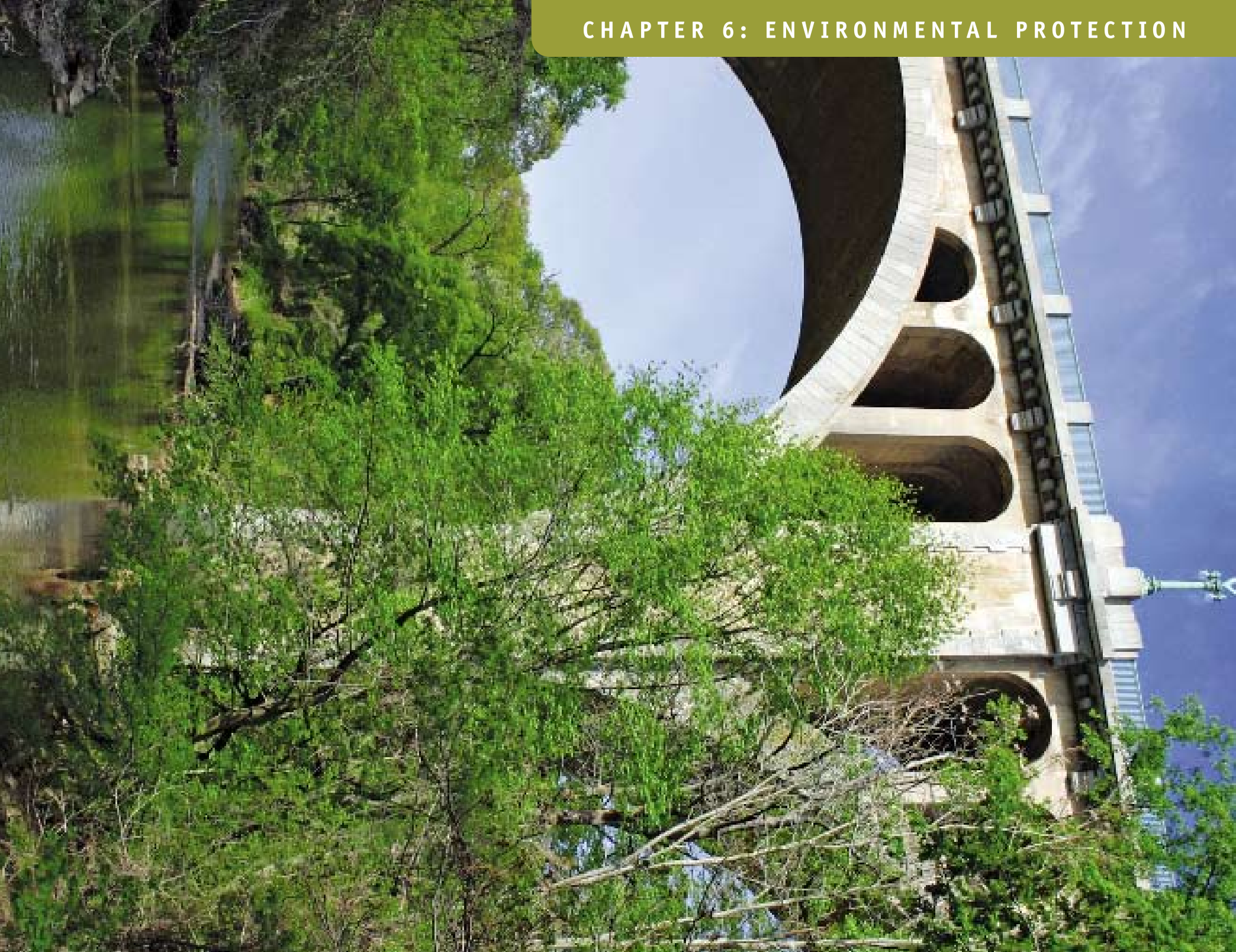
Chapter 6 Environmental Protection Element



Environmental Protection Element

Overview 600

The Environmental Protection Element addresses the protection, restoration, and management of the District's land, air, water, energy, and biologic resources. The Element provides policies and actions on important issues such as 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. The health of Washington's environment is a key indicator of the quality of life in the city. Good environmental management and pollution prevention are essential to sustain all living things and to safeguard the welfare of future generations. 600.1

The critical environmental issues facing the District of Columbia are addressed in this element. These include:

- Restoring the city's tree canopy and green infrastructure
- Improving our rivers, streams and stream valleys
- Reducing erosion and stormwater run-off
- Sustaining plant and animal habitat
- Conserving water and energy
- Expanding recycling
- Encouraging green building techniques
- Reducing air pollution. 600.2

Environmental protection has been part of planning in 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, the District planted 60,000 trees, leading Harper's Magazine to dub Washington the "City of Trees." Today's post-card images of the District still portray a city of blue skies, pristine waters, and lush greenery. 600.3

But reality is another story. Washington's legacy as America's "greenest" city has been seriously challenged over the centuries by urbanization. Our air quality does not meet federal standards, and our rivers and streams are polluted by raw sewage and urban runoff. Ninety percent of 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. 600.4

Fortunately, the District has turned the corner and begun to tackle these challenges head on. In 2005, legislation was passed creating a District Department of the Environment. The most ambitious tree planting, water

The overarching goal for environmental protection is:
Protect, restore, and enhance the natural and man-made environment in the District of Columbia, taking steps to improve environmental quality, prevent and reduce pollution, and conserve the values and functions of the District's natural resources and ecosystems.

quality, and habitat restoration projects in decades are underway, and great strides are being made to promote more sustainable growth. 600.5

The Environmental Protection Element builds on this momentum. It charts a course toward excellence in environmental quality and improved environmental health. 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. 600.6

Environmental Protection Goal 601

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Policies and Actions

E-1 Protecting Natural and Green Areas 602

Washington, DC's natural landscape is characterized by 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

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

E-1.1 Conserving and Expanding Our Urban Forest 603

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. Trees add beauty, improve mental health, 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. 603.1

A 2004 study by the Casey Trees Endowment Fund found that trees currently cover about 29 percent of the District's land area. 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, there are significant geographic disparities in tree cover, ranging from 46 percent of the land area in Upper Northwest to just 8 percent in the Mid-City area. Public awareness of these alarming statistics has sparked tree planting and "re-greening" activities across the city. 603.2

Tree cover in the District as of 2005 is shown in Map 6.1. 603.3

Policy E-1.1.1: Street Tree Planting and Maintenance

Plant and maintain street trees in all parts of the city, particularly in areas 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

Policy E-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

Policy E-1.1.3: Landscaping

Encourage the use of landscaping to beautify the city, enhance streets and public spaces, reduce stormwater runoff, and create a stronger sense of character and identity. 603.6

Policy E-1.1.4: Engaging the Community

Promote partnerships between the District, community groups, and non-profit advocacy groups to undertake tree surveys and planting campaigns, volunteer training and education, and resident stewardship of Washington's urban forest. 603.7

Action E-1.1.A: Tree Replacement Program

Continue working toward a goal of planting 4,000 street trees and 2,000 trees on public 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

Action E-1.1.B: Street Tree Standards

Formalize the planting, pruning, removal, and construction guidelines in use by the city's Urban Forestry Administration by developing official city

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.

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. 603.9

Action E-1.1.C: Tree Inventories

Continue partnership agreements with the federal government, the Casey Trees Endowment Fund and other groups to develop a live database and management system for the District's trees using Geographic Information System (GIS) mapping. Efforts should be made to inventory trees on parkland as well as along city streets. 603.10

Action E-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. 603.11

Action E-1.1.E: Urban Forest Management Plan

Consistent with the District's Tree Bill, 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 coordinating urban forest management activities on all public lands managed by the city (e.g., street trees, city parks, public school grounds, etc.). It should also promote coordination with federal agencies and other large landowners, and include comprehensive strategies to manage insects and diseases. 603.12

Action E-1.1.F: Urban Tree Canopy Goals

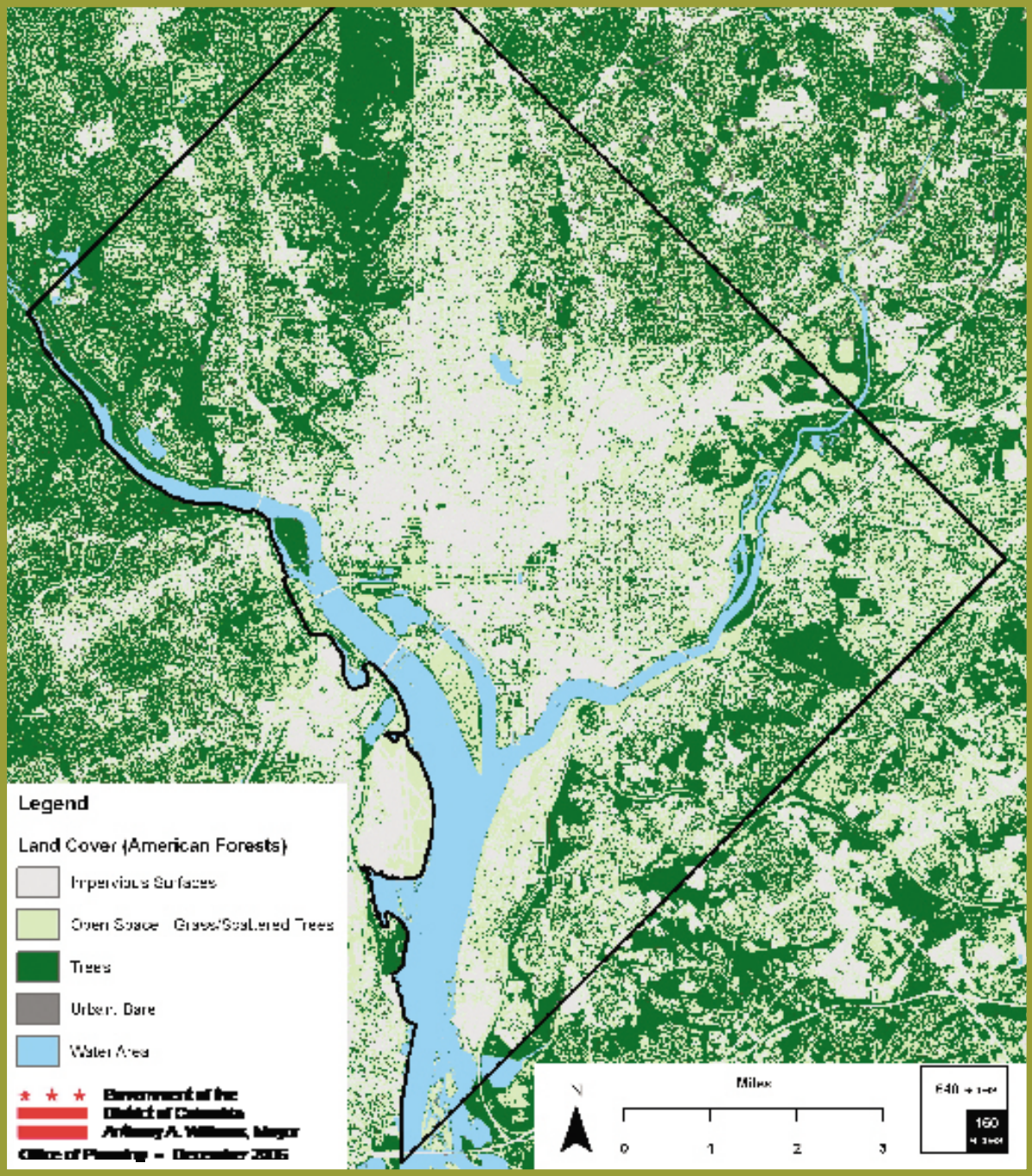
Determine the extent of the District's tree canopy at a sufficient level of detail to establish tree canopy goals for neighborhoods across the city. Such goals have recently been developed by the USDA and tested in other cities as a way of evaluating the existing tree canopy and setting specific goals for its restoration. 603.13

E-1.2 Protecting Rivers, Wetlands, and Riparian Areas 604

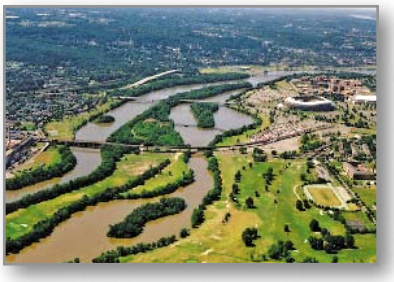
Washington is situated at the confluence of two great rivers—the Anacostia and the Potomac. Both rivers have been altered over the centuries to accommodate development, highways, railroads, airports, military bases, parkland, federal monuments, and other vestiges of life in the nation's capital. The Potomac has fared better than the Anacostia in this regard—

Map 6.1:

Existing Tree Cover in the District of Columbia and Surrounding Region 603.15



Source: American Forests, 1999



As its natural beauty has yielded to industry, the Anacostia River's waters have become polluted, and the river has become a divide between more and less desirable neighborhoods.

much of its shoreline is publicly accessible and has been conserved as parkland. For years, the Anacostia suffered the fate of being 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 between more and less desirable neighborhoods. 604.1

In the first years of the 21st century, a major initiative 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 and estuarine habitat, improve water quality, and increase environmental education about the river. When completed, these initiatives will greatly reduce sewage overflows and pollutant discharges, 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 6.2 indicates the location of rivers, streams, and watersheds in the District of Columbia. 604.2

Policy E-1.2.1: River Conservation

Improve environmental conditions along the Anacostia River 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

Policy E-1.2.2: Waterfront Habitat Restoration

Undertake a range of environmental initiatives along the Anacostia River to eliminate combined sewer overflows, reduce urban runoff, restore wetlands and tributary streams, increase oxygen levels in the water, remediate toxins in the riverbed, clean and redevelop contaminated brownfield sites, and enhance natural habitat. 604.4

Policy E-1.2.3: Retention of Environmentally Sensitive Areas as Open Space

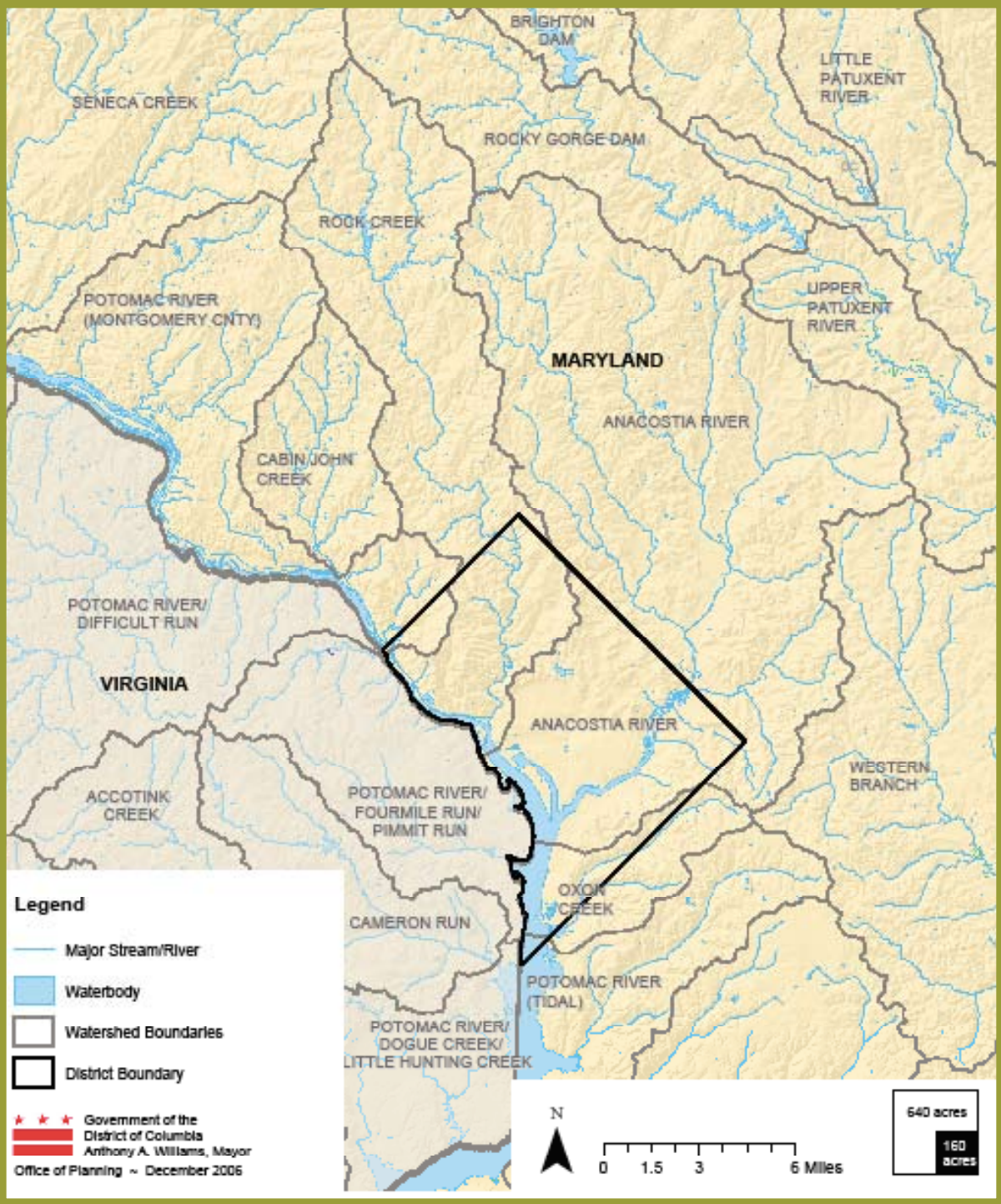
Retain environmentally fragile areas such as wetlands and riparian areas along the Anacostia and Potomac Rivers as open space or parkland. In areas under federal jurisdiction such as Rock Creek Park, work with the National Park Service to conserve and carefully manage such areas, and to implement an effective "no net loss" policy. 604.5

Policy E-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.

Map 6.2:

Watersheds and Waterways in DC and the Surrounding Region 604.6



Undertake wetlands restoration, enhancement, and creation projects to mitigate the impacts of stormwater runoff and improve plant and animal habitat. 604.7

Policy E-1.2.5: Wetland Buffers

Maintain open space buffers around existing and restored wetlands in order to reduce the likelihood of environmental degradation from urban runoff and human activities. 604.8

Action E-1.2.A: 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:

- 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

Action E-1.2.B: Wetland Setback Standards

Establish clear District of Columbia regulations for wetland setbacks and ensure compliance with these regulations during plan review, permitting, and inspections. 604.10

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

E-1.3 Conserving Soil and Reducing Erosion 605

Soils in 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

Policy E-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" 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

Policy E-1.3.2: Grading and Vegetation Removal

Encourage the retention of natural vegetation and topography on new development sites. Grading of hillside sites should be minimized and graded slopes should be quickly revegetated for stabilization. 605.3

Policy E-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

Policy E-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

E-1.4 Preserving Steep Slopes and Stream Valleys 606

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. 606.1

A similar set of challenges is present on steep slopes, generally defined as slopes with a grade of 25 percent or more. As Map 6.3 indicates, such slopes are concentrated in protected areas like Rock Creek Park and the Potomac

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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

Policy E-1.4.1: Conservation of Steep Slopes

Strongly discourage development on steep slopes (i.e., greater than 25 percent), 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

Policy E-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 green buffer between the built environment and these natural areas. 606.4

Policy E-1.4.3: Open Space Protection Along Stream Valleys

Preserve land adjacent to streams and ravines 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

Policy E-1.4.4: Channelization of Streams

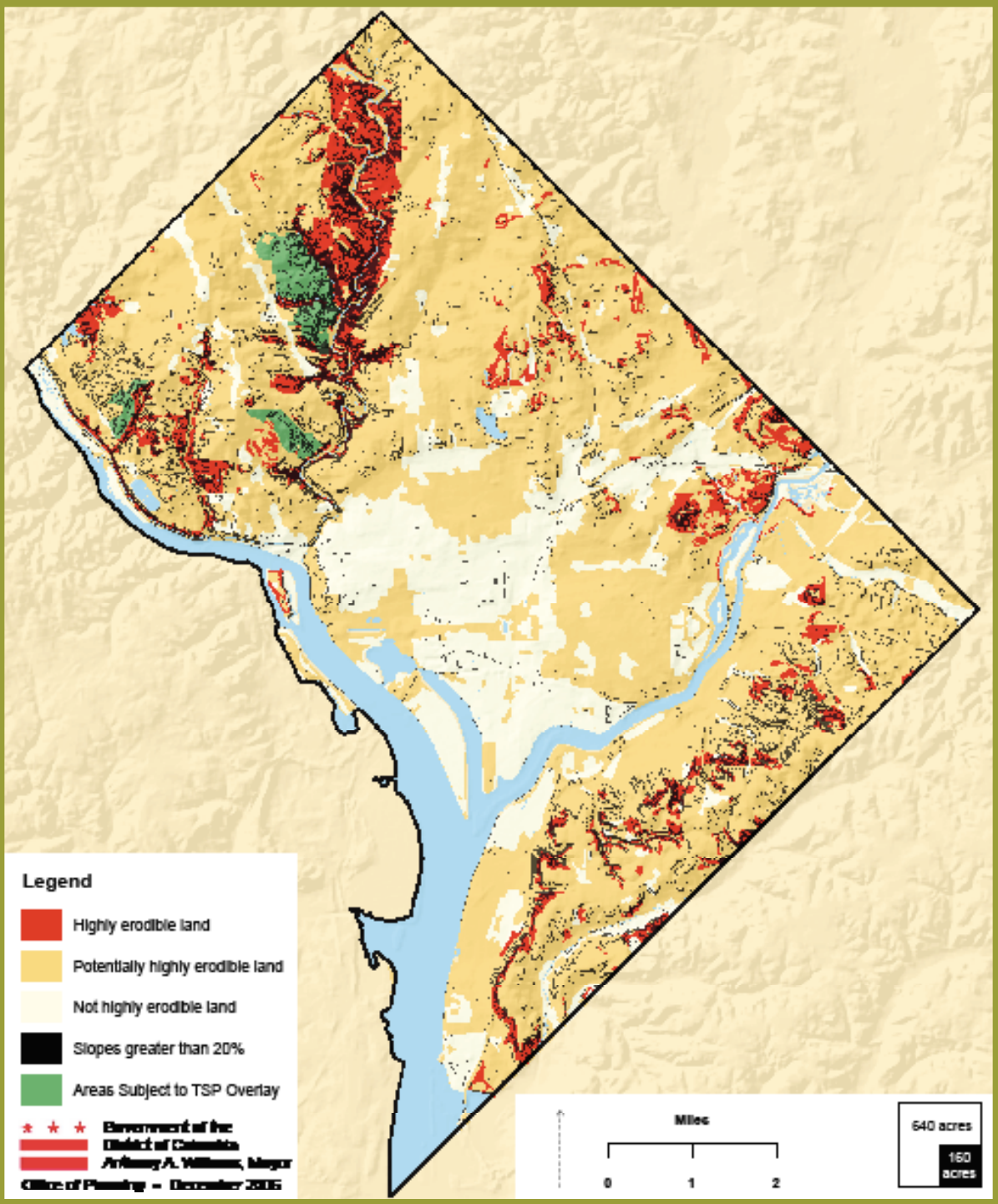
Retain streams and ravines in their natural condition, rather than constructing man-made channels. Where alteration is necessary, encourage design solutions which retain or recreate natural ecological values. 606.6

Action E-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) 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 on lands east of the Anacostia River. 606.7

Map 6.3:

Steep Slopes and Areas Subject to Tree-Slope Overlays 606.8



Action E-1.4.B: Hillside Conservation Easements

Explore the use of land trusts and conservation easements as a tool for protecting steep slopes and hillside areas. 606.9

E-1.5 Sustaining Urban Plant and Animal Life 607

At the time of initial European settlement, the District of Columbia was home to species as diverse as buffalo, bear, elk, otter, and bobcat. While these animals disappeared from the local landscape decades ago, the District continues to provide habitat for hundreds of species of birds, mammals, amphibians, reptiles, fish, and invertebrates. Opossum, raccoon, red and gray foxes, and white tailed deer have adapted to human activities and are not uncommon. Much of the biodiversity can be attributed to open spaces along Rock Creek and the two rivers. However, the importance of the city's parks, cemeteries, street trees, institutional lands, and backyards to wildlife cannot be understated. 607.1

Pursuant to federal law, the Fisheries and Wildlife Division of the District Department of Health prepared a Comprehensive Wildlife Conservation Strategy in 2005. The Strategy, which was prepared in partnership with local wildlife agencies and organizations as well as the public, is an action plan for conserving wildlife and wildlife habitats over the next ten years. It lists the species in the city with the greatest conservation needs, describes specific terrestrial and aquatic wildlife threats, and identifies priority locations for conservation. As an urban area, the District bears a high degree of responsibility for conserving urban species, some of which may be threatened or endangered. 607.2

Policy E-1.5.1: Habitat Restoration

Encourage interagency efforts to restore native habitat along the District's rivers, streams, and woodlands, and public-private partnerships to recreate native habitat within the city. 607.3

Policy E-1.5.2: Protected and Rare Species

As required by the federal Endangered Species Act, protect endangered, threatened, and other special status species from the adverse effects of construction and development. 607.4

Policy E-1.5.3: Habitat Management on Private Land

Encourage environmentally sound landscaping and gardening techniques by DC homeowners and institutional landowners to maximize the habitat value of privately owned land. Such techniques should include reduction of herbicide and pesticide use; the selection of disease, 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

Action E-1.5.A: Implementation of the Wildlife Conservation Plan

Implement the 2005 Wildlife Management Plan for the District of Columbia, including programs to control the white-tailed deer and Canada goose population, and to improve water quality and habitat in the Anacostia River. 607.6

Action E-1.5.B: Data Improvements

Improve the collection and monitoring of data on plant and animal life within the District, particularly data on rare, endangered, threatened, and candidate species, and species of greatest conservation need. 607.7

E-2 Conserving Natural Resources 608

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. 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

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 programs, which are mandated by 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

E-2.1 Conserving Water 609

The District is dependent on the Potomac River for its drinking water. In most years, there is ample rainfall in the Potomac Basin to meet the city's needs, but a plentiful supply is not always guaranteed. With competing demands for land and water in the watershed during the next 20 years, the District cannot afford to overlook opportunities for 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

The 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 and other District agencies will be necessary to reduce water waste and maximize conservation. 609.2

See the Infrastructure Element for more information on water supply.

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Policy E-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. 609.3

Action E-2.1.A: Leak Detection and Repair Program

Continue DC-WASA 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. 609.4

Action E-2.1.B: Building Code Review

Continue efforts by the DC Building Code Advisory Committee to review building, plumbing, and landscaping standards and codes in order to identify possible new water conservation measures. 609.5

Action E-2.1.C: Water Conservation Education

Work collaboratively with DC-WASA to promote greater awareness of the need for water conservation, and to achieve a reduction in the daily per capita consumption of water resources. 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

E-2.2 Conserving Energy 610

Greater energy efficiency results in a cleaner city, better air quality, and lower energy bills for District residents. More than $1.3 billion a year is spent on energy by DC residents, employees, businesses, visitors, and government. It may be possible to slow the growth of these costs in the future, even as the city adds people and jobs. 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

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. 610.2

Policy E-2.2.1: 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

Policy E-2.2.2: 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

Policy E-2.2.3: 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

Policy E-2.2.4: Alternative 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 technology should be used to reduce the dependence on imported energy, provide opportunities for economic and community development, and benefit environmental quality. 610.6

Policy E-2.2.5: 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. The planning and design of new development should contribute to energy efficiency goals. 610.7

The 2003 Comprehensive Energy Plan 610.8

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.

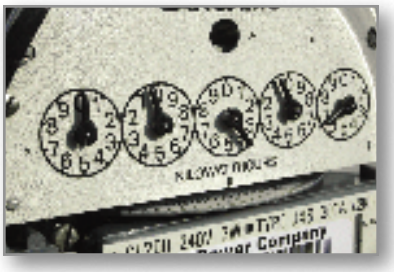
In 2003, the District's third CEP was published. It outlines 43 interconnected measures the city can take to become more energy efficient, while at the same time improving energy reliability. The Plan recognizes that there are many local and federal laws on energy that are already in place. It builds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



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.

Policy E-2.2.6: Energy Efficiency 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

Policy E-2.2.7: Consumer Education on Energy

Promote citizen awareness concerning energy issues through educational and demonstration initiatives and other programs. 610.10

Policy E-2.2.8: 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

Policy E-2.2.9: Energy Security

Promote energy security through partnerships that enable the District to respond to energy emergencies and interruptions in supply. Participate in regional efforts to plan for such emergencies, including those organized by the Metropolitan Washington Council of Governments. 610.12

Action E-2.2.A: Energy Conservation Measures

Pursuant to the District's Comprehensive Energy 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

Action E-2.2.B: Assistance Programs for Lower Income Households

Implement Comprehensive Energy 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 costs. 610.14

Action E-2.2.C: Consumer Education on Energy

Implement the District's Comprehensive Energy Plan recommendations for education and public information on energy issues, including school curricula, awards programs, demonstration projects, websites, and multi-media production. 610.15

Action E-2.2.D: Energy Regulatory Reforms

Enact legislative and regulatory reforms aimed at improving energy efficiency in the city in order to reduce energy costs and improve reliability. 610.16

Action E-2.2.E: Energy Emergency Plan

Prepare an energy emergency response plan by updating and consolidating existing emergency plans and working in collaboration with regional partners such as MWCOG. Regularly scheduled training for energy emergencies should be provided to appropriate District personnel. 610.17

Action E-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. 610.18

E-2.3 Reducing Solid Waste Disposal Needs 611

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

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). 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.

Policy E-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

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.

Policy E-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

Action E-2.3.A: Expanding District Recycling Programs

Continue implementation of the citywide recycling initiative started in 2002, which sets the long-term goal of recycling 45 percent of all waste generated in the District. 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 plan for the recycling of yard waste. 611.5

Action E-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

Action E-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

Action E-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

Action E-2.3.E: E-Cycling Program

Establish E-cycling programs and other measures to promote the recycling of computers and other electronic products in an environmentally sound manner. 611.9

Action E-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

E-3 Promoting Environmental Sustainability 612

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 being a more inclusive city. 612.1

Four principal objectives for growing more sustainably are described here:

a. First, encouraging "low impact" development that retains as much stormwater as possible on-site, thereby protecting local waterways from pollution;

b. Second, promoting "green building"—that is, buildings that are designed through an integrated process that considers site planning, architecture, engineering, and the environment together, and that incorporate recycled materials, advanced energy and water conservation systems, and minimal use of toxic or hazardous materials;

c. Third, providing opportunities for food production and urban gardening; and

d. Fourth, ensuring that the environmental impacts of development are mitigated and monitored. 612.2

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E-3.1 Low Impact Development 613

Low Impact Development (LID) refers to 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 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. 613.1

Policy E-3.1.1: 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

Policy E-3.1.2: Using Landscaping and Green Roofs to Reduce Runoff

Promote an increase in tree planting and landscaping to reduce stormwater runoff, 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

Policy E-3.1.3: Green Engineering

Promote green engineering practices for water and wastewater systems. These practices include design techniques, operational methods, and technology to reduce environmental damage and the toxicity of waste generated. 613.4

Action E-3.1.A: Low Impact Development Criteria

Establish Low Impact Development criteria for new development, including provisions for expanded use of 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

Action E-3.1.B: 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. 613.6

Action E-3.1.C: Road Construction Standards

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

E-3.2 Promoting Green Building 614

"Green" building standards are 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. 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. 614.1

Policy E-3.2.1: Support for Green Building

Encourage the use of green building methods in new construction and rehabilitation projects, and develop green building methods for operation and maintenance activities. 614.2

Policy E-3.2.2: Green Building Education and Awareness

Support programs that educate District employees, the building and real estate communities, and the public regarding the benefits and techniques of green building. 614.3

Action E-3.2.A: Building Code Revisions

Evaluate regulatory obstacles to green building construction in the District, and work to reduce or eliminate such obstacles if they exist. Adopt amendments to the International Construction Code as necessary to promote green building methods and materials, and to encourage such actions as stormwater harvesting, graywater reuse, waterless urinals, and composting toilets. 614.4

Action E-3.2.B: Green Building Incentives

Establish a Green Building Incentive Program, addressing both new construction and the rehabilitation of existing structures. Such a program could include financial incentives, 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-5.1.A on green building requirements for city projects and projects receiving city funds.

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. 614.6

Action E-3.2.D: Sustainability Action Agenda

Develop a Sustainability Action Agenda to promote green building practices and other forms of sustainable architecture, landscape architecture, and development in the city. 614.7

E-3.3 Enhancing Food Production and Urban Gardening 615

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 resource. There are more than 30 such gardens in the city, each independently operated. Community gardens not only

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.

provide a place to grow fruits, vegetables, and flowers, they also provide an environmental, recreational, cultural, and educational asset in the neighborhoods they serve. 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. 615.1

Policy E-3.3.1: Promotion of Community Gardens

Continue to encourage and support the development of community gardens on public and private land across the city. 615.2

Policy E-3.3.2: Capacity Building for Community Gardening and Garden Club Groups

Enhance the capacity of private 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

Policy E-3.3.3: Domestic Gardening

Provide technical and educational support to District residents who wish to plant backyard and rooftop gardens. 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. 615.4

Policy E-3.3.4: Schoolyard Greening

Work with DC Public and Charter Schools to make appropriate portions of buildings and grounds available for community gardens, and to use buildings and grounds for instructional programs in environmental science and gardening classes. Encourage private schools to do likewise. 615.5

Policy E-3.3.5: Produce and Farmers Markets

Encourage the creation and maintenance of produce markets in all quadrants of the city to provide outlets for community gardens and healthful, locally grown produce for District residents. 615.6

Action E-3.3.A: Community Gardens East of the Anacostia River

Recognizing that only two of the city's 31 community gardens are located east of the Anacostia River, work with community leaders and gardening advocates to establish new gardens 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 then working with local advocacy groups to make such sites available. 615.7

Action E-3.3.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. 615.8

E-3.4 Reducing the Environmental Impacts of Development 616

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

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

Policy E-3.4.1: Mitigating Development Impacts

Take measures to ensure that future development mitigates impacts on the natural environment and results in environmental improvements wherever feasible. Construction practices which result in unstable soil and hillside conditions or which degrade natural resources without mitigation shall be prohibited. 616.3

Policy E-3.4.2: 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

Policy E-3.4.3: Environmental Assessments

Ensure full and meaningful compliance with the DC Environmental Policy Act, 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. 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. 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

"The environment is our most precious resource – we must work to enhance and preserve it."

— Participant at a Comprehensive Plan workshop

Policy E-3.4.4: 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

Action E-3.4.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

Action E-3.4.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. 616.8

Action E-3.4.C: Environmental Enforcement

Undertake an interagency effort to improve compliance with the District's existing environmental laws and regulations. This effort should include public education, compliance assistance, and the convening of an environmental crime and enforcement working group. 616.9

E-4 Reducing Environmental Hazards 617

Environmental hazards in the District of Columbia include air and water pollution, contaminated soils, hazardous materials, noise, disease vectors, flooding, light pollution, and electromagnetic fields. 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

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 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 Administration and the District Department of Transportation, also are actively involved in emergency planning and response. 617.2

E-4.1 Reducing Air Pollution 618

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. 618.1

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 has 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. 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 and jet fuel to consumer products such as paints, lawnmowers, and home fireplaces and barbecues. 618.2

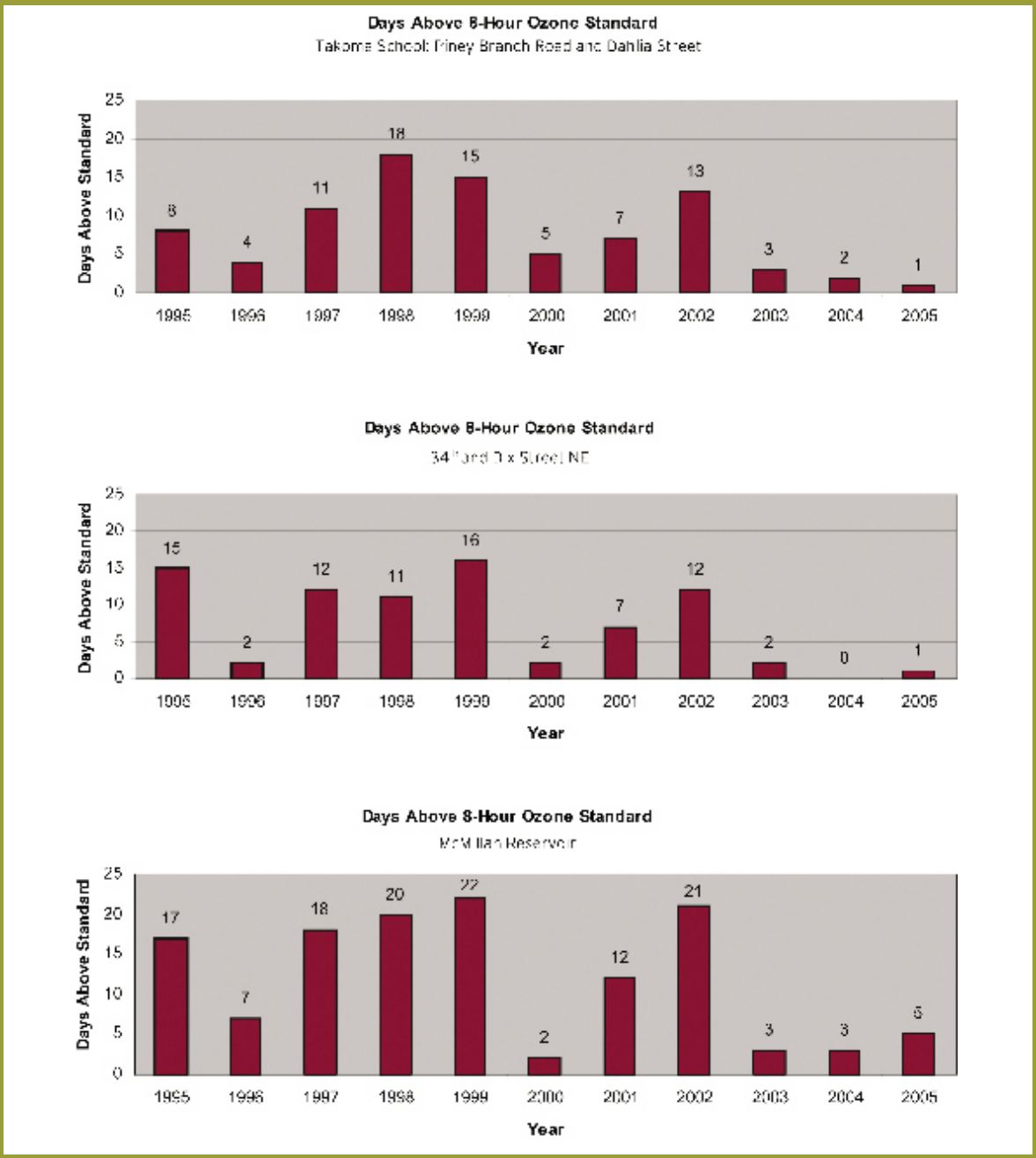
The Clean Air Act establishes standards for six criteria pollutants. These are carbon monoxide, lead, nitrogen oxide, ozone, particulate matter, and sulfur dioxide. Areas where these standards are not met are designated as "non-attainment" by the Environmental Protection Agency (EPA). As of 2005, the Washington area is classified as a moderate non-attainment area for the federal 8-hour ozone standard. 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 will attain federal air quality standards. 618.3

Figure 6.1 shows the number of days the federal 8-hour ozone standard was exceeded at three monitoring locations in the District between 1995 and 2005. 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

6

Figure 6.1:

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



Source: US EPA, 2006

Policy E-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

Policy E-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

Policy E-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

Policy E-4.1.4: Stationary Sources

Maintain controls on gaseous and particulate emissions from stationary sources of air pollution in the city, such as power plants and refrigeration plants. Particular attention should be given to monitoring the air quality impacts of local power plants, which are the largest stationary sources of air pollution in the District. 618.9

Policy E-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

Policy E-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. 618.11

Promote strategies that reduce motor vehicle emissions in the District and surrounding region. 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.

Policy E-4.1.7: Best Available Control Technology

Encourage the use of best available control technology for minor sources of air pollution such as boilers, generators, and construction and maintenance equipment. 618.12

Policy E-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. 618.13

Action E-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 2010. 618.14

Action E-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 transit vehicles. Additionally, encourage natural gas powered, electric powered, and hybrid commercial trucks to reduce emissions and improve air quality. 618.15

Action E-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

Action E-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 exceed federal standards. 618.17

Action E-4.1.E: Cities for Climate Protection Campaign

Implement 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

The Link Between Land Use, Transportation, and Air Quality 618.18

Land use and transportation policies work in tandem to affect our region's air quality. 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 results in additional emissions from idling cars. Despite the use of cleaner-burning fuels, attaining federal air quality standards will be difficult until we fundamentally rethink the way we as a region handle our growth.

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 impacted from pollution from the suburbs, and by power plant emissions from places as far away as the Ohio Valley.

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.

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

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

E-4.2 Reducing Water Pollution 619

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, we are left with the most polluted tributary of the Chesapeake Bay. Swimming in our rivers is considered hazardous and fishing is ill-advised. 619.1

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

As noted in the Infrastructure Element, storm sewers serve the dual purpose of conveying sewage as well as rainwater 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 to be released into the Anacostia and Potomac Rivers, Rock Creek, and tributary streams. Billions of gallons of sewage may be dumped into the river during such events, lowering oxygen levels and damaging aquatic life. 619.3

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 DC Water and Sewer Authority, covers the control of discharges from industrial and construction sites, 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

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

Policy E-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

Policy E-4.2.2: Wastewater Treatment

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.

Policy E-4.2.3: Control of Urban Runoff

Continue to implement water pollution control and "best management practice" measures aimed at slowing urban runoff and reducing pollution, including the flow of sediment and nutrients into streams, rivers, and wetlands. 619.8

Policy E-4.2.4: Riverbed Sediment

Reduce the level of toxins in Anacostia and Potomac River sediment. Remediation measures should minimize the possibility of water contamination resulting from dredging or disturbances of the river bottom. 619.9

Policy E-4.2.5: Groundwater Protection

Protect Washington's groundwater from the adverse effects of urban 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

Policy E-4.2.6: Control of Illicit Discharges

Provide public outreach and education, and maintain inspection and enforcement procedures to control illicit discharges into the city's storm drains and waterways. 619.11

Policy E-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

Action E-4.2.A: Stormwater Management Plan

Create a comprehensive multi-agency stormwater management plan covering such topics as low impact development (LID), maintenance of 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

Action E-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. Seek additional funding from Maryland and Virginia and set incentive-based fee structures for DC residents. 619.14

Action E-4.2.C: Monitoring and Enforcement

Maintain a District water pollution control program that implements water quality standards, regulates land disturbing activities (to reduce sediment), monitors and inspects permitted facilities in the city, and comprehensively monitors DC waters to identify and 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

Action E-4.2.D: Clean Water Education

Working with DC-WASA and the newly created DC Department of the Environment, increase public information, education, and outreach efforts on stormwater pollution. These efforts could include such measures as community clean-ups, storm drain stenciling, school curricula, demonstration projects, signage, and advertisement and media campaigns. 619.16

Action E-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 TMDL sets the quantity of a pollutant that may be introduced

Maintain a District water pollution control program that implements water quality standards, regulates land disturbing activities (to reduce sediment), monitors and inspects permitted facilities in the city, and comprehensively monitors DC waters to identify and stop violations.

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. 619.17

Action E-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

Action E-4.2.G: Green Marinas

Promote the 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

E-4.3 Controlling Noise 620

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, the maintenance of "peace and quiet" is a basic expectation in most District neighborhoods. 620.1

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 District 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 residents and businesses." 620.2

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. Efforts have focused on I-395 and I-295/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

Policy E-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

Policy E-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

Policy E-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

Policy E-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

Policy E-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

Action E-4.3.A: Evaluation of Noise Control Measures

Evaluate 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

Action E-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

Action E-4.3.C: Aviation Improvements to Reduce Noise

Actively participate in the 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.

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.

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

Action E-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

Action E-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

Action E-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

E-4.4 Managing Hazardous Substances 621

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, the 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

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

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

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.

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

Policy E-4.4.1: Hazardous Substances Management

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

Policy E-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 substances from the built environment. When these hazards are abated, require full compliance with all applicable licensing and inspection standards. 621.6

Policy E-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

Policy E-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

Policy E-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

Policy E-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

Policy E-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

Policy E-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.

Action E-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

Action E-4.4.B: Compliance with Hazardous Substance Regulations

Maintain regulatory and inspection programs to ensure that all 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

Action E-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

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.

Action E-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

Action E-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. 621.17

Action E-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

E-4.5 Drinking Water Safety 622

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. 622.1

A related water supply issue is exposure to 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, comprising about 23,000 of the District's 130,000 service lines. 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 and Sewer Authority, the EPA, and the District Department of Health to accelerate service line replacement, increase monitoring, and enact corrosion control measures. 622.2

Policy E-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

Action E-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

Action E-4.5.B: Source Water Protection

Implement measures to protect natural systems and abate pollution sources in the Potomac Basin that could potentially impact the District's drinking water quality. 622.5

Action E-4.5.C: Interagency Working Group

Create an interagency working group on safe drinking water to address drinking water emergencies; coordination between DCWASA and DOH, and expanded public education on water supply. 622.6

E-4.6 Sanitation, Litter, and Environmental Health 623

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

Litter and trash are probably the most visible and pervasive forms of pollution in Washington. 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

Policy E-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

Policy E-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

Policy E-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

Policy E-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

Action E-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 vacant properties, roadsides, public spaces, parks, and city-owned lands. 623.7

Action E-4.6.B: Neighborhood Clean-Ups

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

Action E-4.6.C: 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

Action E-4.6.D: Publicizing Bulk Waste Disposal Options

Continue to sponsor and publicize options for bulk waste disposal, including information on the Fort Totten transfer station and the District's schedule for curbside bulk trash waste removal. 623.10

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

E-4.7 Other Hazards and Pollutants 624

Three 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 amount 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

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 the 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 ensure compliance with all Federal Communications Commission siting standards. 624.2

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

Policy E-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. 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

Policy E-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

Policy E-4.7.3: Light Pollution

Maintain regulations for outdoor lighting to reduce light pollution and conserve energy. Particular attention should be given to preventing glare and nighttime light trespass in the vicinity of the Naval Observatory, so that its operational needs are respected. 624.6

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

Portions of the District are within the FEMA-designated 100-year flood plain and are subject to inundation during hurricanes and other severe storms.

E-4.8 Achieving Environmental Justice 625

Environmental justice refers to the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies. It is about equal and fair access to a healthy environment, and equal enforcement of environmental regulation regardless of community characteristics. 625.1

These are particularly important principles to abide by when the goal of the Comprehensive Plan is to grow an inclusive city. Clearly, some District neighborhoods have been adversely impacted by pollution-generating uses and activities in the past. As the city grows and changes, a greater effort must be made to repair the damage done by these uses and to avoid their over concentrations in the future. All residents should have a fair and meaningful opportunity to participate in environmental decisions. 625.2

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, green building construction, low impact development, and environmentally sound landscaping.

6

Policy E-4.8.1: Environmental Justice

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

Policy E-4.8.2: Expanded Outreach to Disadvantaged Communities

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

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

E-5 Environment, Education, and the Economy 626

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. 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 those who live and work here. 626.1

E-5.1 Greening the Government 627

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, green building construction, low impact development, and environmentally sound landscaping. It should lead the way in recycling and composting solid waste, using recycled goods, and procuring "green power." 627.1

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; key elements of that Plan are summarized in the policies and actions below. 627.2

Policy E-5.1.1: Low Impact Development and Green Building Methods for the District

Strongly encourage the use of low impact development (LID) methods and green building design methods and materials in new construction and major rehabilitation projects undertaken by the District of Columbia government. 627.3

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

Policy E-5.1.3: Environmentally Friendly Government Operations

Promote energy efficient and environmentally friendly District government operations, including 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

Policy E-5.1.4: Sustainable Landscaping

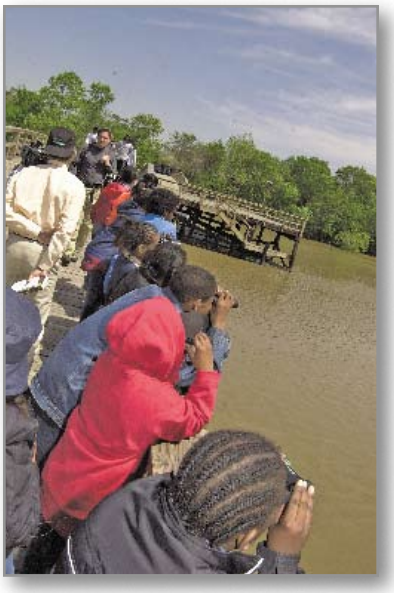
Encourage landscaping practices on District properties that reduce the need for watering and mowing, control the spread of invasive species, increase the use of landscaping for stormwater management, and reduce the use of pesticides and herbicides. 627.6

Action E-5.1.A: Green Building Legislation

Adopt and implement legislation establishing green building standards for projects constructed by the District of Columbia or receiving funding assistance from the District of Columbia. 627.7

Action E-5.1.B: Energy Management Plans

Require the submittal and periodic updating of Energy Management Plans by District agencies. These plans should establish baseline data for assessing the effectiveness of each agency's energy conservation measures. 627.8



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.

E-5.2 Environmental Education and Stewardship 628

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. 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. 628.1

Policy E-5.2.1: Environmental Education in District Schools

Develop or expand programs to educate youth from pre-school to high school about the importance of protecting the environment. 628.2

Policy E-5.2.2: Continuing Education on the Environment

Encourage greater participation by residents, business owners, institutions, and public agencies in maintaining environmental standards. This should be achieved through public education, 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

Policy E-5.2.3: Interpretive Centers

Support the development of environmental education and nature centers in the District, particularly in recovering habitat areas such as the Anacostia River shoreline. 628.4

Policy E-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 and better environmental health) is the preferred choice for energy, transportation, construction, and design decisions. 628.5

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

Action E-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

Action E-5.2.B: Production of Green Guide

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

E-5.3 Environment and the Economy 629

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

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, 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

Policy E-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. Provide financial incentives for the remediation and redevelopment of these sites. 629.3

Policy E-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. 629.4

Policy E-5.3.3: Incentives for Green Business

Support economic incentives that encourage environmentally sustainable businesses to locate in the District. 629.5

Action E-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

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. 629.7

Action E-5.3.C: Green Business Certification

Establish a green business certification program as an incentive for companies that exemplify sustainable and environmentally responsible business practices. 629.8

Action E-5.3.D: Green Collar Job Corps

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

E-5.4 Environmental Program Management 630

The final section of this chapter addresses the administration of environmental policies and programs in 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

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

Policy E-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

Policy E-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

Policy E-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

Action E-5.4.A: Department of the Environment

Provide the necessary staff resources, funding, and regulatory authority for the newly created District Department of the Environment to achieve its mission and successfully implement the District's key environmental protection programs. 630.6