

Sustainable Energy Landscape in New York

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Introduction – The purpose of this mapping exercise is to locate areas in New York where new renewable energy sources would be most beneficial based on population.

Databases Used:

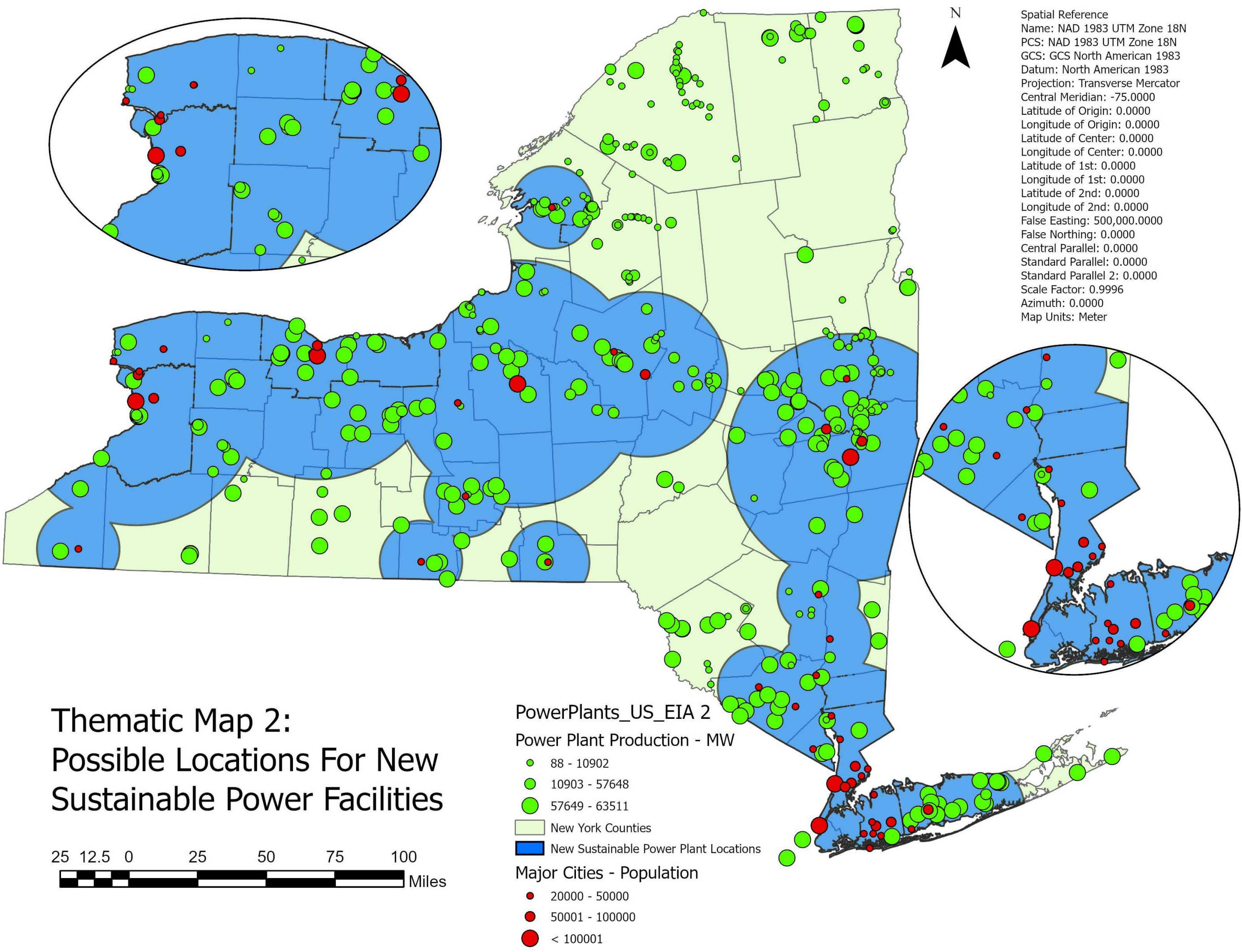
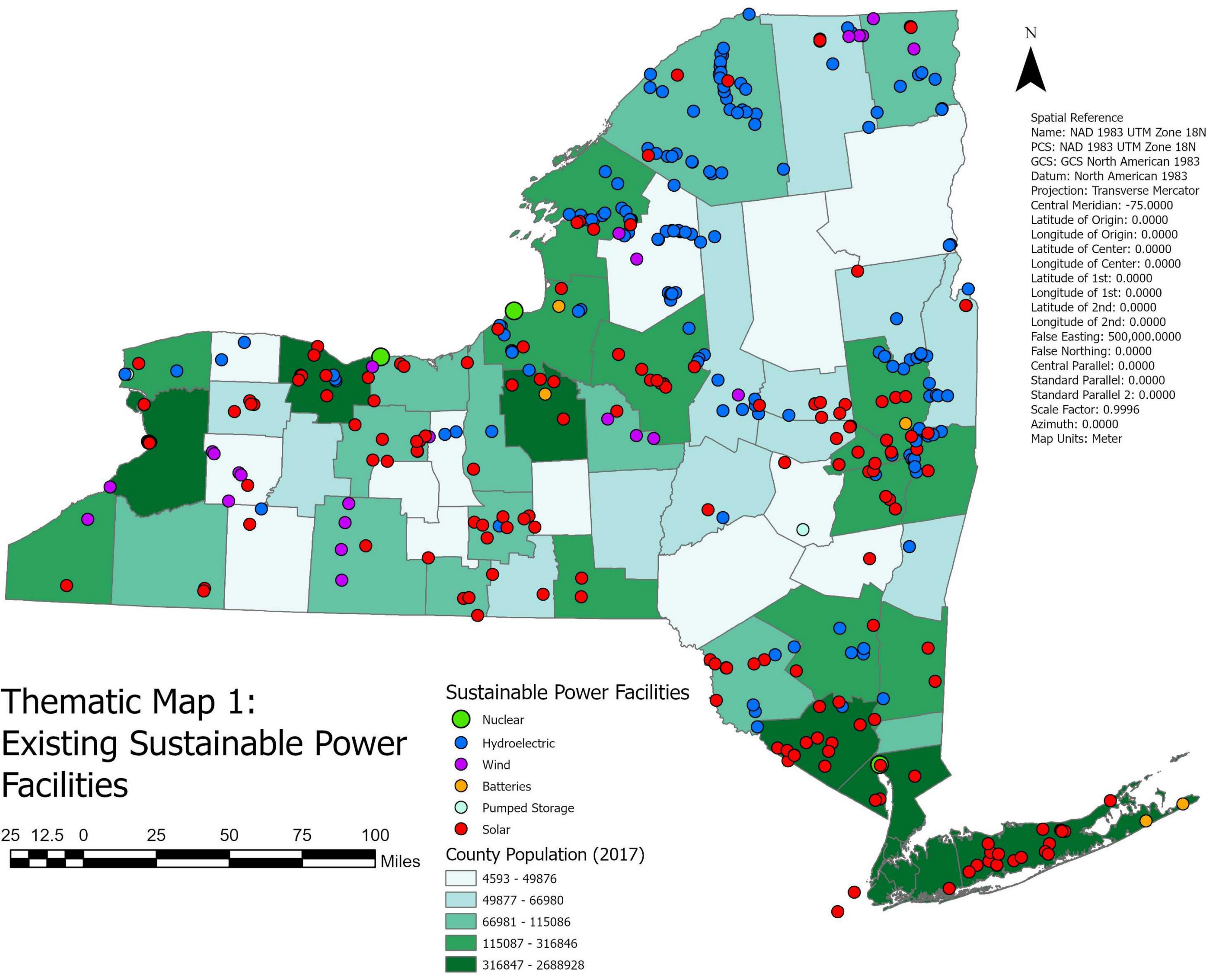
Dataset	Type	Source
State Highways	Line	NYS GIS Clearinghouse
NYS Throughway	Line	NYS GIS Clearinghouse
Bodies of Water	Polygon	NYS GIS Clearinghouse
USA Major Cities	Point	ESRI DM
USA Counties	Polygon	ESRI DM
Power Plants in the US	Point	U.S. Energy Information Administration



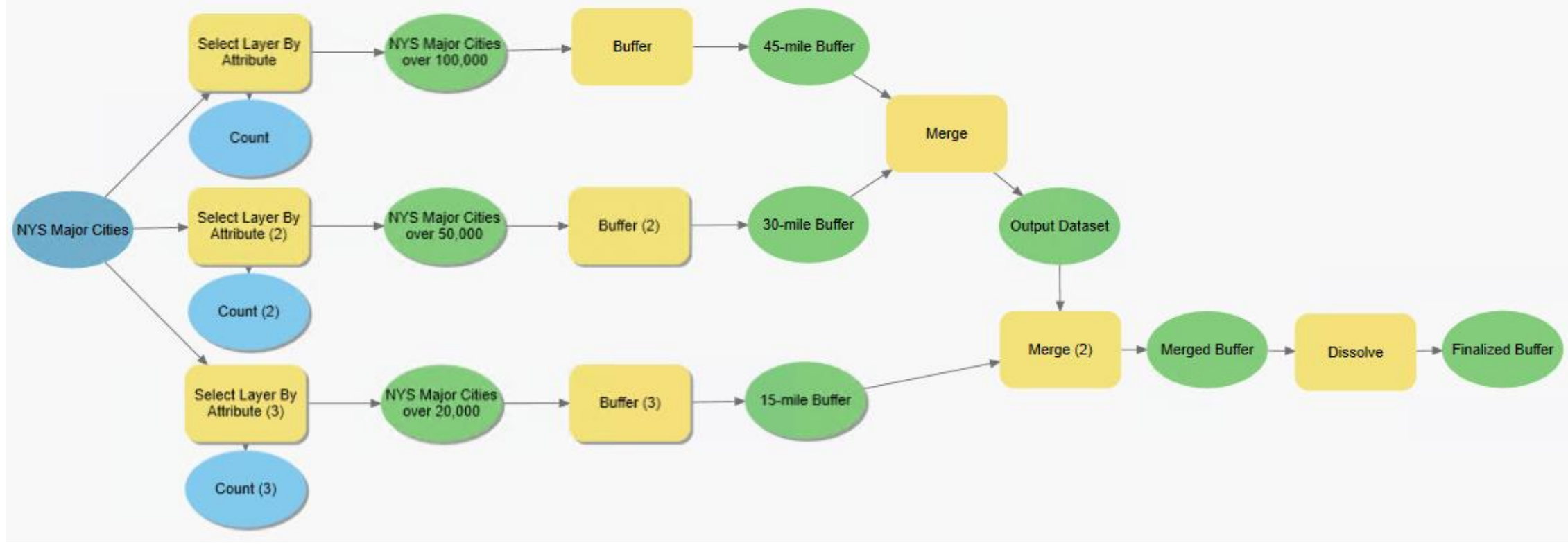
Study Area

This study is being conducted within the State of New York. The population of the study area is 19.45 million, the climate is humid continental with a ranging geography consisting of farms, forests, rivers, mountains, and lakes.

GIS Mapping Analysis & Discussion



When looking for suitable locations for new sustainable power sources, population is a good factor to take into consideration. The locations of sustainable power facilities are shown on Thematic Map 1 along with county populations. To find these optimal locations, I created a buffer around major cities in NY. Cities with a population over 100,000 got a 45-mile buffer, a population over 50,000 got a 30-mile buffer and a population over 20,000 got a 15-mile buffer. The following model was used to obtain the final areas shown in blue on Thematic Map 2.



The two areas in NYS that I have found to be lacking in renewable energy sources are near Buffalo and New York City. These two areas are shown within the two secondary views within Thematic map 2.

Conclusion & Future Direction

The areas that are in most need of new renewable energy sources are Buffalo and New York City, having the least sources that are near by. Roof top solar is one good option for these larger cities, retrofitting panels on the tops of skyscrapers where there are not trees or other vegetation to block the sun. Another good source would be wind forms along the coast of the Long Island Sound, Atlantic Ocean, Lake Erie and Lake Ontario. Convection currents blowing at the coast can be harvested using turbines to generate sustainable energy.

Work Cited:

- Gašparović, I., & Gašparović, M. (2019). Determining Optimal Solar Power Plant Locations Based on Remote Sensing and GIS Methods: A Case Study from Croatia. *Remote Sensing*, 11(12), 1481. <https://doi.org/10.3390/rs11121481>
- Wikimedia Foundation. (2021, May 2). *New York (state)*. Wikipedia. [https://en.wikipedia.org/wiki/New_York_\(state\)](https://en.wikipedia.org/wiki/New_York_(state)).