Planning the Urban Forest

Lancaster, PA
October 6, 2010

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Planning the Urban Forest

Principles of an Effective Urban Forestry Program

• 5 General Principles
• 6 Planning Principles
• 4 Design Principles

Source: APA PAS Report No. 555

Discussion Questions:

• Why do these principles matter?
• Are you applying them in your work?
• If not, would they work in your community?
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General Principles

1. Get trees to the forefront of the planning process
   - Visioning and goal setting
   - Comprehensive planning
   - Subarea / functional planning
   - Plan implementation

Source: PAS Report No. 555, p. 23
Visioning: Green Street (Before)
Visioning: Green Street (After)

Source: WRT for the Philadelphia Water Department
Visioning: Green Homes (Before)
Visioning: Green Homes (After)

Source: WRT for the Philadelphia Water Department
Visioning: Green Industry (Before)
Visioning: Green Industry (After)

Source: WRT for the Philadelphia Water Department
Visioning: Green Business (Before)
Visioning: Green Business (After)

Source: WRT for the Philadelphia Water Department
2. Know where you came from to know where you are going
   • Conduct quantitative assessments of tree canopy conditions and document change over time

3. Seek out private and civic partners
   • Private property owners / volunteers
   • Business partners / media
   • Nonprofits

4. Investing in trees makes economic sense
   • Quantify financial benefits: increased property values, increased retail activity, reduced energy costs, reduced costs of grey infrastructure, etc.
Example: Benefits of Philadelphia’s Existing Urban Forest

- Pollution removal (802 tons/yr.).......................... $3.9 million/yr.
- Carbon storage (530,000 tons).............................$9.8 million
- Carbon sequestration (16,100 tons/yr.).................$297,000/yr.
- Building energy reduction................................. $1.2 million/yr.
- Structural value (replacing 2.1 million trees)...... $1.8 billion

General Principles

GreenPlan Philadelphia: Quantifying the Benefits of Planting One Million Trees

• Target: Achieve at least 30 percent tree cover in every neighborhood
• Cost / Benefit Analysis: Allegheny West / Tioga Neighborhood

Source: GreenPlan Philadelphia, 2010
5. Urban forestry must be sustainable financially
   - Reposition trees as a wise public investment – a profit center, not a cost center
   - Use the concept of green infrastructure to transform the conversation from “environmental costs” to “cost-benefit ratios”

Much as we are trained to see investment in traditional infrastructure, such as roads and bridges, as a means of spurring economic development, environmental investments including urban forestry are acquiring a new status as wealth generators rather than as mere externalities.

Source: APA PAS Report No. 555, p. 30
General Principles

Example: Philadelphia Long Term Control Plan Update  
A Green Infrastructure Approach

- A “triple-bottom line” approach calling for $1.01 billion in green stormwater infrastructure investments over 20 years
- After 40 years, the program is projected to generate more than $2 in benefits for every dollar invested ($2.2 billion)

Green Stormwater Infrastructure Tools

- Stormwater Tree Trench
- Stormwater Wetland
- Bump-out
- Stormwater Planter

Source: Philadelphia Water Department
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Planning Principles

_Ushering vision into reality through regulation..._

1. Incorporate the tree ordinance in the development code and ensure consistency with other codes

2. Collaborate with developers, environmentalists, and other stakeholders to draft ordinances

3. Planned Unit Development (PUD) and similar regulations should include an urban forestry evaluation checklist or guidelines

4. Ordinances must include provisions for enforcement personnel
5. Take an adaptive management approach to resources...

...where actions are designed and executed and effects are monitored for the purpose of learning and adjusting future management actions, which improves the efficiency and responsiveness of management.

Source: Code of Federal Regulations – Title 36: Parks, Forests, and Public Property
Planning Principles

6. Plan for the long-term maintenance of trees
   • Conduct an operations review
   • Review and maintain tree inventory data (provides basis for adaptive management)
   • Budget for equipment
   • Maintain adequate personnel
   • Disseminate information on proper planting and maintenance practices

Source: Best Management Practices for Community Trees, Athens-Clarke County, GA
Planning Principles

Example: Atlanta’s Project Greenspace and Urban Forestry Program

• An element of the City’s Comprehensive Development Plan, Project Greenspace establishes a vision and strategy to achieve a world-class green infrastructure system by 2030.

• It sets a goal of protecting and restoring Atlanta’s tree canopy in order to increase coverage from 26% to 40%.
Atlanta’s Project Greenspace and Urban Forestry Program

• Atlanta has a strong **Urban Forestry Program**
  • The Arborist Division administers and enforces the tree ordinance
  • The Office of Parks is responsible for trees located in city parks, public spaces, and right-of-ways (street trees)

• **Tree Protection Ordinance**
  • Purpose is to achieve “no net loss” of trees
  • Permits required to remove hardwood trees 6” or greater DBH (pines 12” or greater DBH) on private property
  • “Recompense” is required to replace the value of trees removed through replanting and/or payment into the Tree Trust Fund
  • Violations of the ordinance are subject to fines and/or jail
Atlanta’s Project Greenspace and Urban Forestry Program Priorities to Achieve 40% Tree Canopy Coverage Goal

• Establish and maintain a baseline tree inventory

• Increase tree planting through public / private partnerships

• Improve the tree ordinance based on recently completed tree protection evaluation

• Increase education and public outreach on the importance of Atlanta’s tree canopy and the role of the tree ordinance
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1. Use urban forestry to support other planning goals, e.g.:
   • Contemporary community development practices
     ▪ Smart growth / new urbanism
     ▪ Low-impact / conservation development
     ▪ Multimodal transportation / TOD / walkable neighborhoods
     ▪ Sustainable development
   • Emphasize the role of trees in place-making

2. Include green infrastructure elements in local comprehensive plans
   • Link to other plan elements
Example: Envision Lancaster County Comprehensive Plan
2009 EPA Overall Excellence in Smart Growth Award Winner

Lancaster County’s growth management and nationally ranked farmland preservation programs help preserve the agricultural economy, rural character, and unique culture of the area.

Lancaster County, in south central Pennsylvania, is proud of its rich cultural heritage, its historic towns and villages, and its fertile farmland. To maintain the character of the county, as well as its diverse economy and natural resources, for future generations, the Lancaster County Planning Commission established a regional, countywide comprehensive growth management plan, which protects farmland and historic areas while strategically directing development to established towns and cities in the county.

For More Information:
Mark Ferrick
President, Lancaster County Planning Commission
Tel: (717) 299-0033

Like many rural areas, Lancaster County has farmland and open space.

In response, the Lancaster County Planning Commission developed Envision Lancaster County. A plan created to manage growth and maintain the county’s character. Envision Lancaster County plan created a rural and urban areas, and natural. The plan considers the entire region in designing encouraging more compact, integral preserves open space, protects water, and transportation choices.

One of the defining features of Envision Lancaster County is the countywide comprehensive growth management plan that establishes a countywide framework for protecting and promoting farmland.

The plan directs development to existing and agriculturally important land. The farmland protection by encouraging it will be designated for long-term rural addition, Rural Centers, including vital

Throughout the process, the commission actively engaged the public and local governments. The county’s good working relationship with municipalities encouraged them to buy into the plan’s principles. To ensure public input, the commission conducted educational workshops and public forums and developed a citizens’ task force. The county also reached out to Lancaster’s Amish and Mennonite communities through targeted publications and meetings with religious leaders. This plan will help Lancaster County continue to be a model for communities that balance growth with natural, historic, and cultural preservation.

"Smart growth in Lancaster County thrives due to citizens’ dedication to maintain its unique sense of place." - Henry Lashefski, East Hempfield Township resident
Design Principles

Envision Lancaster County Comprehensive Plan and Green Infrastructure Plan (Greenscapes)
Design Principles

3. The natural environment makes neighborhoods more livable
   • From sense of place / community aesthetics to...
   • Measurable benefits such as crime reduction

4. Make the place right for trees and then pick the right trees
Tree Selection Considerations

- Climate, soil type, and topography (water availability, hardiness zone / site aspect, drainage, slope, etc.)

- Urban environment (soil disturbance, space for root and canopy growth, proximity to utilities, microclimate, etc.)

- Species characteristics (native vs. non-native / invasive, hardiness, form at maturity, maintenance requirements, etc.)

http://selectree.calpoly.edu/right_tree.html
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