

FNR 66

Lab 2

County Service Copter Site Lab

You have been hired by Humboldt County to recommend four locations as pilot sites for a new community service that will be delivered via ROV quad copters. There are 14 potential locations and the county provides a point shapefile with their positions.

The county lists a few geospatial constraints for your analyses. The spatial range for the copters is limited to 2 km, constrained by the battery size and the mass of the object they will be delivering. The county would like to know how many people each copter site could serve. They are also interested in the actual cost of energy to power the copter. Their way of evaluating this is to multiply the people in each census block by the distance of that census block to the copter site. The proxy for energy will be called "people distance."

The county would like at least one map that helps them visualize your recommendation. The county would also like to see some graphical plot of these analyses. Finally, the county would like a report that presents your recommendation.

- .1. set up MXD file with the following data sets:

copter_site.shp

cenbl2010_11_1.gdb

- .2. Create 2 km buffer polygon shapefile, using the /Geoprocessing/Buffer menu item.

copter_site_buffer_2km.shp

- .3. Intersect with census block data

census_copter_intersect.shp

- .4. use "Near" toolbox to calculate the distance from each polygon to the copter site

(I included location and angle)

Analysis Tools/Proximity/Near

Input features: "census_copter_intersect.shp"

Near Features: "copter_site.shp"

- .5. create new fields in the new shapefile

"ppl_dist" (float)

"Mean" (long integer)

"Std_dev" (long integer)

.6. Use field calculator to populate “ppl_dist” field

[POP100] * [NEAR_DIST]

.7. for each copter site:

Select by attributes (eg "site_loc" = ' Arcata South')

For “ppl_dist” calculate “statistics”

Copy and paste statistics into spreadsheet

Select field “mean” and use the “field calculator” to enter the Mean value for that site

Select field “std_dev” and use the field calculator to enter the standard deviation for that site.

.8. Create plots in excel that display some statistical measure of “People-Distance” for each site.

.9. Compose a map, or map series that helps one visualize the relative or absolute potential users of the service.

.10. Write a paragraph or three about your analyses. Include your recommendation of the best four sites. Use the data to support your recommendation. Make at least one suggestion about how you could make these analyses better, perhaps an additional data set or a different type of analysis. Include all plots, charts, tables, map(s), and report text on one single pdf.