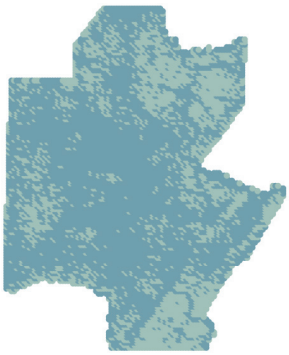
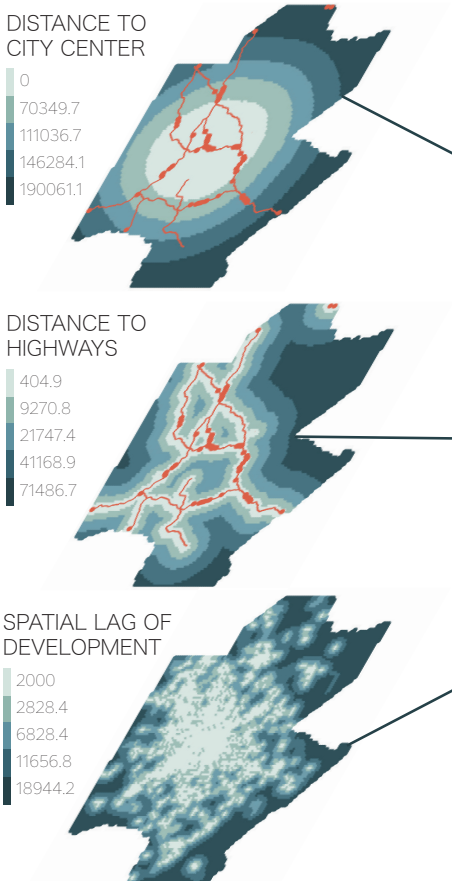


PITTSBURGH MSA URBAN GROWTH MODELING

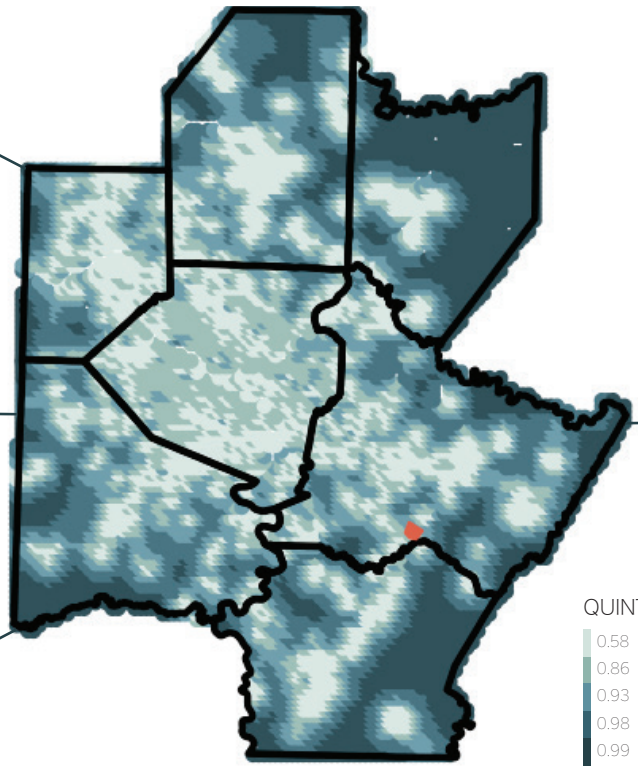
Myron Bañez & Amelia Marcantonio-Fields | CPLN 675: Land Use & Environmental Modeling

Examining the Pittsburgh Metropolitan Statistical Area, this analysis uses historic patterns of development to predict areas that may be developed in the future. This model employs a national Land Cover dataset from 2011 and 2019 indicating development and variables such as highway distances, distance from city center, and distance from developed areas. The model is then utilized to predict where growth might occur and create an allocation procedure for urban growth based on population change, development demand, and supply of land in 2030.

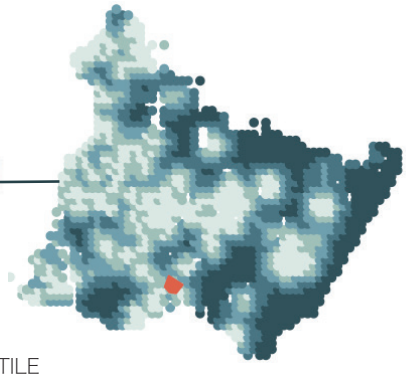
EXPLORATORY MAPS



PREDICTED PROBABILITIES OF DEVELOPMENT FOR 2030



NEW DEVELOPMENT: MICHAEL'S PLACE, PA



The exploratory maps above are some of the variables used to create the urban growth model along with 2011 and 2019 population, population change, and various land cover types. Seven models were created with a mixture of variables to yield the best model, Model7 with a McFadden score of around 0.12. After using 2011 data to predict population and development demand on 2019, these results are then predicted on 2030 and summarized by county as seen on the bottom right. As one of the highest predicted development demand rates, population change rates, and high supply of sensitive land that must be preserved, Westmoreland was chosen for the development of a new satellite city.