

# Green Design

Presentation to the Board of  
County Commissioners

August 5, 2008

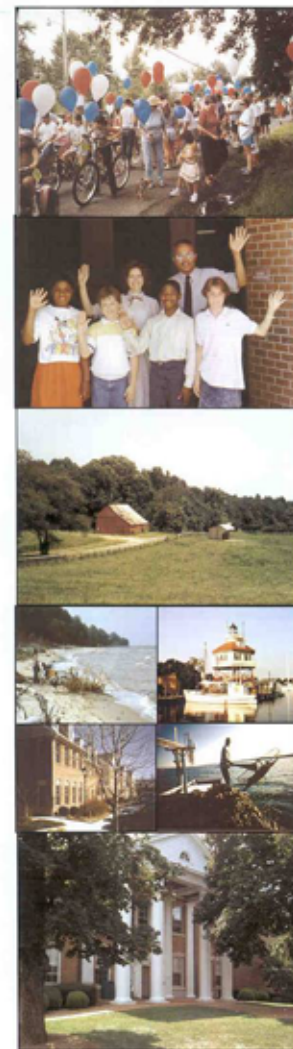
# The Energy Section of the Plan begins on page 14



## 2004 Comprehensive Plan Calvert County, Maryland

Approved and Adopted  
December 2004

### 2004 COMPREHENSIVE PLAN A Review of the Comprehensive Plan Visions and Actions



**Vision: "Our communities are safe. We care for the well-being of each other."**

**Threats to the Vision:**

- Drug and alcohol abuse
- Inadequate parental/adult supervision
- Lack of community ties
- Rapid population growth
- Lack of housing choices

**Action Highlights:**

- Encourage community policing and other neighborhood crime prevention programs
- Promote after school programs and consider use of schools as community centers
- Continue use of the housing trust fund
- Encourage a variety of housing types for the local work force
- Draft "community report cards"

**Vision: "Our children are well prepared for the future. We are healthy in body, mind, and spirit."**

**Threats to the Vision:**

- Overcrowded schools
- Inadequate funding for education
- Inadequate coordination of social services
- Sedentary life styles and stress
- Lack of recreation opportunities

**Action Highlights:**

- Locate and design schools to accommodate community needs
- Consider the creation and use of a "211" telephone system for health and social services
- Develop a full range of recreational sites and facilities

**Vision: "We are stewards of our cultural heritage."**

**Threats to the Vision:**

- Development that destroys historic sites and structures
- Neglect of historic sites and structures
- Failure to learn from and about our past
- Corporate designs and logos that diminish the County's uniqueness

**Action Highlights:**

- Promote adaptive reuse of historic structures and landscapes
- Document, teach, and celebrate County heritage
- Promote conservation of heritage resources
- Incorporate heritage resources in development plans
- Implement the Southern Maryland Heritage Area Management Plan

**Vision: "We are building a strong local economy based on renewable resources, high technology, retirement, recreation and tourism."**

**Threats to the Vision:**

- Lack of infrastructure in Town Centers
- Traffic congestion
- Loss of farmland, forest, and fisheries
- Imbalanced local economy
- Lack of high speed internet service for all employment centers

**Action Highlights:**

- Maintain a five-year strategic plan for economic development
- Provide infrastructure in Town Centers
- Create an environment favorable to retirees
- Evaluate and remove unnecessary barriers to business
- Develop a cultural arts center
- Promote more local jobs and businesses

**Vision: "Our Government is efficient, open, and responsive to citizen needs and concerns."**

**Threats to the Vision:**

- Increasing debt burden due to rapid population growth
- The transfer of fiscal responsibilities from federal and state government to the local level
- Lack of diversified tax base

**Action Highlights:**

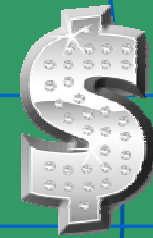
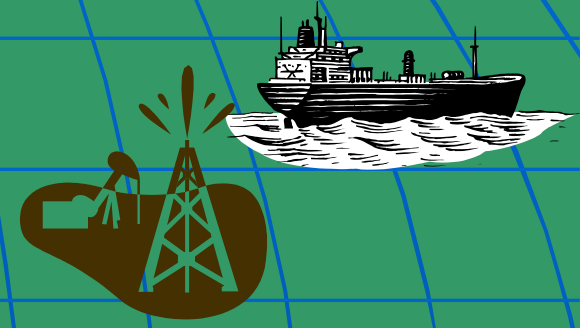
- Promote multiple uses of public buildings
- Maintain an unreserved fund balance to support our bond rating
- Evaluate and improve rules and regulations
- Maintain a rainy day fund to meet unexpected needs and changes in revenue
- Concentrate development to promote efficient service delivery

# Presentation Outline

1. Why Green Design?
2. Examples of Green Design
3. Components of Green Design
4. Evaluating Green
5. Green Standards in Maryland
6. Requested actions

# 1. Why Green Design?

- Energy consumption is a national concern
- Green development can save money
- Green development is needed to protect the Bay



# National Association of Counties

NATIONAL ASSOCIATION OF COUNTIES



NACO HOME

SITEMAP

LINKS

CONTACT US



Search NACO

GO



PRINT THIS PAGE



EMAIL A FRIEND



EMAIL UPDATES

Home

## Green Government Initiative

Launched in 2007, the NACO Green Government Initiative provides comprehensive resources for local governments on all things green, including energy, air quality, transportation, water quality, land use, purchasing and recycling. NACO serves as a catalyst between local governments and the private sector to facilitate green government best practices, products and policies that result in financial and environmental savings.

Through the Initiative, NACO will:

- Increase education and outreach on all things green;
- Help educate counties and help them educate the public;
- Promote environmentally-preferable purchasing;
- Facilitate an open dialogue with the private sector;
- Reverse misinformed opinions that green techniques are too costly or of lesser quality; and
- Expand to schools and cities in the second and third years of the program.

For more information contact Kelly Zonderwyk at [kzonderwyk@naco.org](mailto:kzonderwyk@naco.org) or 202.942.4224.

[NACO Green Government Initiative Overview](#)

[Green Government Database](#) - A searchable database of county green practices, programs, policies and plans



**Green Government**

**Energy and Green Buildings**

**Transportation**

**Land Use**

**Climate Protection and Air Quality**

**Water Quality**

**Purchasing and Recycling**

**Sponsors and Advisory Board**

**Green Government Database**

**Newsletters**

**Webinars and Upcoming Events**



PRINT THIS PAGE



EMAIL A FRIEND



EMAIL UPDATES

Home → Energy and Green Buildings

## Energy and Green Buildings

As good stewards of the environment, counties assume a significant role in spurring the movement toward green building, energy efficiency and renewable energy. More counties are beginning to think beyond just the energy needs of a building, and are approaching building design in a more holistic and integrated way – commonly known as “green building.” Exploring such options in the construction of new buildings and renovation of existing buildings can help counties save taxpayer dollars, help the environment, and lead by example. Counties can also assist in the research and development of renewable energy to help the country move towards energy independence.

## NACo Programs

[County ENERGY STAR Change a Light Campaign](#)

[ENERGY STAR Challenge](#)

## Publications and Presentations

[Blue Earth County courthouse 'goes green'](#)

Blue Earth County courthouse 'goes green', earns coveted ENERGY STAR rating.

[Counties and Residential Green Building Standards](#)

This fact sheet provides a basic overview of green standards and certifications for residential buildings being implemented at a national and local level, and details resources available to help counties achieve those standards and certifications.

[Energy Efficient Lighting in County Facilities](#)



# Green Government

[Energy and Green Buildings](#)

[Transportation](#)

[Land Use](#)

[Climate Protection and Air Quality](#)

[Water Quality](#)

[Purchasing and Recycling](#)

[Sponsors and Advisory Board](#)

[Green Government Database](#)

[Newsletters](#)

[Webinars and Upcoming Events](#)

## 2. Examples of Green Design



**Aldo Leopold Center, the 'greenest building in America'**

# Adam Joseph Lewis Center in Oberlin College, Ohio



- Off the power grid.
- Treats its own waste water and generates power through a combination of southern orientation, rooftop photovoltaics, geothermal pumps and energy conservation.
- Also produces food for students.

# Net-zero-energy Habitat for Humanity Home in Colorado



<http://www.wapa.gov/es/pubs/esb/2005/oct/oct052.htm>

# Greensburg, Kansas after Tornado



Residents now view it as a chance to turn tragedy into triumph, creating the first LEED Platinum energy efficient community.

# Greensburg's New Comprehensive Plan



All city buildings will be LEED Platinum and home owners encouraged to achieve 40% energy savings

## 3. Components of Green Design

- Energy Efficiency
- Stormwater management
- Site Location and design

# Energy Efficiency

- Buildings utilize 48% of all energy in America
- By 2030, 1/2 of all buildings will have been built after the year 2000
- America has a real chance to reduce its energy consumption caused by buildings
- There are already 92 green building programs in the country in cities with over 50,000 population

## Green Roofs

In a recent study at MSU, a green roof intercepted 70% of the rain that fell on it over a 14 month period.  
Green Roof Stormwater Retention;  
*Journal of Environmental Quality, May 2005.*



Sadik Artunc, Professor and Head of the Mississippi State University Department of Landscape Architecture.

## Swales and Basins



Sadik Artunc, Professor and Head of the Mississippi State University Department of Landscape Architecture.

## Swales and Basins



Sadik Artunc, Professor and Head of the Mississippi State University Department of Landscape Architecture.

and Basins



Sadik Artunc, Professor and Head of the Mississippi State University Department of Landscape Architecture



Sadik Artunc, Professor and Head of the Mississippi State University Department of Landscape Architecture.

# Site Location and Design

- Calvert County's land use approach of directing growth to town centers and creating large protected farm and forestry areas can reduce runoff by about 40%.
- In the town centers, with good design, we can reduce vehicle trips.

## 4. Evaluating Green

- U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED)
- Green Globe
- National Association of Home Builders
- Energy Star

# LEED

First LEED Building in Southern Maryland



www.townoflaplata.org



## U.S. GREEN BUILDING COUNCIL

[LEED](#) [Education](#) [Resources](#) [News & Events](#)

[Committees](#) [Chapters](#) [Membership](#)

[Home](#) / [LEED](#) /

### [LEED Rating Systems](#)

The Leadership in Energy and Environmental Design (LEED) Green Building Rating System™ is a third-party certification program and the nationally accepted benchmark for the design, construction and operation of high performance green buildings. LEED provides building owners and operators with the tools they need to have an immediate and measureable impact on their buildings' performance.

### [Project Certification](#)

LEED certification provides independent, third-party verification that a building project is environmentally responsible, profitable and a healthy place to live and work.

### [Professional Accreditation](#)

LEED Accredited Professionals are professionals who have demonstrated a thorough understanding of green building practices and principles and familiarity with LEED requirements, resources and processes.

### [LEED Brochure](#)

Introduction to the LEED Rating System for distribution to clients. [more...](#)

**\$0.68 each**  
**(Members \$0.59)**

[BUY NOW](#)

### [LEED certified buildings outperform their non-certified counterparts](#)

A new study shows occupant satisfaction and productivity are higher in LEED certified buildings than in conventional buildings.

### [New York Times: 'Green Buildings Don't Have to Be Niche'](#)

Just about every month, a new LEED certified building opens in the country, boasting the latest in green building technology. To many people, green buildings are a trend, especially when conventional buildings account for more than 90 percent of the new construction.

 Internet

# Green Globe

Green Globes

Green Globe accepts  
lumber from local  
tree farms

PRODUCT SELECTION

ABOUT

CASE STUDIES

TOUR

CONTACT US

## The Practical Building Rating System

**The Green Globes system** is a revolutionary building environmental design and management tool. It delivers an online assessment protocol, rating system and guidance for green building design, operation and management. It is interactive, flexible and affordable, and provides market recognition of a building's environmental attributes through third-party verification.



### Select an assessment tool:

To begin using Green Globes, select an assessment tool from the list below

Design of New Buildings or Significant Renovation

# National Association of Home Builders (NAHB) Guidelines

**NAHB**<sup>®</sup>  
NATIONAL ASSOCIATION  
OF HOME BUILDERS

LOG IN   SEARCH  [Advanced Sea](#)

ABOUT | JOIN | NEWSROOM | MEETINGS & EVENTS | EDUCATION | BUILDERS' SHOW |  
RESOURCES | NAHB® COMMUNITY | **PUBLICATIONS** | ONLINE SUBSCRIPTIONS | SHOP NAHB® | CONT

Home > Publications > Search Publications > NAHB's Model Green Home Building Guidelines

## NAHB'S MODEL GREEN HOME BUILDING GUIDELINES

**Looking to Go Green?**  
COMMERCIAL BUILDERS

**PUBLICATIONS**

- View All Publications
- Search Publications**
- Advertising Opportunities
- BuilderBooks.com:  
NAHB's Official Bookstore
- Eye on the Economy E-  
Newsletters
- Housing Economics
- NAHB E-Newsletters
- NBN Online: NAHB's  
Weekly E-newspaper
- NAHB Magazines
- NAHB Reports

**NAHB's Model Green Home Building Guidelines**  
Author: NAHB  
Date: 2005  
Publication Type: PDF  
**Fee: Free**  
**DOWNLOAD NOW**

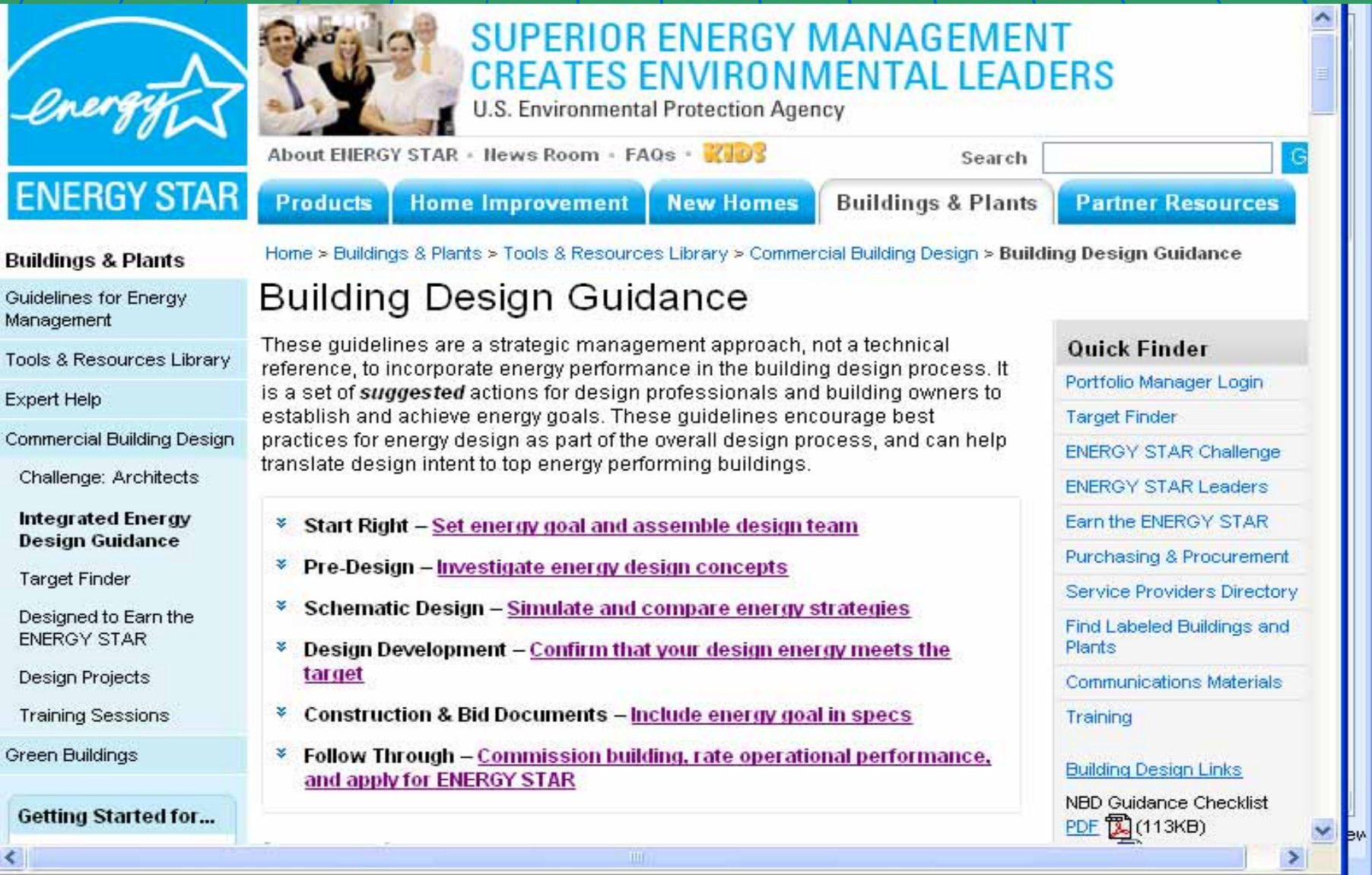
Contact Information: Diane Webb  
1201 15th Street, NW, Washington, DC 20005  
Phone: 800-368-5242 x8290  
E-mail: [dwebb@nahb.com](mailto:dwebb@nahb.com)

Please note: This is a large file, and may take several minutes to download.

(Link to information on the development of the ICC/NAHB [National Green Building Standard](#))

NAHB's Voluntary *Model Green Home Building Guidelines*

# Energy Star



The screenshot displays the Energy Star website interface. At the top left is the Energy Star logo. To its right is a banner for 'SUPERIOR ENERGY MANAGEMENT CREATES ENVIRONMENTAL LEADERS' by the U.S. Environmental Protection Agency, featuring a photo of four professionals. Below the banner are navigation links: 'About ENERGY STAR', 'News Room', 'FAQs', and 'KIDS'. A search bar is located on the right. A horizontal menu contains 'Products', 'Home Improvement', 'New Homes', 'Buildings & Plants', and 'Partner Resources'. The left sidebar lists categories like 'Buildings & Plants', 'Guidelines for Energy Management', 'Tools & Resources Library', 'Expert Help', 'Commercial Building Design', 'Integrated Energy Design Guidance', 'Target Finder', 'Designed to Earn the ENERGY STAR', 'Design Projects', 'Training Sessions', 'Green Buildings', and 'Getting Started for...'. The main content area is titled 'Building Design Guidance' and includes a breadcrumb trail: 'Home > Buildings & Plants > Tools & Resources Library > Commercial Building Design > Building Design Guidance'. The text explains that these guidelines are a strategic management approach for design professionals and building owners. A central box lists six key steps: Start Right, Pre-Design, Schematic Design, Design Development, Construction & Bid Documents, and Follow Through, each with a specific action item. On the right, a 'Quick Finder' sidebar lists various tools and resources like 'Portfolio Manager Login', 'Target Finder', 'ENERGY STAR Challenge', 'ENERGY STAR Leaders', 'Earn the ENERGY STAR', 'Purchasing & Procurement', 'Service Providers Directory', 'Find Labeled Buildings and Plants', 'Communications Materials', 'Training', and 'Building Design Links'. At the bottom of the sidebar, there is a link for 'NBD Guidance Checklist PDF (113KB)'.

**ENERGY STAR**

**ENERGY STAR**

Products Home Improvement New Homes Buildings & Plants Partner Resources

Buildings & Plants

Guidelines for Energy Management

Tools & Resources Library

Expert Help

Commercial Building Design

Challenge: Architects

**Integrated Energy Design Guidance**

Target Finder

Designed to Earn the ENERGY STAR

Design Projects

Training Sessions

Green Buildings

Getting Started for...

Home > Buildings & Plants > Tools & Resources Library > Commercial Building Design > Building Design Guidance

## Building Design Guidance

These guidelines are a strategic management approach, not a technical reference, to incorporate energy performance in the building design process. It is a set of **suggested** actions for design professionals and building owners to establish and achieve energy goals. These guidelines encourage best practices for energy design as part of the overall design process, and can help translate design intent to top energy performing buildings.

- Start Right – [Set energy goal and assemble design team](#)
- Pre-Design – [Investigate energy design concepts](#)
- Schematic Design – [Simulate and compare energy strategies](#)
- Design Development – [Confirm that your design energy meets the target](#)
- Construction & Bid Documents – [Include energy goal in specs](#)
- Follow Through – [Commission building, rate operational performance, and apply for ENERGY STAR](#)

**Quick Finder**

- [Portfolio Manager Login](#)
- [Target Finder](#)
- [ENERGY STAR Challenge](#)
- [ENERGY STAR Leaders](#)
- [Earn the ENERGY STAR](#)
- [Purchasing & Procurement](#)
- [Service Providers Directory](#)
- [Find Labeled Buildings and Plants](#)
- [Communications Materials](#)
- [Training](#)
- [Building Design Links](#)
- [NBD Guidance Checklist PDF \(113KB\)](#)

## 5. Green Standards in Maryland

- On March 26, 2005, the Maryland House passed HB 196, followed by the passage of SB 92 on April 4, 2005. This legislation requires that state capital projects (state-funded building projects) meet green/high-performance building standards.
  - Achieves at least a silver rating according to the U.S. Green Building Council's LEED green building rating system
  - Achieves at least a two-globe rating according to the Green Building Initiative . . .
  - Achieves at least a comparable numeric rating according to a nationally recognized, accepted, and appropriate numeric sustainable development rating system . . .
  - Meets nationally recognized, consensus-based, and accepted green building guidelines, standards, or systems approved by the state.

# 2008 Energy Bills

- House Bill (HB) 375 more than doubles the state's requirements for renewable power, requiring 20% of the state's electricity to be produced from renewable energy by 2022.
- HB 376 requires buildings constructed or renovated solely with state funds to meet tough green building standards, equivalent to a silver rating from the U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) rating system.
- HB 117 creates easements for solar energy systems to prevent projects that would block the sunlight. It also prohibits unreasonable restrictions on solar energy systems, such as homeowner association covenants against their installation.

## 6. Suggested Actions

- Work with the local building industry to employ energy efficient construction designs
- Work with utilities to recognize builders or projects meeting certain standards
- Work with utility companies and lumber supply companies to hold energy savings workshops
- Upgrade building code reflecting latest energy efficiency standards
- Require all future county buildings to comply with LEED (silver) or Green Globe (2 globe) standards
- Make sure that town center ordinances facilitate green site and building design
- Take the NACO Energy Star Challenge!
- Appoint a 'Green Team' in County Government to actively work to reduce energy and materials costs and protect the environment

# Creating a 'Green Team'

With a representative from all departments and a representative from the Board of Education.

**Green Government**  
An initiative of the National Association of Counties

## Creating a Green County Team

**Introduction**  
As counties look to advance green government practices across their agencies and communities, a team of staff members can be brought together to help facilitate the effort. Whether a county is just beginning to think green or is already implementing a countywide green plan, an interagency "green team" can provide the necessary avenues to ensure unified action in meeting the county's green goals.

Approaching the green issue in a team manner makes sense – helping the environment while also saving taxpayer dollars are actions all county staff members and departments impact in some way. A green team provides the necessary structure for an issue that can impact all county operations. Ultimately, the green goals of a county can affect everything from purchasing and procurement of paper, vehicles, and cleaning products to policies for land conservation, development, and employee commuter benefits.

**Creating the Green Team**  
With support of the county administration and county board, a green team may be tasked with:

- reviewing internal operations impacting the county's triple bottom line (environment, economy/budget, and employment/society);
- evaluating the impact of policies on the green goals of the county; and
- creating a sense of commitment and common understanding of green actions among all levels of employees.

In New Castle County, Delaware, for example, the team's mission is to create an open dialogue on environment and energy measures and to find ways to implement those measures. Green issues can vary from county to county and ultimately help to determine priorities and a course of action for the team. Green issues may include:

- air quality
- recycling and waste management
- energy efficiency and renewable energy
- transportation and fleets
- water conservation and land preservation
- environmentally preferable purchasing.

Although the composition of each county's green team will be unique, all green teams should strive for diversity in representation from across agencies and staff levels. Such a diverse composition will not only identify risks and opportunities, but also ensure comprehensive buy-in from all departments. Representations may include but are not limited to:

- Administration
- Finance/Procurement/General Services
- Health/Social Services
- Human Resources
- Facility Management/Parks Works/Fleet Maintenance
- Natural Resources/Parks & Recreation
- Planning/Development
- Land Use/Transportation
- Public Information

**Green Team Tasks**  
Once the team is established, a first task may be to inventory the programs and activities related to the county's identified green issues. The inventory may be used to help map the strategic goals for the team. The green team may subsequently develop government-wide and department-wide strategies and plans.

Sarasota County, Florida created its "Roadmap to Sustainability" to help initiate broader organizational ownership and structure and establish metrics to effectively track the county's efforts. The Roadmap to Sustainability has proven to be a tool to organize all staff and activities and ensure all are cognizant of the overall county initiatives. With this knowledge, all county staff, regardless of department or function, are empowered to initiate sustainable practices in the workplace.

The county's roadmap includes three key components: drivers (policy), vehicles (programs) and fuels (resources). The county opted to establish cross-discipline action teams for its seven issue areas of: environmental conservation, water conservation, waste reduction, energy reduction, transportation, facilities/construction, and community design/partnerships.

In King County, Washington, resources offered by its green team include a focus on green building:

- technical support and training on LEED

(the U.S. Green Building Council's Leadership in Energy and Environmental Design certification program) and other green building technologies for King County departments and offices,

- assistance with project review and budget analysis for county buildings;
- strategies and policies relating to green building;
- current list of county projects that are working to incorporate LEED criteria; and
- a Green Building Resource Center, including an electronic bibliography and online catalogue to provide staff with resources in project management, architecture, landscape architecture, design, budgeting, engineering and resource conservation.

**Green Team Coordination**  
The team should consider scheduling monthly meetings in addition to email work groups. A Microsoft Word or Microsoft Excel document may also be created to continuously share accomplishments and track achievements toward green priority goals.

Team members should update their department or agency management members on the project status and should be given regular opportunity to keep the county board informed about the financial, environmental and social results.

**Conclusion**  
With the full support of the county board, a green team can help a county know where it has been and where it is going in the ever-widening green arena. The green team can be an effective force to integrate actions and policies to achieve a green government. Ultimately, the culture of green that this team will create throughout the county's staff can expand to the entire community to help the county "go green."

**NACO** National Association of Counties  
The Voice of America's Counties