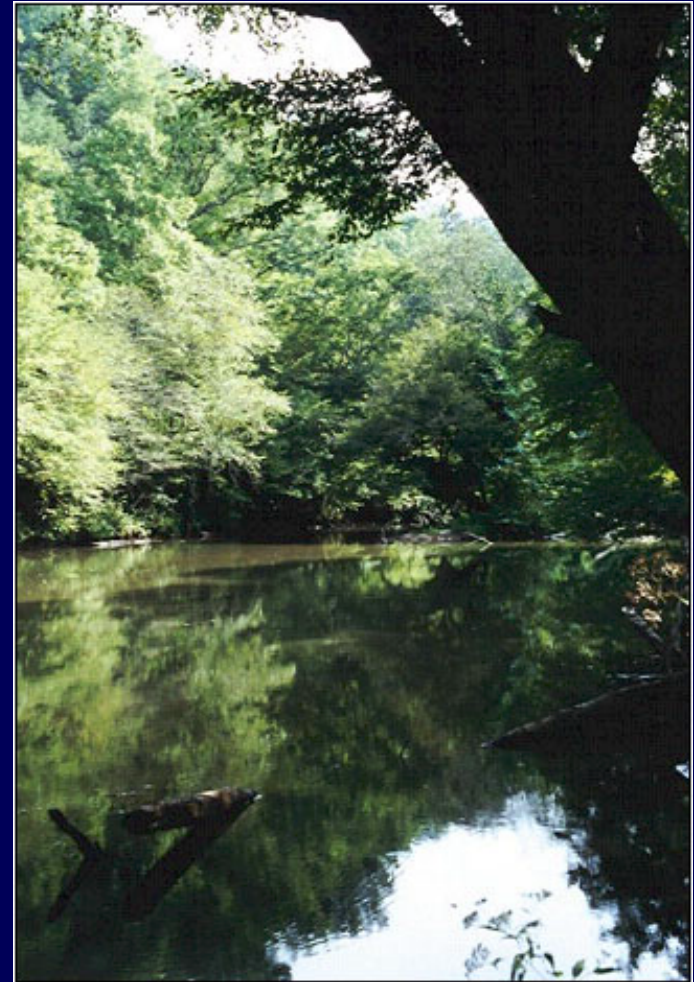


# Better Site Design

## Development Principles to Protect Biodiversity & Water Quality

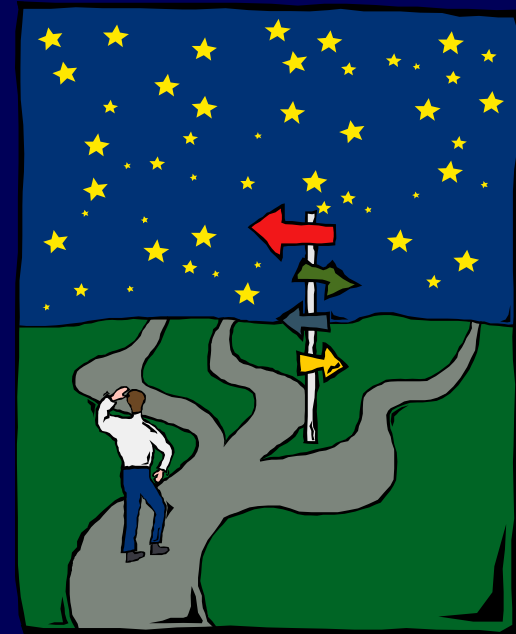
Erin Dreelin



UGA River Basin  
Science and Policy Center

# Presentation Outline

- Better Site Design principles
- Evaluation for the HCP
- Costs: Case studies
- Questions & discussion



# Better Site Design Concepts

- Maximize infiltration at the site
- Minimize collection and conveyance
- Prevent stormwater impacts rather than mitigate them
- Utilize simple, nonstructural methods
- Use hydrology as a framework for site design



# Better Site Design

- Not universal standards
- Identify areas where codes can be improved
- Reduce amount of impervious surfaces & their impact on receiving waters

It's not just where you build, but *how* you build.

# Model Development Principles

## Three Categories of Development:

- Residential Streets and Parking Lots
- Lot Development
- Conservation of Natural Areas



# Model Development Principles

- Adapt to meet unique site conditions
- Act as benchmarks, not cookie cutters
- Do not address infill and redevelopment
- Need to be consistent with environmental and watershed plans

# Evaluation for the HCP

- Methods
- Preliminary results
- Next steps



# Methods

- Ordinance review
  - Subdivision regulations
  - Street & road regulations
  - Stormwater ordinances
  - Tree Preservation ordinances
- Do existing codes promote Better Site Design?



# Evaluating Site Design Standards

Collect development  
codes



Complete Ordinance  
Review Worksheet



Identify codes that prohibit  
Better Site Design



Recommend changes  
for each locality

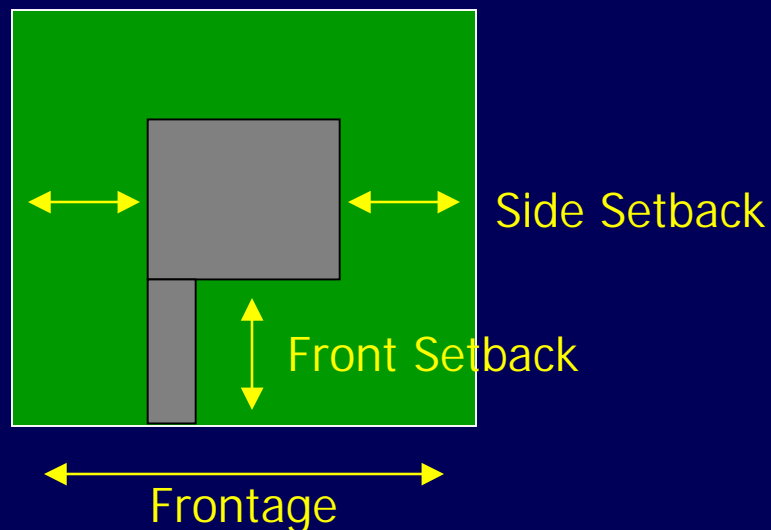
# Preliminary Results

- Building setbacks & frontages
- Impervious surface area

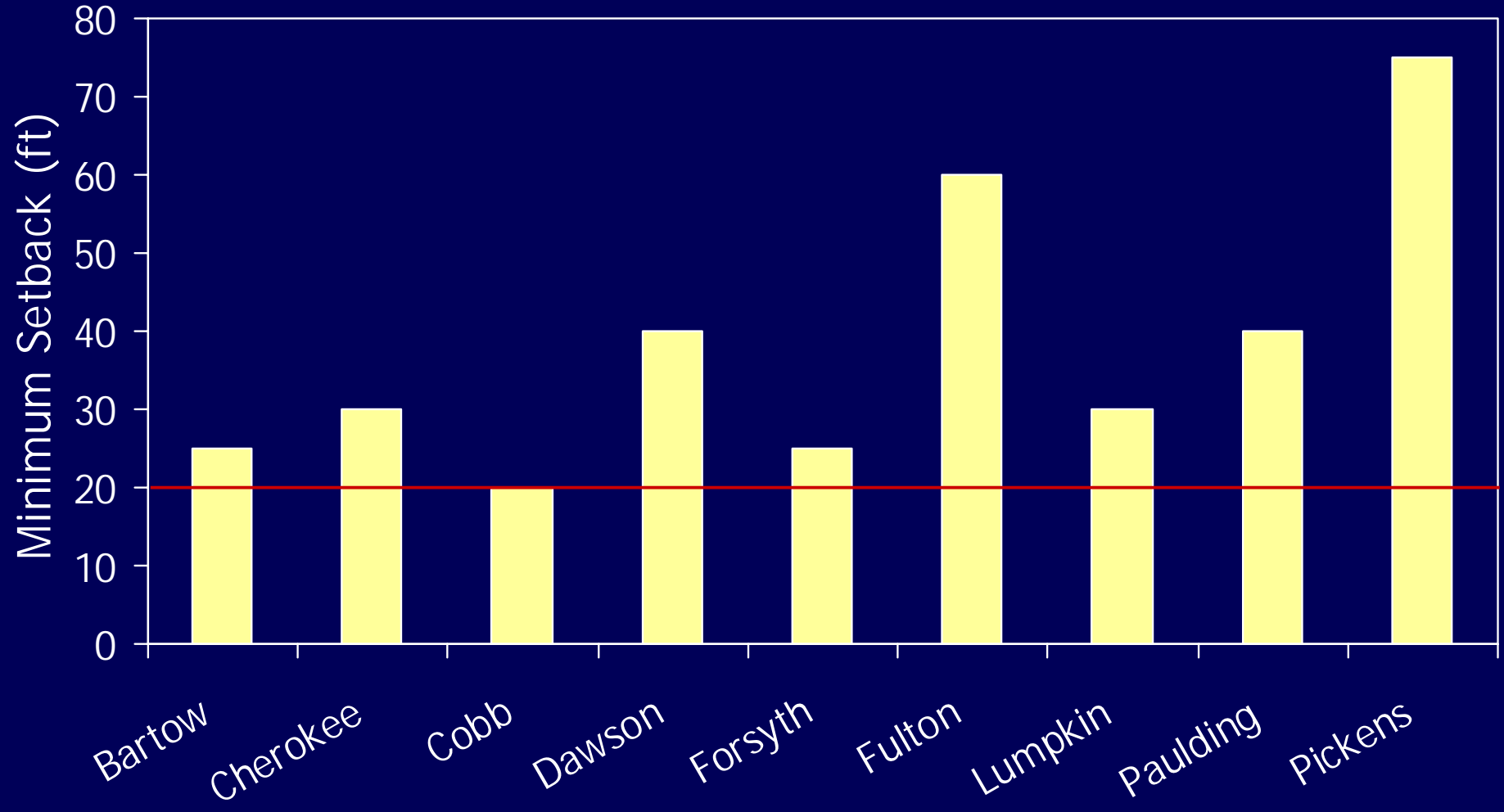


# Setbacks & Frontages

- Current codes have strict requirements for lot geometry
- Criteria constrain site planners
- Smaller setbacks typically not permitted



# Front Setbacks



# Recommendations

- Relax side yard setbacks
- Allow narrower frontages to reduce total road length
- Relax front setback requirements to minimize driveway lengths



# Reducing Impervious Surfaces

- Street Width & Length
- Right-of-way Width
- Cul-de-Sacs
- Curb & gutter
- Parking Ratios
- Parking Codes
- Parking Lot Design
- Structured Parking
- Parking Lot Runoff



# Impervious Surfaces

- Prevent infiltration of runoff
  - Paved areas
  - Roofs
  - Compacted soil





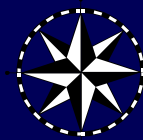
INTENSITY OF LAND USE



IMPERVIOUS SURFACE

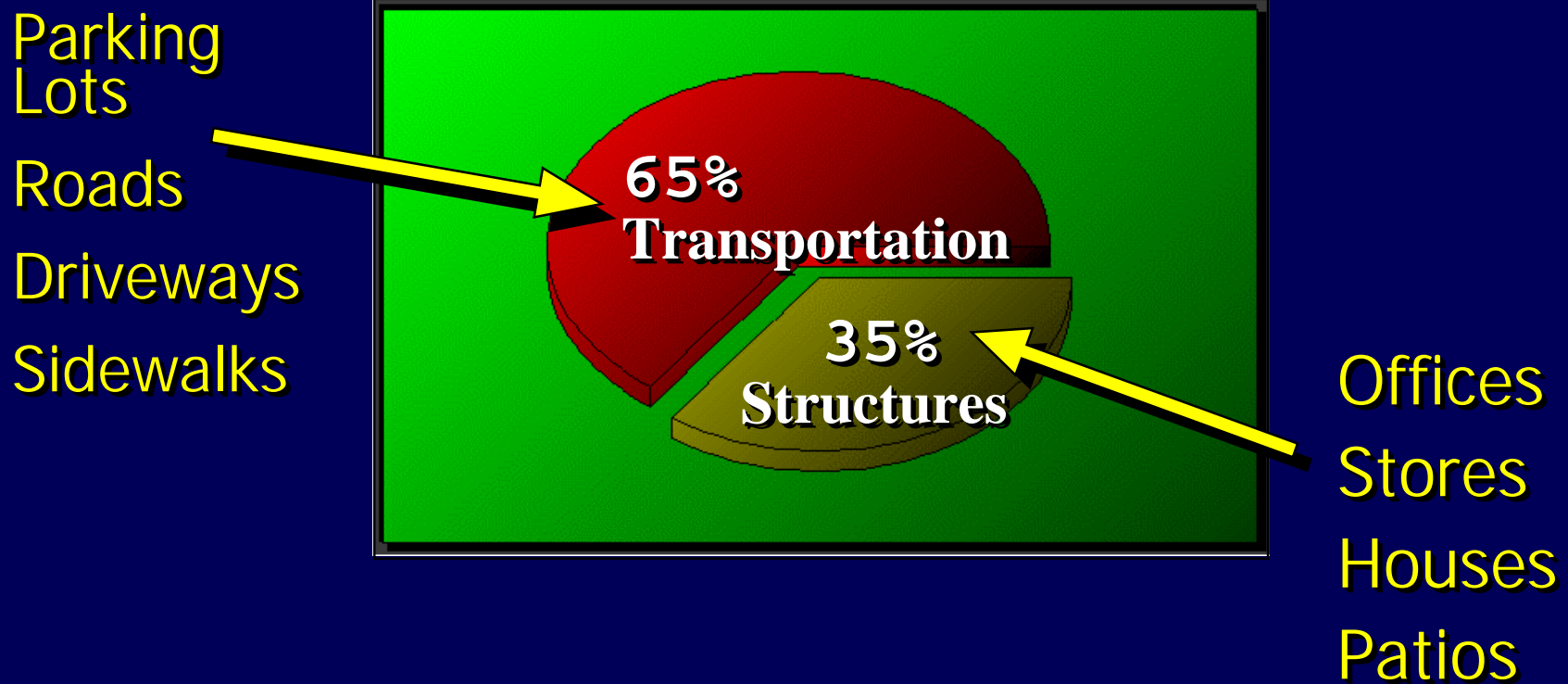


WATER QUALITY PROBLEMS





# The Impervious Surface Budget

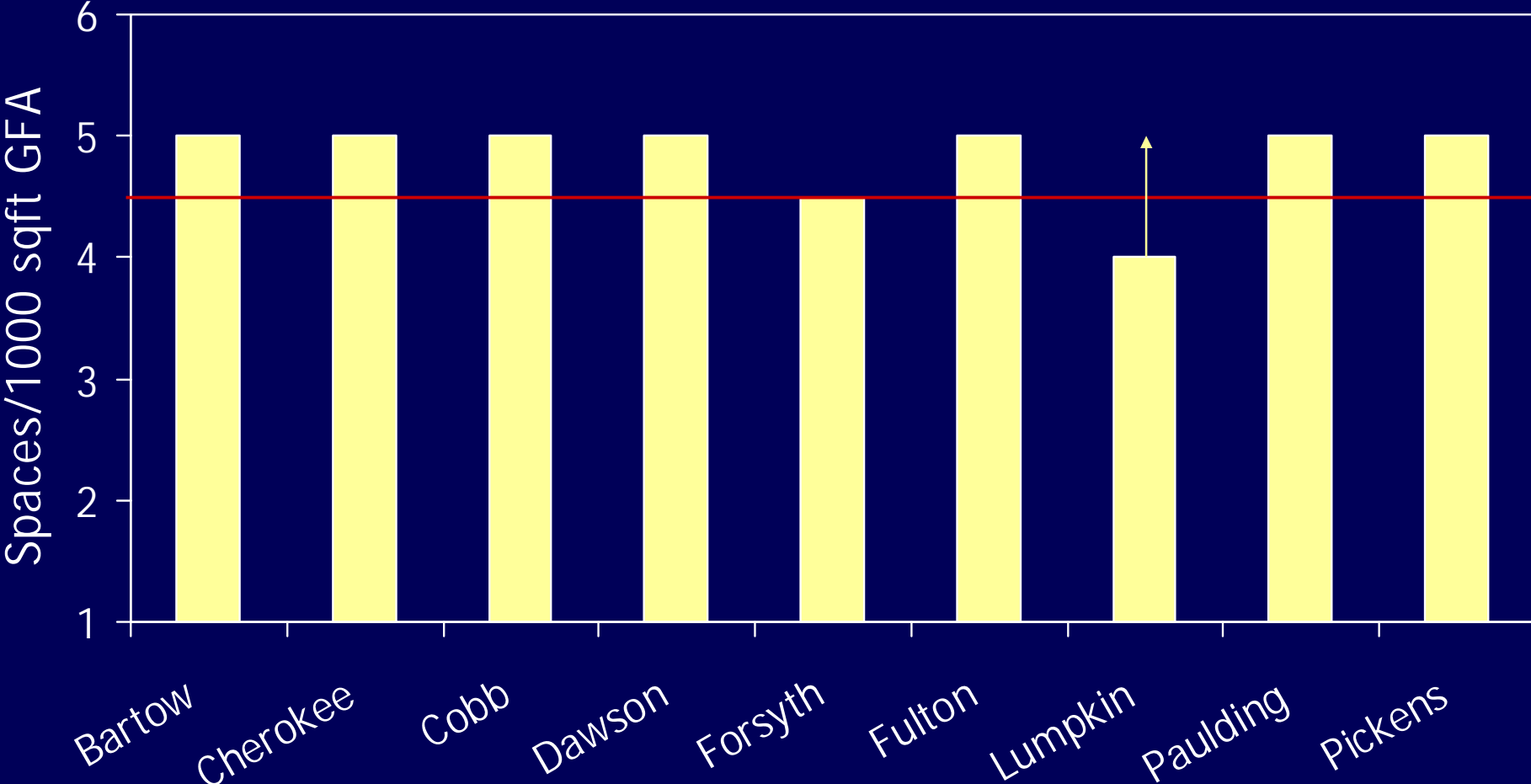


# Parking Regulations

- Often require impervious materials
- Require more spaces than are actually used in peak periods
- Developers often build more spaces than required by zoning



# Parking Ratios



# Parking Recommendations

- Ratios should reflect demand
- State min & max
- Require overflow to be pervious
- Encourage shared parking
- Use vegetated areas where possible

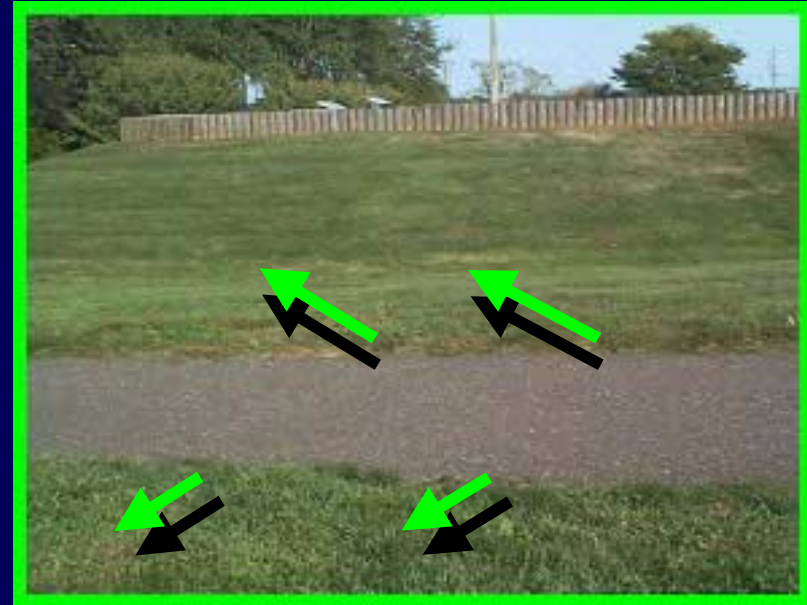


# Reducing Impervious Surfaces

If you can't eliminate it, disconnect it!



**Connected**  
Generates Runoff



**Disconnected**  
Infiltrates Runoff



# Next Steps

- Complete ordinance review
- Tree preservation
- Stormwater management

# Ordinance Review

Collect development codes

✓ Counties  
✗ Cities

Complete Ordinance Review Worksheet

✓ Counties  
✗ Cities

Identify codes that prohibit Better Site Design

✓ Counties  
✗ Cities

Recommend changes for each locality

✗ Counties  
✗ Cities

# Tree Preservation

- Minimize clearing & grading
- Conserve trees at each site
- Cluster tree areas
- Promote use of native vegetation





# Stormwater Management

- Better Site Design credits
- Funding



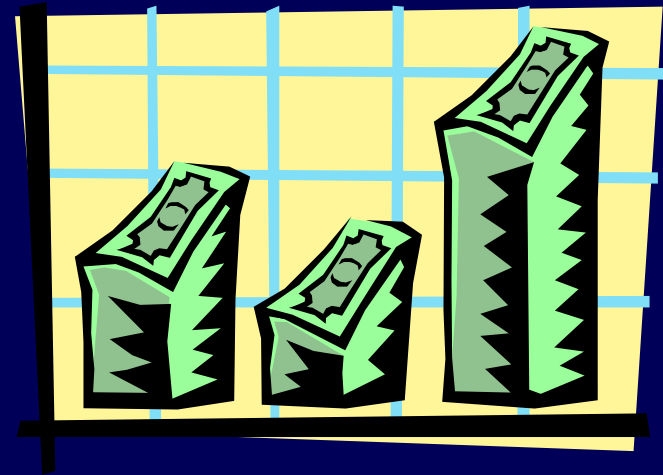
# Better Site Design Credits

- Incentives to include Better Site Design
- Reduce required storage volume
- Model stormwater ordinance



# Funding Stormwater Programs

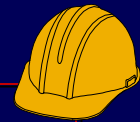
- Permit review fees
- Performance Bonds
- Maintenance Bonds
- Priority funding programs



# What About The Developers?

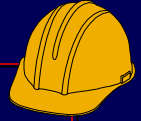
→ Want to know the rules

↳ Clearly written regulations can do that



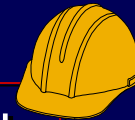
→ Want to save money

↳ Reducing impervious surfaces can do that



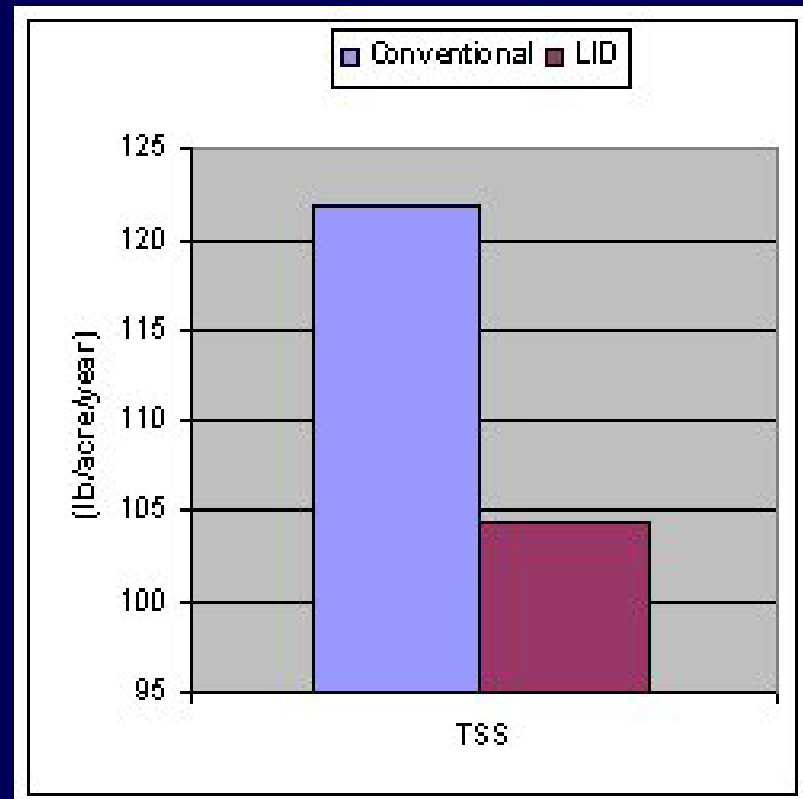
→ Want to sell lots

↳ Green areas can do that



# Case Study: Somerset, MD

- Eliminated stormwater ponds
  - Used bioinfiltration
  - Saved \$300,000
- Gained 6 lots
- Reduced finished lot cost \$4800



# Case Study: Gap Creek, AK

- Higher lot yield
  - 17 additional lots
- Higher lot value
  - \$3000 higher than competition
- Lower cost per lot
  - \$4800 less than conventional
- Enhanced marketability
  - 80% sold in first year
- Added amenities
  - 23.5 acres parks & greenspace

# Information Resources

- Center for Watershed Protection
  - [www.cwp.org](http://www.cwp.org)
- Nonpoint Source Education for Municipal Officials
  - [www.nemo.uconn.edu](http://www.nemo.uconn.edu)
- Urban Design Tools
  - [www.lid-stormwater.net](http://www.lid-stormwater.net)

