Tree-Friendly Development Practices

by

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Slideshow Content

- Overview of Better Site Design
- Open Space Design
- Local Site Planning Roundtable
- Case Study of benefits of development with trees

Source: Center for Watershed Protection

Use Site Design Techniques that Conserve Trees and Native Vegetation

- Better Site Design techniques that can protect trees:
  - Reduced street and ROW widths
  - Reduced parking ratios
  - Reduced lot frontages and setbacks
  - Use natural areas for stormwater treatment
  - Preserve stream buffers
  - Open space design

Open Space Design

- Clusters lots on smaller portion of site to conserve natural areas
- Incorporates smaller lot sizes
- Minimizes total impervious area
- Provides community open space
- Promotes watershed protection

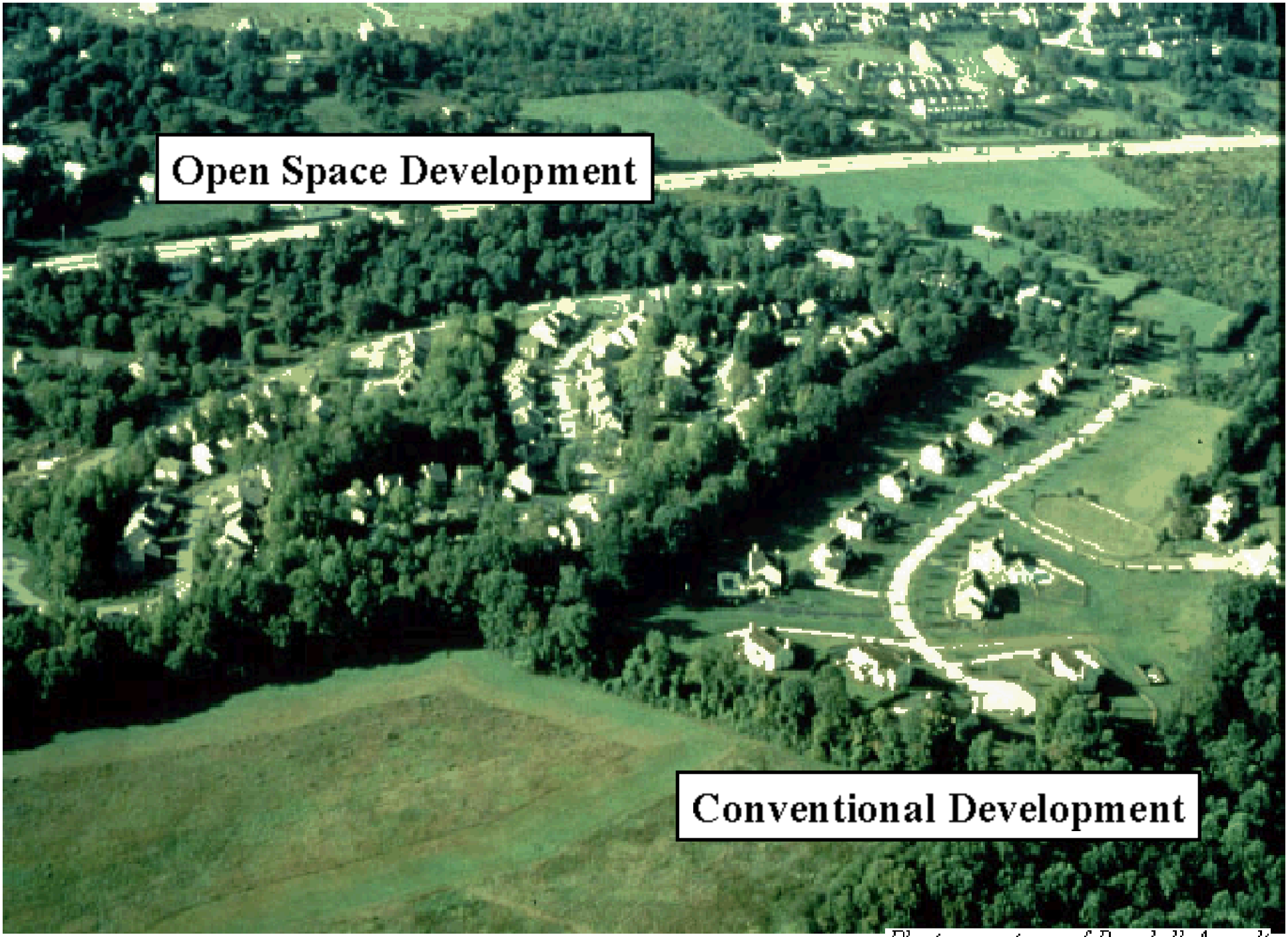


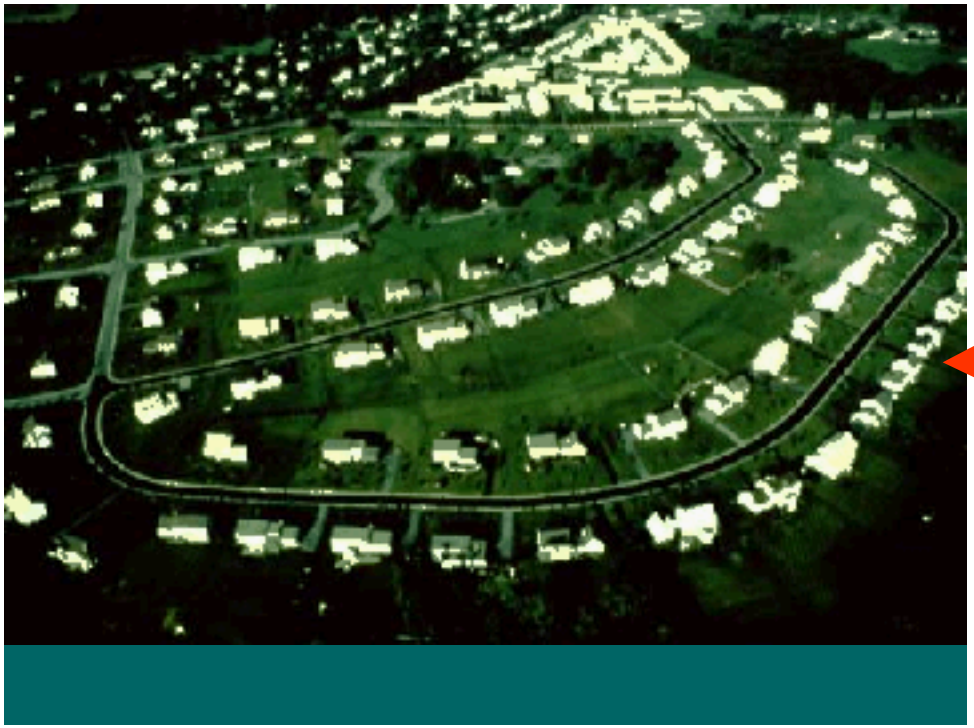
Photo courtesy of Randall Arendt

Open Space Design

Perception	Reality
Smaller lots are less marketable	Many studies indicate that open space designs can save in construction costs while having a higher market value
Developers may be discouraged from using open space design because it requires a special exception or additional review process	Communities can revise their subdivision or zoning ordinances to make open space design by-right

Minimize Clearing of Native Vegetation

- Clearing and grading of native vegetation should be limited to the minimum needed to:
  - Build lots
  - Allow access
  - Provide fire protection
- A suggested limit of disturbance is 5 to 10 feet outward from building pads



Entire Site Cleared

Site Fingerprinting Used

Minimize Clearing

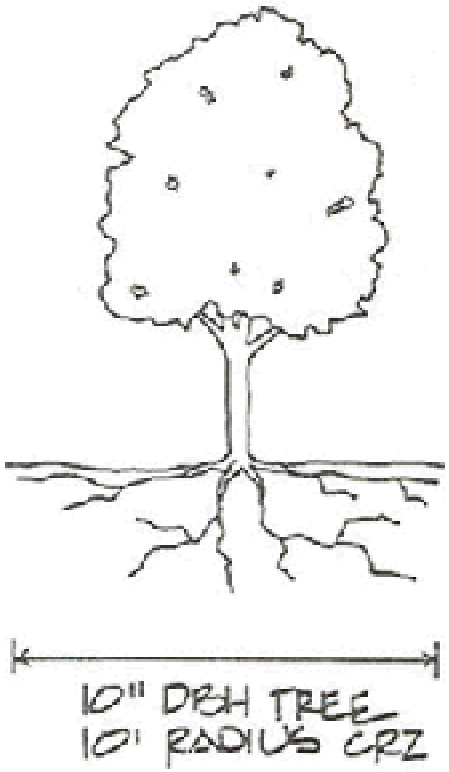
Perception	Reality
Preservation of trees during construction is prohibitively expensive.	Minimizing clearing during construction can reduce earth movement and erosion and sediment control costs by up to $5,000/ acre (Delaware DNREC, 1997)
Vegetation near homes can be a fire risk.	In areas where clearing is required around a house, minimization of the entire site can still be achieved. This can be a challenge in wildfire areas. Greater clearing and grading may be required to reduce risk of fires.

Protect Trees and Soil During Construction

- Delineate the critical root zone (CRZ): the area of tree roots that must be protected for the tree's survival
- Install/enforce physical barriers to protect trees
  - Use signs and visible flagging
  - No construction, material storage, utilities, or vehicles allowed in protected zone
  - Enforce penalties for violation
  - Educate contractors
- Protect soils from compaction/use soil stockpiling

Protect Trees and Soil During Construction

- Methods to delineate the CRZ:
  - Trunk diameter method
  - Site occupancy method
  - Minimum area method
  - Dripline method



Trunk diameter method

Dripline Method

Protect Trees During Construction

Perception	Reality
Additional cost of saving a tree outweigh benefits.	♦Property values increased by 6-15% on both residential and commercial sites (Morales, 1980 and Weyerhauser, 1989) ♦Single family homes in Athens, GA with an average of 5 trees/ home sold for 3.5-4.5% more than houses without trees (National Arbor Day Foundation, 1996)

Protect Trees After Construction

- Educate residents about protected areas including signage or other markers
- Specify management of open space – use maintenance agreements, homeowners' association (HOA)
- Tree and forest protection ordinances

Specify Management of Open Space

- Clearly specify how community open space will be managed
  - Community association/HOA
  - Conservation easement
  - Transfer to land trust ownership
  - Publicly owned land
- Designate a sustainable legal entity responsible for managing open space
- Specify native vegetation and restrict tree removal

Open Space Management

Perception	Possible Resolutions
Common areas, stormwater management, and other facilities can be expensive.	Many of these costs can be offset by reducing the amount of paving on a site.
Community association management of open space areas are not reliable	Other options for management include donation to a land trust, conservation easements, and other strategies for maintaining the viability of community associations

Maryland Forest Conservation Act

- Passed in 1991 to protect forests (>40,000 ft^2) during development
- Two requirements
  - Forest stand delineation
  - Forest conservation plan

Local Tree and Forest Protection Ordinances

- Provide specific criteria for long-term protection and maintenance of natural areas (e.g., restrict tree clearing except for safety reasons)
- Establish appropriate enforcement measures
- Designate an entity responsible for holding and managing forest conservation easements
- Model ordinances available at: www.stormwatercenter.net

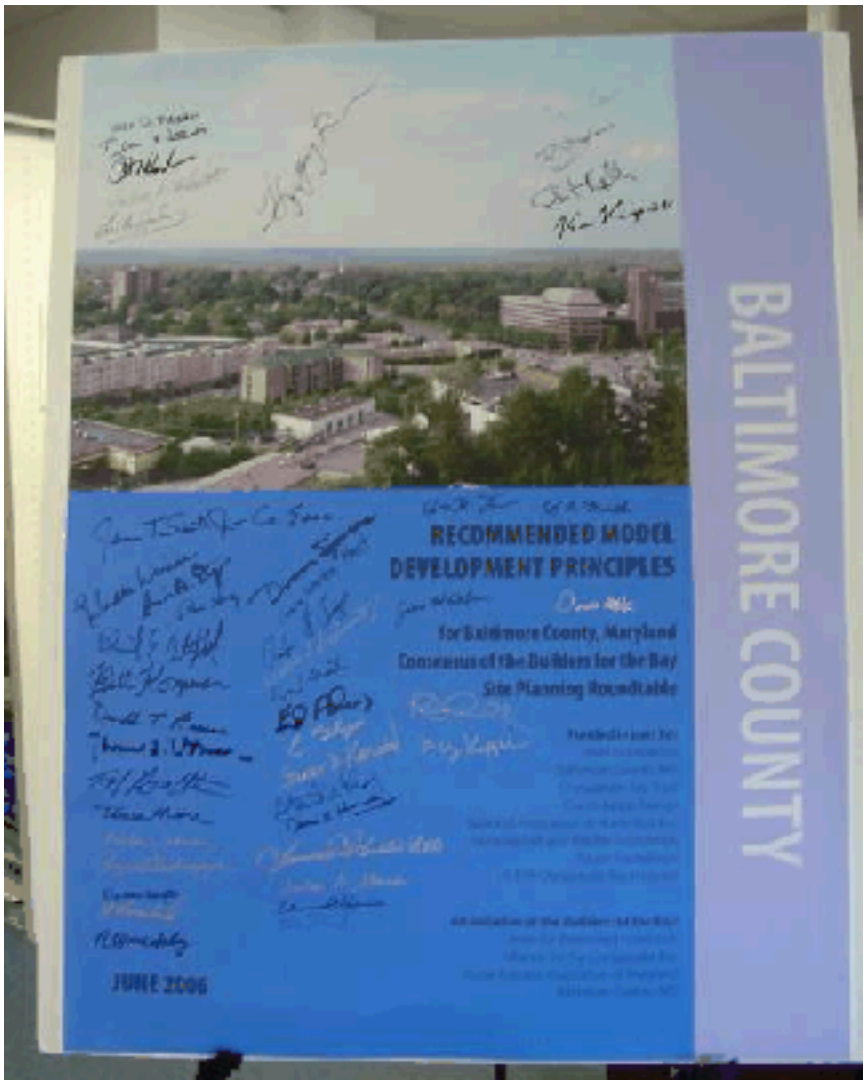
Local Site Planning Roundtable

- A Roundtable is a group of "stakeholders" representing development, government, civic, environmental, and the business community convened to:
  - Conduct a consensus building process that identifies codes and ordinances that act to prohibit or impede better site design
  - Devise a set of recommendations for the jurisdiction to reform or update codes

Site Planning Roundtable

- Review existing codes and ordinances COW
- Work with stakeholders to achieve consensus on changes to codes and ordinances

Baltimore County Roundtable



- 12 month process
  - Reviewed existing codes and regulations
  - Subcommittee meetings
  - Final consensus
  - Ongoing Implementation

Baltimore County Roundtable

Principle N3. Clearing and Grading

"Clearing and grading of forests and native vegetation at a site should be limited to the minimum amount needed to accommodate improvements, allow access and provide fire protection. A fixed portion of any community open space should be managed as protected green space in a consolidated manner."

Case Study
Chapel Run
Conventional Development

Total size of site: 96 acres
Total number of lots: 142
Average size of lots: 1/2 acre
Percent undisturbed: 0%
Percent impervious: 29%

Delaware Dept. of Natural Resources and Environmental Control
Environmental Management Center
Brandywine Conservancy

Case Study
Chapel Run
Conservation Design
Parkway Alternative

Total size of site: 96 acres
Total number of lots: 142
Average size of lots: 1/4 acre
Percent undisturbed: 59.6%
Percent impervious: 14.9%

Delaware Dept. of Natural Resources and Environmental Control
Environmental Management Center
Brandywine Conservancy

Comparison: Chapel Run

- Cost
  - Conventional Development $2,460,200
  - Conservation Design-Parkway $ 888,735

- Percent of Site left undisturbed
  - Conventional Development 0%
  - Conservation Design-Parkway 59.6%

Additional Resources

- Urban Watershed Forestry Manual Parts 1-3. *Available for free download from www.cwp.org*
- Builders for the Bay http://www.cwp.org/builders_for_bay.htm
- Forest Friendly Development. *Available for free download from http://www.alliancechesbay.org/*

Additional Resources

- Forest Conservation Act (summary) http://dnrweb.dnr.state.md.us/download/forests/mfca.pdf

- Center for Watershed Protection www.cwp.org and www.stormwatercenter.net