Preston Hudlow

GEOG 462

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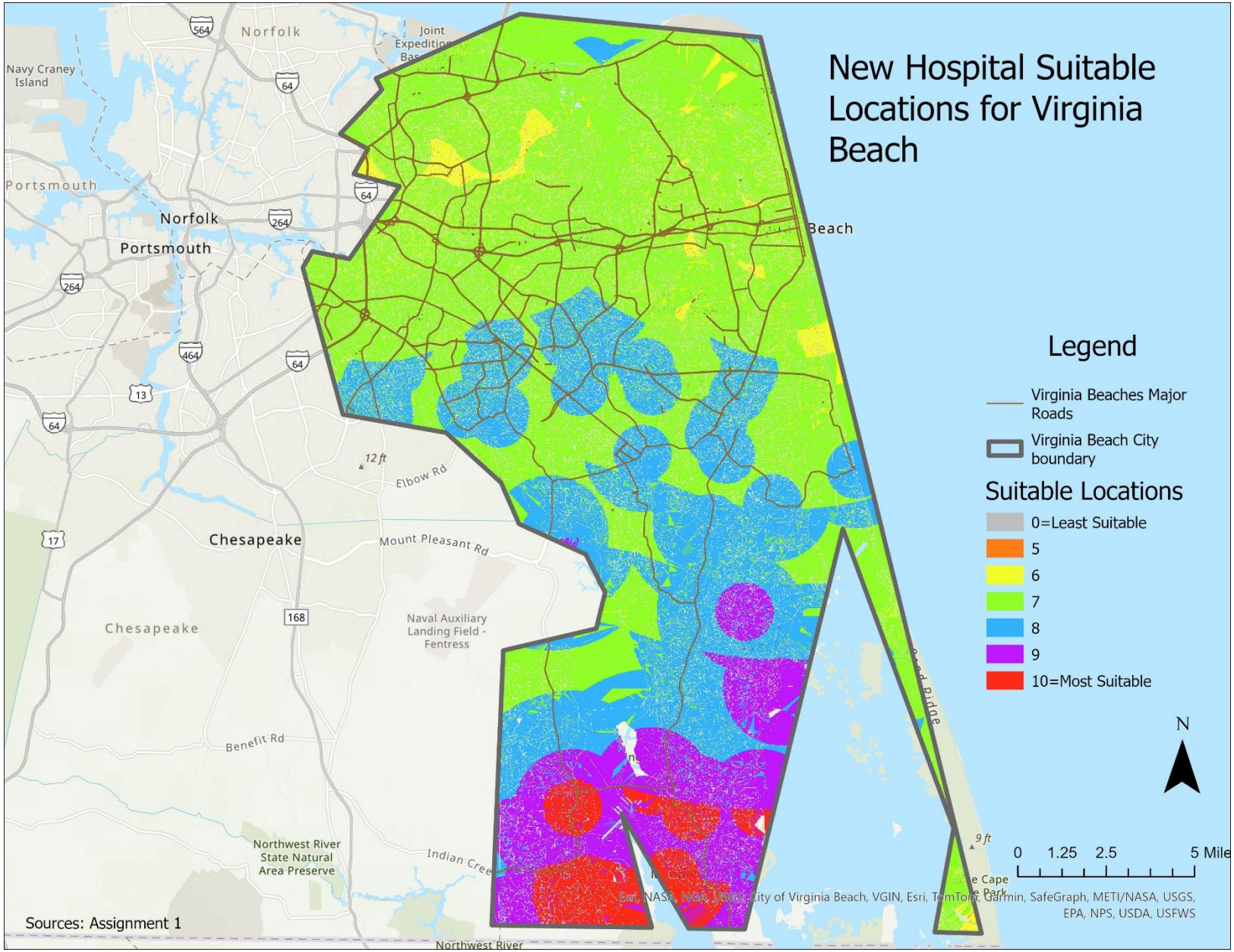
Assignment 1

Question 1: Summarize the entire analytical procedure that you have applied to accomplish this assignment. Your summary must cover each step of your procedure.

There were many steps involved during this process. First, this assignment aimed to project and analyze certain data sets within Virginia Beach to see the most suitable locations for a new hospital. We used different layers like population, major roads, hospitals, city boundaries, and streamlines. During the first step, I reprojected all the data sets to the same NAD 1983 UTM 18S. Now that they are all on the same projected coordinate system, I then used tools like distance, and reclassify to analyze the data to where we want to be close to a populated area but far from other hospitals. At this point, we calculated the stream flow direction and accumulation to provide the best areas where water runoff won't be an issue. With these three data sets, I performed a weighted overlay to combine these features and create one data layer that meets the criteria. The next step is to combine the boundary and major roads and perform an extract by mask to clip the rasta layer within the city's boundary. Lastly, I created a layout with all the map elements to show the favorable locations for a new hospital to be built.

Question 2: Discuss the possible limitations of the methodology used in the assignment.

Some limitations can be the data that was included. For example, there are many minute clinics and emergency locations that might not be listed as an option. Not only that but it only deals with one time frame. You could instead compare the population over the years to see if there are any trends in the data to help find the best location. It also does not consider all the roads, instead only shows the major. This could be a limitation as if someone takes a minor road and does not consider any streamlines or flooding there could be potential issues making the individual turn around and go someplace else.


New Hospital Suitable Locations for Virginia Beach
Legend
Virginia Beaches Major Roads
Virginia Beach City boundary
Suitable Locations
0=Least Suitable
5
6
7
8
9
10=Most Suitable
N
0 1.25 2.5 5 Mile
Sources: Assignment 1
Esri, NASA, NGA, USGS, City of Virginia Beach, VGIN, Esri, TomTom, Garmin, SafeGraph, METI/NASA, USGS, EPA, NPS, USDA, USFWS
Norfolk
Portsmouth
Chesapeake
Navy Craney Island
Joint Expedition
Beach
Elbow Rd
Mount Pleasant Rd
Naval Auxiliary Landing Field - Fentress
Benefit Rd
Northwest River State Natural Area Preserve
Indian Cree
Northwest River
12 ft
9 ft
564
64
264
464
13
17
168