Measurement of Trees Along the Atlanta BeltLine

Bernabe Becerra, Diana Hernandez, Marina Hernandez, Nicholas Simon-Brecke, Jay Austin, Adefemi Olateru, Vaidehi Patel
In partnership with The Atlanta Beltline and Trees Atlanta

A collaborative project of The 2015 Urban Atlanta Geospatial STEM Academy
Research

**Question:** What should the Atlanta BeltLine and Trees Atlanta consider for future developments of the trails and arboretum?

**Approach:**
- Tree Species
- Tree Density
- Damaged Trees
Community Partner Need

Our community partners are Atlanta BeltLine and Trees Atlanta.

- Future improvement projects
- Accurate baseline data
- Areas with high shade for potential bench locations
Study Area

Eastside Trail of the Atlanta BeltLine

- Start: Fourth Ward Skate Park
- End: North Avenue
Fieldwork Methods

Using ArcGIS Collector app

1. Mark the geo-location
2. Tag the tree
3. Identify the tree species
4. Find damage
5. Measure diameter
6. Estimate the crown width and height
Tree Species
- Data management  
  - Attribute Table  
  - Labels  
  - Misspellings  
- Accuracy  
  - Organization  
  - Quality results

Goal
- Identify the different species

Tree Density
- Basic tree map showing locations of trees  
- Analysis to find the density of trees  
- Filter density layer  
  - Class 7+  
- Filter trees layer  
  - Crown width 10+  
- Analysis tool to layout areas with highest shade

Goal
- Shade-covered areas for benches

Tree Damage
- Identified Damaged Trees  
- Divided Land Use  
  - IND/COM  
  - TRANSITIONAL  
  - RES_MULTI  
- Aggregated Data Points

Goal
- Relationship Between Land Use and Damage
Results - Tree Species

- Area of commercial and park area
- 20+ Species
- Majority Quercus and Nyssa genus
- Upper area: Quercus concentrated
- Lower area: Nyssa concentrated
Results - Tree Density

- Highest density of trees near the start
- High density of trees with crown width 10+ ft.
- Potential location for benches near the last middle half of the trail
  - High density of trees with a larger crown width
Results - Tree Damage

- Damaged trees in Residential Multi and Industrial Commercial
- Possible causes
  - Fumes
  - Construction
  - Residents

Goal
- No relationship w/ Land Use
- Relationship w/ Species
  - Quercus genus
  - Nyssa genus
Conclusions

- Learned how to use ArcGIS and Collector app
- Analyzed data points
- Worked together as a team to create a map with accurate information

http://gsu.maps.arcgis.com/apps/webappviewer/index.html?id=eef815fc8aa64aadb54712837369c82c
Thanks From The