



Work Portfolio

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Work Samples

Zoning District Mapping

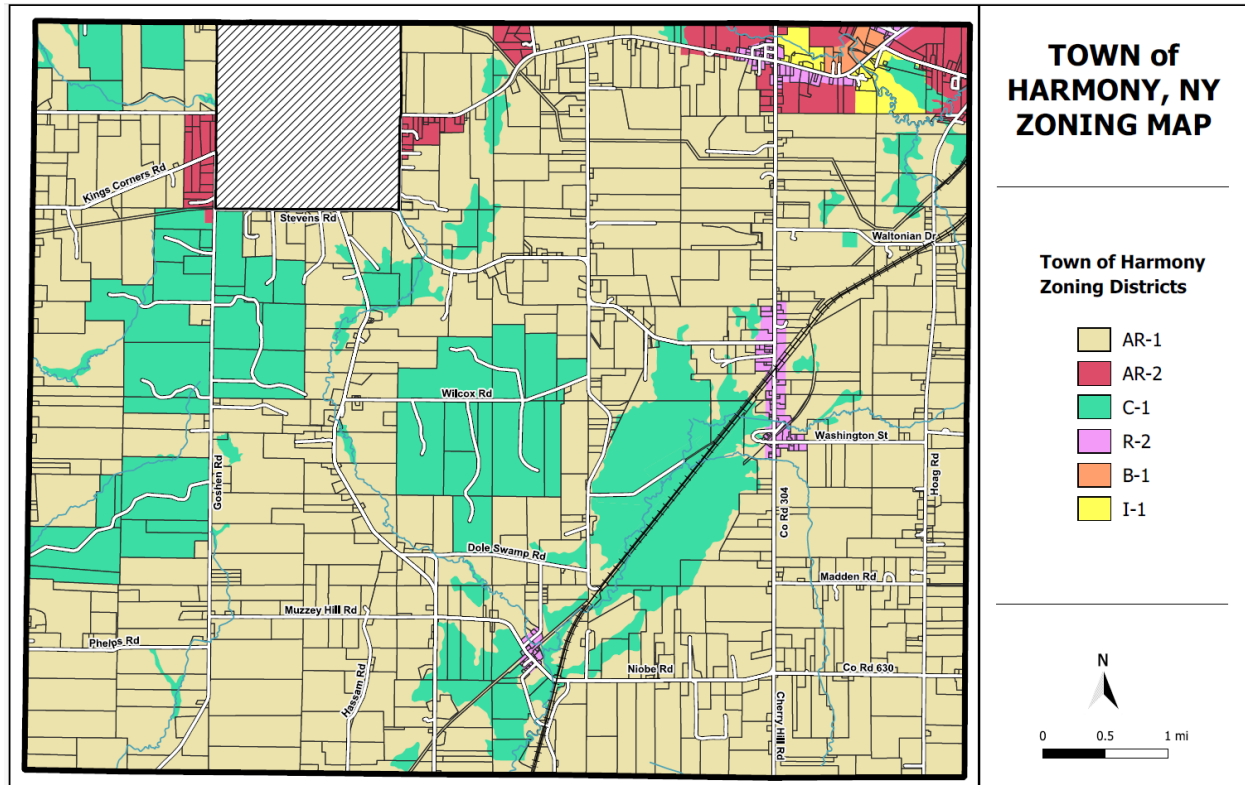
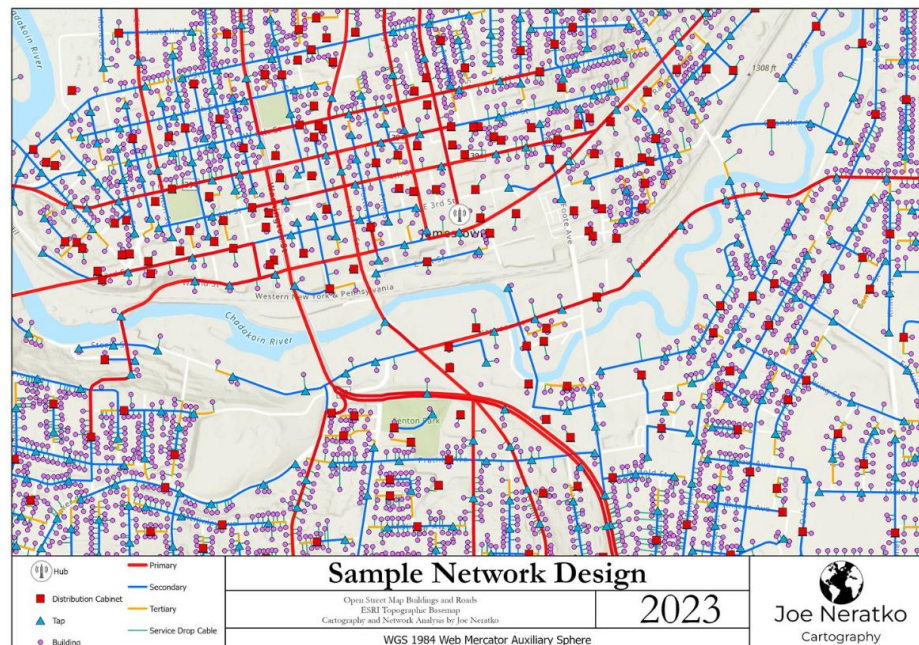
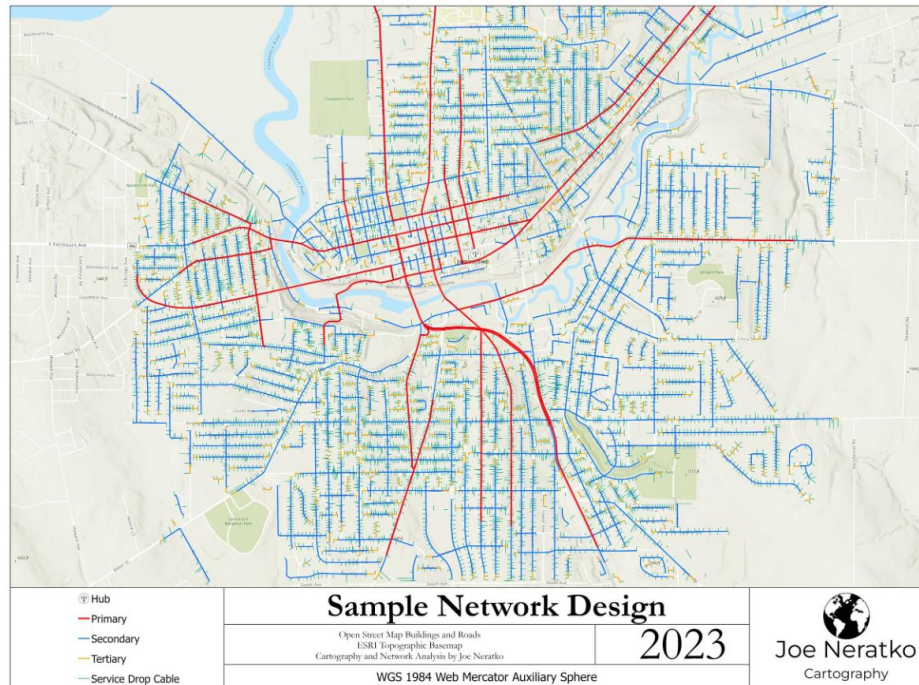


Figure 1: This zoning map for the Town of Harmony, NY, was created from hand-drawn maps. I digitized, georeferenced, and updated the zoning districts to produce an accurate, modern spatial representation, highlighting my workflow in translating analog maps into digital GIS formats

Custom Broadband Network Designs



Figures 2 and 3: These maps show a sample broadband network design created using ArcGIS Network Analyst. Figure 2 provides a zoomed-in view of the same network, highlighting local routing details and infrastructure connections within the broader design.

COVID-19 Mapping

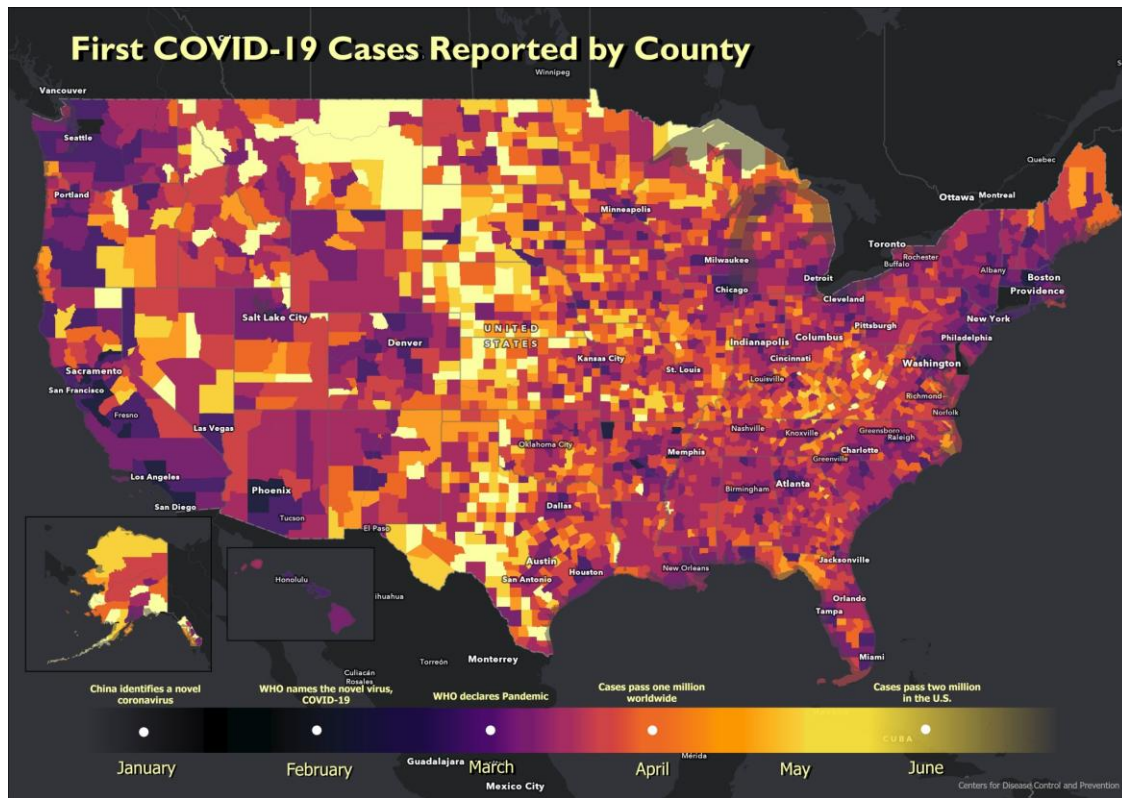


Figure 4: This map uses CDC case data to show the date when each U.S. county first reported a COVID-19 case. The custom legend doubles as a timeline, highlighting key events from the first year of the pandemic and providing additional context to the spread patterns shown on the map.

Building Age Visualization

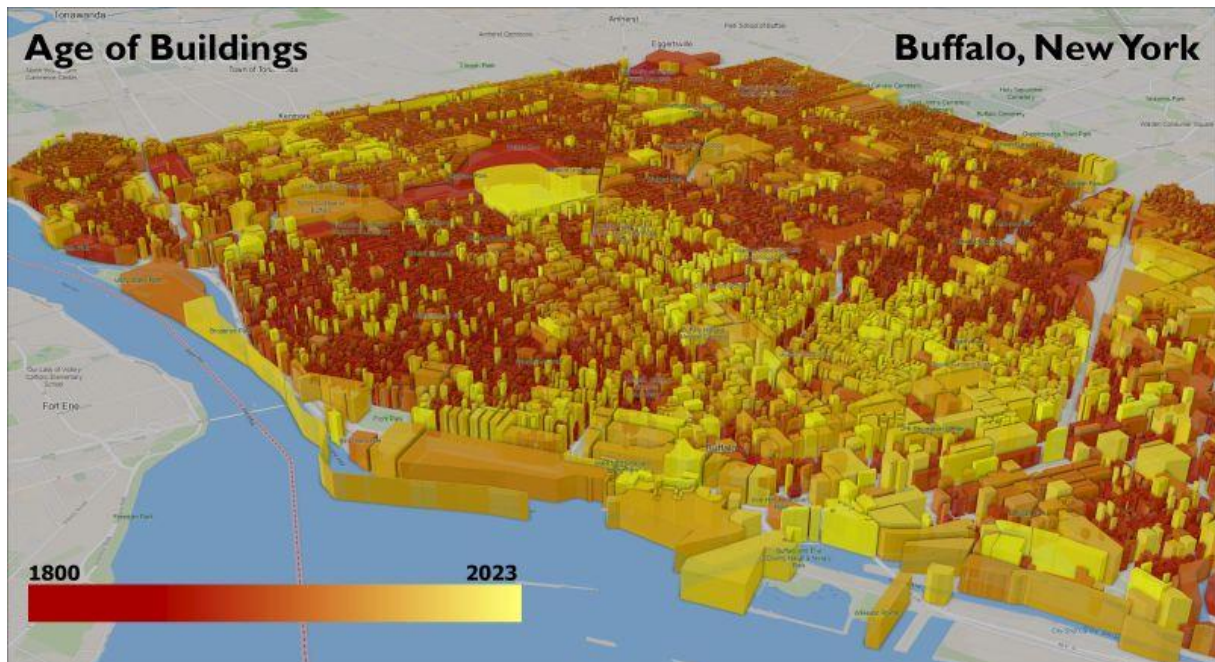


Figure 5: A parcel-level map where building age drives both color and 3D extrusion. This visualization highlights development patterns, identifies clusters of older and newer structures, and shows how the built environment has evolved over time.

Landcover Analysis

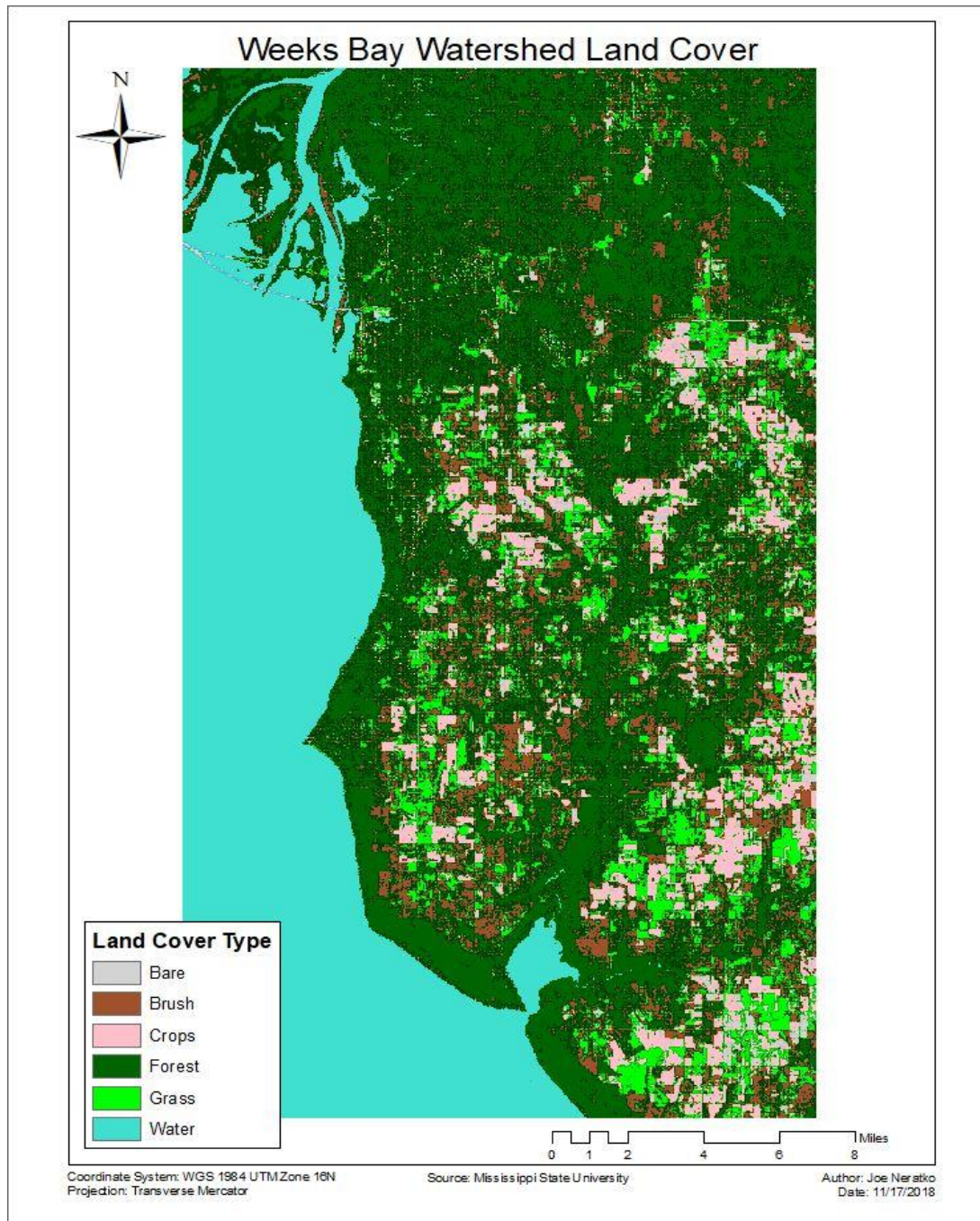


Figure 6: This map shows the results of a land cover analysis using raster data. There are 6 categories that represent every possibility of land cover. The landcover was determined using supervised classification.

Flood Likelihood Modeling

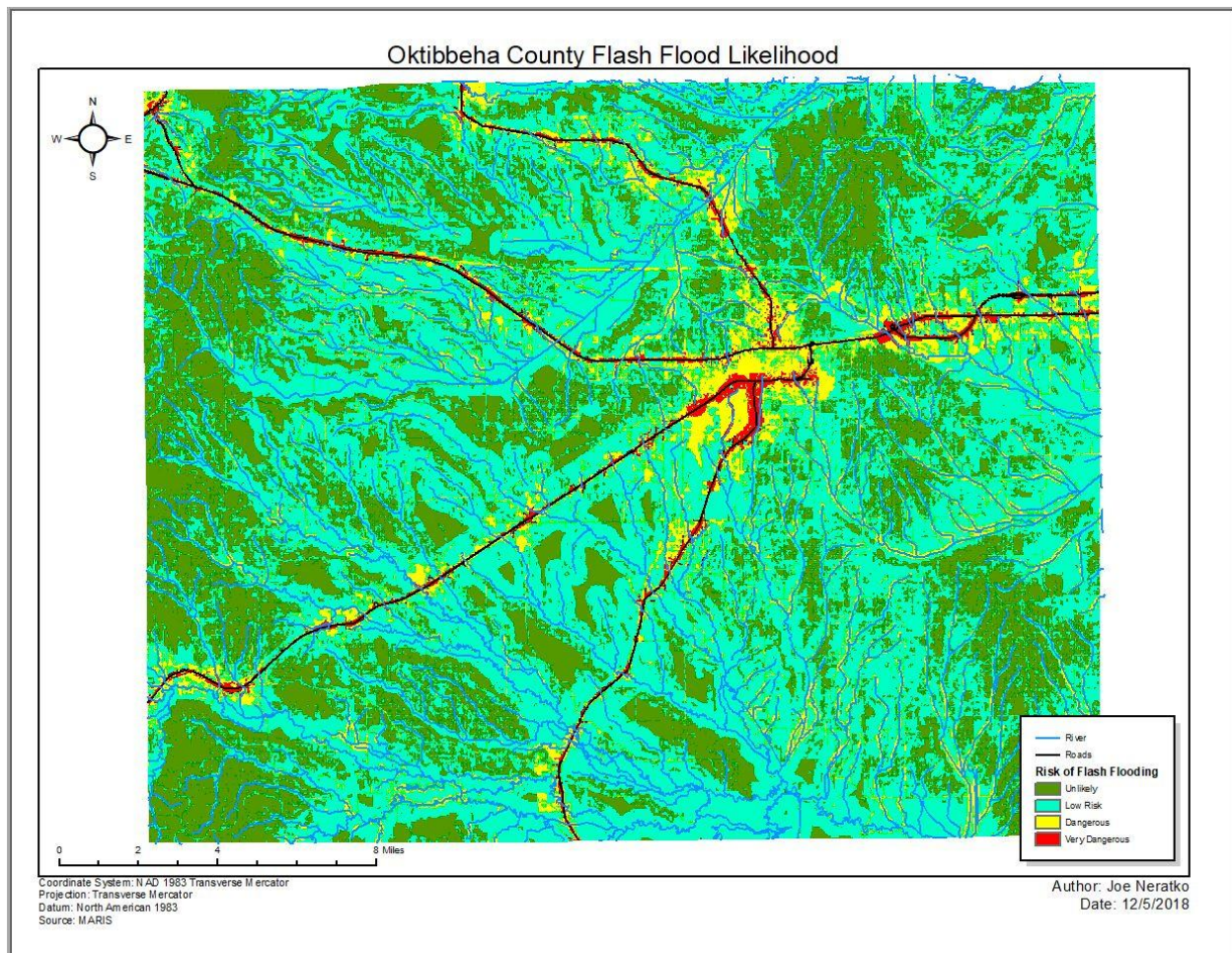


Figure 7: The model utilized in the creation of this map contained four variables that each contributed to an output value, ranging from 0 to 3, representing the likelihood of flash flooding at each cell location. The four variables used were: land cover type, slope, distance to roads, and distance to rivers. The land cover type and distance to roads both contributed 30% to the overall likelihood while slope and distance to rivers both contributed 20%. The regions with the highest risk of flooding are roadways, especially where rivers and roads intersect.

Land Cover Change Analysis

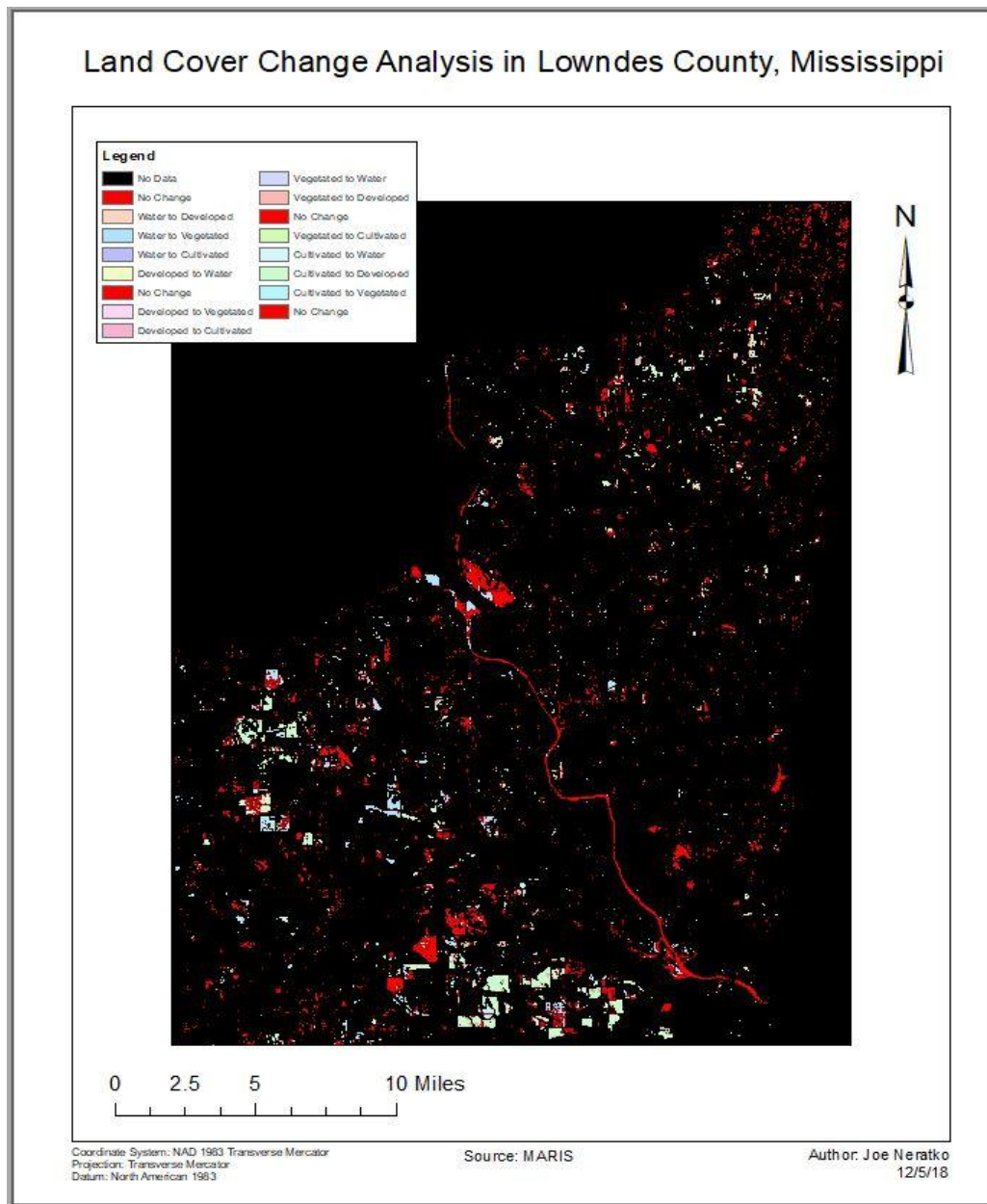


Figure 8: This map shows the results of a land cover change analysis from 2011 to 2018. There are 13 categories that represent every possibility of land cover change in the region. Two original maps were created using reclassification techniques on rasterized data. The two were then compared and reclassified to show which land cover regions had changed over the seven-year period.

Custom Tools and Applications

OpenStreetMap Download App

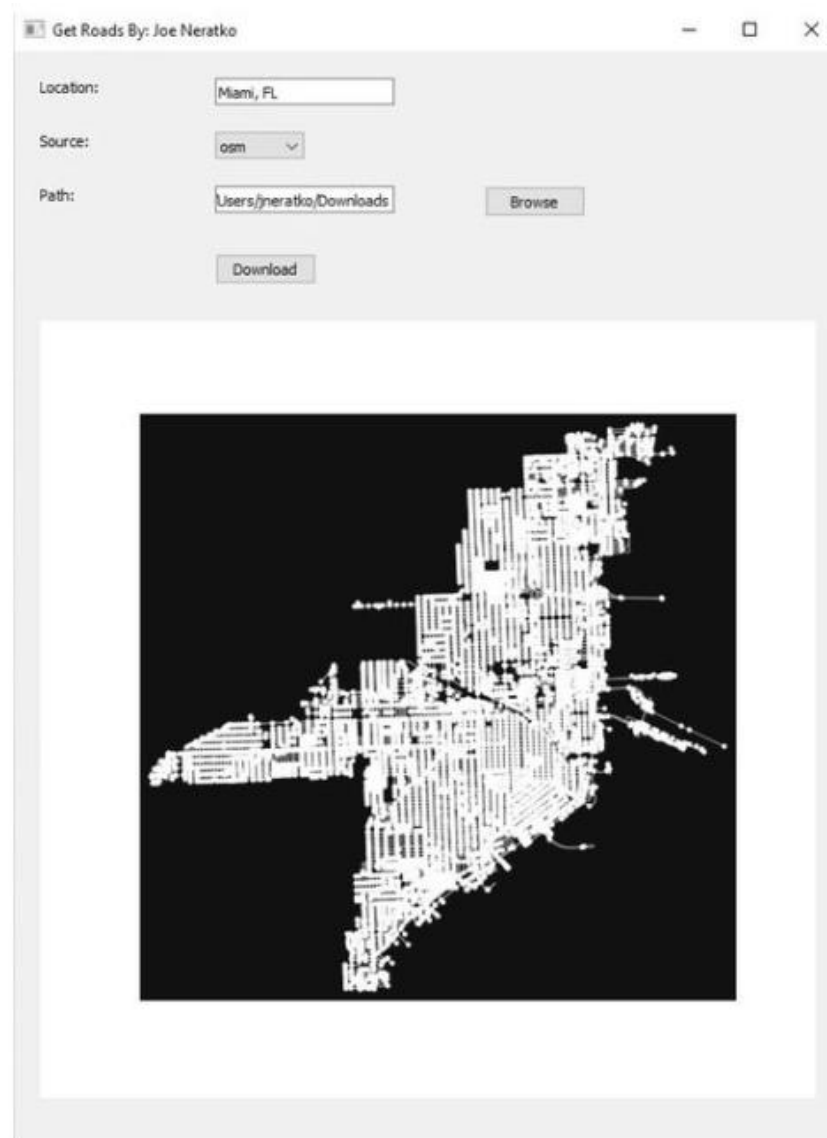


Figure 9: This Custom Application allows for user input of a location and then automatically downloads and displays all road features for the desired location.

National Broadband App

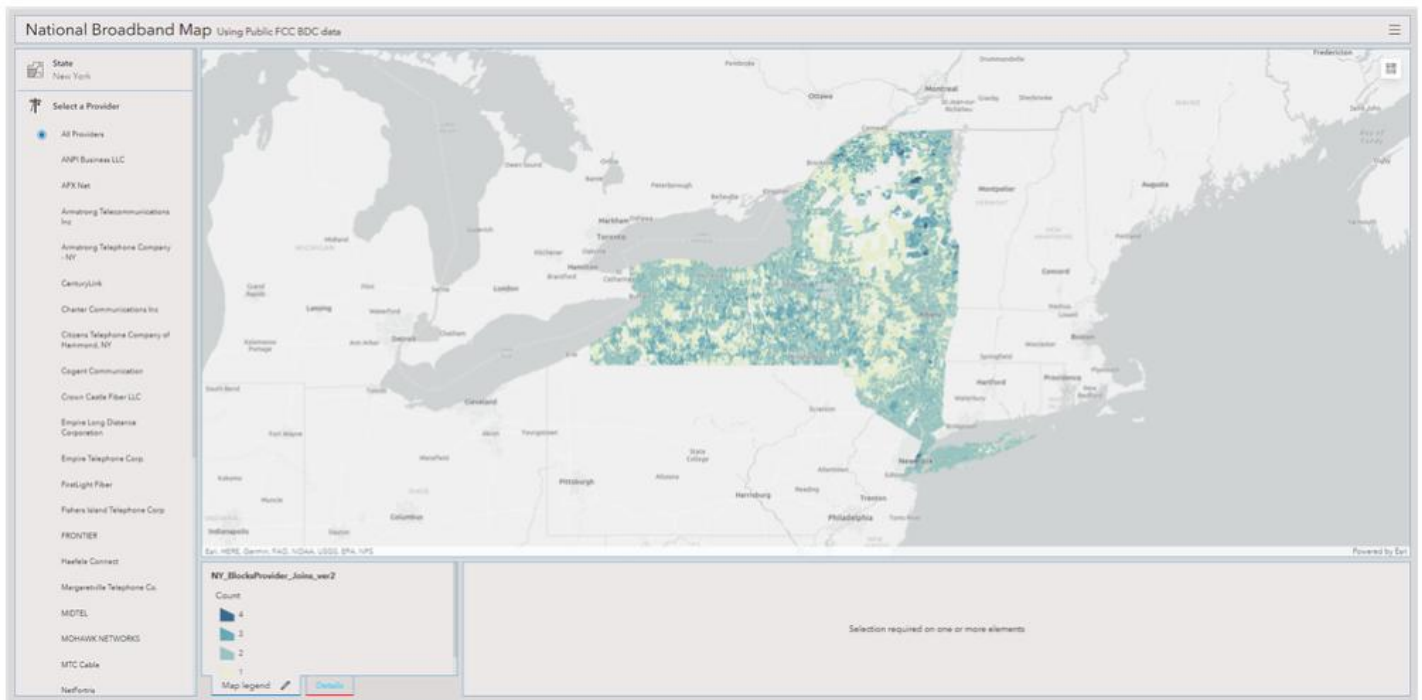


Figure 10: This interactive application was built using publicly available FCC BDC data. It enables users to filter and query datasets, explore broadband coverage at the census-block level, and gain insights into connectivity patterns across the United States.