of the District government's electricity with wind power. In 2018, the District government established the DC Green Bank as a key mechanism to accelerate the deployment of affordable private and public capital for clean energy projects.**

Additionally, ~~T~~the most ambitious tree planting, water quality improvement, and habitat restoration projects in decades are **also** underway, and great strides are being made to promote more sustainable growth. **Integral to this effort are public-private partnerships that have aided the city in advancing many of its Sustainable DC goals, such as already nearly reaching our 2032 tree canopy coverage target of 40 percent.** 600.5

NEW **Washington, DC has become a model for innovative policies and practices, such as the Clean Energy DC Omnibus Act of 2018, that demonstrate how enhancing our natural and built environments, investing in a diverse clean economy, and reducing disparities among residents can help us move towards a more educated, equitable, and prosperous society.**

NEW **Text Box: Washington, DC's historic Clean Energy DC Omnibus Act of 2018, provides a roadmap to achieving the city's clean energy and climate action goals, including;**

- **Mandating 100 percent of the electricity sold in Washington, DC come from renewable sources.**
- **Doubling the required amount of solar energy deployed in the District.**
- **Making significant improvements to the energy efficiency of existing buildings in Washington, DC.**
- **Providing energy bill assistance to support low- and moderate-income residents.**

- **Requiring all public transportation and privately-owned fleet vehicles to become emissions-free by the year 2045.**

- **Funding the DC Green Bank to attract private investment in clean energy projects.**

600.6 The Environmental Protection Element builds on this momentum. It charts a course toward excellence in environmental quality**,** ~~and,~~ **greater environmental resiliency, and** improved environmental health. **This Element emphasizes that restoring the natural environment will support a healthier population, society, and workforce.** Consistent with the notion of an "Inclusive City," it strives for environmental justice so that all neighborhoods are provided with clean air, healthy rivers and streams, clean soils, healthy homes, and an abundance of trees and open spaces. **It also takes ambitious steps to prioritize resiliency and connections between environmental stewardship and innovative solutions to some of its most pressing urban challenges, including sustainable growth and long-term community resilience in the face of a changing climate.** 600.6

NEW **Text Box: Between 2000 and 2015, Washington, DC's population grew by approximately 100,000 people, and all signs point to continued steady growth. As our population continues to expand, decisive actions are needed to ensure that all of our residents—particularly the most vulnerable among us—benefit from a cleaner environment and access to nature, and, are prepared for any potential sudden shocks and chronic stresses posed by climate change.**

In 2013, the Office of Planning (OP) and Department of Energy and Environment (DOEE) launched Sustainable DC with the goal of making Washington, DC the healthiest, greenest, and most livable city in the nation. The city continues to make significant progress on the implementation of 143 actions designed to help reach that goal – including steps not only to protect natural resources, but also to begin preparing for and adapting to climate change. Sustainable DC 2.0, launched in 2017, is a collaborative, citywide effort to update Washington, DC's sustainability plan. The updated plan incorporates new programs and policies, changes in technology, and better reflects the priorities of all Washington, DC residents.

Sustainable DC was quickly followed by several other plans and initiatives. In 2013, Washington, DC's zoning regulations were amended to include the Green Area Ratio (GAR), a site-specific requirement designed to increase the environmental performance of the urban landscape (see a description of the GAR in Section 613.1 for more information). In 2016, Washington, DC released Climate Ready DC, the city's climate adaptation plan, which outlines the strategies to make the city more resilient to future climate challenges and crises, including rising temperatures and more heatwaves,

increased heavy rainfall and flooding, sea level rise, and severe storm events. In 2018, this was followed by Clean Energy DC, which is Washington DC's climate mitigation plan. This strategic plan outlines the necessary steps to achieve the Sustainable DC goal of a 50% greenhouse gas reduction by 2032.

These plans and initiatives, among others, emphasize the importance and value of preserving and enhancing natural resources and improving the built environment to bolster resilience for Washington, DC. They provide the basis for new metrics to inform policies in several sectors for the next 15-30 years, including, bu8.At not limited to, energy, waste, water, health, food, nature, transportation, and the built environment. The plans also set forth roadmaps with timelines for implementation.

601 Environmental Protection Goal 601

601.1 The overarching goal for **the** environmental protection is:
Protect, restore, and enhance the natural and man-made environment in **Washington, DC** ~~the District of Columbia,~~ taking steps to improve environmental quality **and resilience, adapt to and mitigate climate change,** prevent and reduce pollution, **improve human health, increase access to clean and renewable energy,** ~~**and**~~ conserve the values and functions of **Washington, DC's** ~~the District's~~ natural resources and ecosystems**, and educate the public on ways to secure a sustainable future**. 601.1

NEW **E-1 Adapting to and Mitigating Climate Change**

NEW **Climate change refers to long-term shifts in climate including global temperature, precipitation, and wind patterns. Washington, DC's climate is changing because the earth is heating. In urban areas, greenhouse gases from human activities, such as heating and cooling buildings and transportation, are the most significant driver of observed climate change since the mid-20th century.[1] People have increased the amount of carbon dioxide in the air by 40 percent since the late 1700s. Other heat-trapping GHGs are also increasing. These gases have warmed the surface and lower atmosphere of our planet about one degree during the last 50 years. Evaporation increases as the atmosphere heats, which increases humidity, average rainfall, and the frequency of heavy rainstorms in many places—but contributes to drought in others.**

NEW **The United Nations' Intergovernmental Panel on Climate Change (IPCC) stated that pledges from the world's governments to reduce greenhouse gases, made in Paris in 2015, will not be enough to keep global warming from rising nearly three degrees (°F) above pre-industrial temperatures. These**

[1] www.ipcc.ch/report/ar5/wg1.

global changes have serious consequences at the District level as Washington, DC is already experiencing the impacts of human-made climate change. The region has warmed by more than two degrees (°F) in the last century. Hot days, heavy rainstorms and snowstorms are more frequent and the tidal Potomac is rising about one inch every eight years due to rising sea levels and land subsidence. In the coming decades, climate change is likely to increase tidal flooding, cause more heavy precipitation events and increase risks to human health and the built environment.[2] The city will experience warmer average temperatures and two to three times as many dangerously hot days.

NEW **District Government is approaching climate change on three tracks: mitigation and adaptation locally, as well as demonstrated leadership nationally and globally. Mitigation refers to reducing greenhouse gas emissions (carbon dioxide, methane, and nitrous oxide). Washington, DC is committed to becoming carbon neutral and climate resilient by 2050. Progress toward this goal is measured by an annual inventory of the city's GHGs. From 2006, when the District began tracking GHGs, through 2016, emissions have fallen by approximately 29 percent, on track to meet the interim goal of reducing emissions 50 percent by 2032.**

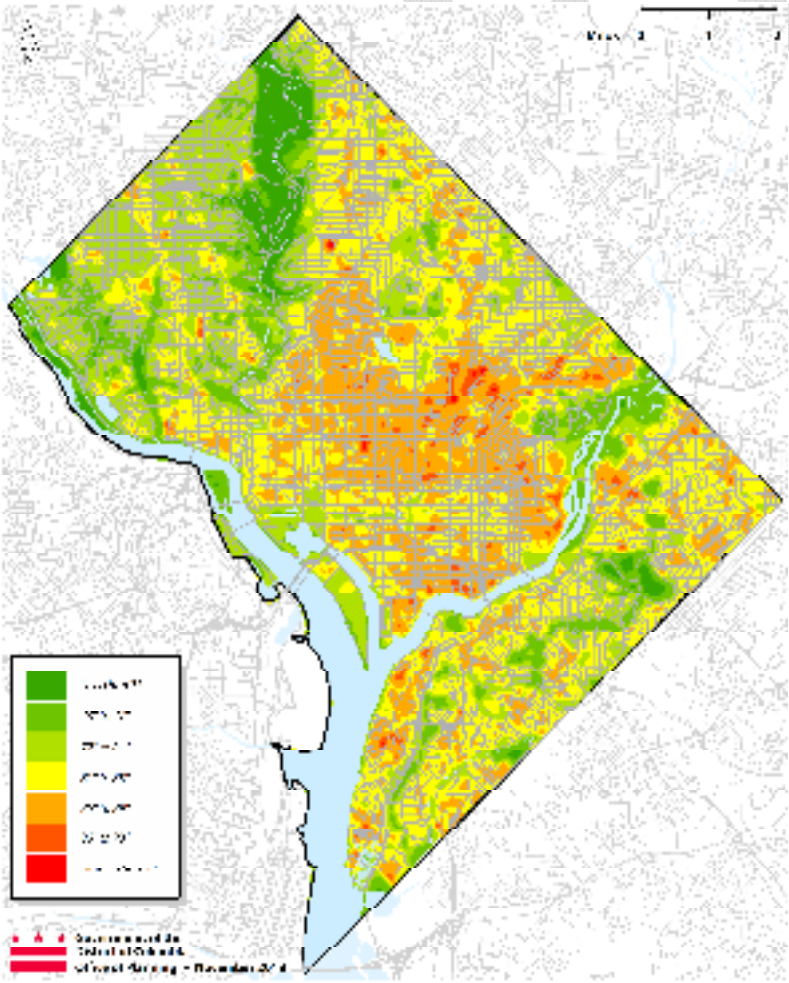
NEW **Figure 6.1 Citywide Emissions and Targets**

(Source: District Department of Energy and the Environment)

[2] https://doee.dc.gov/node/1110407

NEW **Adaptation means adjusting to the impacts of climate change and doing so in a way that supports wider efforts to make the city healthier and more livable. Washington, DC will prepare for potential shocks and stressors brought on by climate change through environmental and built environment approaches that provide multiple community benefits. These solutions include the conservation of the naturally protective features of environmental assets or ecosystem services, the expansion of green infrastructure, and the inclusion of non-structural land uses, such as parks, in hazardous, environmentally sensitive locations. It also means designing buildings to be more responsive to threats posed by flooding and urban heat. These solutions should continue to be integrated with other community goals to improve quality of life through the promotion of environmental justice and sustainability, the preservation or restoration of natural resources, and the provision of additional trees, public parks, recreation areas, and open space.**

NEW **Map 6.1 Average Land Surface Temperature**



(Source: District Department of Energy and the Environment July 2014-2018)

NEW **E-1.1 Preparing for and Responding to Natural Hazards**

624.3 **In the coming decades, changing climate is likely to increase tidal flooding, cause more heavy rainstorms, and increase risks to human health**. Portions of **Washington, DC** ~~the District~~ are within the FEMA-designated 100-year flood plain and are subject to inundation during hurricanes and other severe storms, **and as a result of sea level rise, some low-lying areas are subject to minor, recurrent flooding.**

NEW **Undeveloped floodplain areas can provide significant flood protection, allowing floods to pass through those areas causing minimal harm. When development does occur in floodplain areas, floodplain regulations help ensure individuals living and doing business in those areas comply with safe building practices designed to prevent injury, loss of life, and property damage from flooding. Washington, DC's current floodplain regulations apply only to the FEMA designated 100-year floodplain and restrict some uses.**

NEW **However, communities across the country are experiencing floods that reach beyond the extents of the 100-year floodplain with increasing regularity. What is now considered a 100-year rainfall event will become considerably more common in the years to come. Given these trends, expanding the regulated floodplain areas in Washington, DC beyond the 100-year floodplain will be an important step in making sure Washington, DC is resilient to increased flood risk. Additional flood adaptation measures include integrating new natural shorelines and buffers**, reduc**ing**~~e~~ erosion, replac**ing**~~e~~ undersized culverts, and keep**ing** streambeds free of debris.

NEW **Further, increasing urbanization that replaces vegetated space with concrete and pavement can result in "heat islands", or spaces that reach higher temperatures and retain heat longer than the surrounding areas and can reduce local health quality and negatively impact air quality.**

NEW ***Policy E-1.1.1: Resilience to Climate Change as a Civic Priority***
Advance the District's resilience to climate change as a major civic priority, to be supported through improved mitigation, adaptation and human preparedness.

NEW ***Policy E-1.1.2: Urban Heat Island Mitigation***
Wherever possible, reduce the urban heat island effect with cool and green roofs, expanded green space, cool pavement, tree planting, and tree protection efforts, prioritizing hotspots and those areas with the greatest number of heat-vulnerable residents. Incorporate heat island mitigation into planning for green infrastructure, tree canopy, parks, and public space initiatives.

See Map 6.1 for Average Land Surface Temperature July 2014-2018.

NEW ***Policy E-1.1.3: Natural Assets and Ecosystems for Hazard Mitigation***

Expand and leverage the ability of natural landscape features, such as vegetated land cover and wetlands, and the beneficial ecosystem services they provide to mitigate natural hazards. This includes supporting and encouraging design and construction choices that protect, restore and enhance the protective functionality of natural assets to absorb, reduce, or resist the potentially damaging effects of wind, water and other hazard forces. Such approaches, including natural shorelines, should be incorporated into all waterfront development projects, where possible.

NEW ***Policy E-1.1.4: Non-Structural Land Uses***

Incorporate non-structural uses within designated special flood hazard areas to help protect and enhance the natural and beneficial functions of floodplains, wetlands, and other undeveloped landscape features. These uses include but are not limited to parks, recreation areas, and permanently protected open space.

NEW ***Policy E-1.1.5: Resilient Infrastructure***

Design infrastructure such as roads and parks to withstand future climate impacts and increase the city's resilience by having roads and parks serve multiple purposes where possible, including flood risk reduction, urban heat island mitigation, and stormwater management.

See the Infrastructure Element for more information on resilient infrastructure.

624.7 ***Policy E-1.1.6: Floodplains, Waterfronts, and Other Low-Lying Areas***

Consistent with the Federal Elements of the Comprehensive Plan, prohibit activities within **floodplains, waterfronts, and other low-lying areas** ~~these areas~~ that could pose public health or safety hazards in the event of a flood. Regulation of land uses in floodplains, waterfronts, and other low-lying areas should consider the long-term effects of **climate change, including** ~~global warming and~~ sea-level rise, **increasingly heavy rain events, and more severe coastal storms,** on flood hazards. 624.7

NEW ***Action E-1.1.A: Update Zoning for Resilience***

Continue to monitor and update Washington, DC's zoning regulations to promote flood risk reduction, heat island mitigation, stormwater management, renewable energy and energy resilience, among other practices, where appropriate.

NEW ***Action*** ~~*Policy*~~ *E-1.1.**B***~~*1*~~*: **Development in** Floodplains*

~~R~~~~estrictdevelopment within FEMA-designated floodplain areas and~~ **Evaluate expanding restrictions and/or requiring adaptive design for development in areas that will be at increased risk of flooding due to climate change. Analyses should weigh the requirement to account for climate risks with the needs of a growing city.**

NEW ***Action E-1.1.C: Waterfront Setbacks***
Ensure that waterfront setbacks and buffers account for future sea-level rise, changes in precipitation patterns, and greater use of nature-based and adaptive flood defenses.

618.19 *Action E-**1.1.D**~~4.1.E~~: ~~Cities for Climate Protection Campaign~~ **Covenant for Climate and Energy***
Implement ~~policies recommended by Clean Energy DC and Climate Ready DC to achieve Washington, DC's goal of reducing GHG emissions by 50 percent below 2006 levels by 2032, and achieving carbon neutrality by 2050 while preparing for the impacts of climate change. Maintain compliance with the Global Covenant of Mayors for Climate & Energy, signed by Washington, DC in 2015, which commits Washington, DC to measure and reduce greenhouse gas emissions and address climate risks.~~ ~~the U.S. Mayors Climate Protection Agreement, signed by the District in 2005. Also implement the recommendations for reducing greenhouse gas emissions contained in the District of Columbia Greenhouse Gas Emissions Inventories and Preliminary Projections released in October 2005. This agreement aims to reduce global warming pollution levels to seven percent below 1990 levels by 2012, the levels set by the Kyoto Protocol for developed countries.~~ ~~618.19~~

NEW ***Action E-1.1.E: Update Floodplain Regulations***
Update flood hazard rules to reflect the increased risk of flooding due to climate-related sea level rise, increasingly frequent and severe precipitation events, and coastal storms.

NEW ***Action E-1.1.F: Comprehensive and Integrated Flood Modeling***
Develop, and regularly update, Washington, DC's floodplain models, maps and other tools to account for climate change, including projections for increased precipitation and sea level rise, to make sure any future building in the floodplain is done sustainably. Integrate existing, and develop new, floodplain models to better understand the interplay between coastal, riverine, and interior flooding and potential climate impacts. Consider revising the regulatory flood hazard areas for Washington, DC's Flood Hazard Rules.

NEW **Text Box: In new or substantially renovated buildings, design flood elevation is the minimum height at which residential units may be constructed and utilities like the boiler, the water heater and electrical equipment may be**

located. It also sets the minimum height for dry or wet flood-proofing measures for buildings generally. The margin between this and the base flood elevation is called freeboard.

NEW ***Action E-1.1.G: Design Guidelines for Resilience***
Develop guidelines for new development and substantial land improvements that consider the threat of naturally occurring stressors and hazards (such as flooding, extreme heat, and wind), determine potential impacts to assets over the expected lifecycle of the asset, and identify cost-effective risk-reduction options. Use updated and integrated flood risk models to determine potential flood extents and depths for riparian, coastal, and interior flood events and to determine design flood elevations for a development in flood hazard areas.

NEW ***Action E-1.1.H: Update Climate Vulnerability and Risk Assessment***
Update the vulnerability and risk assessment completed for Climate Ready DC as new data on potential climate impacts become available. Regularly assess the vulnerability of infrastructure, critical facilities including hospitals and emergency shelters, and large developments to climate related hazards.

NEW ***Action-1.1.I: Resiliency Evaluation***
Develop and implement a process to evaluate development projects, including Washington, DC capital projects and large-scale developments, for potential climate risks and adaptation strategies.

NEW ***Action:-1.1.J: Resiliency Incentives***
Expand existing incentives and regulations to include thermal safety and urban heat island mitigation measures such as green and cool roofs, solar shading, shade trees, alternatives to concrete, and other innovative building design strategies.

NEW ***Action:-1.1.K: Interagency Heat Management Strategy***
Develop an interagency heat management strategy to minimize the adverse health impacts associated with extreme cold and heat temperature days. The District Government will work to ensure that residents can prepare for these events by more broadly communicating extreme heat and cold response plans that clearly define specific roles and responsibilities of government and nongovernmental organizations before and during these events. Plans should identify local populations at high risk for extreme temperature-related illness and death and determine the strategies that will be used to support such individuals during emergencies, particularly in disinvested communities. Further, explore strategies, including the use of technology, to help build communities' adaptive capacity, before, during, and after extreme temperature days.

602 E-~~1~~**2** Protecting Natural and Green Areas 602

602.1 Washington, DC's natural landscape is characterized by **two tidal rivers; complex networks of parkland, streams, and valleys; and undulating hills and terraces.** ~~undulating hills, escarpments, and terraces, and a complex network of streams and valleys~~. This landscape provides ecological diversity, ranging from mixed oak and tulip poplar forests to magnolia bogs and wetlands. 602.1

NEW **Washington, DC provides valuable habitats for all types of wildlife, from tiny crustaceans to the majestic bald eagle. Through careful planning and development that respects and preserves natural resources, Washington, DC continues to make strides in wildlife protection and habitat restoration. To protect threatened species and keep habitats healthy, Washington, DC developed the District of Columbia Wildlife Action Plan in 2006 with a comprehensive update in 2015 as a blueprint for wildlife conservation. Further, the Fisheries and Wildlife Omnibus Amendment Act of 2016 designated critical areas - or areas containing species of local importance; critical aquifer recharge areas; fish and wildlife habitat conservation areas; frequently-flooded areas; and wetlands - for protection.**

602.2 ~~The fundamental importance of Washington's natural and green areas has brought a new term – green infrastructure – into the public dialogue.~~ Green infrastructure refers to the interconnected network of land and water that supports plant and animal life, maintains natural ecology, and contributes to the health and quality of life in our communities. ~~Our civic leaders recognize that "growing DC" requires more than bricks and mortar solutions; it also requires a concerted effort to keep Washington green.~~ 602.2

603 E-**2**~~1~~.1 Conserving and Expanding Our Urban Forest 603

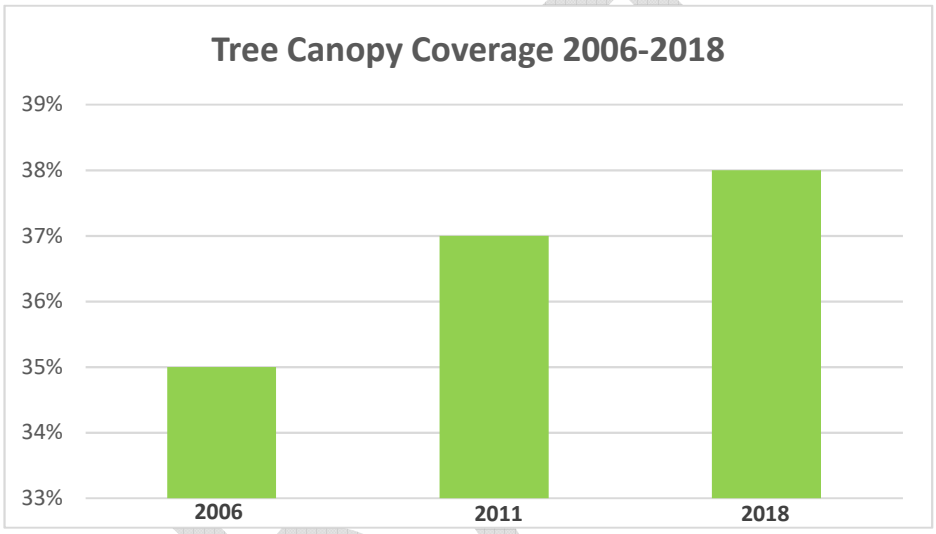
603.1 The benefits of a healthy urban forest~~, including street trees, trees in parks and other public places, and trees on private lands~~, are well documented. **Street trees, trees in parks and natural areas, and** ~~T~~**t**rees **on private lands** add beauty, improve mental health, **provide shade,** reduce water pollution, absorb noise, produce oxygen and absorb greenhouse gases, and provide habitat for birds and small animals. They also add economic value to neighborhoods and contribute to community identity and pride. **Trees also play an increasingly important role in helping Washington, DC adapt to a changing climate that will bring hotter temperatures and more heavy rain events.** 603.1

603.2 ~~A 2004 study by the Casey Trees Endowment Fund found that~~ t**T**rees currently cover about **38** ~~29~~ percent of **Washington, DC's** ~~the District's~~ land area **(Figure 6.2).** ~~However, a 1999 study by American Forests determined that the percentage of "heavy tree cover" areas in the city decreased by 64 percent between 1973 and 1997. Moreover,~~ **However,** there are significant geographic disparities in tree

cover, ranging from **60 percent of the land area in Northwest's Ward 3** ~~46 percent of the land area in Upper Northwest~~ to **23 percent in Mid-City's Ward 1.** ~~just 8 percent in the Mid-City area~~. Public awareness of the **importance of trees** ~~se alarming statistics~~ has sparked tree planting and "re-greening" activities across the city. 603.2

603.3 Tree cover in **Washington, DC** ~~the District~~ as of **2016 is shown in Map 6.2**~~2005 is shown in Map 6.1~~. 603.3

NEW **Figure 6.2 District Tree Canopy Coverage**



(Source: Sustainable DC)

603.4 *Policy E-2~~1~~.1.1: ~~Street~~ Trees ~~o~~**in the Public Lands** ~~Planting and Maintenance~~*
Plant and maintain ~~street~~ trees ~~o~~**in the public lands** in all parts of the city, particularly in areas **with low canopy cover and areas in greater need of trees, such as those with high urban heat island effect, at high risk for flooding, or high particulate matter levels.** ~~where existing tree cover has been reduced over the last 30 years. Recognize the importance of trees in providing shade, reducing energy costs, improving air and water quality, providing urban habitat, absorbing noise, and creating economic and aesthetic value in the District's neighborhoods.~~ 603.4

603.5 Policy E-2~~1~~.1.2: Tree Requirements in New Development
Use planning, zoning, and building regulations to ensure that trees are retained and planted when new development occurs, and that dying trees are removed and replaced. If tree planting and landscaping are required as a condition of permit approval, also require provisions for ongoing maintenance. 603.5

603.6 *Policy E-2~~1~~.1.3: **Sustainable** Landscaping **Practices***

Encourage the use of **sustainable** landscaping **practices** to beautify the city, enhance streets and public spaces, reduce stormwater runoff, and create a stronger sense of character and identity. **District government, private developers and community institutions should coordinate to significantly increase the use of these practices, including planting and maintaining mostly native trees and other plants on District-owned land outside the right-of-way in schools, parks, and housing authority lands.** 603.6

603.7 *Policy E-2~~1~~.1.4: Engaging the Community*
Promote partnerships between **Washington, DC** ~~the District~~, community groups, and non-profit advocacy groups to undertake tree surveys and planting campaigns, volunteer training and education, and resident stewardship of the Washington **DC**'s urban forest. **Leverage the Urban Forestry Advisory Council's diverse membership of District and federal government agencies, nonprofit partners, public utilities, and community members to promote existing policies and develop new initiatives to expand Washington DC's urban tree canopy. Support public private partnerships, which fund tree planting efforts on both public and private land that can vary in scale from small parcel-level projects to large open spaces.** 603.7

NEW ***Policy E-2.1.5: Tree Planting on Private Lands***
Encourage tree planting on private lands through incentive programs and outreach and education. Methods should include using green infrastructure, native plantings, pollinator gardens, and other habitat as a community benefit in planned unit developments and forming voluntary partnerships with major institutions such as universities, embassies, and hospitals.

603.13 ***Policy*** ~~*Action*~~ *E-2~~1~~.1.6~~F~~: Urban Tree Canopy Goals*
Determine the extent of **Washington, DC's** ~~the District's~~ tree canopy at a sufficient level of detail to establish tree canopy goals for neighborhoods across the city. ~~Such goals have recently been developed by the USDA and tested in other cities as a way of evaluating the existing tree canopy and setting specific goals for its restoration.~~ **Continue working toward a citywide goal of 40 percent tree canopy cover by 2032. Components of this program should include the removal of dead and dying trees and their replacement with suitable species, and the pruning and maintenance of trees to eliminate hazards and increase their rate of survival.** 603.13

603.8 *Action E-2~~1~~.1.A: Tree Replacement Program*
Continue working toward a goal of planting **10,500** ~~4,000 street~~ trees ~~and 2,000 trees~~ on public **and private** open space each year. Components of this program should include the removal of dead and dying trees and their replacement with suitable species, and the pruning and maintenance of trees to eliminate hazards and increase their rate of survival. 603.8

603.9 *Action E-2~~1~~.1.B: Street Tree Standards*
Continue to ~~F~~**f**ormalize the planting, pruning, removal, and construction guidelines in use by the city's Urban Forestry **Division** ~~Administration by developing official city street tree standards (see text box on the city's Tree Bill).~~ These standards ~~should~~ provide further direction for tree selection based on such factors as traffic volumes, street width, shade and sunlight conditions, soil conditions, disease and drought resistance, and the space available for tree wells. They ~~should~~ also include provisions to increase the size of tree boxes to improve tree health and longevity, and standards for soils and planting, **as well as the prevalence of tree boxes through impervious surface removal, increasing soil volumes, undergrounding power lines, and installing bio-retention tree boxes.** 603.9

603.10 *Action E-2~~1~~.1.C: Tree Inventories*
Continue partnership agreements with the federal government, ~~the~~ Casey Trees ~~Endowment Fund~~ and other groups to **maintain** ~~develop a~~ **the** live**, publicly available** database and management system for **Washington, DC's** ~~the District's~~ trees using Geographic Information System (GIS) mapping. Efforts should be made to inventory trees on **all District lands outside the right-of-way** ~~parkland~~ as well as along city streets. 603.10

603.11 *Action E-2~~1~~.1.D: Operating Procedures for Utility and Roadwork*
Develop standard operating procedures to minimize tree damage by public utility and road crews. All activities that involve invasive work around street trees should be reviewed by Urban Forestry Administration personnel. ~~Goals have been developed by the USDA and the Casey Trees Endowment Fund and tested in other cities as a way of evaluating the existing tree canopy and setting specific goals for its restoration. Promote the expansion of the urban tree canopy~~. **Promote the expansion of the urban tree canopy, while planting the right tree in the right place in consideration with overhead utility lines.** 603.11

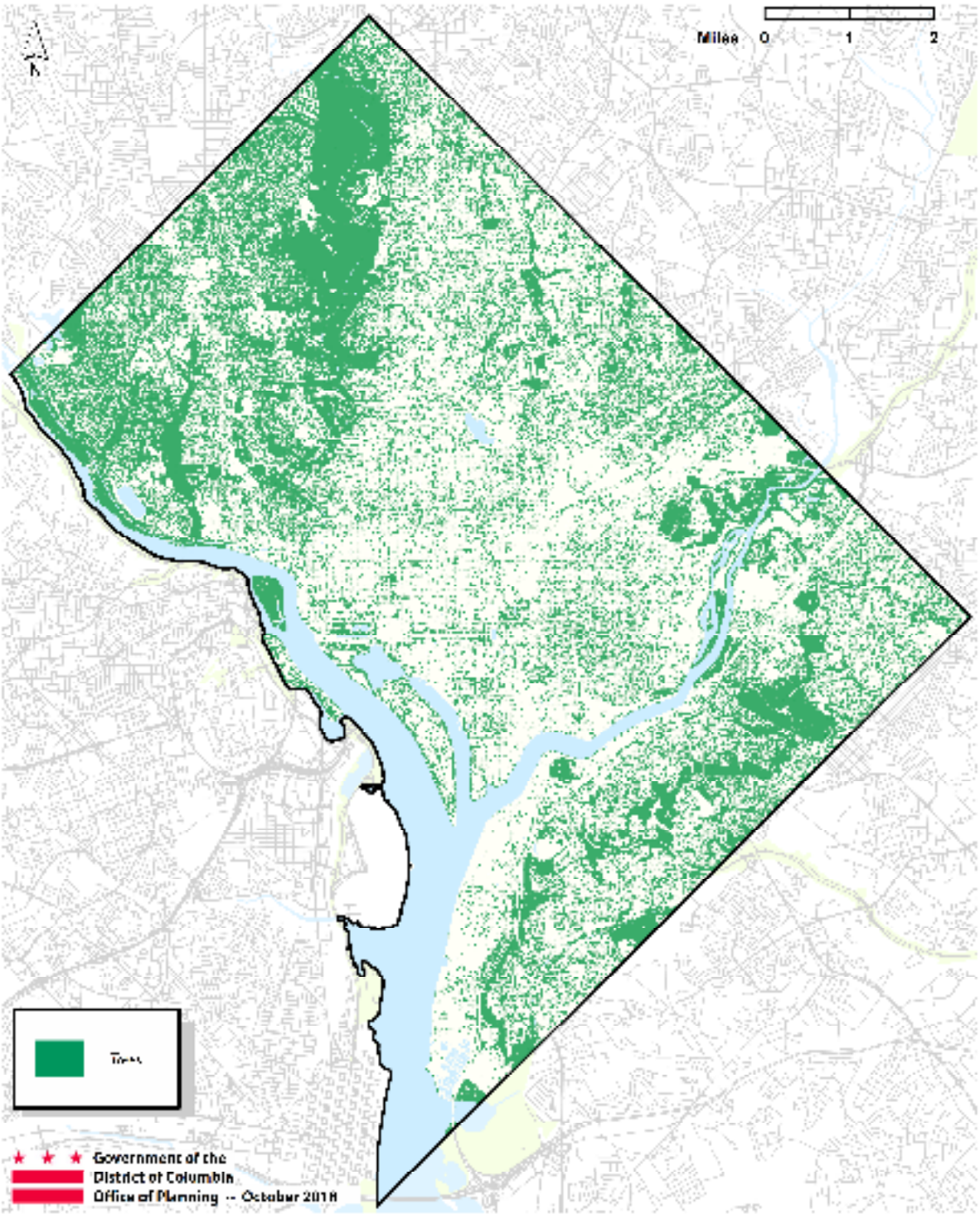
603.12 *Action E-2~~1~~.1.E: Urban Forest Management ~~Plan~~*
Consistent with Washington, DC's ~~the District's~~ **2002 and 2016** Tree Bill**s**, **continue** ~~develop an Urban Forest Management Plan~~ to protect, maintain, and restore trees and native woodlands across the city. ~~The Plan should include a detailed inventory of trees and woodlands and should provide a means of~~ **Utilize the Mayor's Urban Forestry Advisory Council and new and existing District agency partnerships to** coordinate~~ing~~ urban forest management activities on all public lands managed by the city (e.g., street trees, city parks, public school grounds, etc.). **These partnerships and initiatives** ~~It~~ should also promote coordination with federal agencies and other large landowners, and include comprehensive strategies to manage insects and diseases. 603.12

603.14 Text Box: The DC Tree Bill 603.14

The Urban Forest Preservation Act of 2001, better known as the Tree Bill, established a tree preservation program, strengthened the community notice requirements for tree removal on public land, and revised the penalties for injuring trees on public space and private property. The Tree Bill was approved in December 2002 and requires an annual program for tree planting and care, preparation of a tree master plan, and the development of maintenance standards for trees on public space. ~~The Bill includes specific provisions to protect healthy trees with a circumference of 55 inches or more. Homeowners who wish to remove such trees must replace them in kind, or pay into a tree fund used to plant new trees. Financial assistance provisions are included for low income households. The Bill also requires that ANCs are given at least 15 days written notice before a tree is removed from public space, unless the tree is deemed hazardous.~~

The Tree Canopy Protection Amendment Act of 2016 was enacted to build upon the previous tree bill and increase Washington DC's tree canopy. By reducing the circumference of "Special Trees" from 55 inches to 44 inches and creating a designation of "Heritage Trees," which are over 100 inches circumference and cannot be cut down unless deemed hazardous by a Washington, DC arborist, the older tree canopy is better protected. The bill also assesses permits for removal of Special Trees and fines for damage to, and illicit removal of, Special and Heritage Trees.

NEW Map 6.**2**~~1~~ -- Existing Tree Cover in **Washington, DC** ~~the District of Columbia~~ and Surrounding Region 603.15



(Source: DC Office of Planning, 2018)

604 E-**2**~~1~~.2 Protecting Rivers, Wetlands, and Riparian Areas 604

604.1 Washington is situated at the confluence of two great rivers—the Anacostia and the Potomac. Both rivers have been altered over the centuries to accommodate development, highways, railroads, airports, military bases, parkland, federal monuments, and other vestiges of life in the nation's capital. **Throughout the twentieth century,** ~~T~~**t**he Potomac fared better than the Anacostia in this regard—much of its shoreline is publicly accessible and has been conserved as parkland. For years, the Anacostia suffered the fate of being **Washington, DC's** ~~of the District's~~ lesser known and less valued river. As its natural beauty yielded to industry, its waters became polluted and the river became a divide **that separated some neighborhoods from the rest of the city** ~~between more and less desirable neighborhoods~~. 604.1

604.2 In the first years of the 21st century, a major initiative**, the Anacostia Waterfront Initiative (AWI),** was launched to restore the Anacostia River. While the initiative is perhaps best known for its efforts to reclaim the shoreline for recreation and bring new life to underused sites, its programs to improve the natural environment are equally important. A range of environmental initiatives are now being implemented to restore wetlands **(land consisting of marshes or swamps),** and estuarine habitat **(partially enclosed bodies of brackish water),** improve water quality, and increase environmental education about the river. **Today, the turnaround of the Anacostia waterfront is a national model for urban rivers in terms of environmental restoration, public access, economic development, and inclusive growth.**

NEW **Foremost among the recent initiatives is the Clean Rivers Project, DC Water's ongoing program to reduce combined sewer overflows into Washington DC's waterways - the Anacostia and Potomac Rivers and Rock Creek. The Project is a massive infrastructure and support program designed to capture and clean wastewater during rainfalls before it ever reaches our rivers**.

NEW **Text Box: Anacostia River Restoration**
A clean river is the foundation for the Anacostia River revitalization and makes all other objectives and investments in the waterfront possible. Once dubbed "DC's forgotten river" because of heavy pollution, lack of accessibility and neglect of its banks, the Anacostia River is on its way to becoming fully fishable and swimmable. While photos from a decade ago show a river covered in floating trash, today, the Anacostia River is experiencing an environmental rebirth characterized by improved water quality, wildlife repopulation, and more accessible, natural shorelines. To transform the Anacostia River into a fishable and swimmable river, in 2014, Washington, DC launched a long-term project to address contaminated sediments called the "A Cleaner Anacostia River" project. This project is the

most comprehensive approach to restoration in the river's history, and Washington, DC allocated $45 million to support cleanup efforts.

Improved Water Quality
The restoration of five streams (Pope Branch, Watts Branch, Nash Run, Alger Park, and Springhouse Run) that flow into the Anacostia has diminished sediment, sewage, and trash that pollute the river's waters. Legal requirements paved the way for the local water and sewer utility, DC Water, to initiate the biggest infrastructure project in Washington, DC since the building of the Metro system: the DC Clean Rivers Project, a $2.7 billion sewer tunnel system and greening program to decrease the amount of untreated sewage spills into the river by 98 percent. The greening program includes strategies to promote rainwater detention and infiltration into the soil and include techniques such as rain gardens, porous pavements, green roofs and other technologies within targeted sewersheds.

In addition to the ongoing remediation of several polluted sites, including at Kenilworth and Boathouse Row, the Anacostia River Sediment Project will lead to an enforceable clean-up strategy for the river bed itself. The redevelopment of old and highly polluting industrial areas on the riverfront has stemmed industrial runoff. Washington, DC and its partners have also worked to reduce trash pollution in the river through trash traps installed on various tributaries, anti-littering education, illegal dumping enforcement programs, and volunteer clean-up events, preventing millions of pounds of trash from entering the Anacostia River each year. Washington DC's stormwater regulations and incentive programs like the RiverSmart programs and Stormwater Retention Credit Price Lock Program are driving the installation of green infrastructure across the city to reduce pollution and erosion from stormwater runoff.

NEW **Since 2012, Washington, DC has restored over two miles of streams including Pope Branch, Nash Run, Alger Park, Springhouse Run, Linnean Park, and Broad Branch. Sustainable DC 2.0 calls for additional stream restoration efforts, towards a goal of 10 total miles. Stream restoration employs a set of techniques to help improve the environmental health of a stream, ranging from simply removing a disturbance that inhibits natural stream function, to stabilizing stream banks, or installing stormwater management facilities such as wetlands.**

604.2 When completed, these initiatives will greatly reduce sewage overflows and pollutant discharges, **reduce stream bank erosion, improve water quality, slow down stormwater flows,** uncover long-buried tributary streams, and bring native plant and animal species back to the river once again. Improving the health of the Anacostia River will help achieve broader national goals for a healthier

Chesapeake Bay. Map 6.**3**~~2~~ indicates the location of rivers, streams, and watersheds in **Washington DC** ~~the District of Columbia~~. 604.2

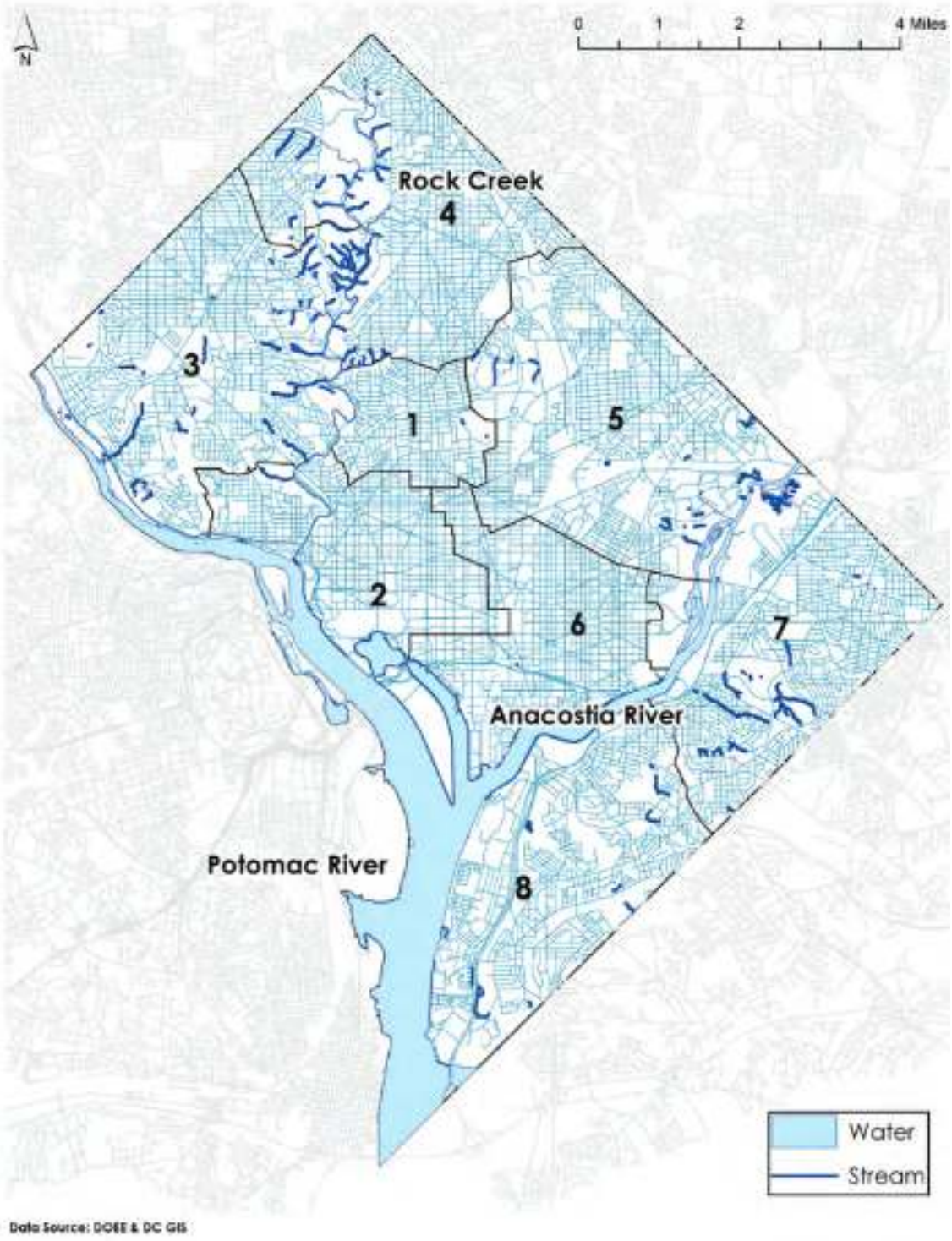
See the Infrastructure Element for more information about the Clean Rivers Project and other initiatives.

604.3 *Policy E-**2**~~1~~.2.1: River Conservation*
Improve environmental conditions along the Anacostia ~~River~~ and **Potomac Rivers and** other water bodies, including shorelines, wetlands, islands, tributaries, and the rivers themselves. Particular attention should be given to eliminating toxic sediments, improving river edges to restore vegetation and reduce erosion, enhancing wetlands and wildlife habitat, creating new wetlands, and reducing litter. 604.3

604.4 *Policy E-**2**~~1~~.2.2: Waterfront Habitat Restoration*
Undertake a range of environmental initiatives along the Anacostia ~~River~~ **and Potomac Rivers** to eliminate combined sewer overflows~~, reduce~~ urban **stormwater** runoff, restore wetlands and tributary streams, **install natural shorelines when possible,** increase oxygen levels in the water, remediate toxins in the riverbed, **remove seawalls when possible,** clean and redevelop contaminated brownfield sites, and enhance natural habitat. 604.4

604.5 *Policy E-**2**~~1~~.2.3: Retention of Environmentally Sensitive Areas as Open Space*
Retain environmentally fragile areas such as wetlands and riparian areas along the Anacostia and Potomac Rivers **as critical areas**. ~~as open space or parkland~~. In areas under federal jurisdiction such as Rock Creek Park **and some portions of the Anacostia waterfront**, work with the National Park Service to conserve and carefully manage such areas, and to implement an effective "no net loss" policy. 604.5

NEW Map 6.**3**~~2~~ -- ~~Watersheds and~~ Waterways in DC and **Stream Restoration Sites** ~~the Surrounding Region~~ 604.6



(Source: District Department of Energy and the Environment, 2018)

604.7 *Policy E-**2**~~1~~.2.4: Identification, Protection, and Restoration of Wetlands*
Identify and protect wetlands and riparian habitat on private and public land. Require official surveys when development is proposed in areas where wetlands are believed to be present to ensure that wetlands are preserved. **Implement the Wetland Conservation Plan to achieve the objective of no net loss and eventual net gain of wetlands. Work collaboratively with stakeholders to undertake wetlands restoration, enhancement, and creation projects on public and private lands to mitigate the impacts of stormwater runoff, sea level rise, and storm events and improve habitat**. ~~Undertake wetlands restoration, enhancement, and creation projects to mitigate the impacts of stormwater runoff and improve plant and animal habitat~~. 604.7

604.8 *Policy E-**2**~~1~~.2.5: Wetland Buffers*
Maintain **natural** buffers around existing and restored wetlands ~~in order~~ to reduce the likelihood of environmental degradation from urban runoff and human activities. 604.8

604.9 *Action E-**2**~~1~~.2.A: **Potomac and** Anacostia River Habitat Improvements*
~~Work collaboratively with federal agencies, upstream jurisdictions, the Anacostia Waterfront Corporation, and environmental advocacy groups to implement conservation measures for the Anacostia River, including:~~
Work collaboratively with federal agencies, upstream jurisdictions, and environmental advocacy groups to implement conservation measures for Washington DC's waterways:

- **Restore tidal wetlands along the Anacostia River and in filled areas that were historically tidal wetlands, consistent with the 2015 District of Columbia Wildlife Action Plan;**
- **Install stormwater best management practices upland of tributary streams;**
- **Create new stormwater wetlands along tributary streams;**
- **Restore degraded streams in Washington, DC and where possible, daylight streams by removing them from pipes to let them to flow uncovered;**
- **Remove bulkheads and seawalls and replace them with natural shoreline and fringe wetlands where possible to provide protection from flooding and erosion;**
- **Restore degraded gullies downstream of stormwater outfalls;**
- **Prevent litter and trash from entering waterways, and remove it when it is present;**
- **Encourage natural buffers consistent with the recommendations of the Anacostia Waterfront Initiative (AWI) Framework Plan; and**
- **Prevent the net loss of parkland and improve access to the waterfront**

and river trails.

- ~~Removing litter and trash on tidal flats;~~
- ~~Restoring tidal wetlands around Kingman Island and along lower Watts Branch;~~
- ~~Creating new stormwater wetlands along tributary streams;~~
- ~~Daylighting streams (i.e., taking streams out of buried pipes and allowing them to run uncovered), particularly Pope Branch, Fort Dupont Stream, and Stickfoot Creek;~~
- ~~Creating naturalized or bio-engineered river edges that maximize habitat value;~~
- ~~Improving bulkheads and seawalls to provide protection from flooding and erosion;~~
- ~~Requiring open space buffers consistent with the recommendations of the Anacostia Waterfront Initiative Framework Plan; and~~
- ~~Preventing the net loss of parkland and improving access to the waterfront and river trails.~~ 604.9

604.10 *Action E-2~~1~~.2.B: Wetland Setback Standards*
Establish clear **Washington, DC** ~~District of Columbia~~ regulations **to protect and preserve wetlands, streams, and their buffers during development** ~~for wetland setbacks~~ and ensure compliance with these regulations during plan review, permitting, and inspections. 604.10

NEW ***Action E-2.2.C: Wetland Planting and Maintenance***
Plant and maintain wetlands to achieve the objective of no net loss and eventual net gain of wetlands. Focus efforts in areas of the city which offer the best opportunity and potential for conservation in Washington, DC—as identified in Washington, DC's 2015 Wildlife Action Plan.

NEW ***Action E-2.2.D: Anacostia River Sedimentation Project***
Develop and implement an Anacostia River remediation work plan that restores fish and wildlife habitat while improving public access to the river.

See the "Water Quality" section of this Element for additional recommendations for the Anacostia River watershed.

605 E-2~~1~~.3 Conserving Soil and Reducing Erosion 605

605.1 Soils in **Washington, DC** ~~the District of Columbia~~ affect the suitability of land for buildings, roads and infrastructure, community gardening, and tree planting. Even in a built-out city like Washington, soil and underlying geologic characteristics must be considered when designing foundations, basements, and other structures. Good soil management also involves the control of erosion

resulting from natural forces like rain and wind. Erosion can undermine foundations, destabilize hillsides, and lead to sedimentation of streams. Measures to reduce erosion are particularly important during construction, when soil is disturbed and exposed to the elements. 605.1

605.2 Policy E-**2**~~1~~.3.1: Preventing Erosion
Ensure that public and private construction activities do not result in soil erosion or the creation of unstable soil conditions. Support the use of retaining walls and other "best management practices" **on new and existing properties** that reduce erosion hazards. Erosion requirements should be implemented through building permit and plan reviews and enforced through the permitting and regulatory processes. 605.2

605.3 *Policy E-**2**~~1~~.3.2: Grading and Vegetation Removal*
Encourage the retention of natural vegetation and topography on new development sites. **Prevent or require mitigation of construction practices that result in unstable soil and hillside conditions.** Grading of hillside sites should be minimized and graded slopes should be quickly revegetated for stabilization. 605.3

605.4 *Policy E-**2**~~1~~.3.3: Reducing Sedimentation*
Prevent sedimentation of rivers and streams by implementing comprehensive stormwater management measures, including regular maintenance of storm drains and catch basins and the use of sedimentation ponds where appropriate. 605.4

605.5 *Policy E-**2**~~1~~.3.4: Restoring Eroded Areas*
Abate soil erosion problems in developed areas, particularly where erosion has resulted from poor site design, aging streets and alleys, or deferred maintenance. 605.5

606 E-**2**~~1~~.4 Preserving Steep Slopes and Stream Valleys 606

606.1 Wooded hillsides and stream valleys provide beauty and visual relief in Washington, particularly in Upper Northwest and in neighborhoods east of the Anacostia River. Many of the city's stream valleys have been preserved by the National Park Service, protecting local waterways and providing corridors for wildlife and recreation. But preservation alone has not fully safeguarded these areas. Development and tree removal on private properties ~~near stream valley parks~~ can reduce their natural, unspoiled character and cause erosion and water quality problems. Along some stream valleys, illegal dumping remains a problem. In some places, the streams themselves have been buried or diverted into stormwater culverts. **Streams have been restored to their natural condition at Alger Park, Springhouse Run, and Watts Branch.** 606.1

606.2 A similar set of challenges is present on steep slopes, generally defined as slopes with a grade of 25 percent or more. As Map 6.**4**~~3~~ indicates, such slopes are concentrated in protected areas like Rock Creek Park and the Potomac Palisades. But they are also present in neighborhoods like Forest Hills and Woodland-Normanstone, and on large sites like the St. Elizabeths Campus. ~~In 1992, the District established a Tree and Slope Protection (TSP) Overlay Zone to reduce the alteration of terrain and removal of trees in steeply sloping and wooded areas. The overlay limits the total amount of each property that may be covered by buildings and impervious surfaces. Areas subject to the TSP Overlay are shown in Map 6.3. 606.2~~

606.3 *Policy E-**2**~~1~~.4.1: Conservation of Steep Slopes*
Strongly discourage development on steep slopes (i.e., greater than 25 percent **or with "highly erodible land" as defined at 7 CFR 12.2 (2005)),** such as those found along stream valleys in Upper Northwest and Southeast DC. Planning and building regulations should ensure that any construction on such slopes is sensitively designed and includes slope stabilization measures. 606.3

606.4 *Policy E-**2**~~1~~.4.2: Management of Uplands Along Stream Valleys*
Protect stream valley parks by limiting construction, requiring sensitive design, and retaining vegetation on adjacent upland properties. Development of land draining to stream valleys shall be managed as needed to protect flora, fauna, and water quality; prevent erosion and siltation of streams; minimize intrusion of views from the parks; and retain a **natural gradient** green buffer between the built environment and these natural areas. 606.4

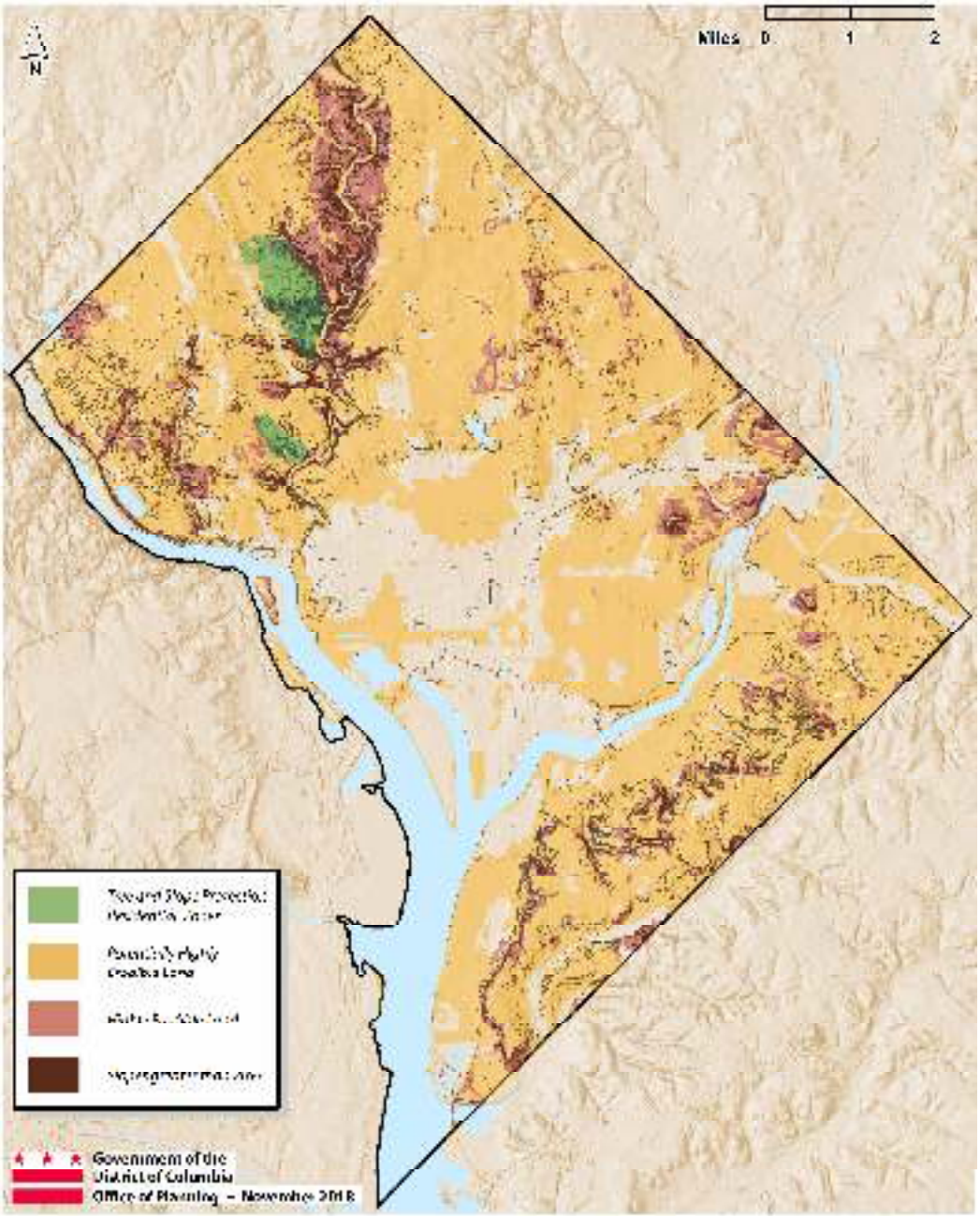
606.5 *Policy E-**2**~~1~~.4.3: Open Space Protection Along Stream Valleys*
Preserve **publicly owned** land adjacent to streams ~~and~~ **,** ravines **and contiguous tracts of habitat** as densely vegetated open space. Natural drainage channels and buffer zones in these areas should be protected from the adverse effects of nearby urban uses. ~~Particular focus should be given to areas adjacent to Rock Creek Park and to Watts Branch, Pope Branch, Oxon Run, Battery Kemble, and Glover-Archbold Parks.~~ 606.5

606.6 *Policy E-**2**~~1~~.4.4: Channelization of Streams*
Retain streams and ravines in their natural condition, rather than constructing man-made channels. **Where possible, restore channelized streams to more natural conditions.** Where alteration is necessary, encourage design solutions which retain or recreate natural ecological values. 606.6

606.7 *Action E-**2**~~1~~.4.A: Expand ~~the~~ Tree and Slope Protection ~~Overlay~~*
Work with neighborhood and community groups, homeowners and other landowners, and Advisory Neighborhood Commissions to identify additional areas where the Tree and Slope Protection (TSP) **areas** ~~Overlay zone~~ should be mapped. Such areas should generally abut streams or public open spaces and

should have steep slopes, significant natural tree cover, and some potential for future development. Particular attention should be given to mapping the TSP ~~Overlay~~ **areas** on lands east of the Anacostia River. 606.7

NEW Map 6.4~~3~~ -- **Tree and Slope Protection Areas, Steep Slopes, and Areas with Erodible Soils** ~~Steep Slopes and Areas Subject to Tree-Slope Overlays~~ 606.8



(Source: DC Office of Planning, 2018)

606.9 *Action E-2~~1~~.4.B: Hillside Conservation Easements*

Explore land trusts, conservation easements, and other tools ~~Explore the use of land trusts and conservation easements~~ **to** ~~as tools for~~ protect~~ing~~ steep slopes and hillside areas. 606.9

607 E-**2**~~1~~.5 Sustaining ~~Urban Plant and Animal~~ **Wildlife** ~~Life~~607

607.1 At the time of initial European settlement, **Washington, DC** ~~the District of Columbia~~ was home to species as diverse as buffalo, bear, **sturgeon, cranes, rattlesnakes, wolf**, ~~otter~~ and bobcat. While these animals **were killed off or driven** ~~disappeared~~ from the local landscape decades ago, **Washington, DC** ~~the District~~ continues to provide habitat for hundreds of species of birds, mammals, amphibians, reptiles, fish, and invertebrates. ~~Opossum~~ **R**accoon, red ~~and gray~~ foxes, **rabbits,** and white-tailed deer**, cardinals, and mockingbirds** have adapted to human activities and are not uncommon. Much of ~~the~~ **Washington DC's** biodiversity can be attributed to ~~open spaces~~ **undeveloped natural areas** along Rock Creek,~~ and~~ the two rivers **and the Civil War defenses of Washington.** ~~However, the importance of t~~**T**he city's parks, ~~cemeteries,~~ street trees, institutional lands, and backyards ~~to wildlife cannot be understated~~ **are important to sustaining wildlife diversity**. **Many commercial and residential neighborhoods, as well as the Potomac and Anacostia Rivers, are located adjacent to permanently protected natural areas. The close proximity between developed areas and undeveloped habitats creates a dynamic between wildlife and habitat conservation and human activity.** 607.1

607.2 **District Government is committed to protecting the city's natural areas while also providing all residents convenient access to nature and green places**. Pursuant to federal law, the Fisheries and Wildlife Division of the District Department of **Energy and Environment** ~~Health~~ prepared a ~~Comprehensive~~ Wildlife **Action Plan** ~~Conservation Strategy~~ in 2005 **with a comprehensive update in 2015**. The ~~Strategy~~ **Plan**, which was prepared in partnership with **the public and** local wildlife agencies and organizations ~~as well as the public, is an action plan for~~ **to identify priority actions for** conserving wildlife and wildlife habitats over the next ten years**.**~~. It~~ lists the **animal wildlife** ~~species~~ in the city with the greatest conservation needs~~, and~~ describes specific terrestrial and aquatic ~~wildlife~~ threats ~~and identifies priority locations for conservation~~. As an urban area, **Washington, DC** ~~the District~~ bears a high degree of responsibility for conserving urban species**.**~~, some of which may be threatened or endangered.~~ 607.2

NEW **In 2016, Washington, DC adopted the Fisheries and Wildlife Omnibus Amendment Act, to help protect critical wildlife habitats and better manage invasive species. The District's State Wildlife Action Plan, last updated in 2015, is a comprehensive, ten-year roadmap for sustaining, conserving, and protecting Washington DC's wildlife and habitats.**

607.3 *Policy E-**2**~~1~~.5.1: Habitat Restoration*

Encourage interagency efforts to restore native habitat ~~along~~ **in Washington DC's** ~~the District's~~ rivers, streams, **forests, meadows, wetlands, parklands, and developed lands and encourage** ~~**and woodlands, and**~~ public-private partnerships **and partnerships with non-governmental organizations** to recreate native habitat within the city. **Where appropriate, designate critical areas for protection within Washington, DC.** 607.3

607.4 *Policy E-2~~1~~.5.2: Protected ~~and Rare~~ Species*
As required by the federal Endangered Species Act **of 1973**, protect endangered, threatened, and other special status speciesfrom the adverse effects of **human activities.** ~~construction and development.~~ 607.4

607.5 *Policy E-2~~1~~.5.3: Habitat Management on Private Land*
Encourage environmentally sound landscaping and gardening techniques by DC homeowners ~~and~~ institutional landowners**, and on federal lands** to maximize the habitat value of privately owned **and federal** land. Such techniques should include reduction of herbicide and pesticide use; the selection of disease**-resistant**, drought-resistant, and native species; the removal of invasive plants; the use of rain gardens to reduce urban runoff; and landscaping that provides food and cover for wildlife. 607.5

NEW ***Policy E-2.5.4: Conserve Critical Areas***
Protect, conserve, or enhance the environmental function and value of critical areas -- including areas containing species of local importance; critical aquifer recharge areas; fish and wildlife habitat conservation areas; frequently-flooded areas; and wetlands – while balancing the needs of a growing city.

NEW ***Policy E-2.5.5: Manage Invasive Species***
Support approaches that limit the spread of invasive plants, animals and other organisms that threaten wildlife and wildlife habitats.

NEW ***Policy E-2.5.6 Ecosystem Services and Nature-Based Design***
Support and encourage ecosystem services and nature-based design related to air and water quality, noise reduction, flood risk reduction, recreation and food supply, among others.

NEW **Text Box: Ecosystem Services and Nature-Based Design**
Ecosystem services are the benefits that humans freely gain from the natural environment and from properly-functioning ecosystems. Such ecosystems include, for example, agroecosystems, forest ecosystems, grassland ecosystems and aquatic ecosystems. Collectively, these benefits are known as 'ecosystem services', and are often integral to the provisioning of clean drinking water, the decomposition of wastes and the natural pollination of crops and other plants.

Nature-based design elements can include a visual connection with nature, the presence of water, the use of natural materials and incorporation of dynamic and diffuse light. These elements can provide humans with both physical, mental and other benefits.

Project examples include, but are not limited to, green roofs or farms, green facades (i.e., vertical gardens), green infrastructure projects, net-zero or net-positive energy-use buildings and use of alternative energy sources.

NEW ***Policy E-2.5.7: Meadow Habitats***
Create meadow habitat by converting large, contiguous, mowed areas to native meadow and/or shrub habitat when feasible. Reduce mowed grassy areas in road and highway rights-of-way and on District-owned property by converting those areas to meadows with native plants and small trees. The design of these areas should balance habitat enhancement with public safety, including vehicle and pedestrian sightlines.

607.6 *Action E-2~~1~~.5.A: Implementation of the Wildlife ~~Conservation~~ **Action** Plan*
Implement the 20~~0~~15 Wildlife Management Plan ~~for the District of Columbia~~, including programs **to increase meadow habitat in the District; restore tidal wetlands; propagate native plants; and create vernal pools, artificial nesting structures, wildlife crossings and corridors, and citizen science projects**. ~~control the white-tailed deer and Canada goose population, and to improve water quality and habitat in the Anacostia River.~~ 607.6

607.7 *Action E-2~~1~~.5.B: Data Improvements*
Improve the collection and monitoring of data on plant and animal life within **Washington, DC** ~~the District~~, particularly data on rare, endangered, threatened, and candidate species, and species of greatest conservation need. 607.7

NEW ***Action E-2.5.C: Pollinator Pathways***
Create pollinator pathways and other contiguous habitat paths that allow the migration of species into natural habitats and that support the goals of the Wildlife Action Plan. Incorporate biodiversity and the use of native plants in green infrastructure along roads and sidewalks.

NEW ***Action E-2.5.D: Landscape Practices***
Encourage the use of landscape practices consistent with industry best practices and certifications, including water-efficient landscape design using native species and green infrastructure. Incorporate biophilic design elements to enhance health and wellbeing by providing a connection between people and nature.

NEW **Text Box: Biophilic design is incorporating nature—plants, water, light, etc.—into the built environment, including homes and offices. Biophilic elements have measurable benefits relative to human productivity, emotional well-being, stress reduction, learning, and healing. Biophilic features can also foster increased appreciation and stewardship of the natural environment. By providing guidance on how to incorporate natural elements into the built environment, DC Government will help to promote well-being and also be a resource for other entities.**

See the Urban Design; Parks, Recreation, and Open Space; and Community Services and Facilities Elements for further examples of biophilic principles.

608 E-**3**~~2~~ Conserving Natural Resources 608

608.1 This section of the Environmental Protection Element addresses the conservation of water and energy resources and the reduction of solid waste. ~~disposal needs~~. Water and energy are both limited resources, subject to growing demand, ~~and~~ constrained supply**, and aging infrastructure. Using more renewable sources of energy and reducing the use of fossil fuel have become critical to maintaining Washington, DC's sustainability. The District has enacted several laws to increase energy efficiency and renewable energy, notably the Clean and Affordable Energy Act and the Renewable Energy Portfolio Standard Act. Washington, DC also released a plan with a long-term roadmap for drastically cutting greenhouse emissions: Clean Energy DC (see insert box on Clean Energy DC for more).** ~~Their efficient use can be achieved through consumer education and behavioral changes, technological improvements, construction and design practices, regulatory and rate changes, and development of alternative sources.~~ 608.1

608.2 Similarly, reducing ~~the amount of~~ solid waste that is incinerated or disposed in landfills can have beneficial environmental and economic impacts—both on the local and the regional scale. Recycling and composting programs, which are mandated by **Washington, DC** ~~District~~ law, can effectively reduce natural resource consumption, expand the local economy, and reduce the need for trash transfer facilities in the city. 608.2

608.3 **Washington, DC's** ~~The District's~~ Clean and Affordable Energy Act of 2008, effective October 22, 2008 (D.C. Law 17-250; D.C. Official Code § 8-1773.01), ~~provides for several policies and programs intended to~~ fosters more energy efficiency and conservation, energy diversification through the production of clean and renewable energy, and energy security through a distributive energy infrastructure system. 608.3

609 E-**3**~~2~~.1 Conserving Water 609

609.1 **Washington, DC's** ~~The District's~~ **drinking water is sourced from** ~~is dependent on~~ the Potomac River ~~for its drinking water~~. ~~In most years, there is ample rainfall in the~~ **While there have not been any water supply issues, severe drought conditions could stress the** Potomac **River.** ~~Basin to meet the city's needs, but a plentiful supply is not always guaranteed.~~ With competing demands **in** ~~for land and water in~~ the watershed during the next 20 years, the District ~~cannot afford to overlook~~ **should explore** opportunities for **water security** in close coordination with DC Water. ~~conservation~~. ~~Simple measures can go a long way toward reducing the need for costly improvements to the water supply system. More significant improvements to the distribution system are also needed – for example, to reduce leaks and correct faulty meters.~~ 609.1.

609.2 ~~The~~ **DC Water** ~~DC Water and Sewer Authority~~ encourages customers to use water wisely and has a number of programs aimed at changing consumer behavior and improving service reliability. Looking to the future, a sustained effort by ~~DC WASA~~ **DC Water** and other District agencies will be necessary to reduce water waste and maximize conservation, **particularly because water treatment is energy-intensive and contributes to GHG emissions. DC Water's High Water Usage Alert (HUNA) system which notifies residents when water usage is higher than normal, help residents track and stay informed about their water usage.** 609.2

See the Infrastructure Element for more information on water supply.

NEW **Text Box/Infographic: Grey and Black Water**
Both grey water and black water are types of wastewater. Grey water is water that may contain chemicals or contaminants that may be harmful to your health. Grey water can come from shower, sink, and dishwasher drains. Black water is contaminated water from flood and sewage waters. Black water can come from a flooded river or a backed up toilet or sewage line. Black water can contain harmful contaminants like bacteria, mold, and viruses that can be extremely harmful to humans.

609.3 *Policy E-**3**~~2~~.1.1: Promoting Water Conservation*
~~Promote the efficient use of existing water supplies through a variety of water conservation measures, including the use of plumbing fixtures designed for water efficiency, drought-tolerant landscaping, and irrigation systems designed to conserve water.~~ **Promote water conservation efforts in the District. This conservation will be necessary to keep current overall consumption levels as the city continues to grow.** 609.3

609.4 *Action E-**3**~~2~~.1.A: Leak Detection and Repair Program*
Continue ~~DC WASA~~ **DC Water** efforts to reduce water loss from leaking mains, including reducing the backlog of deferred maintenance, using audits and

monitoring equipment to identify leaks, performing expeditious repair of leaks, and instructing customers on procedures for detecting and reporting leaks. **Incorporate "smart" infrastructure that provides automatic feedback to identify irregularities in the system, leading to greater leak detection and swifter repair.** 609.4

609.5 *Action E-3~~2~~.1.B: Building Code Review*
Support ~~Continue~~ efforts by the ~~DC Building Code Advisory Committee~~ Construction Code Coordinating Board and the Green Building Advisory Council to ~~review~~ strengthen building, plumbing, and landscaping standards and codes in order to identify possible new water conservation measures. 609.5

609.6 *Action E-3~~2~~.1.C: Water Conservation Education*
Work collaboratively with ~~DC WASA~~ **DC Water and other partners to launch a large-scale marketing and educational campaign bringing** ~~to promote~~ greater awareness of the need for water conservation, **savings achievable through conservation and use of efficient technology,** and to achieve a reduction in the daily per capita consumption of water resources. **This per capita reduction is needed to keep the District's total water consumption level as the city grows.** Special efforts should be made to reach low income customers and institutional users. ~~At least once a year, each customer should receive printed or electronic information on efficient water use practices, costs associated with leaking fixtures, benefits associated with conversation, and guidelines for installing water-saving plumbing devices~~. 609.6

NEW ***Action E-3.1.D: Water Conservation Financial Incentive Program***
Explore mechanisms to create a water conservation financial incentive program. Similar to energy efficiency and renewable energy incentives, consider a program that creates a stronger incentive for residents, small businesses, and private development to use less water in daily operations. The program should include both landscaping and building efficiency.

NEW ***Action E-3.1E: Distributed Rainwater Harvesting and Grey Water Recycling***
Explore the use of distributed rainwater harvesting and grey water recycling to reduce demand on potable water systems during shortages or disruptions.

610 E-3~~2~~.2 Conserving Energy **And Reducing Greenhouse Gas Emissions** 610

610.1 Greater energy efficiency results in a cleaner city, better air quality, and lower energy bills for District residents. More than $~~1~~**2**.3 billion a year is spent on energy by DC residents, employees, businesses, visitors, and government. government. **Pursuant to the Clean Energy DC Act, the District will establish Building Energy Performance Standards to gradually improve the efficiency performance of the District's existing building stock, reducing Washington,**

DC's greatest source of greenhouse gas emission. The energy used to power, heat and cool buildings remains by far the largest contributor to the District's citywide greenhouse gas emissions, accounting for nearly 75 percent of total emissions in 2013. It may be possible to slow the growth of these costs in the future, even as the city adds people and jobs. **Conserving energy is the cheapest and fastest way to cut GHG emissions and will be essential to achieving the District's climate goals.** Energy conservation and efficiency measures can help reduce dependency on outside energy sources, reduce energy costs for the District's most needy residents, and improve environmental quality. 610.1

610.2 ~~In the coming years, energy supply will be challenged by competitive sales for electricity and natural gas, and projected growth in the District. Furthermore, the District is no less vulnerable than other cities and states to petroleum fuel problems caused by the limited and precarious supply of this resource. Energy supply and demand must continue to be carefully managed and efficiency must be improved in all sectors. The text box to the right provides an overview of the Comprehensive Energy Plan, the District's official guide for meeting future energy needs.~~ **While energy conservation efforts in America started in part due to concerns about supply shortages, declining demand and increased supply have reduced these risks. Due to energy efficiency efforts, District-wide energy use declined between 2006 and 2016, despite a rapidly growing population. Today, the prime energy challenges the District faces are energy costs and the environmental impacts of energy use—most critically, energy uses producing GHGs. The most common GHGs include carbon dioxide, methane, and nitrous oxide. The use of fossil fuels such as coal and natural gas to generate electricity, natural gas used for heating and hot water, and gasoline and diesel in vehicles, is the prime contributor in the District to increasing concentrations of GHG emissions in the atmosphere, which cause climate change. Increasing global temperatures will severely harm societies and ecosystems around the world and in the District specifically. Washington, DC has joined the global effort to reduce GHGs and committed to reduce our GHG footprint by 50 percent by 2032 and achieve carbon neutrality by 2050. Living up to our commitments requires both reducing energy use and increasing the use of renewable, carbon-free energy sources.**610.2

NEW **Text Box: Net-zero energy buildings combine energy efficiency and renewable energy generation to consume only as much energy as can be produced on and offsite through renewable resources each year~~.~~ Achieving net-zero energy is an ambitious yet increasingly achievable goal that is gaining momentum across geographic regions and markets. Clean Energy DC and Sustainable DC 2.0 include targets designed to ensure the highest standards of building performance and operation for all new construction,**

including moving a towards a net-zero energy building code by 2026, while advancing health and overall livability.

610.2a *Energy supply and demand must continue to be carefully managed and efficiency must be improved in all sectors*. The related text box provides an overview of ~~the Comprehensive~~ **Clean** Energy **DC**~~Plan~~, the District's official guide for meeting future energy needs. **With the District's Clean Energy DC Omnibus Amendment Act of 2018, by 2032, 5100 percent of its electric generation mix must be renewable energy, with 10 percent of that energy derived from District-generated solar resources by 2041. Further, if Washington, DC is to eliminate all carbon emissions by 2050, new net-zero energy buildings will play a critical role.** ~~With the District's Renewable Energy Portfolio Standards (RPS), by 2020, a total of .04% of total electricity sold must be derived from District-generated solar resources~~. To facilitate the construction of systems that will support the ~~Renewable Portfolio Standards (RPS)~~ goal, policies must be updated to reflect market conditions ~~currently at play~~ in the region **and be designed to do more than simply facilitate growth of particular technologies. Amended distributed energy resource laws govern issues such as storage, efficiency, and demand management, and should** ~~Amended net metering, interconnection, and solar access laws will~~ create favorable conditions for the continued adoption of ~~climate~~ **carbon** neutral **and resilient** energy generation ~~technologies~~ **solutions.** 610.2a

NEW ***Policy E-3.2.1: Carbon Neutrality***
Support land use policies that move the District towards achieving city-wide carbon neutrality by 2050. This means that the District will eliminate GHG emissions, or offset any remaining emissions by supporting initiatives that will reduce emissions like tree planting, renewable energy generation, and land conservation. In the short term, the District Government will develop a detailed implementation plan with clear milestones in order to achieve carbon neutrality by 2050.

NEW ***Policy E-3.2.2 Net-Zero Buildings***
Provide incentives for new buildings to meet net-zero energy design standards, as called for in Clean Energy DC and Sustainable DC 2.0. Establish a path to the phased adoption of net-zero codes between 2022 and 2026. The District's building energy codes should be updated again by 2026 to require that all new buildings achieve net-zero energy use or better. Prior to 2026, the District should provide incentives to projects that voluntarily seek to achieve net-zero energy use.

610.3 *Policy E-3~~2~~.2.3~~1~~: **Renewable** Energy ~~Efficiency~~*
Promote the efficient use of energy, additional use of renewable energy, and a reduction of unnecessary energy expenses. The overarching objective should be to

achieve reductions in per capita energy consumption. ~~by DC residents and employees~~. 610.3

610.4 *Policy E-**3**~~2~~.2.**4**~~2~~: Energy Availability*
Improve energy availability and buffer District consumers from fluctuations in energy supply and prices. This should be achieved through the District's energy purchasing policies, financial assistance programs for lower income customers, incentives for ~~"~~green~~"~~ power, and regulatory changes that ensure that local energy markets are operating efficiently. 610.4

610.5 *Policy E-**3**~~2~~.2.**5**~~3~~: Reducing Home Heating and Cooling Costs*
Encourage the use of energy-efficient systems and methods for home insulation, heating, and cooling, both to conserve natural resources and also to reduce energy costs for those members of the community who are least able to afford them. 610.5

610.6 *Policy E-**3**~~2~~.2.**6**~~4~~: Alternative **Sustainable and Innovative** Energy Sources*
Support the development and application of renewable energy technologies such as active, passive, and photovoltaic solar energy, fuel cells, and other sustainable sources **such as shared solar facilities in neighborhoods and low- or zero-carbon thermal sources such as geothermal energy or wastewater heat exchange**. Such technology should be used to reduce **greenhouse gases and** ~~the dependence on~~ imported energy, provide opportunities for economic and community development, and benefit environmental quality. A key goal is the continued availability and access to unobstructed, direct sunlight for distributed-energy generators and passive-solar homes relying on the sun as a primary energy source. 610.6

610.7 *Policy E-**3**~~2~~.2.**7**~~5~~: Energy-Efficient Building and Site Planning*
Include provisions for energy efficiency and for the use of alternative energy sources in the District's planning, zoning, and building standards. **Encourage new development to exceed minimum code requirements and contribute to energy efficiency and clean energy goals.** ~~The planning and design of new development should contribute to energy efficiency goals.~~ 610.7

NEW ***Policy E-3.2.8: Locally generated electricity***
Support locally generated electricity from renewable sources, including both commercial and residential renewable energy projects. Policies could support the option to share a solar project among several neighbors ("community solar"), financial incentives, research and education, and maximizing existing programs to help install solar panels and solar thermal systems throughout the District.

610.8 ~~The 2003 Comprehensive Energy Plan~~

~~In 1981, the DC Council enacted legislation to establish the DC Energy Office. This legislation (DC Law 3-132) established the Energy Office as the statutorily created lead agency on energy plans, policies and programs. It also mandated the development of a Comprehensive Energy Plan (CEP) that would propose measures to conserve energy, favorably impact the DC budget, improve the local economy, create jobs, and help the environment. The first CEP was completed in 1987, proposing 48 practical and cost-effective measures for managing energy. An updated CEP was prepared in 1990, but was never published.~~

~~In 2003, the District's third CEP was published. It outlines 43 interconnected measures the city can take to become more energy efficient, while at the same time improving energy reliability. The Plan recognizes that there are many local and federal laws on energy that are already in place. It builds on that foundation and lays out additional practices to improve energy security and protect the natural environment.~~

~~The Comprehensive Energy Plan has three major themes:~~

- ~~"Increasing Energy Efficiency and Innovation" focuses on reducing energy consumption.~~
- ~~"Enhancing Energy Availability and Affordability" concentrates on reducing the effects of the rising costs of energy.~~
- ~~"Promoting Energy Collaboration and Security" addresses partnerships to help the city become energy efficient and be better prepared for energy emergencies.~~

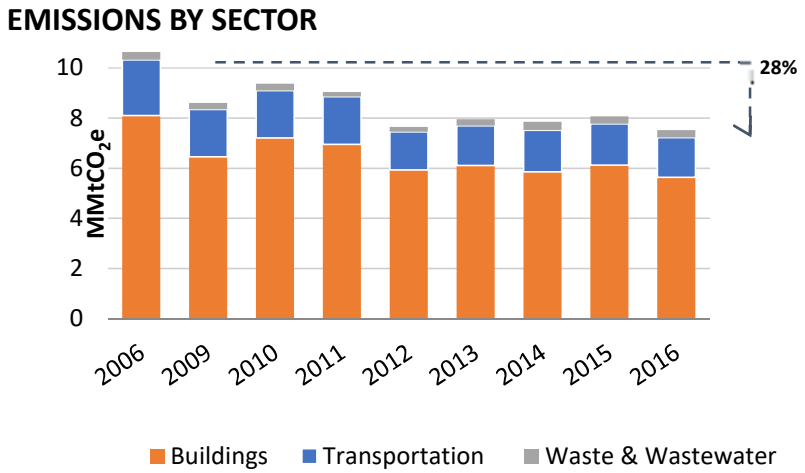
~~Recommendations in the energy plan address the major use sectors (government, residential, institutional, etc.) and the following topical categories: Energy Assistance, Public Information/Education, Regulatory Intervention, Research and Development, and Emergency Planning. Some of the key recommendations of the CEP have been incorporated as Comp Plan Actions. The CEP itself should be reviewed for additional detail. 610.8~~

NEW

Text Box: Along with increasing energy efficiency and conservation, reducing the carbon content in electricity and fuels is also critically important. Fossil fuels remain the dominant source of energy for electricity, for heating buildings through natural gas or fuel oils, and for motor vehicles. Over the long term, phasing fossil fuels out of the District's energy supply will be essential to achieving the city's climate commitments. In fact, 96 percent of the emissions in the District are attributable to using energy, and nearly 75 percent of those emissions come just from the energy used to heat, cool, and power buildings. Energy generation from fossil fuels also hurts regional air quality. One of the biggest challenges for the District is how to reduce costs, reduce energy use overall, and shift the power supply to renewable sources like solar and wind—all while the District's population

and economy continue to grow. Figure 6.3 displays regional sources of GHG emissions.

NEW **Figure 6.3: Metropolitan Washington Emissions Inventory, 2006-2016**



(Source: District Department of Energy and the Environment, 2016)

Washington, DC's goal is to reduce GHG emissions by 50% by 2032 through increasing clean energy and reducing dirty energy—meaning the District Government will help businesses, residents, and city operations improve energy efficiency and increase their access to renewable energy. Clean energy is energy generated with no pollution or carbon emissions in contrast to dirty fuels (such as coal and oil). Washington, DC already has some significant tools: The DC Sustainable Energy Utility (DCSEU) was created to help residents and businesses use less energy and save money, while Property Assessed Clean Energy (PACE) financing and the newly established Green Bank provide innovative financing for energy efficiency and clean energy upgrades.

Washington, DC is seeking to remove barriers to electricity infrastructure modernization, including neighborhood scale energy systems, which allow neighborhoods to cut costs, help the environment, and recover quickly or prevent power outages completely. Neighborhood-scale energy systems benefit from the efficiencies of coordinating across several properties. Individual buildings see these benefits in the form of cost savings, system reliability, and other economic and environmental gains that come from centralizing energy production and managing a shared distribution network. The community can benefit from these systems because they help reduce GHG, can use renewable energy, and can align with other community and environmental efforts.

610.9 *Policy E-**3**~~2~~.2.**9**~~6~~: Energy Efficiency **for Major Employers** ~~at Major Employment Centers~~*
Continue efforts that enable major employers in the city, including the government, institutions, schools, and the private sector to implement energy conservation measures. 610.9

610.10 *Policy E-**3**~~2~~.2.**10**~~7~~: Consumer Education on Energy*
Promote citizen awareness concerning energy issues through educational and demonstration initiatives and other programs. 610.10

610.11 *Policy E-**3**~~2~~.2.**11**~~8~~: Conserving Energy Through Rate Structure*
Continue to propose rate changes that encourage the efficient use of energy resources. Economic incentives and disincentives should vary based on the different classes of ratepayers, and should contribute to the economic viability of ~~alternative~~ energy sources. 610.11

610.12 *Policy E-**3**~~2~~.2.**12**~~9~~: **Resilient** Energy **Systems** ~~Security~~*
~~Promote energy security~~ **Increase the resilience of Washington, DC's energy systems** through partnerships that enable the District to respond to energy emergencies and interruptions in supply **to achieve a secure and reliable energy infrastructure that is also resilient – able to respond and restore services rapidly in the event of an outage.** Participate in regional efforts to plan for such emergencies, including those organized by the Metropolitan Washington Council of Governments. 610.12

NEW ***Policy E-3.2.13: Coordinating Energy Policies to Reduce Greenhouse Gasses***
Ensure that new and existing energy policies result in cutting greenhouse gas emissions and ensure greater resiliency and innovation for the District.

NEW ***Policy E-3.2.14: Clean Energy DC Plan***
Per the goals and actions outlined in the Clean Energy DC Plan, develop building codes and policies that require renewable energy, either for purchase or on-site installation, to make up a portion of every building's energy usage.

NEW ***Policy E-3.2.15: Neighborhood Scale Energy***
Reduce regulatory, political, and physical barriers to modernizing electricity infrastructure to enable the deployment of neighborhood or campus-scale energy systems and distributed energy resources.

610.13 *Action E-**3**~~2~~.2.A: Energy Conservation Measures*
Pursuant to the District's ~~Comprehensive~~ **Clean** Energy **DC** Plan, implement energy conservation programs for the residential, commercial, and institutional sectors. These programs include financial incentives, technical assistance,

building and site design standards, public outreach, and other measures to reduce energy consumption and improve efficiency. 610.13

610.14 *Action E-**3**~~2~~.2.B: Assistance Programs for Lower Income Households*
Implement **Clean** ~~comprehensive~~ Energy **DC** Plan programs to reduce energy costs for lower income households, including the Low Income Home Energy Assistance Program (LIHEAP) and additional measures to reduce monthly energy. 610.14

610.15 *Action E-**3**~~2~~.2.C: Consumer Education on Energy*
~~Implement the District's Comprehensive Energy Plan recommendations for education and public information on~~ **Increase education and public awareness around** energy issues, including school curricula, awards programs, demonstration projects, websites, and multi- media production. 610.15

610.16 *Action E-**3**~~2~~.2.D: Energy Regulatory Reforms*
Enact legislative and regulatory reforms, **including but not limited to building and zoning codes, as well as utility regulations** aimed at improving energy efficiency **and expanded clean, distributed energy generation** in the city ~~in order~~ to reduce energy costs and improve reliability **and resilience. Permitting agencies should have technological expertise in clean energy solutions. Permitting times and costs should conduce towards rapid adaptation of clean energy solutions.** 610.16

610.17 *Action E-**3**~~2~~.2.E: Energy Emergency Plan*
Regularly amend the District's Energy Assurance Plan ~~Prepare an energy emergency response plan by updating and consolidating existing emergency plans~~ and ~~working in~~ collaborat**e**~~ion~~ with regional partners such as MWCOG **and the National Association of State Energy Officials (NASEO).** Regularly scheduled training for energy emergencies should be provided to appropriate District personnel. 610.17

610.18 ~~*Action E-3**2**.2.F: Review of DC Codes and Regulations for Energy Features*~~
~~Review local building codes and zoning regulations to identify potential barriers to achieving energy efficiency goals – and to identify possible changes which would support energy goals. Building and zoning codes should be amended as necessary to encourage energy efficiency, and to remove barriers to using solar power and other renewable sources.~~ **Completed – See Implementation Table** 610.18

NEW ***Action E-3.2.F: Energy Conservation Area***
Explore the establishment of a neighborhood-based energy conservation areas or districts to incentivize energy efficiency, distributed generation, storage, and demand response (an opportunity for consumers to play a significant role in the operation of the electric grid by reducing or shifting

their electricity usage during peak periods in response to time-based rates or other forms of financial incentives), to contribute to and achieve the city-wide energy performance outcomes as defined by Clean Energy DC.

NEW ***Action E-3.2.G: Energy Supply***
Explore and adopt policies that allow for every District resident to have a cost competitive option for the purchase of a 100 percent clean and renewable energy supply.

NEW ***Action E-3.2.H: Solar Easements***
Recognize solar easements as an important alternative energy component in land use planning. Prioritize the review and modification of zoning ordinances and other relevant city regulations to remove barriers to the use of solar energy systems and to ensure access to solar.

NEW ***Action E-3.2.I Building Energy Performance Standard***
Develop and implement a building Energy Performance Standard (BEPS), as described in Clean Energy DC, which would establish regular energy check-ups of buildings and require the owners of poorly performing buildings to improve the energy efficiency of their buildings.

NEW ***Action E-3.2.J: Neighborhood Scale Energy***
By 2021, complete and begin implementing a neighborhood-scale clean energy system development plan to target high-load growth areas and at-risk communities. Encourage large projects or aggregated projects driven by energy consumers to contribute to the District's resilience goals through neighborhood-scale clean energy strategies.

611 E-**3**~~2~~2.3 Reducing Solid Waste Disposal Needs 611

NEW **Sustainable materials management practices and policies consider the entire lifecycle of products from materials extraction, manufacturing, distribution, usage, through end-of-life management, including solid waste disposal and recovery. This systematic approach is supported by the US Environmental Protection Agency (EPA) with the goals of reducing environmental impact, conserving natural resources, and reducing costs. Sustainable materials managing programs implemented in the District include sustainable purchasing guidelines, product stewardship programs, as well as waste diversion and resource recovery activities.**

611.1 In 1988, the District passed legislation requiring recycling in commercial buildings and setting targets for residential recycling. The legislation also contained provisions for District government to increase the use of recycled products through its procurement practices. Despite these mandates, recycling efforts were sporadic during the 1990s and it was not until the early 2000s that

most of the current programs were initiated. DC still lags behind many U.S. cities in the percentage of waste it diverts from landfills; however, recent improvements have been significant. 611.1

NEW **Sustainable DC included the goal of reducing the waste generated and disposed of in the city. This led to the creation of the Sustainable Solid Waste Management Amendment Act in 2014, which called for the District to achieve 80 percent waste diversion citywide without the use of landfills, waste-to-energy or incineration, by 2032. Accomplishing this goal requires the collaboration of District agencies, business, non-profits, residents, and neighboring jurisdictions.**

NEW **Text Box: Zero Waste DC is an initiative that enables the District to speak with one voice in developing and providing resources that help our residents, businesses, and visitors move toward zero waste. Zero Waste DC brings together government agencies and programs responsible for developing and implementing cost effective strategies for converting waste to resources, improving human and environmental health, reducing greenhouse gas emissions, creating inclusive economic opportunity, and conserving natural resources.**

611.2 ~~In 2002, the District began implementing a three-year timeline for all District agencies and facilities to achieve a recycling target of 45 percent (by weight) for the separation and collection of the total solid waste stream. Today, the District has a curbside recycling program and a number of programs to promote recycling and source reduction within the government (see "Greening the Government" at the end of this chapter).~~ **Waste diversion is the process of diverting waste from landfills. Source reduction is the elimination of waste before it is created. Solid waste can be diverted from landfills through source reduction, reuse, recycling, composting, and anaerobic digestion.** Additional waste diversion can be achieved through public education, recycling of construction and demolition debris, and expanded recycling in schools, offices, and other places of employment. Among the many benefits of recycling is the fact that it reduces demand on the city's trash transfer stations, with attendant benefits to nearby neighborhoods. 611.2

> *See the Infrastructure Element for more information on solid waste disposal.*

NEW **Text Box: The District's Sustainable Solid Waste Management Amendment Act sets a bold vision to divert 80 percent of all solid waste generated in the District through source reduction, reuse, recycling, composting, and anaerobic digestion. This law applies to residential, commercial, and industrial waste and requires that waste is source separated at the point of discard.**

To support this goal, the Office of Waste Diversion was established in2015 in the Department of Public Works (DPW). This office is charged with supervising and coordinating the implementation of the District's waste diversion policies and programs.

The Sustainable Solid Waste Management Amendment Act established a sustainable solid waste management hierarchy with the following in order of priority:

1. Source reduction and reuse;
2. Recycling or composting of solid waste, or conversion of compostable solid waste into biofuel; and
3. Landfill or waste to energy.

611.3 *Policy E-**3**~~2~~.3.1: Solid Waste Source Reduction and Recycling*
Actively promote the reduction of the solid waste stream through reduction, reuse, recycling, recovery, composting, and other measures. Use appropriate regulatory, management, and marketing strategies to inform residents and businesses about recycling and composting opportunities, and best practices for reducing ~~the amount of~~ waste requiring landfill disposal or incineration. 611.3

611.4 *Policy E-**3**~~2~~.3.2: Construction and Demolition Recycling*
Support the recycling of construction and demolition debris as a key strategy for reducing the volume of waste requiring landfill disposal. To carry out this policy, encourage the ~~"~~deconstruction~~"~~ of obsolete buildings rather than traditional demolition. Deconstruction dismantles buildings piece by piece and makes the components available for resale and reuse. 611.4

NEW ***Policy E-3.3.3: Organic Waste Diversion***
Support policies and programs that will reduce the amount of organic material sent to waste to energy and landfill by encouraging source reduction, food donation, composting, and/or anaerobic digestion of food and yard waste.

NEW ***Policy E-3.3.4: Regional Approach to Solid Waste Reduction***
Work with surrounding jurisdictions to develop and implement a regional approach to reducing plastic waste. Goods (including items that eventually become plastic waste) flow freely into and out of the city carried not only by our waterways, but also by residents, commuters and visitors. Regional cooperation is required to ensure alignment with the policies and practices of neighboring jurisdictions.

NEW ***Policy E-3.3.5: Promote Product Stewardship***
Promote product stewardship as a product-centered approach to environmental protection. Also known as extended product responsibility

(EPR), product stewardship calls on those in the product life cycle—manufacturers, retailers, users, and disposers—to share responsibility for reducing the environmental impacts of products. Washington, DC's product stewardship program requires manufacturers to develop and pay for systems to reuse, recycle, or properly dispose of electronics and paint in a manner that is safe for people and the environment.

NEW **Text Box: Managing Organic Waste - The District, and surrounding Maryland and Virginia counties, lack sufficient capacity/infrastructure to process large volumes of organic materials. A 2017 compost feasibility study concluded that a facility located in the District would be the most cost-effective and sustainable means of extracting the full value from organic materials. The facility would process organics via composting, anaerobic digestion, co-digestion pre-processing, or a combination of multiple options. Sustainable DC 2.0 calls for the creation of a new composting facility within the District by 2032.**

611.5 *Action E-3~~2~~.3.A: Expanding District Recycling Programs*
~~Continue~~ **Expand** implementation of the citywide recycling initiatives ~~started in 2002, which sets~~ **with** the long-term goal of **diverting** ~~recycling~~ **80**~~45~~ percent of all waste generated in the District **by 2032**. Special efforts should be made to expand workplace recycling through a combined education and inspection/enforcement campaign, conduct ~~"best practices"~~ studies of successful recycling programs in other jurisdictions **and import effective practices,** and plan for the ~~recycling~~ **composting** of yard waste. 611.5

611.6 *Action E-3~~2~~.3.B: Expand Recycling Efforts in District Institutions*
Work with the DC Public Schools and Public Charter Schools to expand school recycling programs and activities. Encourage private schools, universities, colleges, hospitals, and other large institutional employers to do likewise. 611.6

611.7 *Action E-3~~2~~.3.C: Revisions to Planning and Building Standards for Solid Waste*
Review building code standards for solid waste collection to ensure that new structures are designed to encourage and accommodate recycling and convenient trash pickup. 611.7

611.8 *Action E-3~~2~~.3.D: Installation of Sidewalk Recycling Receptacles*
Install receptacles for sidewalk recycling in ~~Downtown DC and other~~ neighborhood commercial centers with high pedestrian volume as a way of increasing waste diversion and publicly reaffirming the District's commitment to recycling. 611.8

611.9 *Action E-3~~2~~.3.E: E-Cycling Program*

~~Establish~~ **Continue to operate drop-off** E-cycling programs and other measures to promote the recycling of computers and other electronic products in an environmentally sound manner. 611.9

611.10 *Action E-3~~2~~.3.F: Commercial and Industrial Waste Reduction*
Work with the commercial and industrial sectors to foster appropriate source reduction and waste minimization activities, such as the environmentally sound recycling and disposal of mercury-containing fluorescent lamps and electronic equipment. 611.10

NEW **Text Box: Sustainable DC Waste Vision**
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.

NEW ***Action E-3.3.G Zero Waste plan***
Develop a comprehensive Zero Waste plan, as required by the Sustainable Solid Waste Management Amendment Act of 2014, with the objective of decreasing all citywide waste streams and achieving source reduction goals. The development of such a plan would tie together existing activities and inform the development and evaluation (including carbon impacts) of further policies so that the District can strategically achieve zero waste citywide, defined as 80 percent diversion of all solid waste from landfill and waste-to-energy.

NEW ***Action E-3.3.H: Product Stewardship Requirements***
Expand product stewardship requirements to create additional waste-stream specific programs (i.e., pharmaceuticals, textiles, plastic bottles, durable goods, etc.) to accompany the current electronics and paint programs.

NEW ***Action 3.3.I: Increase Residential Recycling and Composting***
Design and launch new incentive programs to encourage residents to increase their recycling and composting rates, which is necessary to achieve the District's 80 percent diversion goal.

NEW ***Action 3.3.J: Reduce Organic Waste***
Develop and launch a curbside composting program for residential customers and require commercial customers to separate and compost food and other organic waste.

NEW ***Action 3.3.K: Organics Processing Facility***

Explore creating a new organics processing facility (composting, anaerobic digestion, or co-digestion pre-processing) in the District to capture food and other organic waste.

NEW ***Action 3.3.L: Reduce Residential Construction and Demolition Waste***
Create an accessible recycling and product reuse pathway for residential construction and demolition waste including construction waste management requirements, contractor education, and a market for recycled and salvaged construction materials. Assess existing regulatory barriers to reusing these materials.

NEW ***Action 3.3.M: Source Reduction***
Explore innovative source reduction programs and policies to find ways to keep items out of the waste stream.

612 E-~~3~~4 Promoting Environmental Sustainability 612

612.1 The term "sustainability" has many definitions. At its core, it refers to managing our resources so that they are not permanently depleted or lost for future generations. On a local level, this principle suggests that we take care to protect our city's natural features for future residents and visitors to enjoy. On a global level, it suggests that we reduce the consumption of natural resources as we pursue the goal of **advancing equity and** being a more inclusive city. 612.1

612.2 **Five** ~~Four~~ principal **tactics** ~~objectives~~ for growing more sustainably are described here:

a. First, encourage~~ing~~ **green infrastructure** ~~"low impact" development~~ that retains ~~as much~~ stormwater ~~as possible on-site~~, thereby protecting local waterways from pollution~~;,~~ **while allowing flexibility for developers to install green infrastructure on-site or in an off-site location where green infrastructure has a larger water quality benefit;**

b. Second, promot**e**~~ing~~ ~~"~~green building~~"~~—that is, buildings that are designed through an integrated process that considers site planning, architecture, engineering, the environment, **and aspects of the natural world that contribute to human health and productivity** ~~together~~, and that incorporate recycled materials, advanced energy and water conservation systems, and minimal use of toxic or hazardous materials;

c. Third, provid**e**~~ing~~ opportunities for food production and urban gardening; ~~and~~

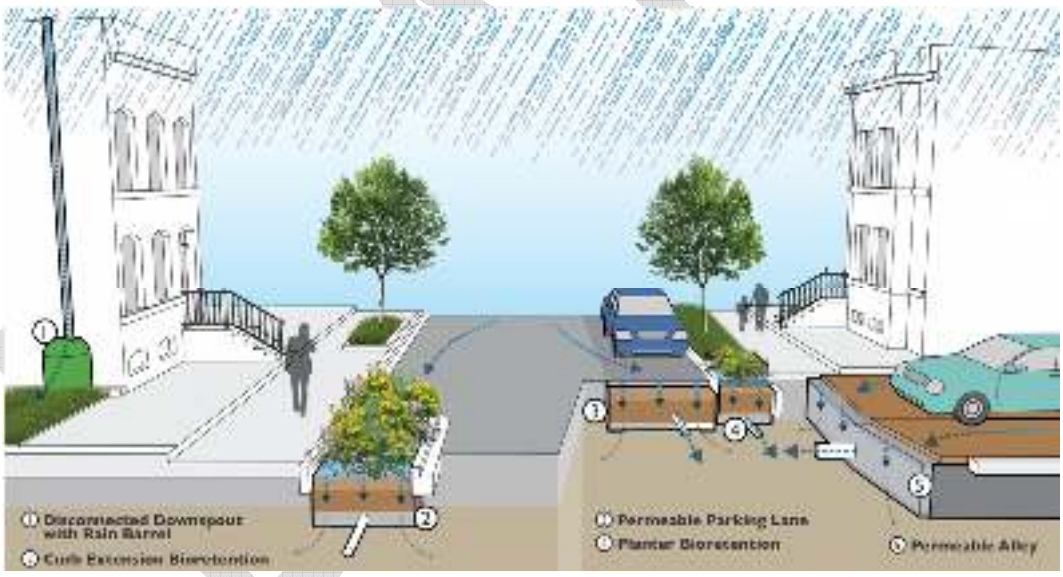
d. Fourth, **monitor and mitigate** ~~ensuring that~~ the environmental impacts of development **and human activities**. ~~are mitigated and monitored.~~

e. Fifth, expanding workforce development programs to further develop the District's green economy.612.2

613 E-~~3~~4.1 **Green Infrastructure** ~~Low Impact Development~~ 613

613.1 **Green infrastructure** ~~Low Impact Development (LID) refers to~~ **can include** a variety of construction and design techniques that conserve the natural hydrology of development or redevelopment sites. It includes small-scale practices that allow water to infiltrate, evaporate, or transpire on-site rather than flowing off and entering local storm drains and waterways. In urban areas like the District of Columbia, typical **green infrastructure** ~~LID~~ measures include green roofs (which absorb rainwater and also reduce energy costs), porous pavement, limits on impervious surface cover, rain barrels, and rain gardens. ~~On larger development sites in the city, LID measures could include such features as artificial wetlands, stormwater detention ponds, and earthen drainage swales.~~ **See Figure 6.4 for more information on green infrastructure.** 613.1

NEW Figure 6.4: Green Infrastructure



(Source: DC Water)

NEW Text Box: In 2013, the District adopted the Green Area Ratio (GAR). The GAR is an environmental sustainability zoning regulation that sets standards for landscape and site design for all new multi-family, commercial and industrial development, to help reduce stormwater runoff, improve air quality, and keep the city cooler. The purposes of the GAR regulations are to implement a point-based system of requirements for environmental site design that provides flexibility in meeting environmental performance

standards and to promote attractive and environmentally functional landscapes.

613.2 *Policy E-~~3~~4.1.1: Maximizing Permeable Surfaces*
Encourage the use of permeable materials for parking lots, driveways, walkways, and other paved surfaces as a way to absorb stormwater and reduce urban runoff. 613.2

613.3 *Policy E-~~3~~4.1.2: Using Landscaping and Green Roofs to Reduce Runoff*
Promote an increase in tree planting and **vegetated spaces** ~~landscaping~~ to reduce stormwater runoff **and mitigate the urban heat island**, including the expanded use of green roofs in new construction and adaptive reuse, and the application of tree and landscaping standards for parking lots and other large paved surfaces. 613.3

613.4 *Policy E-~~3~~4.1.3: Green **Infrastructure and** Engineering*
Promote green **infrastructure and** engineering practices for **rain**water **reclamation** and wastewater **reuse** systems. ~~These practices include~~ **Green infrastructure practices include green roofs, bioretention facilities, permeable pavement, and rainwater harvesting. Green engineering practices include emerging wastewater treatment technologies, constructed wetlands, and purple pipe systems or other** design techniques, operational methods, and technology to reduce environmental damage and the toxicity of waste generated. 613.4

613.5 *Action E-~~3~~4.1.A: **Green Infrastructure** ~~Low Impact Development~~ Criteria*
Support ~~Establish~~ **continued refinement of** ~~Low Impact Development~~ **green infrastructure provisions** ~~criteria~~ for new development, **such as the GAR. Explore** ~~including~~ provisions for expanded use of **elements such as** porous pavement, bioretention facilities, and green roofs. ~~Also, explore the expanded use of impervious surface limits in the District's Zoning Regulations to encourage the use of green roofs, porous pavement, and other means of reducing stormwater runoff.~~ 613.5

613.6 *Action E-~~3~~4.1.B: **Green Infrastructure** ~~LID~~ Demonstration Projects*
~~Complete one demonstration project a year that illustrates use of Low Impact Development (LID) technology, and make the project standards and specifications available for application to other projects in the city. Such demonstration projects should be coordinated to maximize environmental benefits, monitored to evaluate their impacts, and expanded as time and money allow~~. **Continue to install retrofit demonstration projects that educate developers, engineers, designers, and the public to illustrate use of current and new green infrastructure technologies and make the project standards and specifications available for application to other projects in the city. Such demonstration projects should**

be coordinated to maximize environmental benefits, monitored to evaluate their impacts, and expanded as time and money allow. 613.6

613.7 *Action E-~~3~~4.1.C: Road Construction Standards*
Utilize DDOT's Green Infrastructure Standards on all roadway reconstruction projects with the goal of reducing storm water pollution from roadways by minimizing impervious surface areas, expanding the use of porous pavements, and installing bio retention tree boxes and bump outs. ~~Explore changes to DDOT's street, gutter, curb, sidewalk, and parking lot standards that would accommodate expanded use of porous pavement (and other low impact development methods) on sidewalks, road surfaces, and other paved surfaces, or that would otherwise aid in controlling or improving the quality of runoff.~~ 613.7

614 E-~~3~~4.2 Promoting Green Building 614

614.1 ~~"~~Green~~"~~ building standards are **well-established** ~~also gaining acceptance~~ as a means of growing more sustainably. The Leadership in Energy and Environmental Design (LEED®) rating system, established by the Green Building Council, establishes varying levels of certification for green buildings based on the degree to which they mitigate the pollution created during building construction as well as the long-term effects resulting from building operation. **BREEAM® is another internationally-recognized certification system for sustainable performance in planning, design, construction, operation, and refurbishment; several other certifications also exist.** Typical green building strategies include the use of light-colored paving materials to reduce heat build-up, recycled building materials, and energy-conserving windows and insulation methods. Green buildings are also designed to avoid indoor air quality problems, and to encourage pedestrian and bicycle accessibility. **Improving the performance of the District's older building stock through green retrofits is a fundamental component of the Sustainable DC Plan.** 614.1

NEW **The DC Green Building Advisory Council (GBAC) was established in 2007. The GBAC is comprised of both public agency and private sector members. It monitors the District's compliance with relevant green building requirements and makes recommendations on green building policies.**

614.2 *Policy E-~~3~~4.2.1: Support for Green Building*
~~Encourage~~ **Broaden the requirements for** the use of green building methods in new construction and rehabilitation projects **to include all building typologies** and develop green **building standards for minimum performance or continued improvement of energy use through improved** ~~methods for~~ operation and maintenance activities. 614.2

614.3 *Policy E-~~3~~4.2.2: Green Building Education and Awareness*

Support programs that educate **the public, business,** ~~District employees, the~~ **and** building and real estate communities, **on** ~~and the public regarding~~ the benefits and techniques of green building**, including utility cost savings, environmental and health benefits**. 614.3

614.4 *Action E-~~3~~4.2.A: Building Code Revisions*
Periodically review ~~Evaluate~~ regulatory obstacles to green building construction in the District, and work to reduce or eliminate such obstacles if they exist. **Examples include clarifying solar panel or GAR regulations, when appropriate.** Adopt amendments to the **District's green building codes** ~~International Construction Code~~ as necessary to promote green building methods and materials, and to encourage such actions as stormwater harvesting, ~~graywater reuse, waterless urinals,~~**structural insulated panels, and high quality windows.** 614.4

614.5 *Action E-~~3~~4.2.B: Green Building Incentives*
Continue ~~Establish a G~~**g**reen ~~B~~**b**uilding ~~I~~**i**ncentive ~~P~~programs**, to encourage green new construction** ~~addressing both new construction~~ and **the rehabilitation of existing structures that go beyond the baseline code requirements**. ~~such as rebates on LEED certification fees, tax abatement, reduced permit fees, grants, low interest rehabilitation loans, and streamlined permit processing for projects meeting LEED certification standards.~~ 614.5

*See also Action E-**6**~~5~~.1.A on green building requirements for city projects and projects receiving city funds.*

614.6 ~~*Action E-3.2.C: NOMA Demonstration Project*~~
~~Pursue a pilot project to apply green building guidelines and development standards in the North of Massachusetts Avenue (NOMA) area. If the program is successful, expand its application to other parts of the city where large-scale development is expected during the next 20 years.~~ **Completed– See Implementation Table** ~~614.6~~

614.7 ~~*Action E-34.2.D: Green DC Agenda*~~
~~Fully implement the Green DC Agenda to promote green building practices and other forms of sustainable architecture, landscape architecture, and development in the city.~~ **Completed – See Implementation Table** 614.7

615 E-~~3~~4.3 Enhancing **Urban** Food Production and ~~Urban~~ **Community** Gardening 615

615.1 With more than 60 percent of District residents living in multi-family housing with limited access to private open space, community gardens provide an important **opportunity for green, community space and for residents to**

supplement their food budget ~~resource~~. There are more than **34** ~~30~~ such gardens in the city, each independently operated. Community gardens not only provide a place to grow fruits, vegetables, and flowers, they also provide an environmental, recreational, cultural, and educational asset in the neighborhoods they serve. In addition, **urban farms are small businesses that contribute to their surrounding communities by growing fruits, vegetables, and other products and offer environmental, cultural, and educational opportunities.** ~~Our community gardening associations are complemented by a network of local gardening clubs, promoting neighborhood beautification and public space stewardship projects across the city. While these organizations typically operate without District assistance, they provide an important public service to DC residents.~~ **The Department of Parks and Recreation (DPR) plays an integral part in promoting urban food production and community gardening in the District. It helps to manage all 34 community gardens and works with six partner urban farms across Washington, DC, which are all 501(c)(3) organizations that manage farms on DPR properties, focusing on offering gardening and nutrition programs while increasing access to healthy and affordable food to DC communities.** 615.1

NEW **Additionally, the University of the District of Columbia, through the College of Agriculture and Urban Sustainability and Environmental Sciences (CAUSES), and its Land Grant University status, expands academic and public knowledge of sustainable farming techniques that improve food and water security, health and wellness by providing research, education, and gardening techniques to residents and organizations in the city.**

615.2 *Policy E-~~3~~4.3.1: Promotion of Community Gardens**, Urban Farms, and Educational Growing Spaces***
Continue to encourage and support the development of community gardens**, urban farms, rooftop farms, and educational growing spaces** on public and private land across the city**, consistent with the Sustainable DC 2.0 plan, by identifying public and private land suitable for urban agriculture and streamlining the permitting process for gardeners and farmers**. 615.2

615.3 *Policy E-~~3~~4.3.2: Capacity Building for Community Gardening ~~and Garden Club~~*
Enhance the capacity of private, **public,** and non-profit community gardening organizations to develop and operate community gardens. This should include working with the private sector and local foundations to mobilize financial support. 615.3

615.4 *Policy E-~~3~~4.3.3: Domestic Gardening **and Urban Farming***
Provide technical and educational support to District residents who wish to plant backyard and rooftop gardens **or start urban farming businesses**. This could include measures such as partnerships with local gardening groups; education through conferences, websites, and publications; tool lending programs;

integrated pest management; and information on composting and best practices in gardening.

NEW ***Policy E-4.3.4: Use of Fertilizer***
Educate District homeowners, businesses, and commercial applicators on the proper use of fertilizer, and encourage native species plants and landscaping that do not require fertilizer. 615.4

615.5 *Policy E-~~3~~4.3.~~4~~**5**: Schoolyard Greening*
Work with DC ~~P~~**p**ublic and **public** ~~C~~**c**harter Schools to make appropriate portions of buildings and grounds**, including rooftops,** available for **green infrastructure and** community and school gardens, and to use buildings and grounds for instructional programs in environmental science**, urban farming,** and gardening classes. Encourage private schools to do likewise. 615.5

615.6 *Policy E-~~3~~4.3.~~5~~**6**: Produce and Farmers Markets*
Support ~~Encourage~~ the creation**,** ~~and~~ maintenance of**, and outreach for** ~~produce~~ **farmers** markets in all quadrants of the city to provide outlets for **urban farms,** community gardens and **to sell** healthful, locally-grown produce for District residents. 615.6

NEW ***Policy E-4.3.7: Composting Programs and Community Gardens***
Support composting programs at community gardens (through the DPR Compost Cooperatives), food waste drop-off locations at farmers markets (through the Department of Public Works Food Waste Drop Off Program), composting in schoolyard gardening programs, and residential composting. Residents composting in common spaces and at their homes should be properly trained as required in the Residential Composting Incentives Amendment Act of 2018.

615.7 *Action E-~~3~~4.3.A: Community Gardens **and Urban Farms** East of the Anacostia River*
To activate community spaces, increase sustainability, and help address the lack of healthy food retail options east of the Anacostia River, work with community leaders and gardening advocates to establish **and identify property for** new gardens **or urban farms** in this area. The District should assist in this effort by providing an inventory of publicly and privately owned tracts of land that are suitable for community gardens **and urban farms**, and then working with local advocacy groups to make such sites available**. This action should supplement, but not replace, efforts to increase retail options in this part of the District.** 615.7

615.8 *Action E-~~3~~4.3.B: Support for UDC Cooperative Extension*
Enhance the capability of the Cooperative Extension of the University of the District of Columbia to provide technical assistance and research, including

educational materials and programs, to support citizen gardening ~~and~~**,** tree planting efforts**, urban farming, food entrepreneurship, and nutrition education**.

NEW ***Action E-~~3~~4.3.C: Support for Sustainable Agriculture***
Continue to support sustainable agriculture with the goal of producing healthy, abundant crops, preserving environmental services, improving neighborhood health, and creating new entrepreneurial opportunities. Implement the "Urban Farming and Food Security Act" and expedite the process to make public and private lands available for a variety of urban agriculture uses. 615.8

616 E-~~3~~4.4 Reducing the Environmental Impacts of Development 616

616.1 The District of Columbia Environmental Policy Act (DCEPA), modeled after the National Environmental Policy Act (NEPA), requires all District agencies to analyze and disclose the environmental effects of their major actions, including the permitting of new development. Environmental Impact Statements are required for projects that are likely to have substantial negative impacts on the environment. 616.1

616.2 To determine if a project meets this threshold, applicants must complete a ~~simple~~ checklist called an "Environmental Impact Screening Form" (EISF). Unlike the NEPA "Environmental Assessment," the EISF contains simple yes/no questions and requires no narrative or analysis. The policies and actions below call for a more rigorous analysis of impacts in the future, with more substantive documentation of environmental effects. 616.2

616.3 *Policy E-~~3~~4.4.1: Mitigating Development Impacts*
Take measures to ensure that future development mitigates impacts on the natural environment**, anticipates the impacts of climate change,** and results in environmental improvements wherever feasible~~.~~ Construction practices ~~which result in unstable soil and hillside conditions~~ or which **would permanently** degrade natural resources without mitigation shall be **prevented** ~~prohibited~~. 616.3

616.4 *Policy E-~~3~~4.4.2: Transparency of Environmental Decision-Making*
Ensure that discussions and decisions regarding environmental impacts and mitigation measures occur through a transparent process in which the public is kept informed and given a meaningful opportunity to participate. 616.4

616.5 *Policy E-~~3~~4.4.3: Environmental Assessments*
Ensure full and meaningful compliance with the District of Columbia Environmental Policy Act of 1989, effective October 18, 1989 (D.C. Law 8-36; D.C. Official Code § 8-109.01 et seq.), including the use of procedures to assess the environmental impacts of major development projects comparable to the

regulations developed by the Council on Environmental Quality for the National Environmental Policy Act of 1969, approved January 1, 1970 (83 Stat. 852; 42 U.S.C. 4321 et seq.). The environmental review should include all pertinent information about the effects of the project on the human environment, including information about existing conditions, projected impacts, and mitigation measures. Carbon dioxide and other GHG emissions impacts should be included in the environmental impact assessments. The process should ensure that such information is available when a development is proposed and is available to the public and decision-makers before any decision is made. 616.5

616.6 *Policy E-~~3~~4.4.4: Monitoring of Operational and Construction Impacts*
Strengthen District government programs that monitor and resolve air pollution, water pollution, noise, soil contamination, dust, vibration, and other environmental impacts resulting from commercial uses, industrial uses, trucking, construction activities, and other activities around the city that could potentially degrade environmental quality. 616.6

616.7 *Action E-~~3~~4.4.A: Citywide Natural Resource Inventory*
Compile and maintain a citywide natural resources inventory that catalogs and monitors the location and condition of the District's natural resources. The inventory should be used as a benchmark to evaluate the success of environmental programs and the impacts of land use and development decisions. 616.7

616.8 ~~*Action E-34.4.B: Strengthening Environmental Screening and Assessment Procedures*~~
~~Implement a program to strengthen the environmental screening, assessment, impact statement, and notification requirements in the District of Columbia. Based on an analysis of existing practices in the District and "best practices" around the country, recommend statutory and procedural changes to more effectively document and mitigate the environmental impacts of development and infrastructure projects, and to ensure that impacted residents, businesses, and DC agencies have adequate opportunities for review and comment. In adoption of any new environmental standards or procedures, consideration should be given to the cost of compliance for affected businesses, the opportunities for public participation, and the cost to the environment if the standards/procedures are not implemented.~~ **Completed – See Implementation Table** 616.8

616.9 *Action E-~~3~~4.4.C: Environmental Enforcement*
~~Undertake an~~ **Continue** interagency effort**s** to improve compliance with the District's existing environmental laws and regulations. This effort should include public education, compliance assistance, and **continued support for MPD and DPW's partnership to address environmental crimes.** ~~the convening of an environmental crime and enforcement working group~~ 616.9

617 E-**5** ~~4~~ Reducing Environmental Hazards 617

617.1 Environmental hazards in the District of Columbia **that may be related to land use include a variety of sudden shocks and chronic stressors, such as** air and water pollution, contaminated soils, hazardous materials, noise, disease vectors, flooding, light pollution, ~~and~~ electromagnetic fields**, and earthquakes.** The overall purpose of Comprehensive Plan policies on these topics is to minimize the potential for damage, disease, and injury resulting from these hazards. Environmental hazards define basic constraints to land use that must be reflected in how and where development takes place. The severity of these hazards also helps define the priority for future remediation and abatement programs. 617.1

617.2 The presence of environmental hazards in the city also means that up-to-date emergency response planning is essential. As indicated in the Community Services and Facilities Element, the District's **Homeland Security and** Emergency Management Agency is charged with preparing and implementing these plans, and ensuring that District agencies, residents, and businesses are informed and prepared in the event of a disaster or other emergency. Other agencies, including the ~~Environmental~~ Health **Emergency Preparedness Response** Administration ~~(HSEMA)~~ and the District Department of Transportation, also are actively involved in emergency planning and response. 617.2

618 E-**5**~~4~~.1 Reducing Air Pollution 618

618.1 ~~Most Washington residents have experienced the effects of poor air quality at one time or another. On smoggy summer days, the Washington Monument and National Cathedral may not even be visible from high vantage points in the city. However, the most serious effects of air pollution are on human health. These range from minor problems like watery eyes and headaches to serious respiratory problems and heart ailments~~. **Air quality has improved tremendously over the decades thanks to successful air pollution control programs and technology improvements. Washington, DC residents continue to experience occasional smoggy summer days that can hurt human health. Effects range from minor problems like watery eyes and headaches to serious respiratory problems and heart ailments. Those with lung or heart disease, children, and older adults are particularly vulnerable.** 618.1

618.2 **Air pollution is comprised of carbon monoxide, lead, nitrogen oxides, ground-level ozone, particle pollution (often referred to as particulate matter), and sulfur oxides, as well as other hazardous air pollutants.** The greatest contributor to air pollution in the Washington area is motor vehicle emissions. Emissions from local smokestacks and other "stationary" sources are fairly limited, although the District is subject to such pollution from upwind states. While cleaner-burning gasoline **and federal engine standards** ha**s**~~s~~**ve** helped reduce pollution to some degree, urban sprawl and accompanying

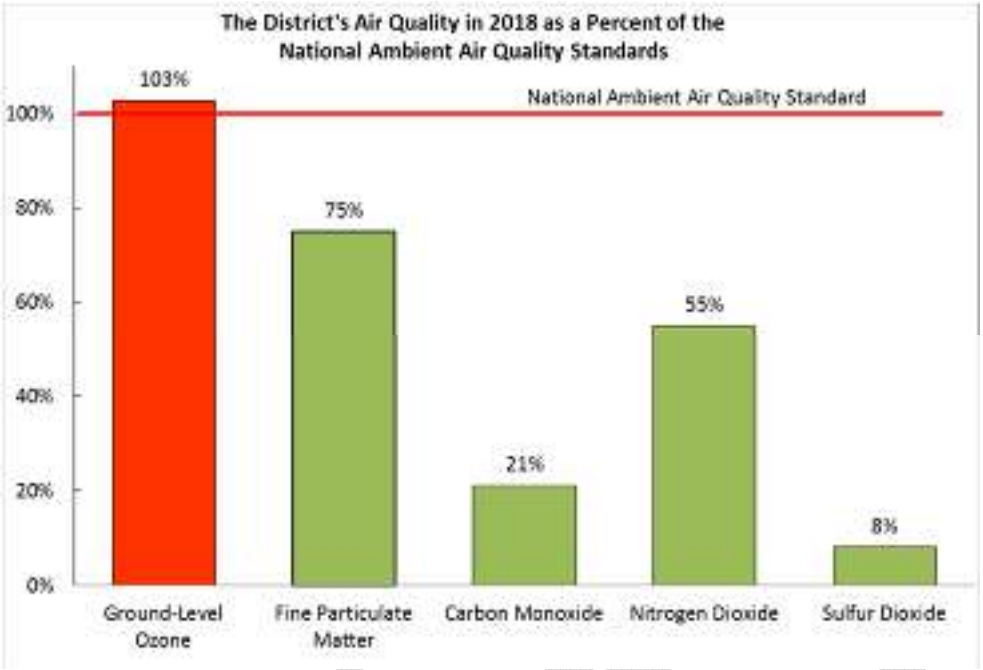
congestion have countered this gain. Clearly, reducing motor vehicle emissions is not something the District can do on its own**, though the District is undertaking numerous efforts to make Washington, DC less dependent on automobiles**. Numerous multi-state organizations and regional committees exist to address the issue, all working toward compliance with federal Clean Air Act standards. These entities focus not only on reducing vehicle emissions, but also on curbing other sources of pollution, ranging from power plants**, locomotives**, and jet fuel to consumer products such as paints, lawnmowers, **gas-fired leaf-blowers,** and home fireplaces and barbecues. 618.2

618.3 The **1970** Clean Air Act establishes standards for six criteria pollutants. These are carbon monoxide, lead, nitrogen oxide, ozone, particulate matter, and sulfur dioxide. Areas where these standards are not met are designated as "nonattainment" by the Environmental Protection Agency (EPA). As of 20~~0~~**1**5, the Washington area is classified as a **marginal** ~~moderate~~ non-attainment area for the federal 8-hour ozone standard **(see Figure 6.5: 2018 Ambient Air Quality Trends).** ~~The region is also a non-attainment area for ground-level ozone, and for fine particulates~~. Because of this status, the District (along with Maryland and Virginia) must prepare "State Implementation Plans" (SIPs) ~~to demonstrate how they~~ **track the progress towards** ~~will~~ attain**ing the** federal air quality standards. 618.3

NEW **Text Box: In two related settlements, German automaker Volkswagen AG (VW) has agreed to spend nearly $25 billion to settle allegations of cheating vehicle emissions tests and deceiving customers. VW's use of a defeat device in its diesel vehicles enabled the vehicles to emit levels of oxides of nitrogen (NOx) significantly in excess of the limits set by the EPA. NOx is a precursor to ozone formation and is also hazardous to human health. The automaker will spend $2.925 billion to mitigate the pollution from these diesel cars; $2 billion to invest in clean vehicle technology; and $10 billion in the vehicle recall program.**

Washington, DC is expected to receive $8.125 million from the VW settlement and must develop a Mitigation Plan outlining the use of the funds for eligible projects, with the main goal of reducing NOx emissions. The District plans to spend the $8.125 million of VW settlement funds in three project areas: locomotive switcher engine replacement; incentives for replacement of diesel transit buses and trash trucks; and rebates for tailpipe pollution reduction retrofits.

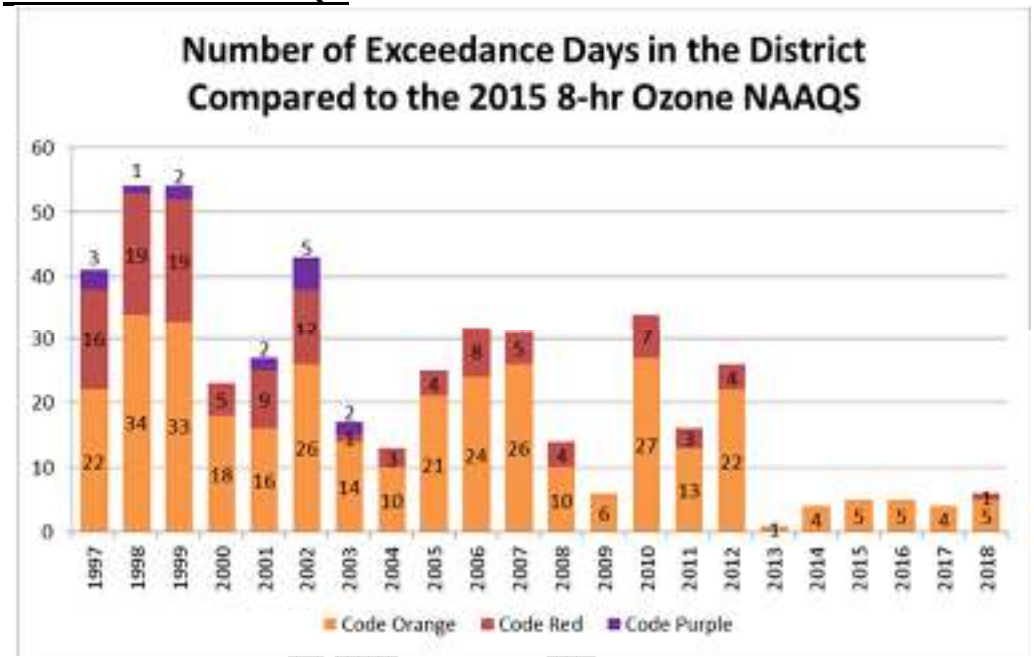
NEW **Figure 6.5: 2018 Ambient Air Quality Trends**



(Source: District Department of Energy and the Environment, 2018)

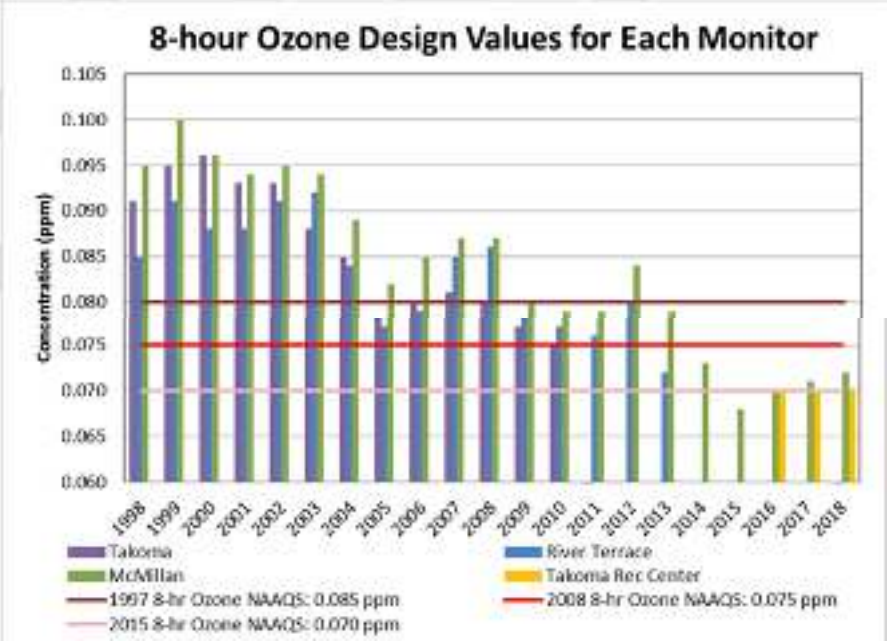
618.4 **Air quality trends data demonstrate that despite population increases and other related activities in the District, ambient concentrations of all criteria pollutants and pollution emissions have dropped during the assessment period. However, ozone continues to be the biggest air pollution challenge the region faces.** Figure 6.~~1~~**6** shows the number of days the federal 8-hour ozone standard was exceeded at three monitoring locations in the District between 199~~5~~**7** and 201~~0~~**8**. **The second chart, Figure 6.7 shows the statistical three-year average of pollutant concentrations in the air per year over the same time period from each monitor in Washington DC. The third chart, Figure 6.8, shows that levels of fine particulate matter ($PM_{2.5}$) pollution, or soot, have also declined at each monitor over time. In 2014, the District officially was designated as being in attainment of all federal standards for fine particulate matter.** ~~Exceedances fluctuate from year to year, and appear to be highest during years of warmer weather. During the last three years, the federal standard was exceeded fewer than five days a year, but was exceeded more than 20 days during 2002.~~ 618.4

NEW **Figure 6.6: Number of Exceedance Days in the District Compared to the 2015 8-hr Ozone NAAQS**



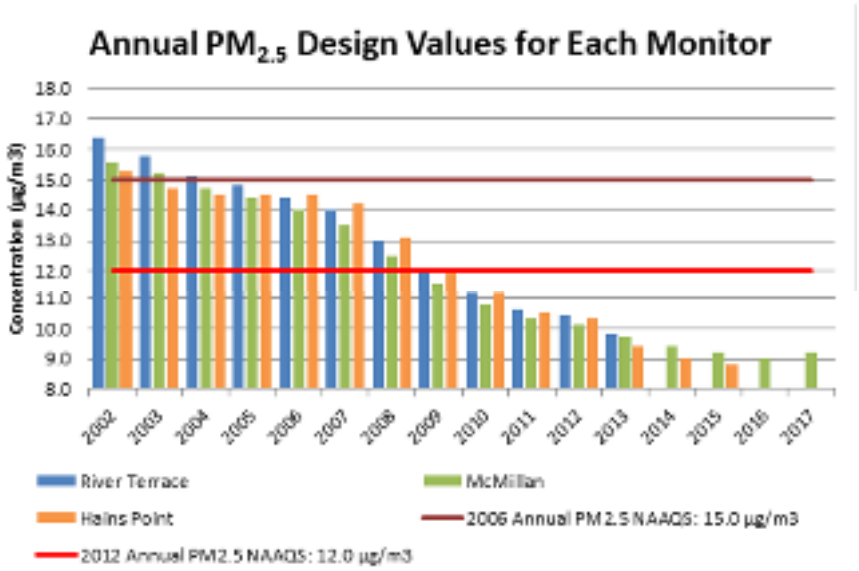
(Source: District Department of Energy and the Environment, 2019)

NEW **Figure 6.7: 8-hour Ozone Design Concentration Values for Each Monitor**



(Source: District Department of Energy and the Environment, 2019)

NEW **Figure 6.8: Annual Particulate Matter ($PM_{2.5}$) Design Concentration Values for Each Monitor**



(Source: District Department of Energy and the Environment, 2019)

NEW **Through implementation of the GAR, citywide tree planting efforts and other green infrastructure initiatives, the District is supporting the use of landscaping and tree planting to absorb ozone and other pollutants.**

See Section 613 for a discussion of the GAR.

~~Figure 6.1 Exceedances of the Federal 8-Hour Ozone Standard, 1995-2005~~
~~618.5~~

618.6 *Policy E-5~~4~~.1.1: Attaining Air Quality Standards*
Continue to undertake programs and initiatives that move the region closer to attaining and maintaining federal air quality standards. Expand these programs as feasible to incorporate new technology and to reflect best practices around the country. 618.6

618.7 *Policy E-5~~4~~.1.2: Regional Planning*
Recognize that air quality is a regional issue that requires multi- jurisdictional strategies and solutions. Accordingly, work with surrounding cities, counties, states, the federal government, and appropriate regional organizations to more effectively conduct air quality planning. 618.7

618.8 *Policy E-**5**~~4~~.1.3: Evaluating Development Impacts On Air Quality*
Evaluate potential air emissions from new and expanded development, including transportation improvements and municipal facilities, to ensure that measures are taken to mitigate any possible adverse impacts. These measures should include construction controls to reduce airborne dust**.**~~, and requirements for landscaping and tree planting to absorb carbon monoxide and other pollutants.~~ 618.8

618.9 *Policy E-**5**~~4~~.1.4: Stationary Sources*
Maintain controls on gaseous and particulate emissions from stationary sources of air pollution in the city, such as **boilers and generators** ~~power plants and refrigeration plants~~. Particular attention should be given to ~~monitoring~~ **achieving compliance** ~~the air quality impacts~~ of local **industrial/commercial/institutional boilers** ~~power plants~~, which are the largest stationary sources of air pollution in the District. 618.9

618.10 *Policy E-**5**~~4~~.1.5: Improving Air Quality Through Transportation Efficiency*
Promote strategies that reduce motor vehicle emissions in the District and surrounding region. As outlined in the Land Use and Transportation Elements of this Comprehensive Plan, this includes the development of a fully integrated regional system of buses, streetcars, rail transit, bicycles, taxis, and pedestrian facilities to make it easier and more convenient to travel without an automobile. It also includes the promotion of trip reduction measures such as videoconference facilities, telecommuting, flextime, and carpooling. Strategies to reduce congestion and idling time, such as improved signal timing and reversible commute lanes, also should contribute to air quality improvement. 618.10

618.11 *Policy E-**5**~~4~~.1.6: Clean Fuels*
Encourage the use of clean fuel vehicles and enhance efforts to place refueling and recharging equipment at facilities accessible for public use. Where feasible, provide financial incentives for District residents and business to use clean vehicles, such as reduced motor vehicle tax and license fees. **Support proliferation of electric vehicles through innovative rate designs.** 618.11

618.12 *Policy E-**5**~~4~~.1.7: ~~Best Available Control Technology~~ **Energy Efficiency and Air Quality***
Encourage ~~the use of best available control technology for~~ **making energy efficiency upgrades to provide the co-benefit of improving air quality** ~~minor sources of air pollution such as boilers, generators, and construction and maintenance equipment.~~ 618.12

618.13 *Policy E-**5**~~4~~.1.8: Air Quality Education*
Support increased public awareness of air quality issues through "Air Quality Action Day" programs, publication of air quality data, and distribution of educational materials that outline steps residents and businesses can take to help maintain clean air. **For the regulated community, continue outreach about air**

quality requirements and compliance assistance. Increase use of innovative technological outreach, such as bench monitoring station. 618.13

NEW ***Policy E-5.1.9: Zero-Emission Vehicles***
Encourage the use of electric and zero-emissions vehicles. Where feasible, provide financial incentives for District residents and business to use electric and zero emissions vehicles, such as reduced motor vehicle tax and license fees. Support expansion of EV charging infrastructure, including innovative designs that encourage off-peak charging and enhance efforts to place refueling and recharging equipment at facilities accessible for public use.

618.14 *Action E-**5**~~4~~.1.A: State Implementation Plan (SIP)*
Cooperate with appropriate state, regional and federal agencies to carry out the federally-mandated State Implementation Plan (SIP) in order to attain federal standards for ground level ozone ~~and fine particulate matter~~ by the end of 20~~10~~**21.** 618.14

618.15 *Action E-**5**~~4~~.1.B: Control of Bus and Truck Emissions*
Collaborate with WMATA and local tour bus operators to reduce diesel bus emissions through the acquisition and use of clean fuel **and electric** transit vehicles. Additionally, encourage natural gas powered, electric powered, and hybrid commercial trucks to reduce emissions and improve air quality. 618.15

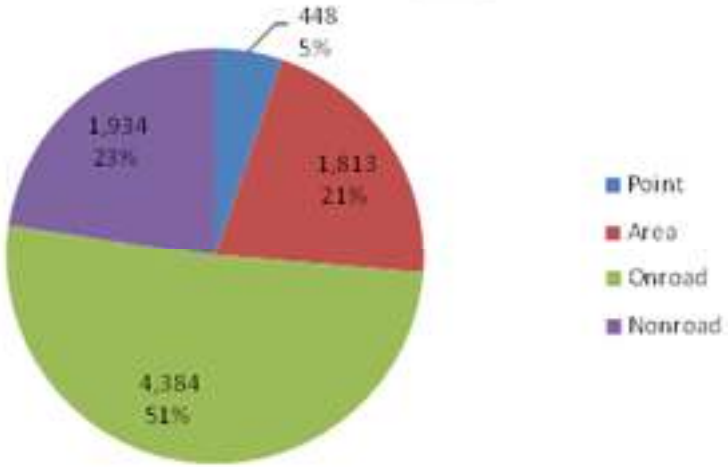
618.16 *Action E-**5**~~4~~.1.C: Motor Vehicle Inspection Programs*
Regularly update the District's motor vehicle inspection and maintenance program to ensure that the latest ~~emission control and~~ monitoring technologies are being employed. Consider expanding requirements for heavy vehicle emission inspections. 618.16

618.17 *Action E-**5**~~4~~.1.D: Air Quality Monitoring*
Continue to operate a system of air quality monitors around the District, and take corrective actions in the event the monitors **detect emissions or pollution that** exceeds federal standards. 618.17

618.18 The Link Between Land Use, Transportation, and Air Quality
Land use and transportation policies work in tandem to affect our region's air quality. **Fifty-one percent of nitrogen oxide emissions and 31 percent of volatile organic compound emissions, the two precursors to ground-level ozone formation, come from transportation, making it the second largest source (see Figure 6.9 and Figure 6.10 respectively).** In general, the more ~~"~~vehicle miles" Washington area residents must travel to reach home, work, shopping, and services, the worse our air quality becomes. Longer commutes are compounded by traffic congestion, which result in additional emissions from idling cars. Despite the use of cleaner-burning fuels **and newer vehicles with tighter emissions standards,** attaining federal air quality standards will be

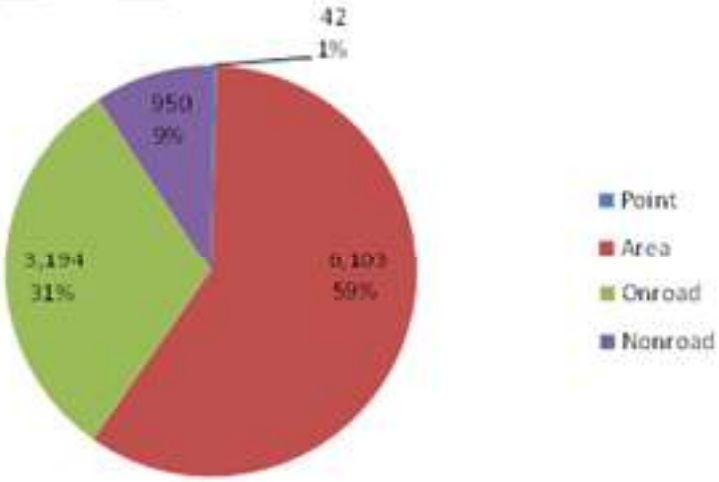
difficult until we ~~fundamentally~~ **adopt and implement new approaches** to ~~rethink~~ the way we as a region handle our growth. **New approaches include supporting smart city data, applications, and technology to help people and goods move more quickly, cheaply, and efficiently, all of which will also contribute to further reductions in air pollution.** 618.18

NEW **Figure 6.9: District Nitrogen Oxide Emissions by Sector in 2014**



(Source: District Department of Energy and the Environment)

NEW **Figure 6.10: District Volatile Organic Compounds Emissions by Sector in 2014**



(Source: District Department of Energy and the Environment)

NEW **Fortunately, Washington, DC is already implementing sustainable approaches to land use and urban form, resulting in lower vehicle emissions even as the city's population continues to grow. These approaches are at the citywide, neighborhood, and site-level, and together will help the city maintain attainment of air quality standards. For example, Washington, DC's land use development patterns mean that jobs, housing and recreation are in proximity to each other. As the Land Use and Transportation Elements of this Plan note, clustering higher density development along major corridors, bus routes, and near Metrorail stations means shorter and fewer car and truck trips, thus reducing vehicle miles traveled (VMT) and motor vehicle emissions, and thus improving air quality for residents. Development patterns have the potential to improve or mitigate air quality problems by providing and promoting alternatives to vehicular travel, such as mass transit, biking, or walking. However, the rise of ridesharing services provided by transportation network companies (TNCs) is a countervailing trend which must be considered; likewise, autonomous vehicles may encourage more people to live farther from their work.**

NEW **At the site level, several District policies also contribute to a further reduction in vehicle emissions. The District continues to support the proliferation of electric vehicle charging and Bikeshare stations throughout the city. In addition, the District continues to work with private businesses to develop a suite of incentives that can be offered to employees to encourage clean commuting, such as including facilities for showering after biking and walking, as well as providing transit subsidies.**

The District is fortunate to have one of the best transit systems in the country and many options to traveling without a car. But we're not an island. Our air is **polluted** ~~impacted from pollution~~ from the suburbs, and by power plant emissions from places as far away as the Ohio Valley. **Washington, DC will continue to work with regional partners through MWCOG to support transportation policies resulting in lower air emissions. Recent data show a reduction in regional emissions is due not only to a cleaner electric grid, but also because of cleaner cars and less driving per person.[3] In addition, the continued development of a safe and convenient regional and citywide bicycle lane and trail network also contributes to a reduction in VMT.**

~~The city can do its part to contribute to air quality improvements by focusing on two key land use strategies. First, directing future growth to parts of the city where car ownership is an option and not a necessity. Second, encouraging the mixing of land uses such as housing, shopping, and offices to reduce the need for routine car trips. As the Land Use Element of this Plan notes, and as previous~~

~~Comprehensive Plans for the District have noted, "transit-oriented development" around Metrorail stations and along bus corridors can help create a city with cleaner air and more housing and transportation choices for its residents. 618.18~~

See the Transportation Element for additional policies on improving mass transit, pedestrian and bicycle circulation, and transportation management.

619 E-**5**~~4~~.2 Reducing Water Pollution 619

619.1 Like cities across the United States, the District of Columbia faces the challenge of combating the pollution of its rivers, streams, and groundwater. The problem dates to colonial days when the city disposed of sewage and agricultural waste in its rivers. While the days of open sewers and unregulated dumping are behind us, **Washington, DC's waterways are still significantly impaired.** ~~we are left with the most polluted tributary of the Chesapeake Bay~~. ~~Swimming in our rivers is considered hazardous and fishing is ill-advised.~~ **Although there is still work to do, given the progress made as a result of DC Water's Clean Rivers project, the District is significantly closer to achieving the Sustainable DC goal of fishable and swimmable rivers.**619.1

619.2 Most of the pollutants entering Washington's waters cannot be traced to specific points. Oil, gas, dust, pesticides, trash, animal waste, and other pollutants are carried to rivers and streams each time it rains. Vegetated and unpaved areas absorb some of these pollutants, while paved surfaces do not. Industrial uses like power plants and military bases also impact water quality. Toxins from these uses have contaminated the groundwater in certain areas and have settled into riverbeds, creating the danger that they will be re-released if the sediment is disturbed. In addition, urban runoff carries high volumes of fast-moving water to local streams, scouring natural channels and stripping away the resources necessary to support local fish and wildlife. 619.2

619.3 As noted in the Infrastructure Element, **the combined** storm sewers **system** serve**s** the dual purpose of conveying sewage as well as **storm**~~rain~~water in about one-third of the city. During major storms or snow melts, stormwater and sanitary sewage flows exceed the capacity of the conveyance system, causing raw sewage **and stormwater** to be released into the Anacostia and Potomac Rivers, Rock Creek, and tributary streams. **M**~~B~~illions of gallons of sewage may be dumped into the river during such events, lowering oxygen levels and damaging aquatic life. **When fully completed in 2030**~~25~~**, the 18-mile Clean Rivers Project will result in a 96 percent system-wide reduction in combined sewer overflow volume.** 619.3

619.4 The federal Clean Water Act required the District to take steps to control stormwater pollution and eventually meet clean water standards. The Long-Term Control Plan for sanitary and storm sewer separation is one of these steps.

Another is the Municipal Separate Storm Sewer System (MS4) permit, which includes specific requirements for the two-thirds of the city where storm and sanitary sewers are already separated. The MS4 program, which is managed by the **Department of Energy and Environment** ~~DC Water and Sewer Authority~~, **authorizes the** ~~covers the control of~~ discharge~~s~~ from industrial and construction sites and other critical source facilities, monitoring of these discharges, enforcement activities for violators, and annual reporting ~~and implementation~~. In 2001, the District passed legislation authorizing the collection of fees to fund these activities. 619.4

619.5 As with air quality, water quality improvements cannot be tackled by the District alone. The Anacostia watershed includes 176 square miles and over 80 percent of this area is in Maryland. The Potomac watershed is larger still—over 14,600 square miles—and extends as far as West Virginia and Pennsylvania. A number of interstate and multi-agency initiatives have been launched to address water quality problems. These must be sustained and expanded in the future. 619.5

619.6 *Policy E-**5**~~4~~.2.1: Improving Water Quality*
Improve the quality of water in the District's rivers and streams to meet public health and water quality standards, and maintain the physical, chemical, and biological integrity of these watercourses for multiple uses, including recreation and aquatic life. 619.6

619.7 *Policy E-**5**~~4~~.2.2: Wastewater Treatment*
Continue ~~Provide~~ sustained capital investment in the District's wastewater treatment system in order to reduce overflows of untreated sewage and improve the quality of effluent discharged to surface waters. Ensure that the Blue Plains treatment plant is maintained and upgraded as needed to meet capacity needs and to incorporate technological advances in wastewater treatment. 619.7

See the Infrastructure Element ~~*for a discussion of plans to separate storm and sanitary sewers.*~~ ***for more details on wastewater treatment.***

619.8 *Policy E-**5**~~4~~.2.3: Control of Urban Runoff*
Continue to implement water pollution control and management practices aimed at **reducing** ~~slowing~~ urban runoff and ~~reducing~~ pollution, including the flow of sediment and nutrients into streams, rivers, and wetlands. 619.8

619.9 *Policy E-**5**~~4~~.2.4: Riverbed Sediment*
Reduce the **concentration of chemicals with identified ecological and human health risks** ~~level of toxins~~ in Anacostia and **Washington Channel** ~~Potomac River~~ sediment**s.** ~~with identified ecological and human health risks.~~ Remediation measures should **restore wetlands and riparian habitat,** address ongoing sources, and minimize the possibility of **media (e.g.,** water, **sediment, and/or**

biota) contamination resulting from dredging or disturbances of the river bottom. 619.9

619.10 *Policy E-**5**~~4~~.2.5: Groundwater Protection*
Protect Washington's groundwater from the adverse effects of **construction processes and** urban **land** uses. Contaminated groundwater should be investigated to determine whether long term monitoring or treatment is necessary or feasible. Future land uses and activities should be managed to minimize public exposure to groundwater hazards and reduce the likelihood of future contamination. 619.10

619.11 *Policy E-**5**~~4~~.2.6: Control of Illicit Discharges*
Provide public outreach and education, and maintain inspection and enforcement to identify **and eliminate illicit discharges to Washington, DC's stormwater system and District waters**. ~~procedures to control illicit discharges into the city's storm drains and waterways.~~ 619.11

619.12 *Policy E-**5**~~4~~.2.7: Regional Coordination*
Promote planning at the watershed level, particularly cooperative efforts with Maryland to address existing pollution loads in the Anacostia River basin. Undertake similar efforts with jurisdictions in the Potomac watershed to address water quality in the Potomac River. 619.12

619.13 *Action E-**5**~~4~~.2.A: Stormwater Management-**Program** ~~Plan~~*
~~Create a comprehensive multi-agency stormwater management plan~~ **As required by the EPA, Washington, DC creates a Stormwater Management Plan every five years** covering such topics as runoff-reducing **Green Infrastructure (GI), ~~low impact development (LID),~~** maintenance of **GI** ~~LID~~ infrastructure, education, ~~impervious~~ surface regulations, fees, and water quality education. The plan should include ~~output and outcome~~ measures that achieve specific water quality standards, reevaluate and clarify stormwater standards to eliminate confusion, and propose fee levels that are sufficient to maintain an effective stormwater management program and encourage residents and businesses to reduce stormwater pollution. 619.13

619.14 *Action E-**5**~~4~~.2.B: Funding*
Continue ~~to aggressively lobby for~~ funding for water quality improvements, including abatement of combined sewer overflow, removal of toxins, and Anacostia River clean-up. **Set incentive-based fee structures for DC residents and commercial property owners. Evaluate opportunities to adjust stormwater fees to accelerate the restoration of local waters as required by the District's federally-issued Municipal Separate Storm Sewer (MS4) Permit.** ~~Seek additional funding from Maryland and Virginia and set incentive-based fee structures for DC residents.~~ 619.14

619.15 *Action E-**5**~~4~~.2.C: Monitoring and Enforcement*
Maintain a District water pollution control program that **enforces** ~~implements~~ water quality standards, regulates land disturbing activities (to reduce sediment), ~~monitors and~~ inspects and controls sources of pollution in the District, ~~and permitted facilities in the city~~, and comprehensively monitors DC waters to identify **and eliminate sources of pollution** ~~stop violations~~. This program should be adequately staffed to carry out its mission and to implement innovative stormwater management programs. Other environmental programs, including underground storage tank regulation, contaminated site remediation, and pesticide control programs, must take groundwater impacts into account in their regulatory and enforcement activities. 619.15

619.16 *Action E-**5**~~4~~.2.D: Clean Water Education*
Working with ~~DC WASA~~ **DC Water,** ~~and the newly created DC Department of the Environment~~ DOEE, DC Public Schools (**DCPS), the Office of the State Superintendent of Education (OSSE), and local universities,** increase public information, education, and outreach efforts on stormwater pollution. These efforts could include such measures as community clean-ups, storm drain **marking** ~~stenciling~~, school curricula, demonstration projects, signage, and advertisement and media campaigns. 619.16

619.17 *Action E-**5**~~4~~.2.E: TMDL ~~Program~~ Implementation*
~~Implement Total Maximum Daily Load (TMDL) plans for the Potomac and Anacostia Rivers, Oxon Run, Watts Branch, Rock Creek, Kingman Lake, the Washington Channel, and other tributaries as required by the Clean Water Act.~~ A **Total Maximum Daily Load (**TMDL**)** sets the quantity of a pollutant that may be introduced into a water body. As a critical step in implementing these requirements, waste load allocations for individual sources or discharges (including city entities) into the municipal stormwater system should be assigned and the technologies and management practices to control stormwater should be identified. **Continue to work with stakeholders to update and execute Washington, DC's 2016 Consolidated TMDL Implementation Plan that details actions to reduce pollution from the MS4 as necessary to achieve water quality objectives**. **Remove TMDLs for tributaries where the water is not being polluted. Update the District's Watershed Implementation Plan for the Chesapeake Bay and continue to implement through 2-year milestones as part of Chesapeake Bay Program efforts to have all practices in place by 2025 to meet the Chesapeake Bay TMDL.** 619.17

619.18 *Action E-**5**~~4~~.2.F: Houseboat Regulations*
Improve regulation of houseboats and other floating structures in the Washington Channel, Anacostia River, and Potomac River to reduce water pollution. 619.18

619.19 *Action E-**5**~~4~~.2.G: **Clean** ~~Green~~ Marinas*
Promote the **Clean** ~~Green~~ Marina Program ~~of the Marine Environmental Education Foundation~~, encouraging boat clubs and marinas to voluntarily change their operating procedures to reduce pollution to District waters. 619.19

NEW ***Action E-5.2.H: Rainwater and Graywater***
Explore the capture and reuse of rainwater and graywater for potable and non-potable indoor uses, including the creation of new policies and guidance that would allow for captured and recycled water for clothes washers, toilets, showers, dishwashers, and other domestic uses.

620 E-**5**~~4~~.3 Controlling Noise 620

620.1 Noise affects the general health and well-being of District residents. High noise levels can create a host of problems, ranging from stress to hearing loss. Noise can also impact urban wildlife. In the noisiest parts of the city, the sounds of cars, trucks, buses, helicopters, and sirens may seem almost constant. Even in relatively quiet parts of the city, household noise sources like car alarms and leaf blowers can be a source of annoyance. ~~Regardless of density,~~ **While** the maintenance of "peace and quiet" is a basic expectation in most District neighborhoods**, it must be balanced with the realities of living in a vibrant and growing city**. 620.1

620.2 Reducing exposure to noise requires strategies that address both noise ~~"~~sources~~"~~ like freeways and airports and noise ~~"~~receptors,~~"~~ like homes, schools, and hospitals. It also involves the enforcement of ordinances regulating the hours of operation for noise-generating activities, like construction and machinery use. The Department of Consumer and Regulatory Affairs (DCRA) enforces Chapter 27 of the DC Municipal Regulations Title 20, which formally declares the "policy of the District that every person is entitled to ambient noise levels that are not detrimental to life, health, and enjoyment of his or her property" and further that "excessive or unnecessary noises within the District are a menace to the welfare and prosperity of the residents and businesses **of the District**." 620.2

620.3 Noise reduction measures also address highways and aviation. The District has a noise abatement and barrier policy for highways, in compliance with Federal Highway Act requirements**, that focuses on highway traffic noise and construction noise.** ~~Efforts have focused on I-395 and I-5/Kenilworth Avenue.~~ Airport noise reduction measures, including regulations on flight paths, hours of operation, aircraft type and model, and helicopters, are coordinated through the Metropolitan Washington Council of Governments. 620.3

620.4 *Policy E-**5**~~4~~.3.1: Interior Noise Standards*
Ensure that interior noise levels in new buildings and major renovation projects comply with federal noise standards and guidelines. Support the retrofitting of

existing structures to meet noise standards where they are currently exceeded. 620.4

620.5 *Policy E-5~~4~~.3.2: Reduction of Vehicle Noise*
Provide regulatory, mitigation, and monitoring measures to minimize exposure to noise from vehicular traffic, including buses, trucks, autos, and trains. Encourage the use of landscaping and sound barriers to reduce exposure to noise along freeways, rail lines, and other transportation corridors. 620.5

620.6 *Policy E-5~~4~~.3.3: Household Noise Control*
Strengthen enforcement of local ordinances and regulations that limit sources of household noise in the city, including noise originating from car alarms, construction activities, mechanical equipment and machinery, and similar sources. 620.6

620.7 *Policy E-5~~4~~.3.4: Airport Noise Control*
Work with appropriate federal and regional agencies to continue aircraft noise reduction programs related to Washington Reagan National Airport, especially in neighborhoods along the Potomac and Anacostia Rivers. 620.7

620.8 *Policy E-5~~4~~.3.5: Noise and Land Use Compatibility*
Avoid locating new land uses that generate excessive noise adjacent to sensitive uses such as housing, hospitals, and schools. Conversely, avoid locating new noise-sensitive uses within areas where noise levels exceed federal and District guidelines for those uses. 620.8

620.9 *Action E-5~~4~~.3.A: Evaluation of Noise Control Measures*
Continue to E~~e~~valuate the District's noise control measures to identify possible regulatory and programmatic improvements, including increased education and outreach on noise standards and requirements. 620.9

620.10 *Action E-5~~4~~.3.B: Enforcement of Noise Regulations*
Pursuant to the DC Municipal Regulations, continue to enforce laws governing maximum day and nighttime levels for commercial, industrial and residential land uses, motor vehicle operation, solid waste collection and hauling equipment, and the operation of construction equipment and other noise-generating activities. 620.10

620.11 *Action E-5~~4~~.3.C: Aviation Improvements to Reduce Noise*
Actively participate in the **Council of Governments Aviation Policy** Committee ~~on Noise Abatement and Aviation at National and Dulles Airports (CONAANDA)~~ to reduce noise levels associated with take offs and landings at Washington-Reagan National Airport. Particular emphasis should be placed on limiting nighttime operations, reducing the use of older and noisier aircraft, maintaining noise monitoring stations within the District, and following flight

path and thrust management measures that minimize noise over District neighborhoods. 620.11

620.12 *Action E-**5**~~4~~.3.D: Reduction of Helicopter Noise*
Encourage the federal government to reduce noise from the operation of helicopters, especially over residential areas along the Potomac and Anacostia Rivers during night-time and early morning hours. 620.12

620.13 *Action E-**5**~~4~~.3.E: Measuring Noise Impacts*
Require evaluations of noise impacts and noise exposure when large- scale development is proposed, and when capital improvements and transportation facility changes are proposed. 620.13

620.14 *Action E-**5**~~4~~.3.F: I-295 Freeway Noise Buffering*
Consistent with DDOT's noise abatement policy, continue to pursue the development of sound barriers and landscaping to shield neighborhoods abutting the I-295 (Anacostia) Freeway, Kenilworth Avenue, and I-395 (SE/ SW Freeway) from noise levels that exceed acceptable standards. 620.14

621 E-**5**~~4~~.4 Managing Hazardous Substances **and Materials** 621

621.1 Hazardous substances include materials that may pose a threat to human health or the environment when they are improperly handled, stored, or disposed. ~~While this may conjure up images of highly-secured industrial or military compounds, t~~ **T**he use of hazardous substances is common in households and businesses across the city—from the perchloroethylene used by dry cleaners, to the pesticides and herbicides used in lawn care, to common cleansers and solvents used in District households. Hazardous building materials such as asbestos, lead, and mercury may be present in many of the city's older structures. Naturally occurring hazards such as radon, and biological contaminants such as mold, also may be present. 621.1

621.2 Hazardous materials are also transported through the city on trucks and in rail cars. Even if all handling, transport, and storage regulations are properly followed, such substances may pose a risk in the event of an accidental spill or act of terrorism. 621.2

621.3 A complex set of federal and District regulations govern hazardous substance handling. Many of these regulations are implemented through District programs designed to reduce public health hazards and to protect the environment. These include underground storage tank regulation, clean-up programs for contaminated sites, toxic substance investigations,
and household hazardous waste disposal programs. The level of investigation and clean-up required at any given site depends both on the degree of contamination, existing land uses, and the particular land use that is planned there in the future.

Looking forward, pollution prevention practices (including hazardous waste minimization and toxic chemical source reduction), stronger environmental review procedures, and continued remediation measures can reduce the likelihood of exposure to hazardous materials and ensure public safety and the protection of ecological resources. 621.3

621.4 Vigilance must be taken to enforce regulations regarding the transport of hazardous materials through the city. This continues to be a high priority of the District's Emergency Management Agency, both to protect the security of District residents, workers, and visitors, and to ensure swift and effective response in the event of an emergency. 621.4

621.5 *Policy E-**5**~~4~~.4.1: Hazardous **Materials** ~~Substances~~ Management*
Strengthen and enforce ~~Develop and implement~~ programs to manage the use, handling, transportation, storage and disposal of harmful chemical, biological, and radioactive materials including expanded enforcement of local regulations and the establishment of training programs on hazardous materials and emergency planning. 621.5

621.6 *Policy E-**5**~~4~~.4.2: Hazardous Building Materials and Conditions*
Protect public health and safety by testing for and, where appropriate, removing lead, radon gas, asbestos, and other hazardous **materials** ~~substances~~ from the built environment. When these hazards are abated, require full compliance with all applicable licensing and inspection standards. 621.6

621.7 *Policy E-**5**~~4~~.4.3: Accidental Spills and Releases*
Ensure compliance with District laws relating to the notification and reporting of accidental spills and releases of hazardous materials. Improve public education and awareness of these requirements as part of a broader effort to improve emergency planning, preparedness and response in the city. 621.7

621.8 *Policy E-**5**~~4~~.4.4: Toxic Chemical Source Reduction and Disposal*
Encourage the substitution of non-toxic or less toxic chemicals and products for toxic chemicals and products in all businesses and households. Provide options for the disposal of hazardous waste generated by households and small businesses to minimize illegal and harmful dumping. Maintain penalties and fines for the illegal dumping of materials such as used oil and batteries. 621.8

621.9 *Policy E-**5**~~4~~.4.5: Clean-Up of Contaminated Sites*
Ensure that the necessary steps are taken to remediate soil and groundwater contamination in the city, both in areas where future development is likely and in areas that are already fully developed. In addition, require soil and groundwater evaluations for any development that is proposed on a site where contamination may be possible due to past activities. Depending on the site, it may also be necessary to investigate the effects of contamination on air quality, surface water,

or river sediments, or to conduct an ecological risk assessment. If contamination is found to be above acceptable levels, require remediation and, where necessary, long term monitoring and institutional controls. 621.9

621.10 *Policy E-**5**~~4~~.4.6: Hazardous Substances and Land Use*
Ensure that land use planning and development decisions minimize the exposure of residents, workers, and visitors to hazardous substances. New residences, schools, and similarly sensitive uses should not be sited in areas where significant quantities of hazardous substances are handled, stored, or disposed. Likewise, new municipal or industrial facilities that use toxic materials or produce hazardous waste should not be sited in residential or environmentally sensitive areas. 621.10

621.11 *Policy E-**5**~~4~~.4.7: Design Considerations*
For uses where hazardous substances are handled, require design and construction practices that minimize the possibility of hazardous spills, accidents, leaks, or security breaches—and encourage other measures as necessary to prevent injury and disease, and protect property and natural resources. 621.11

621.12 *Policy E-**5**~~4~~.4.8: Hazardous Materials Transport*
Regulate and guide the transport of hazardous materials through the District to minimize risks to human health, property, and the environment. 621.12

See the Land Use Element for additional policies on conflicts between industrial and residential uses, and the Community Services and Facilities Element for further discussion of emergency preparedness.

621.13 *Action E-**5**~~4~~.4.A: Household Hazardous Waste Disposal*
Expand the District's education and outreach programs on the dangers of household hazardous wastes and continue to sponsor and publicize household hazardous waste collection events. Provide additional sites and regularly scheduled events for the safe collection and disposal of such wastes. Explore options for addressing the collection and disposal of hazardous waste from businesses that are classified as conditionally exempt small quantity generators. 621.13

621.14 *Action E-**5**~~4~~.4.B: Compliance with Hazardous Substance Regulations*
Maintain regulatory and inspection programs to ensure that **all non-household entities** ~~businesses~~ that store, distribute, or dispose of hazardous materials comply with all applicable health, safety, and environmental requirements. These requirements range from used oil collection facilities at automotive repair shops ~~to emergency contingency plans for the PEPCO power plant~~ to disposal of medical waste from area hospitals and clinics. 621.14

621.15 *Action E-5~~4~~.4.C: Reducing Exposure to Hazardous Building Materials*
Implement programs to reduce exposure to hazardous building materials and conditions, including the existing radon gas testing program, the asbestos program, and the childhood lead poisoning prevention and lead-based paint management programs. The latter programs are designed to eliminate childhood lead poisoning citywide ~~by 2010~~ and to regulate the lead abatement industry to ensure the use of safe work practices. District programs should provide technical and financial support to the owners of residential properties, and particularly resident homeowners, for the abatement of these hazards. 621.15

621.16 *Action E-5~~4~~.4.D: Underground Storage Tank Management*
Maintain and implement regulations to monitor underground storage tanks (UST) that store gasoline, petroleum products, and hazardous substances. Prevent future releases from USTs to soil and groundwater; abate leaking tanks and other hazardous conditions, remediate contaminated sites; and provide public education on UST hazards. 621.16

621.17 *Action E-5~~4~~.4.E: Reductions in Pesticide Use*
Maintain a pesticide management program that complies with the District's Municipal Regulations for pesticide registration, operator/ applicator certification, and handling/use. Implement new programs to promote integrated pest management by the public and private sectors and discourage the use of harmful pesticides by District residents, institutions, and businesses. **Encourage household practices that limit mosquito breeding areas by draining standing water in such places as clogged drainpipes, flower pot trays, and discarded tires.** 621.17

621.18 *Action E-5~~4~~.4.F: Hazardous Substance Response and Water Pollution Control Plans*
Complete the hazardous substance response plan required under the District's Brownfields Act, and update the water pollution control contingency plan, as required under the District's Water Pollution Control Act. 621.18

NEW **Text Box: In 2011 MWCOG developed a Water Pollution Control Contingency Plan on behalf of the District. The plan is intended to provide guidance to the District agencies and departments that respond to hazardous substance, oil, and sewage spills that may threaten or taint ground or surface waters, and/or natural resources within the boundaries of the District of Columbia. To ensure that this plan remains current, it will be updated and revised every five years.**

NEW ***Action E-5.4.G: Water Pollution Control Contingency Plan***
Update the Water Pollution Control Contingency Plan, which includes specific notification and response strategies for major and minor spills/releases and effective containment/cleanup methods. Incorporate

changes in organizational structures, laws, and regulations, and programmatic needs.

622 E-54.**5** Drinking Water Safety

622.1 Drinking water quality in the District is impacted by land use in the Potomac Basin and by the condition of the city's water distribution system. Runoff from upstream development, dairy and hog farms, and other agricultural and mining uses presents an ongoing threat to water supply. Even if our water supply were pristine, however, the pipes used to transport water from treatment facilities to individual customers would affect water quality. Some of these pipes are more than 100 years old and are in poor condition. Problems with old, leaky water pipes are compounded by ~~hundreds of "cross connections" with sewer lines, and~~ **"**dead ends" where water does not adequately circulate. **DC Water is addressing this issue by creating open loops to allow for improved water circulation through the system.** 622.1

622.2 A related water supply issue is exposure to lead. **Water is lead-free when it leaves the treatment plant, but lead can be released when water comes in contact with pipes and plumbing fixtures that contain lead.** ~~Lead may enter our drinking water as a result of corrosion of pipes and plumbing fixtures.~~ Lead service lines between the distribution system and individual homes are relatively common in the city. **There are about 11,300 known lead service lines in public space, and 7,500 known lead service lines on private property. Considering most pipes on private property are unknown, the District estimates there are 48,000 lead service lines on private property.**~~, comprising about 23,000 of the District's 130,000 service lines.~~ **Lead sources and lead levels vary between buildings, so it is important to identify and remove any lead sources in and to each building.** While the risk of lead poisoning is very low for most, it can be more significant for infants and children. Tests conducted in 2004 showed elevated levels of lead in tap water, prompting a collaborative effort by ~~the~~ **DC Water** ~~DC Water and Sewer Authority~~, the EPA, and the District Department of Health **(**DOH**)** to accelerate service line replacement, increase monitoring, and enact corrosion control measures. **DC Water's efforts to replace water service lines are partially supported through a new meter-based fee established in 2016.** 622.2

NEW **Text Box: DC Water is working with the Washington Aqueduct Division of the US Army Corps of Engineers (USACE) to minimize lead release from pipes throughout the District by controlling corrosion, monitoring for lead at the tap, replacing lead service pipes, educating customers on the health impacts of lead, and helping them identify and remove lead sources on their property. Protecting drinking water from lead sources is the shared responsibility of DC Water and the property owner.**

Advancements in technology, like DC Water's interactive map that helps property owners identify their water service line material, increase transparency and strengthen residents' confidence in their drinking water.

622.3 *Policy E-5~~4~~.5.1: Drinking Water Safety*
Ensure the safety of the city's drinking water supply and distribution system. Maintain sustained efforts to reduce health hazards associated with lead and other contaminants. 622.3

NEW ***Policy E-5.5.2: Affordable Water Access***
Ensure affordable access to safe drinking water through continued support for DC Water's programs that discount the amount of water needed for residents' basic needs.

622.4 *Action E-5~~4~~.5.A: Lead Pipe Testing and Replacement*
Aggressively implement programs to test for lead, replace lead feeder pipes, and educate the community on safe drinking water issues and stagnant water control. 622.4

622.5 *Action E-5~~4~~.5.B: Source Water Protection*
Implement measures to protect natural systems and abate pollution sources in the Potomac Basin that could potentially **harm** ~~impact~~ the District's drinking water quality. 622.5

622.6 *Action E-5~~4~~.5.C: Interagency Working Group*
Create an interagency working group on safe drinking water to address drinking water emergencies; coordination between ~~DCWASA~~ **DC Water** and DOH and expanded public education on water supply. 622.6

623 E-5~~4~~.6 Sanitation, Litter, and Environmental Health 623

623.1 Among the many aspects of environmental health in the District are the maintenance of sanitary conditions, the reduction of litter, and the control of disease-carrying pests. The District's Department of Health maintains numerous programs to reduce food-borne illness, ensure compliance with hygiene standards, provide for animal and welfare control, and reduce exposure to animal-transmitted diseases like rabies and West Nile Virus. 623.1

623.2 Litter and trash are probably the most visible and pervasive forms of pollution in Washington. **Policies and programs have been developed to address issues with litter and trash including establishment of a $0.05 fee on disposable plastic and paper retail bags; a ban on the use of polystyrene foam take-out containers; containers, straws and other food service ware that is not recyclable or compostable from any entity that serves or sells food in the District; implementation of a robust street sweeping program; stringent**

enforcement against littering and illegal dumping; operation of a skimmer boat fleet in the lower Anacostia River; installation of litter traps in the Anacostia River; robust rat control programs that involve cleaning up litter and trash; implementation of education and outreach programs, and funding for the Mayor's Office of the Clean City, which provides leadership on these issues. ~~A variety of programs have been launched to combat litter, including the District's Clean City Initiative and the "Keep Washington, DC Beautiful" program, an affiliate of the national "Keep America Beautiful" program. These programs emphasize rapid District response to dumping problems; organization of neighborhood clean-up programs; education about local litter, rodent control, and dumping laws; and strengthening and enforcement of these laws.~~ 623.2

623.3 *Policy E-**5**~~4~~.6.1: Vector Control*
Continue and strengthen efforts to control rats, mice, mosquitoes, and other disease vectors and pests. A variety of related strategies should be used to support these programs, including public outreach and education, garbage control and containment, adequate trash and refuse collection services, ongoing maintenance of public space, enforcement of littering and dumping regulations, clean-up of construction and demolition debris, structural controls and integrated pest management, and a reduction in the number of vacant and abandoned buildings. 623.3

623.4 *Policy E-**5**~~4~~.6.2: Clean City Programs*
Improve environmental quality through programs that promote efficient trash removal, neighborhood clean-ups, and levying of fines and penalties for abandonment of personal property (including cars) and illegal dumping. 623.4

623.5 *Policy E-**5**~~4~~.6.3: Discouraging Illegal Dumping*
Develop and maintain effective public education and enforcement tools to curb littering and illegal dumping, and to promote the safe disposal of solid waste (including hazardous waste, medical waste, construction debris, used oil, and scrap tires) and bulky items. 623.5

623.6 *Policy E-**5**~~4~~.6.4: Environmental Health Activities*
Maintain and improve existing District programs to ensure community hygiene, food and restaurant safety, animal and welfare control, and the control of disease vectors. Promote continuous coordination among District agencies to ensure healthful and sanitary conditions throughout the District. 623.6

623.7 Action E-**5**4.6.A: Expanded Trash Collection and Street Sweeping
~~Explore the feasibility of expanding trash collection services and street sweeping schedules to improve the cleanup of~~ **Evaluate and implement new programs to ensure cleanliness of** vacant properties, roadsides, public spaces, parks, and city-owned lands. **Continue implementation of environmental street sweeping in hotspots for trash.**

NEW ***Action E-5.6.B: Trash Collection in District Waterbodies***
Continue to install and maintain trash traps in the District's waterbodies. Explore opportunities to partner with Virginia and Maryland on capturing trash that is deposited in rivers and streams upstream of the District. Continue to implement the District's skimmer boat fleet in the lower Anacostia River. 623.7

623.8 *Action E-**5**~~4~~.6.~~B~~**C**: Neighborhood Clean-Up*
Co-sponsor and participate in neighborhood and citywide clean-up activities such as those currently held along the Potomac and Anacostia Rivers, and those held around schoolyards and District parks. Encourage Advisory Neighborhood Commissions and other community groups to develop and announce cleanup campaigns in conjunction with the city's bulk trash removal schedule. 623.8

623.9 *Action E-**5**~~4~~.6.~~C~~**D**: Strengthening and Enforcement of Dumping Laws*
Take measures to strengthen and enforce the District's littering, rodent and disease vector control, and illegal dumping laws. These measures should include:

a. Providing adequate funding to carry out anti-littering programs;
b. Empowering the community to report illegal dumping activities;
c. Increasing public education on dumping laws, including posting of signs where appropriate; and
d. Expanding surveying and enforcement activities. 623.9

623.10 *Action E-**5**~~4~~.6.~~D~~**E**: Publicizing **and Expanding** Bulk Waste Disposal **and Recycling** Options*
Continue to sponsor and publicize options for bulk waste disposal **and recycling**, including information on the Fort Totten transfer station and the District's schedule for curbside bulk trash waste removal. **Increase the types of materials that can be dropped off by residents including hard to recycle items.** 623.10

NEW ***Action E-5.6.F Single-Use Bottles***
Discourage purchase of single-use bottles, which often end up in parks and streams, by encouraging persons to carry refillable water bottles, and by encouraging institutions to have working water fountains and bottle-filling stations. Consider mandating manufacturer take-back programs for beverage containers and other packaging.

NEW ***Action E-5.6.G Vacant and Blighted Properties***
Continue investigating and classifying vacant and blighted properties; continue pursuing enforcement of violations on these properties to protect the health, safety and welfare of the general public.

See the Hazardous Materials section of this chapter for additional actions relating to hazardous waste disposal.

624 E-**5**~~4~~.7 Other Hazards and Pollutants 624

624.1 T**wo**~~hree~~ other environmental hazards are addressed in this Comprehensive Plan. The first—light pollution—has been raised in the past around the Naval Observatory in Northwest DC. In some parts of the city, brighter lighting may be desirable to enhance public safety or illuminate our civic buildings and monuments. In other areas, dark skies are more desirable and lighting can be an irritant. Where lighting is required or desired, steps can be taken to use the correct **number of lights, coloring, and brightness** of lighting for the desired purpose, direct the lighting appropriately, employ energy efficient lighting devices, and design and install quality lighting that reduces sharp contrast, glare, and halo effects. 624.1

624.2 ~~The second hazard – electromagnetic fields (EMF) – is an issue principally associated with communication antennas and electric power facilities. While antennas have been part of the District's landscape for years, the widespread use of mobile phones and personal communication devices in the last decade have resulted in a proliferation of requests for new facilities. Although t~~**T**~~he National Research Council has found "no conclusive and consistent evidence" linking ordinary exposure to EMF with human health, the American Medical Association has recommended a policy of prudent avoidance. The intent is to reduce the exposure of residents and workers to EMF radiation and e~~**Ensure** compliance with all Federal Communications Commission siting standards **for communication antennas and electric power facilities.** 624.2

624.3 ~~The third hazard addressed below is flooding. Portions of the District are within the FEMA-designated 100-year flood plain and are subject to inundation during hurricanes and other severe storms. Although the District's flood-prone areas are generally parkland, ongoing efforts are needed to maintain seawalls, reduce erosion, replace undersized culverts, and keep streambeds free of debris. 624.3~~

624.4 *Policy E-**5**~~4~~.7.1: Prudent Avoidance of Electromagnetic Field Impacts*
Incorporate prudent avoidance in decisions regarding the approval, location or routing, and intensity of facilities that generate electromagnetic fields, such as power lines and communication antennas **in accordance with Federal Communications Commission (FCC) guidelines**. Such facilities should be located only when and where necessary based on local service needs, and should be designed using methods to mitigate involuntary public exposure to potential adverse effects. 624.4

624.5 *Policy E-**5**~~4~~.7.2: Co-Location of Antennas*
Consider the joint use and co-location of communication antennas to reduce the number of towers necessary, thereby reducing aesthetic impacts and limiting the area of radiofrequency exposure. 624.5

624.6 *Policy E-**5**~~4~~.7.3: Light Pollution*
Consistent with the goals of Sustainable DC, ~~M~~**m**aintain regulations for outdoor lighting to reduce light pollution**,** ~~and~~ conserve energy**, and reduce impact on wildlife, particularly migratory birds.** Particular attention should be given to preventing glare and nighttime light trespass **near** ~~in the vicinity of~~ the Naval Observatory, so that its operational needs are respected. 624.6

624.7 ~~*Policy E-4.7.4: Flood Plains*~~
~~Restrict development within FEMA-designated flood plain areas. Consistent with the Federal Elements of the Comprehensive Plan, prohibit activities within these areas that could pose public health or safety hazards in the event of a flood. Regulation of land uses in flood plains, waterfronts, and other low-lying areas should consider the long-term effects of global warming and sea-level rise, on flood hazards. 624.7~~

625 E-**5**~~4~~.8 Achieving Environmental Justice 625

625.1 Environmental justice refers to the fair treatment of people of all races, cultures, **national origin** ~~and~~ **or** income,~~s~~ with respect to the development, ~~adoption~~, implementation, and enforcement of environmental laws, regulations, and policies. **A just community is one in which all people experience protection from environmental and health hazards and have equal access to the decision-making process to have a healthy environment.** ~~It is about equal and fair access to a healthy environment, and equal enforcement of environmental regulation regardless of community characteristics.~~ 625.1

625.2 These are particularly important principles to abide by when the goal of the Comprehensive Plan is to grow an inclusive city. ~~Clearly some~~ **Some** District neighborhoods have been adversely impacted by pollution-generating uses and **other forms of environmental degradation.** ~~activities in the past~~., particularly in **Wards 5, 6, 7, and 8. As the city grows and changes, we must continue to focus on environmental justice to mitigate and prevent harm to current and future residents.** ~~repair the damage done by these uses and to avoid their over concentrations in the future.~~ **Low-income and minority communities should not face disproportionate environmental burdens and should enjoy clean and safe places to live, work, play, and learn. Further,** ~~A~~**a**ll residents should have a fair and meaningful opportunity to participate in environmental decisions. 625.2

NEW **Policies and actions found throughout the Comprehensive Plan, particularly those focused on improving equity and resilience, comprise a forward-looking approach to environmental justice. It is the District Government's charge to improve the environment of vulnerable communities that continue to face significant barriers to overall health, livelihood, and sustainability.**

NEW **Text Box: Environmental factors such as air and water quality are fundamental determinants of our health and well-being. These factors can also lead to disease and health disparities when the places where people live, work, learn and play are burdened by social inequities. These social inequities, often referred to as social determinants of health, include differences in individual behaviors, sociocultural influences, access to health services, economic status, and literacy levels. Environmental health disparities exist when communities exposed to a combination of poor environmental quality and social inequities have more sickness and disease than wealthier, less polluted communities.[4]**

625.3 *Policy E-**5**~~4~~.8.1: **Addressing** Environmental **In**justice*
Continue to develop and refine solutions to mitigate the adverse effects of industrial uses, particularly when proximate to residential areas. These solutions include enhanced buffering, sound walls, operational improvements, truck routing, regular air, soil, and water quality assessments, as well as regulating specific uses that result in land use conflicts. ~~Address the over-concentration of industrial uses in the District's lower income communities. Develop solutions to reduce the adverse effects of these uses, such as enhanced buffering, sound walls, operational improvements, truck routing, increased monitoring of impacts, and zoning changes to reduce land use conflicts.~~ 625.3

625.4 *Policy E-**5**~~4~~.8.2: Expanded Outreach to Dis**invested** ~~advantaged~~ Communities*
Identify and understand the needs of the entire community – particularly sensitive populations – or people with characteristics such as age and health conditions that make them more vulnerable to pollutant exposures. Incorporate these needs into plans, programs, and investments. Expand local efforts to involve economically disadvantaged communities, particularly those communities that historically have been impacted by power plants, trash transfer stations, and other municipal or industrial uses, in the planning and development processes. 625.4

NEW **Text Box Hot days can be unhealthy—even dangerous. Rising temperatures will increase the frequency of hot days and warm nights. High air temperatures can cause heat stroke and dehydration and affect people's cardiovascular and nervous systems. Warm nights are especially dangerous because they prevent the human body from cooling off after a hot day. Certain people are vulnerable, including children, the elderly, the sick, and the poor. Because Washington, DC is warmer than surrounding areas, and does not cool off as quickly at night, Washingtonians, particularly those without air conditioning, face a greater risk of heat-related illnesses. Further,**

[4] https://www.niehs.nih.gov/research/programs/geh/index.cfm

high air temperatures can increase the formation of ground-level ozone, a component of smog that can contribute to respiratory problems.

NEW **Rising temperatures may also increase the length and severity of the pollen season for plants such as ragweed. Lengthened pollen seasons have already been observed in other regions. The risk of some diseases may also increase. West Nile virus, transmitted by mosquitoes, could become more common due to rising temperatures, which speed up the mosquito life cycle and increase biting rates, as well as dry periods, which benefit the type of mosquito that transmits West Nile. But the effects are still uncertain and likely to vary by region. Increased flooding from more intense storms could lead to more indoor dampness and mold, which contribute to asthma, allergies, and respiratory infections.**

See Section 1.1 for further discussion regarding extreme heat and disinvested communities.

NEW ***Policy E-5.8.3: Capital Facilities***
Consider factors supporting environmental justice when updating the capital improvement program for existing public facilities and the development of new facilities. Plan for the equitable distribution of infrastructure improvements and public facilities and services considering both number/size and access/distance to facilities.

See the Community Services and Facilities and Infrastructure Elements for further discussion of capital facilities.

NEW ***Policy E-5.8.4 Health Impacts of Municipal and Industrial Uses***
Inform public policy decisions on the siting of municipal and industrial facilities using environmental justice principles, recognizing links between public health and the location of municipal and industrial uses such as power plants and waste treatment facilities.

625.5 ~~*Action E-4.8.A:* Health Impacts of Municipal and Industrial Uses~~
~~Continue to study the link between public health and the location of municipal and industrial uses such as power plants and waste treatment facilities. The findings of such studies should be used to inform public policy decisions and minimize future community health impacts.~~ 625.5 **Obsolete – see Implementation Element**.

NEW ***Action E-5.8 A: Clean and Reuse Contaminated Properties***
Clean up brownfields and Superfund sites so that these sites can be reused for commercial and industrial activities, housing, parks, and other community facilities that can boost local economies and improve quality of life.

NEW ***Action E-5.8.B: Environmental Health Threats in Public Housing***
Audit and eliminate environmental health threats (such as mold, lead, and carbon monoxide) in the District's public housing. Work with the DC Housing Authority to reduce these threats, as well as threats from other contaminants, including lead in drinking water, in all District public housing.

626 E-**6**~~5~~ Environment, Education, and the Economy 626

626.1 The final section of this Element presents policies and actions that tie environmental quality to strategic decisions about government operations, economic growth, and education in the District of Columbia. These policies take the Environmental Protection Element beyond its traditional focus to a new level that recognizes the link between environmental quality and the broader goals set by "Vision for Growing an Inclusive City." The basic premise is that environmental protection should not be seen as a regulatory burden or added expense, but rather as a measure of our stewardship, ~~and~~ respect for the earth**, and respect for communities that have borne the brunt of previous decision-making affecting the environment.** Environmental protection can ultimately reduce the cost of doing business by reducing accidents, disease, and waste. It can create jobs for District residents, strengthen tourism and hospitality, improve the educational experience for District students, and make the District a more attractive and healthy place for all those who live and work here. 626.1

NEW **Text Box: Washington, DC partners with environmental non-profits and advocacy groups to promote environmental education throughout the city, with the goal of raising awareness about the intersections among human activities and the built and natural environments. These partnerships provide a variety of programs including educational boat tours, wetland restoration planting projects, river clean ups, classroom fish hatching and restoration projects, and Meaningful Watershed Educational Experiences. The District also organizes special annual environmental education events with its partners such as the Anacostia Environmental Youth Summit, Family & Youth Casting Call, and DC Electric Vehicle Grand Prix. In addition, the DC Infrastructure Academy (DCIA) coordinates, trains, screens and recruits residents to fulfill the needs of the infrastructure industry and infrastructure jobs with leading companies, including in the renewable energy sector. Further, Solar Works DC, a low-income solar installation and job training program, aims to increase access to clean energy and create a long-term pipeline for green jobs.**

627 E-**6**~~5~~.1 Greening the Government 627

627.1 The District needs to set high standards for its own operations if it expects others in the community to follow suit. It should be a role model in energy efficiency, **renewable energy production,** green building construction, **green infrastructure,** ~~low impact development, and,~~ **sustainable transportation and vehicles,** environmentally sound landscaping**, and adhering to green meeting standards.** It should lead the way in **sustainable materials management, sustainable procurement, reducing waste generation, reusing materials whenever possible, and recycling and composting what is left. It should also ensure its buildings and infrastructure are resilient to a changing climate.** ~~recycling and composting solid waste, using recycled goods, and procuring "green power."~~ 627.1

NEW **District government will continue to adopt as appropriate the latest green construction codes for all new construction and major renovations. The International Green Construction Code (IgCC) and Energy Conservation Code are international standards for the most innovative practices in green building. District Government will continue to integrate the most recent version of the IgCC in the city's construction codes for all new construction and major renovations, which will apply to both public and private buildings of over 10,000 square feet.**

627.2 In 2003, a Mayor's Order established a "Greening the Government" subcommittee comprised of directors from almost 20 District agencies. The subcommittee was charged with setting priorities and measurable goals to further energy efficiency and environmental health in District government workplaces. It was asked to implement energy efficiency measures, educate the District workforce, and bring green building practices into District buildings. The subcommittee produced a Strategic Plan in 2004.~~;~~ **An** a**dditional Mayor's Order on Greening the Government was promulgated in 2013 to build on the initial order. K**~~k~~ey elements of the~~at~~ Plan are summarized in the policies and actions below. 627.2

627.3 *Policy E-6~~5~~.1.1: **Green Infrastructure*** ~~*Low Impact Development*~~ *and Green Building Methods for the District*
Strongly encourage the use of ~~low impact development (LID)~~ **green infrastructure best management practice** ~~methods~~ and green building design methods and materials in new construction and major rehabilitation projects undertaken by the District of Columbia government. 627.3

627.4 ~~*Policy E-5.1.2: Environmental Audits*~~
~~Conduct environmental "audits," including energy audits, of District government facilities to guide decisions about retrofits and other conservation measures. Environmental audits should also be required any time the District leases space for government use. 627. 4~~

627.5 *Policy E-**6**~~5~~.1.3: Environmentally Friendly Government Operations*
Promote energy efficient and environmentally friendly District government operations**,** the purchase of recycled and recyclable products, procurement of ~~"~~green power~~"~~ for District operations where feasible, the use of energy saving equipment, and contracting practices which include incentives for sustainable technology. 627.5

627.6 *Policy E-**6**~~5~~.1.4: Sustainable Landscaping*
Require ~~Encourage~~ **sustainable** ~~landscaping~~ practices **for landscaping projects, green infrastructure, and restoration projects** ~~on District properties~~ that reduce the need for watering and mowing, control the spread of invasive species, increase the use of landscaping for stormwater management, **provide habitat,** and reduce the use of pesticides and herbicides. **Consider using industry best practices and certifications to guide this policy.** 627.6

627.7 *Action E-**6**~~5~~.1.A: Green Building Legislation*
Update ~~Adopt and implement~~ legislation ~~establishing~~ **to increase** green standards for projects constructed by the District of Columbia or receiving funding assistance from the District of Columbia. **Strive for higher levels of energy efficiency, renewable energy requirements, net-zero standards for new construction, and broader sustainability metrics for public projects.**[5] 627.7

627.8 *Action E-**6**~~5~~.1.B: Energy Management Plans*
Require the submittal and periodic updating of Energy Management Plans by District agencies. These plans should **be developed in coordination with Clean Energy DC to ensure that they have baselines, goals, and strategies that are consistent with, and support the goals and objectives of Clean Energy DC and Climate Ready DC.** ~~establish baseline data for assessing the effectiveness of each agency's energy conservation measures~~. 627.8

NEW ***Action E-6.C: Sustainable DC***
By 2032, fully implement Washington, DC's sustainability plan, Sustainable DC, to address the city's built environment, energy, food, nature, transportation, waste, and water. Dedicate District Government staff and funding to implement the Sustainable DC Plan, track progress, and make results publicly available.

NEW ***Action E-6.1.D: Sustainable DC Innovation Challenge***
Fully launch the Sustainable DC Innovation Challenge to help District agencies test new innovations and technology with the goal of increasing the use of renewable energy.

[5] Using 2019 as the baseline year.

NEW ***Action E-6.1.E Reduce Energy Use in District Government Owned Buildings***
Retrofit and maintain District Government owned buildings to minimize energy use. Install renewable energy technology to minimize energy use.

NEW ***Action E-6.1.F Environmental Partnerships***
Continue to leverage the local business and environmental advocacy communities by collaborating on sustainability initiatives.

NEW **Text Box: Public-Private Coordination**
Coalitions of stakeholders and government representatives, including the Food Policy Council (FPC), Green Building Advisory Council (GBAC), and Urban Forestry Advisory Council (UFAC), regularly convene to evaluate and make recommendations regarding the effectiveness of the District's sustainability policies. These coalitions analyze the impact of existing and proposed policies on the District's environmental health, including the potential impact of policies on the specific environmental challenges facing Washington, DC.

627.4 ***Action*** ~~*Policy*~~ *E-****6.1.G***~~*5.1.2:*~~ *Environmental Audits*
Evaluate existing and proposed new ~~Conduct environmental "audits," including energy audits, of~~ District government facilities to guide decisions about retrofits and other conservation measures. ~~Environmental a~~**A**udits should **include analysis with regard to resilience and energy efficiency and** also be required anytime the District leases space for government use. **Resilience audits should support Washington, DC's capacity to thrive amidst challenging conditions by preparing and planning to absorb, recover from, and more successfully adapt to adverse events.** 627.4

628 E-6~~5~~.2 **Sustainability** ~~Environmental~~ Education and Stewardship 628

628.1 A key element of the District's environmental strategy is increased environmental education. This should begin with collaborative efforts between local non-profits, the private sector, District and federal governments, and our K-12 schools. **The District's Sustainable DC Plan, Environmental Literacy Plan, and regional 2014 Chesapeake Bay Plan provide road maps for environmental education implementation**. Aquatic and wildlife education programs instill appreciation of natural resources in our youth and provide them with knowledge and skills that they may use later in life. Environmental education activities should continue with adult programs, professional development for teachers, and outreach to the business community on environmental quality issues. These programs should move the city beyond environmental awareness to increased stewardship and informed action. **Further, demonstration projects, such as those funded through the Sustainable DC Innovation Grant program, provide the means to introduce and experience innovative ideas and approaches and prepare the way for replication and up-scaling** 628.1.

628.2 *Policy E-**6**~~5~~.2.1: **Sustainability** ~~Environmental~~ Education in District Schools*
~~Develop or e~~**E**xpand programs to educate youth from pre-school to high school about the importance of **sustainability** ~~protecting the environment~~. 628.2

628.3 *Policy E-**6**~~5~~.2.2: Continuing Education on the Environment*
Encourage greater participation by residents, business owners, institutions, and public agencies in **reaching** ~~maintaining~~ environmental ~~standards~~ **goals.** This should be achieved through public education, community engagement, compliance assistance, ~~media, outreach and awareness campaigns, compliance assistance,~~ and environmental enforcement programs. ~~Typical programs could include recycling projects, creek clean- ups, and tree planting initiatives~~. 628.3

628.4 *Policy E-**6**~~5~~.2.3: Interpretive Centers*
Support the **continued** development of environmental education and nature centers in the District, particularly in recovering habitat areas such as the Anacostia River shoreline. 628.4

628.5 *Policy E-**6**~~5~~.2.4: Demonstration Projects*
Encourage best practice guides, demonstration projects, tours, and other tools to create a culture where the "green choice" (i.e., the choice that results in greater energy efficiency, **resiliency, sustainability**, innovation and better environmental health) is the preferred choice for energy, transportation, construction, and design decisions. 628.5

NEW ***Policy E-6.2.5: Sustainable Purchasing***
Strengthen the District's Sustainable Purchasing Program through the addition of guidance in new product categories, making the resources more accessible, training more District employees on the use of the product specifications and making Environmentally Preferable Products and Services (EPPS) the default through city purchasing systems.

See also Parks, Recreation, and Open Space Policy PROS-2.2.8 on Stewardship of Public Space.

628.6 *Action E-**6**~~5~~.2.A: Partnerships for Environmental Education*
Develop partnerships with environmental non-profits and advocacy groups to promote environmental education in the District. Examples of such programs include the Earth Conservation Corps effort to employ inner-city youth in environmental restoration along the Anacostia River, the Anacostia Watershed Society's tree planting, clean-up, and riverboat tour events, and the National Park Service summer programs for high school students at Kenilworth Park. 628.6

628.7 *Action E-**6**~~5~~.2.B: Production of Green Guide*

Continue to update guidance ~~Produce a "Green Guide"~~ aimed at homeowners, builders, contractors and the community at large with guidelines and information on green building and low-impact development. 628.7

NEW ***Action E-6.2.C: Sustainability in Schools, Recreation Centers, and Libraries***
When modernizing all public school buildings, recreation centers, and libraries, reduce their environmental footprint and integrate sustainable and healthy practices into their operations. Continue support of citywide schoolyard greening efforts and related programs, and encourage Public and Charter schools to participate in schoolyard greening efforts.

629 E-**6**~~5~~.3 Environment and the Economy 629

629.1 Environmental and economic development goals intersect with respect to the redevelopment of ~~"~~brownfield~~"~~ sites. Brownfields include industrial, commercial, institutional, or government sites that are abandoned or underutilized, in part due to environmental contamination or perceived contamination. Their redevelopment provides the opportunity to revitalize distressed communities, increase property tax revenue, and create new jobs. In the District, a "Voluntary Clean Up Program" has been initiated to provide incentives to clean up brownfields and put them back into active use. ~~There are currently six sites participating in this program.~~ 629.1

629.2 Linked to the redevelopment of brownfields is the idea of ~~"~~growing~~"~~ the environmental sector of the District's economy. A number of DC-based organizations have pioneered the idea of building a ~~"~~green collar~~"~~ workforce to demonstrate how employment and natural resource conservation can sustain one another. Training programs have been established to help DC youth find jobs in green construction, horticulture, parks and recreation, landscaping, recycling, **renewable energy**, and similar professions. The District can contribute to these programs through initiatives to attract ~~"~~green businesses~~"~~ to the city. Such efforts can help diversify the economy and provide new jobs while advancing the sustainability goals of the Comprehensive Plan. 629.2

629.3 *Policy E-**6**~~5~~.3.1: Brownfield Remediation*
Clean up and redevelop contaminated ~~"~~brownfield~~"~~ sites, providing new business and job opportunities and expanding land resources for economic development, open space, and other purposes. **Expand** ~~Provide~~ financial incentives for the remediation and redevelopment of these sites. 629.3

629.4 *Policy E-**6**~~5~~.3.2: Job Training*
~~Provide job training for DC residents seeking careers in the environmental sector, including such fields as environmental science, landscaping and horticulture, lead hazard control, urban salvage and deconstruction, hazard abatement and remediation, and recycling.~~ **Continue to train more District residents to be competitive for livable wage jobs in growing industries such as sustainability,**

the environment, and resilience. Connect underemployed residents to training programs and any necessary social services. 629.4

629.5 *Policy E-**6**~~5~~.3.3: Incentives for Green Business*
Support economic incentives that encourage environmentally sustainable businesses to locate in the District. 629.5

629.6 *Action E-**6**~~5~~.3.A: Voluntary Clean-Up Program*
Continue the District's voluntary clean-up program. The program is designed to encourage the investigation and remediation of contamination on any site that is not on the EPA's National Priority List and that is not the subject of a current clean-up effort. 629.6

629.7 ~~*Action E-5.3.B: Sustainable Business Initiative*~~
~~Establish a Sustainable Business Initiative, starting with the creation of a committee including representatives from the Board of Trade, the Chamber of Commerce, the DC Building Industry Association, and others.~~ **Obsolete - See Implementation Table**
629.7

629.8 *Action E-**6**~~5~~.3.C: ~~*Green Business Certification*~~ ***Sustainable Business Program***
Develop a more robust, voluntary sustainable business program that partners with businesses to help them operate sustainably. ~~Establish a green business certification program as an incentive for companies that exemplify sustainable and environmentally responsible business practices.~~ 629.8

629.9 *Action E-**6**~~5~~.3.D: Green Collar Job Corps*
Continue to implement 'green collar' job training programs focused on green infrastructure installation and maintenance, solar installations, and lead abatement to educate and train unemployed or under-employed District residents. Efforts should be made to connect trainees with employers in the green field upon the completion of their training programs.
~~Explore the feasibility of creating a "green collar" job corps, including education in environmental fields, attraction and retention of green businesses and sustainable industry, and job training and placement within these fields and industries~~. 629.9

630 E-**6**~~5~~.4 Environmental Program Management 630

630.1 The final section of this chapter addresses the administration of environmental policies and programs in **Washington, DC.** ~~the District of Columbia. In the past, the fragmentation of responsibilities across multiple agencies has hindered the enforcement of our environmental regulations and the collection and tracking of environmental data. There has been no single agency with an express mandate to protect the District's environment and provide environmental leadership.~~ 630.1

630.2 ~~As noted in the opening paragraphs of this Element, legislation creating the Department of the Environment was approved in November 2005. Looking forward, a sustained commitment to funding and adequately staffing this department will be necessary to ensure that it can carry out its mission. 630.2~~

630.3 ~~*Policy E-6 5.4.1: Environmental Planning*~~
~~Create a District administrative structure that allows for the most effective possible means of natural resource planning and management. 630.3~~

630.4 *Policy E-**6**~~5~~.4.2: Adequacy of Funding*
Provide for adequate funding and coordination of environmental protection activities and ensure that the environmental impacts of public actions and decisions are fully evaluated. 630.4

630.5 ~~Policy E-6 5.4.3: Cost-Benefit Analysis~~
~~Ensure that cost estimates for environmental programs consider not only immediate costs but also the long-term value of the benefits that will result. To demonstrate long-term value, fiscal impact assessments should consider the long-term cost of not implementing environmental programs as well as the short-term cost of implementing them. 630.5~~

630.6 *Action E-**6**~~5~~.4.A: **District** Department of **Energy and** the Environment*
Provide the necessary staff resources, funding, and regulatory authority for the ~~newly created~~ District Department of **Energy and** ~~the~~ Environment to achieve its mission and successfully implement the District's key environmental protection programs. 630.6