Hospital site suitability analysis using JavaScript in Google Earth Engine (GEE)
Adrienne Hall, April 2022

Health services and facilities are social investments. Geospatial analysis is useful for making decisions about where to invest in health resources. This sample project uses **suitability analysis** to identify possible locations to site a public hospital in North Carolina. A suitability index is a "system whereby locations are ranked according to how well they fit a set of criteria" (Shellito, 2020, pg. 200). Suitability analysis seeks to answer the question: where is the best option for something to be located?

Six factors of relevance will be used to create a simple suitability index and rank ideal locations.

1. Nearby existing medical facilities (derived from state health facilities)
2. High population density (input layer from GEE)
3. Proximate to public water (derived from public water supply sources layer)
4. Proximate to public sewage system (derived from public sewage systems layer)
5. Proximity to public roads (derived from state-maintained roads layer)
6. Accessible slope degree (derived from elevation dataset from GEE)

Suitability Index

Input	**Range**	**Score (1-worst to 5-best)**
Distance to existing medical facilities	> 16 km 12 to 16 km 8 to 12 km 4 to 8 km 0 to 4 km	5 4 3 2 1
Population density (persons per square kilometer)	> 500 250 to 500 100 to 250 50 to 100 0 to 50	5 4 3 2 1
Distance to public water	0 to 100 meters 100 to 250 meters 250 to 500 meters 500 to 1000 meters > 1000 meters	5 4 3 2 1
Distance to public sewage	0 to 100 meters 100 to 250 meters 250 to 500 meters 500 to 1000 meters > 1000 meters	5 4 3 2 1
Distance to public road	0 to 500 meters 500 to 2000 meters > 2000 meters	5 3 1
Slope degree	0 to 1	5

	1 to 2 2 to 3 4 to 5 > 5	4 3 2 1

References

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