

# TREE CANOPY

August 6 2014



# Tree Canopy Benefits

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- Beautification
- Reduce the heat island effect
- **Reduces Stormwater Runoff**

# SANDY SPRINGS TREE CANOPY

July, 2014



# Canopy Studies - 1991, 2001 and 2005

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- UGA Institute of Ecology Natural Resources Spatial Analysis Laboratory (NARSAL) conducted canopy studies using 1991, 2001, and 2005 Landsat Satellite Imagery
- Data resolution was 30 meter pixels

# Canopy Studies - 1991, 2001 and 2005

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- 1991 – 59% canopy cover
- 2001 – 54% canopy cover
- 2005 – 55% canopy cover

# 2008 Canopy Study

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- Sandy Springs GIS staff, with significant assistance from NARSAL, conducted a canopy study of using 2008 Landsat 5 data
- 30 meter resolution infrared pictometry
- Data had already been processed by NARSAL
- 2008 – 51.82% canopy cover

# Canopy Studies – 2010 and 2013

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- Sandy Springs GIS staff, again with significant assistance from NARSAL, conducted canopy studies using data from National Agriculture Inventory Program (NAIP)
- NAIP 1 meter higher resolution data allowed for very accurate grading
- Data was checked against aerial photography of the City

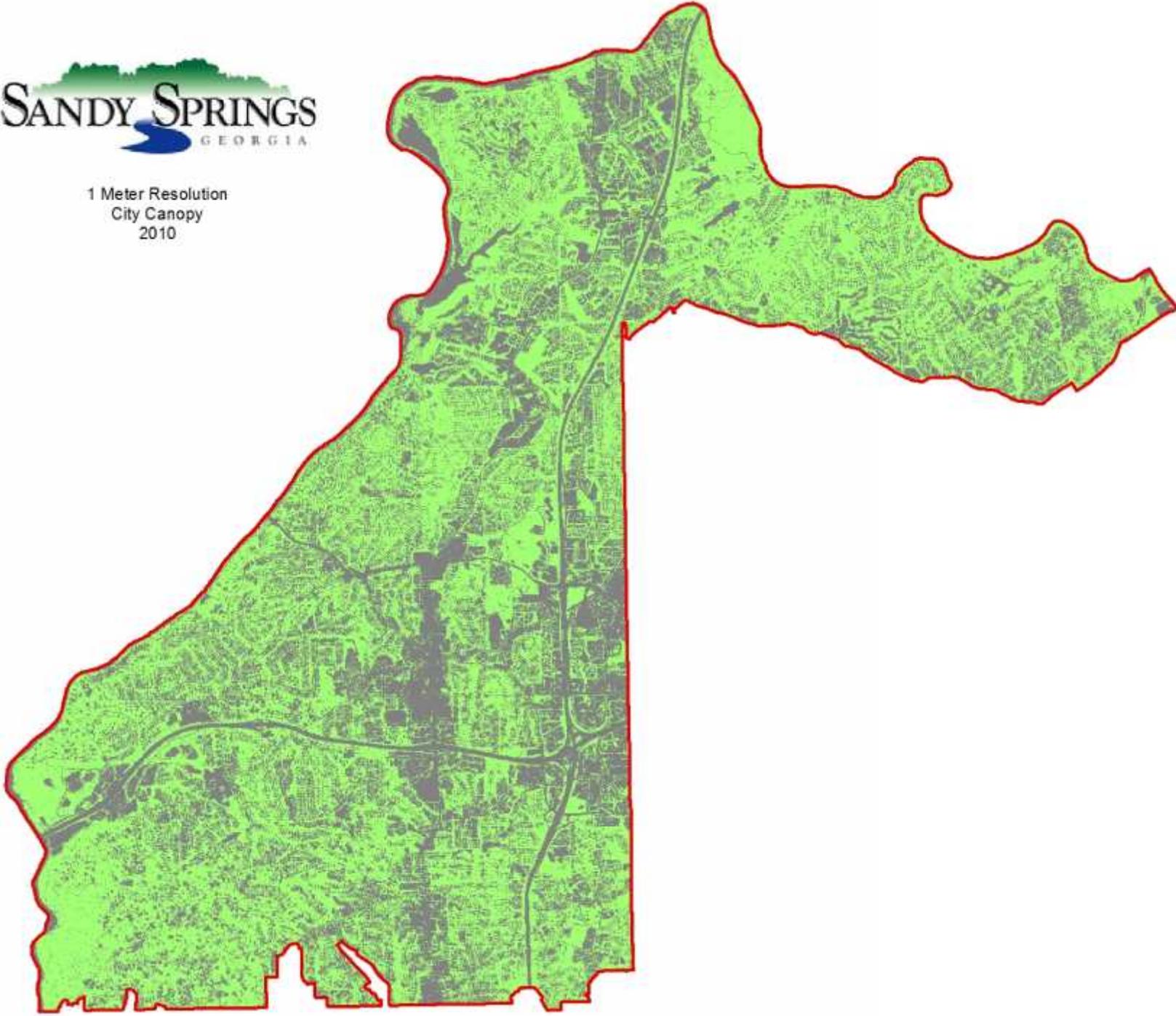
# Canopy Studies – 2010 and 2013

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- 2010 – 59.02% canopy cover
- 2013 – 62.48% canopy cover

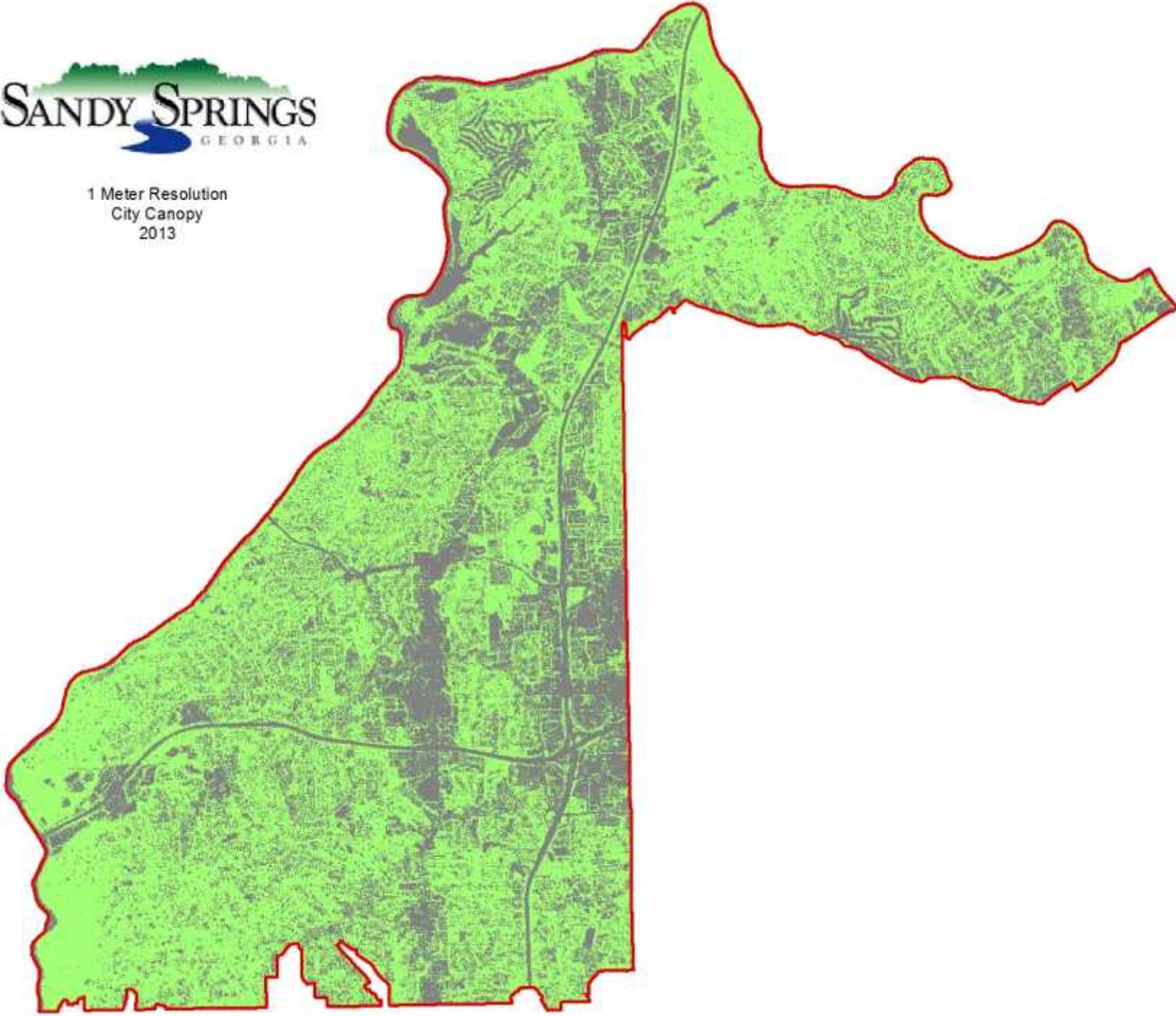


1 Meter Resolution  
City Canopy  
2010





1 Meter Resolution  
City Canopy  
2013



# Sandy Springs Canopy Studies

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## 30 Meter Resolution

- 1991 – 59% canopy cover
- 2001 – 54% canopy cover
- 2005 – 55% canopy cover
- 2008 – 52% canopy cover

## 1 Meter Resolution

- 2010 – 59% canopy cover
- 2013 – 62% canopy cover

# Sandy Springs vs. Other Cities

City	Percent Tree Canopy
Ann Arbor, Michigan	32.93
Atlanta, Georgia	52.45
Austin, Texas	32.00
Baltimore, Maryland	27.28
Des Moines, Iowa	24.09
Salem, Oregon	23.23
Portland, Oregon	28.24
Pittsburgh, Pennsylvania	42.00
<b>Sandy Springs, Georgia</b>	<b>62.48</b>

Source for Comparable City Data: *Tree Canopy Coverage for the City of Atlanta: Methodology Definition, Geography Assessment and City Comparison*, Gilliam Campbell, MRCP 2013



# Sandy Springs vs. Other Cities

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Tree canopy percentages available for US cities vary considerably depending upon the source, the study boundaries (city limits vs. MSA), data resolution, year calculated, etc.

A more valid comparison is:

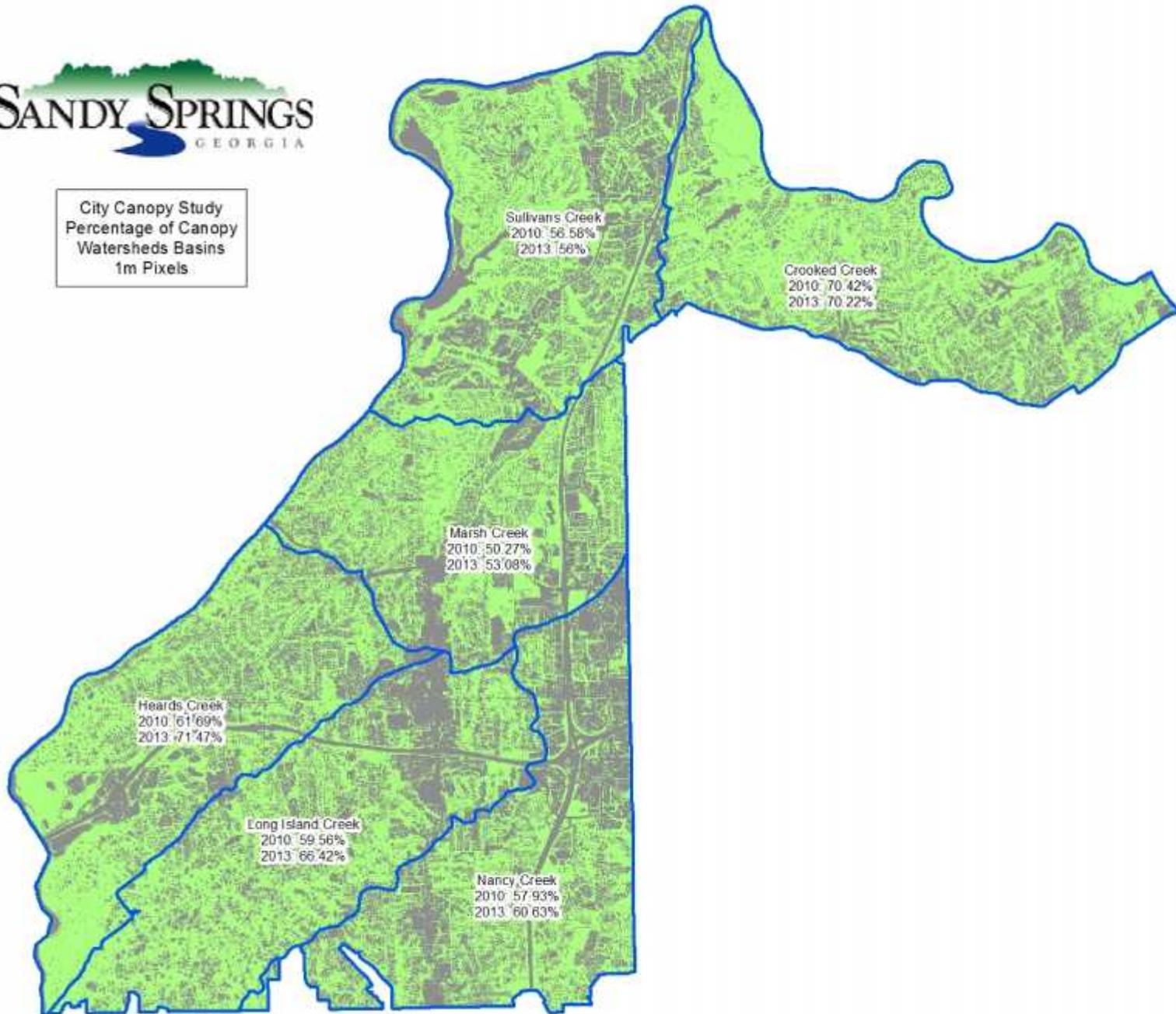
- Canopy data for Sandy Springs over time
- Targeted area canopy studies for Sandy Springs

# Sub Area Canopy Study

Drainage Basin	2010 Canopy	2013 Canopy
Heard Creek	61.69	71.47
Long Island Creek	59.56	66.42
Nancy Creek	50.27	53.08
Marsh Creek	57.93	60.63
Sullivans Creek	56.58	56.00
Crooked Creek	70.42	70.22
<b>Total</b>	<b>59.41</b>	<b>62.97</b>



City Canopy Study  
Percentage of Canopy  
Watersheds Basins  
1m Pixels



# Canopy Study – Next Steps

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Conduct Regular Canopy Studies and continue to assess the tree canopy on a city wide and stormwater basin basis

- National Agricultural Inventory Program (NAIP) data is available every three years
- New data will be available in 2016

# PEER CITY TREE ORDINANCE COMPARISON

August 6, 2014



# Tree Regulations Comparison

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Regulations were reviewed for a number of peer cities:

- Atlanta
- Athens/Clark County
- Decatur
- Roswell
- Alpharetta
- Dunwoody
- Johns Creek
- Smyrna

# Tree Regs Peer City Comparison

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Tree regulations examined for a number of items include:

- When is a tree removal permit required?
- Boundary tree protection requirements
- Recompense requirements
- Specimen or protected tree standards
- Canopy coverage requirements

# Tree Removal Permit

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- **Alpharetta:** Permit required for removal of any tree
- **Atlanta:** Permit required for trees 6” dbh or greater, pines 12” dbh or greater
- **Roswell:** Hardwoods 24” dbh or greater, pines 30” dbh or greater
- **Sandy Springs:** Trees 18” dbh or greater

# Boundary Tree Protection

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- **Athens/Clark County, Dunwoody, Johns Creek:**  
No requirements
- **Atlanta:** Hardwoods 6" dbh or greater, pines 12" dbh or greater
- **Roswell:** Hardwoods 24" dbh or greater, pines 30" dbh or greater
- **Decatur:** Trees 6" dbh or greater
- **Sandy Springs:** Trees 18" dbh or greater

# Recompense Requirements

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## Replacement Requirements for a 30" Tree

- **Athens/Clark County:** Replacement only if minimum canopy coverage requirements are not met
- **Smyrna:** Replace inch for inch or payment of \$4,200 into Tree Fund
- **Roswell:** Payment of \$3,750 into tree bank or replant eight 4" caliper trees
- **Decatur:** Replant total lost square footage of canopy
- **Sandy Springs:** Replant 2 trees or pay \$2,250 into Tree Fund

# Specimen or Landmark Tree

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- Athens/Clark County: Hardwoods 36” dbh
- Atlanta: Hardwoods 30” dbh
- Johns Creek : Hardwoods 27” dbh
- Roswell: Hardwoods 24” dbh
- Decatur: Hardwoods 27” dbh
- Sandy Springs: Hardwoods 27” dbh

# Canopy Requirements

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- Atlanta: 40” per acre
- Johns Creek : 20 density units per acre
- Roswell: 30 density units per acre
- Decatur: Commercial 45%; single family no net loss of canopy
- Smyrna: 100” per acre
- Sandy Springs: 30% for single family, 40% for commercial projects

# TREE ORDINANCE RECOMMENDED AMENDMENTS

August 6, 2014



# Boundary Trees

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Boundary trees are defined as trees on adjacent property 18' Diameter Breast Height (DBH) or larger whose critical root zone or canopy extends across the property line

- Trees less than 18" are not protected

## ***AMENDMENT:***

**Require protection of boundary trees 10" and larger**

# Boundary Trees

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Per Tree Conservation Administrative Guidelines encroachment into the critical root zone of a boundary tree of greater than 25%:

- Requires escrow held for three years to cover the replacement and removal cost if the boundary tree does not survive

## ***AMENDMENT:***

**Add the 25% threshold requirement to the Tree Conservation Ordinance**

# Boundary Trees

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**Amendment:**  
Require  
protection of  
boundary trees  
10" and larger

# Landmark Trees

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Change Landmark Tree mitigation calculation

- The Ordinance allows use of an assigned canopy credit, which is significantly less than the actual canopy of larger trees

## ***AMENDMENT:***

- Require mitigation for actual measured canopy

# Landmark Tree Protection

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**Amendment:**  
Base canopy  
replacement  
on actual size  
of Landmark  
Tree



# Canopy Replacement

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Penalize Significant Canopy Removal

## *AMENDMENT:*

Require payment into the Tree Fund and canopy mitigation when the existing canopy is cut to a point below the minimum canopy requirements

# Canopy Replacement Calculation

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## Increase Canopy Replacement Requirements

### *AMENDMENT:*

- Include only trees 18” or larger towards meeting canopy requirements
- Add provision for calculating canopy for multi-stem trees (should use critical root zone instead of canopy cost assignment table)

# Tree Protection

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Citizens often notify us of Tree Ordinance violations; preference is for calls to go to the Call Center at (770) 730-5600

# Tree Protection

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- Trees can be damaged in a matter of minutes on an active construction site
- Homeowners also damage trees as a part of landscape projects



# Minimum Planting Size

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- Typically trees that are 2" caliper or less require additional structural care to develop into mature specimen
- Trees larger than 2 ½" caliper are more difficult to plant correctly and have a longer establishment curve

## ***AMENDMENT:***

**Increase minimum replanting size from 2" to 2 ½"**

# Other Recommended Amendments

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- Add language that refers to the Zoning Ordinance buffers (as distinguished from a stream buffer)
- Change parking lot replanting standards to incorporate flexibility of recent zoning amendment
- Revise the recommended tree list
- Specify ISA certified arborist can submit condition evaluation for Landmark Trees

# Other Changes for Consideration

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When existing trees along the entire street frontage are cleared as a part single family redevelopment, require tree planting along the frontage:

- One tree for lots 100' wide or less
- Two trees for lots for 200' wide or less
- Three trees for lots 200' wide or greater

# TREE FUND/LANDSCAPE PROJECTS

August 6 2014



# Recently Completed Projects

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- Fig Island
- Hannover Park Road Street Trees
- Spring Crossing (Abernathy and Roswell)
- Arts Center Streetscape
- Gateway Landscaping/ Roswell and I-285
- Abernathy Greenway



# Recently Completed Projects

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## Fig Island

- Island expanded with new curbing installed by Public Works
- Approximately 5,700 square feet planted with crape myrtles, daylilies, sedums and loropetalum



# Recently Completed Projects

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## Hannover Park Road Street Trees

- Planting of Red Maples on Hannover Park Road
- Planting of Crape Myrtles on Roswell Road under utility lines



# Tree Fund

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Funds collected for:

- Site size not sufficient to meet canopy requirements or mitigation requirements
- Enforcement of Tree Conservation Ordinance, related to illegally removed trees

# Tree Fund Projects - 2013/2014

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## Abernathy/Roswell Road Island – To be completed

- Upon reconstruction of island by DPW with mast arm installation

## City Center Street Trees – Reprogram funds

- All previously planted trees to be replaced were on private property

## Spring Crossing Landscape - Completed

## Fig Island - Completed

## Glenridge Drive south of Abernathy – Reprogram funds

- Property proposed for redevelopment

# Tree Fund Balance

- **Tree Fund Balance**  
(as of July, 2013)      \$ 116,983.00
  - Expenditures      \$53,906.00
  - Income      \$50,000.00
  
- **Tree Fund FY 2014/2015**  
(as of July, 2014)      \$113,077.00

# Tree Fund Project Evaluation Criteria

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1. Overall Project Cost (goal to install greater quantity of less-expensive projects)
2. Visibility (proximity to gateway corridors, higher traffic counts)
3. Beautification (addressing eyesores/ impact)
4. Ease of implementation/complexity of project
5. Public/ private partnership potential

# 2014/2015 Tree Fund

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## Recommended Projects

- Fire Station Landscaping
- Johnson Ferry Road Medians and Street Trees
- Abernathy Road Medians and Street Trees

# Fire Stations Landscaping

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## Fire Stations: 1 and 2

- Landscaping to enhance streetscape along roadways



# Johnson Ferry Road Improvements

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## Johnson Ferry Rd Medians

- Islands currently grassed, cleared of concrete in 2013
- Beautification – trees, shrubs, groundcover

# Abernathy Road Improvements

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## Abernathy Road Street Trees

- Trees proposed in existing right of way
- Smaller trees required below power lines and in sight lines of shopping center



# Abernathy Road Improvements

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## Abernathy Road Medians

- Beautification – trees, shrubs, groundcover



# Proposed Project Cost Estimates

<u>Project</u>	<u>Estimated Budget</u>
Fire Stations: 1 and 2	\$ 35,000
Johnson Ferry Road Medians	\$ 100,000
Abernathy Road Medians & Street Trees	\$ 110,000

Estimate is based on potential size and complexity of projects. Actual costs will vary with program development, and are provided for discussion purposes only. Maintenance for first year included in estimates.

# Tree Fund Planting

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Recommended Plan for expenditure of Tree Bank Funds will be submitted to Council for approval annually

## Recommended Change:

Use Tree Bank Funds for Tree Planting only (the purchase, planting and first two years of maintenance)

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