



City of Pompano Beach, Florida

City Commission Workshop Minutes

Agenda No. 2015-11

Date: February 24, 2015

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CITY OF POMPANO BEACH, FLORIDA

CITY COMMISSION WORKSHOP MINUTES

Agenda No. 2015-11

Date: February 24, 2015

Commission Meeting Room

The Mayor called the meeting to order at 9:30 a.m. and presided as the chairman.

ROLL CALL:

Mayor
Vice Mayor
Commissioner
Commissioner
Commissioner
Commissioner

Present:

Lamar Fisher
Charlotte Burrie
Barry Dockswell
Rex Hardin
Barry Moss
Edward Phillips

and

City Manager
City Attorney
City Clerk

Dennis W. Beach
Gordon B. Linn
Asceleta Hammond

INVOCATION BY:

Mayor Lamar Fisher

PLEDGE OF ALLEGIANCE LED BY: *Asceleta Hammond, City Clerk*

Names of Commrs.	M	S	Y	V	V
VOICE VOTE					
Dockswell		X		X	
Hardin	X			X	
Moss				X	
Phillips				X	
Burrie				X	
Fisher				X	

CITY COMMISSION WORKSHOP MINUTES February 24, 2015

PAGE 1

APPROVAL OF AGENDA

MOTION: To approve the City Commission Workshop Agenda of February 24, 2015, as submitted.

There were no revisions to the agenda.

DISCUSSION ITEM

TAPE 1 ITEM 1

A presentation and discussion by the Davey Tree Expert Company of Columbus, Ohio, regarding the economic value of tree preservation.

Dennis W. Beach, City Manager, stated that while attending an International City Managers' Association meeting in Charlotte, NC, one of the programs he attended was a presentation on the economic value of tree preservation. He was impressed with the information and was convinced that it will help to enforce the City's tree and landscape ordinances. This company has been able to place an economic dollar value on trees, specifically their size and location, as well as what they accomplished.

Moreover, Mr. Beach stated that the presentation would be approximately 30 minutes long and would be videotaped. He intends to use this information as a training mechanism for the community at-large. From his own experience while working in the City, he noticed that the community struggles with the strictness and stringent nature of the City's landscape code; therefore, he hopes that this information will help people have a better appreciation for that. In addition, if they can break down things into dollars, they can understand its value.

Names of Commrs.	M	S	Y	V N
<p>CITY COMMISSION WORKSHOP MINUTES February 24, 2015</p> <p>PAGE 2</p> <p><u>DISCUSSION ITEM – CONTINUED</u></p> <p>Robin Bird, Development Services Director, introduced Wade Collum, the City’s Urban Forester, who is available to address any follow-up questions and inquiries. He also introduced James Zwack from Minneapolis, Minnesota. Mr. Zwack has a Bachelor in urban forestry and a Masters in tree physiology. He has 15 years’ experience and is presently working with Davey Tree Expert Company located in Ohio. Also, they have an office in Fort Lauderdale.</p> <p>James Zwack, Director of Technical Services Division of Davey Tree Expert Company, provided brief background information on himself and his company, citing that he oversees a technical staff mostly individuals with Ph.Ds. who are scattered around the country and provides all forms of technical support to Davey’s operations. They are a group of people who have a scientific background in tree science and related disciplines. His goal has always been to connect what he knows with what they do on the field.</p> <p>Furthermore, Mr. Zwack stated that Davey Tree Expert Company was founded in 1880, and is based in Kent, Ohio. They have about 8000 employees in approximately 45 U.S. States and all of the Canadian provinces. They are one of the largest employee-owned companies in the United States. They also have operations in utility line clearances, residential services, commercial properties and consulting services. However, he works in the Davey Institute, which oversees the research, training, education and technical arm of the company.</p> <p>In addition, Mr. Zwack provided a presentation, which was broken down into three distinct topics, Trees as Liabilities, Trees as Assets and Taking Control. Attached is a copy of the presentation that provides a more detailed breakdown of these distinct topics.</p> <p>Finally, Mr. Zwack closed his presentation with a quote from Arnold Lee, Mayor of the City of Valley, Alabama who said, a community should see itself the same way as its trees, if trees are dying the town is dying. Planting trees symbolizes a community that is alive, prosperous and growing. From his perspective, it is not just planting trees, but managing them. Essentially, it involves making a decision, which includes consideration of the following:</p>				

Names of Commrs.	M	S	Y	V N
<p>CITY COMMISSION WORKSHOP MINUTES February 24, 2015</p> <p>PAGE 3</p> <p><u>DISCUSSION ITEM – CONTINUED</u></p> <p>1) Why are we managing it? 2) What are the objectives? 3) What are the benefits that trees provide? and 4) What are the liabilities? However, where it does not make sense to retain something, get it out of the way and build with a clean slate. On the other hand, if it is providing a valuable resource that can be quantified with the tools to identify it, then a decision can be made. The point is they have the tools to help understand it.</p> <p>Barbara Boynton, 3528 Sahara Springs Boulevard, Pompano Beach, FL, stated that many of the older trees in her community are uprooting along the edge of the road and there are many tree stumps in the area. Therefore, she asked how this could be avoided.</p> <p>Mr. Zwack mentioned that this is a nationwide problem. From his perspective, it is a classic conflict between the growth of a city/community and road widening/construction projects encroaching on well established landscape trees. Those two situations are diametrically opposed. In fact, the need for roads and safety is completely different from what is best for the trees. Because of encroachment, cutting of roots and compacting of soil, it is often seen that mature trees begin to decline, even though it does not happen overnight. Nevertheless, there is no clear answer for well-established mature trees if there is a need to take more ground for roads to get more people through a community as this is more a priority issue.</p> <p>Ms. Boynton suggested that when planting trees, the City should consider placing them a little bit further away from the road.</p> <p>Mr. Zwack stated in many cases, distance is everything. Whether it involves a street tree project or a building site, the further away the equipment are kept and so forth, the better it is for the trees, which he explained why.</p> <p>Mr. Bird stated that the Oasis, where Ms. Boynton resides, is a private association and they are handling this issue as a liability. Additionally, they have elected not to replace the trees nor have they stump grinded the trees. However, since they have not stump grinded the trees, they are leaving behind an additional liability for trip and falls. Therefore, he urged the association to work with Mr. Collum to make sure the tree stumps are stump-grounded and replaced. Because if the association keeps cutting down the trees, the dollar value for the homes in the community will decline.</p>				

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<p>CITY COMMISSION WORKSHOP MINUTES February 24, 2015</p> <p>PAGE 4</p> <p><u>DISCUSSION ITEM – CONTINUED</u></p> <p>Ms. Boynton asked if that was a requirement when the neighborhood and association was built.</p> <p>Mr. Bird stated that when the association was built, as with every project, the City requires trees to be installed. Every tree established after a year, whether on private property or in City’s right-of-ways, is protected. Therefore, when trees are removed, there is a requirement to replace them and he explained the process.</p> <p>Ms. Boynton asked if the city plans to perform an assessment, because she is not sure if the community is aware of this.</p> <p>Mr. Bird stated that they have found many communities are divided on this issue. There are those who want to see certain types of trees and some who do not want any trees. Also, instead of issuing citations, the City wants to be proactive, meet one on one with either the homeowner’s association or the homeowners to work out the issues.</p> <p>Comr. Moss stated that there are signs around the City indicating the City received some kind of award for having trees; and asked about that award.</p> <p>Mayor Fisher stated that the award is called Tree City USA.</p> <p>Comr. Moss asked what the parameters of requirements to receive this award are. Is it something difficult to achieve or does every town in America has it?</p> <p>Wade Collum, Urban Forestry, stated that Tree City USA is granted to the City through the Arbor Day Foundation based on requirements provided every year. Certain amount of trees has to be planted per capita. In addition, the City has to spend certain amount of dollars per capita on trees and the maintenance thereof. Lastly, a quantification process has to be in place that shows how it is done on an ongoing basis. Therefore, if the City falls within those parameters it is granted the Tree City USA designation. Incidentally, not all cities have this designation but with the help of the Public Works Department, they work very hard to maintain it.</p> <p>Mayor Fisher asked how many years has the city carried this designation.</p>				

Names of Commrs.	M	S	Y	N

CITY COMMISSION WORKSHOP MINUTES February 24, 2015

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DISCUSSION ITEM – CONTINUED

Mr. Collum replied 24 years.

Comr. Moss asked if there are areas in the City that has the largest number of old mature trees, which pose a challenge when having to make improvements.

Mr. Collum stated that the City has a tree rating of 9%; however, before Hurricane Wilma, the City's tree rating was 13%. The vast majority of the largest mature trees can be found in the Palm Aire and Cypress Bend area. In fact, a 2005 aerial view of both Palm Aire and Cypress Bend would reveal the amount of canopy coverage lost due to past storms.

Comr. Moss asked if there were any improvements being made in those areas.

Mr. Collum stated that a few years following Hurricane Wilma, the City held a couple of workshops. Thereafter, people were proactively removing and replacing damaged trees. Presently, staff is working on a situation, which may require input from Code Enforcement, to have a workshop to help explain to the public how to meet the minimal requirements for the approval of plans.

Comr. Moss felt that this would be an important topic for the citizens of District 5, particularly those in Palm Aire and Cypress Bend. Also, Palm Aire United, a group that periodically sponsors seminars, would be interested in this topic as well.

Comr. Dockswell questioned whether the references made earlier concerning tree inventory meant an inventory of trees on public owned property.

Mr. Zwack stated that generally if a community embarks upon a particular project, they would do an inventory of trees within the right-of-ways, not for private property.

In response to Comr. Dockswell's question regarding the exclusion of trees on private property, Mr. Zwack stated that in many cases, it can be estimated that there are at least as many trees on private properties as there are on public properties. In essence, it comes down to the resources for which the City is tasked to oversee directly. It is for this reason most communities stick with mostly right-of-ways and parks as it uses its resources on trees they have to manage or preserve, as well as to mitigate for risk and liability.

Names of Commrs.	M	S	Y	V N
<p>CITY COMMISSION WORKSHOP MINUTES February 24, 2015</p> <p>PAGE 6</p> <p><u>DISCUSSION ITEM – CONTINUED</u></p> <p>The sum total of a city’s entire urban forest could likely come from half or more of the trees on private property; however, the primary function of their inventory always involves trees on its right-of-ways.</p> <p>Comr. Dockswell stated that the presentation was very informative; but he would have appreciated receiving an article via email to read about the content of this presentation prior to the workshop.</p> <p>Additionally, he commented on the purpose of the workshop; citing that the City is taking the position that the community is struggling with its urban forestry, which bothers him a lot, even to the point of being offended. Notwithstanding, he has not seen anyone in the community nor has he heard a commissioner complained about trees and/or their benefits. However, he asserted that the issues have always been about rigidity of the city’s code enforcement, rudeness and unresponsiveness to phone calls. In sum, he does not believe that the community is struggling with the value of trees. Although he felt it is nice to be told how to quantify trees he believes the improvements made in the urban forestry division is more important.</p> <p>Comr. Phillips asked if the City has a tree requirement when building or renovating single-family homes.</p> <p>Mr. Bird stated that every new single-family home or a major addition requires a minimum requirement of trees on a piece of property. This applies to single-family homes, apartment complexes, and commercial warehouses. Additionally, it would be three (3) trees for small lots and four (4) trees for lots 7,000 sq. ft. and over.</p> <p>Comr. Phillips agreed with the Comr. Dockswell that the City is doing a great job in responding to issues regarding trees. However, he was concerned that the City of Fort Lauderdale has a higher tree goal rating than the City of Pompano Beach. He then asked staff to provide the purpose of the workshop.</p> <p>Mr. Bird stated that the City has gone back and forth on this issue. Actually, there is another side to this, which involves planning public projects. Oftentimes the landscape is put to the end and staff is thinking about building first and then budget for the installation of trees. Therefore, this is essentially a twofold issue.</p>				

Names of Commrs.	M	S	Y	V	V

CITY COMMISSION WORKSHOP MINUTES February 24, 2015

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DISCUSSION ITEM – CONTINUED

Mayor Fisher stated that several years ago the City struggled with this issue. In fact, the City has had several workshops on this issue, which included discussion on enforcement, updating the city’s code to Broward County standard and so forth. He opined that the struggle has been with trying to get a balance between trees and new developments. Somehow, trees came in the way when trying to complete those projects. Nevertheless, the city has made tremendous efforts with the help of Mr. Collum to address certain issues relating to such projects.

In addition, he understands the need to have the right trees as mentioned in the presentation by Mr. Zwack. However, he would have preferred to see a Florida City included in the presentation or another city that can be compared to the City of Pompano Beach because this City has an ocean and must deal with saltwater intrusion and things of that nature. Therefore, he hopes to see, in the future, research regarding trees in Florida, especially in the east coast. That way, they can see firsthand what happen to trees in this area.

Comr. Hardin commented on the presentation; citing that it was great and should be made available to the public via the City’s Tradewinds Magazine. That way, the public would know the economic benefits of trees. He then requested clarification about the meaning of 25% versus 9% referenced in the presentation.

Mr. Collum stated that those percentages are associated with canopy coverages citywide. In fact, aerial photography is used to measure and calculate the City’s canopy coverage.

Comr. Hardin questioned whether the City has an inventory of trees.

Mr. Bird replied that the City maintains an inventory of 15,000 trees in its public spaces. In addition, the City has grant funds managed by Public Works Director Robert McCaughan for the inventory. There are quite a bit of trees on Federal Highway, the golf course and I-95. There is actually significant amount of these resources on public right-of-ways; however, staff is looking for money to do more.

Comr. Hardin asked what percentage of the City’s public spaces is managed.

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<p>CITY COMMISSION WORKSHOP MINUTES February 24, 2015</p> <p>PAGE 8</p> <p><u>DISCUSSION ITEM – CONTINUED</u></p> <p>Mr. Bird replied that the bulk of the inventory is 35%, which is a “ballpark” estimate.</p> <p>Comr. Hardin indicated that the City has about 65% of its properties that needs to be inventoried.</p> <p>Mayor Fisher stated that Hurricane Wilma had a devastating impact in Pompano Beach, especially the Palm Aire area and the Community Park. The City is still struggling to return to its former venue.</p> <p>Mr. Bird stated that after a storm event, Urban Forestry along with the Public Work Department have to go out and assess the trees and damages. From a liability standpoint, a tree that maybe safe today can grow to be unsafe, of which he provided examples of tree related injuries and casualties. Furthermore, he explained that when the City introduced people to public spaces, such as the Dog Park, staff performed an assessment and replaced trees that were damaged by Hurricane Wilma. Therefore, it is important that they have this discussion, because they also struggle with the public funding process as well.</p> <p>Mayor Fisher asked if staff could look into a public/private partnership with entities, such as Pompano Proud and other organizations, to advance the City’s tree canopy either through surveying or planting.</p> <p>Mr. Collum stated that he currently works with the Public Works Department as well as Pompano Proud on education. However, with regard to Tree Plotting Programs, he stressed the importance of the programs maintenance. Because, information can be gathered and placed within the system but it requires maintenance so that when trees are removed, it must be removed from the list/system as well.</p> <p>Comr. Phillips asked how people should respond to dying diseased trees such as guava trees. In the past, there used to be many guava trees in the City, but none can be found at this time.</p> <p>Mayor Fisher stated that guava trees grew wild mostly on the west part of the City.</p>				

Names of Commrs.	M	S	Y	V	V
				N	N

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DISCUSSION ITEM – CONTINUED

Mr. Bird stated due to the citrus canker issue, the Florida Department of Agriculture removed those trees.

Comr. Moss commented on the adequate trimming of trees. He stated that as an officer at his condominium the most contentious issue discussed is the trimming of trees. In fact, one unit owner may not want the trees to be trimmed for the sake of shade and another wants them trimmed to view the golf courses. Therefore, he asked if the Palm Aire and Cypress Bend Communities were removed from the equation of urban canopy, where would Pompano Beach stand.

Mr. Collum stated that although it would be difficult to provide an accurate number at this time, he believed the City would rank high in urban tree canopy. Actually, he thinks the City would be at the 30 percentile.

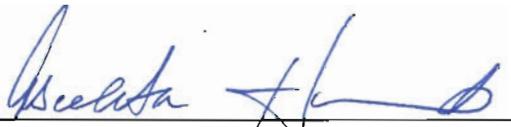
No formal action was taken on this item, as this was for informational purposes only.

ADJOURNMENT

There being no further business, the meeting adjourned at 10:35 a.m.



LAMAR FISHER, MAYOR



ASCELETA HAMMOND, CITY CLERK

Assets and Liabilities of the Urban Forest

Jim Zwack

The Davey Tree Expert Company



Personal Introduction

- B.S. in Urban Forestry
- M.S. in Tree Physiology
- Director of Technical Services for the Davey Tree Expert Company
 - We help people protect their trees and prevent problems associated with them
- My goal is to expand how you think about trees during the next 45 minutes

ICMA

The Davey Tree Expert Company

- Founded in 1880 in Kent, Ohio
- 8,000 employees in 45 US States and Canada
- 16th largest Employee-Owned company in the US
- Utility, Residential, Commercial, and Consulting Business Units



ICMA

Three Distinct Topics

- Trees as Liabilities
- Trees as Assets
 - *“Trees add value to a community, but they also come with their own issues.”*
- Taking Control
 - *“This session will focus how to use trees to enhance your community’s value and how managers can be proactive in addressing potential legal and economic issues.”*



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Trees as Liabilities

- Why not start with Assets?
- If I ask you to think about the trees in your community, what comes to mind?

ICMA

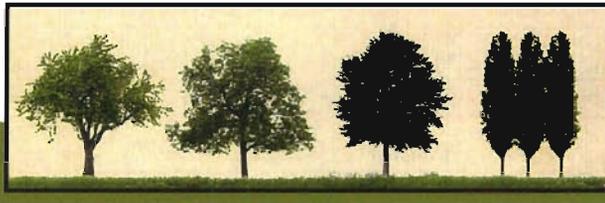
What Comes to Mind?

- Annual costs associated with:
 - Pruning – visibility, line clearance, etc.
 - Removals – personal and property damage
 - Roots that break sidewalks, curbs, and sewers
- Direct liability from all 3



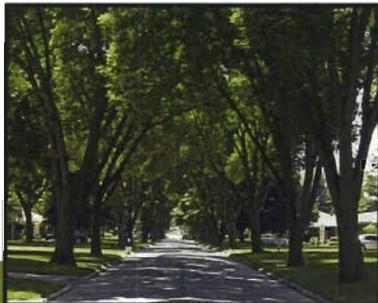
What Comes to Mind?

- Storms that are difficult budget for
- Questions from the public
 - Who answers them?
- Species complexity!



What Comes to Mind?

- Exotic/Invasive pests
 - Tree killers, not routine issues
 - More frequent and more serious (White fly, EAB, PSHB, TCD, ALB etc.)

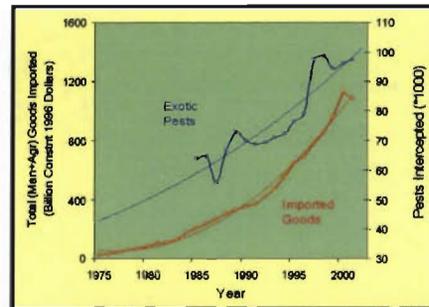
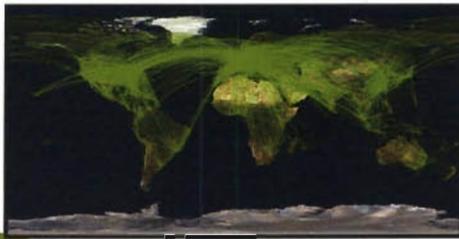


Photos: Dr. Dan Herms, Ohio State University

MA

What Comes to Mind?

- University of California Riverside
 - California gets 6 new per year
 - Florida and Hawaii get about 15 per year



Graph David Kellum, Ph.D. — San Diego County Entomologist

ICMA

Trees as Liabilities

- If I ask you to think about the trees in your community, what comes to mind?
- Nice “decorations” to have, but...



ICMA

Three Distinct Topics

- Trees as Liabilities
- Trees as Assets
 - *"Trees add value to a community, but they also come with their own issues."*
- Taking Control
 - *"This session will focus how to use trees to enhance your community's value and how managers can be proactive in addressing potential legal and economic issues."*



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Trees as Assets

- What assets in your community appreciate in value as they get older?
 - Real estate?
 - Pipes, cars, computers, etc. all go down in value
 - Trees increase in value and benefits delivered as they age
 - What does this mean?

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Quantifying Tree Benefits: i-Tree

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

- Credible, USDA FS peer-reviewed tools
- Free public domain software
- Continuously improved
- Technical support

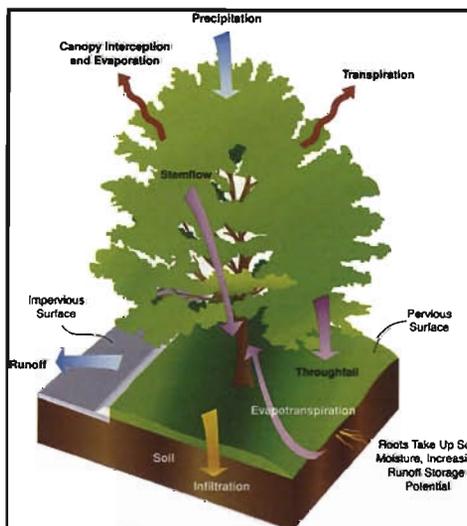


www.itreetools.org



Benefit 1: Stormwater

- Trees intercept and hold rain on leaves, branches, and other surfaces
- Increases storage in soil
- Reduces erosion
- **Reduces stormwater runoff**



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Benefit 2: Energy Use

- Trees shade buildings
 - Reduces demand for air conditioning
 - Reduces electricity consumption
- Trees are windbreaks that reduce heat loss in winter

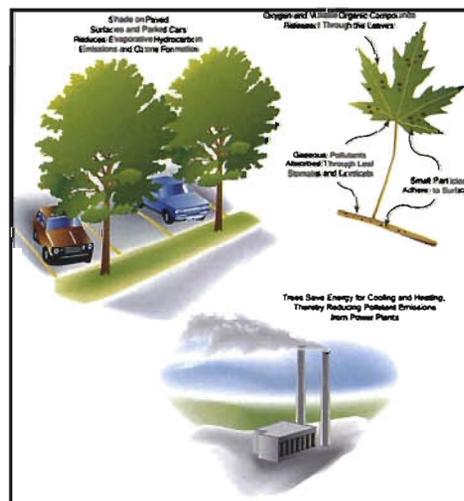


- Transpiration cools the air
- Trees reduce urban heat island effects

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Benefit 3: Improve Air Quality

- Absorb pollutants through leaf surfaces
 - O_3 (ozone)
 - NO_2 (nitrogen dioxide)
 - SO_2 (sulfur dioxide)
- Intercept dust and/or particulate matter (PM10 and PM2.5)
- Release oxygen
- Trees reduce the demand for energy consumption, which reduces the creation of many pollutants



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Benefit 4: CO₂ Reduction

- Trees are largely made of carbon so they take carbon out of the air and turn it into tissue (bark, leaves, wood, etc.)
- Trees reduce energy needs which helps avoid carbon release in the first place



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Some Benefits are Hard to Quantify...

- 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
- People spend more money shopping along tree-lined streets

Atlanta
RESEARCH Beyond Expectation

HOME MAGAZINE BLOGS & COLUMNISTS FOOD & DINING LIFE & STYLE A & E COVER

Health & Wellness • Trees save lives

Trees save lives
Atlanta's tree canopy helps with pollution more than other cities
Posted on 5/9/2013 7:45:00 AM by Mary Jo DiLeonardo

Everyone knows trees are good for the environment—plus they look really nice in your backyard. But a new study by the U.S. Forest Service and the DeJoy Institute says trees save lives. The report, which looked at ten urban areas, including Atlanta, found that urban trees and forests save an average of one life every year in major cities.

The trees make life healthier by removing fine particle pollution from the air, consequently improving both air quality and human health. Fine particulate air pollution has been linked to health issues including lung inflammation, accelerated atherosclerosis, and heart problems.

Virginia Johnson

ICMA

Large Trees Provide More Benefits



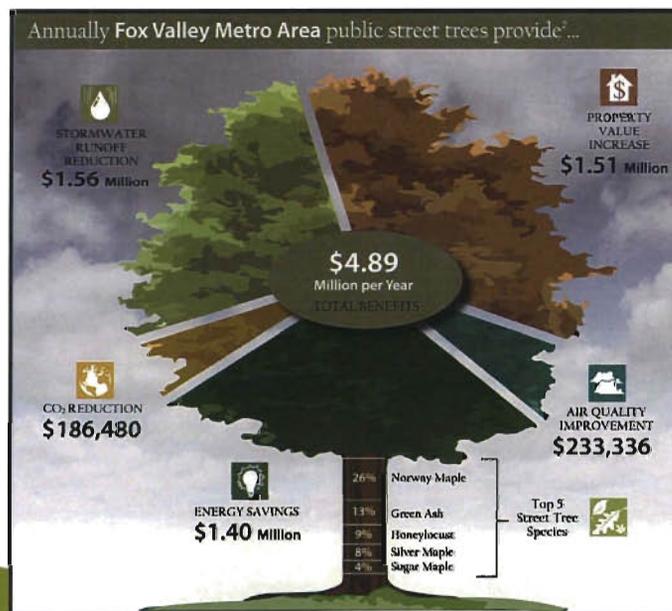
Bur oak - \$119.87/yr benefits



Callery Pear - \$32.7/yr in benefits

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Adding it Up



ICMA

Minneapolis i-Tree Assessment

- \$6.8 million in energy savings
- \$9.1 million in reduced storm water runoff
- \$1 million improvements to air quality
- \$7.1 million increase in property value



Milwaukee i-Tree Assessment

EAB Structural Impacts:

- 17.4% Canopy Loss
- 30,000 public ash trees



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)

Three Distinct Topics

- Trees as Liabilities
- Trees as Assets
 - *“Trees add value to a community, but they also come with their own issues.”*
- Taking Control
 - *“This session will focus how to use trees to enhance your community's value and how managers can be proactive in addressing potential legal and economic issues.”*



ICMA

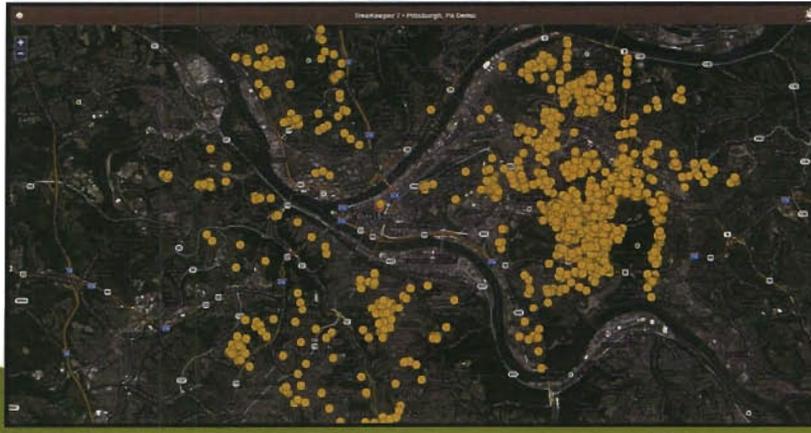
Taking Control

- Trees have both asset and liability qualities
- When you think of the trees in your community, if your forestry budget comes to mind you are probably focused more on the liability than the asset
- Yet the assets of the urban forest:
 - Are quantifiable
 - Provide for community engagement
 - Provide for program defensibility

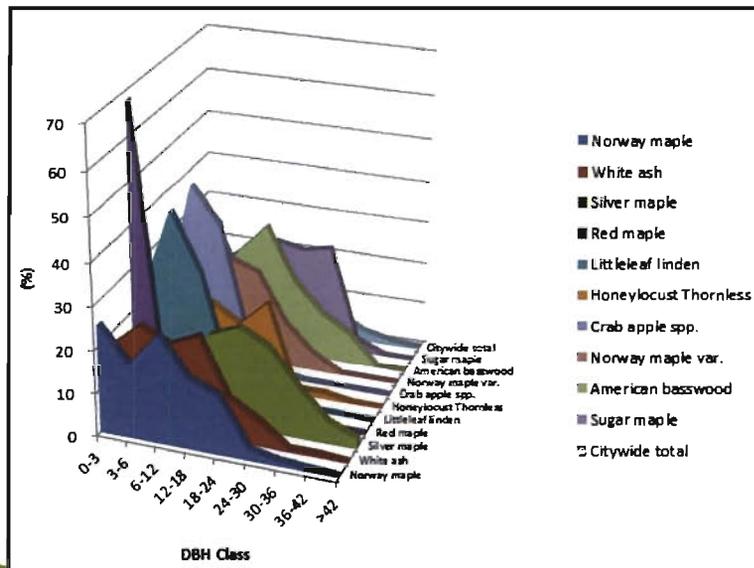
ICMA

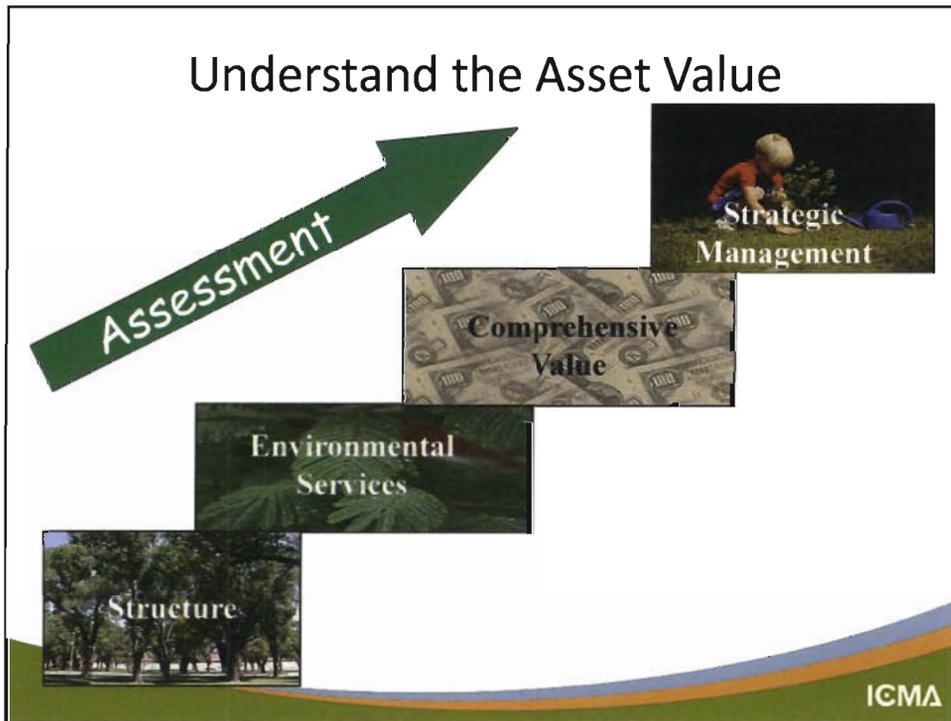
Inventory/Assessment

- You cannot manage what you do not know
- Create an Inventory
 - How many? What kind? How big? What condition?



Information from an Inventory





Why a Benefit Based Approach?

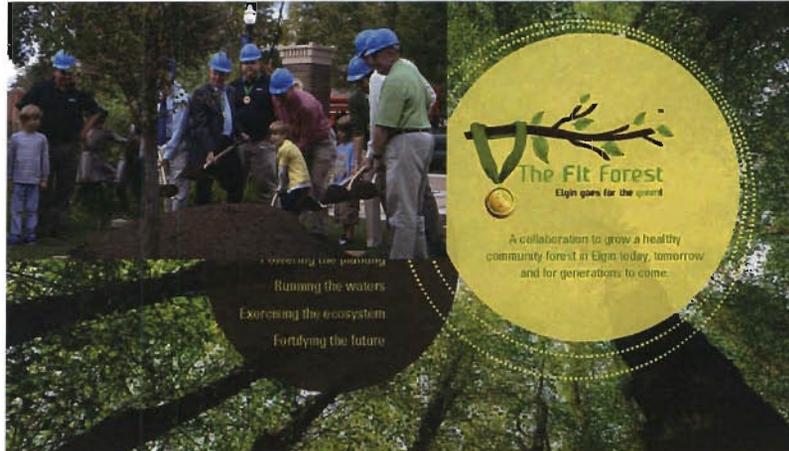
- Helps link trees to community values
- To ensure that future generations can enjoy at least the same natural resources that we did.

The slide features a main image of a city skyline at night with a tall building illuminated. Below this are three smaller inset photos showing a community meeting or presentation. Text on the slide includes:

City of Elgin
Draft Sustainability Action Plan
Developed and written by Elgin Citizens participating in Elgin's sustainability working group

ICMA

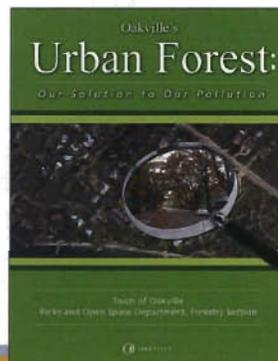
Assets Engage the Public



We invite you to work out with us to grow a healthy community forest in Elgin.

ICMA

Assets Influence Decision Making and Policy



ICMA

Assets Inform Economics

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

\$2.94 in benefits for every \$1 spent



i-Tree helps people see the value of trees beyond just their beauty and shade. i-Tree represents cutting-edge U.S. Forest Service research packaged into a suite of software tools and web applications easily used by everyone. www.itreetools.org

Why Trees Matter in Milton, GA

Trees have a **substantial impact** on environmental quality and human health and well-being. These estimates show the amount and value of air pollution removed each year by trees in your city.

Air Pollution Removed	Value	Amount (tons)
Carbon Monoxide	\$11,389	11.3
Nitrogen Dioxide	\$22,844	62
Ozone	\$488,955	365
Particulate matter (less than 2.5 microns)	\$1,219,101	23
Sulfur Dioxide	\$3,388	28
Carbon Dioxide	\$1,614,420	83,375
Total Pollutants	\$3,360,097	83,864.5



Tree Cover



Land Composition



Trees

- Enhance property values
- Alter heating and cooling costs
- Improve health and well-being
- Boost commercial performance
- Reduce storm water runoff
- Lower summer air temperatures
- Reduce air pollution
- Reduce atmospheric carbon dioxide
- Provide wildlife habitat
- Improve learning and concentration
- Provide aesthetic benefits

Tree Cover in your city:
57%

Land Composition	
Tree	57.0% ±1.50%
Non-Tree	27.5% ±1.41%
Water	1.70% ±0.41
Impervious	13.4% ±1.09%
Total	100%



Emerging Tools

ICMA

The image displays the i-Tree Canopy software interface. On the left is the i-Tree Canopy logo with the URL www.itreetools.org. The main interface shows a satellite map with a survey area outlined in red. To the right of the map is a control panel with three steps: 'One: Browse to your project area boundary', 'Two: Configure the cover classes for your survey', and 'Three: Save i-Tree Canopy Survey'. Below the map is a 'Percent Cover (±SE)' graph showing a vertical bar representing the range of tree cover. At the bottom left is a street-level view of a tree. At the bottom right is a data table with the following content:

ID	Cover Class	Latitude
1	Tree	-37.8293054323144
2	Tree	-37.82925633144
3	Tree	-37.8191319363144
4	Non-Tree	-37.8296495805144
5	Non-Tree	-37.8184852392144
6	Non-Tree	-37.8218882923144
7	Non-Tree	-37.81882077144
8	Tree	-37.7860617853144
9	Non-Tree	

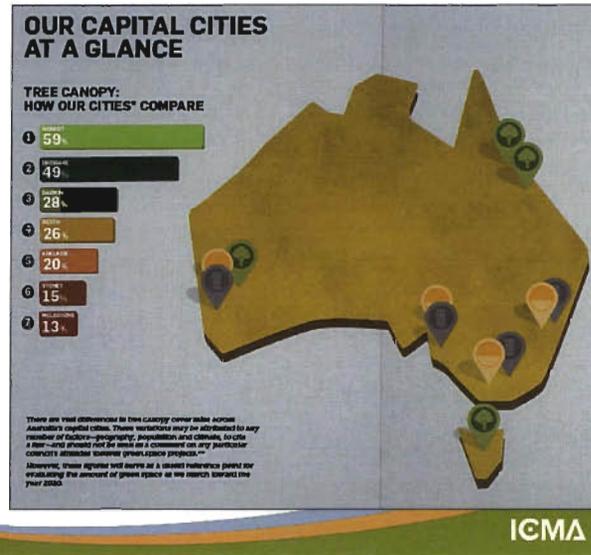
Determines:

- ◆ % Tree cover
- ◆ Pollution removal
- ◆ CO2 sequestration
- ◆ Carbon storage

ICMA

How Do Cities Use i-Tree Canopy?

- Establish baseline
- Monitor change:
 - emerald ash borer
 - land development
- Historical change analysis
 - Google Earth



Monitoring with i-Tree Canopy

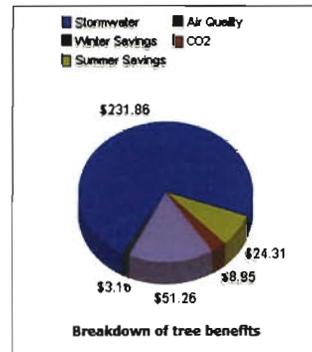
Example: Assess change in tree cover in a 100ft buffer for Wissahickon creek.

- What % of buffer is tree covered?
- What % tree cover could be added?
- How has cover changed (2006-2011)?



i-Tree Design

- Parcel level analysis of individual trees
- Google Maps-based

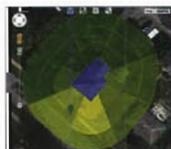


- 📍 Quick & easy
- 📍 Web accessible by all

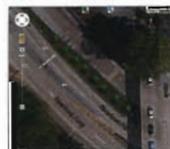
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How does i-Tree Design work?

1. Enter an address
2. Draw building footprints (for energy benefits)



1 or 2 trees ...



...Or many...



...Or hundreds

3. Add trees (existing or proposed)

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Mandolin Gardens Redevelopment



Using i-Tree Design to assess 341 trees planted on redeveloped retention ponds
i-Tree Design project provided courtesy of Mickey Merritt, Texas A&M Forest Service

ICMA

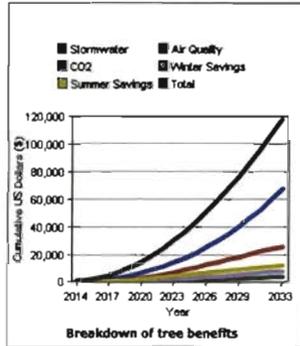
Forecast Benefits for Redevelopment



ICMA

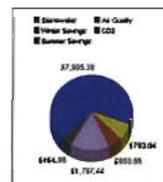
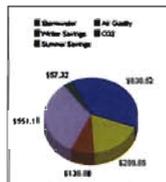
341 trees planted at Mandolin Gardens...

will provide \$118,200 worth of benefits over the next 20 years ...and growing



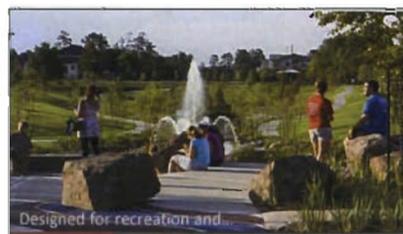
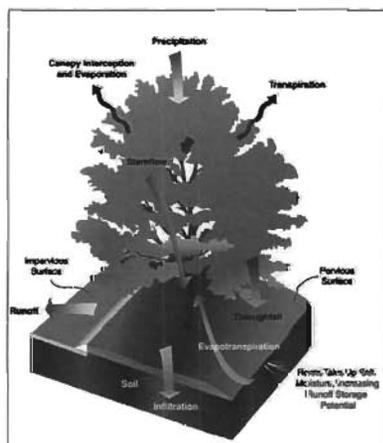
Benefits in 2014 = \$1,676

Benefits in 2044 = \$11,682



ICMA

341 trees planted at Mandolin Gardens...



will intercept 11.1 million gallons of stormwater worth \$67,000 over the next 20 years

ICMA

Parting Thought

- “A community should see itself in the same way as its trees. If trees are dying, the town is dying. Planting trees symbolizes a community that is alive, prosperous, and growing.”
– Arnold Leak, Mayor of Valley, Alabama

ICMA

Questions/Comments?

james.zwack@davey.com

