

# Alliance for Community Trees Day





# **Creating Green Infrastructure Corridors**



PRESENTED BY

#### **Matt Thomas**

Green Team Project Manager TreesLouisville, inc.

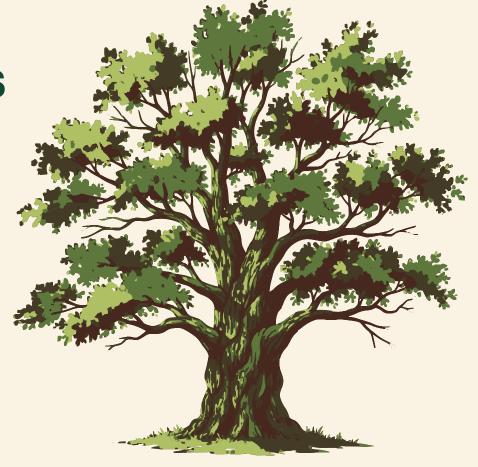
matt@treeslouisville.org (502) 939-9856







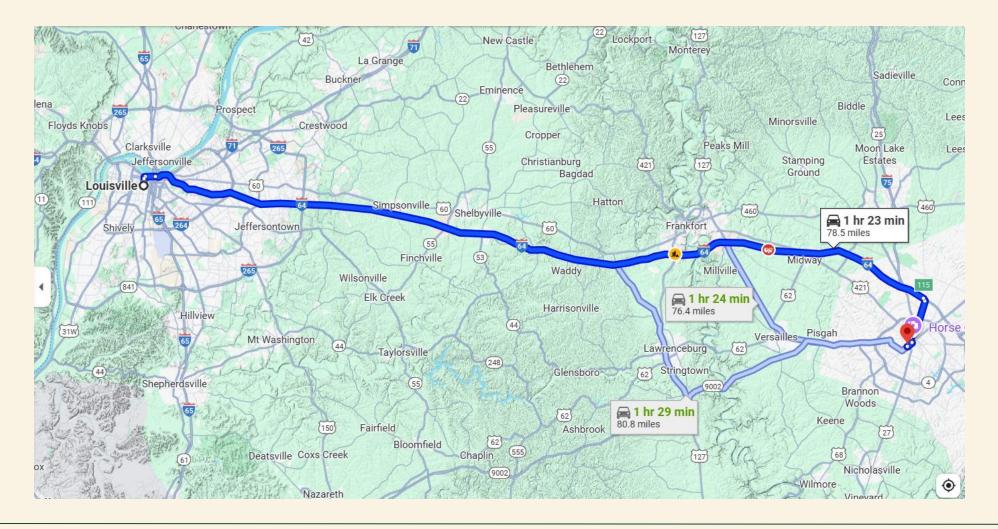
# **Two Bur Oaks**







# Louisville to Lexington













# Mike Hayman







Paristown,
Kentucky
Estimated:
400 years old







#### **TreesLouisville**









#### **Boots on the Ground**



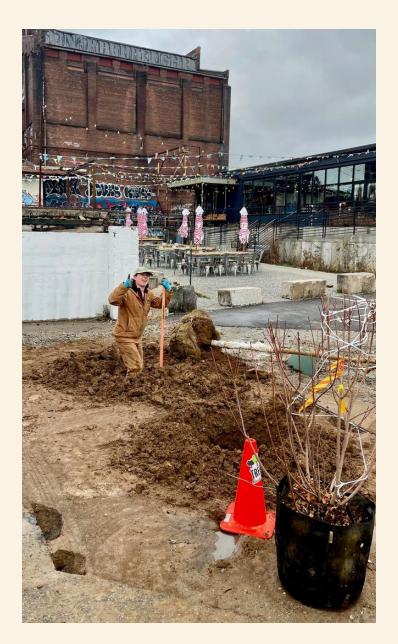






# **Bottom Up**











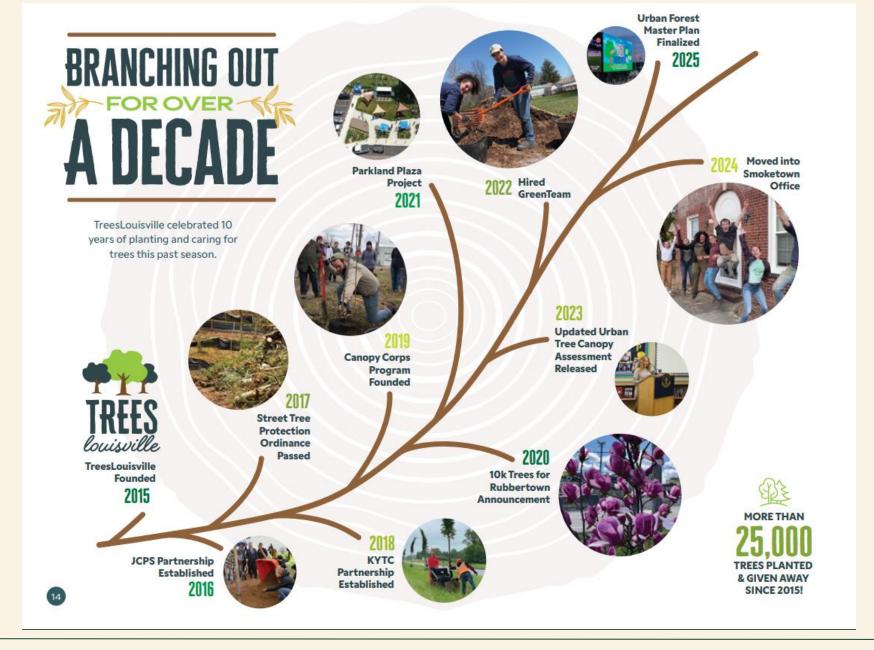
# **Top Down**







#### 10 Years!







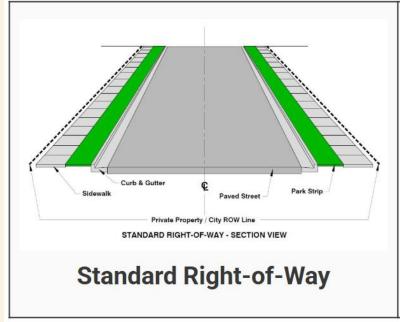
#### Who and What is KYTC?

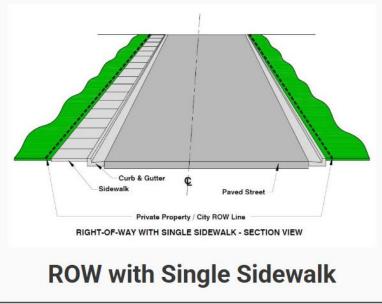


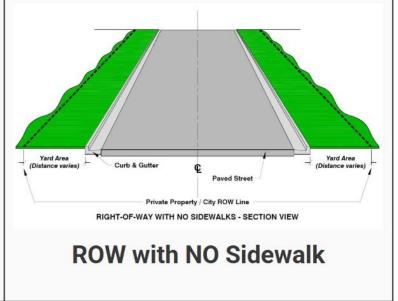




# **Right of Way**









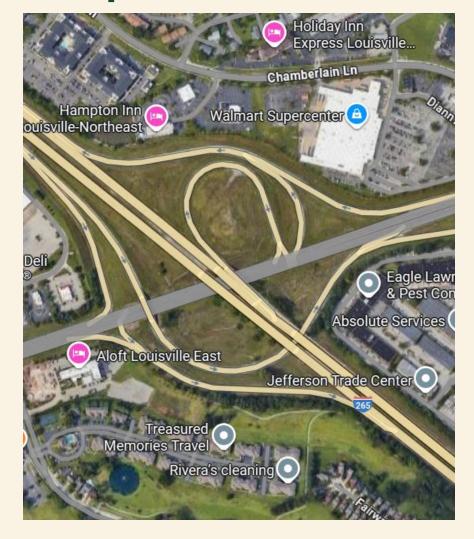








# **KYTC Westport Road / I-265**









# **KYTC Westport Road / I-265**









# **Cindy Marquel - KYTC**

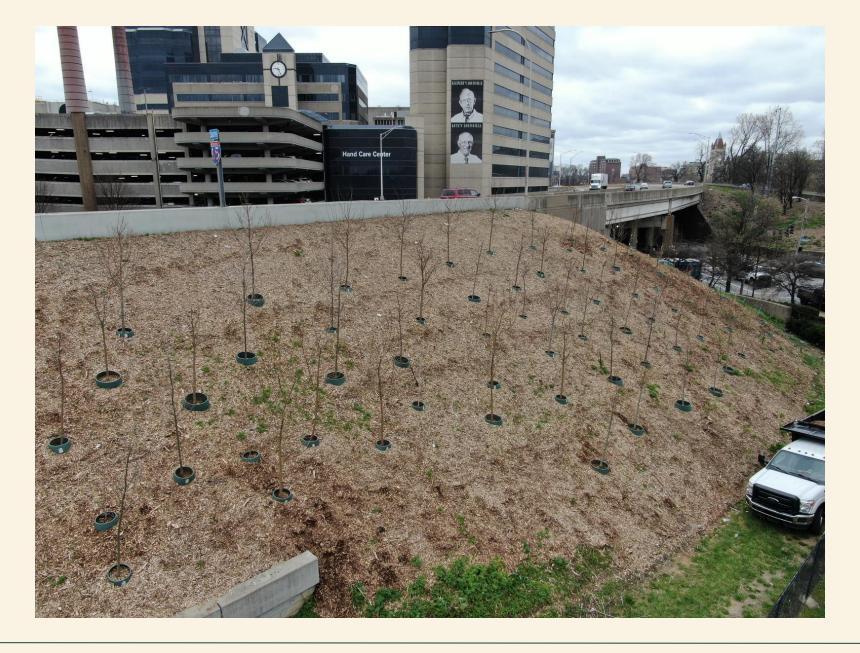








# **Brook and Ali**







# **Brook and Ali**







#### **Brook and Ali**













# Liberty and Jefferson





# E. Liberty St.







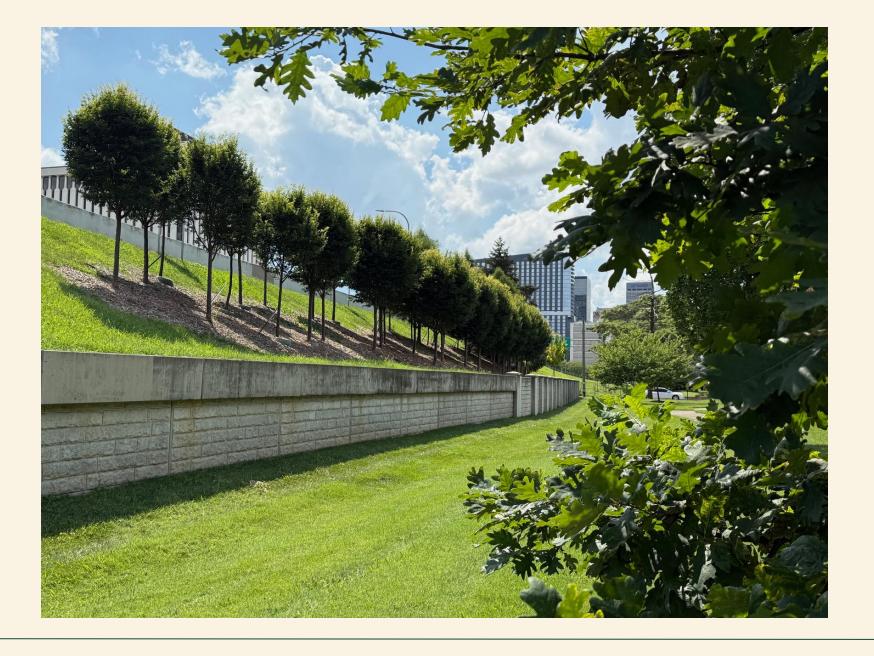
#### E. Jefferson St.







# E. Jefferson St.





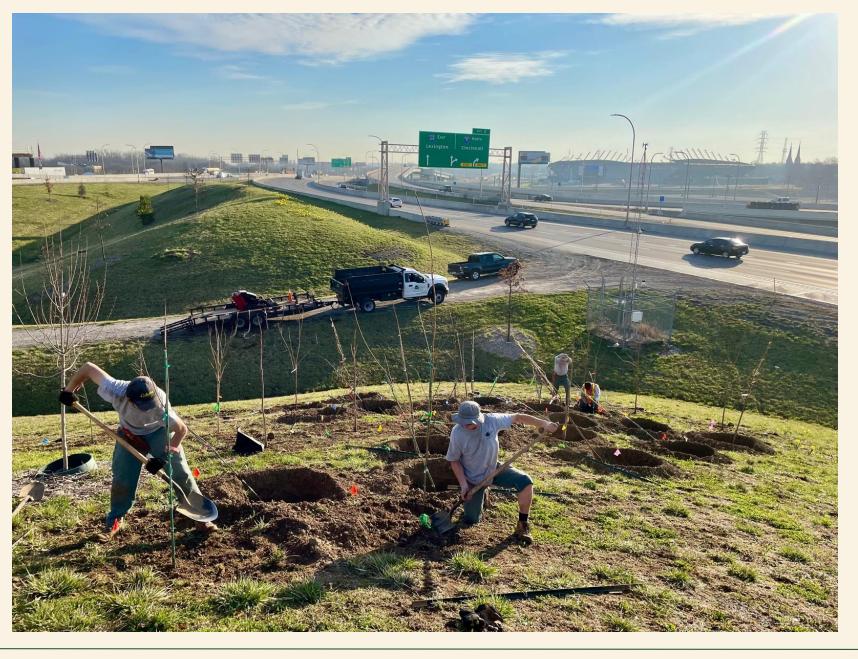








# **KYTC Tower**







#### **KYTC Tower**







# **KYTC Tower**







# I-65 / I -265 Interchange









# I-65 / I -265 Interchange



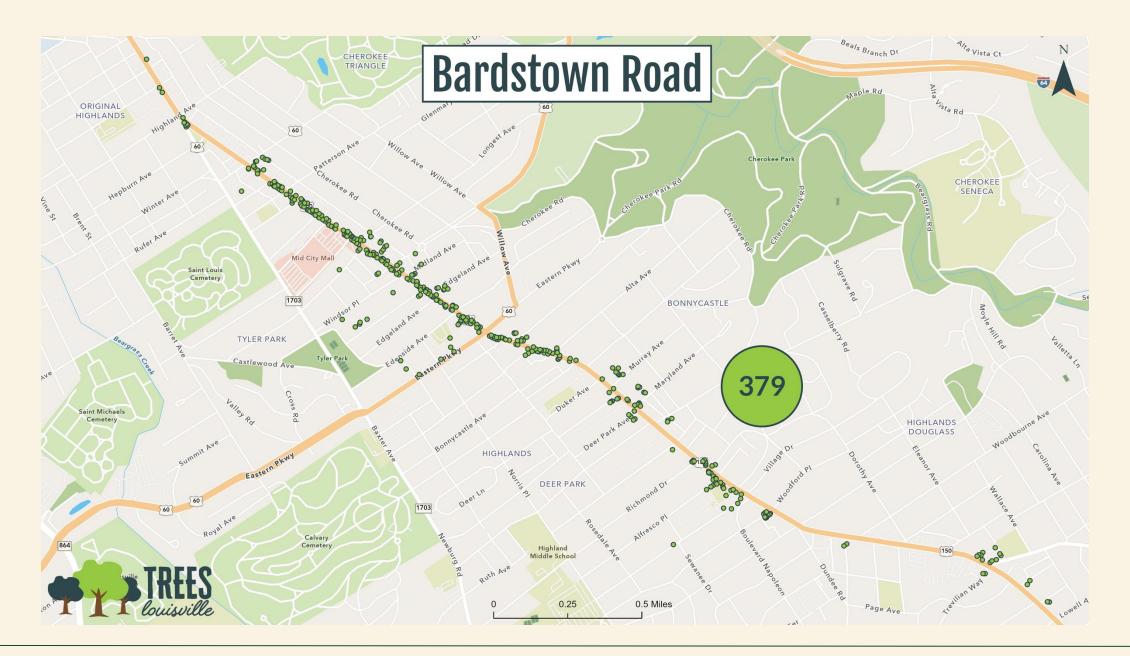




# p = m x v

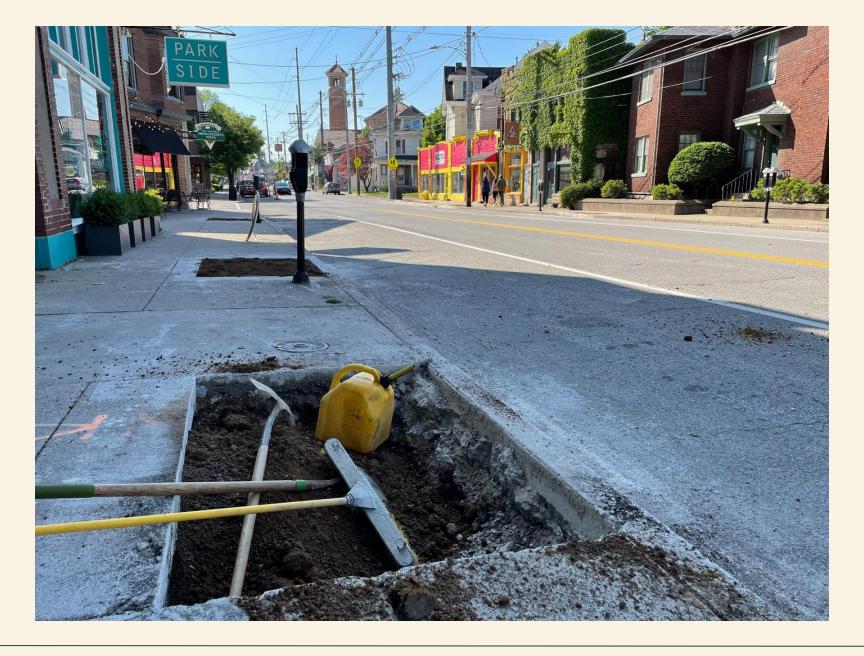














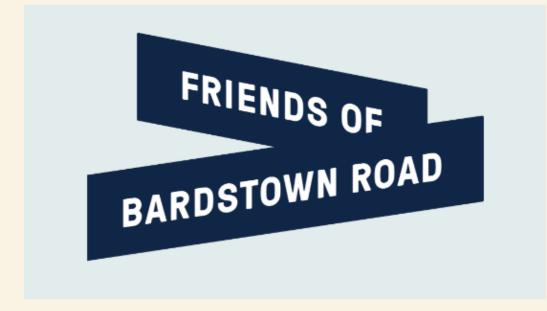








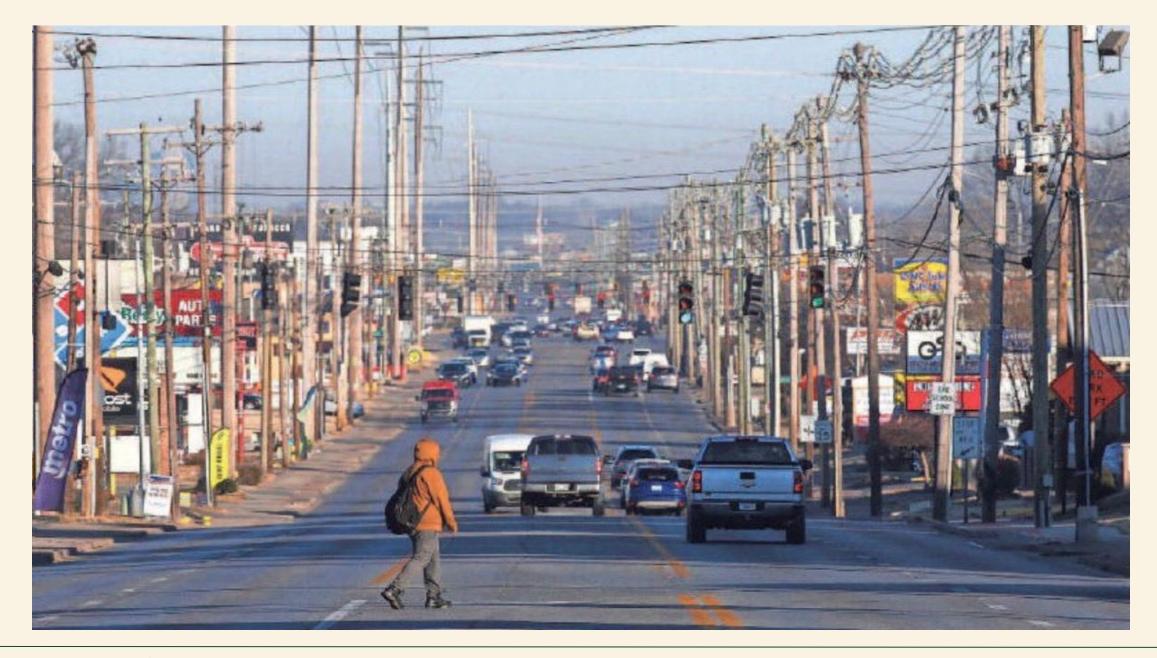




















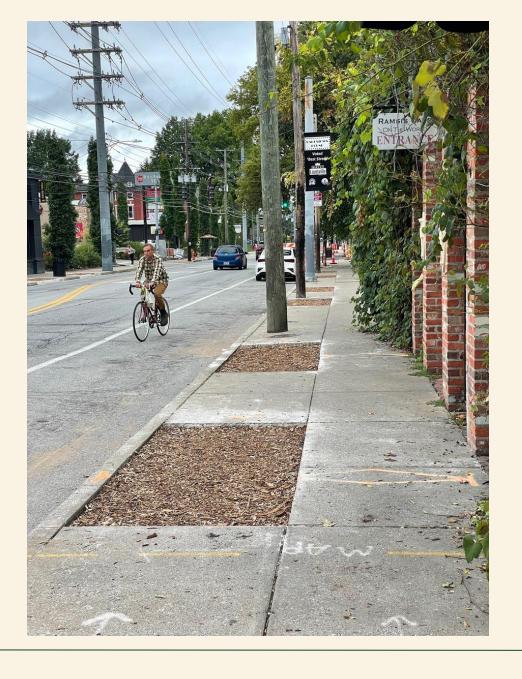






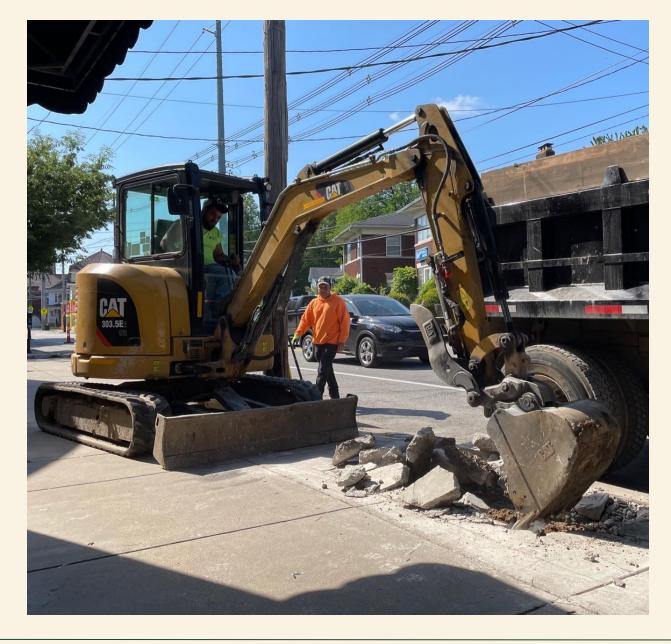


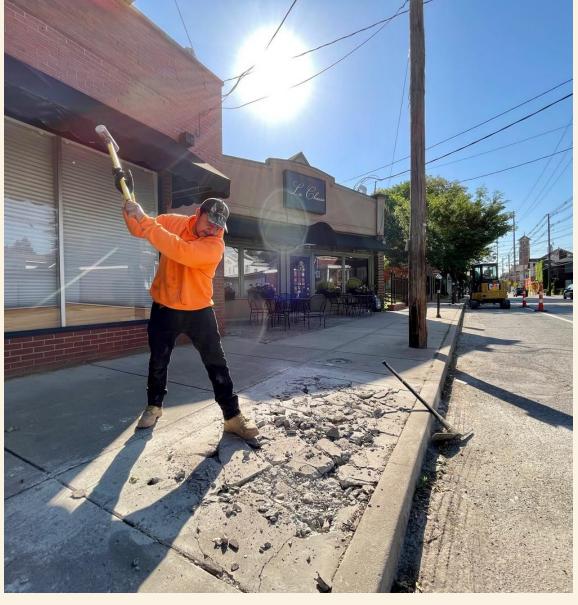


















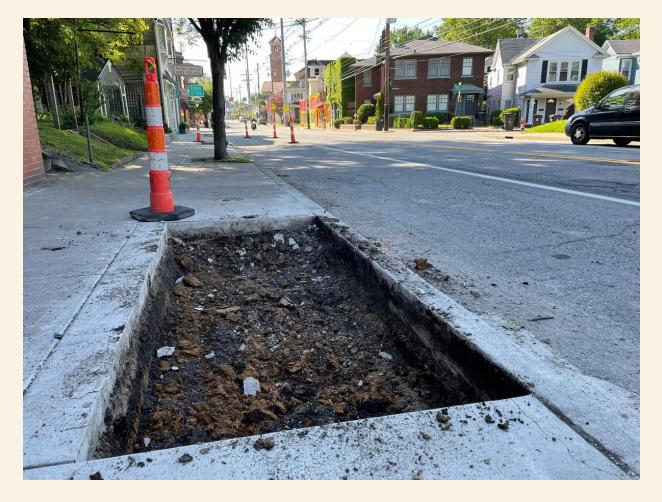


















## **Soil Conditions**

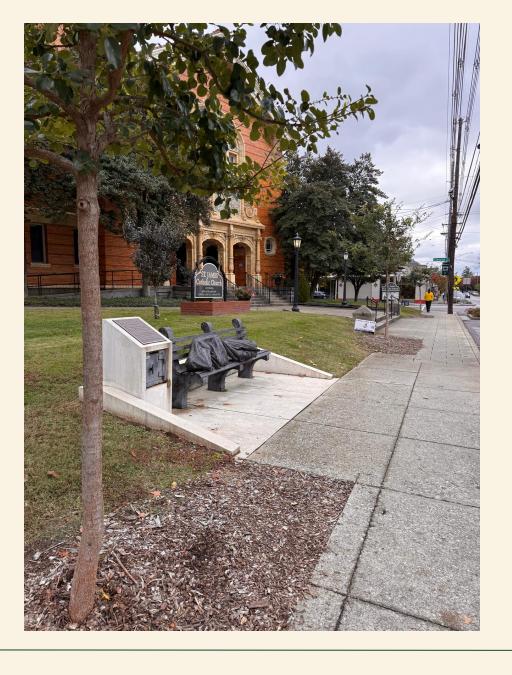




















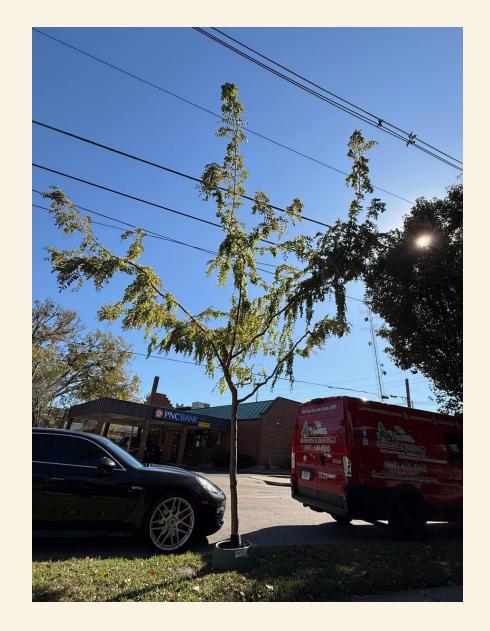








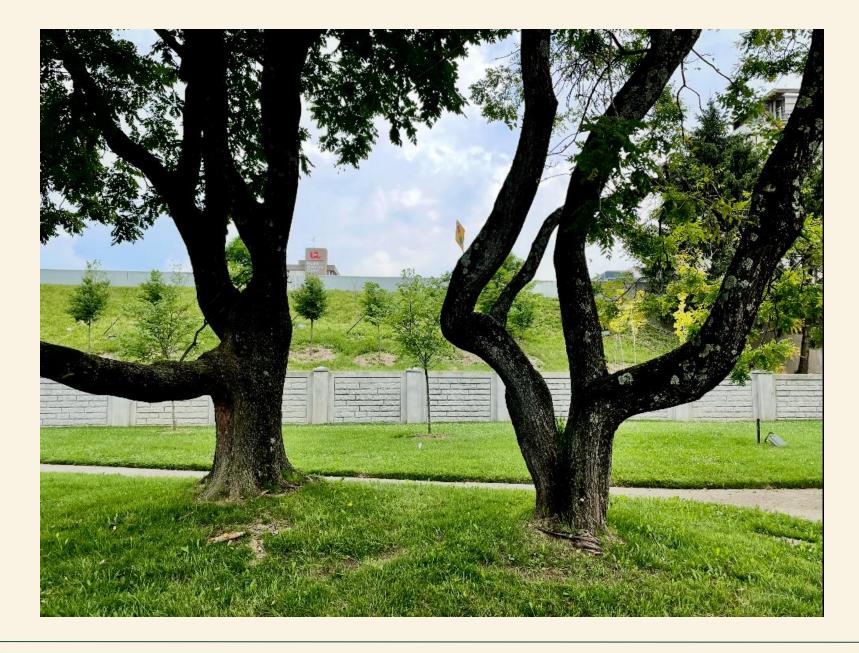




























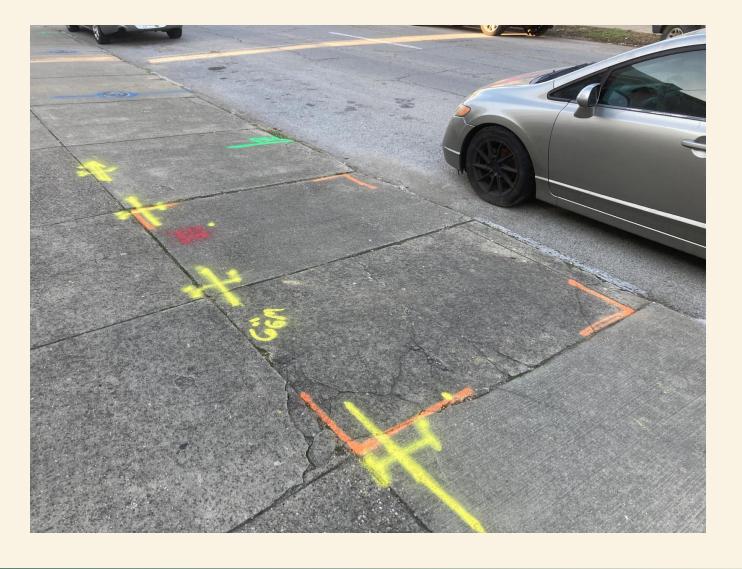








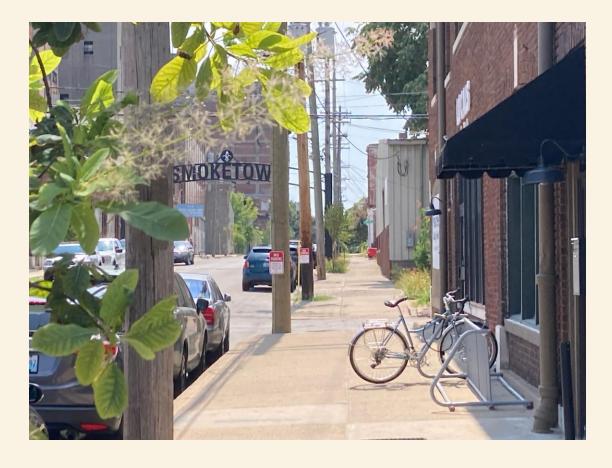








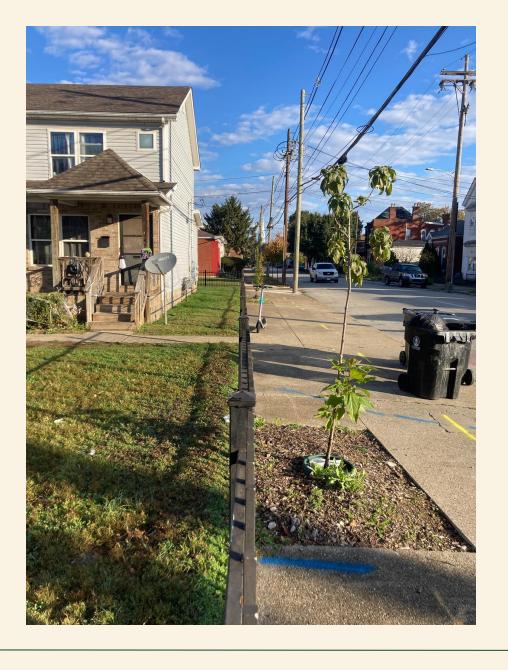






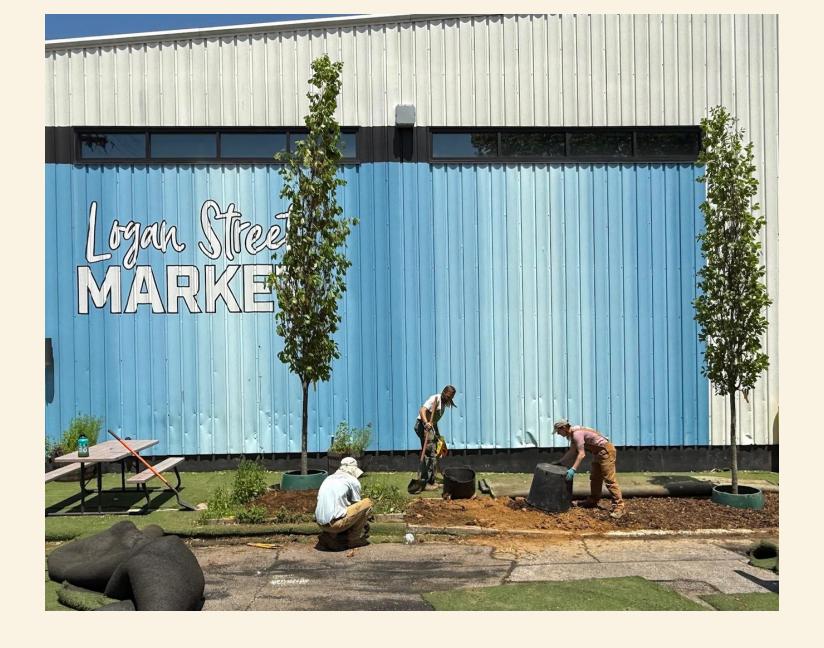














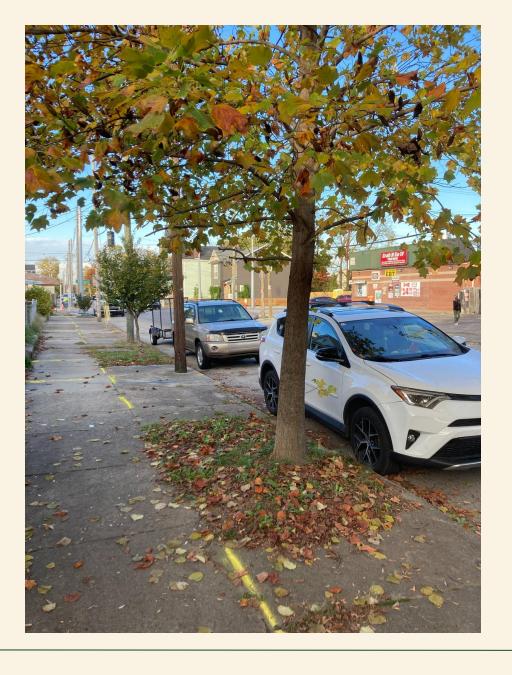
















## **Simple Math**

130 sidewalk cuts at 40 sq ft each: 5,200 square feet

1 inch of rain = .623 gallons per square foot

Over 50 inches of rain in Louisville this year.

162,000 gallons of rain water absorbed





# **Green Infrastructure Management**







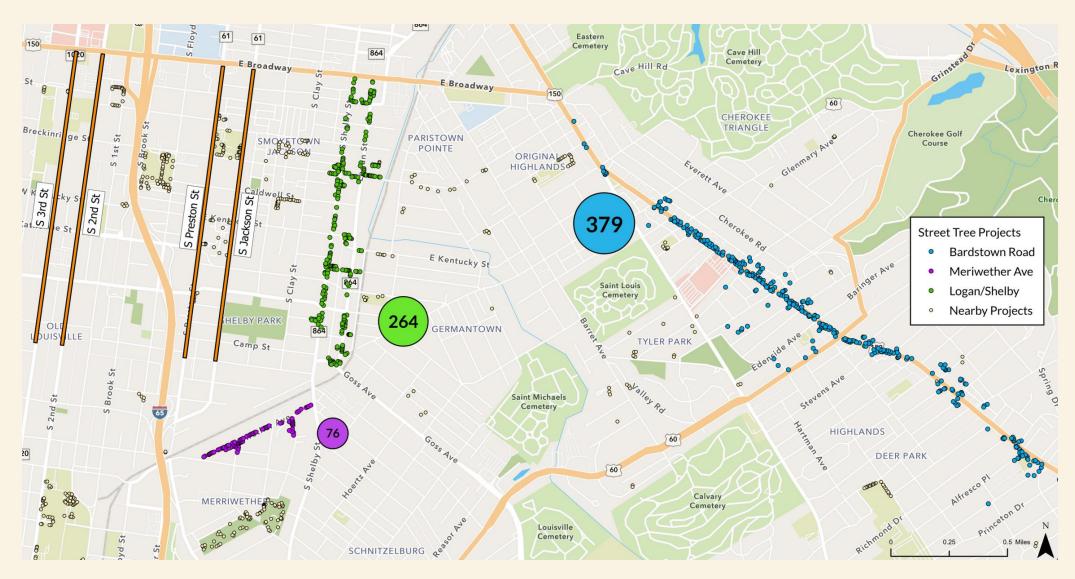






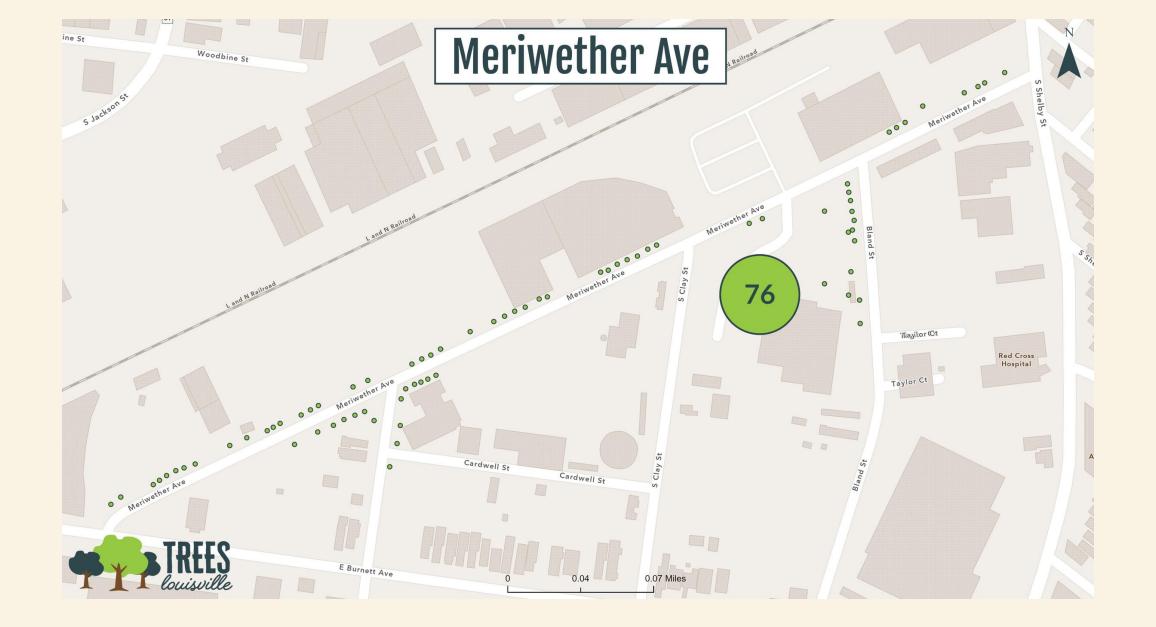


### **Green Infrastructure Corridors**













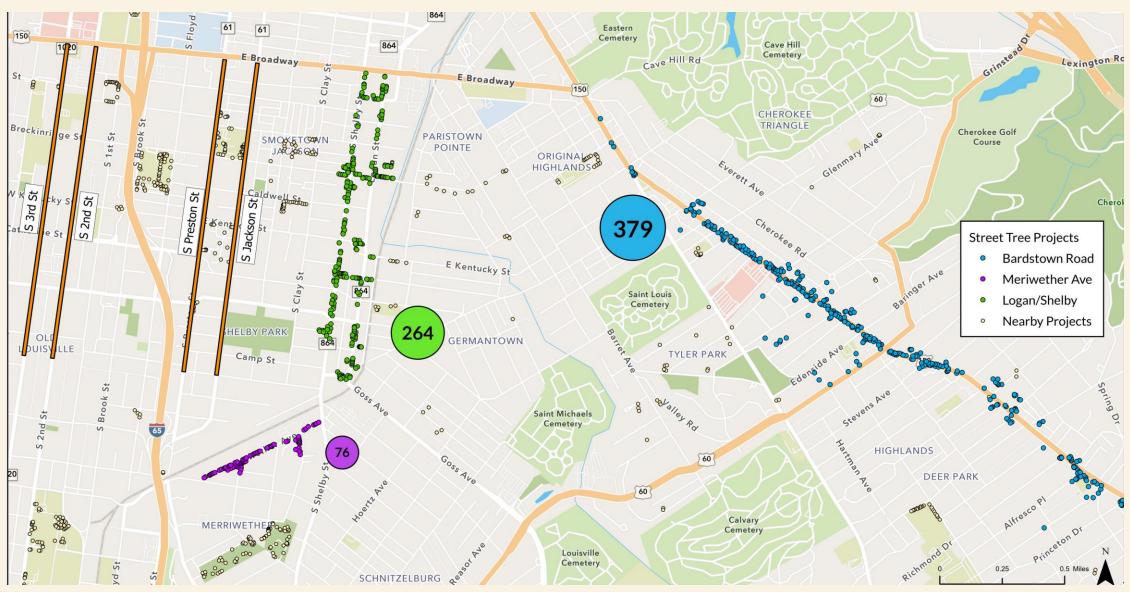








## **Green Infrastructure Corridors**







## **Key Takeaways**

It takes a team.

There is no "one size fits all approach."

Find the win-win partnerships.

Find tough trees for tough spaces.



**Our team** 







# Thank you.

Matt Thomas
TreesLouisville, inc.

matt@treeslouisville.org (502) 939-9856







# ALLIANCE FOR COMMUNITY TREES DAY

PARTNERS IN COMMUNITY FORESTRY CONFERENCE 2025

Trees Forever: Stop, Collaborate, and Listen



# Stop, Collaborate, and Listen



PRESENTED BY

#### **MOLLY STUELKE**

Director of Programs, Linn County

Trees Forever



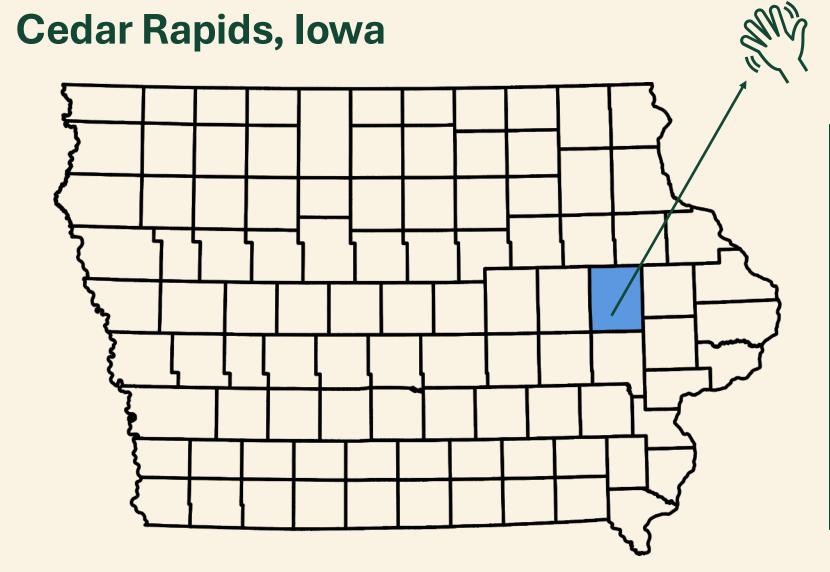
#### **DINA HAVERIC**

Outreach, Volunteer, & Community Education Coordinator

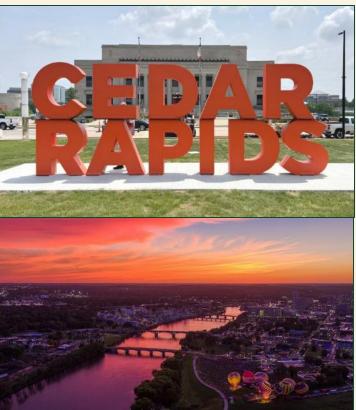
Trees Forever







Hey! That's us!







# 2008 Flood Impact











# **STOP**

A Moment that Changed Everything







# **Derecho Impact: Across the City**















# **Derecho Impact: Center Point Road & Daniels Park**



PRE DERECHO





**POST DERECHO** 



- 350,000 Iowans lost power
- 4,600 utilities poles snapped
- 1,500+ gas leaks
- 850,000 acres of corn destroyed
- \$4.9 B in Iowa property damage





# **Stopping to Start Fresh**







Pile of storm debris 50% larger than the great pyramid of Giza





## **Trees Forever**

# **OUR MISSION SINCE 1989**

### TO PLANT & CARE FOR TREES AND THE ENVIRONMENT BY

EMPOWERING PEOPLE



BUILDING COMMUNITY



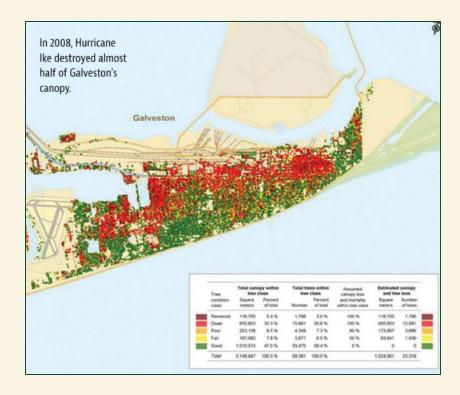
PROMOTING STEWARDSHIP







## **Collaboration Across Cities**



**Galveston, TX** 







# COLLABORATE

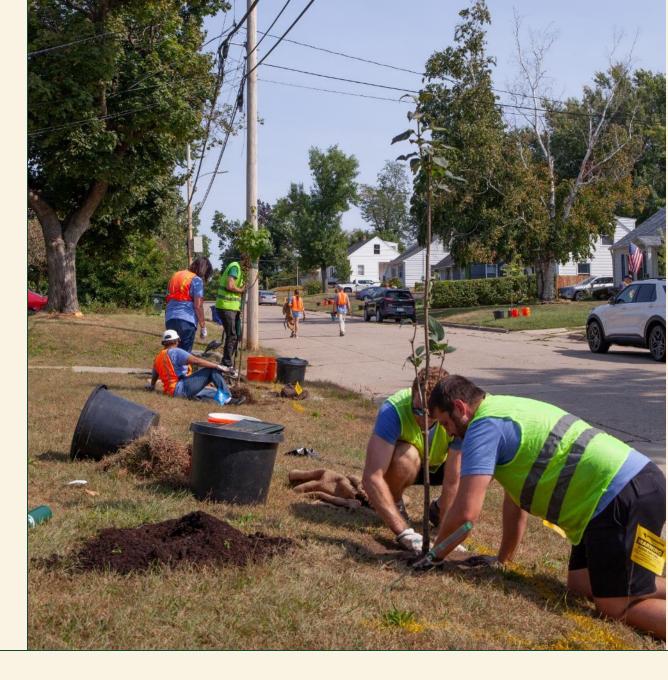
Two Teams, One Mission





## **ReLeaf Mission Statement**

ReLeaf Cedar Rapids is committed to rebuilding a resilient canopy of mostly native trees, one that preserves citywide plant diversity and distinct neighborhood character, while striving to limit climate change, increase social equity, encourage volunteerism, grow human capital, and educate our children.



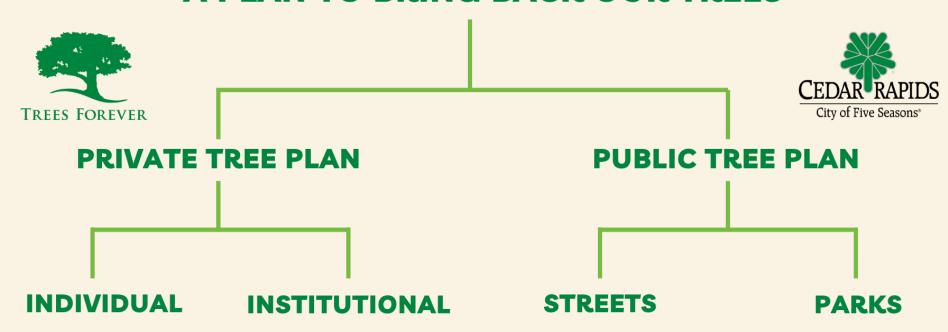




# **Combining Strengths to Multiply Impact**



### A PLAN TO BRING BACK OUR TREES







# **Collaboration in Action**

## **Funding**



Secures
philanthropy,
corporate, &
grassroots
donations



Dollars go
farther, priorities
align, &
duplication
is avoided



Taps into municipal, state, & federal funding







# **Funding**

## **Tree Voucher Program**

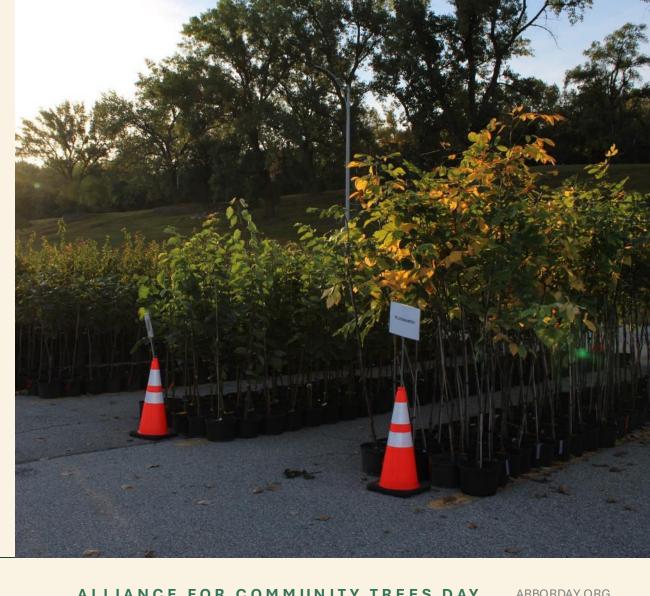
- 6 local nursery partners
- Dollars & trees directly into neighborhoods
- Tree planting data collected











## **Collaboration in Action**

### **Outreach**



Builds trust through neighborhood connections



Joint messaging, consistent voice & stronger participation



Reaches thousands through official channels







# **Outreach**

**Neighborhood Tree Captains Program** 

• Neighbors helping neighbors

• Educational opportunities

• Residential ownership

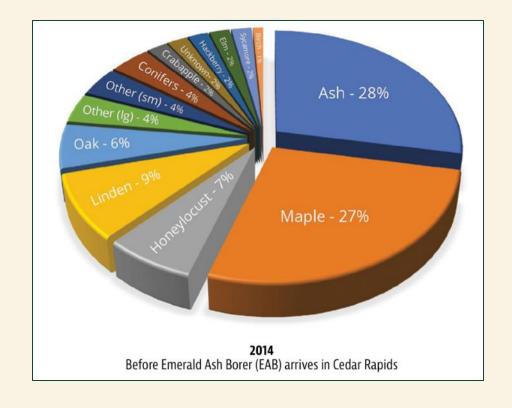






# **Outreach is Education**

The ReLeaf Tree List																				
		FORM				ATTRIBUTE				SITE				SOILS						
Superior Native, Large, Food Web Supporters	Cultivar for Consideration	Iowa Native	Height/Width	Shape	Growth Rate	Fall Color	Flower	Food for Wildlife Food for People	Forest	Park	Parkway	Median	Tree Pit	Under Utility Lines	Wet Moist/Well Drained	Dry	Clay Soils Tolerance	Road Salt Tolerance	Compaction Tolerance	Additional Notes
Northern Pin / Hills Oak Quercus ellipsoidalis		Υ			(1)	ø		2												A native oak, among the most productive supporters of the food web
Shingle Oak Quercus imbricaria		Υ		•	5			3												<ul> <li>Has an atypical, unlobed leaf</li> <li>A native oak, among the most productive supporters of the food web</li> </ul>
Northern Pin / Hills Oak Quercus ellipsoidalis	Majestic Skies	Υ		<b></b>	5	,		*												Vibrant fall color     Good tolerance for high pH soils     A native oak, among the most productive supporters of the food web
<b>White Oak</b> Quercus albα		Υ			5	ø	(	2												A native oak, among the most productive supporters of the food web
<b>Bur Oak</b> Quercus macrocarpa		Υ			5			2												<ul> <li>lowa's state tree</li> <li>A native oak, among the most productive supporters of the food web</li> </ul>
Chinkapin Oak Quercus muehlenbergii		Υ			(1)			3												A native oak, among the most productive supporters of the food web
Northern Red Oak Quercus rubrα		Υ		•	C/1	ø		3												<ul> <li>Vibrant fall color</li> <li>A native oak, among the most productive supporters of the food web</li> </ul>
Scarlet Oak Quercus coccinea		Υ		•	(1)	,	(	2												<ul> <li>Vibrant fall color</li> <li>A native oak, among the most productive supporters of the food web</li> </ul>







## **Collaboration in Action**

## **Implementation**



Volunteers, schools, and neighborhood leaders



Faster planting healthier trees, and stronger community ties



Contractors, professional crews, large-scale and park projects







# **Roll Up Your Sleeves!**















# **Implementation**

## **Volunteer Spotlight**

• Volunteers like Mike ensure trees thrive and that the community stays invested







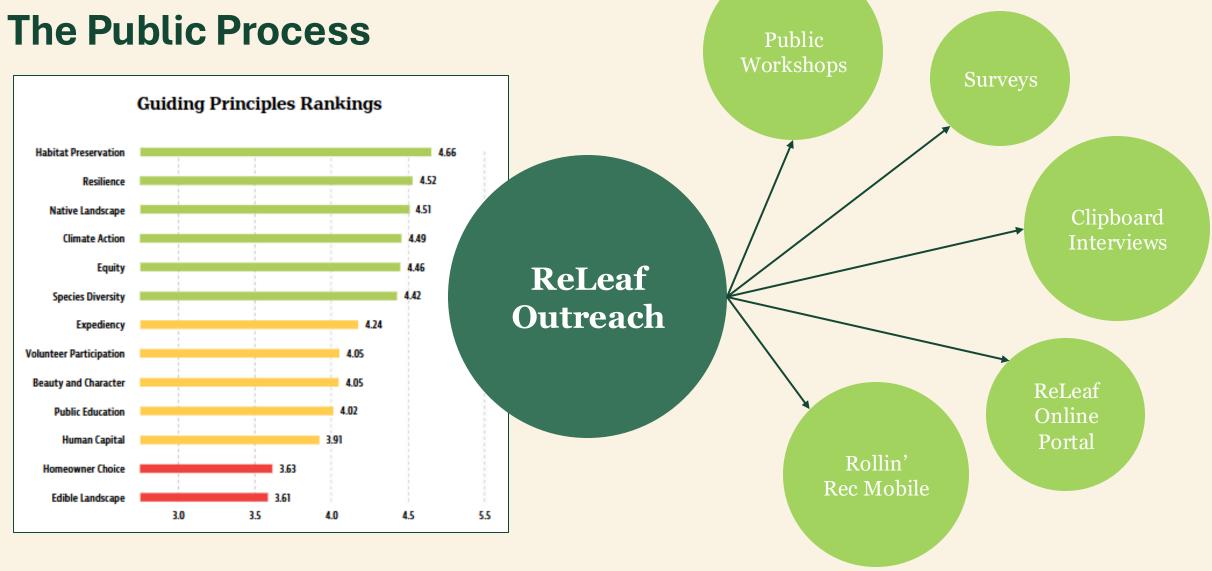


# LISTEN

Community is the Root System











# Listen

## Campus Canopy 10+

- Hands-on education
- Volunteer engagement









# Listen

## Party in the Park















# STOP, COLLABORATE, & LISTEN











# **STOP**

Long enough to understand the true scope of your challenge.

# COLLABORATE

With the people who bring strengths different from your own.

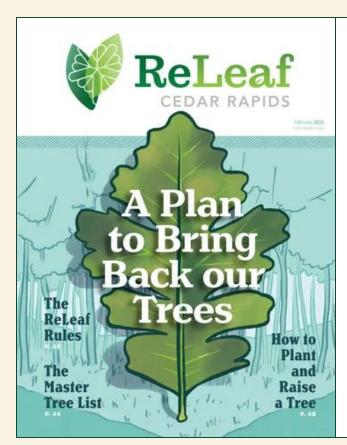
# **LISTEN**

Not just once, but continuously to keep your community at the heart of the recovery.





# **ReLeaf Cedar Rapids**





**Contact Us!** 

Molly Stuelke mstuelke@treesforever.org

Dina Haveric
dhaveric@treesforever.org









# Thank you.

TreesForever.org/ReLeaf









# ALLIANCE FOR COMMUNITY TREES DAY

PARTNERS IN COMMUNITY FORESTRY CONFERENCE 2025

1:30 p.m. – 2:40 p.m.

Partnering in the Urban Forest



# Branching Out: Growing institutional Partnerships, Accomplishing Common Goals



PRESENTED BY

## **TOM EBELING**

Director of Forestry, Openlands

tebeling@openlands.org









# In The Beginning....









NATURE AND BIODIVERSITY

# One trillion trees - World Economic Forum launches plan to help nature and the climate

Jan 22, 2020







# FR®NTIERGROUP

Our Work ~

# The Biden administration has released \$1 billion in funding for urban trees. Here's why that matters.

City trees aren't just ornaments. This unprecedented investment in the nation's urban forests will pay major dividends.

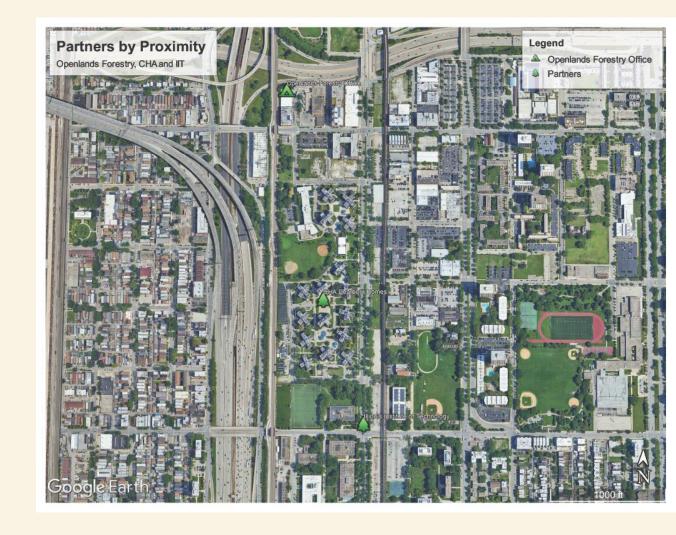




# Time to Get Creative... Time to Branch Out!!!

# Identifying NEW Partners

- Common Goals
- Planting Space
- Mismatched Resources





































# Growing the Relationship

- Show Up
- Get In Where You Fit In
- Be There, Be Flexible



# Growing the Relationship

- Show Up
- Get In Where You Fit In
- Be There, Be Flexible







# Growing the Relationship

- Show Up
- Get In Where You Fit In
- Be There, Be Flexible



FOR PARTICIPANTS

Openlands Activities Participation, Consent & Release Document -Waiver and Release of All Liability Against Chicago Housing Authority For Openlands' Sponsored Activities at Lake Parc Place

(Date)
Fighteen (18). if any, Who Are Partii: ipating in the Openlands A ctivities
ther minors in my charge are participating in the Openlands Activities.
9



# Growing Forward

- Embed Yourself
- Make big Plans; Aim High in Hope and Work







# Thank You!

Branching Out:
Growing institutional Partnerships,
Accomplishing Common Goals

TEBELING@OPENLANDS.ORG





# Partnering in the Urban Forest Q&A

ALLIANCE FOR COMMUNITY TREES DAY



# Alliance for Community Trees Day





# Your Trees, Your Story, With i-Tree



PRESENTED BY

#### **ANA CASTILLO**

i-Tree Outreach and Support Specialist, The Davey Institute

Ana.Castillo@Davey.com



#### i-Tree Suite of Tools

- Software tools designed to calculate the benefits of trees and their monetary value
- Peer-reviewed science and location specific results
- Free tools and technical support
- A public private partnership, cooperative initiative























# **Communicating the Value of Trees**

- Generic -> specific
- "Be concise, be quotable, be responsive"
- Provide clear, credible sources

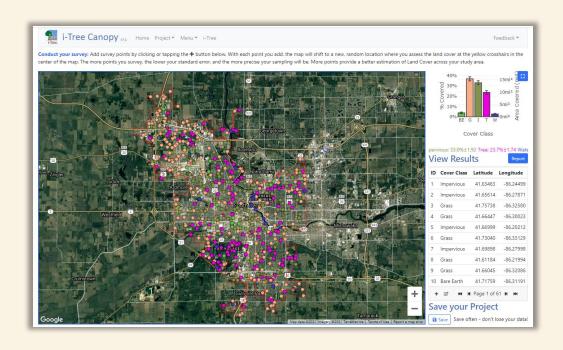


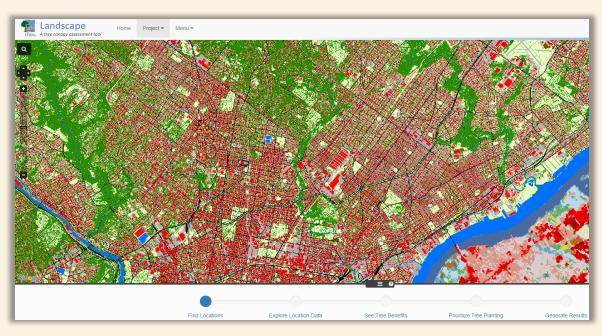




### Quantify the Value of the Existing Canopy

- Tools use existing spatial data on canopy cover
- Quantify benefits related to carbon sequestration, stormwater, and air pollution removal
- Establish a baseline measurement or identify canopy cover gaps

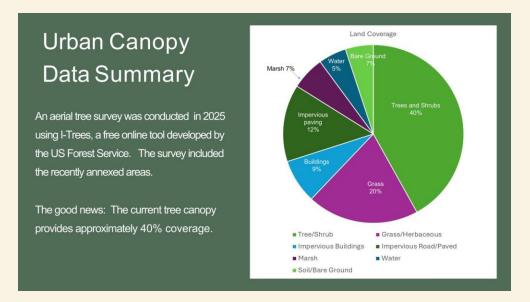






### Ocean Springs Tree Canopy Renewal Project

- Used i-Tree Canopy to perform a land cover survey and arrive at canopy cover estimate
- Set goal of 50% canopy cover, part of a program for hazardous storm mitigation
- Applied for \$250k grant to perform tree inventory and tree care



SEdition SunHerald

NEWS SPORTS RESTAURANTS MISSISSIPPI GAMES OBITUARIES FINANCE CLASSIFIEDS BEST OF BILOXI

#### Listen to this article

The trees that grace Ocean Springs are one of the most prized characteristics of this small city that wins accolades from national publications as a charming place to visit.

Washington Avenue, the entry to downtown, is the city's best-known tree haven but far from the only neighborhood where trees flourish. An aerial survey shows the tree canopy covers 42% of Ocean Springs — on the low end of the 40-60% tree coverage that U.S. Forest Service researchers consider attainable in forested states.



### **Canopy Change Survey**

#### **Capture your wins and losses**

- Monitor canopy cover changes from tree planting or conservation projects
- Show potential loses from development or other land use changes
- Inform disaster recovery efforts and planning











### Derecho Storm, Iowa 2020

Table 1. Estimated structural value and benefit loss in Iowa due to the derecho wind event on August 10, 2020. Data source: Nowack & Greenfield, 2018.

#### Structural Loss

***************************************									
Trees		Leaf Area	Leaf Biomass	Carbon Storage					
# of trees	Trees Per Capita	Acres	Tons	Tons	\$				
4,424,426	17.60	103,193	35,343.81	735,254.47	90,294,408.12				

#### Annual Benefit Loss

Carbon Sequestration		Avoided Emissions		Air Pollution Removal	Avoided Energy Use	Total
Tons/Year	\$/Year	Tons/Year	\$/Year	\$/Year	\$/Year	\$/Year
22,870.28	2,966,816.12	335.38	2,708,832.24	7,713,722.29	6,849,475.82	20,238,846.62





**NEXT UP: 12:00 I** 

The analysis relied on data collected during an aerial flight survey of the impacted area, as well as urban forest statistics.

Quoting from the National Oceanic and Atmospheric Administration, the report notes that "[t]he strongest estimated wind speeds in the vicinity of Cedar Rapids, Iowa, were among the highest wind speeds ever recorded during a derecho event, peaking at about 140 mph."

The derecho is considered "the costliest thunderstorm event in recorded history in the United States."

In terms of tree damage, the DNR analysis estimates that derecho impacts to the urban tree canopy alone amount to \$90 million in lost carbon storage, and more than \$20 million a year in total lost benefits.

o Recovery

Response and Assessment

Impact on Resources

Recovery Moving Forward

sequestered about 22,870.28 lbs of carbon a year with an associated value of \$2,966,816.12. In addition, these trees store 735,254.47 tons (1,470,508,940 lbs) of carbon with a benefit of \$90,294,408.12.

#### **Loss in Air Quality Benefits**

Air quality is a persistent public health issue in Iowa. Urban forests improve air quality by removing pollutants, lowering air temperature, and reducing energy consumption, which reduces emissions from power plants and emitting volatile organic matter. The 12.9% of the urban canopy lost in the derecho reduced the avoided emissions by 335.38 tons, with a value of \$2,708,832.24 per year. Overall, the trees lost in the 2020 Midwest Derecho resulted in the loss of \$7,713,722.29 per year in ability to remove air pollution.

#### Avoided Energy Use

Trees conserve energy by shading buildings and blocking winds. Losing 12.9% of the urban canopy reduced the annual benefit associated with energy related costs by about \$6,849,475.82 each year.

Total losses from urban tree canopy damage is estimated at \$20,238,846.62 per year (benefits include carbon sequestration, avoided emissions, air pollution removal and avoided energy use).

Powered by



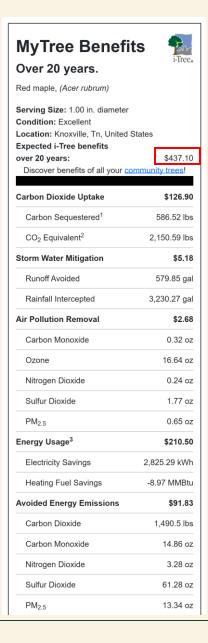
All benefits discussed were calculated using i-Tree Tools



# **Show Trees are a Good Investment**

#### Appeal to diverse donors and funders

- Little trees yield big benefits in the future
  - Example: For \$20, 1 red maple will produce \$437 in benefits in 20 years!
- Make the case for funding tree maintenance –
   mature trees offer greater benefits <u>right now</u>
- Demonstrate diverse benefits of trees in terms of public health, stormwater management, and energy savings, etc.



MyTree Benefits 🐘						
Over 20 years.	i-Tree.					
Red maple, (Acer rubrum)						
Serving Size: 20.00 in. diameter Condition: Excellent Location: Knoxville, Tn, United S Expected i-Tree benefits over 20 years:  Discover benefits of all your core.	\$1,366.67					
Carbon Dioxide Uptake	\$769.55					
Carbon Sequestered <sup>1</sup>	3,556.72 lbs					
CO <sub>2</sub> Equivalent <sup>2</sup>	13,041.31 lbs					
Storm Water Mitigation	\$48.09					
Runoff Avoided	5,381.63 gal					
Rainfall Intercepted	29,980.4 gal					
Air Pollution Removal	\$84.91					
Carbon Monoxide	3.01 oz					
Ozone	281.51 oz					
Nitrogen Dioxide	4.75 oz					
Sulfur Dioxide	28.05 oz					
PM <sub>2.5</sub>	25.66 oz					
Energy Usage <sup>3</sup>	\$315.74					
Electricity Savings	4,031.46 kWh					
Heating Fuel Savings	-11.35 MMBtu					
Avoided Energy Emissions	\$148.38					
Carbon Dioxide	2,419.34 lbs					
Carbon Monoxide	22.11 oz					
Nitrogen Dioxide	5.33 oz					
Sulfur Dioxide	99.47 oz					

#### OurTrees Story



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 Knoxville, TN

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

Trees shade an area equivalent to 15,529 professional football fields!





The land area covered by impervious surfaces – typically buildings and pavement – is like a 34

square mile parking lot.

Annual Tree Benefits for Knoxville. TN

Sequestering carbon as wood in trees counteracts the CO<sub>2</sub> emissions of 16,116 gasoline powered passenger cars.



19.07 oz

The filtration and removal of air pollution by the leaves of trees is estimated to avoid 17 hospital and ER visits as well as reduce

acute respiratory symptoms and exacerbated asthma by 1,041 incidents.

Rainfall absorbed by tree roots and therefore kept out of storm sewers is equal to 523 Olympic sized pools!

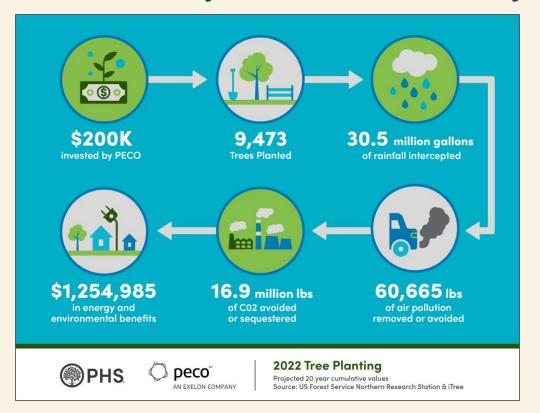


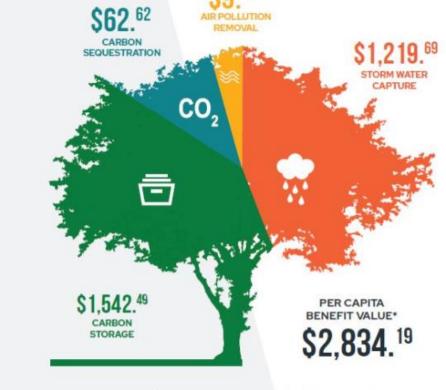


 $PM_{2.5}$ 

#### **Return on Investment of Trees**

#### **PECO and Pennsylvania Horticultural Society**





#### What do your community's trees do for you?

Trees provide substantial added value to the quality of life of Wake County's residents. The ecosystem services contributed to the community by its tree canopy infrastructure can be quantified and valued on an individual level.

Over their lifespan, the county's trees have stored an estimated accumulated total of 9.04 tons of carbon per county resident, translating to a per capita carbon storage value of \$1,542.49.

Per resident, Wake County's tree canopy annually removes 19.5 pounds of air pollution, capture 7,174 gallons of stormwater and absorbs 734 pounds of carbon. These vital eco-services translate to an annual per capita value of \$1,291.70.

The combined per capita benefit value of Wake County's tree canopy is estimated to be \$2,834.19.

\*Per capita refers to the average value per Wake County resident. As of 2020, Wake County had a resident population of 1,129,410 with a tree canopy valuation of \$3,200,958,479.



Wake County, NC

#### **Baltimore Tree Trust**













NEWS > REGION > BALTIMORE CITY





# Thousands of new trees planted in Baltimore's underserved communities





Stay connected to community, wherever you are



Mayor Brandon Scott says he is proud of organizations like Baltimore Tree Trust and the Chesapeake Bay Trust for working to improve the quality of life for future generations.

"Over the next decade, those trees that we're going to do will remove about 72,000 pounds of carbon from the environment and we are talking about over the last four years when we planted 23,000 trees. That's that amount of carbon is the emission of eight railroad cars full of coal removed from our air," Scott said.

# TELL YOUR STORY WITH I-TREE

We know trees are great, but how great are they?

We know urban and community forestry work is impactful, but how impactful is it?









# Thank you.

i-TreeTools.org

Contact info@itreetools.org

Follow us on LinkedIn:









# ALLIANCE FOR COMMUNITY TREES DAY

PARTNERS IN COMMUNITY FORESTRY CONFERENCE 2025

ARBORDAY.ORG

# Leveraging GIS for Urban and Community Forestry

PRESENTED BY

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Arbor Day Foundation, Director of GIS

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### Why GIS?

The need...

.... improve data collection and record keeping, conduct analysis, and share stories

The need behind the need...

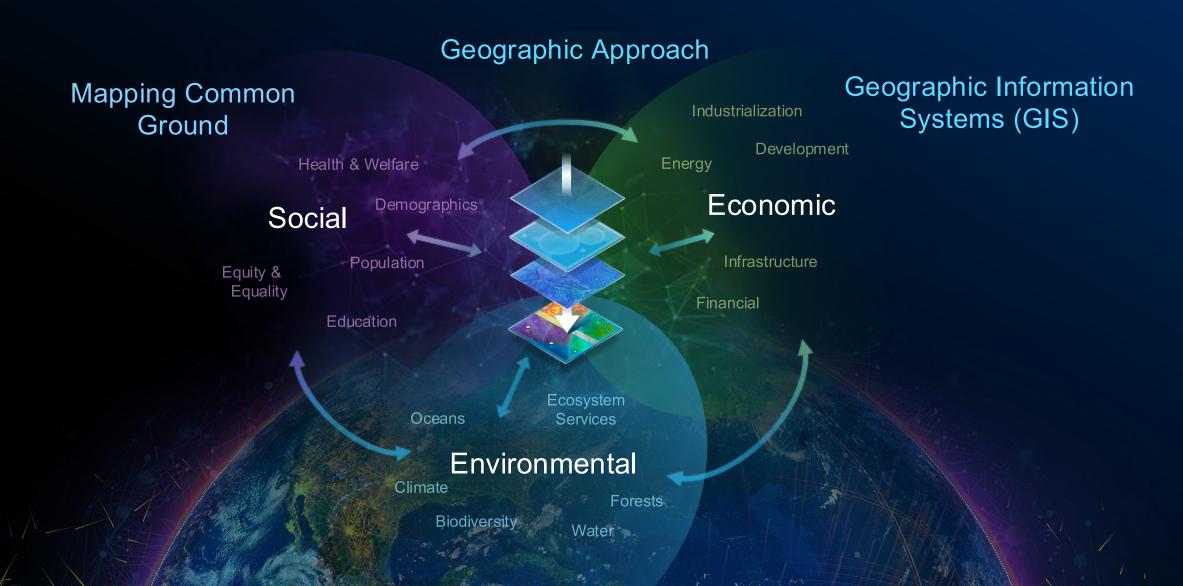
... understanding "where" and "place" of nature and people







### The Geographic Approach



# ArcGIS as a System

# Mapping & Visualization



Understand locations and relationships with maps and visual representations

#### Data Management



Collect, organize, and maintain accurate locations and details about assets and resources

#### **Field Mobility**



Manage and enable a mobile workforce to collect and access information in the field

#### Monitoring



Track, manage, and monitor assets and resources in real-time

#### **Analytics**



Discover, quantify, and predict trends and patterns to improve outcomes

# Design & Planning



Evaluate alternative solutions and create optimal designs

# Decision Support



Gain situational awareness, and enable information-driven decision making

# **Constituent Engagement**



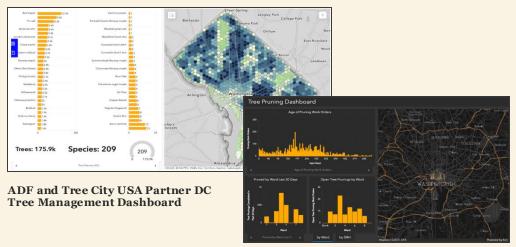
Communicate and collaborate with citizens and external communities of interest

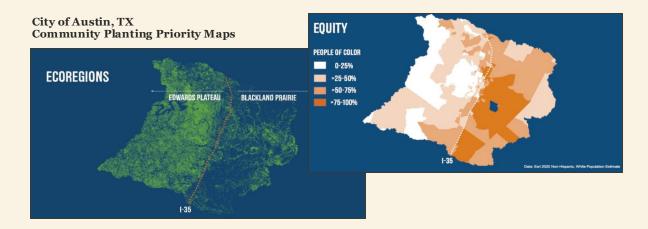
# Sharing & Collaboration

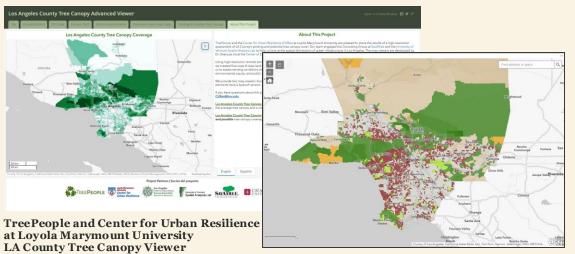


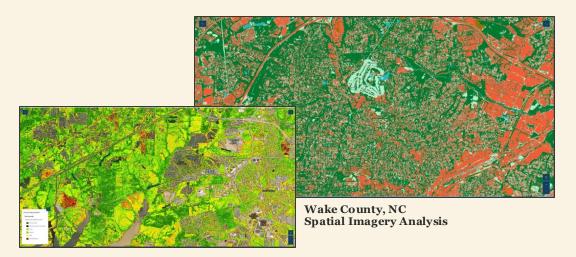
Empower everyone to easily discover, use, make, and share geographic information

# How is ArcGIS being used?







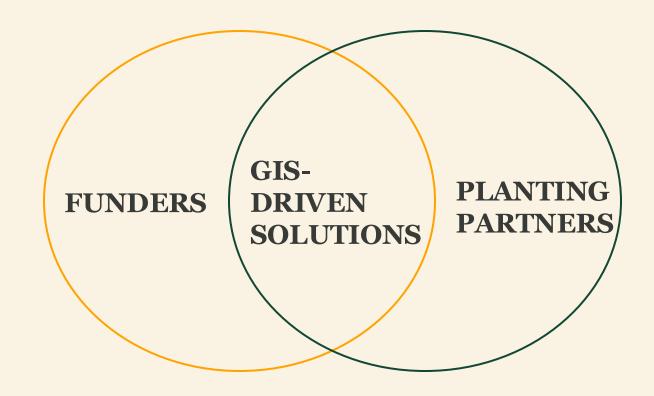






### **GIS: Patterns of Use for Nonprofits**

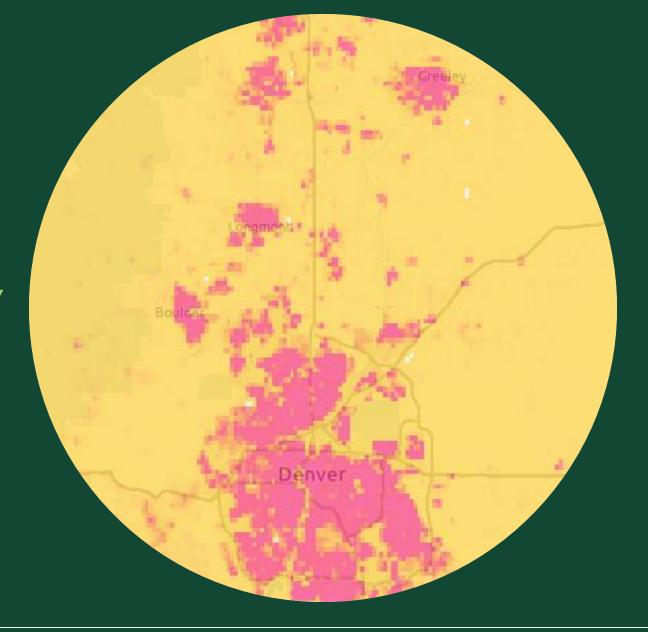
- 1. Understand Your Community
- 2. Act On Your Mission
- 3. Measure Your Impact
- 4. Communicate Your Cause







# UNDERSTAND YOUR COMMUNITY







### **Understand Your Community**

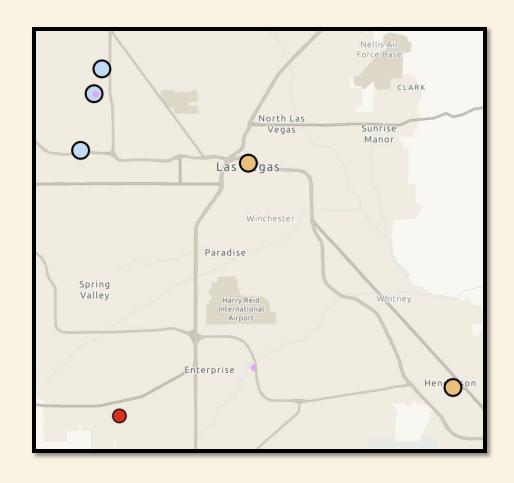
#### **Partners**

- Program Networks: Alliance for Community Trees, Tree City USA, TreeCampus, TreeLine, etc.
- Planting Partner Service Areas
- Nurseries
- Projects and Proposals (i.e., supply)

#### **Funders**

Areas of Demand

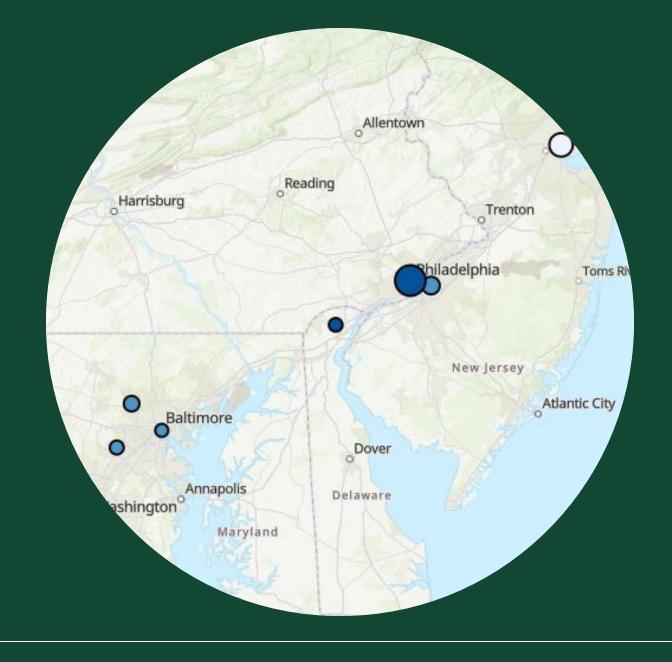
Spatial data helps us better understand our networks and community, and to meet the needs of our donors







## ACT ON YOUR MISSION



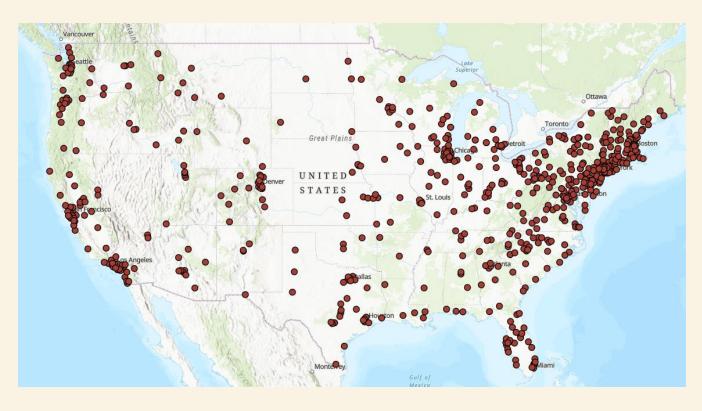


### **Act On Your Mission**

 Use spatial data to see new insights and make more informed decisions

### Case Study #1 = 2024 Subaru Tree Distribution

- Inputs
  - 641 Participating Dealerships
  - 94,000 Trees to Distribute
  - Horticulture Zones
- Outcomes
  - Number of trees per dealership
  - Capture location and ecosystem service benefits for each tree planted



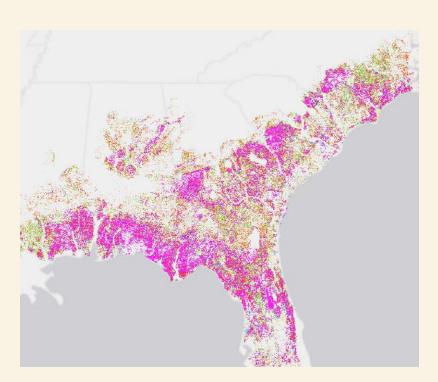


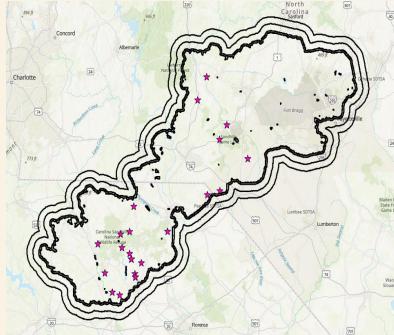


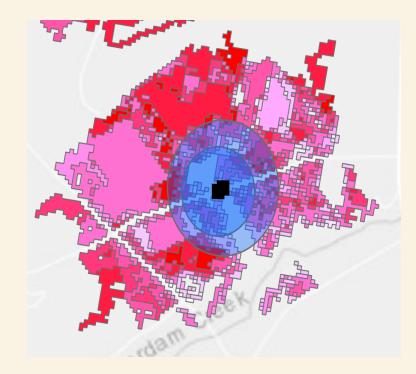
### **Act On Your Mission**

• Use spatial data to see new insights and make more informed decisions

Case Study #2 = Procter & Gamble Long Leaf Pine Initiative



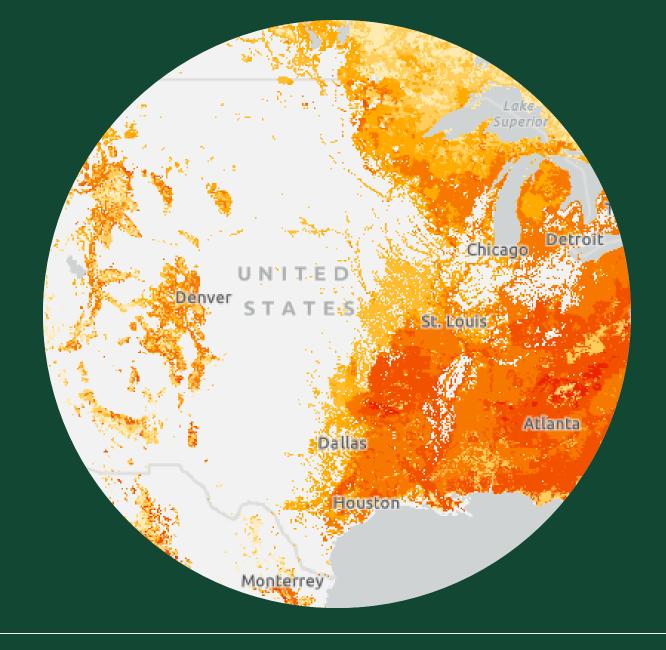








# MEASURE YOUR IMPACT







### **Measure Your Impact**

People Impacted Metric

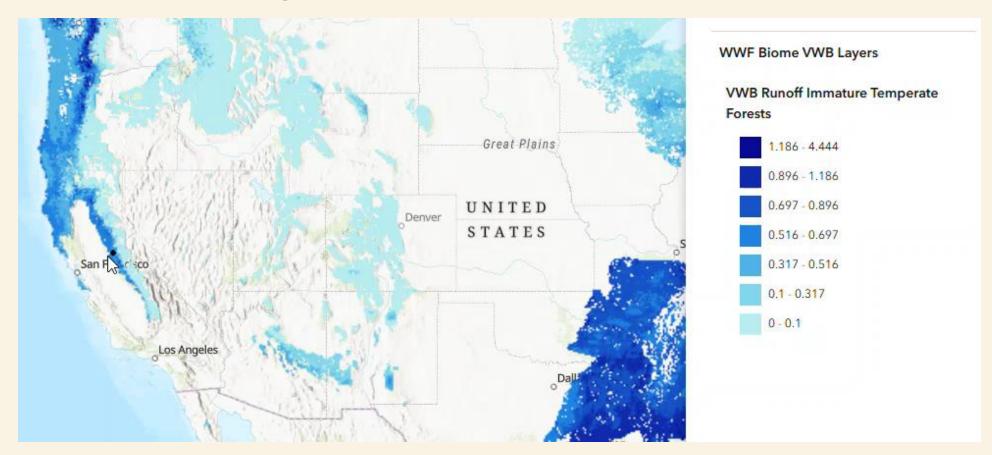






### **Measure Your Impact**

**Volumetric Water Benefit Accounting** 







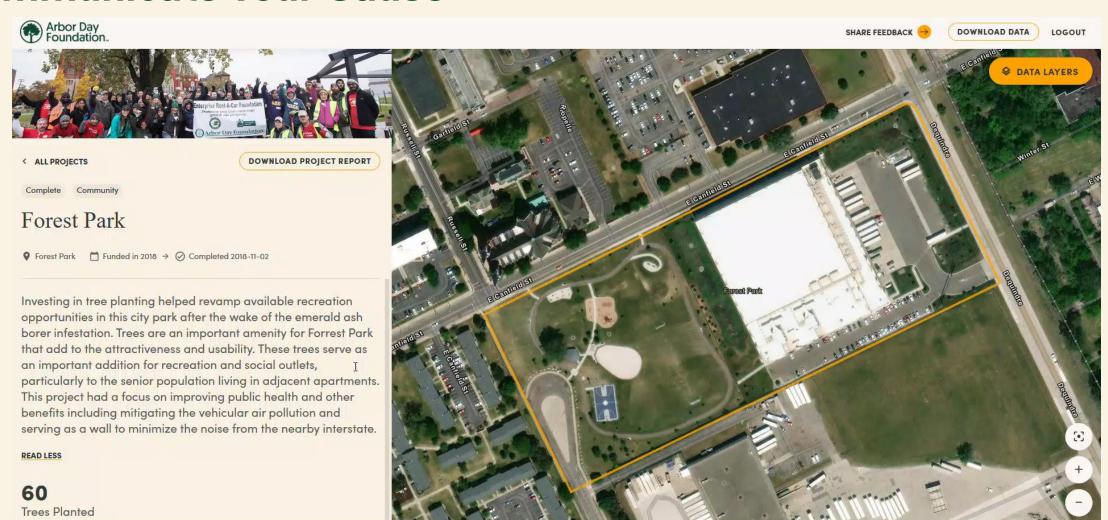
### COMMUNICATE YOUR CAUSE







### **Communicate Your Cause**















### Thank you.

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# Trees and Technology Q&A