

# THE VALUE OF YOUR URBAN FOREST & PARKS

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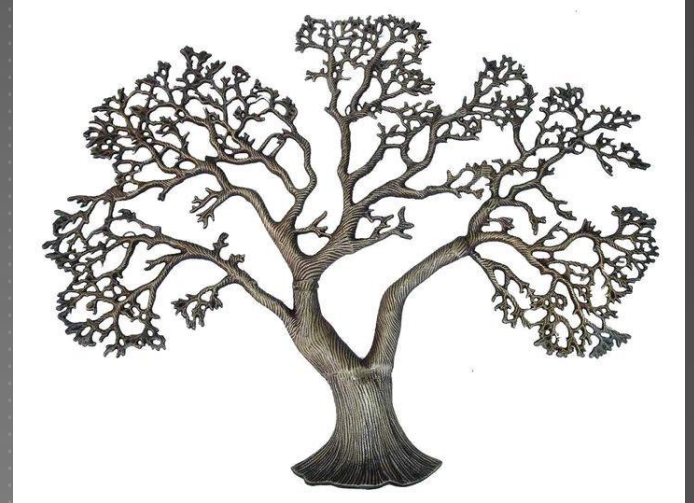
# BEFORE WE BEGIN ...

- ▶ I am not an Economist
- ▶ Don't let anyone tell you there isn't much economic information available on forest/park benefits (stay tuned)
- ▶ You are the Urban Forestry experts
- ▶ Who is CFPA?



# ECOLOGICAL BENEFITS OF TREES

- ▶ reduced air pollution/smog
- ▶ storm-water control
- ▶ carbon storage
- ▶ improved water quality
- ▶ reduced energy consumption
- ▶ wildlife habitat



Source: The Value of Trees in an Urban/Community Forest, UMass /Virginia Extension

# SOCIAL BENEFITS OF TREES

- ▶ Hospital patients who have a view of trees out of their window recovered more quickly than patients who did not (Ulrich 1984).
- ▶ Employees who could look out their office windows and see trees and nature were happier at work (Miller 1997).
- ▶ Properly placed and maintained trees have even been shown to reduce crime (Kuo et al. 1998) and enhance cognitive development in children (Wells 2000).
- ▶ Outdoor recreation activities, such as hiking, are more enjoyable around trees. The availability of active outdoor recreation generated \$289 billion in retail sales and services across the United States (Outdoor Industry Association, 2006).
- ▶ The aesthetic value of landscape trees can increase property values by as much as 20 percent.

Source: The Value of Trees in an Urban/Community Forest, UMass/Virginia Extension

# BENEFITS OF URBAN TREES

- ▶ Environmental/Energy Savings
  - ▶ Trees reduce heating/cooling costs of residents by 8-12%
  - ▶ 1 person consumes 386 lbs of O<sub>2</sub>/year; 2 healthy 32' trees produce 520 lbs
  - ▶ Mature tree absorbs 120-240 lbs of particulate pollution/year
  - ▶ Just one 32' ash tree intercepts 327 gallons of stormwater runoff



Urban Forest Values: Economic Benefits of Trees  
in Cities, U. Washington Center for Urban  
Horticulture

# BENEFITS OF URBAN TREES

- ▶ Retail and Commercial Environments
  - ▶ 74% of public surveyed preferred to patronize commercial establishments whose parking lots use trees and other landscaping
  - ▶ 92% of Real Estate appraisers surveyed agreed that landscaping added to value and sales appeal of commercial real estate
  - ▶ Landscaping amenities have highest correlation with occupancy rates (greater than location, location, location)

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# BENEFITS OF URBAN TREES

- ▶ Residential Property Values
  - ▶ 4-6% increase in value of residential properties associated with presence of trees
  - ▶ Tree size relatively insignificant for low priced homes, but did affect values for more expensive homes
  - ▶ 30% difference in appraised value based on amount and variation of tree cover

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# LONG ISLAND PARKS/OPEN SPACE

## How much would you pay? (survey of residents)

- ▶ Long Islanders are willing to pay \$1.48 billion annually to recreate in public parks. (2.75 million people in Nassau & Suffolk counties)

## Eco-Tourism Revenues

- ▶ Non-residents who visit Long Island because of parks and open space spend \$615 million in the local economy, which generates \$27.3 million in sales tax.

## Health/Recreation Benefits

- ▶ More than 600,000 Long Islanders engage in physical activities in parks, generating measurable health benefits of \$164 million per year.

## Property Values

- ▶ Proximity to parks and open space enhances the value of residential properties-an aggregate, one-time increase of \$5.8 billion. Increased tax revenues from these properties generate \$58.2 million annually.

## Resource Benefits (Water/Pollution)

- ▶ Parks and open spaces capture precipitation and slow run-off, reducing stormwater management costs by \$23.9 million annually. By protecting underground drinking water sources, open space also reduces the cost of drinking water up to ten-fold. Trees and shrubs remove air pollutants, reducing pollution-control costs by \$18.9 million a year.

Source: Trust for Public Land, *The Economic Benefits and Fiscal Impact of Parks and Open Space in Nassau and Suffolk Counties, New York*

# WEIGHING THE COSTS/BENEFITS

## Making the Right Choice for NYC

- ▶ Estimated cost to New York City to buy watershed lands to protect upstate drinking water supplies: \$1.5 billion

Vs.

- ▶ Estimated cost to New York City to build a filtration plant if upstate watershed lands are developed: \$6 billion to \$8 billion
- ▶ Similarly, argument used by Guilford of costs of services weighed against costs of protection

# NYC FOREST RESOURCE ANALYSIS

## Total Economic Benefits

- ▶ The city's 592,130 street trees are a valuable asset, providing approximately \$121.9 million (\$209 per tree) in annual gross benefits

## Costs (tree planting and establishment, pruning and general tree care, and administration/staff)

- ▶ New York City currently spends approximately \$21.8 million per year maintaining its inventoried street trees or \$37 per tree.

## Net Benefits

- ▶ After costs are taken into account, the city's street tree resource provides approximately \$100.2 million, or \$171 per tree (\$12.79 per capita), in net benefits annually to the community.
- ▶ **Citizens are receiving \$5.60 in benefits for every \$1 spent on tree care.** The benefit-cost ratio in NYC is greater than in any other city. This is due to the presence of many large, old trees as well as the cost of living is 72% higher than the average cost of living across the United States. Utility costs are about 63% higher and median home prices are over double the average (Sperling 2006).

## Where do the Benefits come from?

- ▶ Over half (57%) of the annual benefits provided to residents of the city are environmental services. Stormwater runoff reduction accounts for 51% of environmental benefits, with energy savings accounting for another 40%. Air quality improvement (8%) and CO2 reduction (1%) provide the remaining environmental benefits. Annual increases in property value are also very valuable, accounting for 43% of total annual benefits.

# DO FORESTS & PARKS CREATE JOBS?

## \$1 Million = More jobs for green industries

(Employment per \$1 million spending in various industries – full-time equivalent jobs)



Source: Heidi Garrett-Peltier, Political Economy Research Institute, University of Massachusetts at Amherst.

# DO FORESTS & PARKS CREATE JOBS?

**Job Creation per \$1 Million Investment**

INDUSTRY	DIRECT	INDIRECT	INDUCED	TOTAL
Reforestation, Land and Watershed Restoration, and Sustainable Forest Management	17.55	12.95	9.2	39.7
Crop Agriculture	9.8	6.5	6.5	22.8
Livestock	6.4	9.1	6.2	21.7
Gas (heavy and civil construction for pipelines - 50% new and 50% repair)	12.05	3.93	5.912	21.888
Mass transit and freight rail construction	13	3.70	5.038	21.738
Roads and bridges: repair	11.1	3.69	5.527	20.317
Conservation (Parks and Land and Water Conservation Fund)	11.45	4.15	4.7	20.3
Water infrastructure	9.98	4.38	5.427	19.764
Aviation	9.7	4.30	5.264	19.266
School buildings	8.65	5.38	5.233	19.262
Building retrofits	7.7	4.70	4.96	17.36
Roads and bridges: new	8.7	3.94	4.834	14.474
Solar	5.4	4.40	3.92	13.72
Biomass	7.4	5.00	4.96	17.36
Smart grid	4.3	4.60	3.58	12.46
Wind	4.6	4.90	3.8	13.3
Electricity generation, transmission, distribution	5.32	4.50	4.696	14.512
Coal	1.9	3.00	1.96	6.86
Financial Industry	3.22	2.34	1.668	7.228
Oil and gas	0.8	2.90	1.48	5.18
Nuclear	1.2	1.80	1.2	4.2

Source: Heidi Garrett-Peltier and Robert Pollin, University of Massachusetts Political Economy and Research Institute.

Note: Multipliers derived using IMPLAN 2.0 with 2007 data. Infrastructure multipliers and assumptions are presented in "How Infrastructure Investments Support the U.S. Economy: Employment, Productivity and Growth," Political Economy Research Institute, January 2009, <http://www.peri.umass.edu/236/hash/efc9f7456a/publication/333/>

# 10 MILLION NEW JOBS (GLOBALLY)

- ▶ Ten million new “green jobs” can be created by investing in sustainable forest management, according to FAO.
- ▶ “As more jobs are lost due to the current economic downturn, sustainable forest management could become a means of creating millions of green jobs, thus helping to reduce poverty and improve the environment,. Since forests and trees are vital storehouses of carbon, such an investment could also make a major contribution to climate change mitigation and adaptation efforts,” said Jan Heino, Assistant Director-General of FAO’s Forestry Department.

U.N. FAO Report: March, 2009

# FUTURE OF URBAN FOREST & PARKS

- ▶ Transition from acquisition to management, discovery, & opportunity
- ▶ Funding is limited, need creative solutions
  - ▶ Dedicated funding source for parks/forests (Prop 21 model)
  - ▶ Timber Harvest Revolving Fund
  - ▶ Local Town bonding versus State bonding (\$11.4 million, Guilford)
  - ▶ Public-Private Partnerships (S. Windsor, Greenwich, other examples)
  - ▶ DEP environmental settlement \$
  - ▶ Power of volunteers
- ▶ Determined within neighborhood/community context & goals
- ▶ Experience Parks
- ▶ Virtual Parks?!

# FUTURE OF URBAN FOREST & PARKS

Discussion Points Raised at the End of the Presentation:

- ▶ Virtual Parks as a Means of Encouraging Interest in Real Parks
- ▶ Community Gardens as a Type of Park
- ▶ Golf Carts for Seniors and other Accessibility Issues
- ▶ 'Virtual' Fish Ponds
- ▶ Safety with Respect to the Use of Parks – especially, crime as a concern in the use of urban parks

**Thank You!**

