

# White Flint Sector Plan

## environment and sustainability

### overview

goals

recommendations

general

carbon

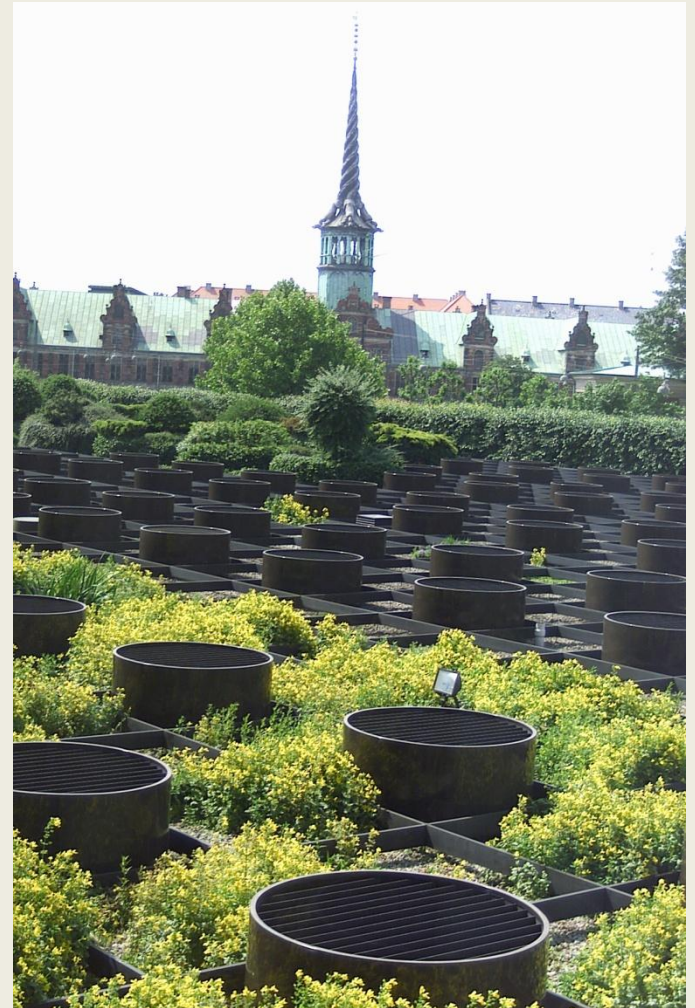


# White Flint Sector Plan

## environment and sustainability

### goals

- water quality
- native vegetation
- carbon emissions



# White Flint Sector Plan

## environment and sustainability

### recommendations

goal		initial	revised
general	improved water quality	no loss of pervious, 20% pervious on redevelopments, 30% tree canopy	proposed montgomery green factor, overall 30% green area for sector plan
	community character through use of native vegetation	sustainable landscape guidelines	proposed montgomery green factor
carbon	reduce carbon emissions	20% on-site energy generation, increased tree canopy	maximize LEED energy & environment points, proposed montgomery green factor

# White Flint Sector Plan

## environment and sustainability

### general recommendation

same goals, better way to get there





# White Flint Sector Plan

## environment and sustainability

### **montgomery green factor**

program to encourage functional green infrastructure and features

point based system, similar to MCPB recreation guidelines but tied to property area, not units

included in CR zone but detailed in separate guidelines



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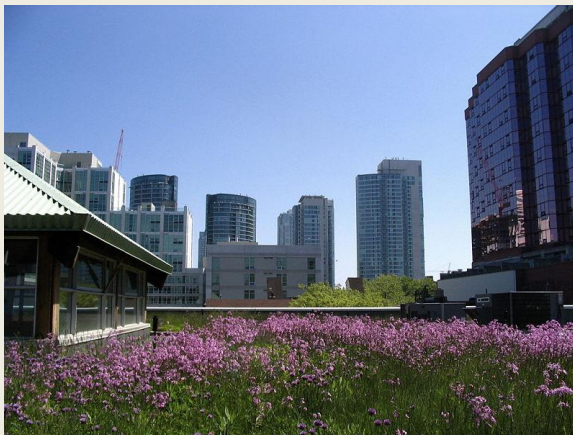
## environment and sustainability

### montgomery green factor

base level set in zone with density  
bonuses for higher levels

reviewed as part of planning board  
staff review

expands on state of the art systems  
used in berlin, seattle, portland,



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## environment and sustainability

**montgomery green factor** - environmental features with greater environmental benefits receive more points

examples of basic features	air quality	water quality	carbon storage	energy reduction	heat reduction
tree planting	★	★	★	★	★
tree retention	★	★	★	★	★
vegetated roof	★	★	★	★	★
vegetated wall	★	★	★	★	★
planting beds (soil>24")	★	★	★	★	★
on-site renewable energy	★			★	
higher LEED certifications	★			★	
lawn and planting bed (soil <24")	★	★			★
rainwater reuse		★			
pervious paving		★			★

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### montgomery green factor

extra credit features

- visible or accessible to public
- stormwater management
- native or drought tolerant plantings

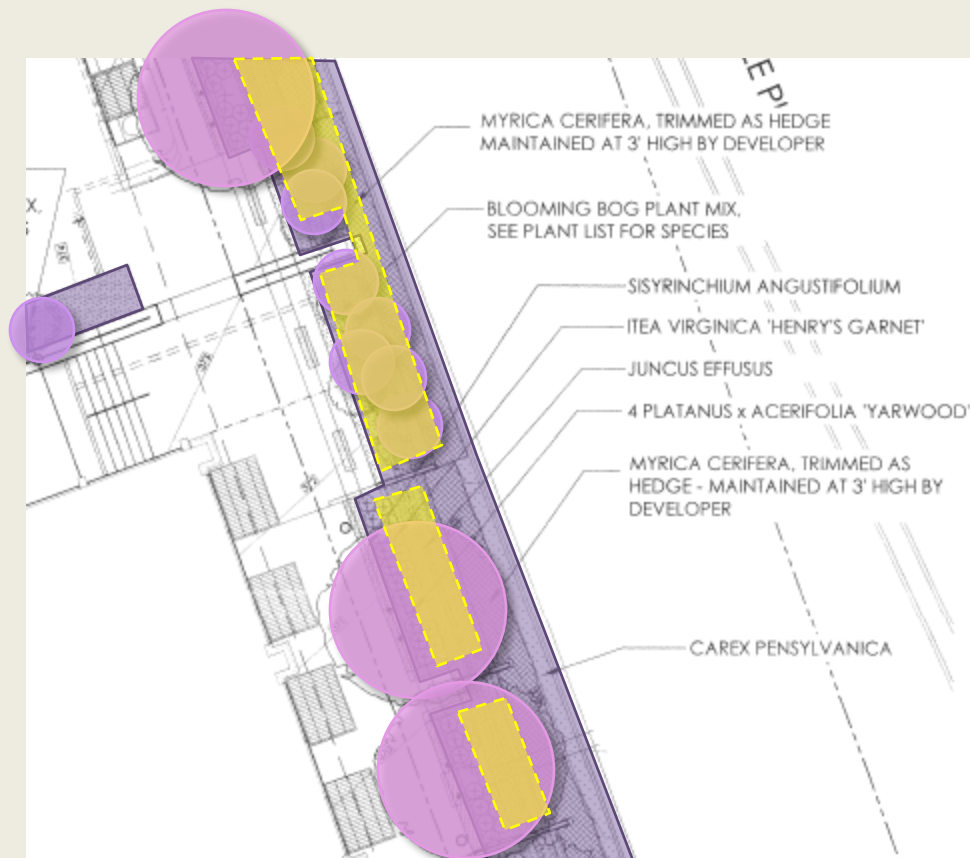




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### montgomery green factor example application



credit given for

- planting beds
- medium trees
- large trees
- bonus for stormwater planters

layered benefits = layered credits

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## environment and sustainability

### montgomery green factor

#### benefits

- air quality

- deposit airborne particulates
- filter air pollutants



# White Flint Sector Plan

## environment and sustainability

### montgomery green factor

#### benefits

- water quality
  - uptake and use
  - retention
  - filtering





# White Flint Sector Plan

## environment and sustainability

### montgomery green factor

#### benefits

- carbon storage (sequestration)
  - woody plants
  - soil
  - constructed wetlands





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## environment and sustainability

### montgomery green factor

#### benefits

- energy use reduction

- insulate
- shade
- produce



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## environment and sustainability

### montgomery green factor

#### benefits

- heat island effect reduction

- block solar radiation
- absorb solar radiation



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## environment and sustainability

### montgomery green factor

benefits

- public health
- respiratory
  - obesity
  - mental health





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## environment and sustainability

### montgomery green factor

#### benefits

- compatible with urban form





# White Flint Sector Plan

## environment and sustainability

### montgomery green factor

#### benefits

- integral to site and process
- functional not garnish



# White Flint Sector Plan

## environment and sustainability

### montgomery green factor

#### benefits

- flexibility for developer

- tailored to site and use
- many options





# White Flint Sector Plan

## environment and sustainability

### montgomery green factor

#### benefits

- diversity for community

- many types of green



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## environment and sustainability

### montgomery green factor

#### benefits

- allows innovation



- green technology improves
- cost balance changes



# White Flint Sector Plan

## environment and sustainability

### montgomery green factor

#### benefits

- developer benefits



- energy savings
- worker productivity
- rent or sales increases
- retail increases

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## environment and sustainability

### montgomery green factor

#### benefits

- supports other regulatory goals



- MD stormwater management act 2007
- county stormwater permit - pollutant reduction
- carbon footprint reduction



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## environment and sustainability

### montgomery green factor

what could development look like?



# White Flint Sector Plan

## environment and sustainability

### **current urban development**

landscaping – negotiated, garnish

stormwater – conventional,  
underground

streetscape – very basic, per master plan

energy generation – not required

### **montgomery green development**

landscaping – guaranteed, functional

stormwater – environmental site design

streetscape – functional and innovative

energy generation – encouraged and  
rewarded





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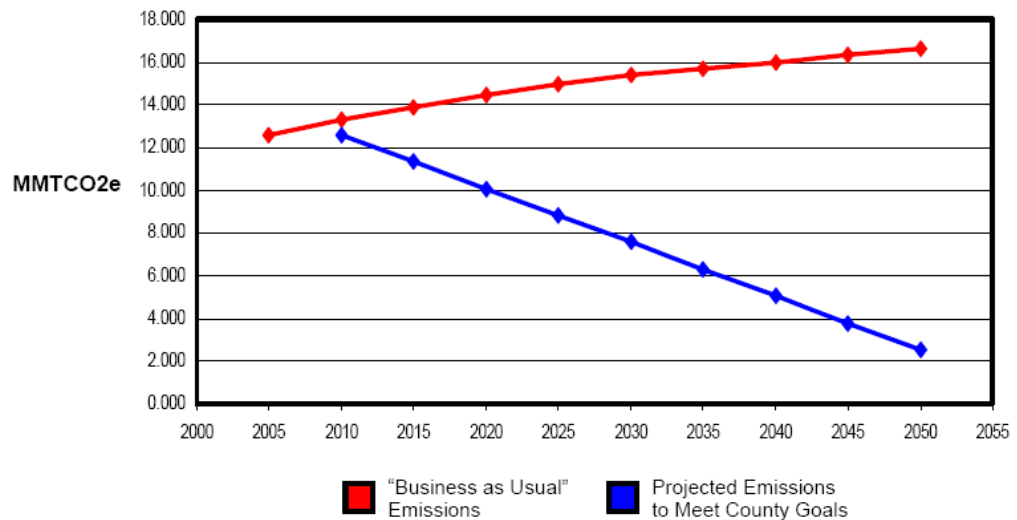
## environment and sustainability

### why are we doing carbon modeling

- global climate change
- carbon footprint analysis required by code
- county code also mandates climate protection plan, now under review.
- carbon modeling one part of overall effort aimed at climate protection



Figure 6 – Projected GHG Emissions Reductions Necessary to Meet County Goals



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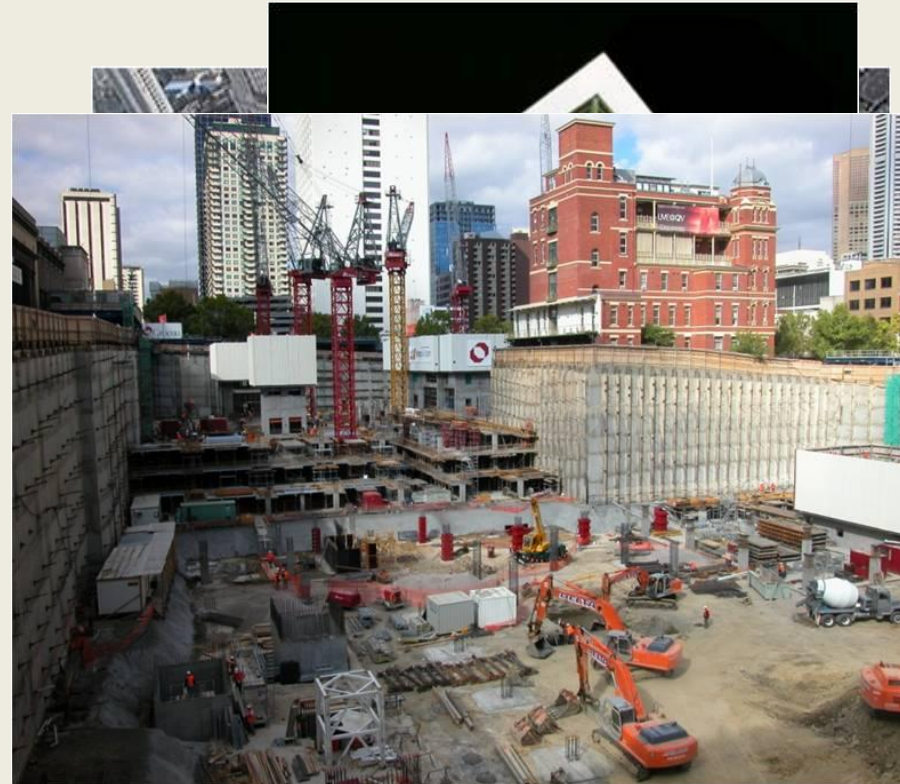
## environment and sustainability

### carbon modeling

- spreadsheet model developed by king county, washington

the model considers:

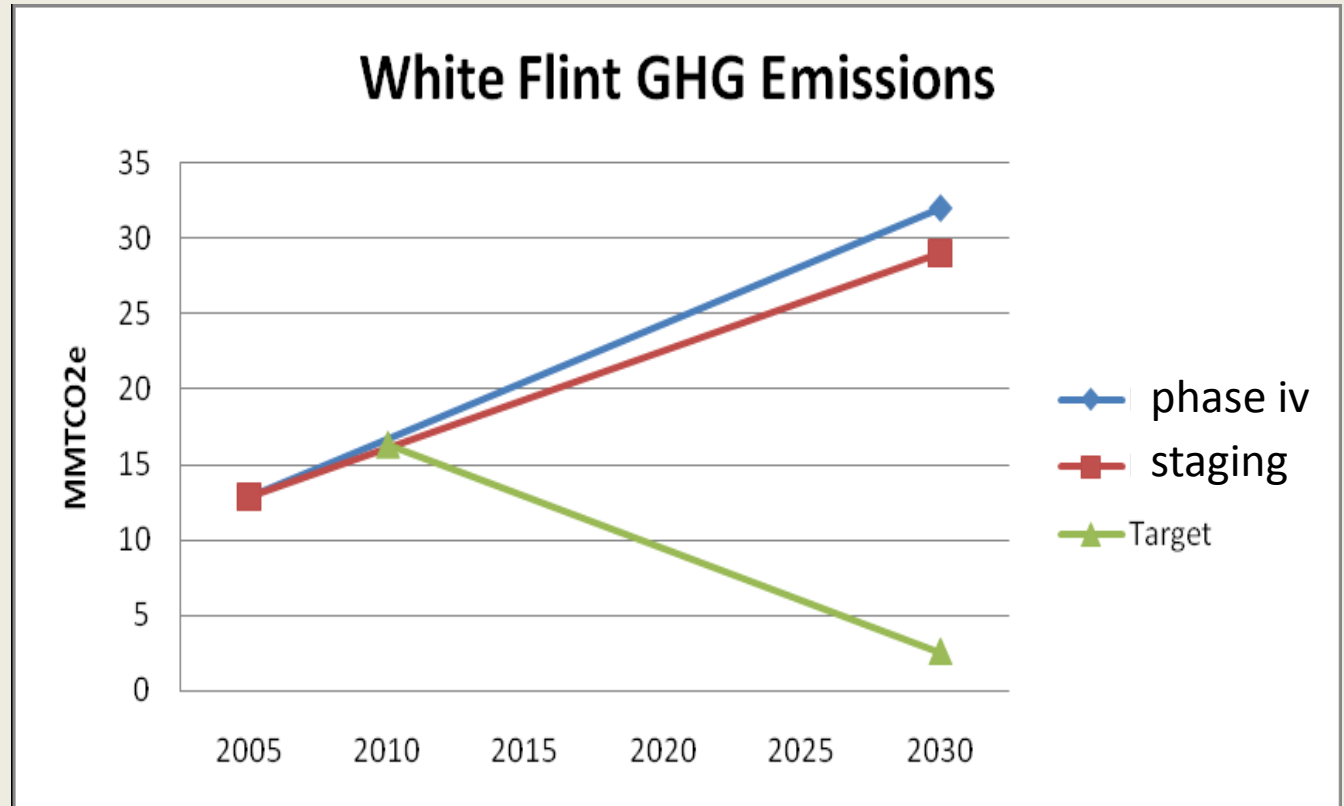
- carbon from materials production
- energy emissions from buildings
- transportation energy emissions



# White Flint Sector Plan

environment and sustainability

carbon modeling  
gross results



Projected Lifetime Emissions (MMT CO<sub>2</sub>e)  
and Target for White Flint Sector Plan



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**carbon modeling**  
growth in white flint

<0.2% area

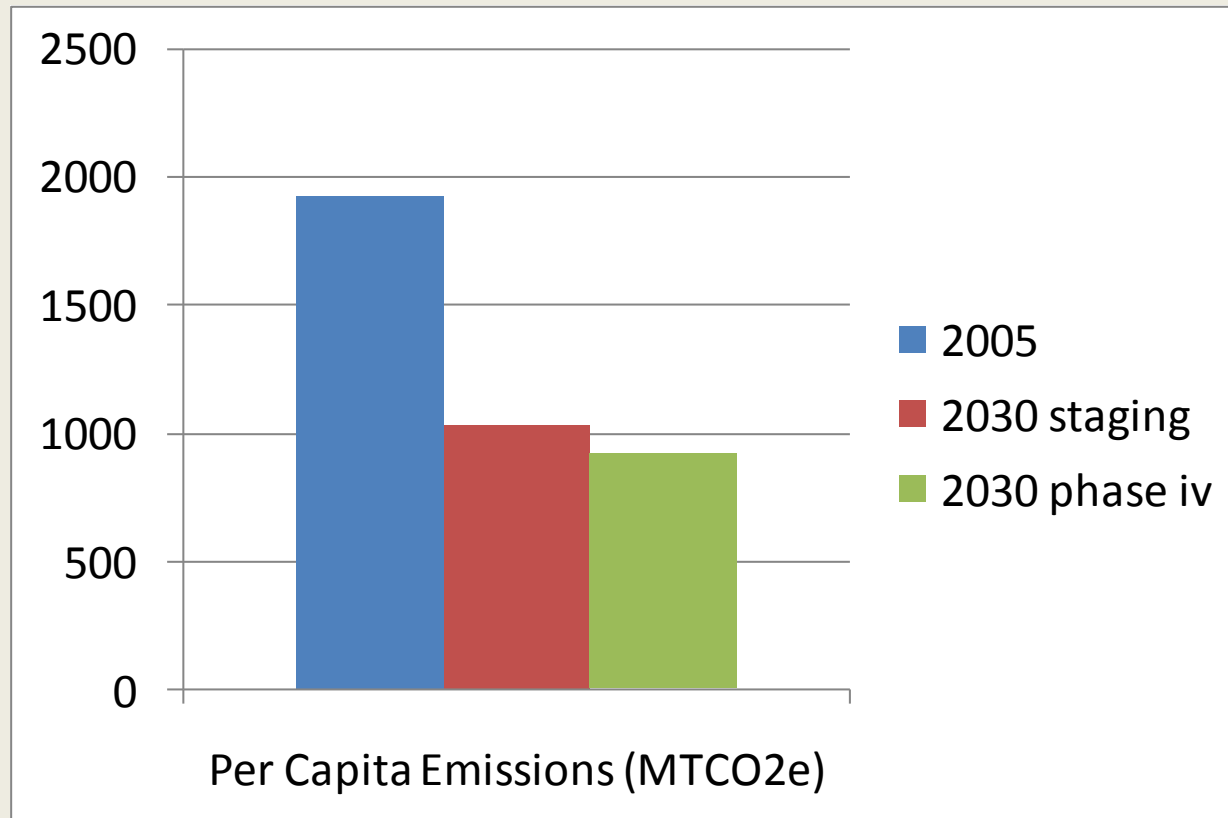
10% projected  
population growth



# White Flint Sector Plan

## environment and sustainability

### carbon modeling per capita results



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## environment and sustainability

### **carbon modeling**

#### reduction scenarios

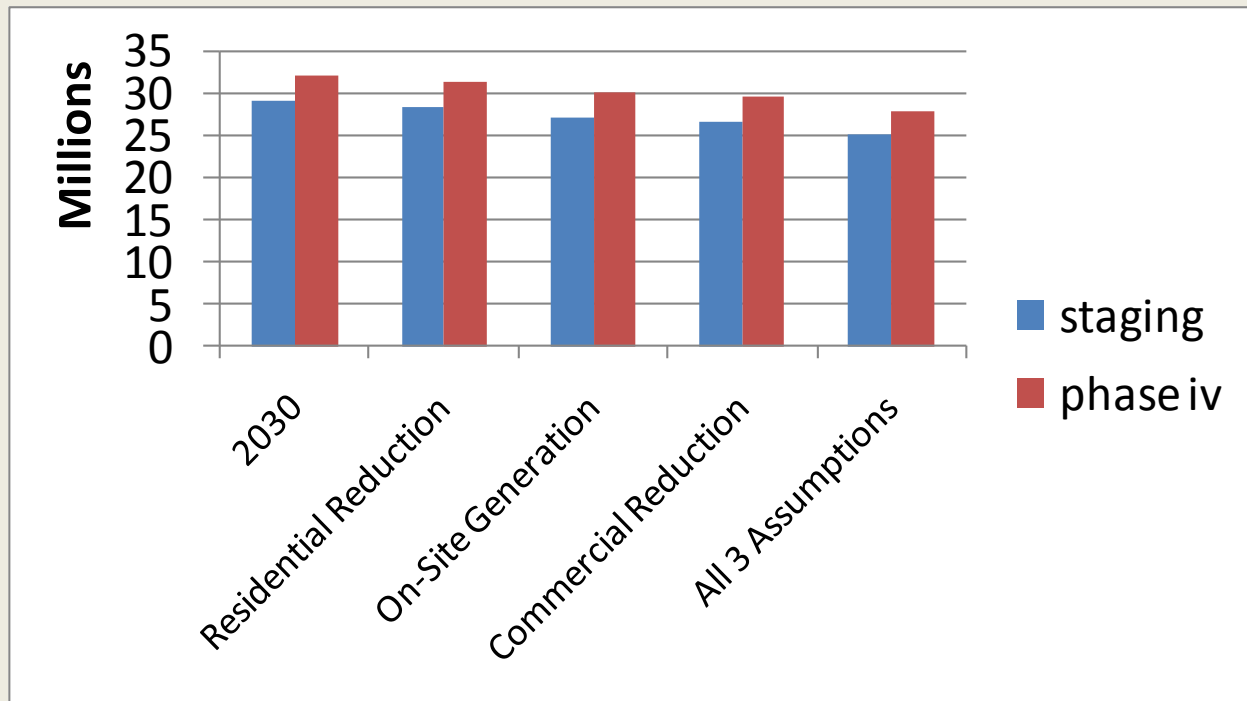
1. 50% of residences reduce energy by 25%
2. commercial buildings reduce energy 25%
3. 20% renewable energy onsite for commercial buildings



# White Flint Sector Plan

## environment and sustainability

### carbon modeling reduction scenarios



# White Flint Sector Plan

## environment and sustainability

### specific carbon recommendations

goal	initial	revised
reduce carbon emissions	20% on-site energy generation, increased tree canopy	proposed montgomery green factor maximize LEED energy & environment points

# White Flint Sector Plan

## environment and sustainability

### specific carbon recommendations

reasons for change

- more comprehensive approach
- aligned with state of the art practice
- using known standards





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### specific carbon recommendations

comprehensive carbon reduction strategy

- mixed use, walkable, transit-oriented



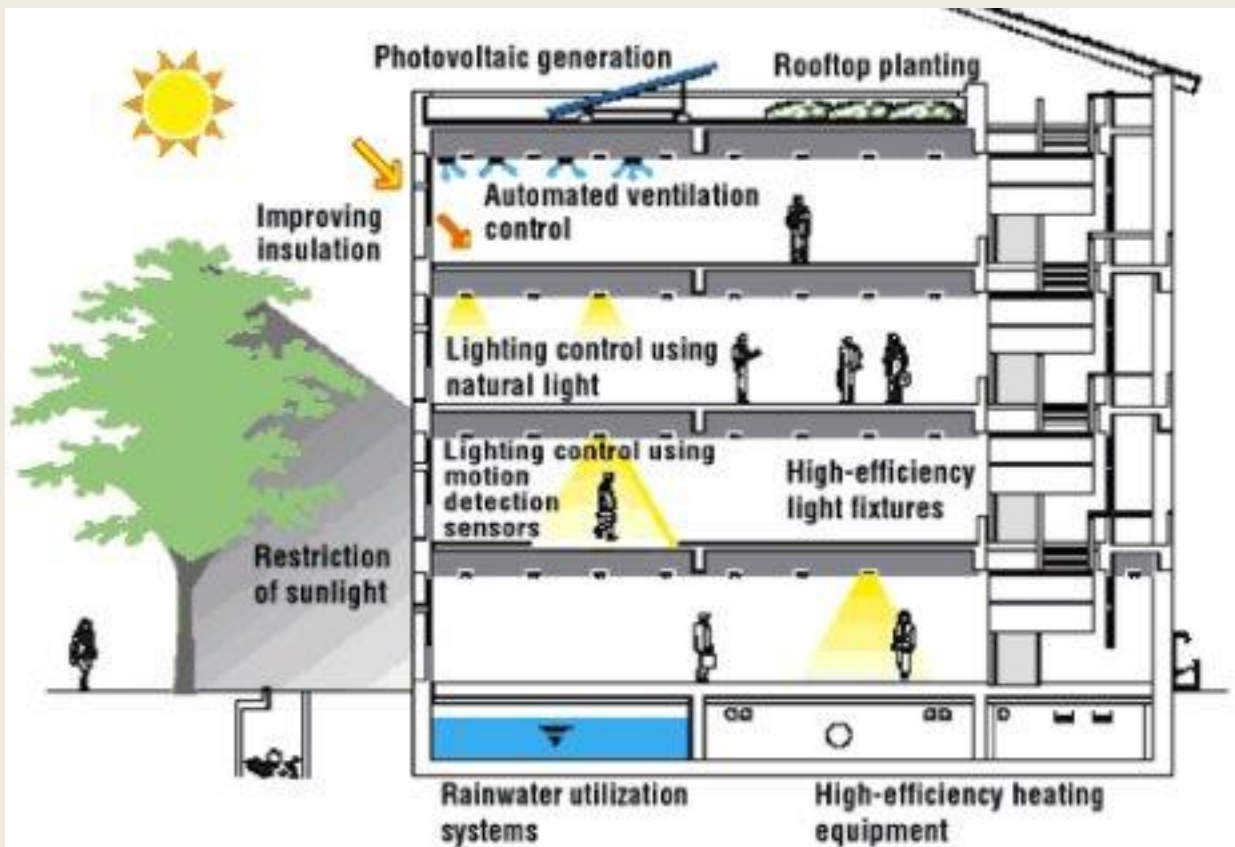
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## environment and sustainability

### specific carbon recommendations

comprehensive carbon reduction strategy

- reduce consumption



- energy efficient
- site design

# White Flint Sector Plan

## environment and sustainability

### specific carbon recommendations

comprehensive carbon reduction strategy

- maximize renewable energy



- on-site production
- off-site purchase
- mitigation





# White Flint Sector Plan

## environment and sustainability

### specific carbon recommendations

comprehensive carbon reduction strategy

- maximize renewable energy



- on-site production
- off-site purchase
- mitigation



# White Flint Sector Plan

## environment and sustainability

how do we protect the **environment**?

- compact, transit-oriented neighborhoods with a **diversity** of land uses
- **connect** within and between communities
- green site **design**
  - increase vegetation
  - urban stormwater solutions
  - energy efficiency
  - on-site energy generation
  - minimize pavement, reduce heat island
  - save/reuse water

