


# Bethesda
## Downtown Plan

community identity | equity | habitat + health | access + mobility | water | energy + materials


Work Session #10 | Planning Board April 7, 2016

MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

# Areawide Approach

1. Ecology
2. High Performance Area

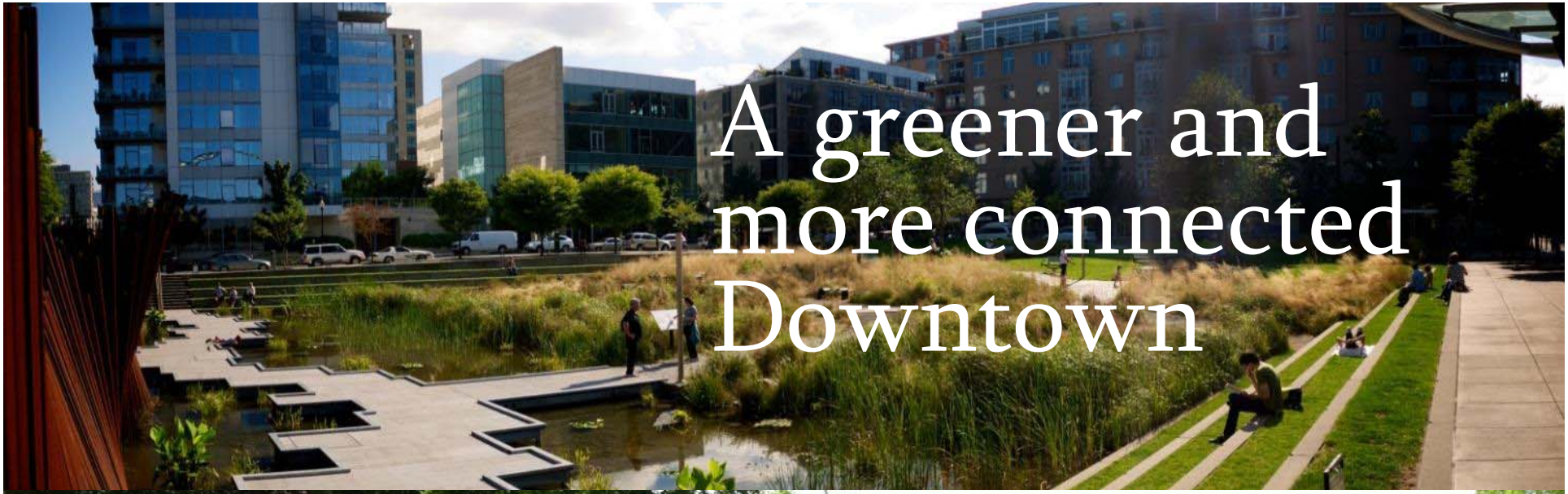
# A truly sustainable Downtown...


# Goals

Reduce vehicle miles traveled
Improve building energy efficiency
Increase overall tree canopy
Improve air quality
Reduce untreated stormwater runoff


A competitive
Downtown that
fosters innovation


More energy-
efficient buildings


A greener and
more connected
Downtown


Improved
sidewalks and
bicycle routes


Better stormwater
management


# Enhanced community health and quality of life

# A truly sustainable Downtown...

# Bethesda Today

# Agenda

## 1. Greening Bethesda/ Canopy Corridors

Recommendation

Water | Habitat Health | Energy | Community Identity

## 2. Green Roofs & Green Cover

Recommendation

Water | Habitat Health | Energy | Community Identity

## 3. Energy

Recommendation

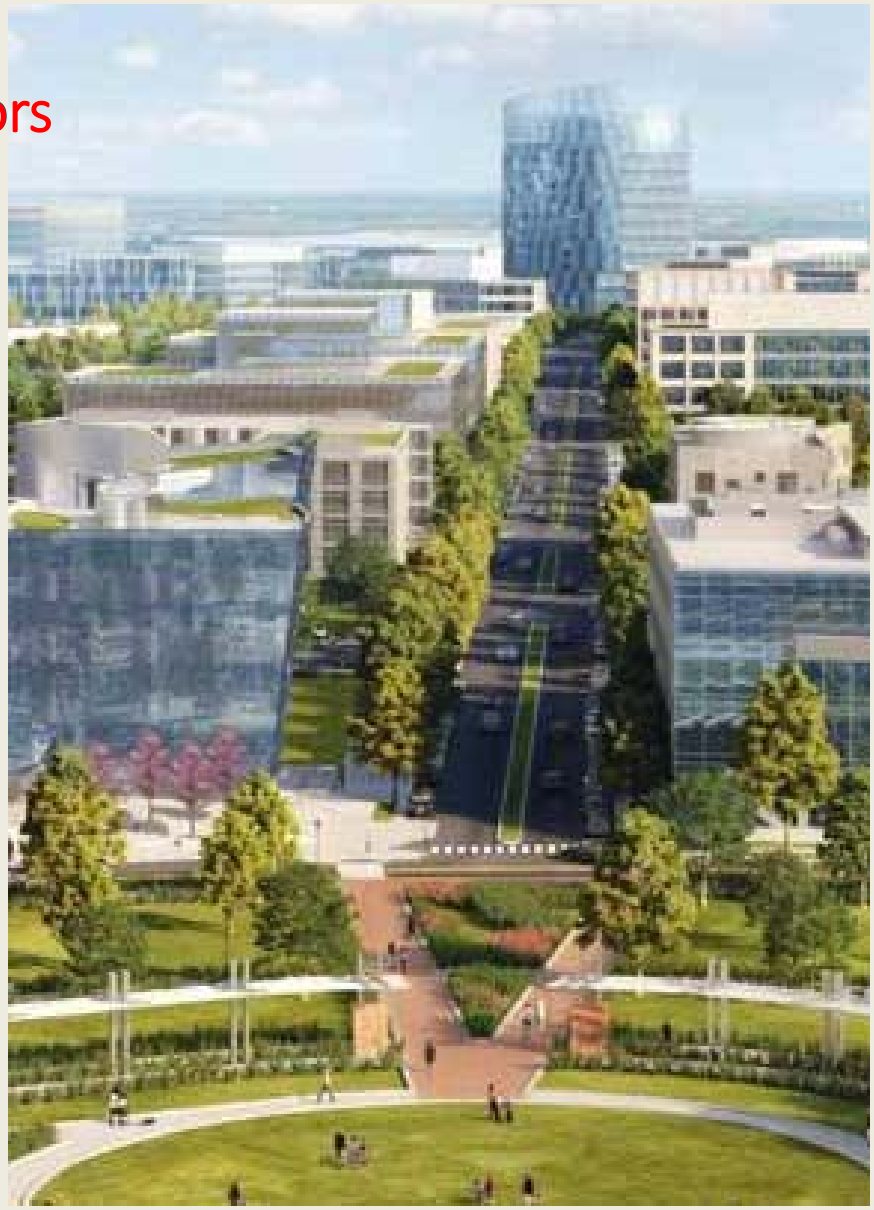
- Economics

Energy | Community Identity

## 4. Stormwater

Recommendation

Water | Habitat Health | Community Identity



Philadelphia 2013 Master Plan

# Greening Bethesda

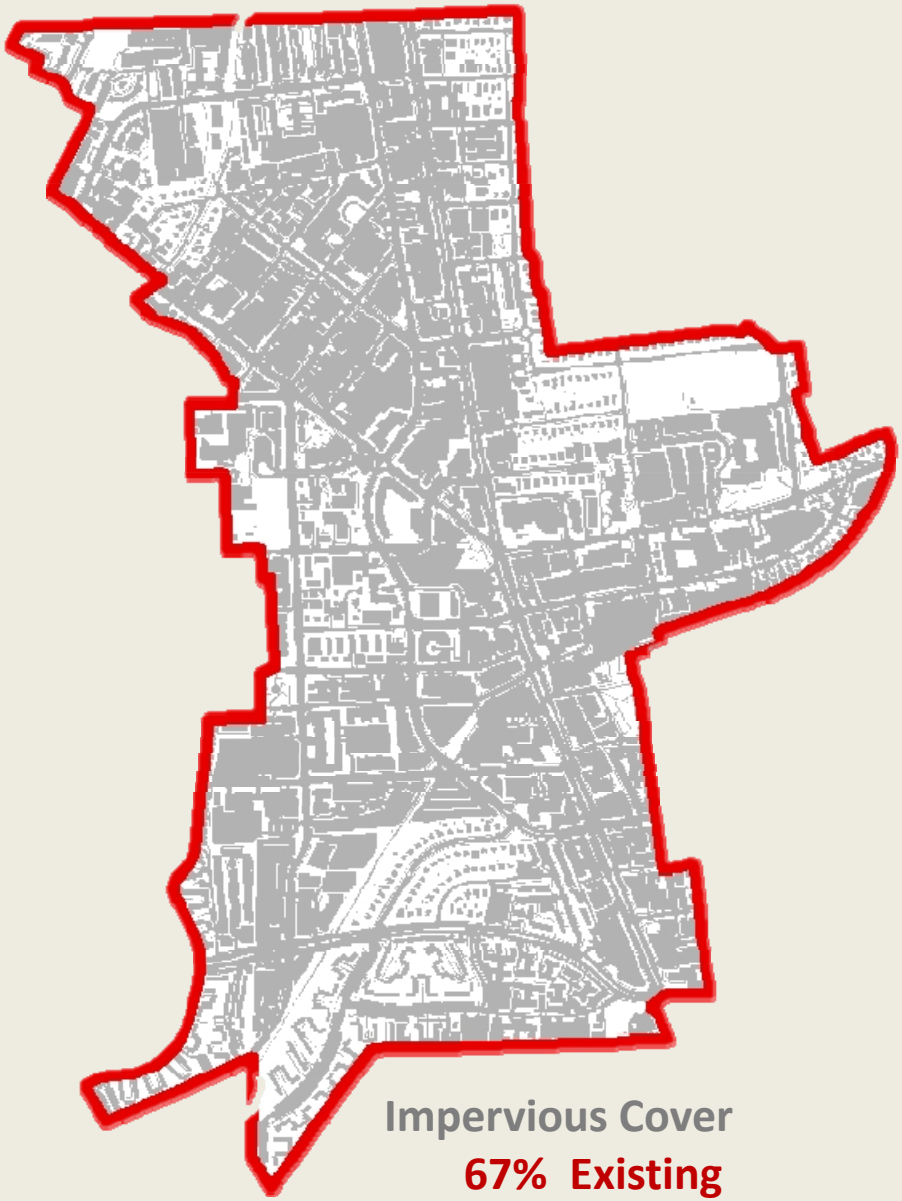
RECOMMENDATIONS:

## 3 Strategies to Greening Bethesda

1. **Expand Parkland**
2. **Increase Green Cover**
3. **Improve Tree Canopy Corridors**

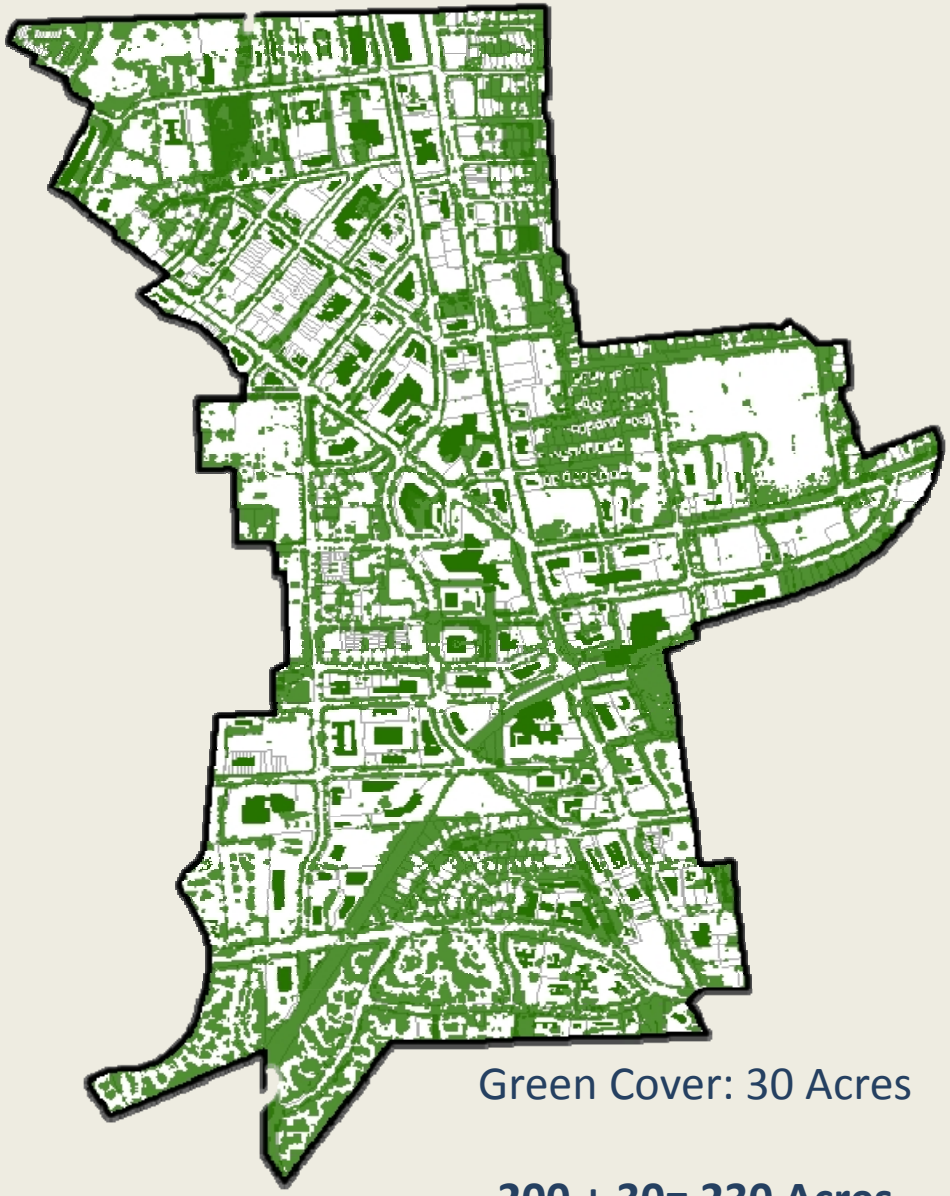


# Conditions and Goals



Impervious Cover

**67% Existing**



Green Cover: 30 Acres

**200 + 30= 230 Acres**

**52+% Green Cover**

# Canopy Corridors

RECOMMENDATION:

**Supplement tree planting along streets and public space to achieve a minimum of 45% canopy cover.**

**Implemented by:**

- Private Developers
- Department of Transportation
- State Highway Administration
- Bethesda Urban Partnership
- Shades of Green


EXCEPT BUSES
CYCLISTS YIELD TO PEDESTRIANS


USE PED SIGNAL
YIELD TO PEDS

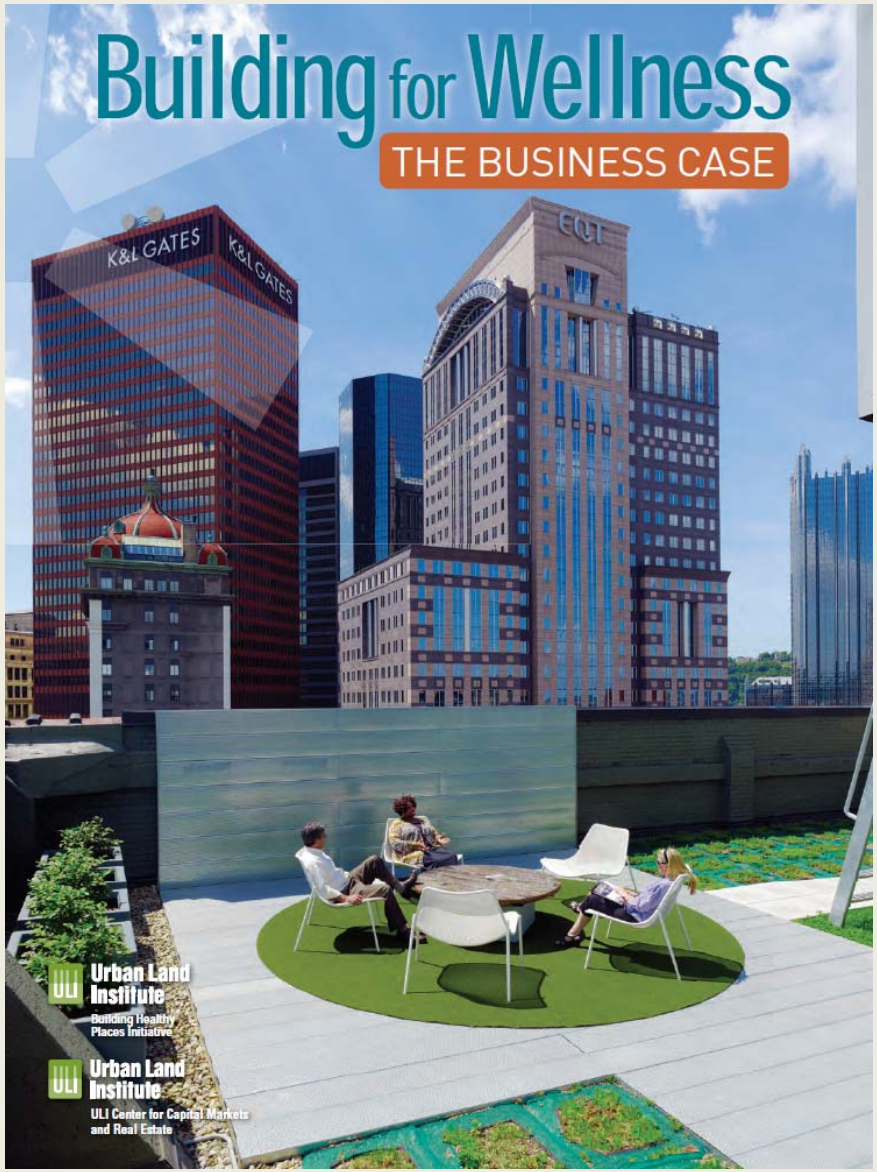
# Agenda

1. Canopy Corridors
   Recommendation
   Water | Habitat Health | Energy | Identity

2. Green Roofs & Green Cover
   Recommendation
   Water | Habitat Health | Energy | Identity

3. Energy
   Recommendation
   Energy | Identity
   - Economics

4. Stormwater
   Recommendation
   Water | Habitat Health | Identity



# Green Roofs/Vegetated Roofs

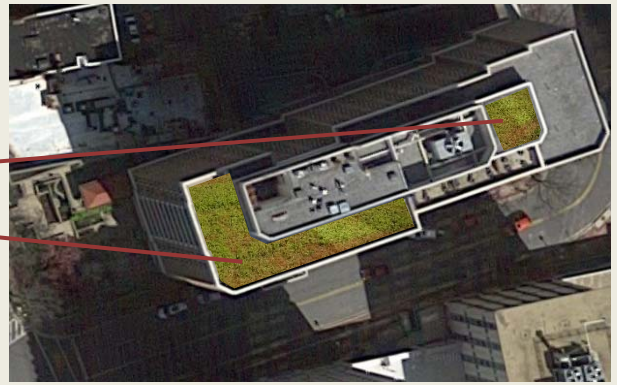
RECOMMENDATION:

**"Provide a minimum of 35% green cover which may include either singularly or a combination of the following:**

- **Intensive green roof**
- **Tree canopy cover**

# OPTIONS FOR 35% GREEN COVER

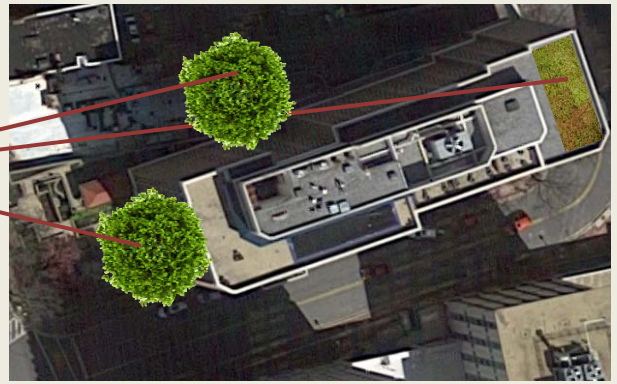
A. 35% green roof



B. 35% canopy (tree) cover

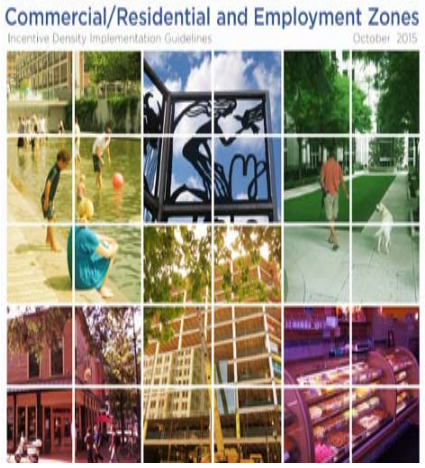
C. 35% total green cover

% green roof + % canopy cover = 35%



# Not Regulatory

## Commercial/Residential Zone Incentive Density Guidelines




(f) **<u>Vegetated Roof</u>:** Up to 15 points for installation of a vegetated roof with a soil depth of at least 4 inches covering at ***<u>least 33%</u>*** of a building's roof, excluding space for mechanical equipment.

Additional incentive density points may be appropriate if other criteria are met, including:

- ✓ **Greater coverage**
- ✓ **Greater depth**
- Plant species that provide habitat
- Native plant species

Pg 47.

# Depth of Green Roof

RECOMMENDATION:

**“Install a green roof of at least 6” in soil depth”**

# Greening Bethesda

# Agenda

1. Canopy Corridors
   - Recommendation
   - Water
   - Habitat Health
   - Energy
   - Identity

2. Green Roofs & Green Cover
   - Recommendation
   - Water
   - Habitat Health
   - Energy
   - Identity

3. Energy
   - Recommendation
   - Energy
   - Identity
     - Economics

4. Stormwater
   - Recommendation
   - Water
   - Habitat Health
   - Identity

# Energy


Bethesda Maryland
Platinum
CARR
PROPERTIES
4500
NOW AVAILABLE
170,000 SF
TRANSWESTERN
NO
TURN
ON RED
4500

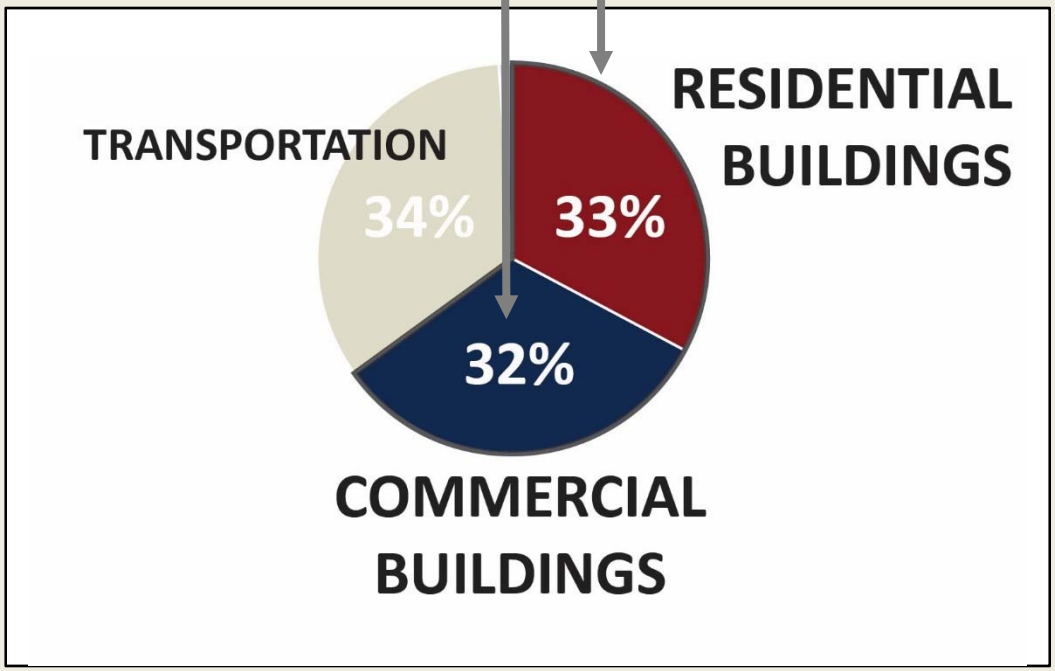
# Energy

**65%** of Montgomery County greenhouse gas emissions come from **BUILDINGS**

***The county is***

***NOT ON TRACK***

***to meet the goals established in the "Climate Protection Plan".***



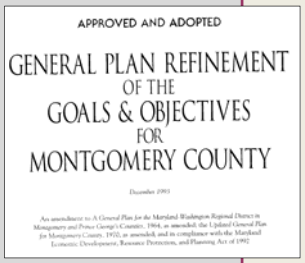

**County Legislation**

**General Plan**: Promote the efficient use of energy and consider **energy conservation** practices during the master plan, subdivision, site plan, and mandatory referral process

**Bill 34-07**: Requires the Planning Board to make recommendations for carbon emissions reductions

**Bill 32-07**: Reduce GHG to 80% below base year [FY05]

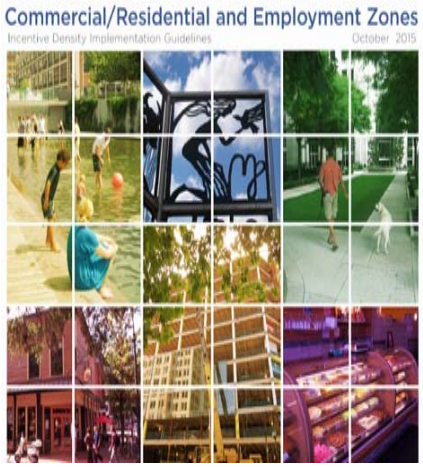
**Climate Protection Plan**: Stop increasing GHG by 2010


APPROVED AND ADOPTED

GENERAL PLAN REFINEMENT OF THE GOALS & OBJECTIVES FOR MONTGOMERY COUNTY

# Energy Conservation

## Commercial/Residential Zone Incentive Density Guidelines




*Energy Conservation and Generation*: Up to 15 points for constructing buildings that exceed the energy-efficiency standards for the building type by 17.5% for new buildings or 10% for existing.

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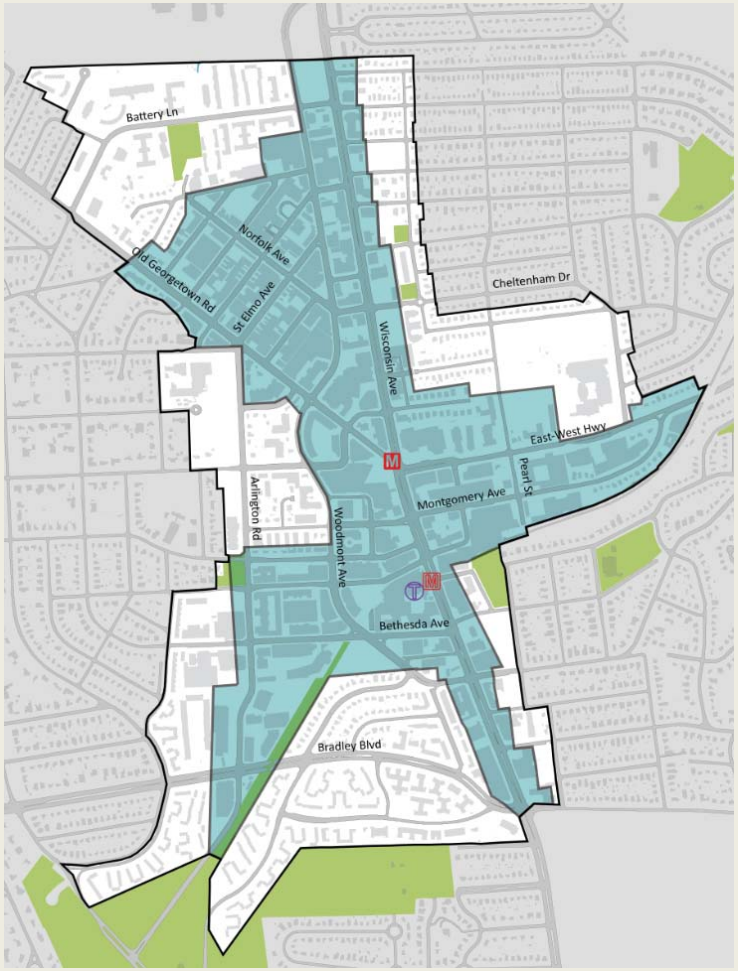
# High Performance Area

**RECOMMENDATION:**

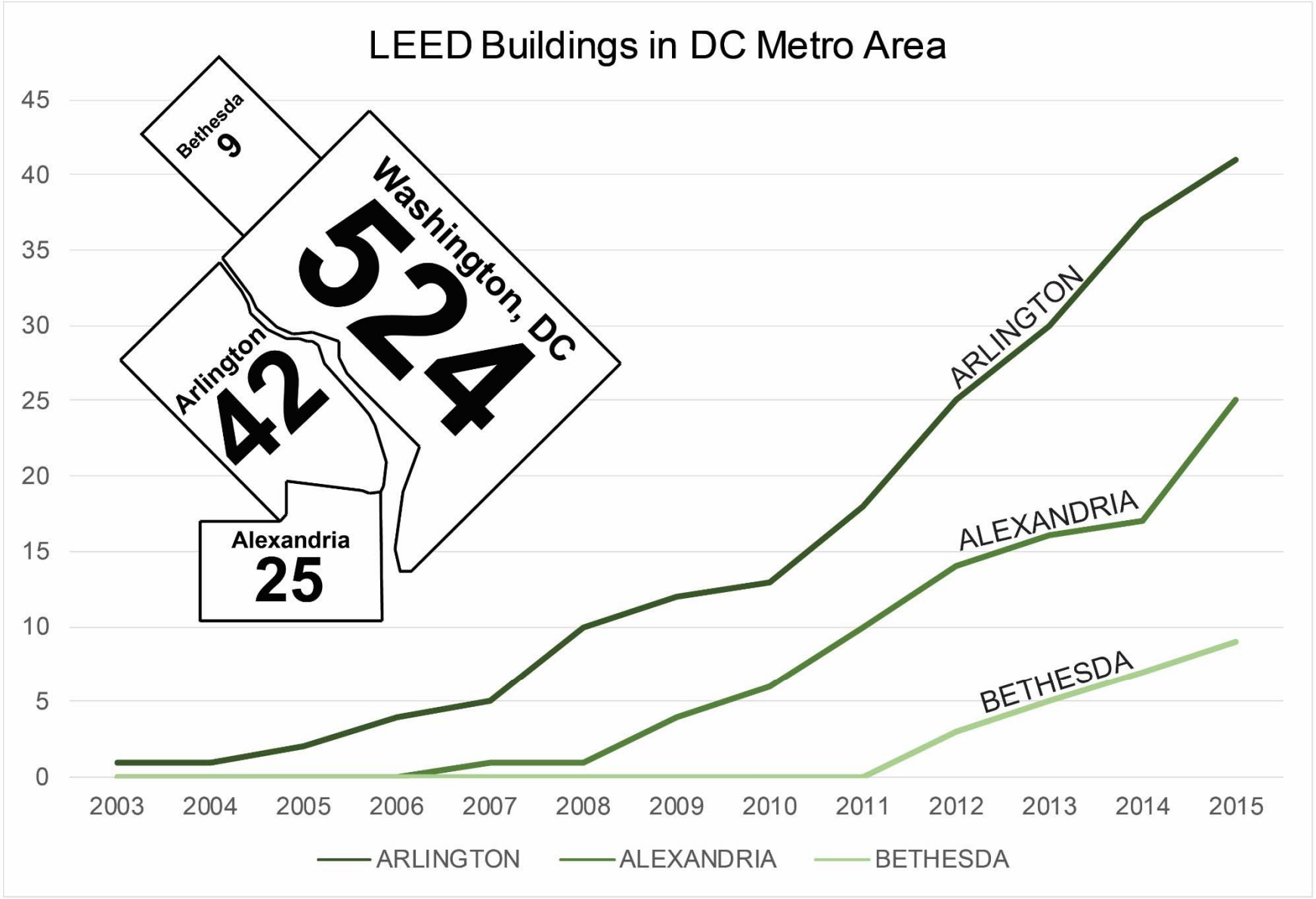
- **Any building located in whole or in part within the High Performance Area should exceed ASHRAE 90.1 (Appendix G) standard by 15%.**

- Should the County approve the International Green Construction Code (IgCC), building energy performance must be 2 points more efficient.

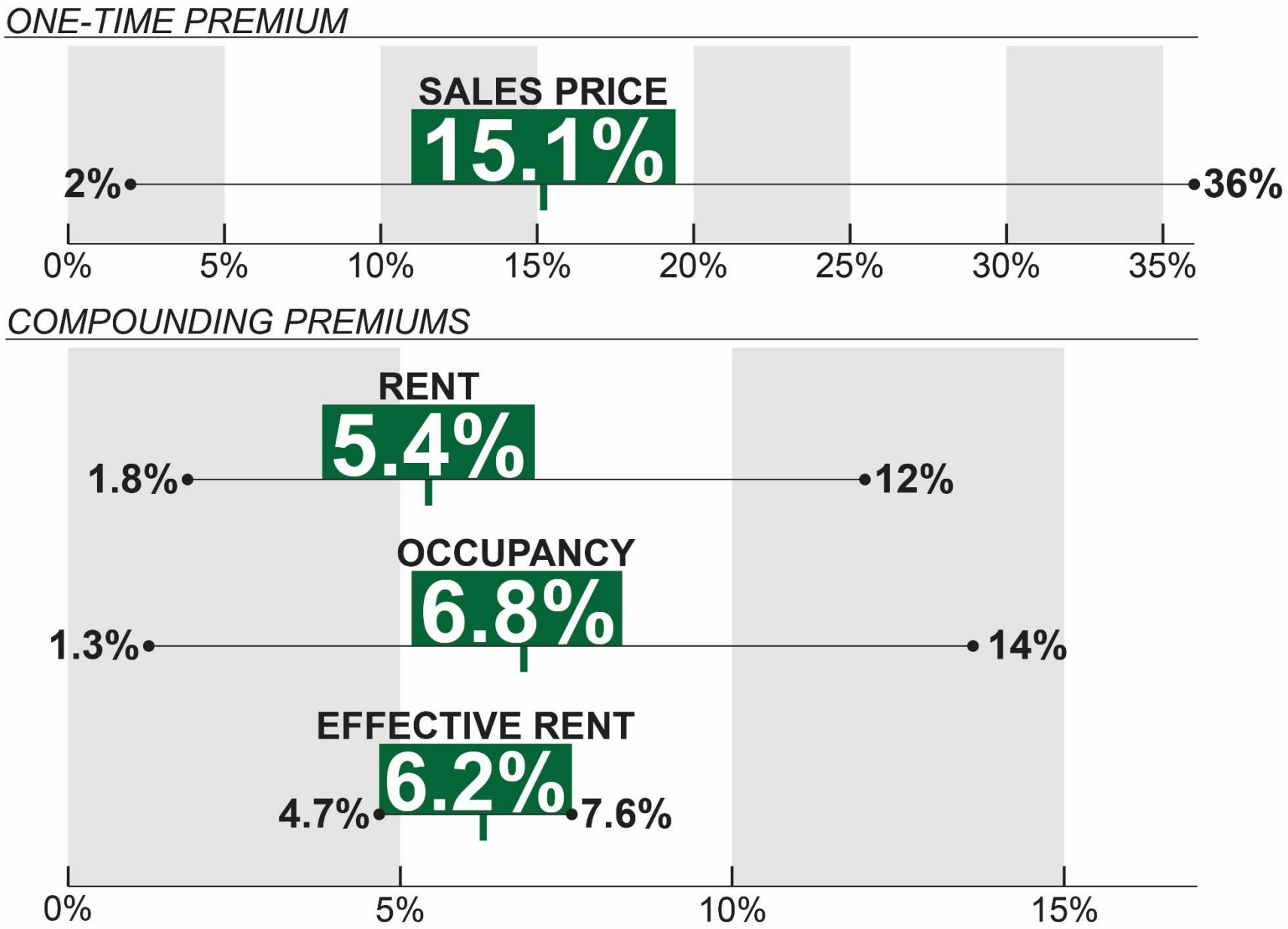
High Performance Area



# Green Competition



# Green Premiums



# Construction Costs

The Business Case for Green Building
by the World Green Building Council

The Cost of LEED
by Chad Mapp, Mary Ellen C. Nobe, and Brian Dunbar

Value Beyond Cost Savings
by Scott R. Muldavin

High Performance Green Building: What's It Worth?
by Theddi Wright Chappell and Chris Corps

Does Green Pay Off?
by Norm Miller, Jay Spivey and Andy Florance

Green Building Costs and Savings
by Nora Knox

Cost of Green Revisited
by Davis Langdon Construction

Costing Green: A Comprehensive Cost Database and Budgeting Methodology
by Davis Langdon Construction

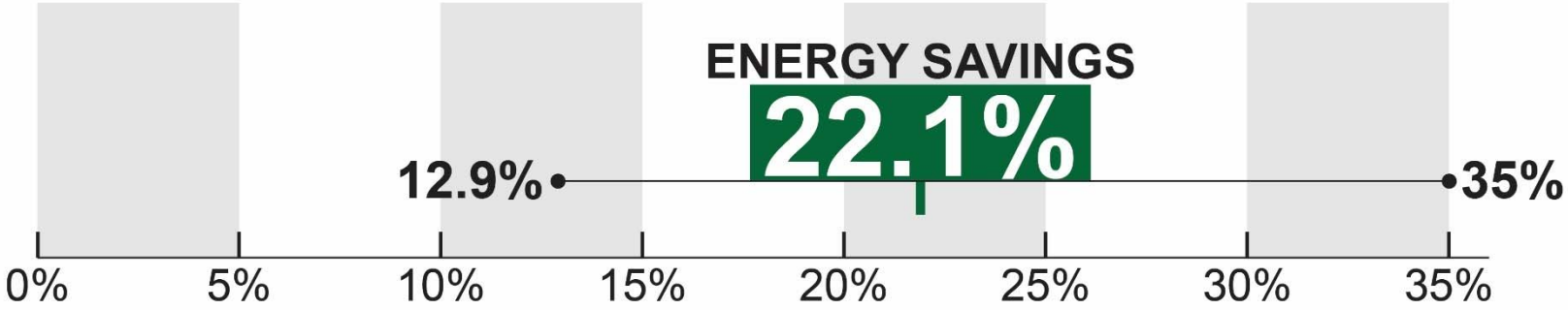
GSA LEED Cost Study
by Steven Winter Associates

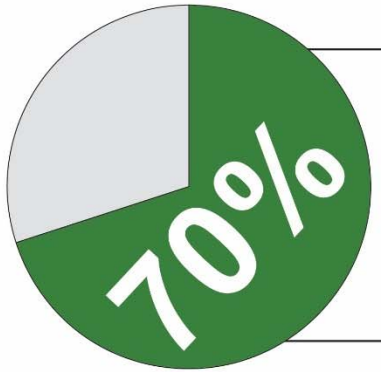
Costs and Financial Benefits of Green Buildings
by Greg Kats

**<2%**

Additional construction cost to achieve LEED certification

# Energy Savings



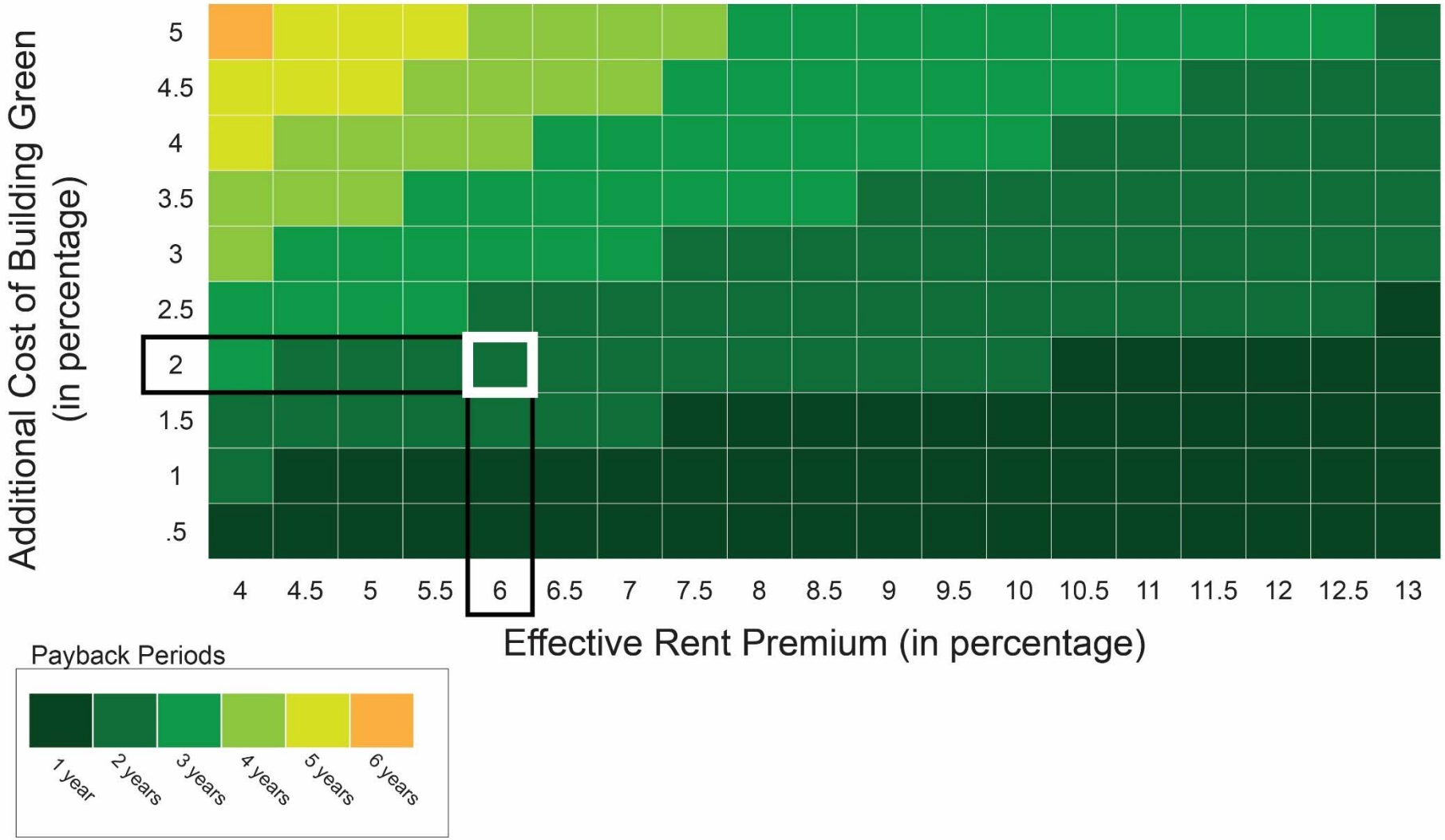




of building professionals

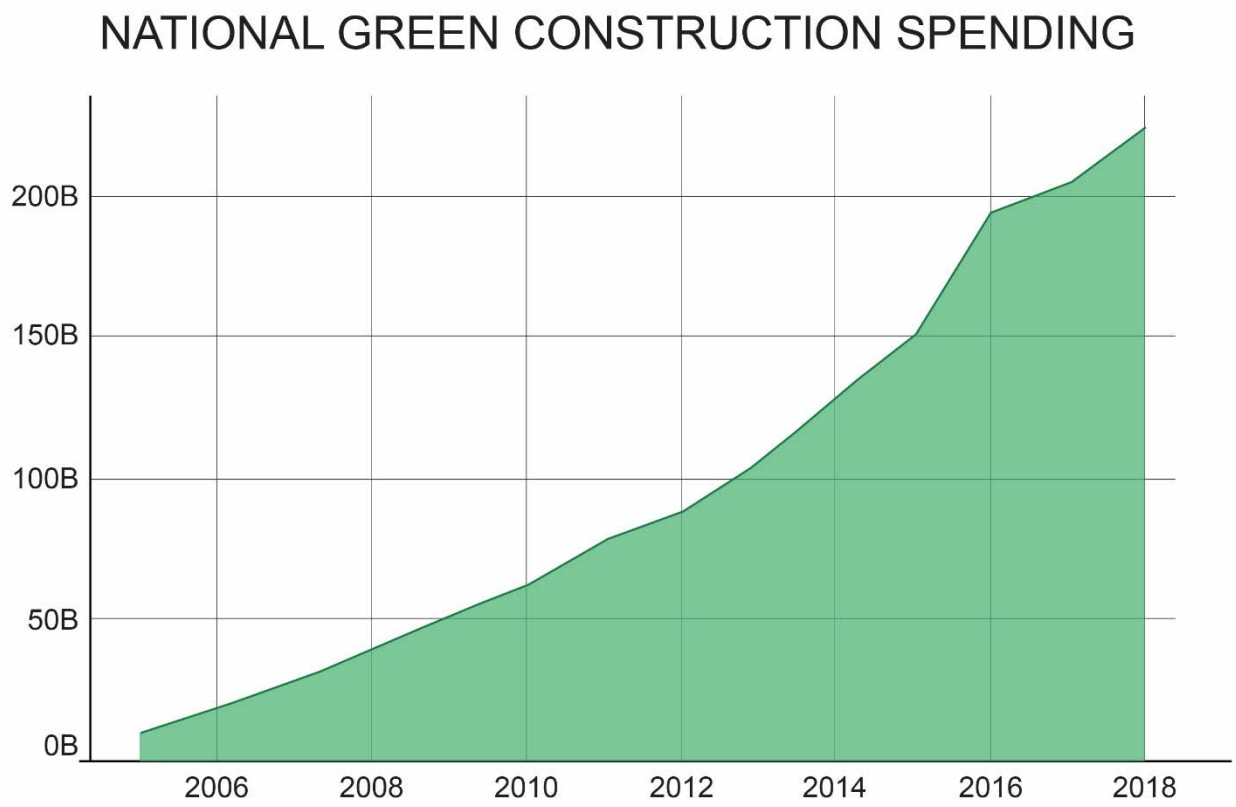
**CITE LOWER OPERATING COSTS**

as the greatest benefit of green building

# Payback Periods



# Green Construction Trends




**49%** of people consider eco-friendly features more important than luxury items in a home

Based on Harris poll of 2,000 Americans

# Green Competition


**Attitudes in real estate moving in a greener direction**

By Jordan Blum | May 13, 2015 | Updated: May 13, 2015 8:55pm

Houston Chronicle

myAJC LOCAL SPORTS AJC VOICES POLITICS IN-DEPTH U.S. / WORLD FOOD LIVING TRAVEL EPAPER

**Millennials embrace LEED**

Atlanta Journal Constitution

OPINION By Demetrius Minor

BUILDER

MILLENNIAL BUYERS EXPECT ENERGY SAVINGS

**A three-pronged approach can help meet young buyers' demands for high-performance homes with proven results.**

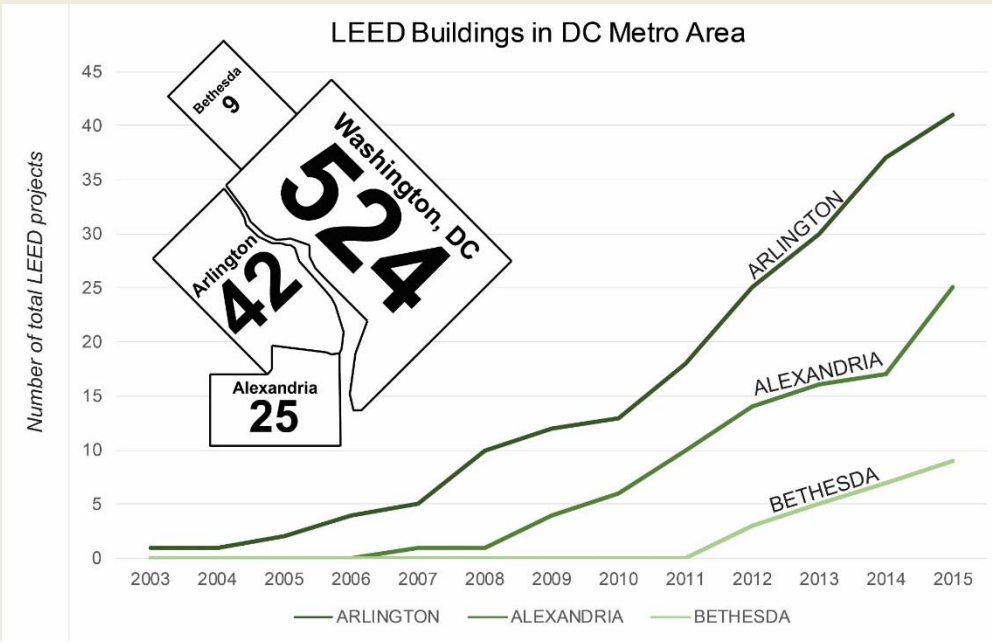
By Rick Davenport

Builder.com

# Discussion

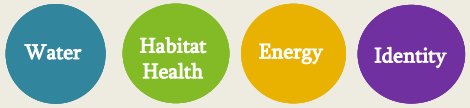
- **Any building located in whole or in part within the High Performance Area should exceed ASHRAE 90.1 (Appendix G) standard by 15%.**

- Should the County approve the International Green Construction Code (IgCC), building energy performance must be 2 points more efficient.



# Agenda

1. Canopy Cover
   - Recommendation




2. Green Roofs & Green Cover
   - Recommendation


3. Energy
   - Recommendation

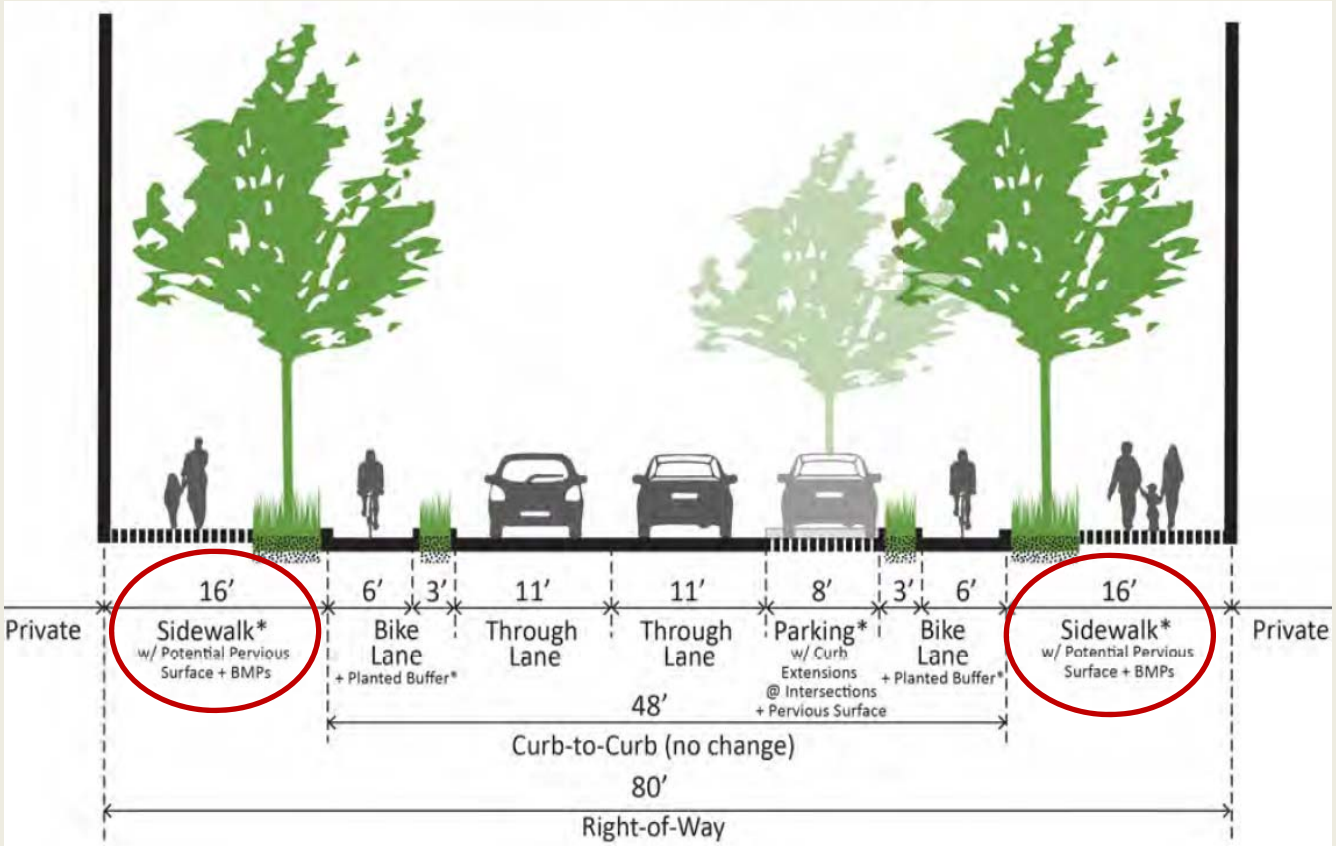

     - Economics

4. Stormwater
   - Recommendation

# Stormwater Management

RECOMMENDATION:

**Integrate stormwater management within the right- of-way <u>where feasible</u>**




Woodmont Ave.

# Stormwater Management