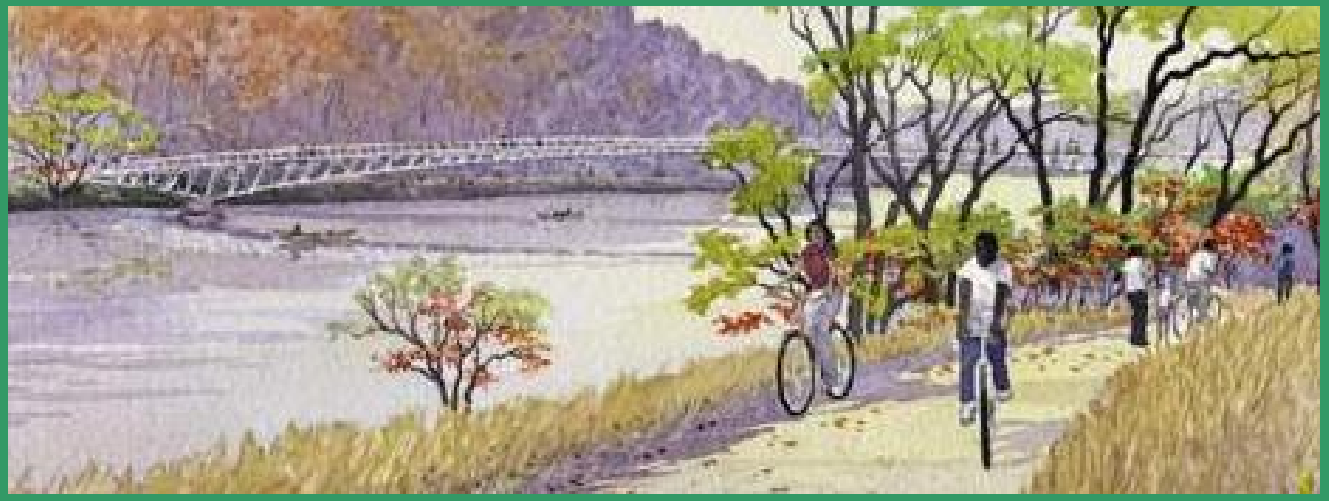
Anacostia Waterfront Corporation
Final Environmental Standards – June 1, 2007

RESTORE and REVITALIZE

Water Air Habitat Community



Imagine a beautiful day on the restored Anacostia River. Imagine your neighbors from Historic Anacostia, Capitol Hill and across the District and region converging to swim and play in its waters, fish for bass or catfish, jog or bike unimpeded along miles of riverbank trails, and stroll through an unmatched urban forest intent on seeing a bald eagle.

This is the vision of the Anacostia Waterfront Initiative, and the Anacostia Waterfront Corporation can set a new standard for development and stewardship that will make the vision a reality.

– ***Roger Sant**, AWC Board member and Chairman of the Summit Fund of Washington, and **Nancy Stoner**, Natural Resources Defense Council Clean Water Project, Co-Chairs of the AWC Environmental Standards Development Committee*

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Green Roofs
(photo courtesy of Roofscapes, Inc.)

Vegetated Streetscapes
(photo courtesy of Portland Bureau of Environmental Services)

ANACOSTIA RESTORATION – MAKING THE VISION A REALITY

Restoring the Anacostia River is central to the Anacostia Waterfront Corporation's (AWC) mission. A clean, healthy, and vibrant River will be an economic and community asset—and source of pride—for residents of the District of Columbia. To make restoration a reality, we must act now to adopt new, sustainable methods of development and to aggressively pursue opportunities to restore water and air quality, wetlands and other critical habitat, and recreational amenities that will reconnect surrounding neighborhoods to the Anacostia River.

As the lead agent for the District of Columbia overseeing redevelopment around the Anacostia River, AWC is charged not only with the economic revitalization of neighborhoods, but also with the cleanup, restoration, and stewardship of the River itself. To restore the Anacostia, the District must become a leader in environmentally sensitive development—also known as *sustainable development*. Technologies are now available to ensure that development will help restore the Anacostia River and create healthy, livable neighborhoods. AWC's development partners—and other developers, agencies, community groups, and individuals throughout the watershed—are encouraged to make sustainability not only a goal, but a new way of doing business.

With the adoption of these environmental standards, AWC and the District join a growing number of cities implementing cutting-edge environmental policies that acknowledge the environmental *and* economic benefits of making our urban areas "green" and sustainable.

These environmental standards define a new standard—the **"AWC Gold Standard"**—that will deliver:

Cleaner Water – Green roofs, rain gardens, restored wetlands and innovative green infrastructure capture and clean rainwater runoff, reducing the amount of trash, chemical pollution, sediment, and sewage flowing into the Anacostia.

Cleaner Air – Trees and other vegetation improve air quality by filtering many airborne pollutants and green building techniques improve indoor air quality in homes and offices – all of which help reduce the amount of respiratory illness.

Cooler Summertime Temperatures – Trees, green roofs, and green building techniques create shade, reduce heat absorption, and release water vapor – all of which cool the air and make us more comfortable during the summer and provide a healthier environment.

Increased Energy Efficiency – Green building techniques greatly reduce energy consumption, saving owners and renters money and improving air quality by reducing pollution caused by power generation.

Livable Neighborhoods – Sustainable development techniques make our communities more beautiful, livable, and healthy by reducing pollution and providing green public spaces, new recreational opportunities, and critical wildlife habitat along our waterfront.

Economic Revitalization – Cleaner, healthier communities and a more beautiful Anacostia River bring new residents, businesses, and tourists and enhance quality of life for all.

Mitigating Climate Change – Green buildings that incorporate energy efficient systems and green roofs reduce demands for energy which, in turn, reduces emissions of greenhouses gases produced by the burning of coal and other fossil fuels. Walkable neighborhoods accessible by mass transportation further reduce carbon dioxide emissions. While climate change impacts are global, buildings and infrastructure along the Anacostia waterfront face unique threats from sea level rise due to their low elevation.

Useful Links and Resources

- U.S. Green Building Council and Leadership in Energy and Environmental Design (LEED) – *www.usgbc.org*
- Green Communities – *www.enterprisefoundation.org*
- U.S. EPA Energy Star Programs – *www.energystar.gov*
- 2030 Challenge Climate Initiative – *www.architecture2030.org*
- DDOT Anacostia Waterfront Transportation Architecture Design Standards – *www.ddot.dc.gov*
- DC Green Building Act of 2006 – *www.dccouncil.washington.dc.us*

Links to additional resources are available on the AWC website: *www.anacostiawaterfront.net*

INTRODUCTION

In May 2006, the Anacostia Waterfront Corporation (AWC) Board of Directors resolved that AWC would "be a regional leader to clean up and restore the Anacostia River" and would adopt written environmental standards "to minimize or eliminate the harmful ecological effects of existing pollutants and ongoing pollution sources entering the Anacostia River."

To that end, the AWC Board formed an Environmental Standards Development Committee (Committee) under the leadership of AWC Board member Roger Sant and Nancy Stoner of the Natural Resources Defense Council to develop recommended environmental standards for AWC Board consideration. The Committee developed these environmental standards to further the restoration of the Anacostia River and the development of vibrant, sustainable communities along its shores.

The AWC Board adopted these standards on **June 1, 2007**. The standards will apply to all AWC development projects and will be implemented through agreements with development partners.

For more information on the AWC Standards and programs to restore the Anacostia watershed, contact:

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Acknowledgments

The following members of the Committee gave generously of their time and provided thoughtful input on these draft standards:

- Roger Sant (Committee Co-Chair), AWC Board Member and Chairman, The Summit Fund of Washington
- Nancy Stoner (Committee Co-Chair), Natural Resources Defense Council Clean Water Project
- Carl Cole, AWC Board Member and Chairman, AWC Audit and Finance Committee
- Chip Akridge and David Tuchmann, Akridge
- Uwe Brandes and Brendan Shane, AWC
- Mary Jane Goodrick, DC Appleseed Center for Law & Justice
- Linda Howard, The Summit Fund of Washington
- Roger K. Lewis, FAIA, Architect, Professor Emeritus University of Maryland and Washington Post columnist
- Russell Randle and Michele Walter, Patton Boggs (counsel to DC Appleseed)
- Doug Siglin, Chesapeake Bay Foundation
- Neil Weinstein and Christopher Kloss, Low Impact Development Center

AWC HISTORY AND MANDATE

In 2000, the District joined 16 federal and regional agencies to form an unprecedented partnership, the Anacostia Waterfront Initiative (AWI). Over the next three years, the partnership conducted over 20 community workshops, briefing over 5,000 people and over 3,000 workshop participants.

In 2004, the partnership finalized the AWI Framework Plan that defined a shared vision for a world-class waterfront along the banks of the Anacostia River. The plan outlined five themes for Anacostia restoration that recognize the critical relationship between economic and community revitalization and environmental restoration:

1 – A Clean and Active River
2 – Gaining Access to, Along, and Across the River
3 – A Great Riverfront Park System
4 – A Riverfront of Distinct Places and Cultural Destinations
5 – Building and Sustaining Strong Waterfront Neighborhoods

The AWI Framework Plan also defined an environmental agenda to eliminate pollution from stormwater run-off and sewage overflow, restore streams and wetlands, expand natural habitat areas, and promote water activities. Environmental goals were defined in six areas: water quality; air quality; toxins remediation; habitat enhancement; sustainable design practices; and outreach and education. Closely related to the environmental agenda is the plan to create a great riverfront park system that connects and revitalizes existing parks, creates over 100 acres of new parks, and provides high quality recreational opportunities and vibrant gathering places for the citizens of surrounding neighborhoods, the District, and the region.

AWC was formed by Mayor Anthony Williams and the DC Council in 2004 to implement the AWI Framework Plan and its environmental agenda. They acknowledged the unique vision of simultaneous economic and environmental revitalization of the Anacostia River watershed. As directed by the legislation creating AWC, AWC is:

"…responsible for the development, redevelopment, and revitalization of the lands adjacent to the Anacostia River and associated waterways and for the environmental restoration of the Anacostia River and associated waterways…"

AWC's Local Jobs and Affordable Housing Mandates

AWC is required by DC law to implement the vision defined in the Anacostia Waterfront Initiative Framework Plan. This comprehensive plan addresses five themes for creation of a world-class waterfront. In addition to its environmental restoration mandate, AWC must comply with affordable housing, DC resident employment, and local and disadvantaged business hiring requirements that will directly benefit residents in existing communities along the Anacostia. The Framework Plan and AWC's jobs and affordable housing requirements can be viewed at AWC's website: *www.anacostiawaterfront.net*

EXECUTIVE SUMMARY

AWC's mission is to transform the underutilized Anacostia and realize its potential as one of the Nation's great urban rivers. The AWI Framework Plan, adopted by the DC Council to guide AWC's development activity, highlights the importance of "A Clean and Active River."

The environmental standards adopted by AWC will help achieve the environmental goals in the AWI Framework Plan by "greening" development. We adopt a four-pronged approach that supplements accepted green building practices with creative design, enhanced stormwater control, and site preservation requirements. This approach—the ***"AWC Gold Standard"***—will produce environmentally responsible buildings and greatly reduce the flow of pollutants into the Anacostia River and associated waterways.

For each element below, there is a minimum standard with which all AWC projects must comply. We also identify a goal that all AWC projects should aspire to. In addition to meeting minimum standards, we encourage all developers to adopt these goals as their own, reexamine old ways of doing business, and explore new technology and design that will help restore the Anacostia River and create healthier neighborhoods. These standards can be a model across the Anacostia watershed and the region of flexible, creative performance requirements to improve the environmental quality of our community.

These environmental standards do not replace applicable District of Columbia or federal laws or regulations. All projects must comply with applicable District and federal laws and regulations, including permitting requirements of DC Water and Sewer Authority (WASA), District Department of the Environment (DDOE), Department of Consumer and Regulatory Affairs (DCRA), the Army Corps of Engineers, U.S. Environmental Protection Agency (USEPA) and other agencies as applicable. The AWC Environmental Standards supplement existing environmental and development standards.

I. Integrated Environmental Design

Goal: To require early identification and adoption of environmental design elements during project development.

Minimum Standard:

The developer and AWC shall meet as early as possible in the development and design process to discuss the AWC environmental standards. Throughout the development process, meetings to review environmental planning and design shall be held no less than quarterly. The developer shall retain a consultant accredited by the U.S. Green Building Council Leadership in Energy and Environmental Design (LEED) program or maintain an experienced LEED-accredited member on staff. The developer shall also select an architect of record and general contracting firms that have achieved LEED-certification on at least two major projects.

The developer shall prepare an overall sustainability plan as a component of the concept design package, which shall identify the project elements used to satisfy the Green Building, Stormwater Control, and Site Planning and Preservation elements of the AWC environmental standards. The developer shall submit to AWC any draft or final checklists and other materials submitted to demonstrate LEED, Green Communities, and/or Energy Star compliance.

II. Green Building

Goal: To develop sustainable buildings through maximum integration of environmentally sensitive technology and design.

Minimum Standard: All non-residential buildings constructed on AWC land or financed by AWC must be verified by a third-party as having fulfilled or exceeded the requirements of the LEED program at the Gold level. All residential buildings must be verified by a third-party as having fulfilled or exceeded the requirements of the LEED program at the Silver level. The LEED program sets out a standard of measurement for what constitutes a green building. On a case-by-case basis, affordable and small residential buildings may be permitted to comply with the Green Communities program created by the Enterprise Foundation and Natural Resources Defense Council. The LEED and Green Communities rating systems require an integrated design approach to promote early identification of options to improve energy and water efficiency, minimize waste streams, and enhance indoor environmental quality. In addition, all projects must satisfy requirements of the USEPA Energy Star program and be designed to be 30 percent more energy efficient than the ASHRAE 90.1 2004 standard.

III. Stormwater Control

Goal: To eliminate the flow of pollution into the Anacostia River and associated waterways.

Minimum Standard: While green buildings deliver many environmental benefits, green building standards do not include mandatory requirements to reduce pollution carried by stormwater runoff into our rivers and streams. To ensure significant reductions in pollution, all projects developed on AWC land or financed by AWC must implement enhanced stormwater management to retain and reuse on-site the precipitation from a "one-inch in twenty-four hour" storm event following 48 hours of dry conditions. Any discharge of stormwater from the project, up to the volume of a 2-year storm, shall be treated to substantially remove pollutants of concern. When designing stormwater control systems, developers must first use green roofs and other vegetated systems that provide air quality, habitat, and heat island benefits in addition to stormwater treatment and control.

What is Stormwater?

Stormwater is rainwater or snowmelt that drains from roofs, sidewalks, streets, and other hard surfaces (also known as impervious surfaces). Urban areas create significantly more stormwater than undeveloped land, because buildings and pavement prevent rain from soaking into the ground. Stormwater is most often directed along streets and through pipes, carrying a variety of pollutants and trash into streams and rivers and degrading water quality. The large volume of runoff also erodes streambanks and carries large amounts of sediment that further pollute waterways. In the highly urbanized Anacostia River watershed, stormwater flows carry thousands of tons of pollutants, sediment, and trash into the waterways each year.

IV. Site Planning and Preservation

Goal: To create healthy, livable neighborhoods by preserving public access to the Anacostia River and associated waterways, revitalizing parks and recreational opportunities, and restoring and expanding natural areas.

Minimum Standards: Development of AWC projects shall:

1. Ensure public access to the Anacostia River and associated waterways and the Riverwalk system of parks and trails.
2. Preserve existing public parks, with at least 1-to-1 replacement for any loss of park area caused by project development.
3. Protect delineated wetlands and buffer land within 100 feet of wetlands, with 3-to-1 mitigation for any impacts.
4. Daylight and/or restore streams wherever practical including Watts Branch, Piney Run, Fort Dupont, Pope Branch, Fort Davis, Fort Stanton, and Stickfoot Creek.
5. Preserve or create woodland or meadow buffers along the Anacostia River, as provided in the AWI Framework Plan, and for tributary streams, incorporating bioengineered edge designs from the AWI Framework Plan.
6. Preserve or create vegetated buffers within the right-of-way of all roadways.
7. Design all roadways to comply with the transportation construction and design guidelines in the District Department of Transportation (DDOT) Anacostia Waterfront Transportation Architecture Design Standards.
8. Provide tree canopy coverage within 20 years of project occupancy for a minimum of: (a) 30 percent of non-roof impervious surfaces; and (b) 40 percent of the overall non-roof project area.
9. Design all Riverwalk trails to comply with the construction and design guidelines in the AWI Anacostia Riverparks Plan and Riverwalk Design Guidelines.
10. Bring any existing or new marinas into compliance with the Clean Marina Guidebook issued by the National Park Service.
11. Coordinate habitat restoration activities with DDOE.

I. Integrated Environmental Design

Goal:

To require early identification and adoption of environmental design elements during project development.

Minimum Standards:

1. The developer and AWC shall meet as early as possible in the development and design planning process to review the AWC environmental standards and to plan for a design workshop to identify methods for complying with and preferably exceeding the AWC environmental standards. Developer shall organize and fund the environmental design workshop. Regular meetings to review environmental planning and design shall be held no less than quarterly thereafter.

2. The developer shall retain a LEED-accredited consultant to guide the overall development process, or maintain an experienced LEED-accredited member on staff.

3. The developer shall prepare an overall sustainability plan as a component of the concept design package, which shall identify the project approach and elements used to satisfy the Green Building, Stormwater Control, and Site Planning and Preservation elements of the AWC environmental standards. The plan shall include project analysis using the DOE-2 energy model and stormwater management modeling. The sustainability plan shall be submitted to AWC and made available to the public.

4. The developer shall select a design team, including architects, engineers, and general contractors, that have designed and built projects that have been LEED-certified, or otherwise demonstrate capability to implement these environmental standards.

5. The developer shall submit to AWC any draft or final checklists and other materials submitted to demonstrate LEED, Green Communities, and Energy Star compliance.

II. Green Building

Goal:

To develop sustainable buildings through maximum integration of environmentally sensitive technology and design.

Minimum Standards:

The DC Green Building Act of 2006 establishes minimum green building standards for projects owned or financed by AWC—an instrumentality of the District government. AWC's environmental standards complement the District-wide requirements and, rather than being phased-in over the next two to three years, will take effect immediately and apply to all AWC projects.

These standards apply to all buildings financed by AWC or constructed on property under AWC control (AWC Buildings).

1. DC Green Building Act Compliance

These Green Building standards are intended to achieve a higher level of environmental and energy performance than is required under the DC Green Building Act of 2006 (Green Building Act). Where these standards are not more stringent than the Green Building Act, all new AWC Buildings shall immediately comply with the requirements of Section 3 of the Green Building Act, which applies to publicly owned or financed buildings.

2. LEED Compliance

(a) All new non-residential AWC Buildings shall be verified by a third-party approved by AWC as having fulfilled or exceeded the U.S. Green Building Council LEED standard for new construction (LEED-NC) and/or core and shell (LEED-CS) at the Gold level. Major renovations of existing non-residential buildings shall be verified by a third-party approved by AWC as having fulfilled or exceeded the LEED-NC standard at the Gold level. Improvements to interiors of new or existing non-residential buildings shall be verified by a third-party approved by AWC as having fulfilled or exceeded the LEED for Commercial Interiors (LEED-CI) standard at the Gold level.

(b) All new residential AWC Buildings shall be verified by a third-party approved by AWC as having fulfilled or exceeded the U.S. Green Building Council LEED standard for new construction (LEED-NC) and/or core and shell (LEED-CS) at the Silver level. Major renovations of existing residential buildings shall be verified by a third-party approved by AWC as having fulfilled or exceeded the LEED-NC standard at the Silver level.

3. Energy Star Compliance

(a) All new non-residential AWC Buildings shall be designed to:

(i) achieve 85 points on the EPA national energy performance rating system as determined by the Energy Star Target Finder Tool, provided the AWC Building is of a type for which the Energy Star tools are available; and

(ii) be 30 percent more energy efficient than required by ASHRAE 90.1 2004.

Performance for non-residential AWC Buildings shall be benchmarked annually using the Energy Star Portfolio Manager benchmarking tool. Benchmark and Target Finder scores and Energy Star statements of energy performance for

each AWC Building shall be provided to AWC and made available to the general public within 60 days after they are generated.

(b) All new residential AWC Buildings shall be designed to achieve the Energy Star label and to be 30 percent more energy efficient than required by ASHRAE 90.1 2004.

4. Affordable and Small Residential Projects

In order to help AWC meet its affordable housing mandate, AWC may, on a case-by-case basis, approve construction of affordable and/or small residential projects (or components of larger projects) that comply with the Green Communities standards created by the Enterprise Foundation and NRDC, rather than the LEED Silver standard, but must still achieve Energy Star.

Affordable projects or affordable elements of larger projects are those constructed for persons earning less than 60 percent of the Area Median Income. Small residential projects are those less than 10,000 square feet of gross building floor area. When approving use of an alternative green building standard for affordable or small residential projects, AWC will work with the developer to achieve the greatest number of Green Communities points as possible.

Green Communities closely tracks the LEED green building standards and was specifically designed by Enterprise and NRDC to bring the benefits of green building to affordable housing construction.

See www.enterprisefoundation.org

5. 2030 Challenge

To address the impacts of climate change, developers should seek to align project design with the greenhouse gas reduction goals outlined in the 2030 Challenge.

The 2030 Challenge – Addressing Climate Change

The 2030 Challenge calls on the architecture and building community to take immediate action to stabilize and reduce global warming and climate change impacts. The Challenge sets realistic targets, achievable over time, to eliminate the use of carbon-based energy to power buildings. Making a commitment to the goals of the 2030 Challenge is a strong signal that a developer is committed to reducing energy use and protecting our environment. The Challenge calls for new buildings, developments, and major renovations to be designed to meet the following fossil fuel reduction goals:

- 50% immediately
- 60% in 2010
- 70% in 2015
- 80% in 2020
- 90% in 2025
- Carbon-neutral by 2030 (using no fossil fuel, greenhouse gas emitting energy to operate)

The 2030 Challenge has been adopted by the U.S. Conference of Mayors, the American Institute of Architects, and other major non-profit and professional associations.

See www.architecture2030.org

III. Stormwater Control

Goal:

To eliminate the flow of pollution into the Anacostia River and associated waterways.

Minimum Standards:

While green buildings deliver many environmental benefits, current green building standards do not include mandatory requirements to reduce pollution carried by stormwater runoff into our rivers and streams. To address the urgent need to clean and restore the ecological integrity of the Anacostia River and associated waterways, additional measures to control the flow of pollution and sediment into our waters are required.

This standard will significantly improve stormwater control by requiring retention and on-site reuse of the stormwater from the "one-inch in twenty-four hour" storm following 48 hours of dry conditions. Data for the Washington area indicates that capturing and reusing the first inch of precipitation will reduce annual stormwater volume flowing into the combined and separated sewer systems by 85 percent. The standard will significantly improve the quality of stormwater flowing from AWC projects.

The standard prioritizes use of vegetative methods for capturing and filtering stormwater because of their practicality, potential cost advantages over "end-of-pipe" treatment systems, and other benefits for the developer and community, including reduced energy consumption, improved air quality and wildlife habitat, and reductions in the urban "heat island" effect (lower summertime air temperatures).

Where it is infeasible or inappropriate for reasons of public safety or environmental protection to manage stormwater on-site, "offsets" may be approved. Offsets are off-site reductions of stormwater volumes to address the difference between the stormwater volume that can be prudently managed on-site and the volume that must be managed to comply with this standard.

1. Retention and Reuse Requirement

The developer shall design and construct the project to retain and beneficially reuse the stormwater generated on-site by a "one-inch in twenty-four hour" storm following 48 hours of dry conditions. This standard applies to all private and public spaces in the project (*i.e.*, buildings, sidewalks, streets, lawns, and other areas). Once completed, the owner of the property, or tenant if AWC is the owner, shall operate and maintain the control measures and any offset measures to ensure ongoing compliance with this standard.

2. Permissible Control Methods

The developer, in consultation with AWC, shall satisfy the stormwater standard using the methods identified below, which are listed in order of preference:

(a) Vegetated controls including: "green" roofs designed to retain and beneficially use stormwater to support vegetation; rain gardens or bioretention cells; infiltration planters and vegetated swales, large filtered cells for growing trees, pocket wetlands;

(b) Where compatible with groundwater protection, permeable asphalt, concrete, or pavers; infiltration trenches; dry wells; and downspout disconnections to areas designed to infiltrate runoff;

(c) Collection and reuse of stormwater for on-site irrigation using cisterns and rain barrels;

(d) Other appropriate on-site design techniques as agreed upon by AWC and the developer; and

(e) Offsets where on-site techniques are insufficient to meet the standard.

Stormwater control systems for public space regulated by the DDOT shall utilize the Low Impact Development (LID) technologies in the Anacostia Waterfront Transportation Architecture Design Standards, or other measures approved by AWC and DDOT.

3. Comprehensive Stormwater Planning

Developers are strongly encouraged to coordinate stormwater planning for phased projects and with adjacent parcels to increase overall retention, reuse, and treatment volumes. Coordinated planning can also facilitate: (a) sharing of monitoring, reporting and administrative costs; and (b) opportunities for local offsets by managing stormwater from related development that otherwise would not be retained, reused, or treated.

4. Construction Phase Requirements

Developers shall fully comply with all requirements for sediment and pollution control during the construction phase of the project. Developers shall work in consultation with AWC to identify measures to enhance controls for water and wind erosion that carry sediment and pollutants from the site. Developers will report to AWC every other month on these pollution control methods and conduct periodic site tours at AWC request.

5. Stormwater Quality Treatment

(a) Stormwater management systems shall be designed so that all stormwater passes through a filtering medium designed to remove sediment and pollutants. As noted above, the first preference for filter design is implementation of vegetated systems.

(b) It is understood that rainfall may exceed the design capacity of the stormwater management system under extreme conditions. Any discharge of stormwater from the project up to the volume of a 2-year storm shall meet the following requirements:

(i) discharge to the combined sewer system shall pass through vegetated filtration systems or other on-site controls that are designed, constructed, operated and maintained to substantially remove pollutants of concern as identified in permits by DDOE or WASA; and

(ii) discharge to a separate sewer system shall pass through vegetated filtration systems and other onsite controls that are designed, constructed, operated, and maintained to substantially remove pollutants impairing the Anacostia River, including but not limited to:

- Total Suspended Solids
- Bacteria
- Metals (arsenic, copper, lead, and zinc)
- Total Phosphorus
- Total Nitrogen
- Organics (such as PAHs and PCBs)
- Petroleum

(c) All stormwater discharge from the project shall comply fully with any applicable governmental discharge limitations, whether imposed by permit, contract, regulation, or otherwise.

(d) Developers must establish contractually enforceable limitations to:

(i) prevent overuse of fertilizers, herbicides, and pesticides that could be carried from the project by stormwater, including through use of integrated pest management; and

(ii) prevent use of coal tar sealants for paved surfaces including roads, driveways, alleys, and parking lots.

6. Protection of Ongoing Remediation

(a) Where existing soil contamination documented as part of a government-approved remediation effort will not be removed, or where previously approved remedial plans provide for capping or other limitations on groundwater infiltration, and such systems are not being replaced as part of redevelopment, the developer shall design vegetative and other control systems with an impermeable liner or other measures to prevent stormwater migration into underlying soil and groundwater.

(b) If a project property is the subject of ongoing soil or groundwater remediation of hazardous substances or petroleum contamination, the developer shall assure that such remediation is completed as part of the development process, or that properly functioning long-term remedial measures are in place at the conclusion of construction. The developer of the property shall, as part of the initial compliance certification, obtain certification from a registered professional engineer satisfactory to AWC that remediation has been properly completed or that properly functioning long-term remedial measures, as approved by the relevant regulatory agency, are in place.

7. Groundwater Treatment

Where groundwater is produced at a project after completion of construction due to dewatering wells or other systems, the developer, owner, or tenant must comply with the following requirements:

(a) Any groundwater discharged to a combined sewer shall conform to WASA requirements. If any pollutant-specific stormwater treatment requirement defined pursuant to paragraph 5 above is more stringent than the WASA groundwater discharge requirements, the groundwater discharge must comply with the more stringent treatment requirement.

(b) Any groundwater discharged to a separated sewer shall be submitted to the DDOE for review and approval before the discharge begins and must comply with the terms of any discharge permit for the project issued by USEPA or DDOE. If any pollutant-specific stormwater treatment requirement defined pursuant to paragraph 5 above is more stringent than the corresponding discharge limitations, any discharge must comply with the more stringent treatment requirement. In no case shall any such discharge have a visible oily sheen.

(c) Any discharge of groundwater to the combined *or* separated sewer systems produced from a site that is the subject of ongoing soil or groundwater remediation of hazardous substances or petroleum contamination shall comply with applicable discharge limitations, whether imposed

by permit, contract, regulation, or otherwise. In no case shall any such discharge to the separated sewer system have a visible oily sheen.

8. Monitoring, Maintenance, and Inspection

Sale agreements and leases for property subject to these environmental standards shall:

(a) Impose contractually enforceable obligations on the transferee or lessee for as long as it owns or leases the property to arrange at transferee's sole cost for maintenance, annual third-party inspection, monitoring and reporting requirements (to AWC, owner, and the tenants) in order to assure that the stormwater control system is functioning properly;

(b) Require an annual certification of compliance by a registered professional engineer that the system and any offsets (other than a one-time monetary payment) have been and are being properly operated and maintained and are functioning properly, based on those certified inspections, appropriate monitoring, and maintenance records; and

(c) Impose contractually enforceable requirements for the payment by the transferee or lessee of an annual fee to finance AWC stormwater monitoring activities. This annual fee shall be calculated based on the gross land area of the project and shall be equal to $0.25 per square foot in 2007, and shall be adjusted annually, as of January 1 each year, by the consumer price index as published in the Wall Street Journal.

Offset Provisions

9. Necessity and Volume Determination

(a) Underlying soil or groundwater conditions at a specific project may limit the feasibility or appropriateness of on-site stormwater management. Examples of such conditions may include:

(i) very shallow water table conditions or highly impermeable soils;
(ii) the presence of combined sewer pipes undergoing significant groundwater infiltration, as documented by WASA;
(iii) potentially serious water problems with neighbors' basements, buried utilities at nearby properties, or with highway or Metro tunnels;
(iv) contaminated soil or groundwater at or nearby the site, where the contamination is not to be removed or the remedial system reconstructed as part of the project.

(b) If the developer and AWC jointly determine that underlying soil or groundwater conditions limit the feasibility or appropriateness of on-site stormwater management, they shall, using generally accepted engineering methods, jointly estimate the volume of stormwater generated by the project to comply with this standard that cannot be beneficially reused or safely infiltrated on-site. The developer shall procure offsets for this volume pursuant to the rules set forth below. AWC and the developer shall make public the specific methods used to make such estimates and show specifically how the volumes were calculated using these methods.

10. Acceptable Offsets

The following types of offsets in the Anacostia watershed or associated waterways within the District will be acceptable to AWC. The preference and appropriate mix of financial and physical offsets for a particular project will be determined by AWC in consultation with the developer on a case-by-case basis:

(a) Physical offsets shall consist of contractually enforceable measures at off-site locations to procure 1½ times the reduction in stormwater flow through the use of green roofs, potable water conservation measures, and LID measures shown to be effective for such purposes. Where off-site potable water conservation measures are employed, such as installation of low-flow fixtures where not already required by building codes, the volume of stormwater reduction for purposes of the offset shall be 25 percent of the annual volume saved, because most of the potable water savings occur outside wet weather, combined sewer overflow periods. Thus, if fixture retrofits would save 100 gallons per year in potable water, a 25 gallon stormwater reduction would be credited to the developer.

(b) Financial offsets shall consist of payments to the Anacostia River Trust Corporation, a non-profit 501(c)(3) subsidiary of AWC, for twice the cost of obtaining an equivalent reduction of the stormwater flow being offset.

(i) AWC shall calculate the offset payment in the following manner. AWC will obtain an engineering cost estimate for the fully-loaded 2007 construction costs to retrofit streetscape covering one acre for optimal stormwater infiltration and retention, together with the discounted long-term operation and maintenance (O&M) costs for the design life of this improved streetscape. From this total cost figure and estimated reduction in stormwater volume, AWC will calculate a cost per stormwater gallon. The resulting per gallon figure shall be multiplied by the volume of offsets a developer seeks to offset. This number shall be multiplied by two; the final dollar figure shall be paid AWC or its designee. This price includes a premium to compensate AWC for the performance risk it is undertaking.

(ii) AWC will adjust the per gallon cost figure annually, based on appropriate published indexes of construction cost inflation, including the appropriate Dodge Reports and R.S. Means indexes of construction costs.

General Compliance and Financial Assurance Provisions

11. Initial Compliance and Performance Bond

(a) The final design and the as-built drawings of the project shall be reviewed by a registered professional engineer for the developer, owner, or tenant as appropriate, and certified as compliant with this stormwater standard, or corrections shall be made until such certification can be provided. The certification shall be delivered to AWC within 30 days.

(b) A performance bond, letter of credit, or other form of financial security satisfactory to AWC shall be posted at the beginning of construction to assure that the measures are constructed in compliance with plans and perform as designed, and for offsets, that appropriate commitments are in place for their long-term maintenance. The bond, letter of credit or other financial security may be released after the certificate of occupancy for the building issues and a

satisfactory compliance inspection has been obtained from an independent professional engineer of the systems and offsets. If compliance is deficient, the developer, owner, or tenant, depending on which is contractually responsible, shall take steps to correct the deficiencies and bring the project into compliance. In the event such measures are unsuccessful after a reasonable time, AWC may draw upon the performance bond or letter of credit in order to finance such corrective measures.

12. Offset Measure Compliance and Financial Assurance

Except for offsets consisting of one-time monetary payments, contractually enforceable provisions must be in place to provide for operation and maintenance (O&M) of any off-site stormwater reduction measure claimed as an offset. Such provisions shall entitle AWC to bring an enforcement action if the commitments are not properly performed. Appropriate financial assurance of such O&M for the life of the offset measure must also be provided, and must be in a form satisfactory to AWC.

13. Subsequent Compliance Corrections and Performance Bond for Corrective Measures

If ongoing compliance with this stormwater standard for a project or offset measure location(s) cannot be certified by a registered professional engineer without corrective measures, the owner or tenant, as is appropriate, shall enter into binding contractual commitments, also explicitly enforceable by AWC, to correct the deficiencies. If the estimated cost of performing the corrective measures exceeds $50,000, or if the performance of corrective measures takes more than 120 days (regardless of cost), the owner shall post a performance bond, letter of credit, or other appropriate financial security in a form satisfactory to AWC in the sum reasonably estimated to be necessary to perform the work correctly.

14. Performance Bond Requirements

The form of any performance bond, letter of credit, or other financial security posted to satisfy these rules must be provided to AWC at least 30 days in advance of its proposed posting and must be satisfactory to AWC. The sum of any such performance bond, letter of credit, or other financial security posted to assure performance shall include a contingency figure, in a percentage customary for such engineering and construction work.

15. Release of Performance Bond

The performance bond, letter of credit, or other financial security posted in order to comply with these rules shall be released upon a satisfactory demonstration to AWC of compliance with these standards. In the event such measures are unsuccessful after a reasonable time, appropriate to test performance and any cure period, the AWC may draw upon the performance bond or letter of credit in order to finance such corrective measures. In the event that correction costs more than the bond or letter of credit has provided, AWC may perform such work at owner's or tenant's expense, which cost shall be a lien on the property and/or a charge under any applicable lease until paid.

16. Engineer Certifications

The engineer certifications required pursuant to these standards shall not be provided by any engineer having any financial interest in the underlying development project, and shall not be provided by an officer or employee of any company (including direct and indirect subsidiaries) with a

financial interest in the development project reviewed by that engineer.

17. Recording of Commitments

The developer shall record a deed notice with the District Recorder of Deeds that summarizes all obligations associated with ownership or operations and maintenance of AWC projects that are required to ensure ongoing compliance with the AWC Environmental Standards.

IV. Site Planning and Preservation

Goal:

To create healthy, livable neighborhoods by preserving public access to the Anacostia River and associated waterways, revitalizing parks and recreational opportunities, and restoring and expanding natural areas.

Minimum Standards:

1. Access to the River

The AWI Framework Plan envisions a continuous Anacostia Riverwalk and Trail along both banks of the Anacostia, as well as neighborhood parks within developments away from the water. The RiverParks initiative will connect and enhance existing parks and create additional parks to increase recreational uses of the Anacostia River. Development shall ensure a continuous RiverParks system and permit public access to the RiverParks, the Anacostia River, and associated waterways.

2. Parkland

Existing public parks shall be preserved and, where possible, expanded. Where development in public parks cannot be practicably avoided, any encroachment shall be mitigated in-kind at a minimum acreage ratio of at least one-to-one. Both on-site remaining parks and off-site mitigation areas shall be permanently protected.

3. Wetlands

No construction shall disturb delineated wetlands or land within 100 feet of delineated wetlands. The land within 100 feet of delineated wetlands shall be treated as if it were a riparian buffer. Where DDOE and the U.S. Army Corps of Engineers determine that construction in these areas cannot be avoided, any impacts on wetland areas shall be mitigated in-kind and on-site at a minimum acreage ratio of three-to-one. Only if on-site locations are unavailable may off-site locations be considered. Preference for mitigation should be given to restoring degraded wetlands or recreating former wetlands, not creating new wetlands. On-site remaining wetlands and buffers and off-site mitigation areas shall be permanently protected.

4. Daylighting and/or Restoration of Streams

Streams that have previously been piped or covered shall be daylit and/or restored to enhance the ecological integrity of the Anacostia River system, unless determined by AWC to be infeasible. Similarly, open air streams that have been degraded by stormwater runoff and other causes should be restored, unless determined by AWC to be infeasible. Among others, the AWI Framework Plan identifies seven streams east of the Anacostia River for daylighting and/or restoration: Watts Branch; Piney Run; Fort Dupont; Pope Branch; Fort Davis; Fort Stanton; and Stickfoot Creek.

5. River (Riparian) Buffers

The AWI Framework Plan established specific goals for creation of woodland and meadow buffers along the main channel of the Anacostia River (Location and Type of Riparian Buffers, p. 33). Development shall maintain these minimum riparian buffer goals, which range from 50 to 300 feet depending on location, except where necessary to ensure public access and use of the riverfront. Development along open air or daylit tributary streams shall maintain a minimum riparian buffer of 25 feet. Where development within buffer

areas cannot be practicably avoided, any reductions in buffer area shall be mitigated in-kind and on-site at a minimum acreage ratio of three-to-one. Only if on-site locations are unavailable may off-site locations be considered. On-site buffers and off-site mitigation areas shall be permanently protected. Where appropriate, buffer design should incorporate bioengineered edges referenced in the AWI Framework Plan (p. 31).

6. Roadway Buffers

Development shall incorporate planted vegetated buffers within the right-of-way of all roadways to increase treecover and shade, help mitigate traffic noise, absorb toxic emissions, and minimize stormwater runoff.

7. Roadway Design

Roadways shall comply with the Anacostia Waterfront Transportation Architecture Design Standards developed by DDOT.

8. Tree Canopy

Development shall provide canopy coverage within 20 years of project occupancy for a minimum of: (a) 30 percent of non-roof impervious surfaces; and (b) 40 percent of the overall non-roof project area.

9. RiverWalk Trails

Development along both sides of the Anacostia River and along associated waterways shall include continuous, publicly accessible trails that comply with the Anacostia Riverparks Plan and Riverwalk Design Guidelines.

10. Clean Marinas

New or existing marinas shall comply with the program elements outlined in the Clean Marina Guidebook issued by the National Park Service and any site specific compliance requirements established by DDOE or EPA. The owner or developer of the marina shall submit a copy of its Clean Marina Checklist and any supporting documentation to AWC.

11. Habitat Restoration

Habitat restoration components of any development shall be coordinated with DDOE and the Wildlife Division's Wildlife Action Plan.

Facilitating Off-Site Restoration and Preservation

AWC recognizes that, to achieve the desired outcome of a restored Anacostia River, we must extend application of these environmental standards beyond the footprint of AWC projects. The AWC is charged with promoting restoration throughout the Anacostia River watershed. To achieve this goal, each community within the Anacostia watershed must adopt a watershed focus that leverages available resources and facilitates additional restoration activity throughout the watershed in the District and Maryland.

AWC will coordinate and work cooperatively with government, private, and non-profit partners throughout the watershed to promote and facilitate, to the greatest extent possible, the following kinds of projects:

(a) Restoration of specific wetlands within the tidal portion of the Anacostia watershed;

(b) Purchase and dedication of specific tracts of land for vegetated river (riparian) buffer along the tidal portion of the Anacostia or associated waterways;

(c) Planting of trees of native species at specified locations in the Anacostia watershed, including costs for appropriate tree boxes and captured recycled water irrigation;

(d) Funding to replace streetscapes, medians strips, traffic islands, surface parking, and sidewalks to maximize stormwater infiltration within the Anacostia watershed;

(e) Funding to purchase specific property for dedication to additional public open space in the Anacostia watershed; or

(f) Other projects with specific water quality benefits.