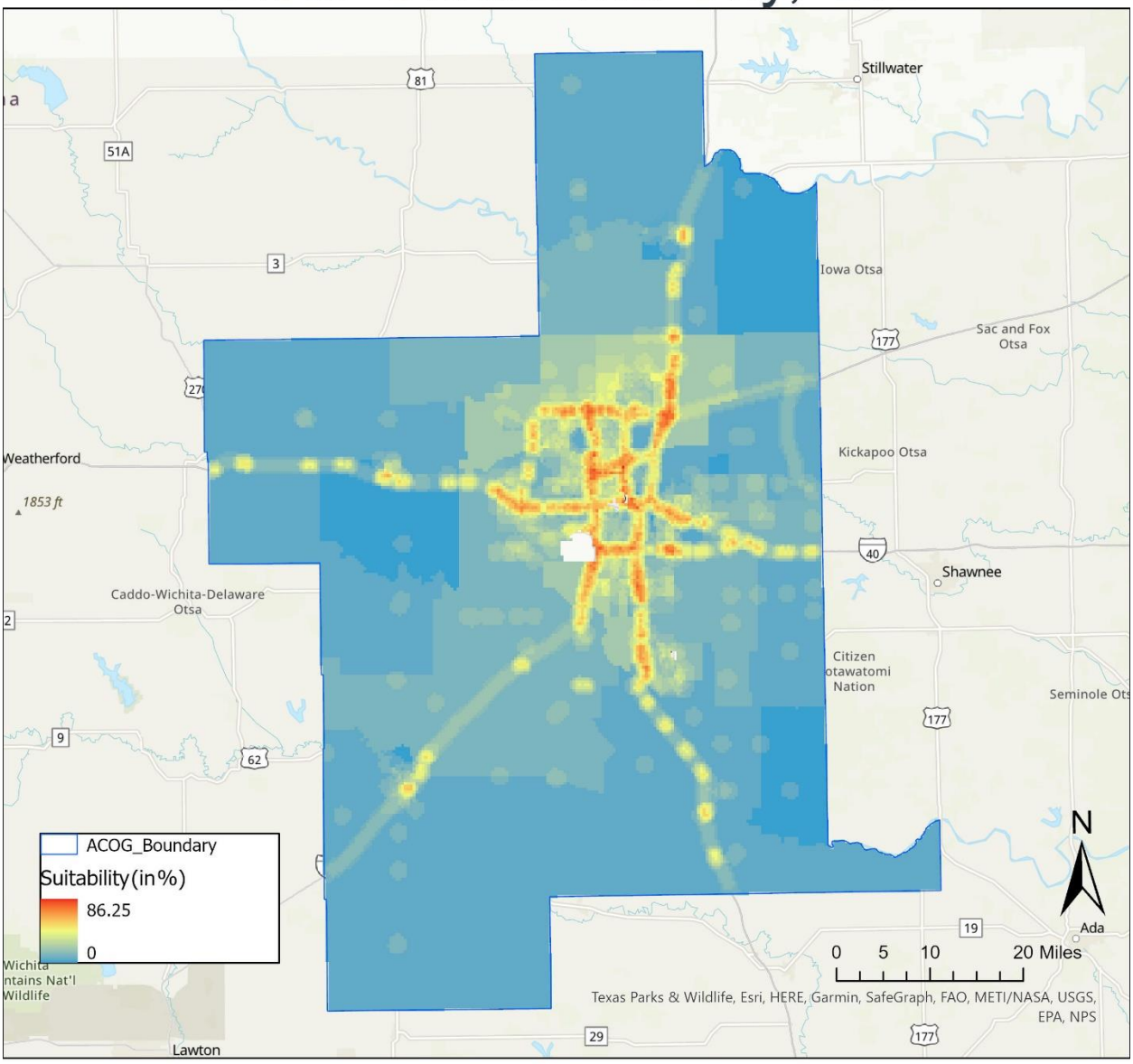
MCDA Assignment 4

Best Locations for EV Charging Stations Near Oklahoma City, OK



Criteria Weights for Graph
Proximity to Exit: 30%
Proximity to Gas Station: 20%
Median Income: 20%
Population Density: 15%
Density of Highways: 15%

Spatial Reference
Name: NAD 1983 UTM Zone 14N

Created by: Megan Morgan June 23, 2022

The highest matched locations are no surprise closest and around Oklahoma City itself. The major city will naturally have a higher population density and highway structure than the suburbs around the city. The only criterion that the major city may fall short on from the surrounding suburbs is the median income. There are several green (best fit) options near Norman and Edmond Oklahoma (lesser but still major cities that flow into/out of Oklahoma City). Many exits along Interstate 35 are at least partial candidates. A major interstate that connects Mexico to Canada, this interstate is a popular trucking line, as well as a major driving road for personal and commercial vehicles. No surprise many of the exits are close to a major highway and contain a gas station within a very short distance of the exit. Something that we did not filter for are gas stations that are diesel in nature as currently majority of the electric vehicles are personal and not trucking which is the major consumer of diesel fuel.

As electric vehicles become more and more popular (or depending on the political state, the only option), the median income criterion will become less and less necessary and therefore lower in weighting. The population density should be a higher criterion than a gas station location. There are other locations like apartment complexes that could also host the charging stations, therefore population density which lends to the volume of people to use the stations, should be higher ranked than a gas station. Also, I would add a bonus criterion for locations like shopping malls, movie theaters, and amusement parks as they are places that people will spend many hours leaving them with plenty of time for the vehicles charge to complete.