MEMO

Date: April 12, 2012
To: Urban Forestry Program and Urban Forestry Board, City of Austin, Texas
From: ACWQ
CC: Dr. Yongmei Lu, Ryan Schuermann, Tom Hayes, Ana Gonzales, Eli Pruitt, Lowell Hughes
Subject: Progress Report: Austin Tree-Canopy Resource, Phase II

Message

As requested, here in the most recent scope of our project as discussed in our conference call yesterday morning. We have listed the original project and in italics we have noted the changes or modifications now incorporated into the project.

Project Re-Defined

First:

We are going to use the buffer layer that the City of Austin provided as it will relate to the "planting and restoration" as originally mentioned in the RFP and as you mentioned on Monday during our Progress Report Presentation. We intend to evaluate/make recommendations for planting/restoration sites based on canopy coverage.

We are now also going to create and utilize a 300-ft centerline buffer based off of the creek layer. This will allow for consistency throughout all of the selected watersheds. The results will display land coverage classification ex: results that display 0-24% would be Class 1, 25-50% is Class 2 and so on.

Second:

We are going to explore how water quality is related to tree canopy coverage. For water quality we are going to use three parameters total inorganic N, turbidity/clarity, and water temperature. We are going to select the watersheds that have a sampling site at or .5 miles away from the drainage of the watershed *and* contain all three water quality parameters; those selected watersheds will be our study area.

The 3 water quality parameters are inorganic N, turbidity, and water temperature. Also, after looking back and rechecking our work, our .5 miles is not measured in stream miles but Euclidean Distance.

Third:

We will look at all of the canopy coverage within those watersheds selected and determine in our final report whether we found relationships/trends for those watersheds' water canopy coverage and the three water quality parameters or not.

We are going to calculate the total stream length per selected watershed to help determine the correlation of water quality for the sample site within that specific watershed. We will list the stream length and each individual watershed area in an excel file and join that to an existing layer (we have not gotten to this point, so we are still discussing how we are going to present these calculations to you all). We will do simple correlation to determine any relations.

Fourth:

We will look at the canopy coverage within the buffer layer (given to us by the City of Austin) of those watersheds selected and determine in our final report whether we found relationships/trends for those watersheds' canopy coverage within the buffer layer and the three water quality parameters or not. As the canopy coverage area is more narrowed and more likely to affect the water quality gathered at the sampling site in the watershed (by decreasing the probability of evaporation/evapotranspiration/ground penetration) this will offer another relationship between water quality and canopy coverage.

We'll perform the same methods utilizing the newly discussed 300-ft centerline buffer.

Fifth:

If time permits we will clip the following datasets: impervious cover, soils, habitat types, street and trail density, Toxic Release Inventory (TRI) sites, populations and housing density, and floodplain/priority woodlands.

> *We are now not going to use TRI sites, soils, habitat types, street and trail density, populations and housing density and floodplain/priority woodlands. Instead, we are gong to perform all of the analysis functions we're performing on the canopy layer on the impervious layer.*
>
> *All relative layers will be clipped threefold: the buffer layer given to us by the City of Austin, the 300-ft centerline buffer, and the selected watersheds themselves.*

Thank You,

ACWQ