Watershed and Tree Canopy Association in Austin, TX





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Introduction

- Impermeable surfaces:
 - Contribute to runoff, increasing flooding
 - Eliminates some natural process
 - Can transport urban-source pollutants directly to streams
- The Austin Urban Forestry Program is interested in tree canopy coverage and its relationship to the surrounding environment, particularly water quality
- They are concerned with prioritizing future tree planting

Objectives

- Develop an adjustable, replicable model
 - Delineating a watersheds from Ell points
 - Clipping its associated canopy coverage to that watershed
 - Accounting for urban structures and natural phenomenon hindering future planting
 - Calculating percent canopy coverage for an entire watershed
 - Calculating percent canopy coverage for the "plantable" area of a watershed
 - Produce statistics to aid the City of Austin in prioritizing future land management and enable further analysis

Methods

Hydrologic Model



- Building Watersheds
- Tree Canopy Overlay

Erasing Unplantable Layer



Methods

Created tools to analyze water quality in Austin



 T.U.B.A. created a model from the EII water quality sites



T.U.B.A then clipped the canopy layer to the watersheds and plantable watersheds layers.





 Creating these layers helped
T.U.B.A. find the percent
coverage in
each watershed.



> Below is a sample table of the results from this study.

Point Name	Area of Plantable Watershed (Sq. Ft.)	Area of Full Watershed (Sq. Ft.)	Canopy Coverage Area (Sq. Ft.)	Percent Coverage of Full Watershed	Percent Coverage of Plantable Watershed
Wshd_pt_67 1	242,848,575.93196	361,580,900.25 486	102,818,032.889 61	28.4%	42.3%
Wshd_pt_67 6	635,531,530.59709	893,456,264.82 460	250,006,491.850 51	28.0%	39.3%
Wshd_pt_68	3,994,021.93092	5,997,456.4012 3	2,227,740.18991	37.1%	55.8%
Wshd_pt_68 9	24,236,213.97366	38,818,492.664 94	14,650,465.2170 3	37.7%	60.4%
Wshd_pt_69 8	12,692,963.68626	20,944,497.313 45	5,948,736.57590	28.4%	46.9%

Discussion and Conclusion

- Four unplantable calculations produced
- > 100% canopy coverage
- Successful completion
 - > 121 Ell points, 121 watersheds
- Project can be replicated, updated, expanded



Questions?