Amber Bennett- GIS Analyst & Cartographer

Jason Hinojosa- GIS & Remote Sensing Analyst

Neliralda da Silva- GIS Analyst & Web Developer
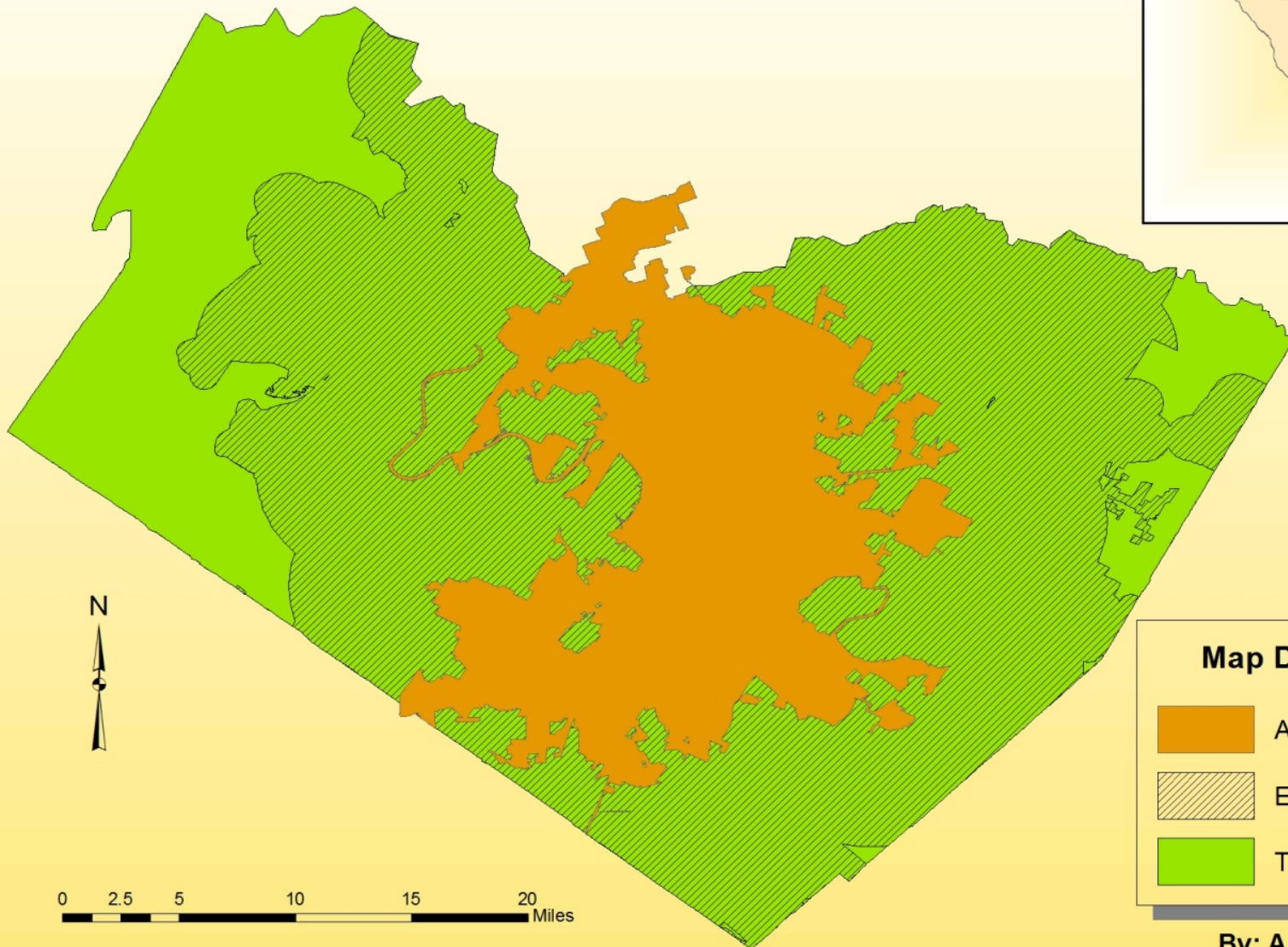
Purpose

- Help the Urban Forestry Program meet their goals:

  ❖ Identify Shade Distribution Along Austin Trails

  ❖ Create Canopy Corridor Overlay

  ❖ Develop Shade Index

Study Area
Austin City Limits

State of Texas & Travis County, TX

N

0   2.5   5   10   15   20
Miles

Map Description

Austin City Limits

Extra Territorial Jurisdiction

Travis County

By: Austin Urban Trails
September 26, 2011

Tree Canopy Benefits

- Results of Maintaining a Healthy Canopy

  ❖ Cleaner Environment

  ❖ Lowered Crime Rates

  ❖ Raised Real Estate Values

Data

- The data was provided by the City of Austin's Urban Forestry Program & Board, and also acquired from the city's GIS Data Sets include:

  ❖ Trails
  ❖ Tree Canopy
  ❖ Watersheds
  ❖ Neighborhoods
  ❖ Parks
  ❖ Streets
  ❖ Sidewalks network
  ❖ Austin City Limit
  ❖ ETJ- Extra Territorial Jurisdiction
  ❖ 200ft Grid

Methodology

- Tree Canopy coverage data used as the base layer for other areas to be extracted

- Cut out the three separate sections of canopy coverage: Parks, Watersheds & Neighborhoods extending out to the ETJ

- Extract the Trails using each individual section with coverage

- Include a 20ft buffer from the Trail to analyze the trees that provide the coverage

Methodology

- Results in illustrations of the canopy coverage over the trails that are within the Parks, Watersheds, and Neighborhoods

- Next will be to determine and quantify the amount of available shade within the trails of each section

- Trails will be divided in a range of available shade per 200ft grid

- Final step :
  - ❖ develop a shade index according to distribution of the canopy coverage along the trails

Implications

- The data presented can serve as a resource for future project planning direction also used to correlate canopy coverage with:

  ❖ Tree Planting Projects

  ❖ Air Quality Assessments

  ❖ Urban Heat Island Studies

  ❖ Home Prices

  ❖ Crime Rate

  ❖ Bike-ability

Timetable

	City of Austin - Inventory and GIS Database Development												
	Week1	Week2	Week3	Week4	Week5	Week6	Week7	Week8	Week9	Wee10	Week11	Week12	Week13
	21-Sep	28-Sep	5-Oct	12-Oct	19-Oct	26-Oct	2-Oct	9-Nov	16-Nov	23-Nov	30-Nov	5-Dec	12-Dec
Data Collection	■	■											
Data Processing		■	■	■									
Data Analysis				■	■	■	■						
Data Interpretation							■	■					
Website Development									■	■			
Final Deliverables										■	■	■	■

Budget

	Hours Per Week	Project length	Total Hours	Hourly Rate	Total Cost
Data Collection	20	2 weeks	40	30	$ 1,200.00
Data Analysis	20	3 weeks	60	45	$ 2,700.00
System Management					
Project Manager			50	80	$ 4,000.00
Assistant Manager			50	60	$ 3,000.00
GIS Analyst			50	45	$ 2,500.00
Total					$ 9,500.00
Equipment Costs					
Supplies	($200.00 workstation * 3 workstations)				$ 200.00
Maintenance	($200.00 workstation * 3 workstations)				$ 100.00
Depreciation*					$ 200.00
Total					$ 1,800.00
Total Costs					$15,200.00

*Depreciation: $15,000 total value of equipment/ 30 equipment life in months *3 months equipment will be in exclusive use for project

Final Deliverables

- CDs
  - ❖ All data
  - ❖ Poster
  - ❖ Metadata
  - ❖ Power Point presentations
  - ❖ Proposal, Progress, and Final reports
- Website
- Final Report
  - ❖ Data
  - ❖ Maps
  - ❖ Metadata
  - ❖ References
- Instructions on how to use the CD (readme file)
- Professional Poster to be displayed in Evans Liberal Arts Building

Conclusion

- Techniques we will use:
  - ❖ Identify and quantify the areas in Austin that need more trees planted to offer optimum canopy benefits.
- Data:
  - ❖ Secondary data from: the City of Austin Urban Forestry Program and the City of Austin GIS files.
- Analysis:
  - ❖ This project should offer some answers as to how the current canopy in Austin relates to the trails and what might be done to improve the coverage.

Reference

- Dwyer, J. F., Mcpherson, E. G., Schroeder, H. W., & Rowntree, R. A. (1992, September). Assessing the benefits and costs of the urban forest. *Journal of arboriculture*, *18*(5), 227-234.

- Heat island impacts. (n.d.). In *heat island effect*. Retrieved March 16, 2011, from http://www.epa.gov/heatisland/impacts/index.htm

- Kuo, F. E., & Sullivan, W. C. (2001, May). Environment and crime in the inner city : Does vegetation reduce crime? *Environment and behavior*, *33*(3), 343-367. doi:10.1177/0013916501333002

Questions???