

Best Location for Tiny House Communities in the Mankato Area



By: Tyler Dardis, Ashley Grengs, & Gabriella Wojszynski

Objective

- Analyze the best location of land averaging 75 acres to build a tiny home community within counties surrounding Mankato.



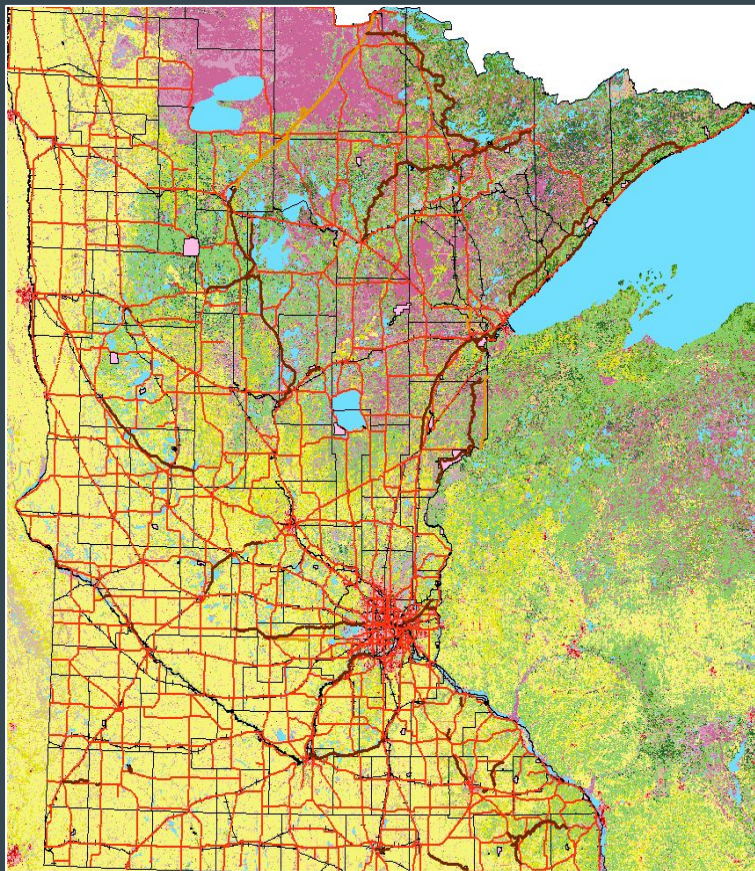
Criteria and Variables

1. In open area, no/limited tree coverage
2. 500 m away from noise pollution
3. 250 m away from environmental pollution
4. 5 m from existing roads
5. 100 m away from wetlands, rivers, and lakes.
6. Built on undeveloped land
7. No building on public land
8. Build on 5 degree slope



Starting Data

- Counties
 - Road Networks
 - Got for each county, and merged them
- Statewide
 - Tree Coverage, Noise Pollution, Environmental Pollution, Water Features, Land, Railroads, Highways, Public Lands
 - Had to Select for 3 counties (Blue Earth, Le Sueur, & Nicollet)
 - Extract by Mask with rasters
 - Intersected/Clipped with vectors

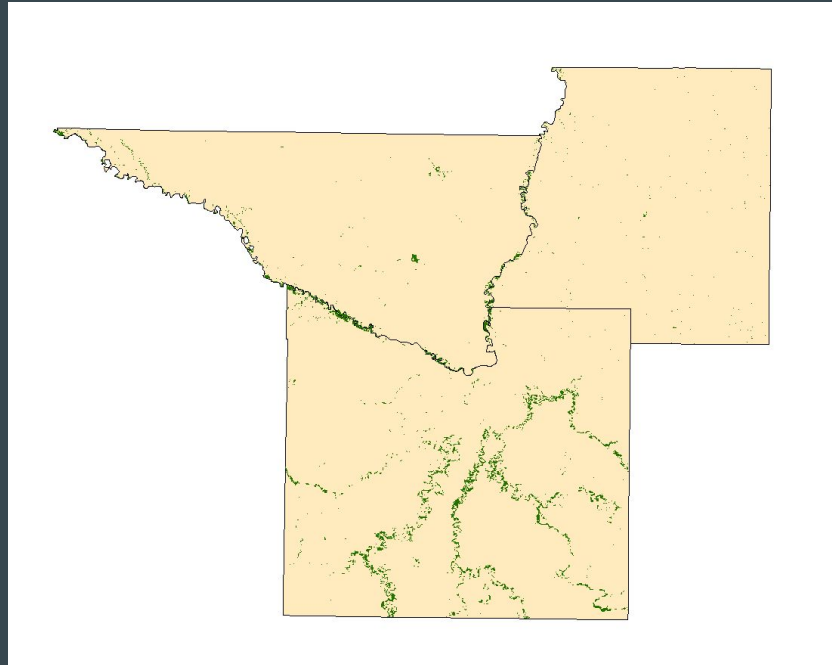


Open Area, Limited Tree Coverage

- Solar Panels
- Natural Lighting
- Gardening Area
- Open land for recreation activities

Data: Tree coverage data extracted from Minnesota NLCD raster. (2011)

-Converted to Vector and erased from final map

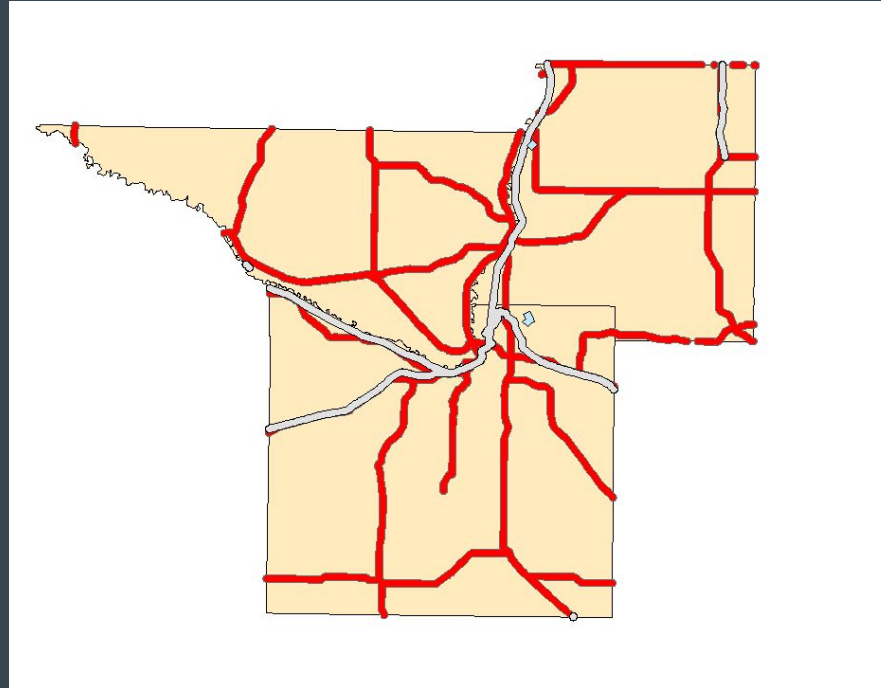


Noise Pollution Buffer

- Airport Runways
- Major Highways
- Railroads

All buffered 500 meters

Data: MNDOT statewide
shapefiles (2017)

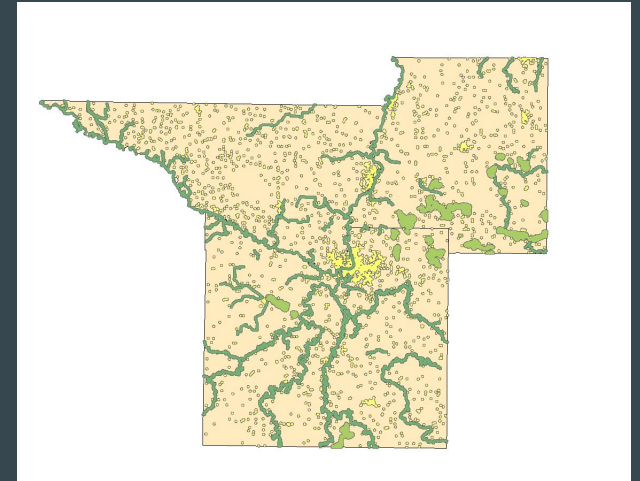


Away From Environmental Pollution

- Contaminated sites, recent inspections, and closed enforcement activities.
- Potentially impaired waterbodies

Stay farther away from impaired waterbodies at 250m, compared to 100m for unimpaired waterbodies

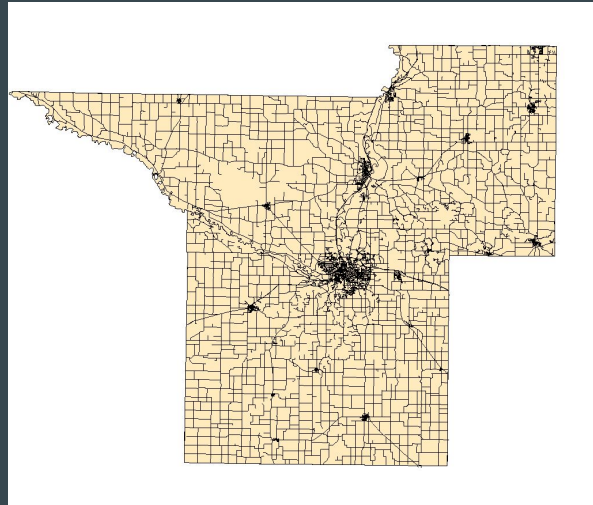
Data: Pollution Control Agency shapefiles of impaired water bodies, and sites.



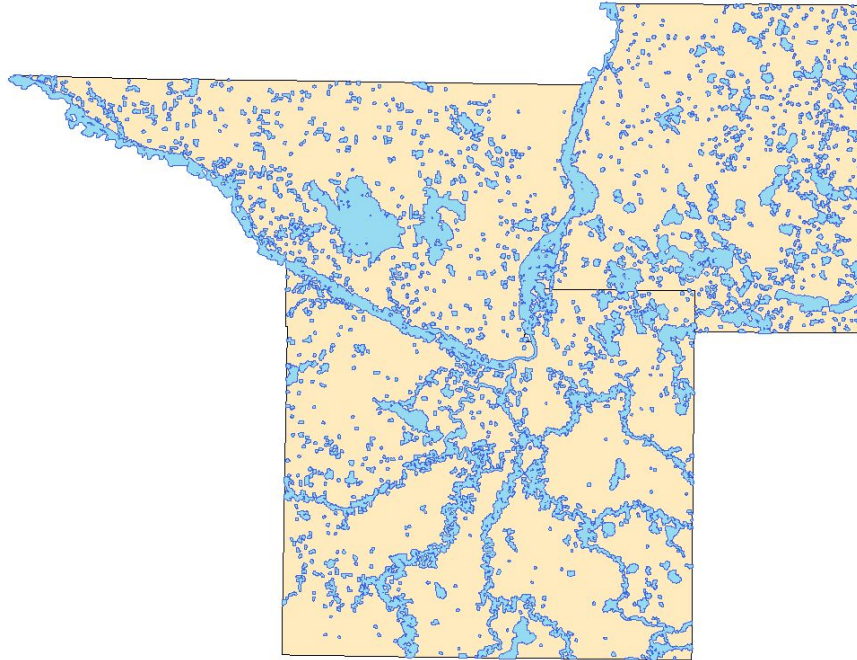
Road Buffer

- Accessibility
- 5 Meter buffer
 - To prevent from building on top of road

Data: MNDOT by county



Wetlands, Lakes, and Rivers Buffer



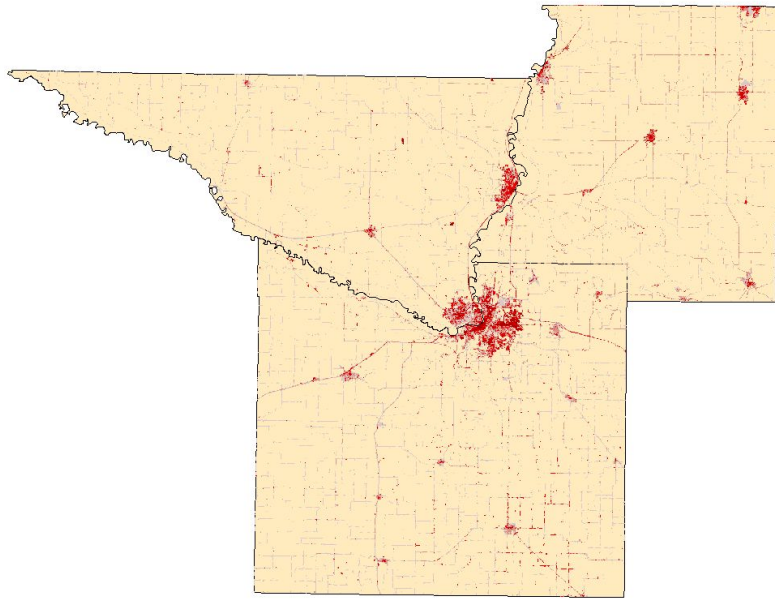
- Flooding
- Erosion
- Foundation
- Environmental Concerns

100 m Buffer

Extracted from NLCD

Data: NLCD gisdata.com

Undeveloped Land



- Available space to place the tiny home community.
- More cost efficient

Extracted from NLCD

Data: NLCD gisdata.gov

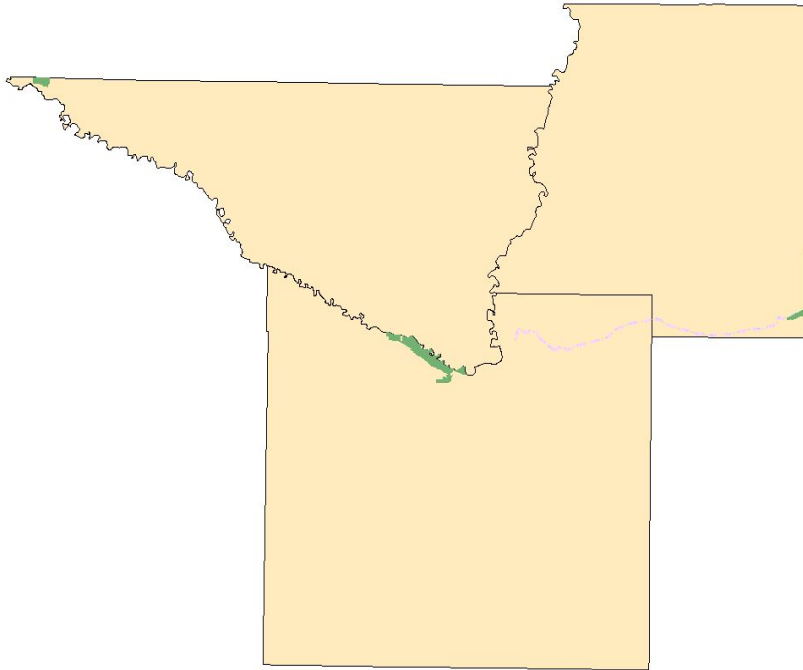
Avoid Public Land



- State Parks
- State Trails

Erased public land

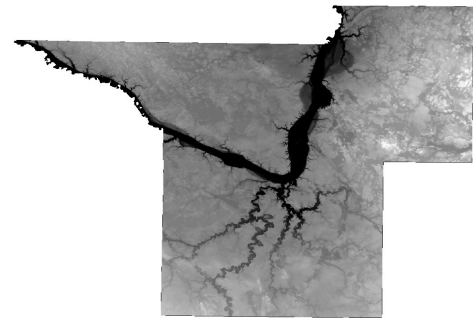
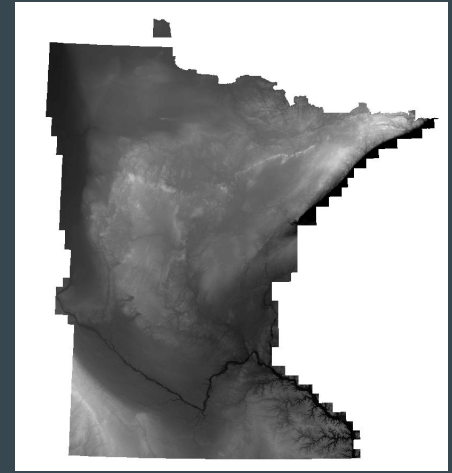
Data: MNDOT



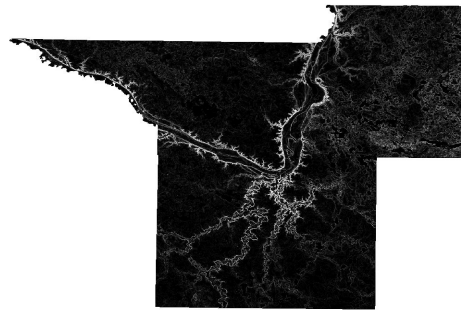
Build on Land With Slope of 5 Degree or Less

- For safety
- Landslides
- Accessibility
- Land Use

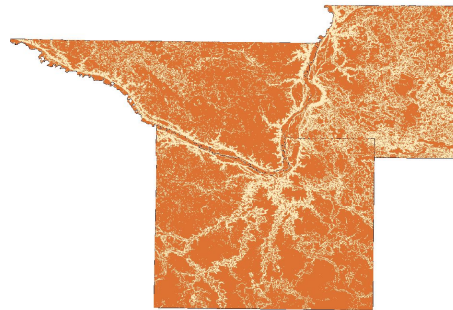
Data: data.gov



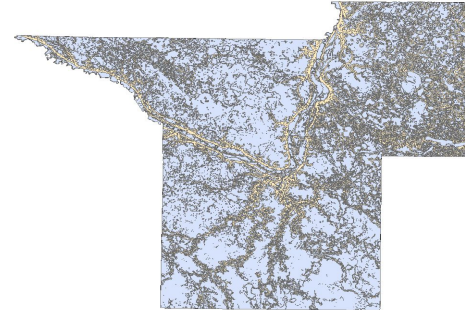
Dem



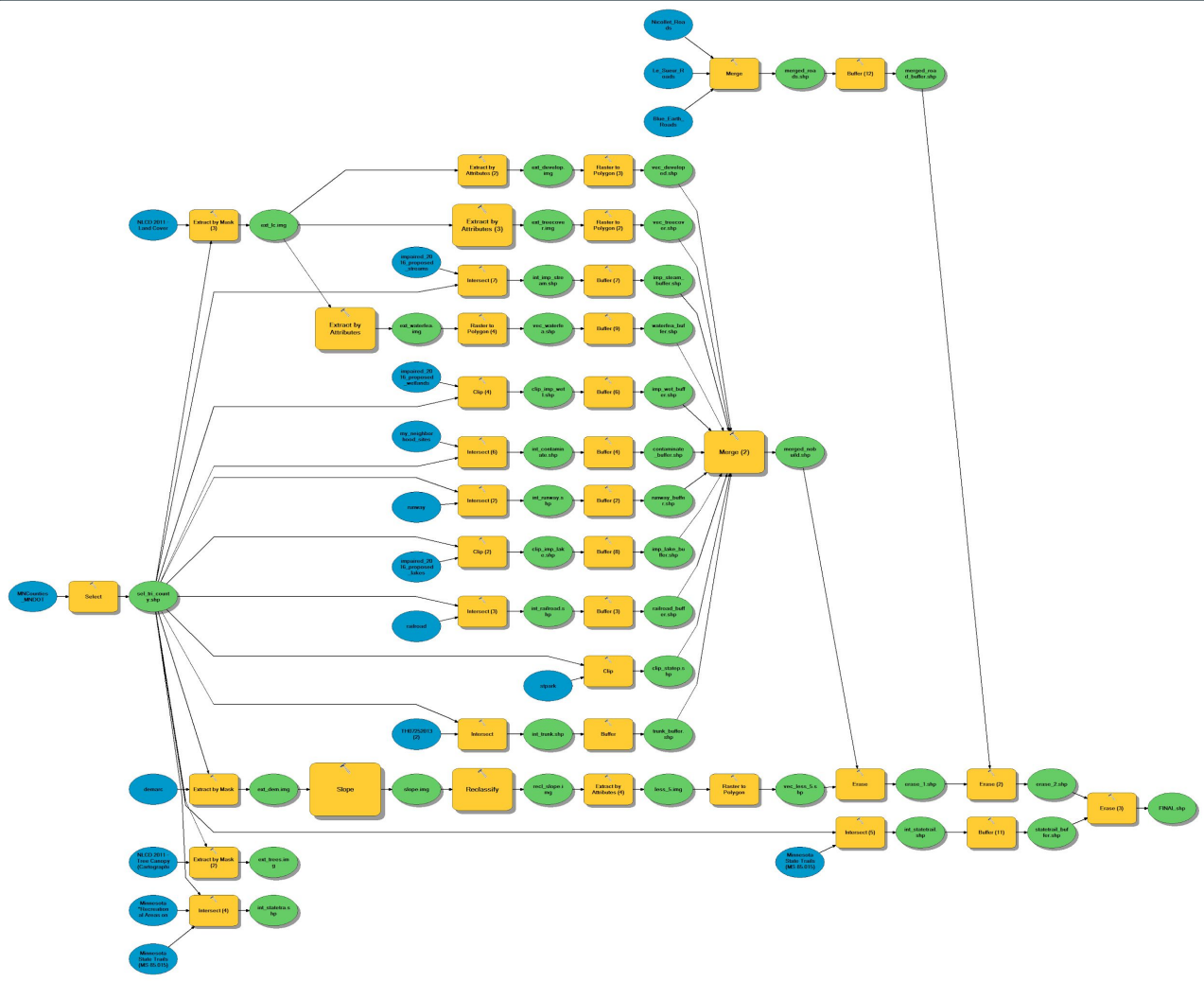
Slope



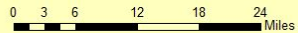
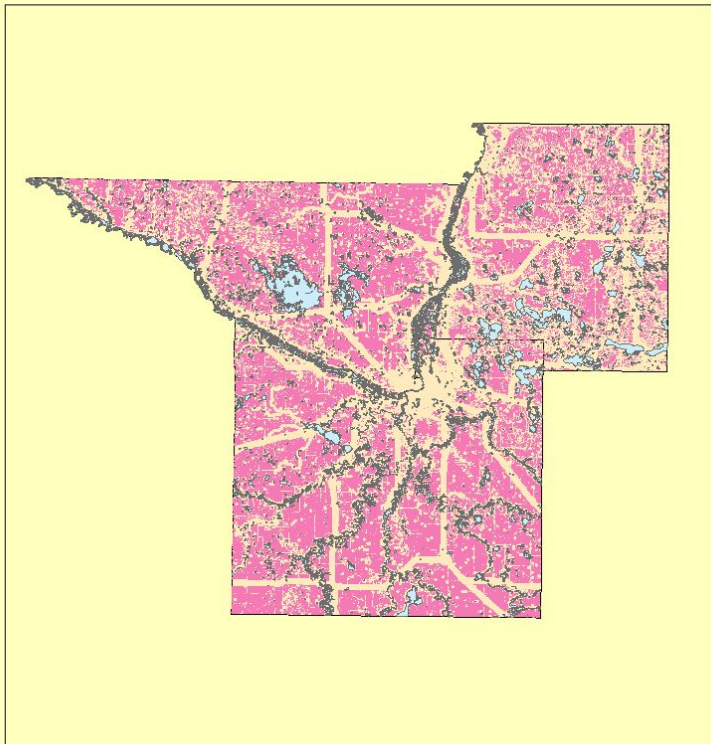
Reclassified slope





Vector



Suitable Area for Tiny Homes

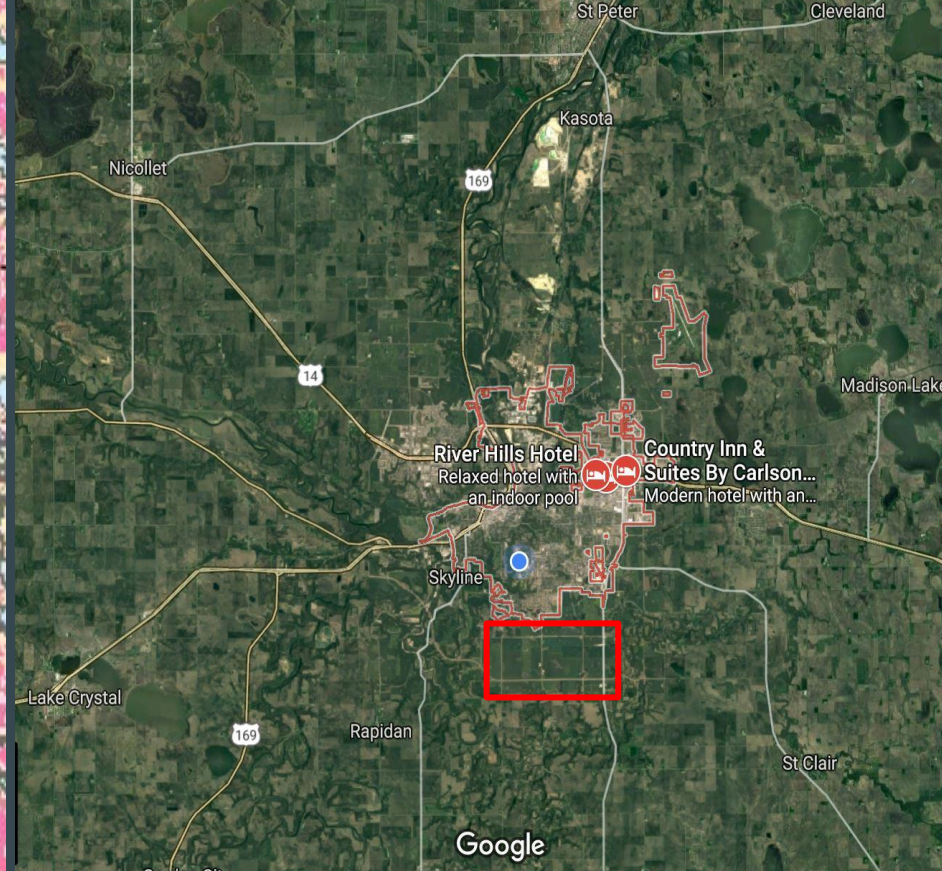
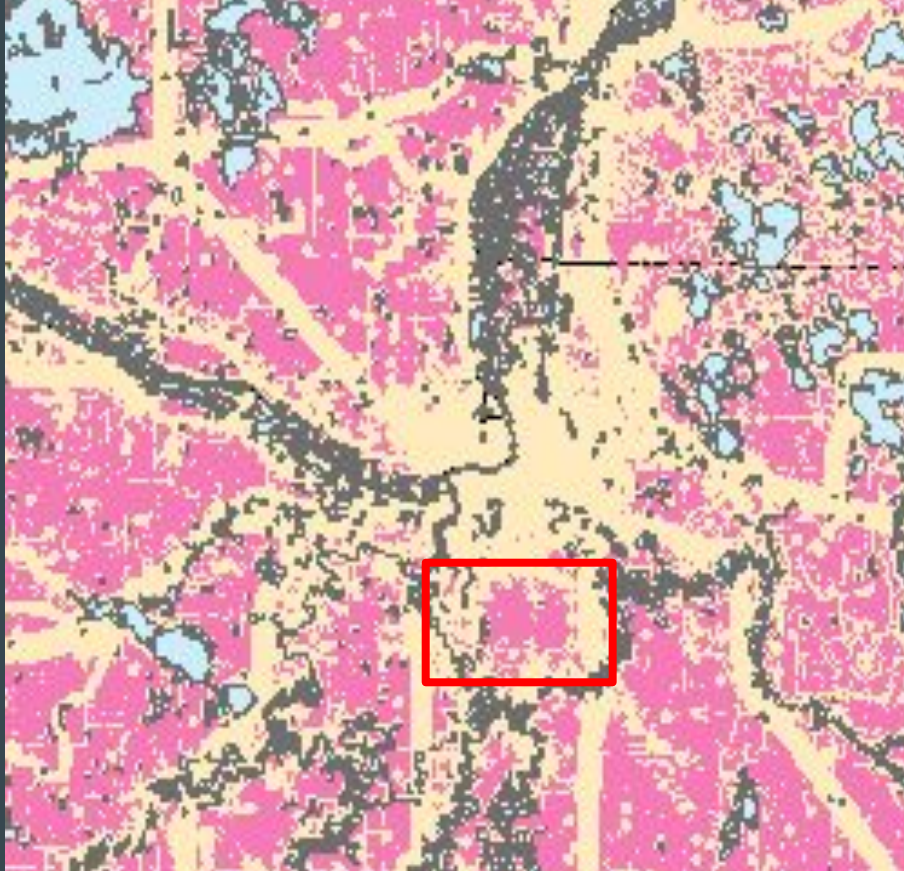


Legend

-  Suitable Area for Tiny Homes
-  Water



Proposed Land



Questions & Answers

