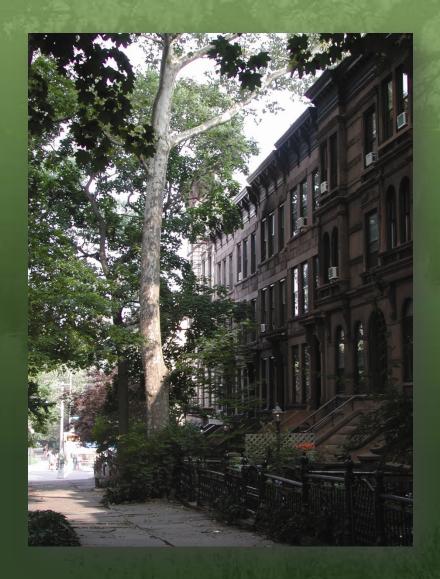# Trees in Our City
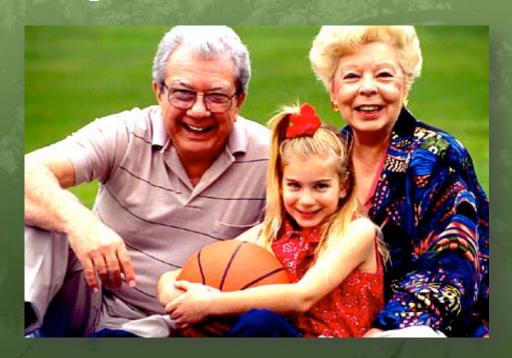
Trees. Worth Our Time.
Worth Our Resources.

· Part of community infrastructure
· Vital to community health
· Community legacy
· Positive impact on business and tax base
· Wise investment of community dollars

Trees. Vital to Community Health.

- Tree-filled neighborhoods:
  - Lower levels of domestic violence
  - Are safer and more sociable
- Tree-filled landscapes reduce stress
- Trees decrease need for medication and speed recovery times

Trees. Important to Human Health.

- 100 trees remove 32 tons of CO_2/year
- 100 trees remove 420 lbs of pollutants per year, including:
  - 100 lbs of ozone
  - 83 lbs of particulates

Trees Save the Environment.

- 100 mature trees catch about 371,000 gallons of rainwater per year...
  - Less $ for stormwater control
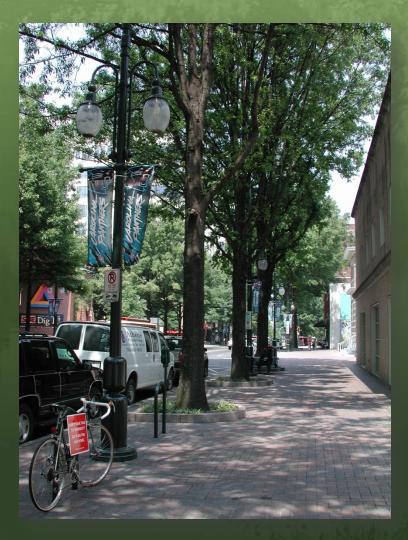 - Cleaner water

Trees. A Savings for Homeowners.

ISA

- Save 10% of annual air conditioning costs
- Save up to 10% of winter heating costs

Trees Sell Houses. (At higher prices.)

- Each large front yard tree adds about 1% to sales price
- Large specimen trees can add 10%, or more, to property values.

Trees Mean Better Business.

In tree-lined commercial districts...

- More frequent shopping
- Longer shopping trips
- Shoppers spend more for parking
- Shoppers spend 12% more for goods

Trees Pay Us Back.

100 Trees Over 40 Years...

Benefits = $411,000

Energy

Air Quality

Runoff

Real Estate

Costs = $115,000

Planting - Pruning

Removal/Disposal

Sidewalk Repair

Litter

Legal - Admin

Pay Off: $296,000

Plant Trees. Create a Legacy.

Central Park, New York City

The Bottom Line...

- Quality of life depends on tree benefits
- Benefits depend on healthy trees
- Healthy trees require quality care
- Quality care depends on you

What You Can Do…

- Establish long-term goals for the community forest
- Fund programs for maintenance and care
- Support volunteer organizations
- Champion community trees

PLANTING THE SEEDS OF SUCCESS.

Trees in Our City

So, where did that information come from, anyway?

Northeast
T**Community**
Tree Guide

Benefits, Costs, and Strategic Planting

E. Gregory McPherson, James R. Simpson, Paula J. Peper,
Shelley L. Gardner, Kelaine E. Vargas, and Qingfu Xiao

Contents

i-Tree 4.0

Using Technology to Tell the Story of the Value of Community Trees

Maybe Only God Can Make a Tree, but Only People Can Put a Price on It

i-Tree

- Climate change

- Storm water mgt.

- Pollution mitigation

- Energy conservation

- Carbon strategies

- Public health issues

➢ **Economic development**

➢ **Green job creation**

Greater Public Scrutiny

i-Tree

The United States Conference of Mayors   Release #2: December 8, 2008

MAINSTREET

Community Development, Green Jobs, Transit, Streets/Highways, Airports, Amtrak, Water, Schools, Housing, Public Safety

ECONOMIC RECOVERY

"Ready to Go"
Jobs and Infrastructure Projects

AMERICA'S MAYORS Report to the Nation on Projects to Strengthen Metro Economies and Create Jobs Now

Manuel A. (Manny) Diaz
Mayor of Miami
President

Tom Cochran
CEO and Executive Director

THE UNITED STATES CONFERENCE OF MAYORS

"Instead of spending money planting trees on a causeway, we should fix the bridge on the causeway,"...

--Senator Tom Coburn (R-OK)

Stimulus Watch

i-Tree

KANSAS CITY, MO

STREET TREE PLANTING - FOR PLANTING 13,000 TREES IN CITY RIGHT-OF-WAYS AS A CLIMATE PROTECTION MEASURE

$1,500,000.00 - 18 JOBS - CDBG PROGRAM

Is this project critical? Yes or No

32% voted critical - 68% voted not critical - 73 votes cast

Yes

No

CHULA VISTA, CA

TREE PLANTING & ESTABLISHMENT IN PARKWAYS CITYWIDE

$2,500,000.00 - 32 JOBS - STREETS/ROADS PROGRAM
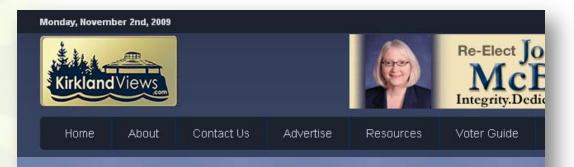
Is this project critical? Yes or No

18% voted critical - 82% voted not critical - 45 votes cast

Yes

No

http://stimuluswatch.org

How do we communicate the value of community trees?

🌳 *"Shame on you City of Kirkland! Government has too much money if we can afford to grade trees!"*

i-Tree: Demonstrating That Trees Pay Us Back!

Street Tree Benefits in Minneapolis:

🌳 $6.8 million in energy savings

🌳 $9.1 million in reduced storm water runoff

🌳 $7.1 million increase in property value

🌳 $1 million improvements to air quality
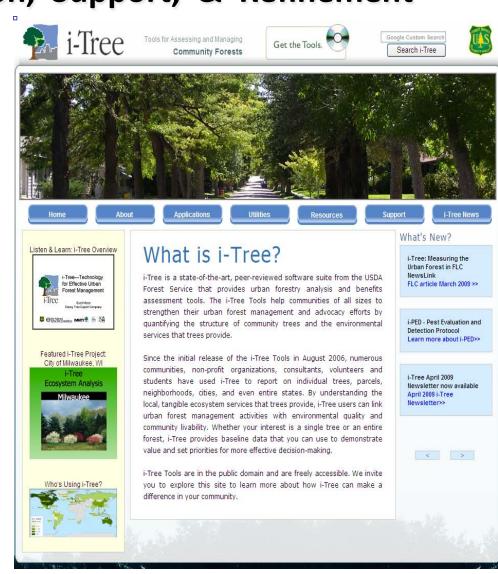
i-Tree is...

Development, Dissemination, Support, & Refinement

🌳 Credible, USDA FS peer-reviewed tools

🌳 Public Domain Software

🌳 Accessible

🌳 Technical Support

"Putting USFS Urban Forest science into the hands of users"

A Benefit-Based Assessment
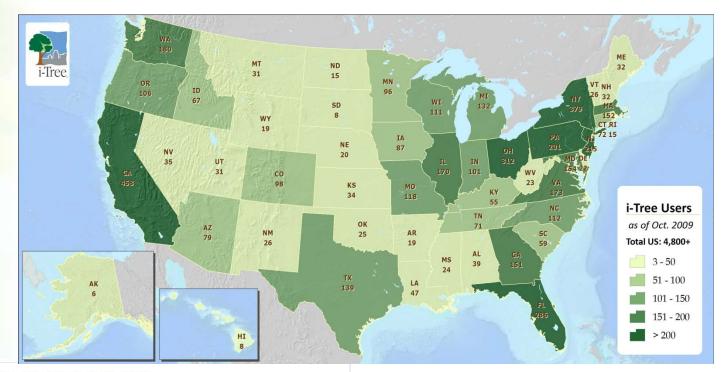
i-Tree user base continues to grow…

- Consultants

- Non-profits

- Universities

i-Tree Users as of Oct. 2009
Total US: 4,800+

| 3 - 50 |
| 51 - 100 |
| 101 - 150 |
| 151 - 200 |
| > 200 |

Friday, November 14, 2008 | Modified: Monday, November 17, 2008

NFL favors proven strategies for a green Super Bowl

Tampa Bay Business Journal - by Alexis Muellner Editor

Print   Email   Reprints   RSS Feeds   Add to Del.icio.us   Digg This   Comments (1)

Real carbon impacts

To that end, for the first time at a Super Bowl, the **U.S. Forest Service** is implementing in Tampa a public domain software monitoring system called i-Tree that it developed with Kent, Ohio-based **Davey Tree Expert Co.** The software, its components 10 years in the making, is expected to do a far more accurate job of monitoring the carbon impact of the tree-planting efforts than current systems offer.

- State-wide projects

- Municipal projects

Using technology to tell your story?

Credit: Waldo Nilo

Four Keys to Success

Pittsburgh's Urban Forest

City of Pittsburgh, Pennsylvania Municipal Forest Resource Analysis

April, 2008

$2.94 in benefits for every $1 spent

i-Tree

Benefit Summary for Pittsburgh's Street Trees

+ Benefits	Total ($)
Energy	$1,205,133
CO2	$35,424
Air Quality	$252,935
Stormwater	$334,601
Aesthetic/Other	$572,882
➡ Total Benefits	**$2,400,975**

Key Element for Success #1:

Understand Your Vision for Using the Results

🌳 Knowing why you are implementing i-Tree and specifically what you want out of it.

➢ Credibility

➢ Quantification using sound science

"Trees are a favorite tool because every tree intercepts about 1,400 gallons of rainfall"

--Danielle Crumrine

PITTSBURGH TRIBUNE-REVIEW.

Larger text   Smaller text   SHARE

A coalition in East Liberty is tackling stormwater issues

By **Mike Cronin**
TRIBUNE-REVIEW
Tuesday, July 22, 2008

Buzz up!
Buzz up!

Multimedia

PDF: East Liberty
Porous streets
View PDF Now

Photo Gallery

click to enlarge

Not many things are less sexy than raw sewage flowing into Western Pennsylvania waterways. But few are more important, said Nate Wildfire, a policy coordinator for East Liberty Development Inc.

"People don't understand that the water you flush down the toilet and the water that goes into stormwater drains go to the same place," Wildfire said.

i-Tree – General Project Phases

🌲 Phase I: Getting Started

➤ Study area, inventory type

🌲 Phase II: Project Establishment

➤ Project parameters, mobilization

🌲 Phase III: Out in the Field

➤ Data collection, Management

🌲 Phase IV: Running the Software

➤ Reporting, interpretation

Chestertown, MD: linking technology with policy

Energy	$31,280
Carbon	$7,760
Air quality	$8,287
Stormwater	$83,413
Property	$103,020

Total annual benefits $223,750

Chestertown i-Tree Project Details

🌱 Project expenses   **$2,000 approx.**

🌱 Funding assistance   **Chesapeake Bay Trust grant**

🌱 Key Partner   **Washington College- CES**

🌱 Project manager   **Local resident (retired forester)**

🌱 Inventory type   **15% random sample**

🌱 Data collection   **40 trained students & vols.**

                               3 - Days

🌱 Total project time   **Approx. 3 months**

Key Element for Success #2:
Plan & Implement Strategically

🌳 Understand the advantages and limitations of i-Tree

🌳 Assess your capacity to complete a project

🌳 Identify barriers and how you will address these

🌳 Develop an implementation plan, but stay flexible

THE CHESTERTOWN Spy

Tree Ordinance Takes a Whack

Posted by John Lang on September 8, 2009 · 5 Comments

If you've got a great big old tree in your yard in Chestertown and you don't like it for any reason, just chop it down, no approvals necessary. There's no such tree protection in the town ordinance anymore.

Milwaukee i-Tree Eco Assessment

EAB Structural Impacts:

- 17.4% Canopy Loss

- $221 Million structural damage

  (citywide)

EAB Functional Impacts:

- $243,785 less pollutant removal

- $138,000 less energy savings (cooling costs)

- $2.6 million reduction in storm water benefits (1996 study)

Milwaukee Ecosystem Assessment
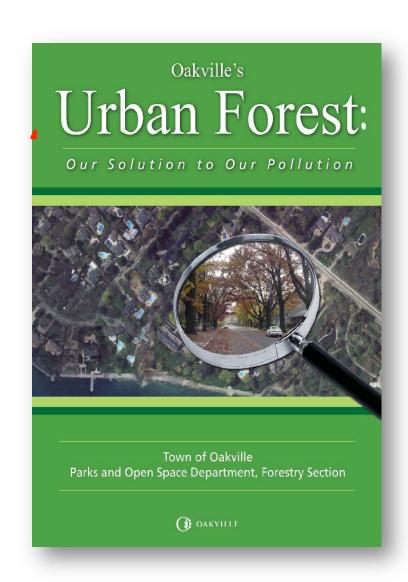
Key Element for Success #3:
Make the message compelling.

- Craft your message for your
  intended audience

- Make local, tangible
  connections

- Link tree benefits to themes
  and current initiatives
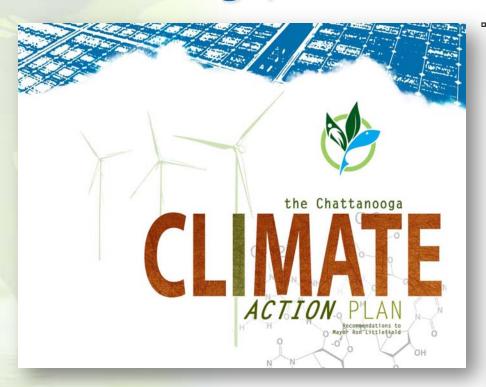
Chattanooga, Tennessee

i-Tree

GOAL: Reduce global warming pollution levels to 7 percent below 1990 levels by 2012.

U.S. Conference of Mayors, Climate Protection Agreement

CLIMATE ACTION PLAN: RECOMMENDATIONS

URBAN AND REGIONAL FORESTS

FIGURE 35: INCREASE URBAN FOREST			
Estimated GHG Reduction (metric tons)	Estimated Cost	Estimated $ Savings	
63	$	★	

FIGURE 36: MODIFY LANDSCAPE ORDINANCE TO RETAIN TREES			
Estimated GHG Reduction (metric tons)	Estimated Cost	Estimated $ Savings	
501	NOT CALCULATED	★	

60

Detailed, Species Specific Data

Table 13. Net Atmospheric CO$_2$ Reduction by Chattanooga's Street Trees—City-Managed Population Only

Species	Sequestered (lb)	Sequestered ($)	Net Total (lb)	Total ($)	SE	% of Total Tree Numbers	% of Total $	Avg. $/tree
hackberry	3219030	24,142.72	4041645	30,312.34	(±5,126)	10.8	12.1	1.69
flowering dogwood	660577	4,954.33						
black cherry	1132151	8,491.13	798960	5,992.20	(±1,285)	6.9	2.4	0.52
mimosa	259225	1,944.19						
crapemyrtle	220719	1,655.39	1398996	10,492.47	(±2,031)	4.5	4.2	1.41
slippery elm	783416	5,875.62						
boxelder	1476852	11,076.39	322339	2,417.54	(±592)	3.9	1.0	0.37
red maple	1237812	9,283.59						
sweetgum	398331	2,987.48	311476	2,336.07	(±712)	3.6	0.9	0.39
sugar maple	622267	4,667.00						
white oak	1757987	13,184.90						
eastern red cedar	222030	1,665.22						
tree of heaven	262374	1,967.80						
callery pear	390189	2,926.42						
eastern white pine	740275	5,552.06	-26946	-401	- 205.10	191412	1,435.59	904341	6,782.56	(±2,367)	2.2	2.7	1.88
silver maple	1798692	13,490.19	-78831	-397	- 594.21	369853	2,773.89	2089317	15,669.88	(±4,113)	2.2	6.2	4.38
Yoshino flowering cherry							277.87	85741	643.06	(±450)	2.1	0.3	0.18
Virginia pine	361598	2,711.21	-13722	-382	- 105.78	110879	831.59	458363	3,437.72	(±802)	2.1	1.4	1.00
loblolly pine	477374	3,580.30	-15977	-363	- 122.55	126057	945.42	587090	4,403.18	(±1,340)	2.0	1.8	1.34
shortleaf pine								447194	3,353.96	(±1,031)	1.9	1.3	1.08
eastern redbud	137464	1,030.98	-4388	-333	- 35.41	36638	274.78	169380	1,270.35	(±566)	1.8	0.5	0.42
willow oak	1099667	8,247.50	-91351	-307	- 687.43	270410	2,028.07	1278419	9,588.14	(±2,492)	1.7	3.8	3.46
winged elm	143218	1,074.14	-2294	-255	- 19.12	24976	187.32	165645	1,242.34	(±452)	1.4	0.5	0.54
chestnut oak								847187	6,353.90	(±2,085)	1.3	2.5	2.85
water oak	635487	4,766.20	-32257	-243	- 243.75	133119	998.39	736106	5,520.80	(±1,663)	1.3	2.2	2.52
white ash	412970	3,097.27	-13419	-228	- 102.35	115432	865.74	514755	3,860.66	(±1,250)	1.2	1.5	1.87
Chinese elm	572308	4,292.31	-11933	-221	- 91.15	96271	722.03	656425	4,923.19	(±1,945)	1.2	2.0	2.47
southern red oak	647183	4,853.87	-44188	-213	- 333.01	222465	1,675.99	826246	6,196.85	(±1,620)	1.2	2.5	3.22
black tupelo													1.08
Other street trees	6645139	49,838.54	-281435	-3901	- 2,140.02	1835412	13,765.59	8195215	61,464.11	(±6,623)	21.2	24.5	1.75
Citywide Total	27620224	$207,151.70	-1110142	-18399	-$8,464.06	6969860	$52,273.95	33461542	$250,961.59	(±30,808)	100.0	100.0	$1.51

- Average CO$_2$ reduction = 200 lbs
- Average tree maintenance costs = $3.46

Cost of CO$_2$ reduction = $35 per ton

✓ **25% of Carbon emissions offset by municipal trees**

Key to Success # 4: Make a difference

🌳 Share your results strategically with numerous audiences in multiple formats

🌳 **Teach others how trees can be part of the solution to THEIR problem**

Successful storytelling with i-Tree requires:

1. Understand your Vision

2. Plan & Implement Strategically

3. Turn your results into a compelling message

4. Make a difference

You can do it. i-Tree can help.

Visit *www.itreetools.org*

Email: dbloniarz@fs.fed.us

Presentation at: www.unri.org/