PARTNERS IN COMMUNITY FORESTRY

2024 CONFERENCE

i-Tree®

Photo Credit: Oleksandra Khalaim

Arbor Day Foundation™

Bringing the Receipts:

i-Tree captures your impact for funding requests, benchmarking, and case-making.

PRESENTED BY:

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Dave Institute and i-Tree
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# Why do we have trees in our communities?

- Answer with data

- Estimate tree benefits and their value

- Backed by peer reviewed science

- Suite of flexible software applications

- Continuously improved

- Completely free

Conveying the benefits of trees is more important than ever

- $1.5 billion in Inflation Reduction Act through US Forest Service

- $2 billion in EPA Community Change Grants

- Grants from States and NGOs

- Corporate/Institutional sustainability

- Environmental, social, and governance (ESG)

- Increased focus on equity, resiliency, and sustainability
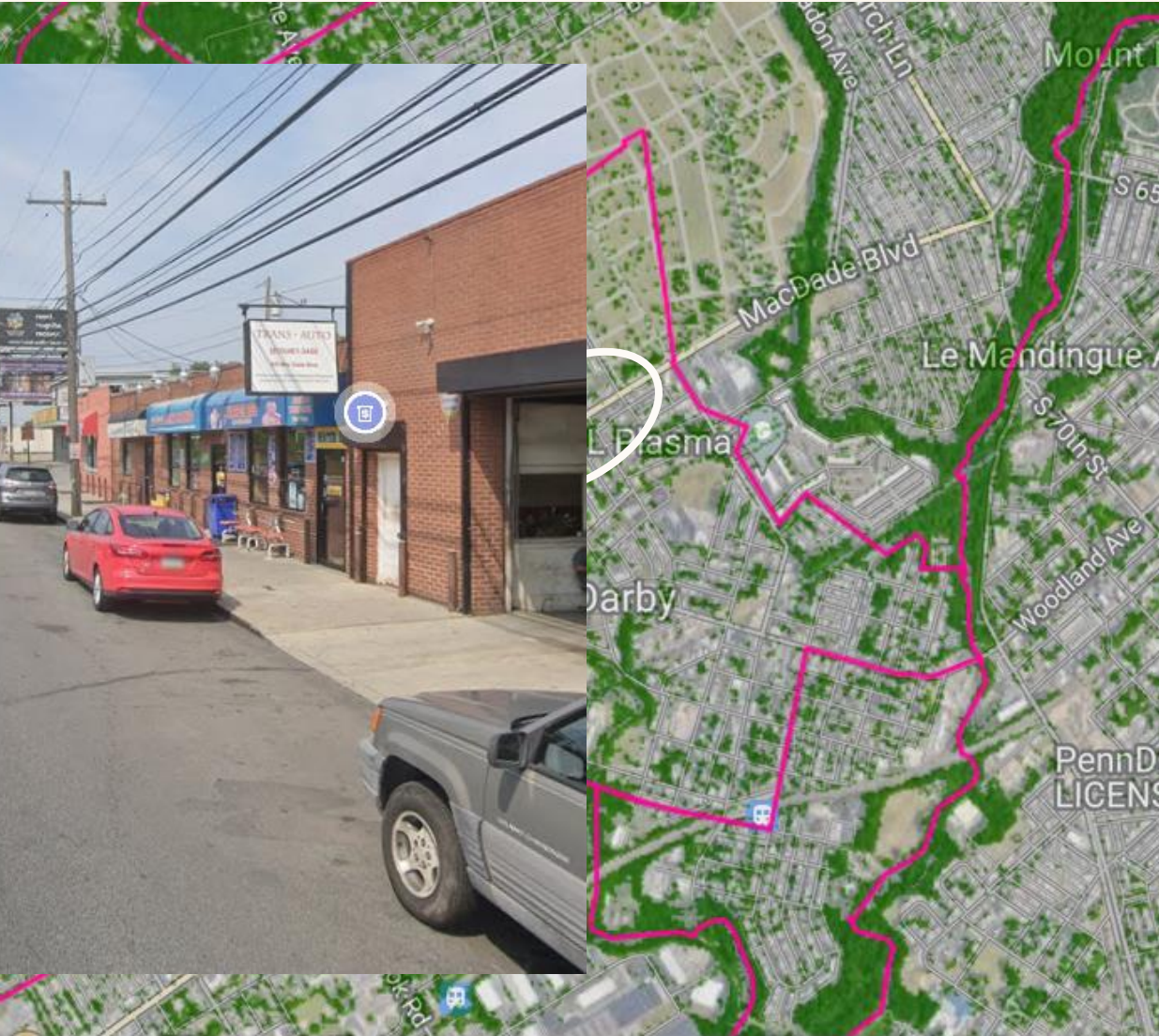
…more than just more trees

Prioritize tree planting considering poverty and equity
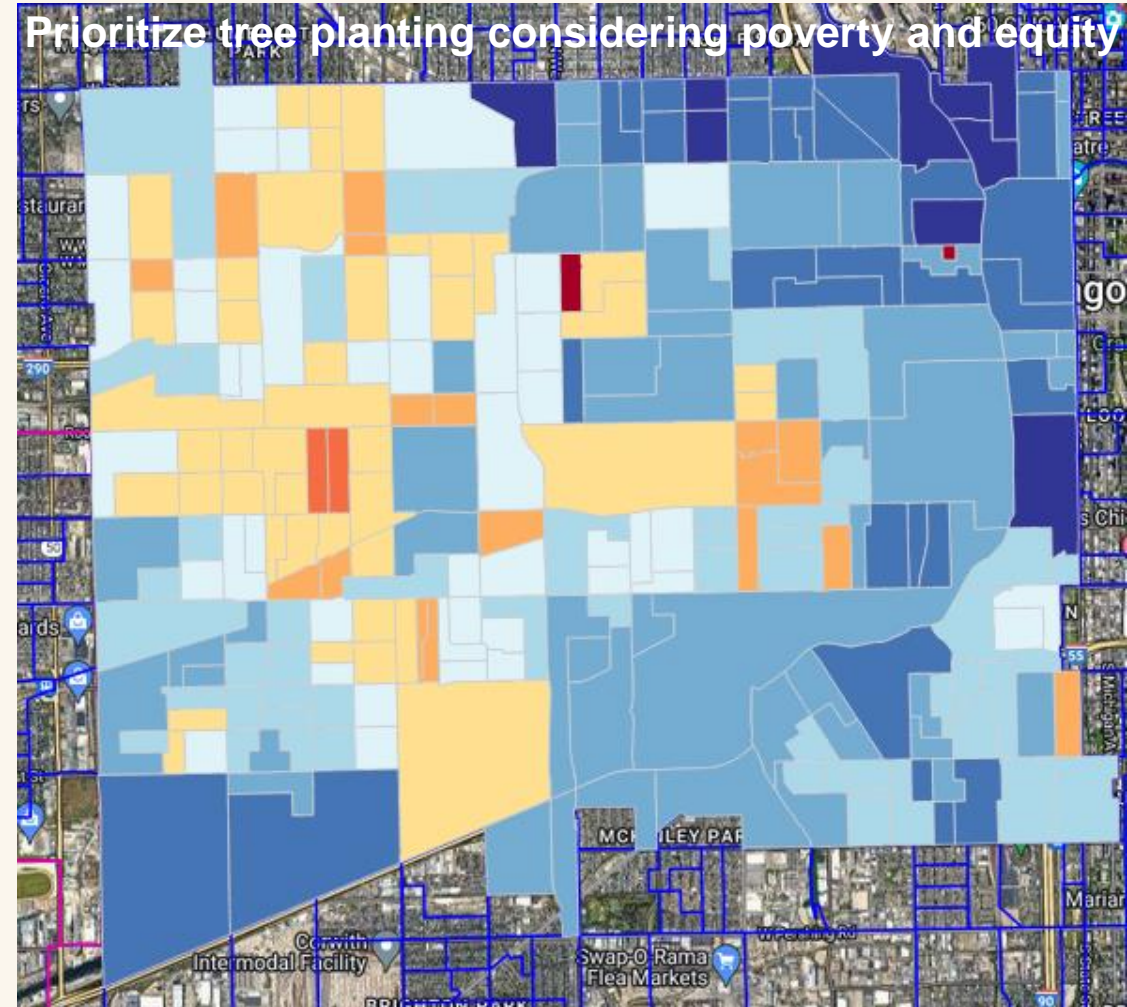
The where…

Temperature differentials
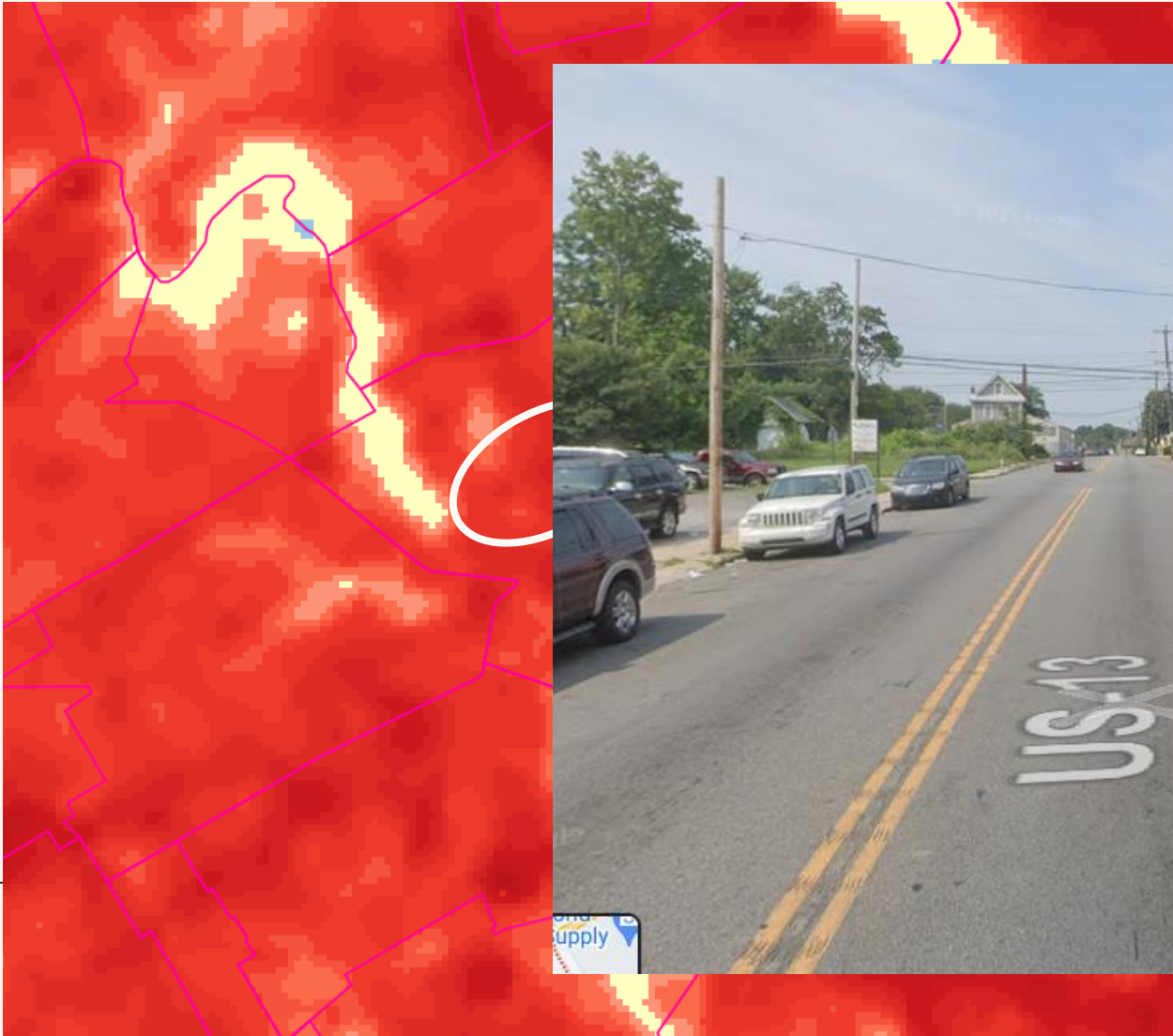
Existing tree cover
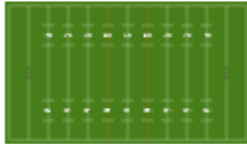
The who…

OurTrees Story

i-Tree.

The impacts of tree benefits can be hard to grasp. Below are some real-world examples of how trees work hard for our community.

Trees in Gary, IN

Trees lower air temperature and absorb water, while impervious areas do the opposite.

Trees shade an area equivalent to 5,685 professional football fields!

The land area covered by impervious surfaces – typically buildings and pavement – is like a 13 square mile parking lot.

Annual Tree Benefits for Gary, IN

Sequestering carbon as wood in trees counteracts the CO$_2$ emissions of 4,160 gasoline powered passenger cars.

The filtration and removal of air pollution by the leaves of trees is estimated to reduce acute respiratory symptoms and exacerbated asthma by 319 incidents. This also prevents the loss of 43 school day(s) and 6 work day(s).

Rainfall absorbed by tree roots and therefore kept out of storm sewers is equal to 215 Olympic sized pools!
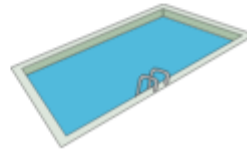
OurTrees Community

i-Tree.

Location! Location! Location! Context is important when it comes to the trees all around us. Here are some fast facts from the U.S. census:

Gary, IN

—Population

Total Population	80,294
Under 5	6,270
Under 18	22,532
Over 64	11,651
Median Age	37 years
Minority Percent	89.3%

—Income Overview

Median Income	$27,846
Per Capita Income	$15,383
Percent Impoverished	34.2%

The how much…

Cumulative Benefits Over Years

- Carbon Sequestered and Avoided
- Energy Saved
- Avoided Runoff
- Air Pollution
- Combined
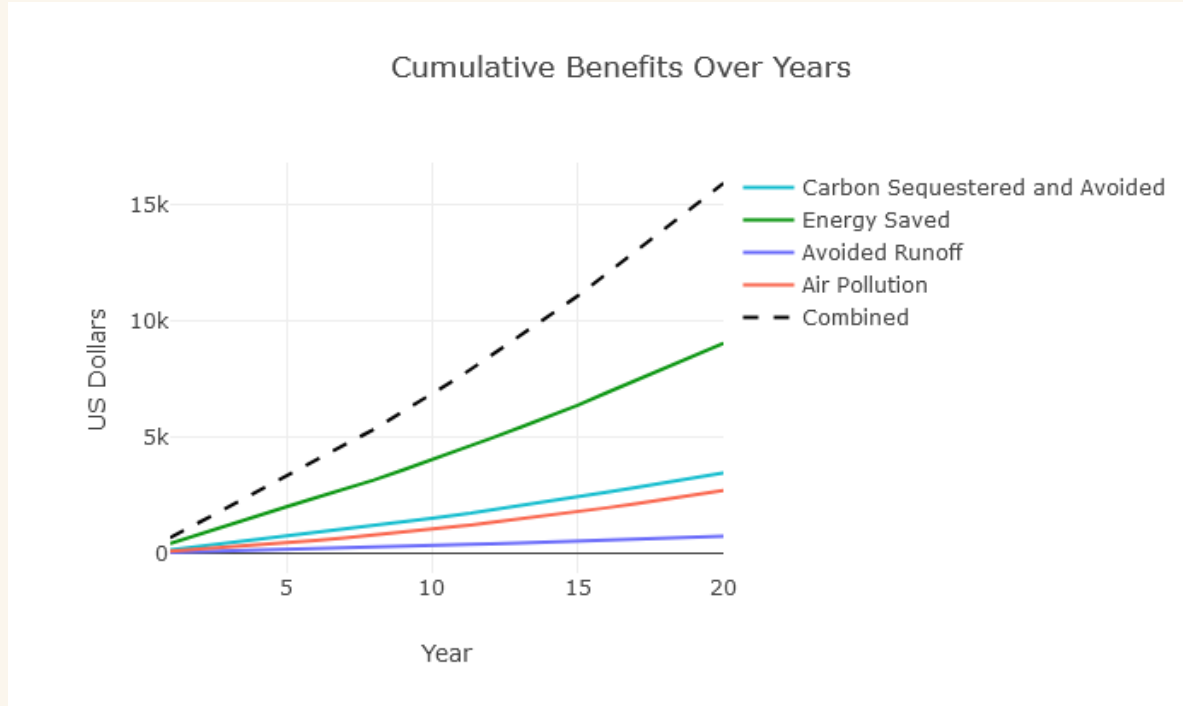
MyTree Benefits

Over 20 years.

American elm, *(Ulmus americana)*

Serving Size: 22.00 in. diameter
Condition: Good
Location: Chicago, Il, United States
Expected over 20 years: $915.29
Discover benefits of all your community trees!

Carbon Dioxide Uptake	**$143.44**
Carbon Sequestered[1]	1,682.06 lbs
CO_2 Equivalent[2]	6,167.55 lbs
Storm Water Mitigation	**$183.32**
Runoff Avoided	20,515.26 gal
Rainfall Intercepted	56,917.29 gal
Air Pollution Removal	**$380.92**
Energy Usage[3]	**$166.56**
Electricity Savings	1,064.36 kWh
Heating Fuel Savings	2.42 MMBtu
Avoided Energy Emissions	**$41.05**

Arbor Day Foundation™

Show that tree benefits are being delivered

- Science and data backed decision making

- Address equity and community sustainability

- Specificity around species, location, and people

- Realistic scenarios and goals

- Accountability

BALTIMORE TREE TRUST

Spring 2022 Season Analysis
By: Marcus Tuah

Created 166,950 square feet of tree cover

Released 14,838,972 gallons of water into the atmosphere

Removed 831,933 pounds of carbon from the atmosphere

Stopped 1,908,937 gallons of runoff Saving $17,058.40 in runoff costs

Saved $11,794 in electricity costs

https://storymaps.arcgis.com/stories/1140f07f5212458592c3b60c8e2b59e5
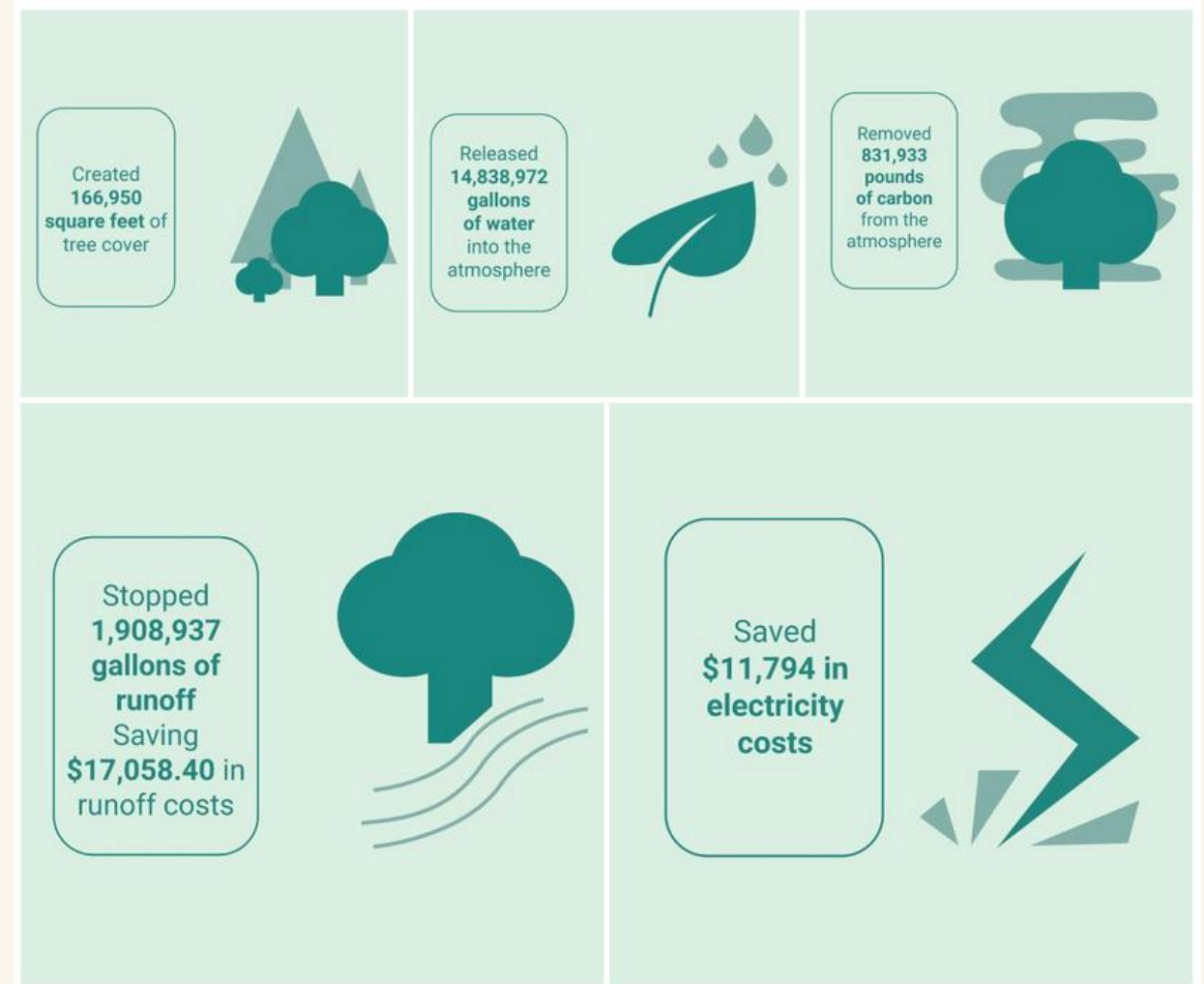
Example 1: i-Tree Planting for reporting impact

Pennsylvania Horticultural Society (PHS) plants thousands of trees in Philly and surrounding areas each year

PECO annually funds a portion of this tree planting

Photo courtesy of PHS

Arbor Day Foundation™

Example 1: i-Tree Planting for reporting impact

	A	B
1	Species	Number of Trees
2	Acer campestre	10
3	Acer ginnala	14
4	Acer griseum	3
5	Acer nigrum	7
6	Acer Rubrum	37
7	Acer Saccharum	34
8	Acer truncatum	1
9	Acer x freemanii	2
10	Aesculus spp	3
11	Amelanchier spp	42
12	Betula nigra	11
13	Carpinus spp	41
14	Catalpa speciosa	1
15	Celtis occidentalis	24
16	Cercidiphyllum japonicum	7
17	Cercis Canadensis	59
18	Cladrastis kentukea	34
19	Cornus mas	21
20	Crataegus spp	14
21	Diospyros virginiana	1
22	Ginkgo biloba	17
23	Gleditsia triacanthos	27
24	Gymnocladus dioicus	13
25	Halesia spp	5
26	ignored	1
27	Liquidambar styraciflua	4
28	Liriodendron tulipifera	
29	Maclura pomifera	1
30	Magnolia acuminata	1
31	Malus spp.	64
32	Ostrya virginiana	22

Location   Parameters   Trees   Report

Tree Planting Configurations

ATTENTION: Please, limit projects to batches of 100 or less tree groups.

Enter the tree groups for the project.

Units
- ◉ English (feet & inches)   ○ Metric (meters & cm)

Nomenclature
- ○ Common Name   ◉ Scientific Name

	Group Number	Species	DBH in inches	Distance to Nearest in feet	Tree is _____ of Building	Vintage	Climate Controls	Condition	Exposure to Sunlight	Number of Trees
✕	1	Acer campestre	1.5	40-59	North (0°)	Built after 1980	Heat & Cool	Good	Full Sun	10
✕	2	Acer tataricum ssp. ginnala	1.5	40-59	North (0°)	Built after 1980	Heat & Cool	Good	Full Sun	14
✕	3	Acer nigrum	1.5	40-59	North (0°)	Built after 1980	Heat & Cool	Good	Full Sun	7
✕	4	Acer rubrum	1.5	40-59	North (0°)	Built after 1980	Heat & Cool	Good	Full Sun	37
✕	5	Acer saccharum	1.5	40-59	North (0°)	Built after 1980	Heat & Cool	Good	Full Sun	34
✕	6	Acer griseum	1.5	40-59	North (0°)	Built after 1980	Heat & Cool	Good	Full Sun	3
✕	7	Acer truncatum	1.5	40-59	North (0°)	Built after 1980	Heat & Cool	Good	Full Sun	1
✕	8	Acer x freemanii	1.5	40-59	North (0°)	Built after 1980	Heat & Cool	Good	Full Sun	2
✕	9	Aesculus hippocastanum	1.5	40-59	North (0°)	Built after 1980	Heat & Cool	Good	Full Sun	3
✕	11	Amelanchier (genus)	1.5	40-59	North (0°)	Built after 1980	Heat & Cool	Good	Full Sun	42

Tree Group Information — Building Information — Tree Details

Example 1: i-Tree Planting for reporting impact

Project Report - i-Tree Planting Calculator

Location: Philadelphia, Pennsylvania 19133
Electricity Emissions Factor: 517.24 kilograms CO2 equivalent/MWh
Fuel Emissions Factor: 84.69 kilograms CO2 equivalent/MMBtu
Lifetime: 20 years
Tree Mortality: 37%

All amounts in the tables are for the full lifetime of the project.

Units

● English (pounds & tons; kWh & MMBtu; gallons) ○ Metric (kilograms & metric tons; kWh & MMBtu; cubic meters)

| Copy | Export | CO₂ | Energy | Eco | Air Pollution |

Search: [ ]

| Location		CO₂ Benefits			
Group Identifier	Tree Group Characteristics	CO₂ Avoided (pounds)	CO₂ Avoided ($)	CO₂ Sequestered (pounds)	CO₂ Sequestered ($)
1	• (10.0) Hedge maple(Acer campestre) at 1.5 inches DBH. • Planted 40-59 feet and north (0°) of buildings that were built post-1980 with heating and cooling. • Trees are in good condition and planted in full sun.	18,918.5	$439.99	5,010.7	$116.53
11	• (42.0) Serviceberry spp(Amelanchier) at 1.5 inches DBH. • Planted 40-59 feet and north (0°) of buildings that were built post-1980 with heating and cooling. • Trees are in good condition and planted in full sun.	71,728.9	$1,668.19	42,209.0	$981.65
12	• (41.0) River birch(Betula nigra) at 1.5 inches DBH. • Planted 40-59 feet and north (0°) of buildings that were built post-1980 with heating and cooling. • Trees are in good condition and planted in full sun.	121,384.6	$2,823.03	59,485.2	$1,383.44
13	• (41.0) American hornbeam(Carpinus caroliniana) at 1.5 inches DBH. • Planted 40-59 feet and north (0°) of buildings that were built post-1980 with heating and cooling. • Trees are in good condition and planted in full sun.	52,615.8	$1,223.68	18,671.2	$434.23
14	• (1.0) Northern catalpa(Catalpa speciosa) at 1.5 inches DBH. • Planted 40-59 feet and north (0°) of buildings that were built post-1980 with heating and cooling. • Trees are in good condition and planted in full sun.	2,184.3	$50.80	947.8	$22.04

Example 1: i-Tree Planting for reporting impact

$300K invested by PECO

18,331 Trees Planted

59.4 million gallons of rainfall intercepted

$940,066 in energy and environmental benefits

23.3 million lbs of CO2 avoided or sequestered

57,490 lbs of air pollution removed or avoided

PHS | **peco** AN EXELON COMPANY | **2019–2021 Tree Planting**
Projected 20 year cumulative values
Source: US Forest Service Northern Research Station & iTree

PECO Announces Increased Investment in Tree Planting and Expanded Support of PHS with Launch of ReLeaf Program

PHILADELPHIA, PA | April 19, 2022
PECO Communications | ✉ PECO.Communication@exeloncorp.com

https://www.peco.com/news/news-releases/peco-announces-increased-investment-in-tree-planting-and-expanded-support-of-phs-with-launch-of-re-leaf-program-04262022
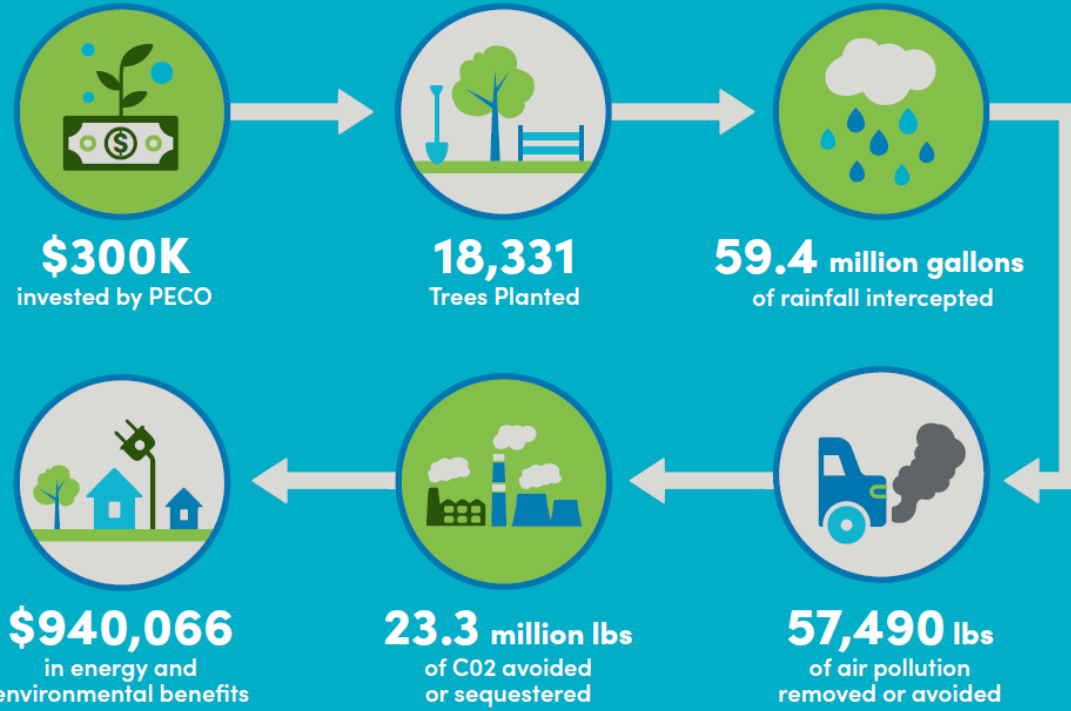
"When planted right, trees offer our customers a number of benefits, including energy and money savings, and help support our efforts to promote a cleaner, brighter future for the communities we serve." Riscoe Brinson, Director of Corporate and Community Impact
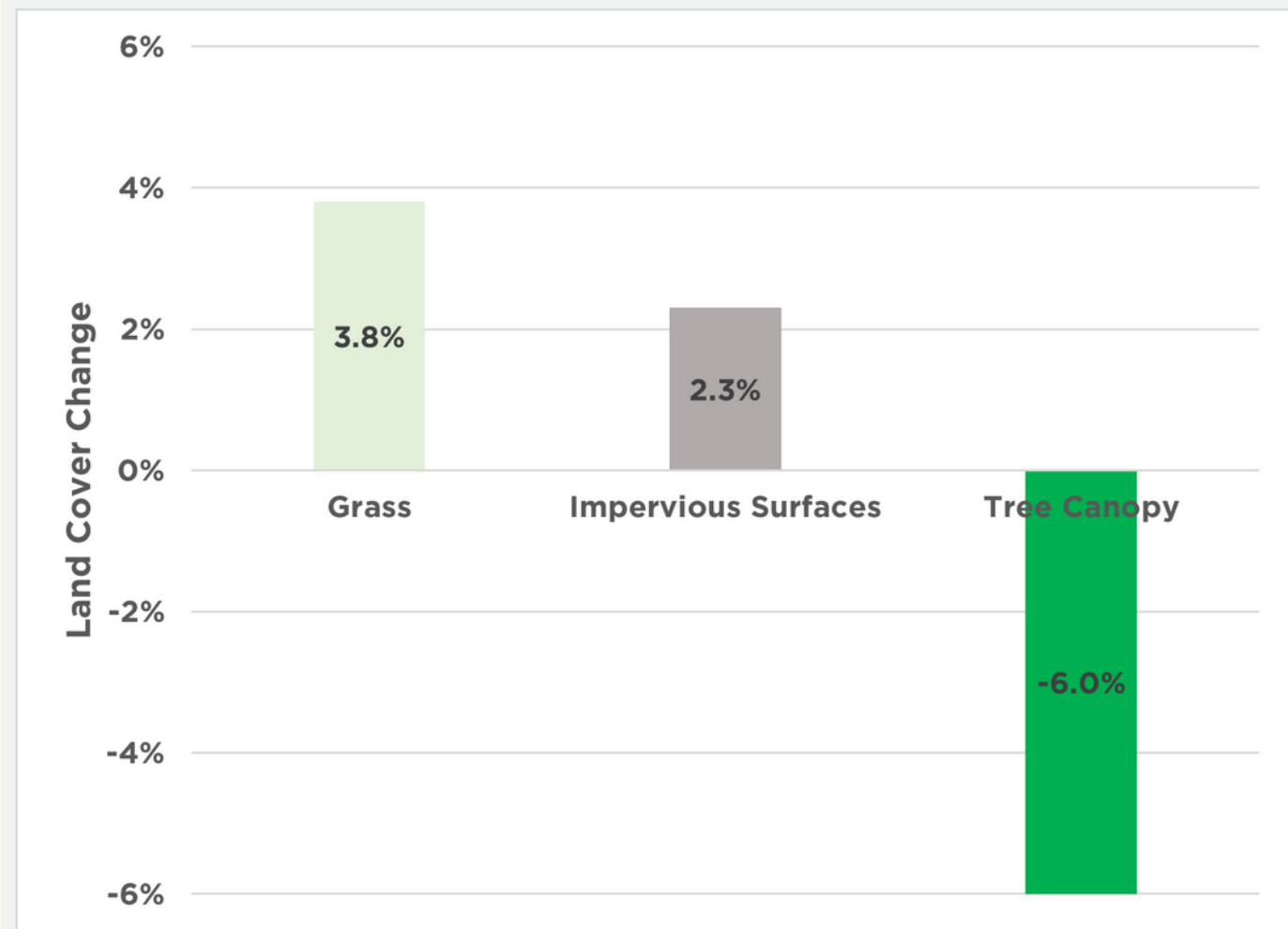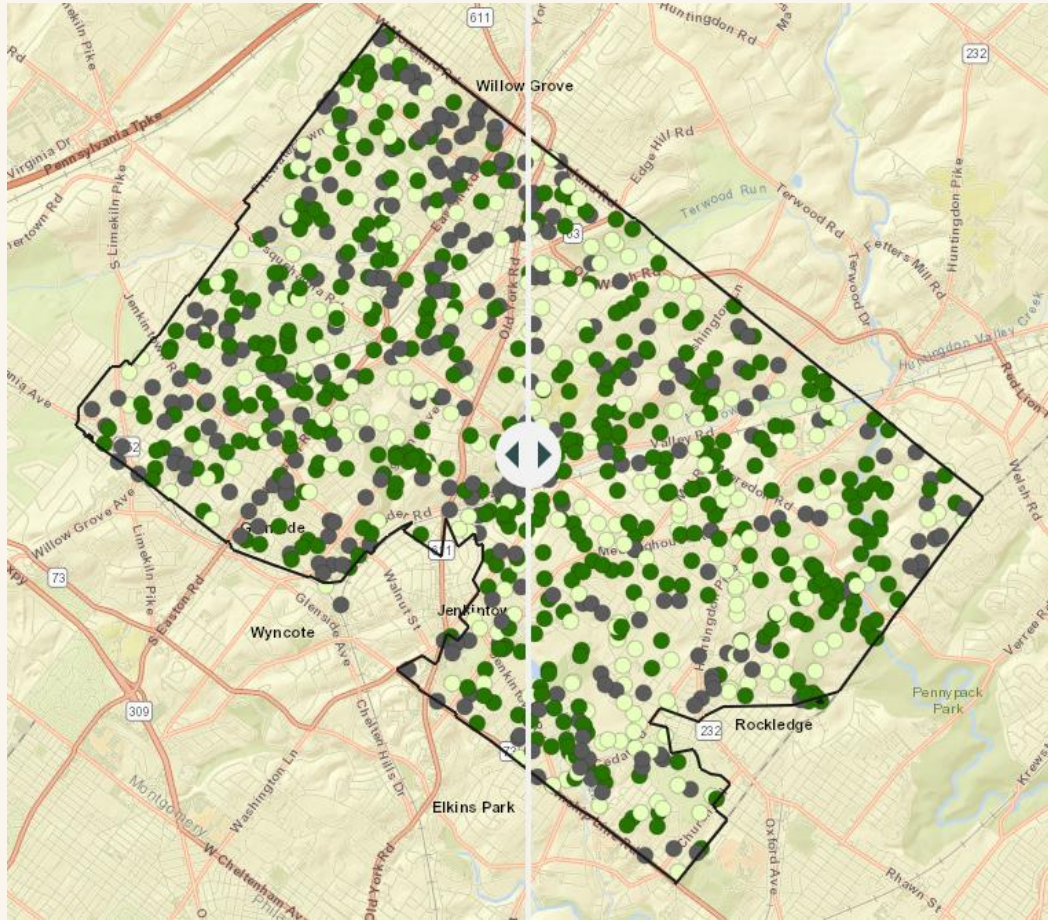
Funding doubled to $200,000/year

Example 2: i-Tree Canopy for benchmarking

Our Urban Forest: A Call to Action
Abington Township Montgomery County, PA

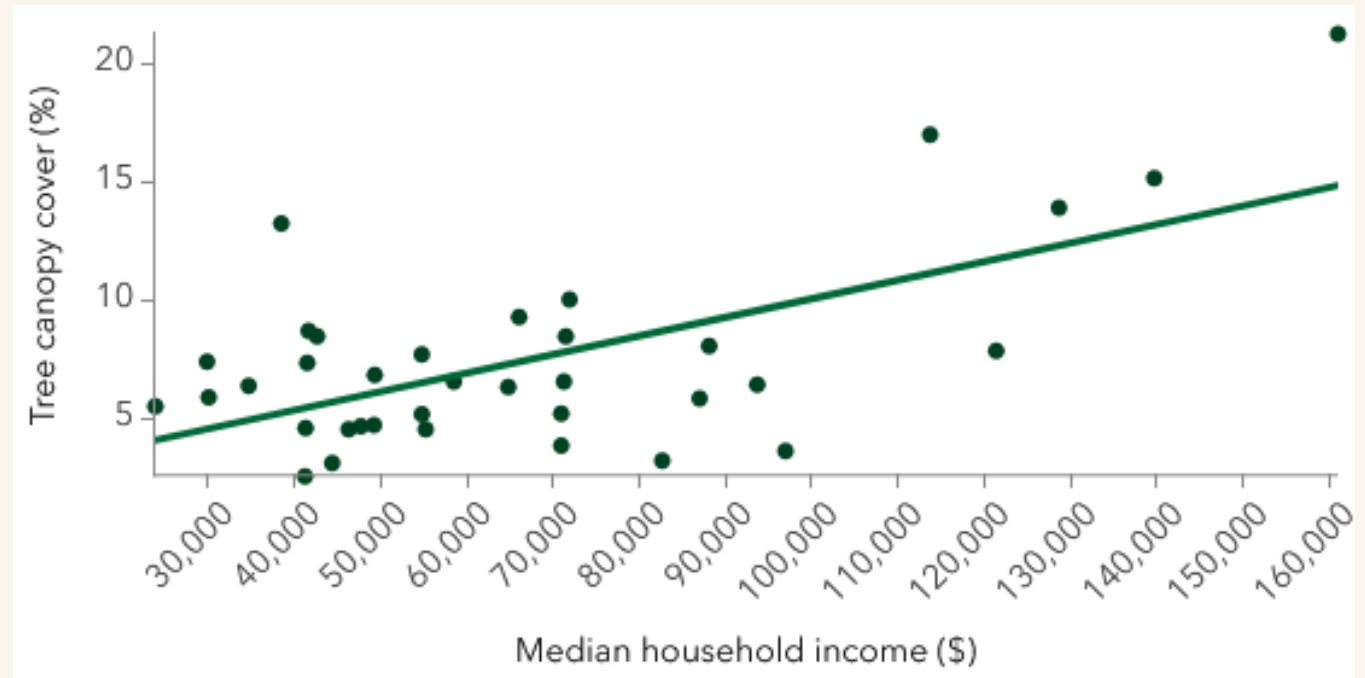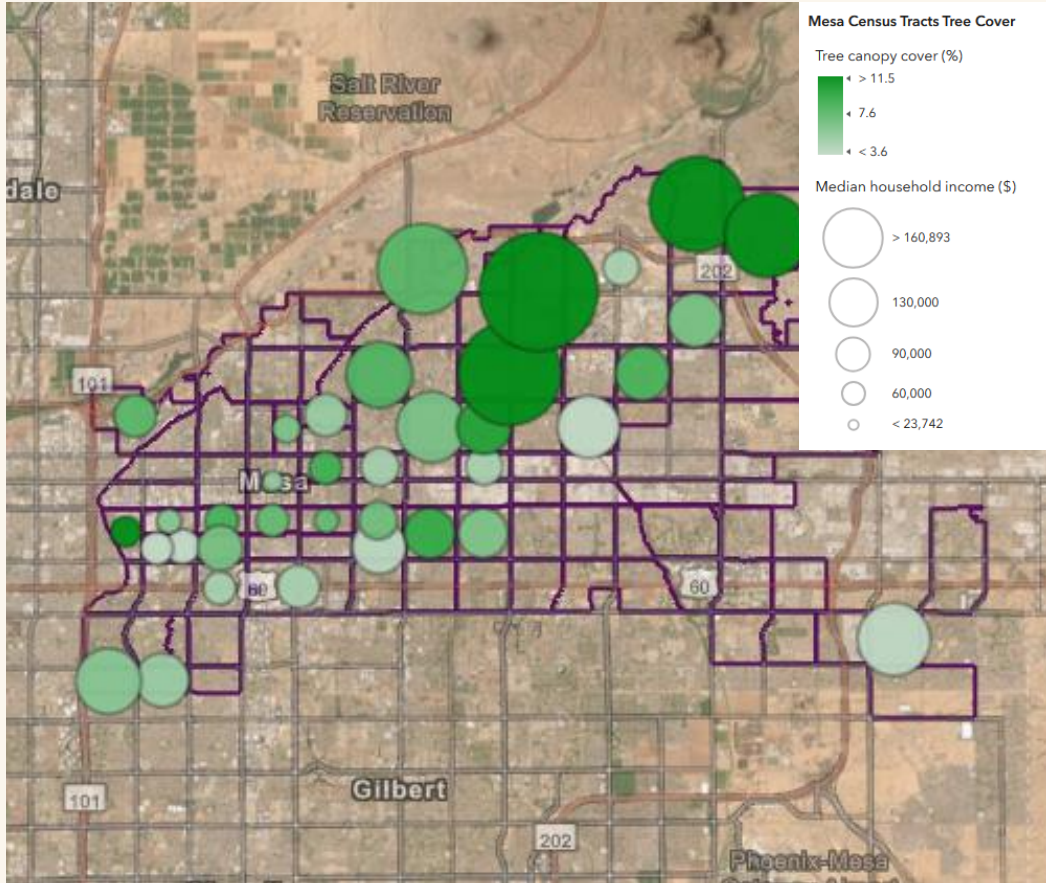https://storymaps.arcgis.com/stories/ed7e547aeaed454ea5dd44c4b1be08c0

Loss of Abington Township average canopy between 2004 and 2017, based on Google Earth imagery.

Example 2: i-Tree Canopy for benchmarking

Tree cover vs. income in Mesa
MCC BIO 105 research project

Courtesy of Sean Whitcomb:
https://experience.arcgis.com/experience/7eedcd77946842f69c68f62203451887/

Example 2: i-Tree Canopy for benchmarking

Example integration into voluntary carbon credit markets

## Baseline Tree Assessments

CLIMATE FORWARD ▶

Percentage deduction applied to project C stocks

Pre-existing trees

- Canopy cover assessment using i-Tree Canopy
- % deduction based on % canopy cover

Pre-existing natural regeneration (seedlings)

- Only for no site preparation performed
- Pre-planting photo plots
- % deduction based on expected contribution to future forest cover (pre-defined categories)

https://climateforward.org/program/methodologies/reforestation/
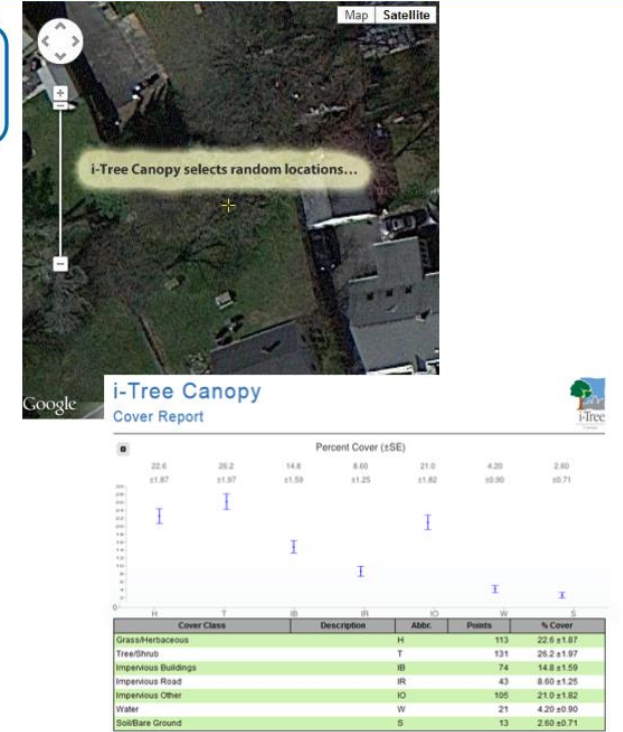
i-Tree is the go-to receipt generator

Michigan Department of Natural Resources
www.michigan.gov/dnr

MICHIGAN URBAN AND COMMUNITY FORESTRY INFLATION REDUCTION ACT GRANT PROGRAM

GRANT HANDBOOK
JUNE 2024

https://www.michigan.gov/dnr/-/media/Project/Websites/dnr/Documents/FRD/UCF/UCF-IRA-Grant-Handbook_IC4075.pdf

"i-Tree Landscape …. can be used to help in identifying areas to prioritize tree planting, preservation and care."

SUSTAINABLE
URBAN
FORESTS
COALITION

October 11, 2022

SUFC Principles on Implementation of IRA Funding

http://southernforests.org/wp-content/uploads/2023/03/Coalition-SUFC-Letter-on-IRA-UCF-Imiplementation-October-2022.pdf

"Forest Service platforms for technology transfer, such as i-Tree— and the numerous tools and programs it supports provide for both the ability to make <u>well-informed management decisions and accountability</u> for those actions. "

PlanIT Geo

Grant Guide: California IRA Urban Forestry Grants

Key details on California's IRA grants and the role urban forestry software can play

April 10, 2024 | Alec Sabatini

https://planitgeo.com/library/grant-guide-california-ira-urban-forestry-grants/

"The grant guidelines also state special attention should be given to the ecosystem benefits. With the <u>Ecosystem Benefits module</u>, you can get estimates on your trees' carbon, air quality, and stormwater impacts backed by <u>the latest i-Tree research</u>."

These are your receipts

"I imagine there are many organizations out there like PA DCNR who use i-Tree regularly as part of <u>tracking and justifying urban</u> <u>forests</u> as nature-based solutions."

– Robbie Coville
Ecosystem Products and Markets
Specialist, PA DCNR

"You're an angel."

– Alma Fargason
Grant Writer with
Philadelphia Parks and Rec

"This doesn't stay with me. I'm an amplifier."

– Dan Buckler
Urban Forest Assessment Specialist –
Division of Forestry Wisconsin DNR

i-Tree®

Arbor Day Foundation™

Thank you.

Jason.Henning@davey.com

Support: info@itreetools.org

Connect: LinkedIn and Newsletter

Find the tools: www.itreetools.org

CEUs

Bringing the Receipts: Using i-Tree to Capture Your Impact

Speaker:

Jason Henning

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CEU ISA

PP-24-927
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