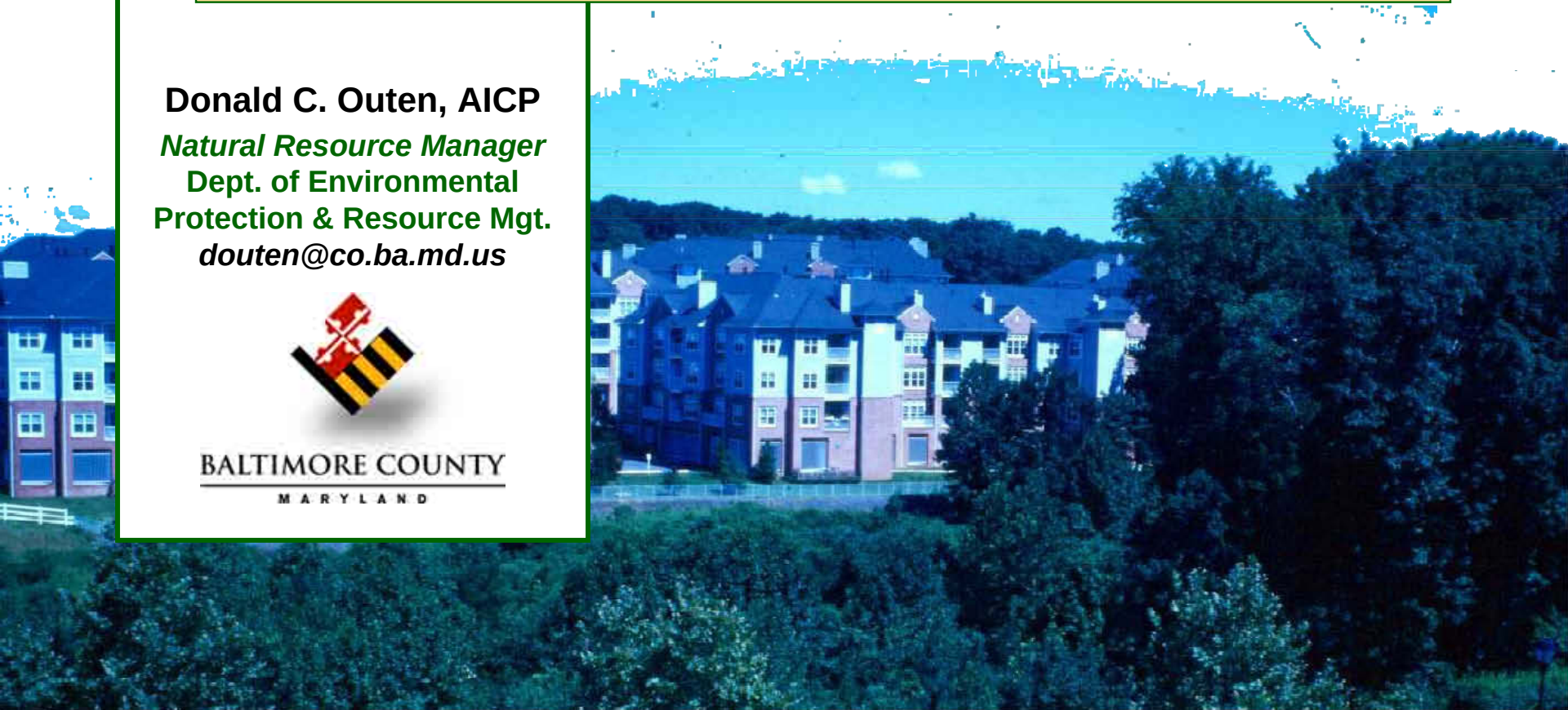
November 18, 2006

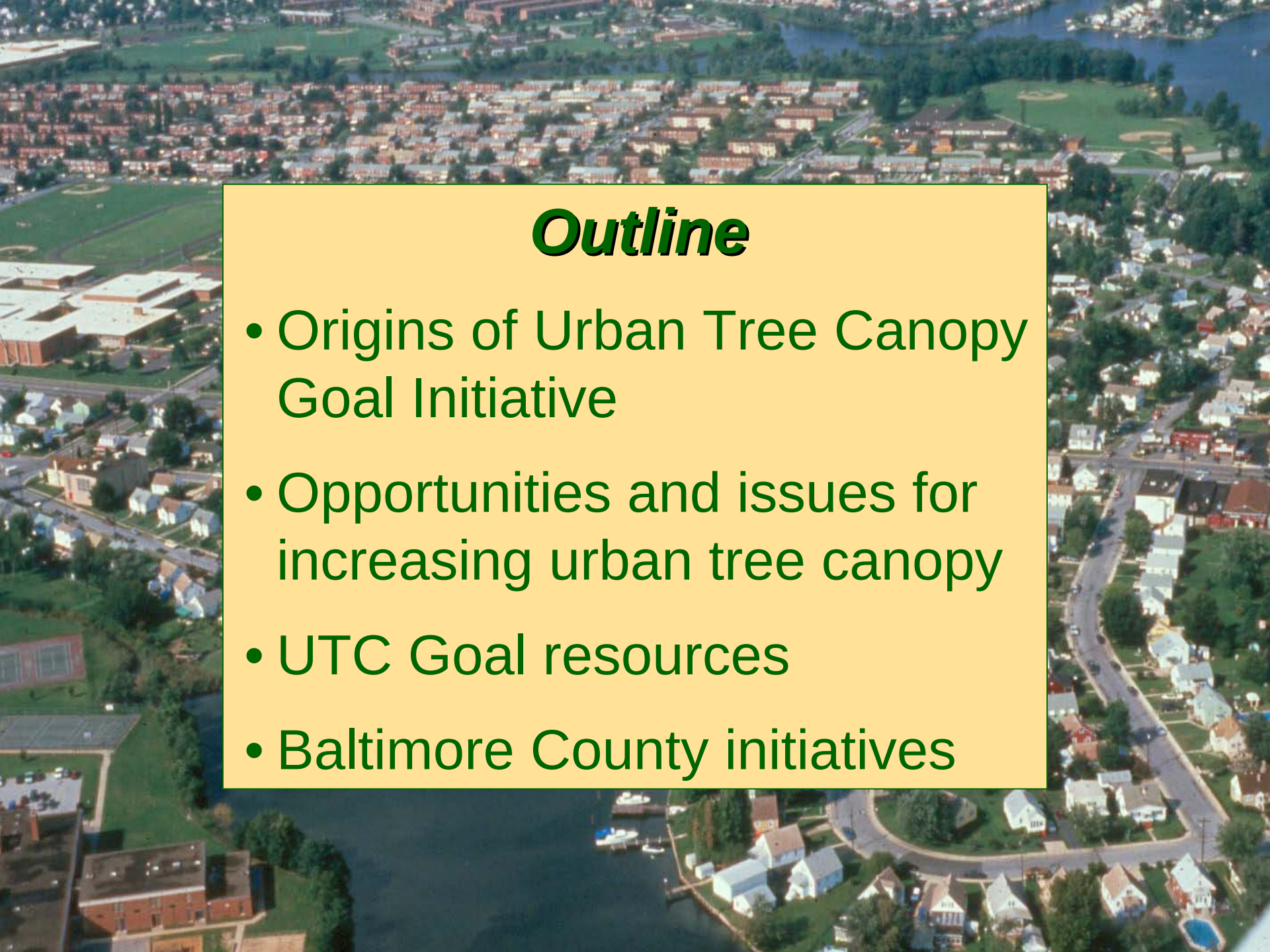
CHESAPEAKE WATERSHED FORUM

Discussion Session: Urban Tree Canopy Goals

Donald C. Outen, AICP
Natural Resource Manager
Dept. of Environmental Protection & Resource Mgt.
douten@co.ba.md.us

BALTIMORE COUNTY
MARYLAND





Outline

- Origins of Urban Tree Canopy Goal Initiative
- Opportunities and issues for increasing urban tree canopy
- UTC Goal resources
- Baltimore County initiatives

The Functions of Forests and Trees

Social (Quality of Life)

- Forest Products
- Reduced Energy Demands
- Recreation and Tourism
- Aesthetics
- Enhanced Property Values

Ecological

- Clean Air
- Clean Water
- Biological Diversity and Habitat

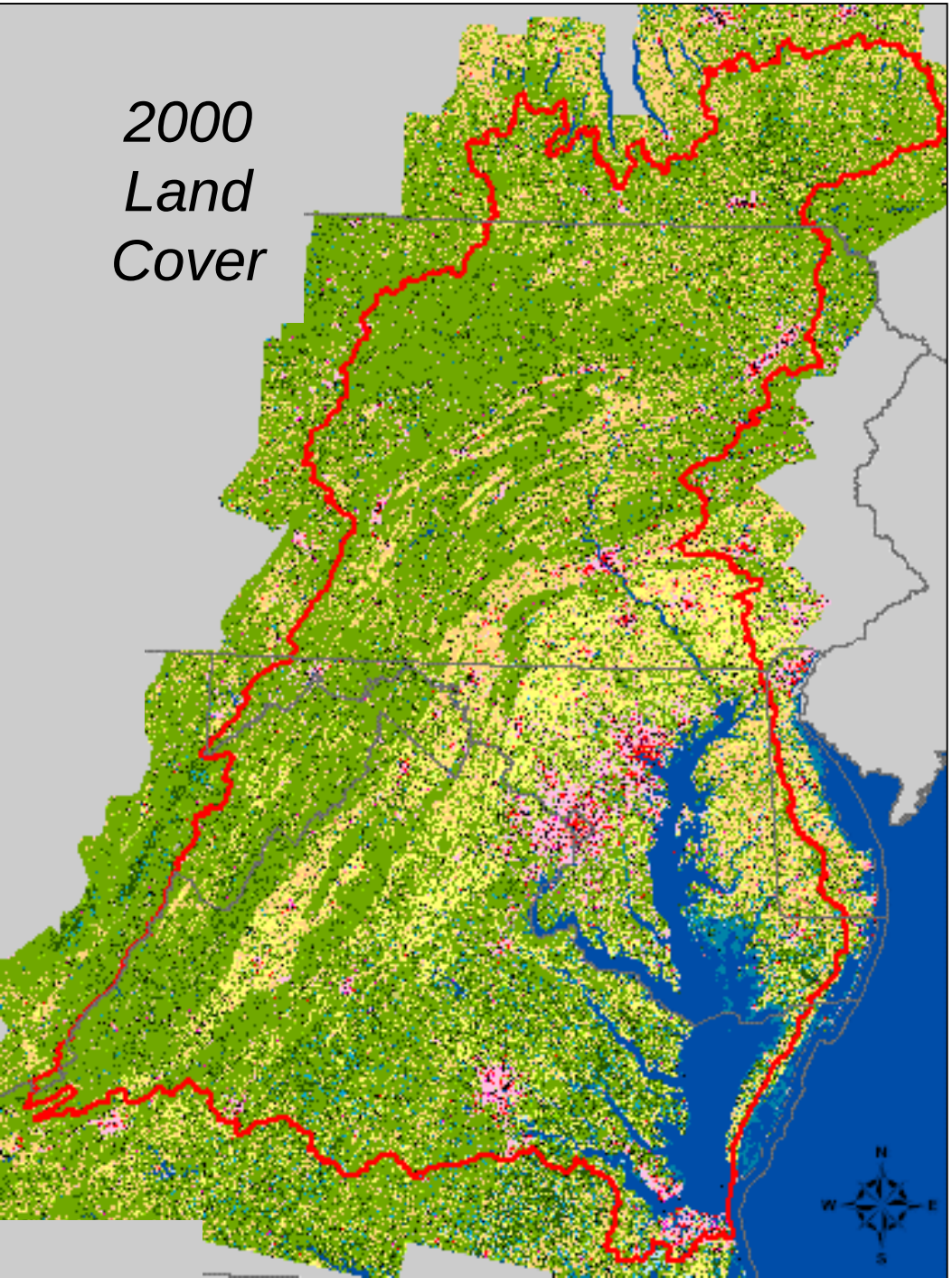
Economics

Protecting beneficial social and ecological functions of forests accrues economic value to society

The failure to protect these functions incurs economic costs to society

A popular bumper-sticker reads:

Trees are the answer



Urban Land and the Chesapeake Bay

- the Bay is shallow and its watershed land area is large, so land use affects water quality
- >80% of the people in the Bay watershed live in urban areas
- the rate of land conversion is 3x the rate of population growth
- >75% of precipitation in the Bay watershed's urban areas does not infiltrate
- urban land accounts for 7% of Bay watershed land area but generates 11% of N and 17% of P from non-point sources and 20% of N and P for point sources

Riparian Forest Buffers for the Chesapeake Bay

1996 - the Chesapeake Executive Council set a goal of restoring 2,010 miles of riparian forest buffers by 2010

2000 – Chesapeake 2000 Agreement charged the Bay Program to expand the buffer goals by 2003

2002 - the 1996 buffer goal was met

Expanded Riparian Forest Buffer Goals

Chesapeake Bay Program
A Watershed Partnership

CHESAPEAKE EXECUTIVE COUNCIL

DIRECTIVE NO. 03-01

EXPANDED RIPARIAN FOREST BUFFER GOALS

We, the members of the Chesapeake Executive Council, hereby reaffirm our commitment to restoring the Chesapeake Bay, in part, by protecting and restoring riparian lands along the watershed's thousands of miles of stream and shoreline. Scientific evidence indicates that riparian forest buffers offer the greatest range of benefits of any riparian land use. Such benefits include improved downstream and instream habitats, reduced nutrient and suspended sediment levels and moderated water temperatures, and improved value such as foraging, migration, spawning, nursery and nesting habitat for a variety of wildlife. Based on this evidence, we support increased efforts in the conservation, restoration, and maintenance of forested riparian buffers.

WE ARE PROUD of the progress that each of our jurisdictions has made in achieving the goal set in 1996 fully eight years ahead of the 2010 schedule. To capitalize on the momentum we have created, we commit to the following:

- WE REAFFIRM OUR BELIEF that riparian forested buffers are critical to protecting the streams of the Chesapeake watershed, and as agreed to in the *Chesapeake 2000* agreement, we commit to a continued effort to maximize the miles of streambank and shoreline that are protected by any form of vegetated buffer, especially trees.
- WE RECOGNIZE THAT THERE IS A GREAT OPPORTUNITY to further improve water quality and living resource habitat by continuing to establish forest buffers on the many miles of streams yet to be restored. Our long term restoration goal is beyond our current capacity, so we must seek new public-private partnerships, and encourage the participation of our headwater state partners. We appreciate that our ultimate goal must be to enhance streams and their riparian forests in the years beyond 2010, preserving these buffers over the long-term once they are established.
- WE FURTHER RECOGNIZE THAT URBAN TREE CANOPY COVER offers stormwater control and water quality benefits for municipalities in the Chesapeake Bay watershed and can extend many riparian forest buffer functions to urban settings.
- WE BELIEVE THAT THE CHESAPEAKE BAY PROGRAM is uniquely positioned, as the premier watershed restoration program, to set ambitious goals and to marshal the resources necessary to achieve those goals, and we intend to continue to provide the leadership necessary to assure success.
- Building on our past commitments, WE COMMIT TO THE ADOPTION OF AN EXPANDED SET OF GOALS:
  - Enhance and sustain the integrity of aquatic ecosystems over the long term through conservation and restoration of forests along at least 70% of all streams and shorelines, which translates to about 26,000 miles of additional buffers in our jurisdictions with the near term goal of achieving at least 10,000 miles of riparian forest buffers by 2010. We expect that additional miles will be added to our near term goal based on the tributary strategies to achieve the nutrient and sediment allocations, due to be completed by April, 2004.
  - By 2010, work with at least 5 local jurisdictions and communities in each state to complete an assessment of urban forests, adopt a local goal to increase urban tree canopy cover and encourage measures to attain the established goals in order to enhance and extend forest buffer functions in urban areas.
  - Encourage increases in the amount of tree canopy in all urban and suburban areas by promoting the adoption of tree canopy goals as a tool for communities in watershed planning.

Chesapeake Executive Council Directive No. 03-01 (Dec. 2003)

Preamble:

"We further recognize that urban tree canopy cover offers stormwater control and water quality benefits for municipalities in the Chesapeake Bay watershed and can extend many riparian forest buffer functions to urban settings."

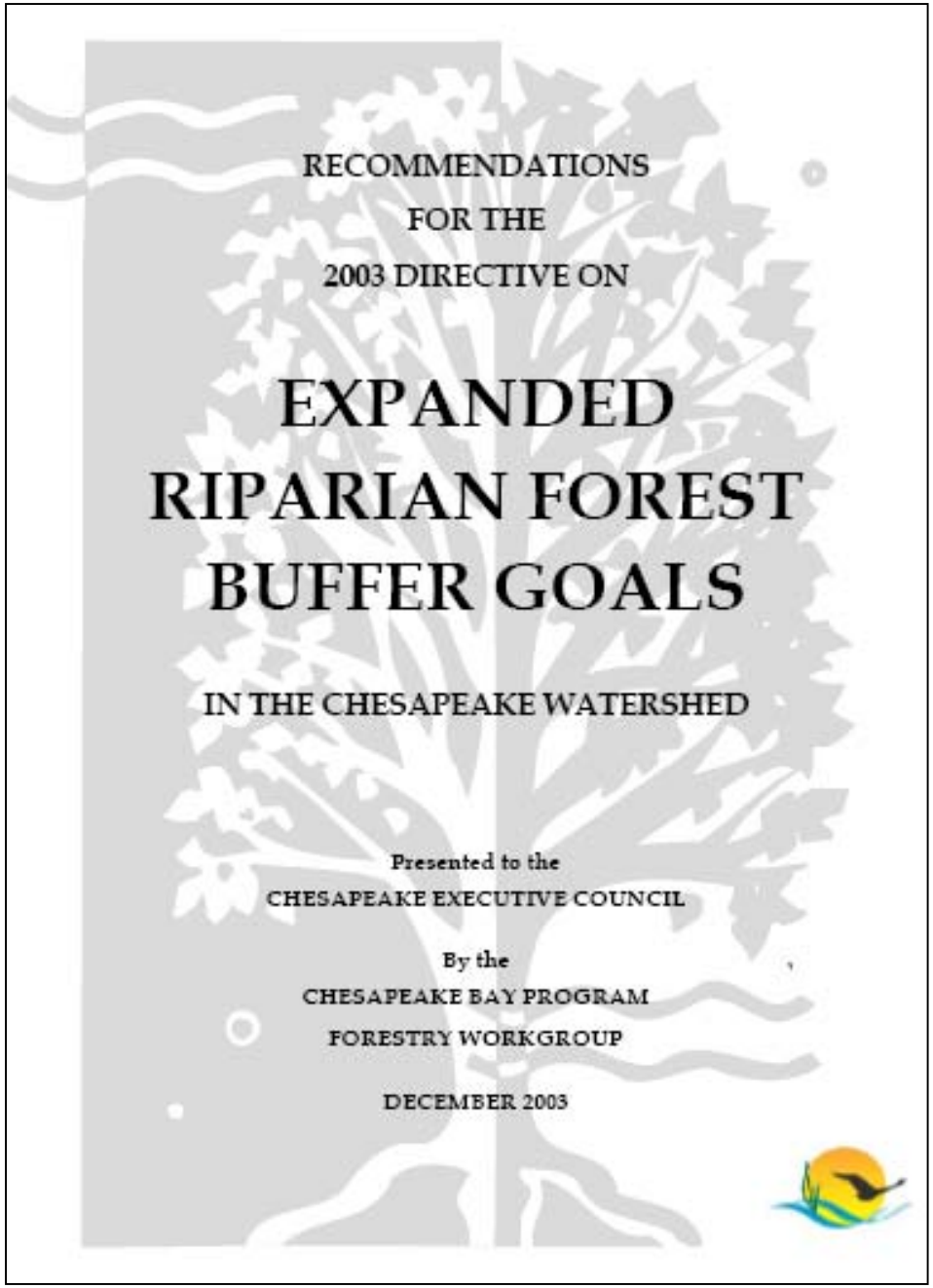
Chesapeake Bay Program
A Watershed Partnership

CHESAPEAKE EXECUTIVE COUNCIL

DIRECTIVE NO. 03-01

EXPANDED RIPARIAN FOREST BUFFER GOALS

- Riparian buffers on 70% of streams/shorelines or about 26,000 miles of additional buffers with near term goal of >10,000 miles by 2010 as part of Tributary Strategies
- By 2010, work with at least 5 local jurisdictions and communities in each state to complete an assessment of urban forests, adopt a local goal to increase urban tree canopy cover and encourage measures to attain the established goals in order to enhance and extend forest buffer functions in urban areas.
- Encourage increases in the amount of tree canopy in all urban and suburban areas by promoting the adoption of tree canopy goals as a tool for communities in watershed planning.

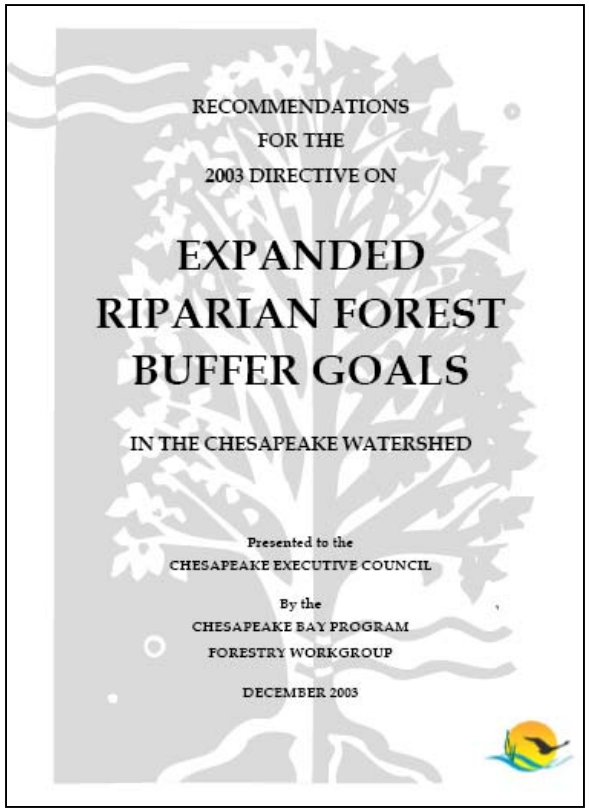


Key findings:

#3 We need stronger emphasis on urban buffers and tree canopy

- **widespread restoration of forest buffers in urban areas is difficult**
- **however, urban tree canopy emerged as an important issue in stakeholder meetings**
- **participants stressed the need for urban tree plantings to improve water quality and make population centers more livable**
- **tree canopy differs from riparian buffers, but ample canopy cover can serve many of the same functions in urban settings where restoring riparian areas may not be feasible**

Goals and Policies #2: By 2010, work with at least 5 local jurisdictions and communities in each state ….


RECOMMENDATIONS
FOR THE
2003 DIRECTIVE ON

EXPANDED
RIPARIAN FOREST
BUFFER GOALS

IN THE CHESAPEAKE WATERSHED

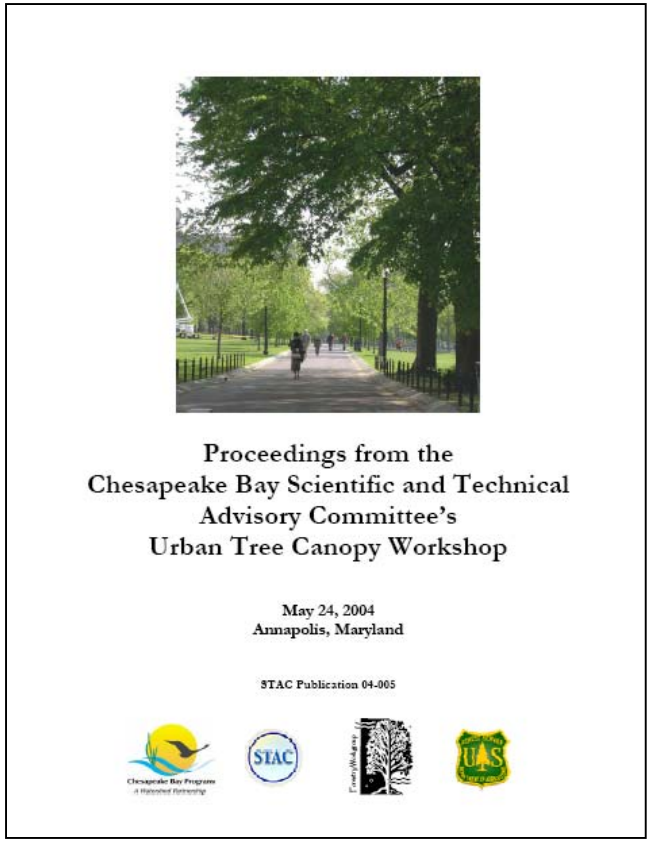
Presented to the
CHESAPEAKE EXECUTIVE COUNCIL

By the
CHESAPEAKE BAY PROGRAM
FORESTRY WORKGROUP

DECEMBER 2003

- view canopy as tree crowns that intercept rainfall, absorb and store water, reduce runoff, protect soil from erosion, filter pollutants, improve air quality & cool the air
- canopy goals are expressed as % of area covered by tree crowns, as measured using aerial photographs, satellite images, and/or ground surveys
- jurisdictions should:
  - strengthen tree protection policies
  - replace dying trees
  - identify vacant areas to plant new trees (costs offset by environmental and social benefits urban trees provide)

Assessing Urban Tree Canopy



Aerial assessments:

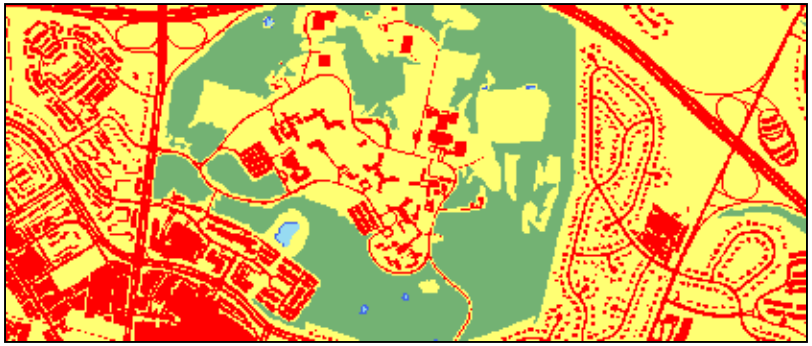
- Landsat
  30 meter; regional analysis
- High-resolution satellite
  e.g., IKONOS 1-4 meter
- digital orthoquads (DOQ)
  1 meter & sub-meter CIR

Ground-based assessments:

- I-Tree tools (UFORE, STRATUM)

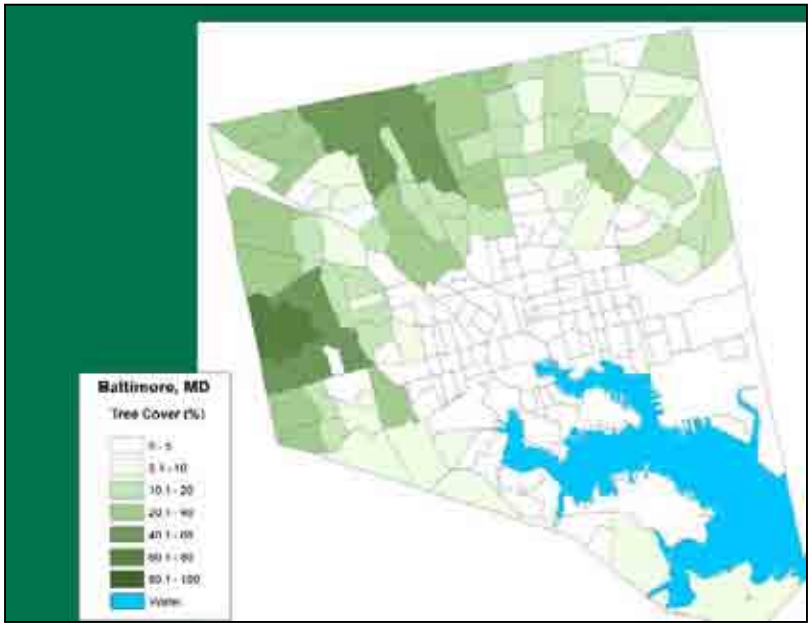
Message: setting urban tree canopy goals should be based on an assessment of existing canopy cover

Assessing Urban Tree Canopy



What Do You Want To Know?

- scale (regional – street)
- leaf-on or leaf-off
- type of analysis & mapping



Source: Microsoft Virtual Earth

Source: Microsoft Virtual Earth

CITYgreen

CITYgreen

CITYgreen Home
CITYgreen 5
CITYgreen ArcGIS
Success Stories
Resources for Educators
Training and Support
Pricing at a Glance

Products and Publications

Forest Bytes
American Forest Magazine
CITYgreen
Understanding Community-Based Forest Ecosystem Management
Historic Tree Nursery

CITYgreen is a powerful GIS application for land-use planning and policy-making. The software conducts complex statistical analyses of ecosystem services and creates easy-to-understand maps and reports. CITYgreen calculates dollar benefits based on your specific site conditions.

CITYgreen analyzes:

- Stormwater Runoff
- Air Quality
- Summer Energy Savings
- Carbon Storage and Avoidance
- Tree Growth

With CITYgreen, you can take advantage of natural systems to produce the maximum economic benefits for your growing community. CITYgreen uses the most up-to-date scientific research to calculate the dollar value of trees and vegetation.

CITYgreen creates:

- Broad regional studies or detailed small site assessments
- Ecological maps revealing the value of resources
- Models for future growth
- Colorful, easy-to-understand presentations
- Automatic reports that summarize key findings

CITYgreen

Choose a Version

- **CITYGreen 5 (ArcView 3.x)**
- **CITYGreen ArcGIS (ArcGIS 8.x and 9.x)**

Success Stories
Resources for Educators
Training and Support
Pricing at a Glance

http://www.itreetools.org/index.html

Tools for Assessing Urban Forests

Assessing Urban Ecosystems

BACK

Within i-Tree, entire urban forest tree populations are assessed using **UFORE**-the **U**rban **For**est **E**ffects model. Developed in the late 1990s by researchers at the USDA Forest Service's Northeastern Research Station in Syracuse, NY, UFORE is a computer model that calculates the structure, environmental effects and values of urban forests.

What is UFORE?

UFORE is a model suite that allows users to collect data on the entire urban forest and estimate the ecosystem services the resource provides to the community. From project start to finish, UFORE is a complete package that provides users with the following components:

- Detailed, statistically based sampling and data collection protocols. These protocols allow for estimation of total and variation related to urban forest structure and population effects.
- A customizable PDA Utility that supplies data collection applications to run on low-cost, Windows-based Pocket PCs.
- A central computing engine that makes scientifically sound estimates of the effects of urban forests based on peer-reviewed scientific equations to predict environmental and economic benefits.

What does UFORE do?

After tree data are collected and entered into the UFORE database (either by uploading from PDAs or by doing manual entry), they are merged with local hourly weather and air pollution concentration data. These data make it possible to calculate structural and functional information using a series of scientific equations or algorithms. If a complete inventory is conducted (i.e., all trees are measured; a 100% sample), then UFORE calculates values for each tree and for the total population. If only a sample is examined (i.e., plots are randomly located within the area of analysis), then UFORE calculates estimates for the total population along with estimate error.

Assessing Street Tree Populations

BACK

Within i-Tree, street tree populations are assessed using STRATUM (Street Tree Management Tool for Urban forest Managers). Developed by researchers at the Center for Urban Forest Research -- a research unit of the USDA Forest Service's Pacific Southwest Research Station -- STRATUM is a computer application that uses tree inventory data to quantify the structure, function, value and management needs of any street tree resource.

What is STRATUM?

STRATUM is a street tree management and analysis tool for urban forest managers that uses tree inventory data to quantify the dollar value of annual environmental and aesthetic benefits: energy conservation, air quality improvement, CO_2 reduction, stormwater control, and property value increase. It's an easy-to-use, computer-based program that allows any community to conduct and analyze a street tree inventory. Baseline data can be used to effectively manage the resource, develop policy and set priorities. Using a sample or an existing inventory of street trees, this software allows managers to evaluate current benefits, costs, and management needs. Use STRATUM to:

- Improve the return on your investment dollar by determining which trees maximize canopy cover and provide the benefits that are important to your community.
- Determine the management needs of your street tree resource to foster and perpetuate a healthy municipal forest.
- Leverage investment from partners for such things as carbon credits or energy conservation.
- Gain public support by demonstrating the value of trees to the quality of life in your community.
- Perform economic evaluations of tree performance using annual budget and expenditure data.
- Assess costs of management -- rather than benefits alone -- to provide a platform for strategic planning.

http://www.itreetools.org/index.html

General Guidelines for Setting Forest Cover Goals

Type of watershed	Percent impervious cover	Percent forest cover goal	Benefits	Approaches
Rural	0-10%	65% 65% riparian areas	Maintain aquatic ecosystem Improve filtering capacity Wildlife habitat	Prevent Forest Loss During Development Conserve Priority Forests Reforest Private Land
Surburban	11-25%	40% 50% suburban residential	Stormwater runoff reduction Wildlife habitat Reduce urban heat island	Conserve Priority Forests Prevent Forest Loss During Development Landscaping/Street Trees
Urban	26-60%	25%	Stormwater runoff reduction Reduce urban heat island Wildlife habitat	Conserve Priority Forests Reforest Public Land Maintain Existing Forest Canopy
Ultra-urban	>60%	15%	Reduce urban heat island Recreation/aesthetic benefits	Conserve Priority Forests Restore Forest Remnants Maintain Existing Forest Canopy

Center for Watershed Protection

Maryland's UTC Initiative

- April 26, 2006 - Governor Ehrlich announced MD's Urban Tree Canopy initiative
- CBT in cooperation with USDA Forest Service and MD DNR created the ***Community Greening Initiative*** grant program - $300,000
- Provides grants up to $50,000 to local governments or non-profits working in cooperation with locals for on-the-ground restoration to support implementation of an adopted plan for greening
- Also provides direct technical assistance to develop and implement plans. UTC plans have already been developed for 3 cities (Baltimore, Annapolis, Cumberland); canopy cover is currently being assessed for Baltimore County (within the URDL)

Potential Funding Sources for UTC Implementation

Chesapeake Bay Small Watershed Grants Program

http://www.nfwf.org/programs/chesapeake/fs.cfm

Chesapeake Bay Trust Community Greening Grant Program

http://www.cbtrust.org

2005 Projects for Maryland:

- City of Annapolis - $25k for 200 trees
- City of Cumberland - $50k for 200 trees & satellite imagery
- Herring Run Watershed Association - $47,815 for 250 trees
- Baltimore City Recreation & Parks - $50k for community coalition builder to develop/implement strategies for 2,000 trees in the Jones Falls watershed
- City of Hyattsville - $8k to acquire satellite imagery and data for goal

TREE-MENDOUS MARYLAND

TREE-MENDOUS MARYLAND

Maryland Department of Natural Resources

Helping plant trees for a Cleaner Chesapeake Bay

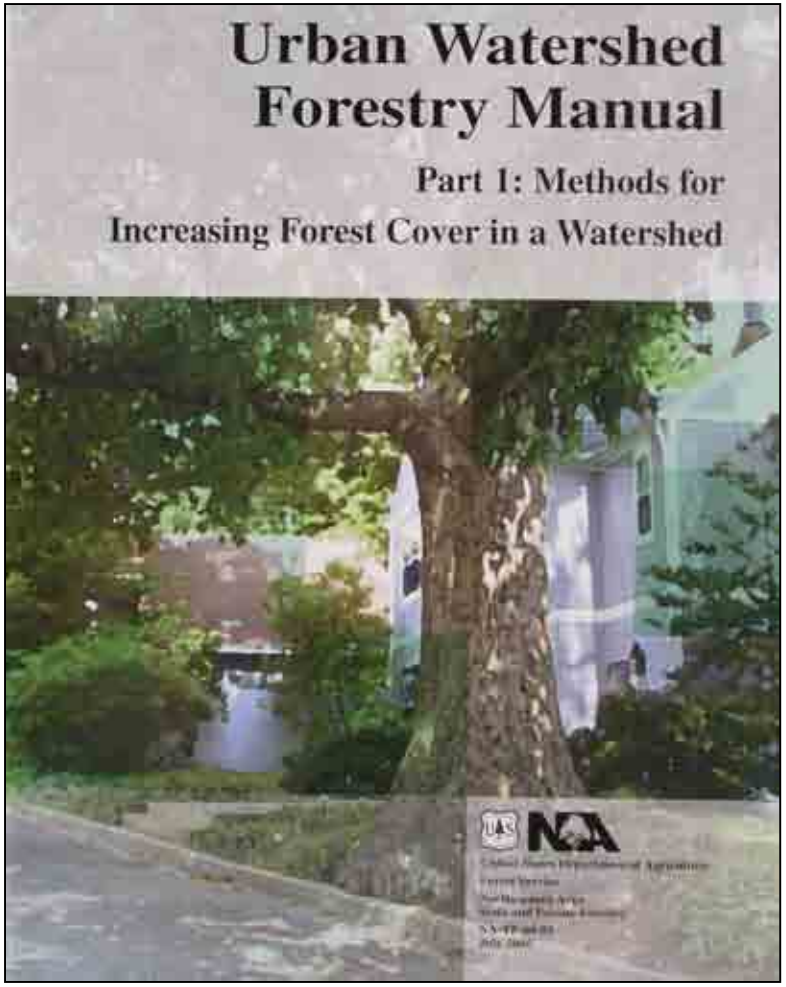
Gift of Trees | Volunteer Opportunities | Purchase Trees

TREE-MENDOUS MARYLAND IN ACTION

To view a video of a tree planting at Sandy Point State Park, please click button directly above.

http://www.dnr.state.md.us/forests/treemendous/

Urban Tree Planting Opportunities

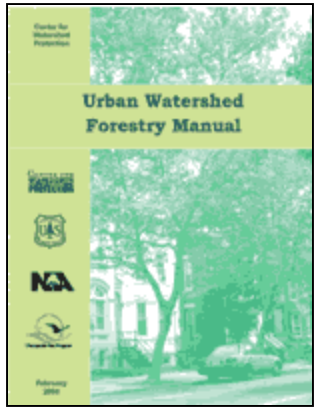


- Schools/other public sites
- Parks
- Roadsides/street trees
- Vacant lots
- Stream buffers
- Stormwater dry ponds
- Utility corridors
- Home lawns

Urban Watershed Forestry Manuals

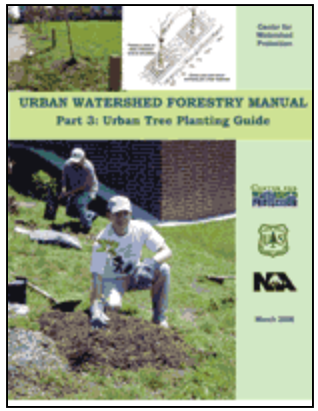
http://www.cwp.org/forestry/index.htm

CENTER FOR WATERSHED PROTECTION



Part 1: Methods for Increasing Forest Cover in a Watershed– This manual introduces the emerging topic of urban watershed forestry and presents new methods for systematically measuring watershed forest cover and techniques for maintaining or increasing this cover. The audience for this manual includes the local watershed planner or forester.

Part 2: Conserving and Planting Trees at Development Sites – This manual presents specific ways to enable developers, engineers or landscape architects to incorporate more trees into a development site. The proposed approach focuses on protecting existing trees, planting trees in stormwater treatment practices, and planting trees in other pervious areas of the development site. This manual introduces conceptual designs for stormwater treatment practices that utilize trees as part of the design (referred to as stormwater forestry practices).



Part 3: Urban Tree Planting Guide – This manual provides detailed guidance on urban tree planting that is applicable at both the development site and the watershed scale. Topics covered include: species selection, site preparation, tree planting and maintenance techniques, and special considerations for urban tree planting.

Street Trees

Portland Green Streets Program

http://www.portlandonline.com/bes/index.cfm

Portland Bureau of Environmental Services
City of Portland, Oregon

Home | Customer Services | What We Do | Publications | Projects

Sewer Construction | Other Projects | Stewardship Grant Program | Rain Projects | **Sustainable Stormwater**

POL → Government → Bureaus → BES → Projects → Sustainable Stormwater → **Green Streets**

Search

Environmental Services

Go

Pervious Pavement Projects
Pilot projects with porous paving materials

SW 12th Avenue Green Street
An award winning green street project on the PSU campus

Siskiyou Green Street
NE Siskiyou Street between 35th Place and 36th Avenue

Going Green on Division
New Seasons store project at SE 20th and Division

Stormwater Curb Extensions
Stormwater Curb Extension Fact Sheet

Green Street News
Spring 2006

Ankeny Green Street
SE Ankeny between 56th and 57th Avenues

Green Streets Cross-Bureau Team Report, Phase 1
March 2006 report

Green Streets

Urban stormwater runoff pollutes rivers and streams and contributes to combined sewer overflows (CSOs) to the Willamette River. Portland is building sustainable street projects around the City to reduce the negative impacts of stormwater runoff. Green Streets mimic natural conditions by managing runoff on the surface and at its source.

Landscaped Stormwater Curb Extensions

Stormwater curb extensions are landscaped with plants that help filter pollutants from stormwater runoff. They improve water quality, reduce stormwater flow, and they look good.

In streets where landscaped curb extensions aren't feasible, there are several sustainable stormwater management alternatives, including:

- Swales that infiltrate and store stormwater runoff
- Lowered planter strips
- Permeable surfaces, such as porous paver blocks and pervious asphalt or concrete
- Street trees

Want to see some Green Street projects? Click here to download the 2006 Portland Green Streets Tour Map.

Siskiyou stormwater curb extension

Infiltration Swales at SE 20th and Division Street

Portland Oregon - Green Streets Program

Green streets: Innovative solutions for stormwater and stream crossings

The Green streets handbook is now available. The handbook describes stormwater management strategies and includes detailed illustrations of "green" street designs that allow infiltration and limit stormwater runoff.

This is a new resource for designing environmentally sound streets that can help protect streams and wildlife habitat. The handbook describes basic stormwater management strategies and illustrates street designs with features such as street trees, landscaped swales and special paving materials that allow infiltration and limit runoff. The handbook also provides guidance on balancing the needs of protecting stream corridors and providing access across those streams.

What is a green street?

A green street can be defined as a street designed to:

- integrate a system of stormwater management within its right of way
- reduce the amount of water that is piped directly to streams and rivers
- be a visible component of a system of "green infrastructure" that is incorporated into the aesthetics of the community
- make the best use of the street tree canopy for stormwater interception as well as temperature mitigation and air quality improvement
- ensure the street has the least impact on its surroundings, particularly at locations where it crosses a stream or other sensitive area.

The design and construction of green streets is one component of a larger watershed approach to improving the region's water quality, and requires a more broad-based alliance for its planning, funding, maintenance and monitoring.

How to order handbooks

Handbooks are 11 inches wide by 8-1/2 inches tall in size, with soft covers and spiral bindings. Single copies of the handbooks are free (including shipping) to residents of the Metro region; there is a charge for multiple copies. Handbooks are for sale to residents outside the Metro region.

Buy online using the links below. To place your order by phone or e-mail, or if you have questions, call (503) 797-1839 or send e-mail to 2040@metro-region.org.

Creating livable streets: Street design guidelines for 2040
more information...
Price: $14.95

Green streets: Innovative solutions for stormwater and stream crossings
Price: $14.95

Trees for green streets: An illustrated guide
more information...
Price: $9.95
Add to cart

http://www.metro-region.org/article.cfm?ArticleID=262

How Many Trees Do YOU Need To Plant?

Climate Change Calculator

http://www.americanforests.org/resources/ccc/

Home | Plant Trees | Join Now! | News | Products & Publications | Campaigns | Resources | About Us

Climate Change Calculator

Global ReLeaf

Global ReLeaf
Global ReLeaf Projects
Global ReLeaf Grants
Climate Change Calculator
Global ReLeaf International
Urban Projects

Campaigns

Campaigns
Global ReLeaf
Measuring Ecological Services
Trees for Tigers
Wildfire ReLeaf

Home | Campaigns | Global ReLeaf | Climate Change Calculator

Calculator Instructions

Just 3 Easy Steps:
1. Fill in your estimates or numbers.
2. Click calculate.
3. Plant trees.

Enter exact figures into the left-hand columns or select one of the national averages in the second column. The CO2 generated by your use of fossil fuels is instantly tallied in the third column, while the number of trees it will take to remove that amount of CO^2 is given in the last column. If you make a mistake or want to delete a factor from your total, enter a zero in the left-most columns as needed until a zero appears in the corresponding CO2 column. If you wish to start over, hit Reload or Refresh on your browser. Once you have filled in all the appropriate boxes, hit "Calculate and Verify" at the bottom of the page.

Wondering how we arrived at these figures? Hyperlinks within the calculator will take you to our **Assumptions and Sources page**.

AF's Climate Change Calculator

Part 1: At Home

Emission Source	My Annual Household Usage	...Or Use U.S. Averages	CO2 Emissions	Trees Needed
Residential Power				
Electricity	kWh	...Or Select Average	lbs.	
Oil	Gallons	...Or Select Average	lbs.	
Natural Gas	Therms	...Or Select Average	lbs.	
Propane or Bottled Gas	Gallons	...Or Select Average	lbs.	
Kerosene	Gallons	...Or Select Average	lbs.	
Wood Stoves, Fireplaces		Cords	lbs.	
Waste				
Garbage	lbs.	...Or Select Average	lbs.	
Recycling	lbs.	...Or Select Average	lbs.	
Other				
Gas Lawn Equipment		Gallons	lbs.	

Part 2: On the Go

Emission Source	Enter Your Vehicle Data	...Or Use U.S. Averages	CO2 Emissions	Trees Needed
Vehicle 1				
Miles per Year	Miles			
Avg. Miles per Gallon	MPG			
Vehicle Has **Air Conditioner**	Yes	*Averages below are based on EPA estimates by type of vehicle.*		
Total Gas Used	Gallons	...Or Select Vehicle Type	lbs.	
Vehicle 2				
Miles per Year	Miles			
Avg. Miles per Gallon	MPG			
Vehicle Has **Air Conditioner**	Yes	*Averages below are based on EPA estimates by type of vehicle.*		
Total Gas Used	Gallons	...Or Select Vehicle Type	lbs.	
Vehicle 3				

Urban Tree Planting Issues

- species tolerance to urban conditions
- site history/soil compaction
- overhead and below ground utilities
- materials/installation cost
- ownership/permission
- site access
- watering & maintenance
- vandalism
- visibility (safety & commerce)
- nuisances (leaves, birds)

Citizen Expectations

Susan Colligan, who lives on Baylis Street in Baltimore, is frustrated with the bureaucratic runaround she has encountered in trying to get trees for her street.

PHOTOS BY JED KIRSCHBAUM [SUN PHOTOGRAPHER]

Annoyance grows in Canton as city's tree-planting plans remain unfulfilled

Roots of frustration

BY JILL ROSEN
[SUN REPORTER]

All Susan Colligan wants to know is what exactly it's going to take to get her street trees.

Obviously something more than filling out the application.

Obviously something more than winning the support of her block, her community association and her City Council representative.

The dozens of e-mails she's sent to everyone from Baltimore's arborist to Mayor Martin O'Malley — obviously those aren't working either.

Residents of Baylis Street are rallying for more trees. "The city is making it ... impossible," one resident says.

In a city that's been boasting about doubling the size of its tree canopy over the next 30 years, Colligan thought getting a few maples or elms for the 900 block of S. Baylis St. would be no problem.

But after months of mixed messages from city officials, her street remains bare.

"We know there's a green canopy goal. We know about 'Believe.' Why should it be so hard to get these trees planted?" she asks. "It's an election year. We expected more than lip service and obstacles."

Despite Baltimore's big tree aspirations, homeowners who want trees on their streets are being told that they have to pay for the most expensive part of the installation — cutting the sidewalk.

This is happening even though, in some cases, the city's Transportation Department is apparently willing to do the work for free.

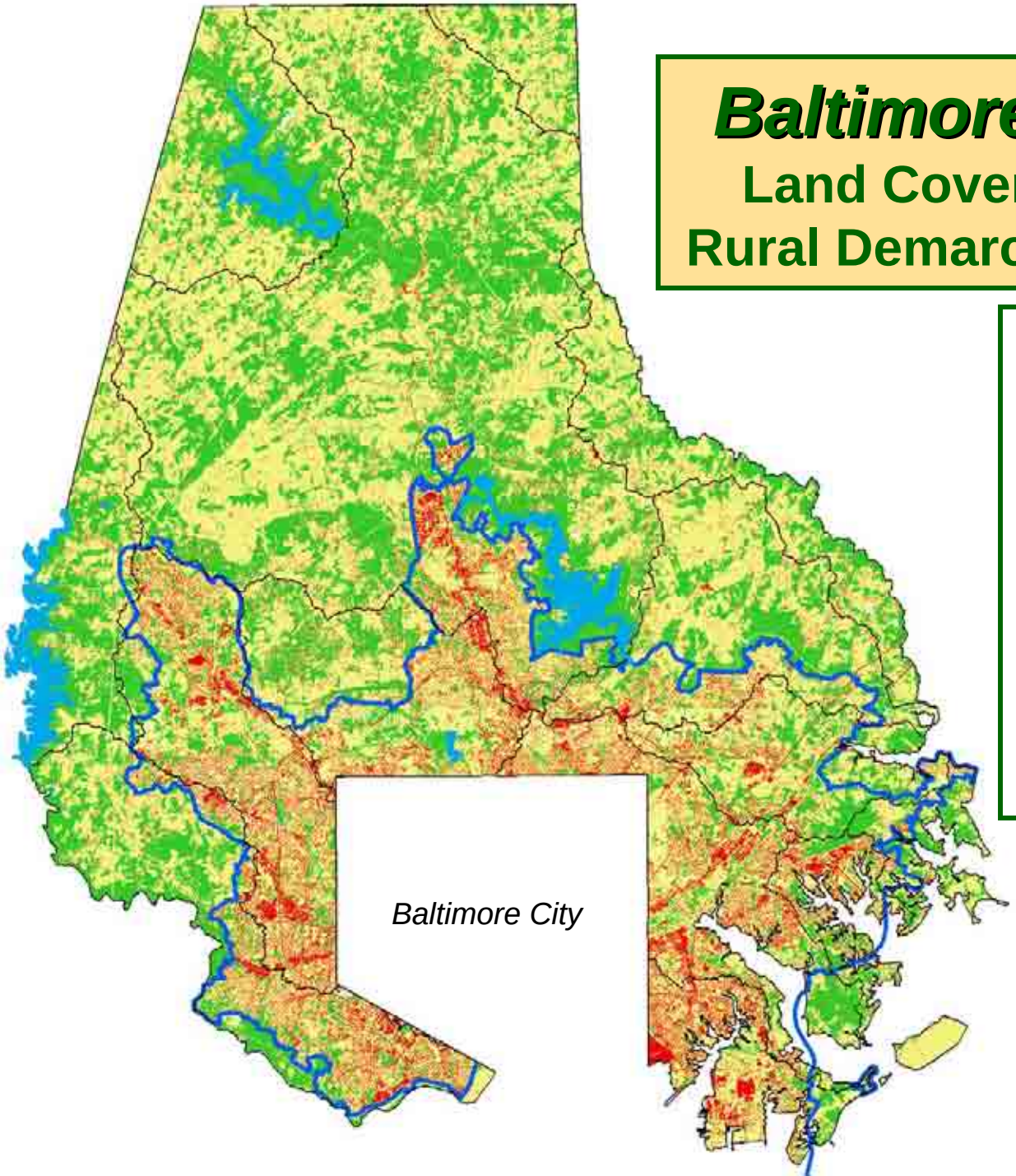
"It is ab-so-lute-ly ridiculous," says City Councilman James B. Kraft, enunciating each syllable with annoyance because his office has spent weeks trying to help Colligan and her Canton neighbors. "There is no logic to this at all. None.

"We have this entire commitment for this quote-unquote tree canopy thing, which was announced with great fanfare,

[Please see TREES, 8B]

Baltimore County, MD

Land Cover and the Urban-Rural Demarcation Line (URDL)

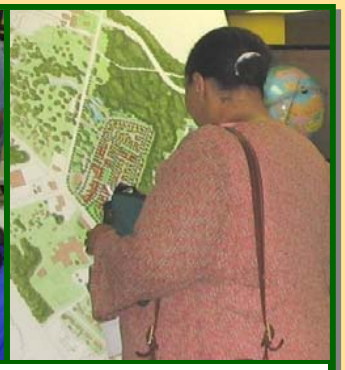


Growth Management Results

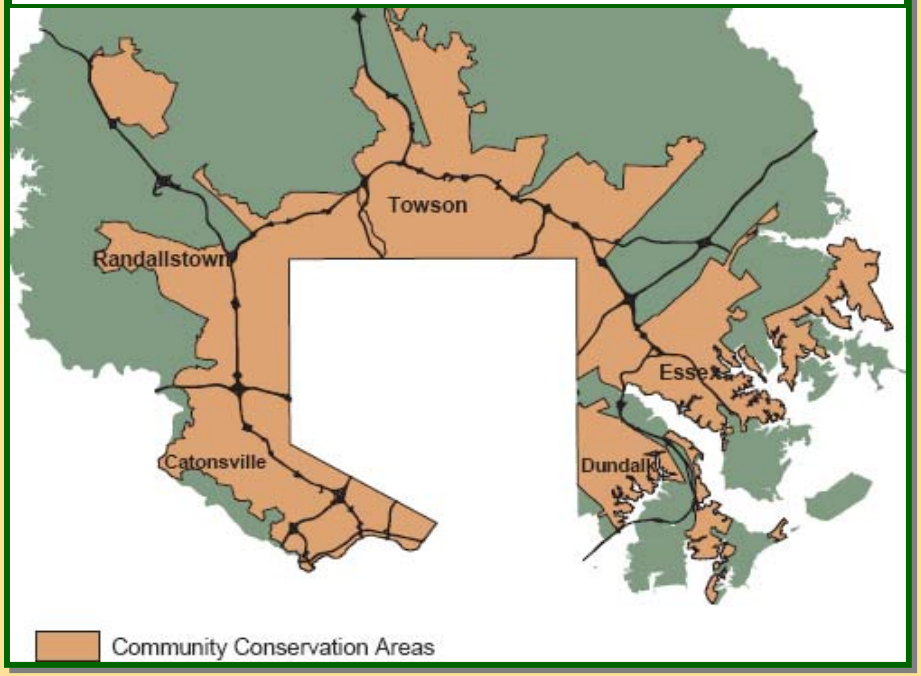
90% of Baltimore County's Year 2000 population lived inside the URDL, on one-third of the land

Legend

- Water and Wetlands
- Impervious
- Forest
- Fields and Lawns

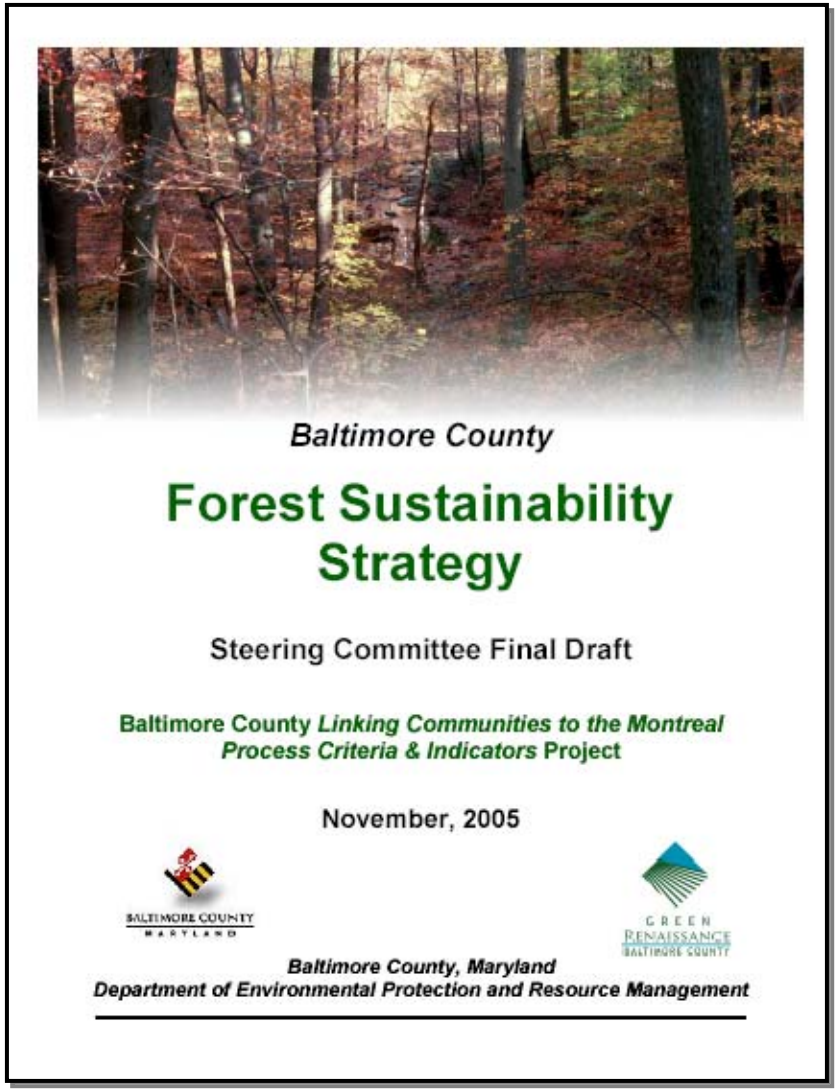


Renaissance Redevelopment



GREEN RENAISSANCE
BALTIMORE COUNTY

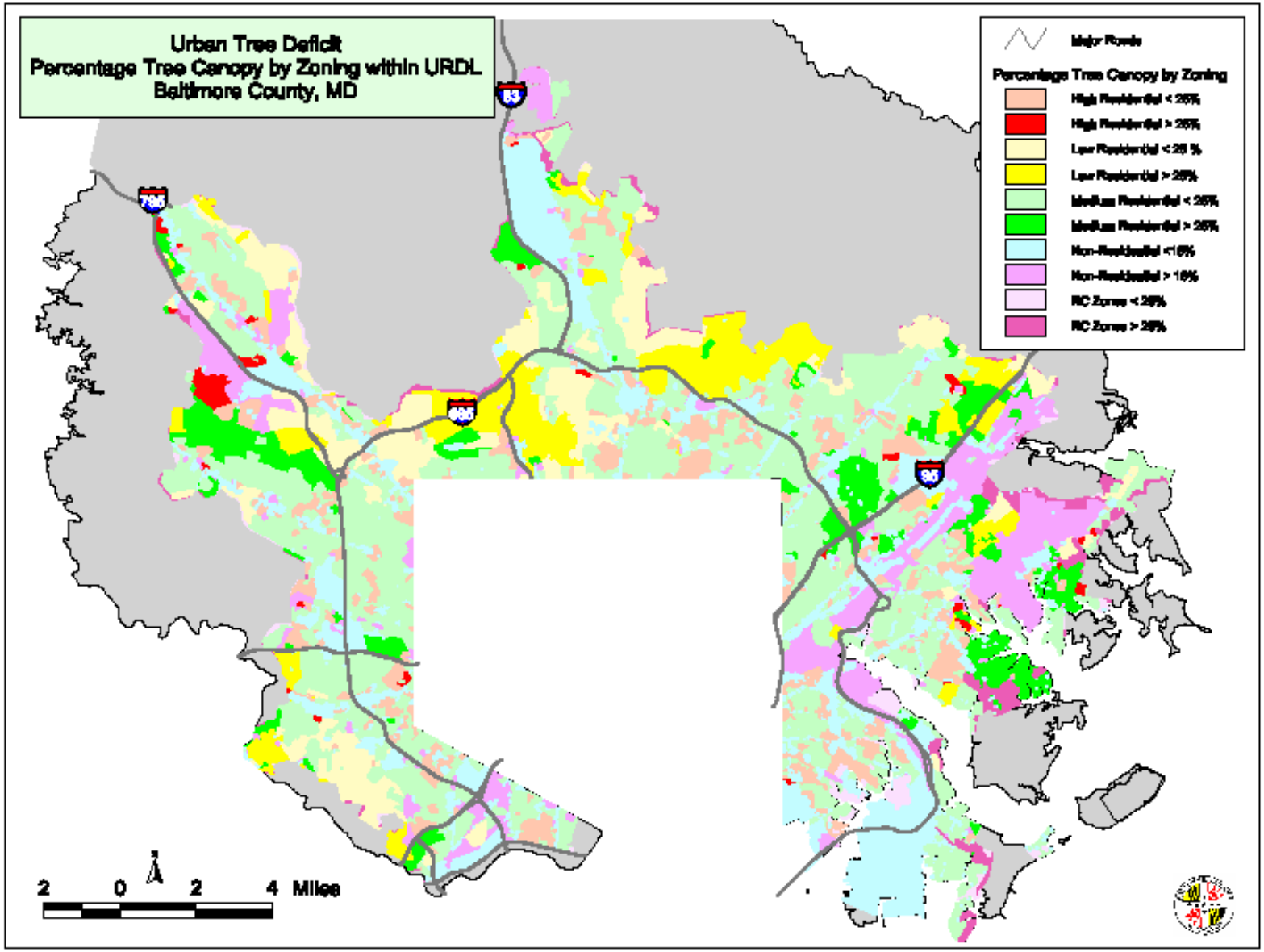
- **Forest Sustainability Strategy**
- **Land Preservation Strategy**
- **Water Quality & Watershed Restoration Program**



DRAFT
Forest Sustainability Strategy

- **10 Guiding Principles**
- **15 Ecological & Economic Sustainability Issues**
- **42 Proposed Goals**
- **101 Recommended Actions**
- **85 Recommended Assessment and Data Analyses**

http://www.co.ba.md.us/agencies/environment/workgroup
User name: deprm Password: environment



At <20% canopy, urban area tree deficit about 50%

Residential Lawns:

Low-hanging Fruit for Increasing Urban Tree Canopy

newer development

older development

Growing Home Campaign

The Greening of Baltimore County Begins in Your Own Yard

- ***Concept*** developed in 2002 to effect behavior change using market incentives (Bay Program theme)
- ***Approach:*** educate homeowners about benefits of planting trees in their yards and provide a coupon off price of $25+ tree
- ***2006 pilot project*** funded by a grant from USDA Forest Service through Chesapeake Bay Small Watershed grant (NFWF)

Growing Home Campaign

The Greening of Baltimore County Begins in Your Own Yard

Coupon Incentive:

- offered point-of-purchase coupon for $10 toward the purchase of qualifying trees costing >$25
- natives and selected urban-adapted trees qualified
- garden centers and nurseries got $5 back for each coupon sent to the County
- County captured coupon data and GIS'ed planting locations
- goal for Spring 2006 was 10,000 new urban trees

Growing Home Campaign Partners

- USDA Forest Service (funded through NFWF)
- 27 nursery & garden center retailers
- MD Nursery and Landscape Association
- Baltimore Gas & Electric
- Weyerhaeuser Company Foundation

Businesses for the Bay!

Campaign kickoff event at Garlands Nursery Center April 3, 2006

Growing Home Campaign

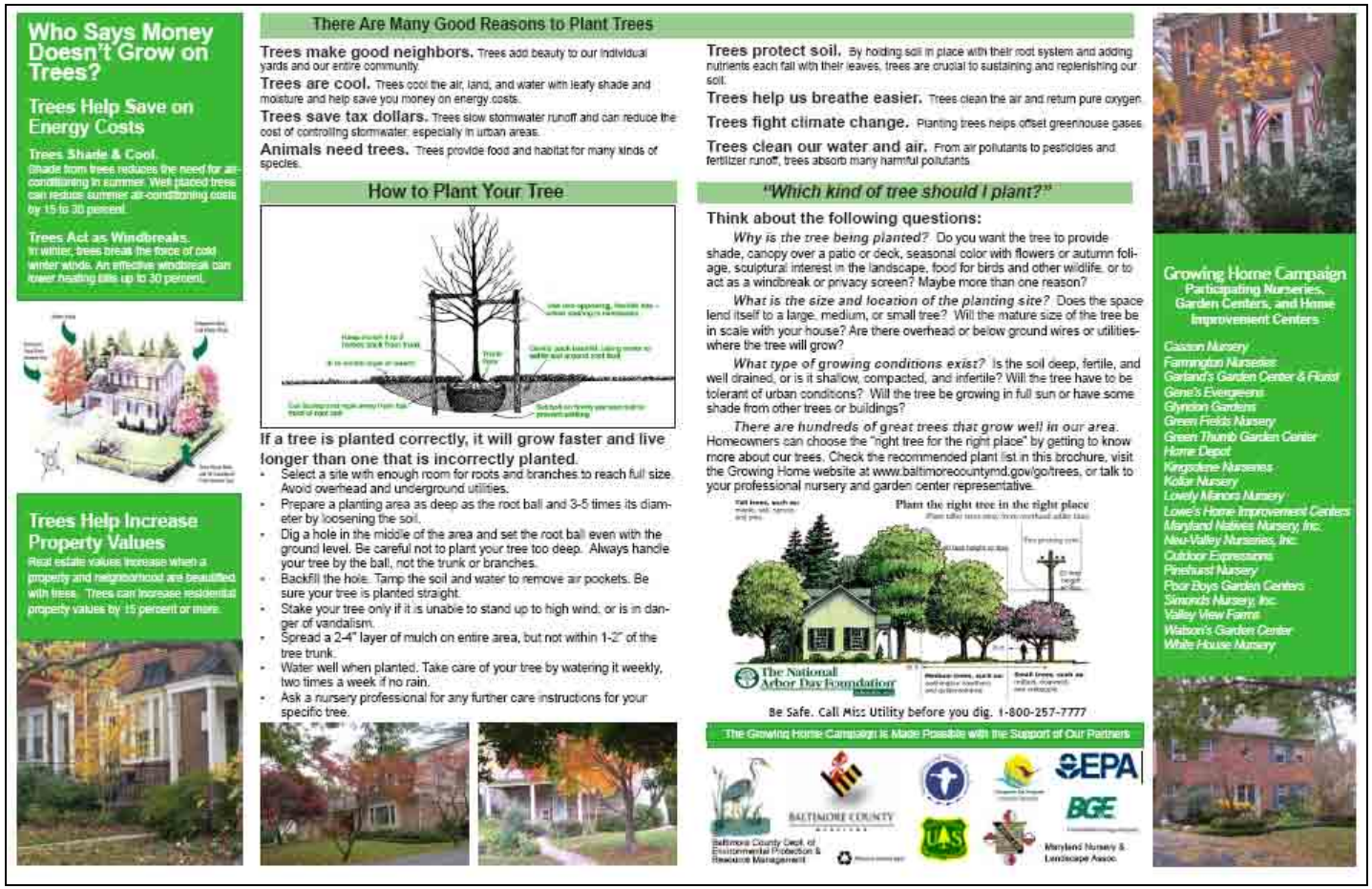
Promotional materials:

- 11,000 brochures with coupons
- 500 each of 2 posters

Distribution:

- 16 County libraries
- 17 County senior centers
- 16 Recreation & Parks centers
- 181 County schools
- 27 nursery retailers
- community festivals
- environmental organizations
- National Aquarium, Irvine Nature Center

The Growing Home Campaign Brochure



Who Says Money Doesn't Grow on Trees?

Trees Help Save on Energy Costs

Trees Shade & Cool. Shade from trees reduces the need for air-conditioning in summer. Well placed trees can reduce summer air-conditioning costs by 15 to 30 percent.

Trees Act as Windbreaks. In winter, trees break the force of cold winter winds. An effective windbreak can lower heating bills up to 30 percent.

Trees Help Increase Property Values

Real estate values increase when a property and neighborhood are beautified with trees. Trees can increase residential property values by 15 percent or more.

There Are Many Good Reasons to Plant Trees

Trees make good neighbors. Trees add beauty to our individual yards and our entire community.

Trees are cool. Trees cool the air, land, and water with leafy shade and moisture and help save you money on energy costs.

Trees save tax dollars. Trees slow stormwater runoff and can reduce the cost of controlling stormwater, especially in urban areas.

Animals need trees. Trees provide food and habitat for many kinds of species.

Trees protect soil. By holding soil in place with their root system and adding nutrients each fall with their leaves, trees are crucial to sustaining and replenishing our soil.

Trees help us breathe easier. Trees clean the air and return pure oxygen.

Trees fight climate change. Planting trees helps offset greenhouse gases.

Trees clean our water and air. From air pollutants to pesticides and fertilizer runoff, trees absorb many harmful pollutants.

How to Plant Your Tree

If a tree is planted correctly, it will grow faster and live longer than one that is incorrectly planted.

- Select a site with enough room for roots and branches to reach full size. Avoid overhead and underground utilities.
- Prepare a planting area as deep as the root ball and 3-5 times its diameter by loosening the soil.
- Dig a hole in the middle of the area and set the root ball even with the ground level. Be careful not to plant your tree too deep. Always handle your tree by the ball, not the trunk or branches.
- Backfill the hole. Tamp the soil and water to remove air pockets. Be sure your tree is planted straight.
- Stake your tree only if it is unable to stand up to high wind, or is in danger of vandalism.
- Spread a 2-4" layer of mulch on entire area, but not within 1-2" of the tree trunk.
- Water well when planted. Take care of your tree by watering it weekly, two times a week if no rain.
- Ask a nursery professional for any further care instructions for your specific tree.

"Which kind of tree should I plant?"

Think about the following questions:

Why is the tree being planted? Do you want the tree to provide shade, canopy over a patio or deck, seasonal color with flowers or autumn foliage, sculptural interest in the landscape, food for birds and other wildlife, or to act as a windbreak or privacy screen? Maybe more than one reason?

What is the size and location of the planting site? Does the space lend itself to a large, medium, or small tree? Will the mature size of the tree be in scale with your house? Are there overhead or below ground wires or utilities-where the tree will grow?

What type of growing conditions exist? Is the soil deep, fertile, and well drained, or is it shallow, compacted, and infertile? Will the tree have to be tolerant of urban conditions? Will the tree be growing in full sun or have some shade from other trees or buildings?

There are hundreds of great trees that grow well in our area. Homeowners can choose the "right tree for the right place" by getting to know more about our trees. Check the recommended plant list in this brochure, visit the Growing Home website at www.baltimorecountymd.gov/go/trees, or talk to your professional nursery and garden center representative.

Plant the right tree in the right place

The National Arbor Day Foundation

Be Safe. Call Miss Utility before you dig. 1-800-257-7777

The Growing Home Campaign is Made Possible with the Support of Our Partners

Baltimore County Dept. of Environmental Protection & Resource Management

Baltimore County

EPA

BGE

Maryland Nursery & Landscape Assoc.

Growing Home Campaign

Participating Nurseries, Garden Centers, and Home Improvement Centers

- Cassom Nursery
- Farrington Nurseries
- Garland's Garden Center & Florist
- Gene's Evergreens
- Glyndon Gardens
- Green Fields Nursery
- Green Thumb Garden Center
- Home Depot
- Kingsdale Nurseries
- Kollar Nursery
- Lovely Manors Nursery
- Lowe's Home Improvement Centers
- Maryland Natives Nursery, Inc.
- New-Valley Nurseries, Inc.
- Outdoor Expressions
- Pinehurst Nursery
- Poor Boys Garden Centers
- Simonds Nursery, Inc.
- Valley View Farms
- Watson's Garden Center
- White House Nursery

Summary information on: benefits of planting trees, how to plant a tree, species selection, participating retailers, and recommended tree species

Growing Home Campaign

$10 Coupon

The Growing Home Campaign Coupon

The coupon is worth $10 toward the purchase of one qualifying tree with a retail value of at least $25.
Coupon information must be completed for coupon to be valid.

Name of Purchaser: _____

Street Address (where tree will be planted): _____

Community: _____

Name of Tree: _____

Tree Purchased from: _____

Date Purchased: _____

The Growing Home Coupon
Will Be Available Again March 2007
Available at Baltimore County Libraries, Senior Centers, Recreation & Parks Facilities
and online at www.baltimorecountymd.gov/trees

Terms of Coupon Redemption: The coupon is worth $10 of the purchase of one tree that qualifies under Baltimore County's Growing Home Campaign from participating nursery and garden center retailer. The tree must have a retail value of at least $25. The Purchaser will be billed the original price at the time of sale. There is no cash redemption. One coupon can be filled out for each tree purchased. If a store purchasing multiple trees fills out one coupon for multiple trees, the store will be reimbursed only for one tree. Coupons must be completed in full and the tree must be planted in Baltimore County. Coupons must be mailed to the address on the back of the coupon. Coupons will be honored for up to a total of 10,000 trees. Reimbursement offer begins March 31, 2006 and expires June 30, 2006.

Recommended Trees

Visit www.baltimorecountymd.gov/go/trees
For more information about trees and a complete list of trees that qualify for reimbursement using the Growing Home Coupon.

Common Name	Botanical Name	Native/ Non-Native	Mature Height
Small Ornamental Trees			
Paperbark Maple	*Acer griseum*	Non-Native	Small 20 - 60'
Japanese Maple	*Acer palmatum*	Non-Native	Small 15 - 25'
Shadblow Serviceberry	*Amelanchier canadensis*	Native	Small 10 - 20'
Ironwood/Hornbeam	*Carpinus caroliniana*	Native	Small 20 - 30'
Eastern Redbud	*Cercis canadensis*	Native	Small 20 - 30'
Fringe Tree	*Chionanthus virginicus*	Native	Small 20 - 30'
Dogwood	*Cornus florida*	Native	Small 20 - 30'
Kousa Dogwood	*Cornus kousa*	Non-Native	Small 20 - 30'
American Smoketree	*Cotinus obovatus*	Native	Small 20 - 30'
Winter King Hawthorn	*Crataegus viridis 'Winter King'*	Native	Small 20 - 25'
Carolina Silverbell	*Halesia carolina*	Native	Small 25 - 40'
Common Witchhazel	*Hamamelis virginiana*	Native	Small 20 - 30'
Crape Myrtle	*Lagerstroemia indica*	Non-Native	Small 15 - 25'
Sweetbay Magnolia	*Magnolia virginiana*	Native	Small 10 - 20'
Saucer Magnolia	*Magnolia x soulangiana*	Non-Native	Small 20 - 30'
Flowering Crabapple	*Malus coronaria*	Native	Small 15 - 25'
Bourwood	*Oxydendron arboreum*	Native	Small 25 - 30'
Kwanzan Cherry	*Prunus serrulata*	Non-Native	Small 15 - 30'
Weeping Cherry	*Prunus subhirtella 'Pendula'*	Non-Native	Small 15 - 30'
Medium to Large Trees for Shade			
Red Maple	*Acer rubrum*	Native	Large 40 - 60'
Sugar Maple	*Acer saccharum*	Native	Large 60 - 75'
Heritage River Birch	*Betula nigra 'Heritage'*	Native - cultivar	Large 40 - 70'
European Hornbeam	*Carpinus betulus & cvs.*	Non-Native	Medium 40 - 60'
American Yellowwood	*Cladrastis kentukea (lutea)*	Native	Medium 30 - 50'
American Beech	*Fagus grandifolia*	Native	Large 50 - 70'
Green Ash	*Fraxinus pennsylvanica*	Native	Large 50 - 80'
Ginkgo	*Ginkgo biloba*	Non-Native	Large 50 - 80'
Thornless Honeylocust	*Gleditsia triacanthos inermis*	Native	Large 30 - 70'
Goldenraintree	*Koelreuteria paniculata*	Non-Native	Medium 30 - 40'
Sweet Gum	*Liquidambar styraciflua*	Native	Large 50 - 75'
Black Gum (Tupelo)	*Nyssa sylvatica*	Native	Medium 30 - 75'
Pin Oak	*Quercus palustris*	Native	Large 50 - 80'
Willow Oak	*Quercus phellos*	Native	Large 60 - 100'
Northern Red Oak	*Quercus rubra*	Native	Large 60 - 75'
Scholartree	*Sophora japonica*	Non-Native	Medium 40 - 50'
American Linden	*Tilia americana*	Native	Large 60 - 80'
Little Leaf Linden	*Tilia cordata*	Non-Native	Large 60 - 70'
Liberty Elm	*Ulmus americana-cvs.*	Native	Large 60 - 80'
Japanese Zelkova	*Zelkova serrata*	Non-Native	Large 50 - 80'
Evergreen Trees for Screening and Windbreaks			
White Fir	*Abies concolor*	Native	Medium 30 - 50'
Atlantic White Cedar	*Chamaecyparis thyoides*	Native	Medium 40 - 50'
American Holly	*Ilex opaca*	Native	Small 20 - 35'
Southern Magnolia	*Magnolia grandiflora*	Native	Large 60 - 80'
Norway Spruce	*Picea abies*	Non-Native	Medium 40 - 60'
White Spruce	*Picea glauca*	Native	Medium 40 - 60'
Colorado Spruce	*Picea pungens*	Native	Medium 30 - 75'
Austrian Pine	*Pinus nigra*	Non-Native	Large 50 - 80'
Japanese White Pine	*Pinus parviflora*	Non-Native	Medium 25 - 50'
White Pine	*Pinus strobus*	Native	Large 50 - 80'
Hemlock	*Tsuga canadensis*	Native	Large 50 - 80'
Carolina Hemlock	*Tsuga caroliniana*	Native	Medium 40 - 60'

NOTE: Trees that do not qualify for Growing Home Coupon include all trees considered to be invasive species including Norway Maples, Bradford Pears, Mimosa. Fruit trees and plants that are considered bad shrubs such as Winterberry and Bittersweet do not qualify.

Marketing Strategy:

- 5 television promotions (WJZ, WBAL, Fox 45 -2x, Comcast)
- 1 radio promotion (WCBM)
- 5 newspaper articles; County *Senior Digest*
- *Bay Journal* feature
- County web site (5,600 visits and 5,500 downloads of coupons)
- displays at 5 watershed festivals and garden shows
- 4 e-mail newsletters to 1,500 addresses on environmental and watershed distribution lists
- E-mail to 7,000 County employees

Growing Home Campaign

The Greening of Baltimore County Begins in Your Own Yard

Economic Impact:

$	2,710	County coupon match*
$	13,290	Retailer coupon match
$	72,000	Citizen after-discount cost
$	88,000	Total Investment
$	32,000	Landowner labor for planting & initial tree care
$	**120,000**	**Total Impact**

*** 542 of the coupons were returned to the County for the 1,600 trees sold**

Spring 2006 Pilot Results:

- 1,600 trees purchased
- Average tree purchased was $55 not including incidental purchases
- County's $5 leveraged $50 in private sector funding, not including cost of planting
- Retailers generally found implementation favorable and want to continue next year
- 2007 Small Watershed Grant secured