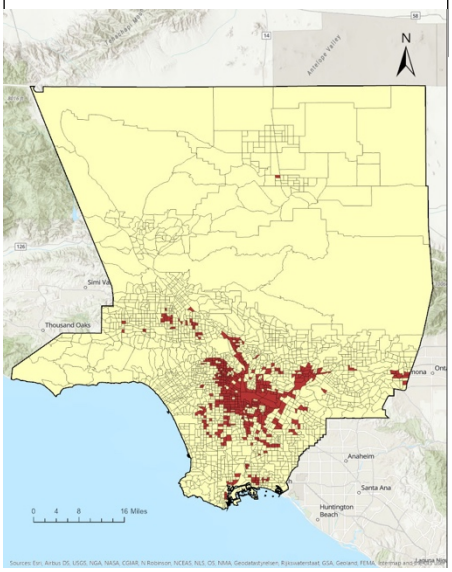
Nick Hadjimichael | INF 510 | Professor Abramson | 12/19/2019
This document shows the methodology and results of the analysis portion of my project.

The goal of this analysis is to create buffers around the wells, then determine which schools fall inside and outside of those buffers (which represent areas affected by air pollution). Then, the schools are determined to either be in disadvantaged or non-disadvantaged areas based on their cumulative impact EJSM score (the higher the score, the more environmental and social stressors. disadvantaged represent the top 25 percent of census tracts with the highest scores). All maps were made by me.

Figure 1: LA County

1. First, I uploaded the tables into to ArcGISPRO and also brought in boundary lines downloaded for the county and county census tracts in shapefiles from the LA County Data Portal.[1] The study area was Los Angeles County (see Figure 1).
2. Next, I used the Join Field tool to append the EJSM data to the census tract boundaries. I then used Symbology to create 4 quintiles on the cumulative impact score attribute and then made a two color visualization with Disadvantaged (top 25% of scores) and Non-Disadvantaged (the bottom 75%). The darker color represents disadvantaged census tracts (see Figure 2).
3. Then I brought in the school (see Figure 3) and well (see Figure 4) point data, using the X Y Table to Point tool.
4. I then used the Buffer tool to create 2,500ft buffers around the wells. Then, I used the Identity tool twice, once to determine the schools inside and outside the buffer zones and then to determine the schools in disadvantaged or disadvantaged areas. For the visualization of the latter, please see Figure 5.

Figure 2: EJSM LA County



The results showed that only 442 of 2,070 schools inside the buffers were in disadvantaged census tracts. This is not dissimilar to the amount outside of the buffers, but goes to show that it is actually advantaged areas that benefit most from this policy. That said, some of these disadvantaged areas are particularly benefit, specifically near the Inglewood oil field, near Santa Clarita, and near the ports and Wilmington.

[1] (http://egis3.lacounty.gov/dataportal/2016/01/26/census_tracts/).

Figure 3: Schools LA County

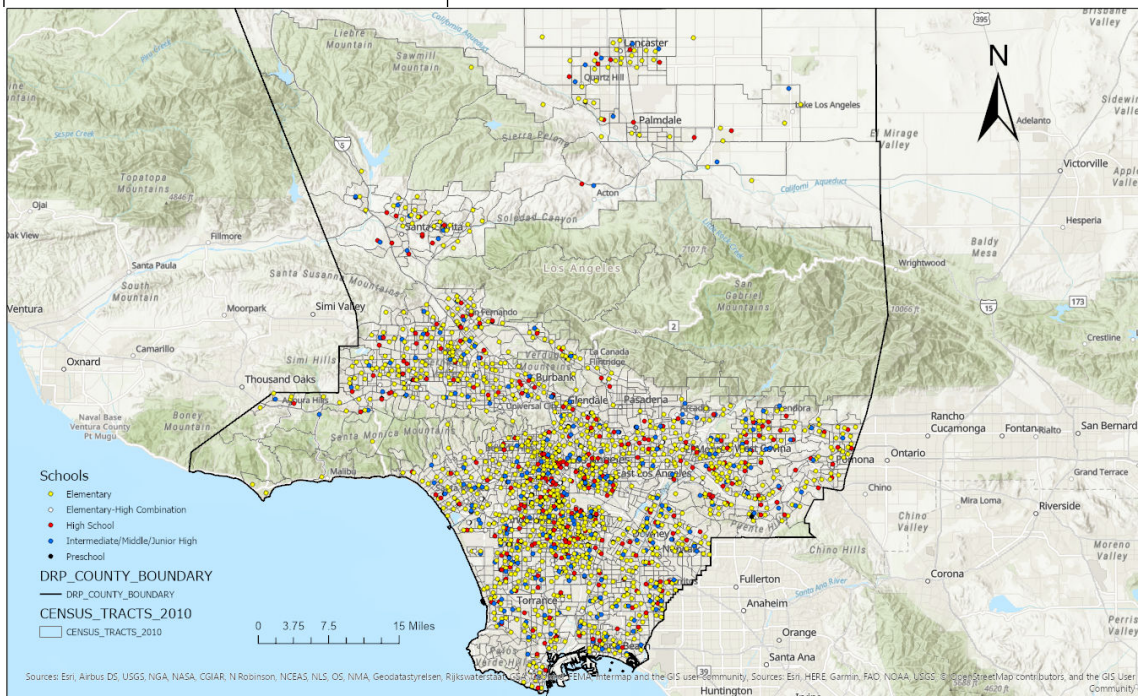


Figure 4: Active Wells LA County

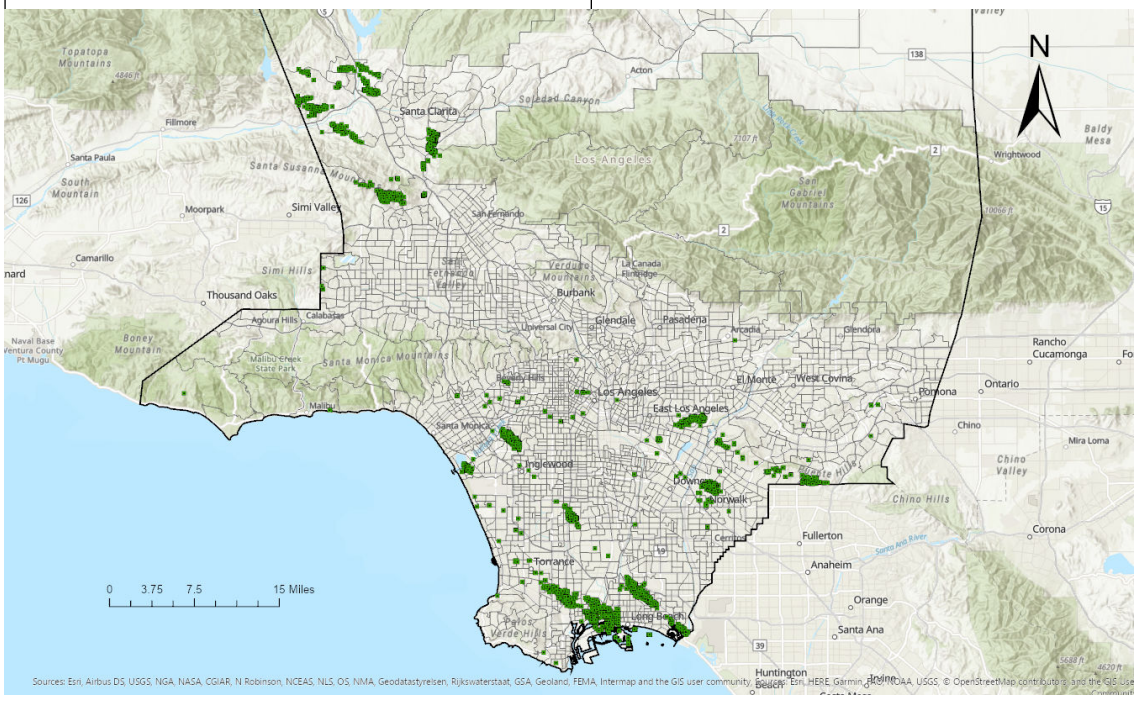


Figure 5: Schools in LA County within buffer