

Green Building Measures in Neighboring Jurisdictions

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Howard County – The County offers a three-year property tax credit for an energy conservation device that receives a LEED credit and is used in a LEED certified structure. The County tax credit ranges from 14 to 20% of the eligible cost, based on the LEED certification of the building.

The Department of Recreation and Parks is interested in green buildings and is designing the North Laurel Community Center and the Robinson Nature Center as green buildings, aiming for a LEED silver rating. The Glenwood Center, which will open this fall, was also designed as a green building. The proposed Ellicott City County office complex expansion will also be designed as a green building.

Anne Arundel County – In 2002, the County passed a resolution (27-02) to encourage the use of green building techniques in public and private development projects. The resolution states that "to further our commitment to protecting the Chesapeake Bay, Anne Arundel County will, where feasible, seek Leadership in Energy and Environmental Design (LEED) Certification by incorporating Green Building practices and techniques in the implementation of the County Capital Improvement Program, and be it further resolved that, for existing buildings owned, leased, or operated by the County, reasonable efforts will be made to maximize the use of energy efficient and resource conservation techniques, and be it further resolved, that Anne Arundel County will work collaboratively with the private sector to encourage voluntary participation in pursuing environmentally sensitive site design in new development projects."

Baltimore County – In 2006, the County Council passed a bill (85-06) to provide a 100% property tax credit for commercial LEED certified silver (or higher) buildings. The credit is applicable for 10 years. There is a \$5 million annual cap for the program, subject to annual review by the Council.

Baltimore City – In April 2006, the Baltimore City Council and Green Building Task Force released a report on Sustainable Building Guidelines and Standards for Public and Private Construction and Renovation Projects. Some of the recommendations for the City include:

- Establish an Office of Sustainability to develop and administer a Sustainable Baltimore Initiative.
- Require all CIP construction for new and major renovation projects over 10,000 gross square feet be certified LEED silver.
- Require Green Building Guidelines for minor city projects with a minimum cost of \$25,000. All other city sponsored construction projects of \$25,000 or greater are required to follow basic sustainable design, development and construction principles and meet specified LEED credit criteria.
- Offer a variety of incentives for private developers, including:

- Reduced fees for compliance with certain criteria (for example, reduce hook-up fees for water when water usage is reduced by 30%)
- Grants (through a Green Building Fund)
- Tax abatements
- Density bonuses
- Expedited review
- Establish green zones that require private buildings be developed to LEED silver or greater standards.

Montgomery County – In November 2006, the County Council passed the Montgomery County Green Buildings Law (Bill 17-06) that institutes green building requirements for certain new or extensively modified buildings. County buildings, including buildings with at least 30% County financing, must achieve a LEED silver or equivalent rating. Private non-residential or multi-family residential buildings (multi-family residential or mixed use buildings of more than four stories) of 10,000 square feet or more must achieve a LEED certified or equivalent rating.

In August 2006, the County Council introduced a bill (37-06) to grant a property tax credit on buildings that achieve a LEED silver rating. The tax credit can be a 5-year, 50% credit or a 10-year, 25% credit. This bill is still in process.

Prince George's County – In 2006, a task force submitted recommendations to the County Executive on ways to promote green building techniques in the County. These recommendations are under review and the County Executive is expected to announce new initiatives.

Recommendations under consideration include:

- Adding on to the State contract with Johnson & Duron, energy consultants, to audit County buildings for energy savings
- Training development review staff on green building techniques
- Offering private development incentives such as tax incentives and expedited permitting
- Conducting a public awareness campaign in schools and communities on ways to save energy
- Requiring new County buildings meet certain sustainable building standards

State of Maryland – Maryland allows a green building tax credit for businesses that construct or rehabilitate a building conforming to specific standards intended to save energy and to mitigate environmental impact. The Green Building Tax Credit provides a credit against a taxpayer's personal or corporate income tax. The credit varies from 6 to 8% of total allowable construction costs for a building that meets specified green building standards. The current standard is based on the LEED Guidelines. Applicants for the tax credit must submit an eligibility certificate from a LEED accredited professional architect or engineer licensed in Maryland. For the full tax credit, the building must be located in a Priority Funding Area. In addition, all State owned or leased facilities larger than 7,500 gross square feet must be certified LEED silver, and if possible, LEED gold.

Case Studies of North American Cities

Rooftops to Rivers, NRDC, June 2006

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Note: All of the cities in these case studies have combined storm sewer collection systems.

Chicago, Illinois

Green Roof Program

- Program began with a 20,300 square foot demonstration project on City Hall.
- As of June 2004, the City had more than 80 municipal and private green roofs covering over one million square feet in various stages of installation.
- City sponsors installations and demonstration sites.
- A density bonus is offered to developers who cover 50% or 2,000 square feet (whichever is greater) of a roof with vegetation.
- In 2006, the city provided 20 \$5,000 grants for green roof installations on small-scale commercial and residential properties.

Rain Barrel and Rain Garden Program

- Subsidized program for residential properties.
- Targeted to areas with a high frequency of flooded basements.

Green Building

- Adopted the Chicago Standard in 2004, a set of construction principles designed for municipal buildings based on LEED. Standards emphasize sustainability, water efficiency, energy effects, indoor air quality and stormwater management.
- In 2005, published Building Healthy, Smart and Green, Chicago's Green Building Agenda.

Milwaukee, Wisconsin

Rain Barrel and Rain Garden Program

- Cooperative, cost-sharing arrangement with public entities and private businesses to install more than 60 rain gardens to receive and treat rooftop runoff (overflow from rain barrels).
- Run by Milwaukee Metropolitan Sewerage District.

Portland, Oregon

Portland's rainfall occurs mostly in small frequent storms, which is the type of precipitation event green infrastructure technologies are most successful at mitigation.

Innovative Wet Weather Program

- Jointly funded by Portland Bureau of Environmental Services and the EPA.

- Grant program for stormwater management projects that focus on water quality improvement.

Green Roofs

- New city-owned buildings must have a green roof that covers at least 70% of the roof area.
- Zoning bonus offered for additional square footage for buildings with green roofs.

Stormwater Fee

- The Bureau of Environmental Services is a rate-financed, non-profit municipal utility. Portland finances stormwater management services primarily through charges and fees imposed on developed property. Fees are collected as part of the water and sewer bill.
- The Clean River Discount and Incentive Program, once implemented in October, will offer discounts for properties with on-site stormwater management.

Downspout Disconnection Program

- Homeowners can receive \$53 per downspout disconnected from the combined sewer system.
- City estimates more than 45,000 households participate.

Innovative Stormwater Management Facilities

- Vegetated curb extensions for streets.
- Swaled medians around parking lot (Museum of Science and Industry).
- Infiltration planters (Liberty Centre Parking Garage).
- Rainwater gardens (Oregon Convention Center).
- Bioswales (New Seasons Market).

Stormwater Trading Program

- Recently awarded a grant to study the feasibility of a stormwater trading program.

Green Building (info from web, not NRDC report)

- The Office of Sustainable Development provides free technical assistance for development projects in Portland, educational tours and classes, project guidebooks, and grants that support innovative green building practices.
- Technical assistance can include: plans review by on-staff trained architects; site visits; eco-charrettes to formulate green alternatives and opportunities; informational resources including project guides and case studies; key contacts in the green building industry; and one-on-one meetings or phone consultations.

Seattle, Washington

Seattle Public Utilities (SPU) is responsible for water and stormwater programs. SPU uses the concept of Natural Drainage Systems, with the goal to develop a stormwater management system that resembles natural hydrologic functions lost to urbanization.

Innovative Stormwater Management Facilities

- Stepped vegetated cells (The Viewlands Cascade).

- Street Edge Alternative (SEA) Streets reduces pavement width and adds vegetated swales.

Rainwater Harvesting

- Rainwater is filtered and used for toilet flushing and landscaping (King Street Center).
- Pilot program for residential properties.

Rain Barrel and Cistern Program

- Subsidized program for homeowners.

Green Roofs

- City has installed four.

Urban Forestry Initiative

- Master plan for planting trees on city streets.
- Goal to increase tree canopy from 27% to 40% of city area.

Green Building (info from web, not NRDC report)

- The City Green Building program, which is part of the Department of Planning and Development, provides customized green building education, early design guidance, technical assistance, incentives, and recognition for projects.
- The Sustainable Building Policy, adopted in 2000, calls for all new City-funded projects and renovations with over 5,000 square feet of occupied space to achieve a LEED Silver rating.

Toronto, Canada

Water Pollution Solution (formerly called the Wet Weather Flow Management Plan)

- 25-year stormwater management plan approved by the City Council in 2003.
- Comprehensive strategy to address water quality and quantity, sewage overflows and habitat protection.
- Based on four principles:
 - Recognize rainwater and snowmelt as a valuable resource.
 - Manage wet weather flows on a watershed basis.
 - Implement a hierarchy of wet weather practices, beginning with the source, then the conveyance and lastly the end-of-pipe solutions.
 - Educate communities and involve the public.

Downspout Disconnection

- City will disconnect residences for free and provide splash guards or rain barrels.
- Targeted at areas that experience localized flooding or have significant runoff impacts on Toronto's beaches.

Green Roofs

- The city is a center for green roof technologies.
- Over 100 green roofs have been installed, including one on City Hall.

- Green Roof Infrastructure Demonstration Project is a public-private partnership initiated in 2002 that will fund more than \$800,000 in green roof costs (not clear the City is part of this effort).
- The City Council approved a Green Roofs Strategy promoting the use of city rooftops to grow gardens and other vegetation. The strategy includes a commitment to install green roofs on new and existing buildings owned by the City whenever practical.
- A new 2-year pilot program has been created to encourage green roof construction as part of the Green Roofs Strategy. Subsidies of \$10 per square metre and up to a maximum of \$20,000 are available to private property owners for new and retrofit green roof projects. (These last two bullets contain info from web.)

Vancouver, Canada

Innovative Stormwater Management Facilities

- Street design modeled on Seattle's SEA Street design.
- Country Lane Program replaces asphalt alleys and lanes with two concrete or gravel strips and structural grass, and replaces residential connections with permeable materials.
- Vegetated curb extensions (called infiltration bulges) for streets.
- Biofiltration systems (one to treat residential runoff and one for street runoff)

Green Roofs

- More than 30 installations.

Project Checklist

Sustainable Sites

14 Possible Points

| | | |
|------------|--|----------|
| Prereq 1 | Construction Activity Pollution Prevention | Required |
| Credit 1 | Site Selection | 1 |
| Credit 2 | Development Density & Community Connectivity | 1 |
| Credit 3 | Brownfield Redevelopment | 1 |
| Credit 4.1 | Alternative Transportation , Public Transportation Access | 1 |
| Credit 4.2 | Alternative Transportation , Bicycle Storage & Changing Rooms | 1 |
| Credit 4.3 | Alternative Transportation , Low Emitting & Fuel Efficient Vehicles | 1 |
| Credit 4.4 | Alternative Transportation , Parking Capacity | 1 |
| Credit 5.1 | Site Development , Protect or Restore Habitat | 1 |
| Credit 5.2 | Site Development , Maximize Open Space | 1 |
| Credit 6.1 | Stormwater Design , Quantity Control | 1 |
| Credit 6.2 | Stormwater Design , Quality Control | 1 |
| Credit 7.1 | Heat Island Effect , Non-Roof | 1 |
| Credit 7.2 | Heat Island Effect , Roof | 1 |
| Credit 8 | Light Pollution Reduction | 1 |

Water Efficiency

5 Possible Points

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|------------|--|---|
| Credit 1.1 | Water Efficient Landscaping , Reduce by 50% | 1 |
| Credit 1.2 | Water Efficient Landscaping , No Potable Use or No Irrigation | 1 |
| Credit 2 | Innovative Wastewater Technologies | 1 |
| Credit 3.1 | Water Use Reduction , 20% Reduction | 1 |
| Credit 3.2 | Water Use Reduction , 30% Reduction | 1 |

Energy & Atmosphere

17 Possible Points

| | | |
|----------|---|----------|
| Prereq 1 | Fundamental Commissioning of the Building Energy Systems | Required |
| Prereq 2 | Minimum Energy Performance | Required |
| Prereq 3 | Fundamental Refrigerant Management | Required |
| Credit 1 | Optimize Energy Performance | 1–10 |
| Credit 2 | On-Site Renewable Energy | 1–3 |
| Credit 3 | Enhanced Commissioning | 1 |
| Credit 4 | Enhanced Refrigerant Management | 1 |
| Credit 5 | Measurement & Verification | 1 |
| Credit 6 | Green Power | 1 |

Materials & Resources

13 Possible Points

| | | |
|------------|---|----------|
| Prereq 1 | Storage & Collection of Recyclables | Required |
| Credit 1.1 | Building Reuse , Maintain 75% of Existing Walls, Floors & Roof | 1 |
| Credit 1.2 | Building Reuse , Maintain 95% of Existing Walls, Floors & Roof | 1 |

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|------------|--|---|
| Credit 1.3 | Building Reuse , Maintain 50% of Interior Non-Structural Elements | 1 |
| Credit 2.1 | Construction Waste Management , Divert 50% from Disposal | 1 |
| Credit 2.2 | Construction Waste Management , Divert 75% from Disposal | 1 |
| Credit 3.1 | Materials Reuse , 5% | 1 |
| Credit 3.2 | Materials Reuse , 10% | 1 |
| Credit 4.1 | Recycled Content , 10% (post-consumer + 1/2 pre-consumer) | 1 |
| Credit 4.2 | Recycled Content , 20% (post-consumer + 1/2 pre-consumer) | 1 |
| Credit 5.1 | Regional Materials , 10% Extracted, Processed & Manufactured Regionally | 1 |
| Credit 5.2 | Regional Materials , 20% Extracted, Processed & Manufactured Regionally | 1 |
| Credit 6 | Rapidly Renewable Materials | 1 |
| Credit 7 | Certified Wood | 1 |

Indoor Environmental Quality 15 Possible Points

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|------------|---|----------|
| Prereq 1 | Minimum IAQ Performance | Required |
| Prereq 2 | Environmental Tobacco Smoke (ETS) Control | Required |
| Credit 1 | Outdoor Air Delivery Monitoring | 1 |
| Credit 2 | Increased Ventilation | 1 |
| Credit 3.1 | Construction IAQ Management Plan , During Construction | 1 |
| Credit 3.2 | Construction IAQ Management Plan , Before Occupancy | 1 |
| Credit 4.1 | Low-Emitting Materials , Adhesives & Sealants | 1 |
| Credit 4.2 | Low-Emitting Materials , Paints & Coatings | 1 |
| Credit 4.3 | Low-Emitting Materials , Carpet Systems | 1 |
| Credit 4.4 | Low-Emitting Materials , Composite Wood & Agrifiber Products | 1 |
| Credit 5 | Indoor Chemical & Pollutant Source Control | 1 |
| Credit 6.1 | Controllability of Systems , Lighting | 1 |
| Credit 6.2 | Controllability of Systems , Thermal Comfort | 1 |
| Credit 7.1 | Thermal Comfort , Design | 1 |
| Credit 7.2 | Thermal Comfort , Verification | 1 |
| Credit 8.1 | Daylight & Views , Daylight 75% of Spaces | 1 |
| Credit 8.2 | Daylight & Views , Views for 90% of Spaces | 1 |

Innovation & Design Process 5 Possible Points

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|------------|-------------------------------------|---|
| Credit 1.1 | Innovation in Design | 1 |
| Credit 1.2 | Innovation in Design | 1 |
| Credit 1.3 | Innovation in Design | 1 |
| Credit 1.4 | Innovation in Design | 1 |
| Credit 2 | LEED Accredited Professional | 1 |

Project Totals 69 Possible Points

Certified 26–32 points Silver 33–38 points Gold 39–51 points Platinum 52–69 points