MEMORANDUM

To: Dr. Jeff LaMondia, Mayor of Austin, TX

From: Lan Liu

Date: February 3, 2017

RE: Three new Recycling Drop-off Centers within the Austin City Limits.

I. Purpose

This assignment is made to choose three new positions of recycling centers for citizens who need to recycle the majority of their trash. And the designer need to use ArcMap to make a convincing map.

II. Methods of creating a map

A large map was created from five layers and an inset map was created from a data frame with two layers. The final layout was made with following steps:

- First, the data was downloaded and exported into a folder. And seven layers (recycling centers, reginal roads, Austin City Limits, CAMPO Counties, census2010 blockgroups, City of Austin FLUM, and parks) were selected to show up in ArcGIS. Travis County (from CAMPO Counties) was selected first, and a new layer of Travis county was created by exporting data. Then, a New Data Frame was added with two layers (CAMPO Counties and Travis County, respectively) to create an inset map. Clipping between census2010 layer and Austin City Limits layer to set up a graduated symbol map for Austin City. After this step, the population distribution was shown in map with different color. To meet the requirement, the three new recycling centers can only set up in Austin City. So the external area was removed to let audience focus on the specific area.

- Second, the attribute table was opened to select all State Highways and Interstate Highways. Using export data, a new layer named IH&SH&US was created to show only the Highways in the layout. Clipping between IH&SH&US layer and Austin City Limits layer, since only the Highways within Austin City will be considered. Buffering around Clipped IH&SH&US layer by using Buffer from Analysis Tools in Toolbox, dissolving within the Buffered IH&SH&US layer by using Dissolve from Data Management Tools in Toolbox and set 0.5 miles in linear filed to show up area within 0.5 miles from Highways, and then unioning Dissolved IH&SH&US layer. After this step the area within 0.5 miles from Highways in Austin City was highlighted.

- Third, code 200 represents the vacant land in attribute table from City of Austin FLUM. The vacant land was selected by selecting 200 in the attribute table. Exporting data to create a new layer of vacant land. After this step the vacant land was highlighted. The existing recycling centers were highlighted in Austin City by using clip. Based on the highlighted objects in layout, draw three marks on the map to show the positon of new recycling centers. North Arrow, Scale Bar, and Legend were inserted as the required elements. Transparent was set to 50% in Display from Properties of the layer to distinguish each layer clearly. After this step, all five layers can be viewed clearly from each other in a large map. To print out the map in 2' by 3', the page size was reset in Page and Print Setup part.

The data used to create the map comes from the folder named lab 2. The full citation is referred to the layout.

III. Findings

Exporting data is useful to show up the specific object in the entire map. However, the sequence of doing this step is important since by exporting data, a new layer is created. This circumstance increases the difficulty for designer to arrange the map in the end.

Total population (Totpop) was selected as the main variable in the consideration. Since in the attribute table the other variables are not representative. The requirement shows that the new centers should well serve the population of Austin, which means the dark purple areas will catch more attention.

The position of existing recycling centers need to be considered, since it can well serve surrounding people. It means the new recycling centers can not set up very near to the existing recycling centers, which does not make sense.

IV. Caveats

The layout shows that a large amount of people live surround the Austin City, and the positions of the existing recycling centers has the same access to the population. This circumstance displays that the distribution of population influences the location of recycling centers.

V. Appendices

A large map with five layers and an inset map are presented in the following page.