"Brookhaven will be a national model. . . ."

Tree Ordinance Changes to Reflect Brookhaven's Vision and Preserve and Restore the Tree Ecosystem

Discussion Outline
February 11, 2021

- Progress to Date
  - Studies, City Council Meetings, Canopy and Arborist hires

- Metrics on Brookhaven Tree Canopy Loss

- The Cost of Tree Loss and Impervious Surface Growth

- Brookhaven Tree Ordinance Rewrite Timeline

- Recommended Changes to Brookhaven's Tree Ordinance and Processes

- Key Points for Feedback Sessions

- Our Ask of You

Our Accelerating Tree Loss Violates the City's Vision. We Need to Take Thoughtful Action Now.

- **Single family residential (SFR)** represents 52% of Brookhaven's land area and **79% of the tree canopy**. In the last year, the Brookhaven Tree Conservancy used City development records to quantify tree loss at the lot and district level, and the City commissioned an outside canopy study.

- The 2019 Canopy Study revealed the rapid loss rate tied to community development.
  - The UTC shrank 6.3% since 2009 (47%-44%), with an even higher 8.7% loss in SFR lots (5 points).
  - Alarmingly, the *pace* **of the loss is increasing** while an 8.7% SFR loss rate was documented over the last 10 years, we allowed a 13.3% loss (8-point drop) in the last *two* years.
  - At a loss rate of 13.3% / 2 years, our SFR UTC will shrink from 52% in 2019, to 45% in 2021, to 39% in 2023 and to 34% in 2025.

- Corroborating this at the lot and district level was BTC's lot and four-district-level review of 60 developed lots. Here we found a 53% loss of hardwood Dbh, a **500% increase in impervious lot coverage** and a 65% loss of Specimen trees (33 saved, 61 destroyed).

Metric	Before	After	% Change
Number of Trees	1,064	549	- 48%
Dbh	18,740	8057	- 57%
Dbh Hardwoods	11,703	5466	- 53%
Dbh Conifers	4,257	1105	- 75%
Recompense		100 trees / $4,425	
Impervious Lot Coverage	5.3%	26.7%	+ 500%

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Why Is Brookhaven Losing So Many Trees, Especially High Value Trees?

- The current tree ordinance allows for the loss of *all* tree canopy on single-family lots, where most of Brookhaven's development and tree loss occurs. Builders can clear-cut lots while homeowners pay fees for removing more than three trees over 18 months.

- Alternative compliance provision allows too many trees to be cut down, shrinking the canopy to that provided by 3" saplings.

- Thus, we are losing or exchanging high-performance canopy for low-value, reduced, or unendurable canopy.

- Protective fencing is regularly breached resulting in dying trees, often high value trees.

- Homeowner regulations do not take into account high value trees.

- The processes to save trees and to replace trees are intertwined. Both elements need to be incorporated into a *new* Brookhaven Canopy Strategy as well as the ordinance.

Tree *Loss* Increases City Infrastructure Budgets
Tree loss = Impervious surface = Stormwater damage

- Stormwater runoff from impervious surface creates infrastructure costs to cities and taxpayers.

- Estimates show 1 square meter of impervious surface = $4,000 in stormwater damage.

- In a Houston study, impervious surface increased by 25% in the 15 year period (before Hurricane Harvey). *The increase in our Brookhaven study was 500%!*

- A single deciduous tree can consume 500-760 gallons annually, a mature pine tree can intercept more than 4,000 gallons per year, and a single mature oak can consume over 40,000 gallons of water per year.

- Grass lawns with fewer trees create approximately 70-80% stormwater runoff.

Trees are important to the citizens of Brookhaven

- Brookhaven Tree Conservancy (BTC)
- TreePeople.org
- CityintheForest.org
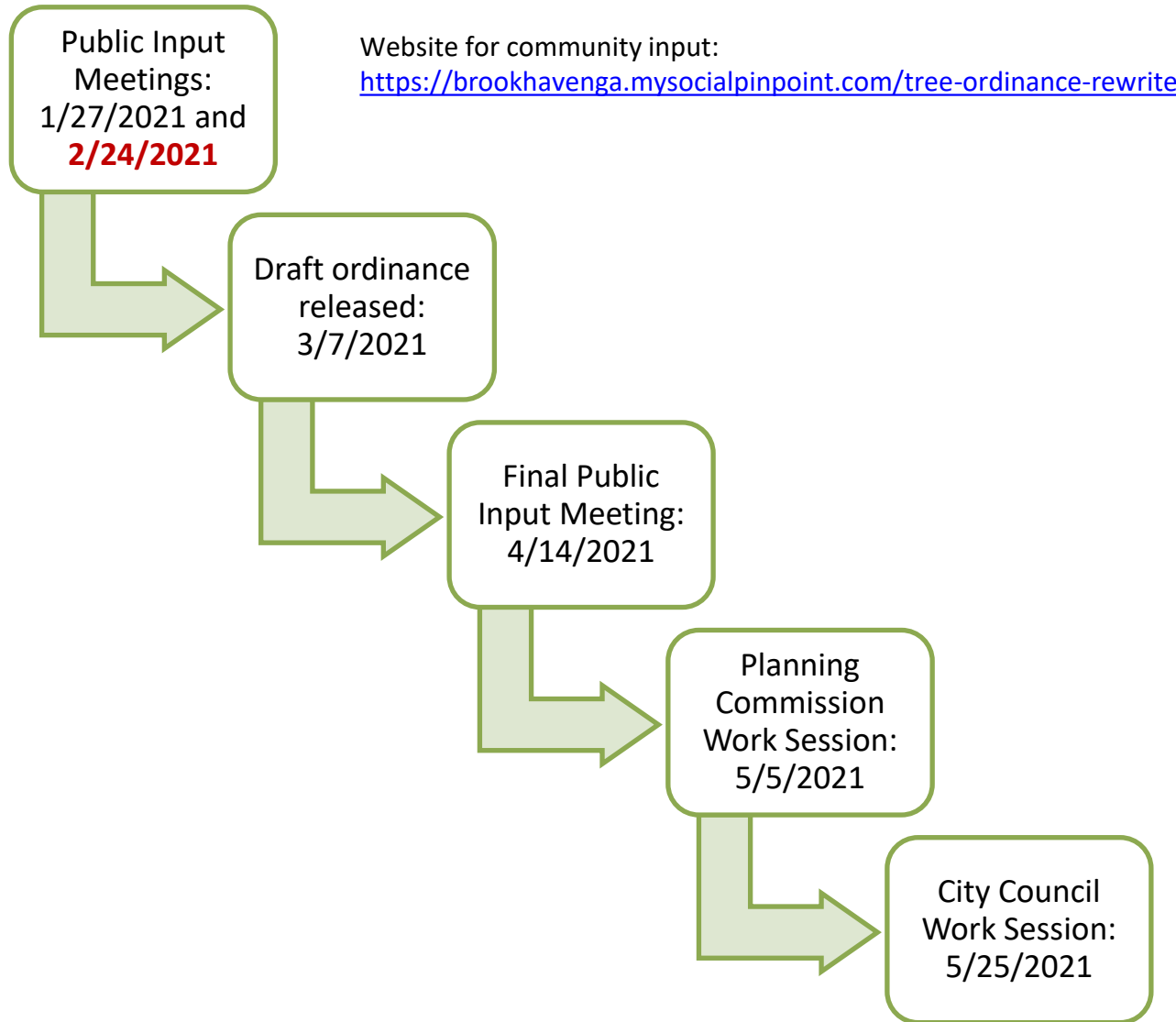- Park Pride
- Next Door Communities

https://www.cnbc.com/2016/04/20/houston-flood-damage-chronic-expensive-and-avoidable.html
Professor Samuel Brody

Global Warming Adds Additional Risk to Cities

- For us in Brookhaven, climate change will mean hotter temperatures, stronger storms, and increased flooding. It's estimated we'll see as many as 25 days over 120 degrees by 2050.

- Cities are developing resiliency plans to prepare for the coming impact of climate change.

- Trees can reduce temperatures by 10-15 degrees. The more trees we lose, the less resilient we become and the harder it will be to address the heat impact when it arrives. *Hotter temperatures mean fewer people walking & bicycling, which is an important priority for Brookhaven.*

- Mature trees play an important role in improving air quality. This is important as the effects of climate change will disproportionately impact socially vulnerable populations. *Addressing disparity is an important priority for Brookhaven's new SJRE Commission.*

- Storm water runoff is a key area being addressed by several city resilience managers. This problem is exacerbated when paving percentage increases and when trees are removed.

- Increased tree loss makes Brookhaven less resilient and makes it harder & more expensive to address when the impact of increased flooding arrives.

Park Pride session on Nature-Based Strategies for Climate and Social Resilience: https://youtu.be/MEd6c0DJyTw

Brookhaven Tree Ordinance Timeline:
Goal to Pass Ordinance by End of June 2021

Public Input Meetings: 1/27/2021 and **2/24/2021**

Website for community input:
https://brookhavenga.mysocialpinpoint.com/tree-ordinance-rewrite

Draft ordinance released: 3/7/2021

Final Public Input Meeting: 4/14/2021

Planning Commission Work Session: 5/5/2021

City Council Work Session: 5/25/2021

Recommended Changes to
Brookhaven's Tree Ordinance and Processes (1 of 2)

Current Tree Ordinance	New Tree Ordinance	Benefit
A plan for tree preservation is required *after* site and demo plans	Integrate tree preservation & restoration into application, with demo and site plans that include full tree inventory and analysis	**Tree conservation is built into the plan for all development projects**
No public posting of proposed tree loss before it occurs	Require posting 30 days in advance on property when property owner requests permit to remove trees. Follow Sandy Springs yellow sign example.	**Builds public awareness of pending tree loss, and encourages engagement before destruction**
Does not address preservation of high value trees and tree health with sidewalk construction	Require that all City-installed and builder-installed sidewalks protect in-path high value trees with bridges or build-arounds	**Preserves the shade canopy and encourages people to use the sidewalks**
Limited Boundary Tree protection results in boundary tree loss, impacting 2 or more property owners	Protect boundary trees by requiring limited removal of crown and roots and having additional treatments for protecting high value trees	**Retains more tree canopy between houses and provides a healthier environment**

Recommended Changes to
Brookhaven's Tree Ordinance and Processes (2 of 2)

Current Tree Ordinance	New Tree Ordinance	Benefit
Tree value reduced to Diameter at Breast Height; urban forest and maturity not considered.	Require mechanism to protect & restore high-value trees (e.g. Tree Value Calculator): trees in native forest/ oldest soils, and living in a stand of trees	**Preserves high-value canopy and tree health, while providing flexibility for property owners**
Allows grading in the entire buildable area, which puts tree ecosystem at risk. Even setback areas can be graded.	Create limits on grading area/soil disturbance that support stormwater management. Make limits of grading an extra 5-10% area over and above the allowable impervious surface.	**Contributes to stormwater management naturally without man-made land disturbance and encourages alternate building such as on piers**
Does not work with building ordinances to flex the building ordinance to protect the best and optimum number of trees.	Established setbacks and other guidelines adjusted for tree canopy preservation. This expectation is set and enforced with builders, also providing them more flexibility in the buildable envelope	**Builders and homeowners will be able to achieve development goals while preserving the maximum canopy; will see the additional benefit of less uniformity in setbacks, etc.**
Alternative Compliance allows clear cutting.	Eliminates Alternative Compliance and provides an end-to-end process for builders that integrates high value tree preservation	**Tree Ordinance preserves trees (rather than default to alternative compliance) reducing excessive tree loss and supporting stormwater needs**

Key Points for Feedback Sessions (1 of 2)

- Require city processes & contractors **enforce** the Tree Ordinance, such as Zoning, Land Disturbance, Variances, Site Planning, Sidewalk Policy, Stormwater Management, Transportation and Modifications.

- New ordinance should preserve the best, **high value trees**, by planning for trees at the **very beginning** of the development process. Value of trees should be validated by arborist expert tools. **Stop Alternate Compliance**.

- New ordinance should be enforceable, have meaningful **penalties**, **and** provide **incentives** for canopy enhancing behavior. Increase minimum Dbh requirements scaled by lot size. Eliminate caps on recompense (14-51 B9).

- Tree removal plans need to be **visible to neighbors** with good signage, and adequate lead time.

- Establish a **Tree Conservation Commission** that hears appeals for oversight, checks and balances, and serves as advisor to City Council and offers educational outreach.

- City of Brookhaven needs to **model the proper tree canopy preservation** behaviors:
  - Preserve/establish/replace the canopy along streets and sidewalks
  - Land development on city and park property preserves the high value trees.

Key Points for Feedback Sessions (2 of 2)

- Improve **building site tree protection** by requiring chain link fences to protect high value trees, rather than netting, and setback protection. Thoughtful preservation of high value boundary trees.

- **Stormwater remediation** projects should **limit land disturbance** and include tree replacement or restoration.

- The ordinance should meaningfully **reduce grading and impervious surface** expansion, with a measurement system.

- Ordinance provides a **reporting** and management report on stormwater management costs and canopy changes every 6 months.

- Ordinance to require 85% usage of **native species**.

- The City of Brookhaven's **Vision** supports **community health** through a strong canopy, bikeability and walkability.
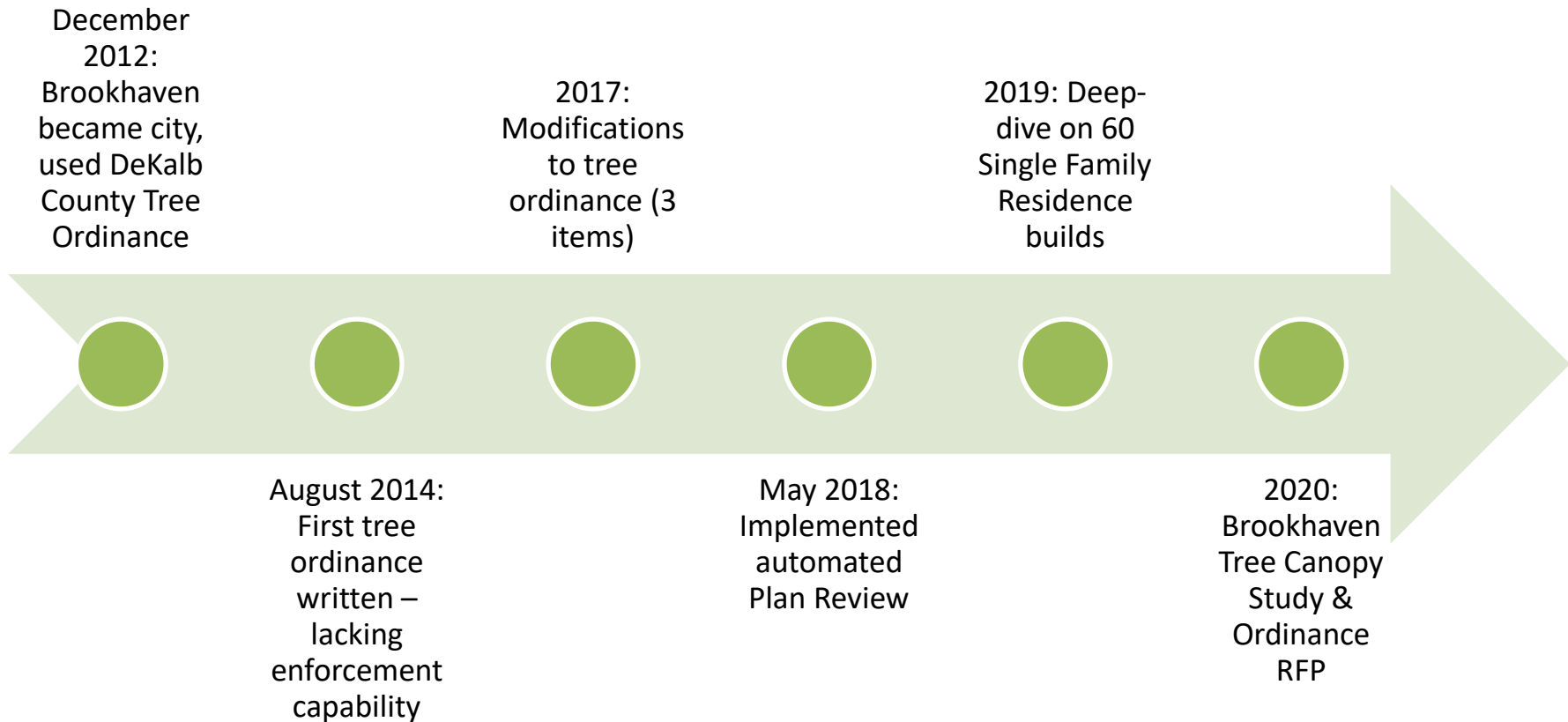
Before and After – Park Chase

Our Ask of You

❑ **Actively participate in Tree Ordinance Rewrite schedule**

❑ Reach out to your Councilperson with your input

❑ Reach out to the Planning Commission with your input

❑ Monitor City Project Portal for notices on tree removal plans
   – *Search Permits/Cases, Select Permit Case/Type, Choose Tree Removal*

❑ Think about how you can spread the word on the importance of planting natives – model the way

❑ Consider becoming a Georgia Audubon certified wildlife sanctuary or National Wildlife Federation Garden for Wildlife

Appendix 1:
Brief History of Brookhaven Tree Policy

December 2012: Brookhaven became city, used DeKalb County Tree Ordinance

2017: Modifications to tree ordinance (3 items)

2019: Deep-dive on 60 Single Family Residence builds

August 2014: First tree ordinance written – lacking enforcement capability

May 2018: Implemented automated Plan Review

2020: Brookhaven Tree Canopy Study & Ordinance RFP

Appendix 2:
Benefits of Trees and Urban Forest: A Research List

Roads and Traffic Benefits

Traffic Calming and Accident Reduction
- The presence of trees in a suburban landscape significantly reduced the cruising speed of drivers by an average of 3 miles per hour. Faster drivers and slower driver both drove slower with the presence of trees.

Reducing Road Maintenance Costs
- Shade provided by trees reduces the need for maintenance and repaving. A study from UC Davis found that 20% shade on a street improves pavement condition by 11% which is a 60% savings for resurfacing over 30 years.

Business Benefits

Business Districts: Increased Sales, Desirability and Rents
- Visitors to well treed central business districts will spend 9 – 12 percent more for products.

Energy Use Benefits

Energy Efficiency
- Properly placed trees can reduced cooling costs by 30%. Shading an air conditioning unit can increase its efficiency by 10 percent.
- A 25-foot tree reduces annual heating and cooling costs of a typical residence by 8 - 12 %.
- Trees on the west and south sides of houses can reduce summertime electricity use by 185kWh or 5.2%.

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Appendix 2:
Benefits of Trees and Urban Forest: A Research List

Property Values

Increasing Property Values

- Studies have found general increases of up to 37% in residential property values associated with the presence of trees and vegetation on a property.
- Trees increased home sales prices in Athens GA $1475 to $1750. This increase in property value results in an increase of $100,000 in the city's property tax revenues.
- The free i-Tree Tools provide individuals and communities access to analysis and benefit assessment tools for the tree ecosystem. https://design.itreetools.org/

Climate Change and Carbon Benefits

Storing carbon and reduction of carbon emissions

- Each year an acre of trees absorbs the amount of carbon produced by driving a car for 26,000 miles.
- Individual urban trees contain about four time more carbon than individual trees in forests.

Reducing the Heat Island Effect

- Trees and vegetation lower surface and air temperatures by providing shade and through evapotranspiration. Shaded surfaces may be 20-45 degrees cooler than the peak temperatures of unshaded materials. Evapotranspiration can hep reduce peak summertime temperatures by 2 – 9 degrees.
- Mature tree canopy reduces air temperatures by about 5 – 10 degrees.

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Benefits of Trees and Urban Forest: A Research List

Community Benefits

Less Violence and Crime
- Results of a Portland crime study found that street trees fronting a house reduced 44 crime occurrences. The net effect of all trees was a reduction in 33 crimes.
- There is less graffiti, vandalism and littering in outdoor spaces with natural landscapes than in comparable plant-less spaces.

Improves Neighborhood, Connectivity
- Older adults who have more exposure to green common spaces report a stronger sense of unity among residents within their local neighborhood, and experience a stronger sense of belonging to the neighborhood..
- Researchers are finding sign of stronger communities where there are trees. In buildings with trees, people report significantly better relations with their neighbors. People report a stronger feeling of unity and cohesion with their neighbors; they like where they are living more and they feel safer than residents who have few trees around them.
- Survey show that people free trees improve communities by making people feel calmer, and improve ones quality of life.

Before and After – Gail Drive NE