

Capstone project track- 1: Urban farming potential in Detroit

Objective:

To find zones most favourable for Urban farming in Detroit using QGIS

Data required:

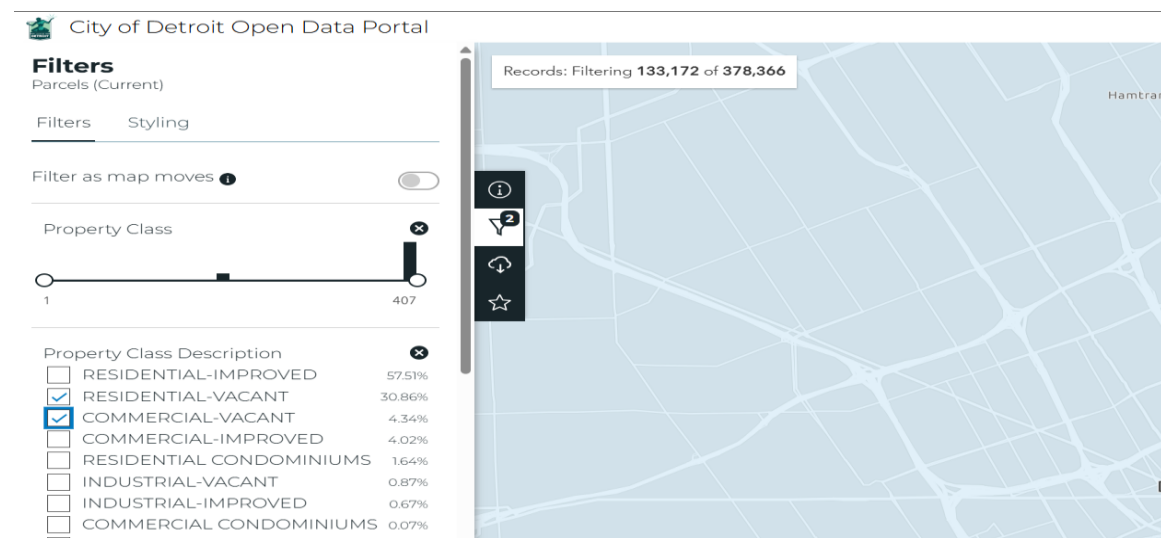
1. Detroit shape file
2. Vacant land parcels
3. Soil data

Tools used:

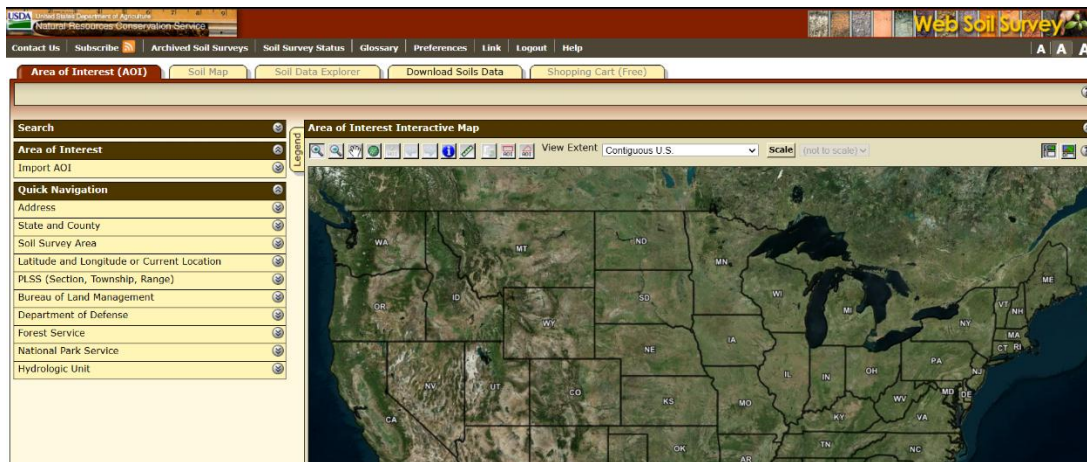
1. Buffer
2. Intersection
3. Difference

Work flow:

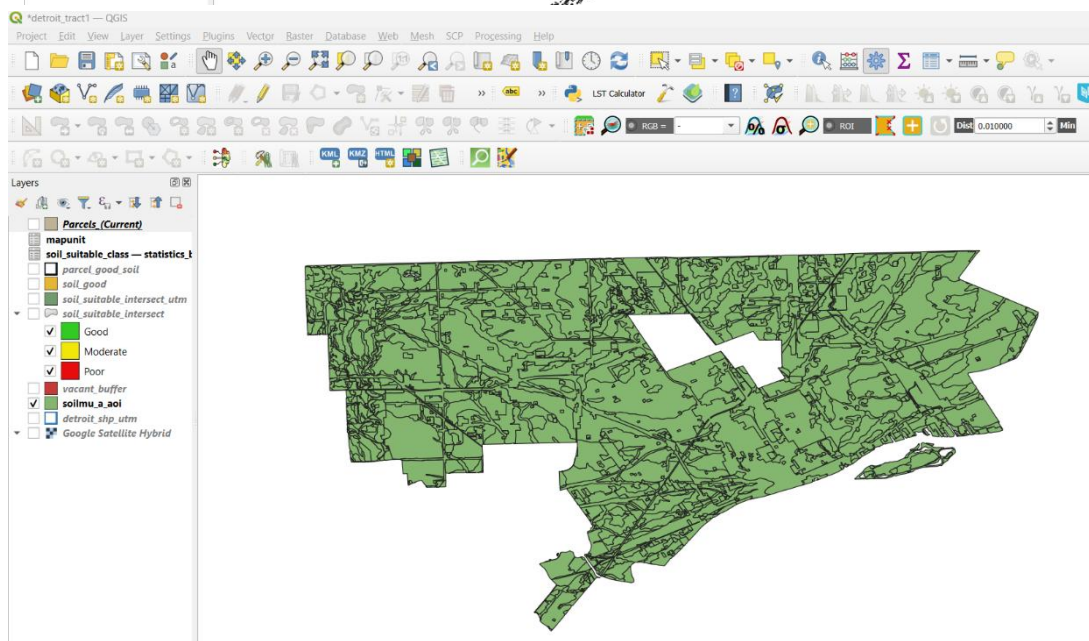
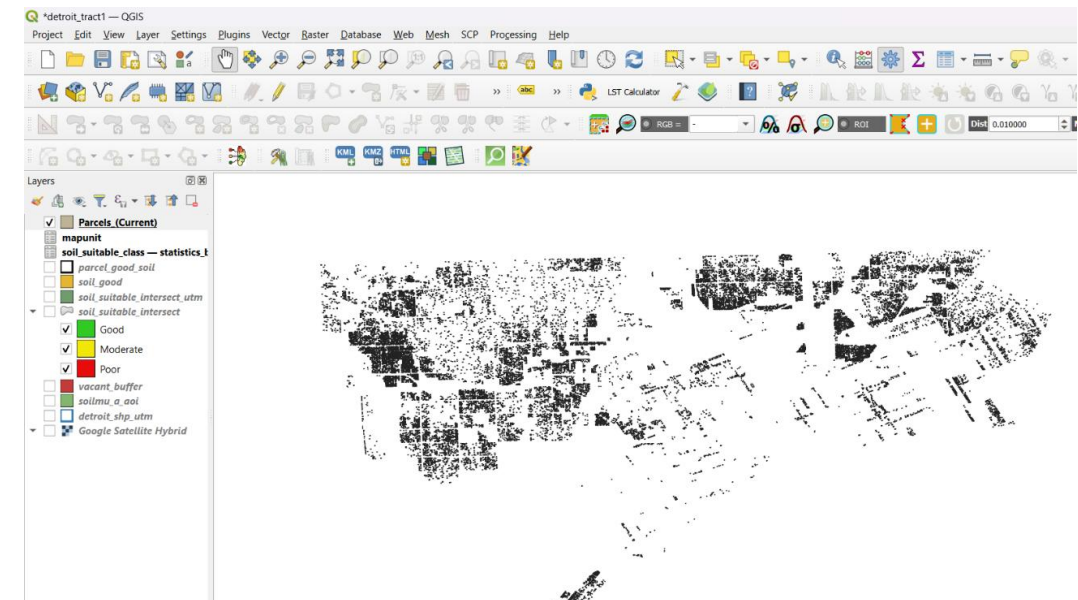
1. Download Vacant parcels from <https://data.detroitmi.gov/>



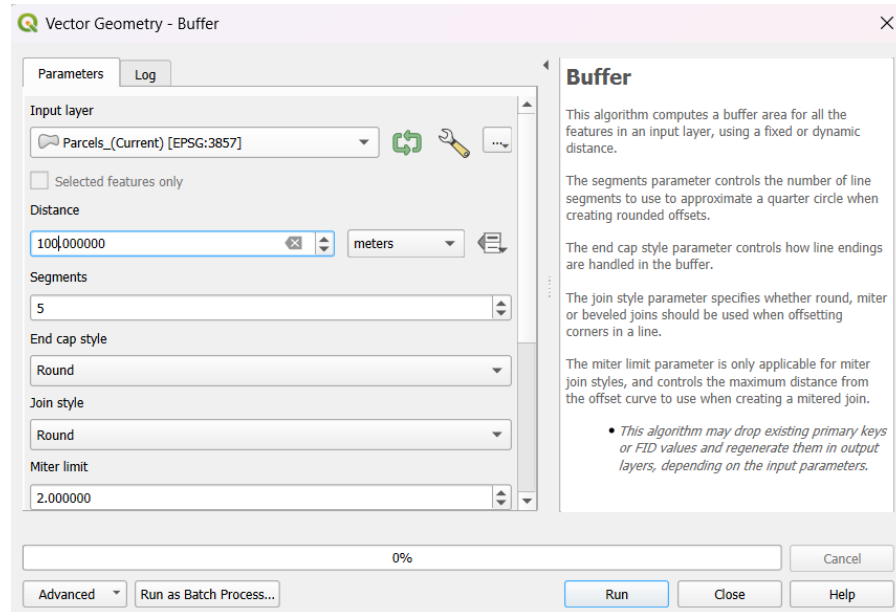
2. Download Soil data from <https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>



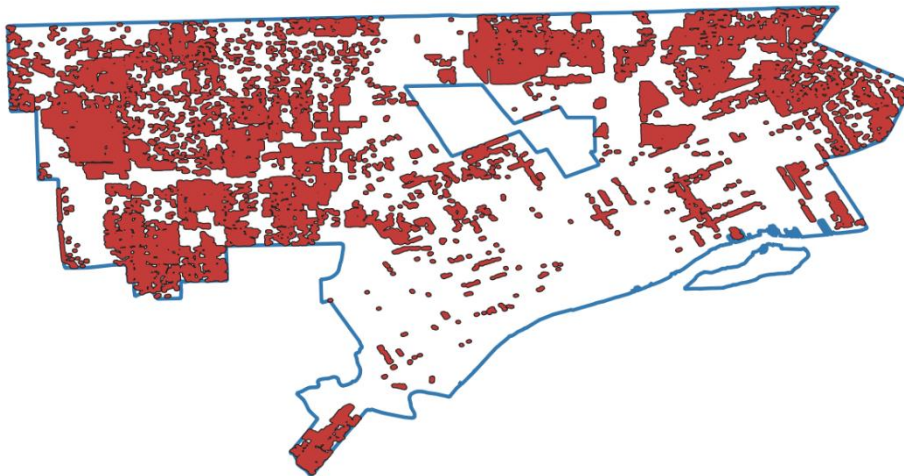
- Open QGIS and load both the data (Parcels, Soil data). Add vector layer> Parcels, Soil data



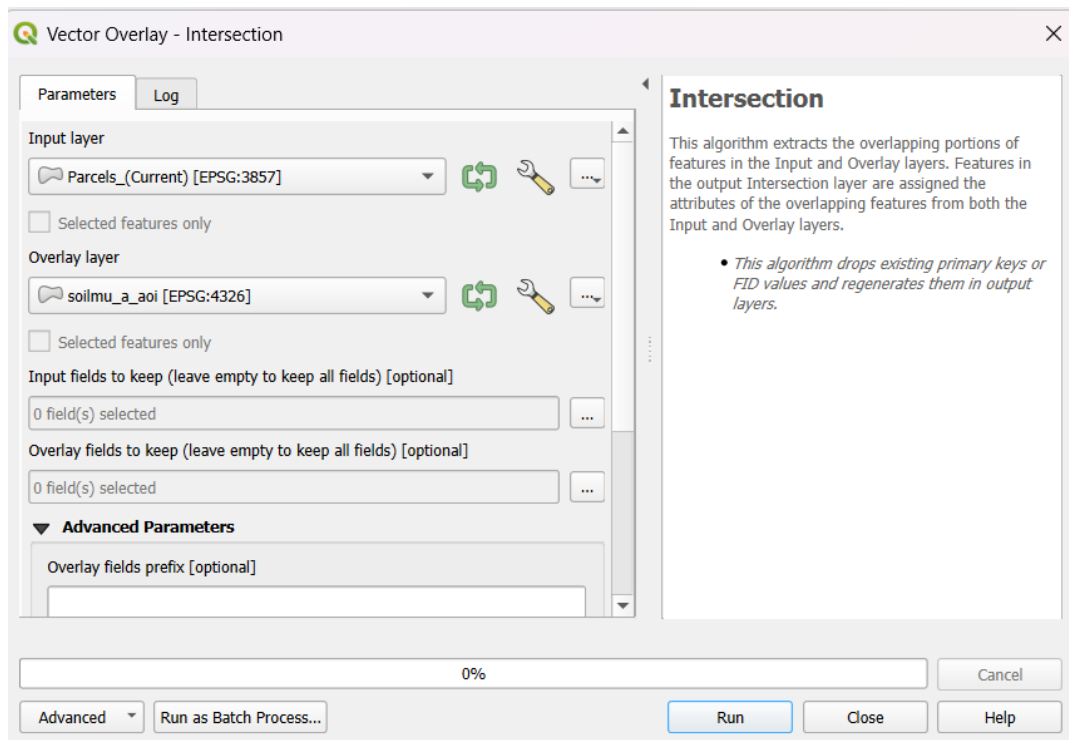
4. A 100 mtr buffer is taken with the vacant parcels. Vector> Geoprocessing tools> Buffer> Input layer: Parcels> Distance: 100> save to file> Run.



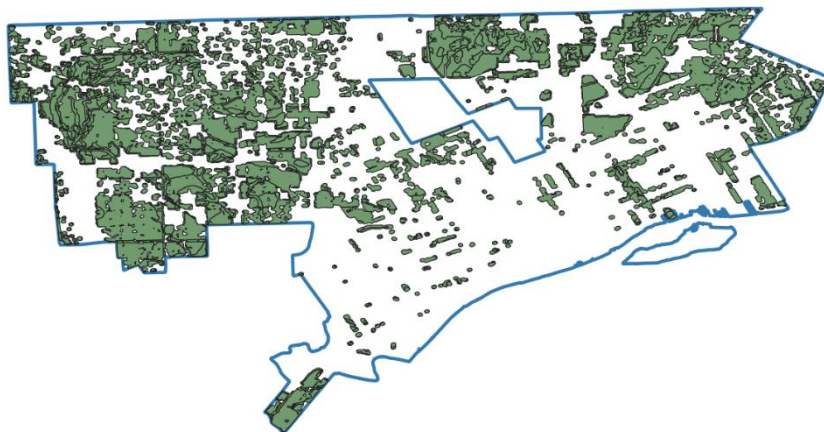
Output:



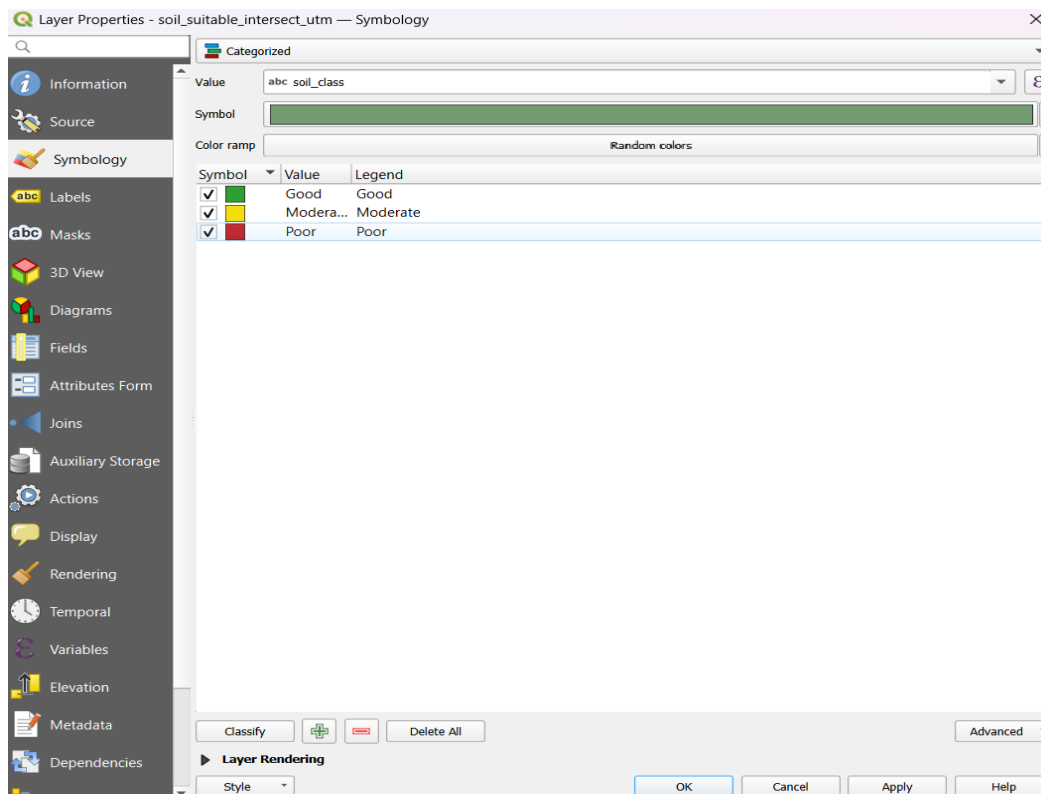
5. Intersection: Vector> Geoprocessing tools> Intersection> Input layer: (the vacant parcels buffer)> Overlay layer: (soil data)> save to file> Run
We are intersecting the buffer with the soil data



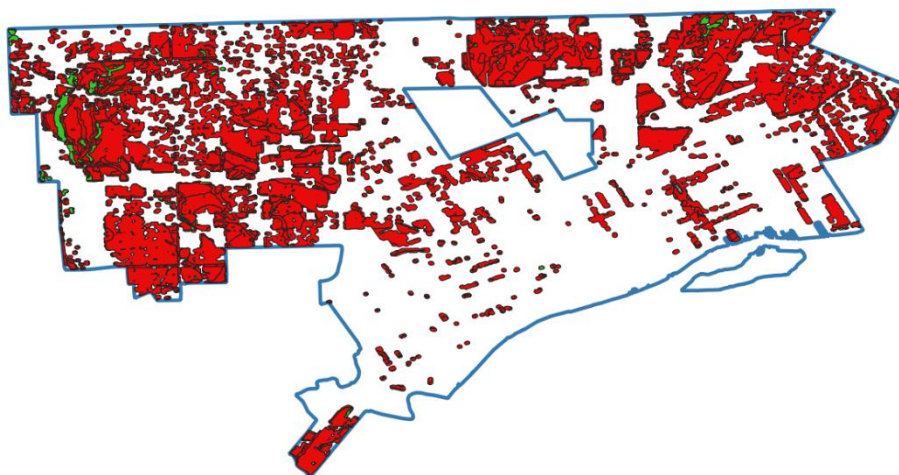
Output:



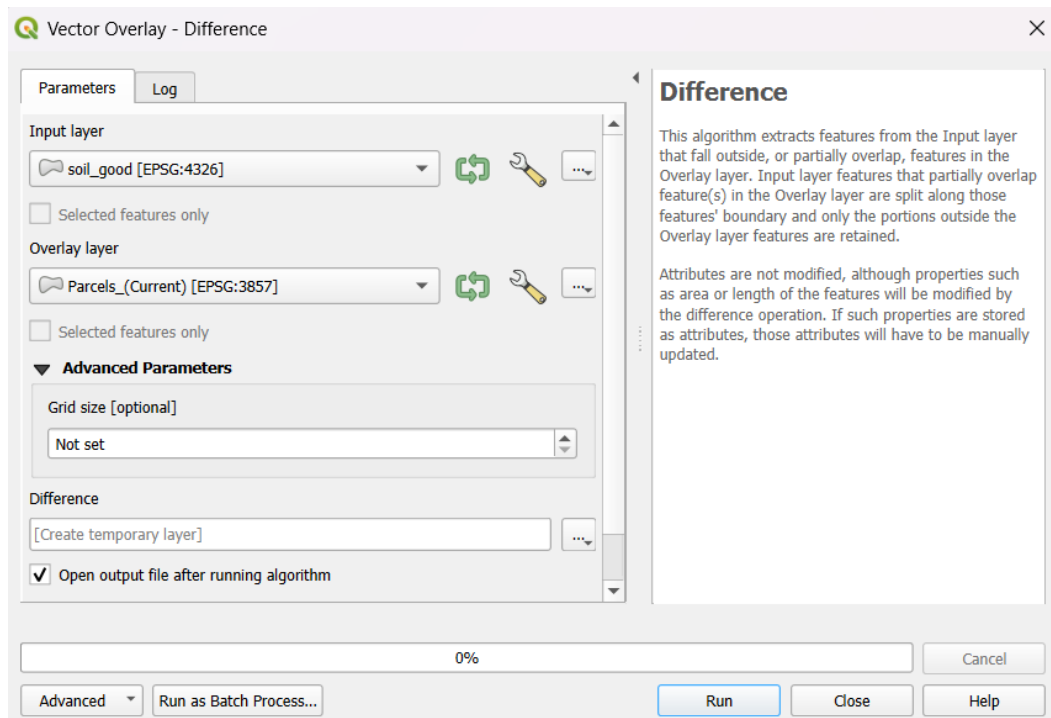
6. Categorize the soil data based on soil class (Good, Moderate, Poor):
 (Intersect_output) > properties > Symbology > Categorize > Good, Moderate, Poor



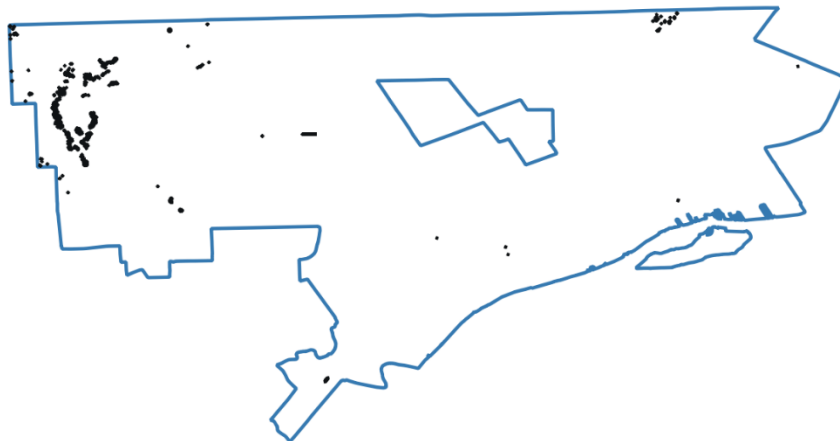
Output:



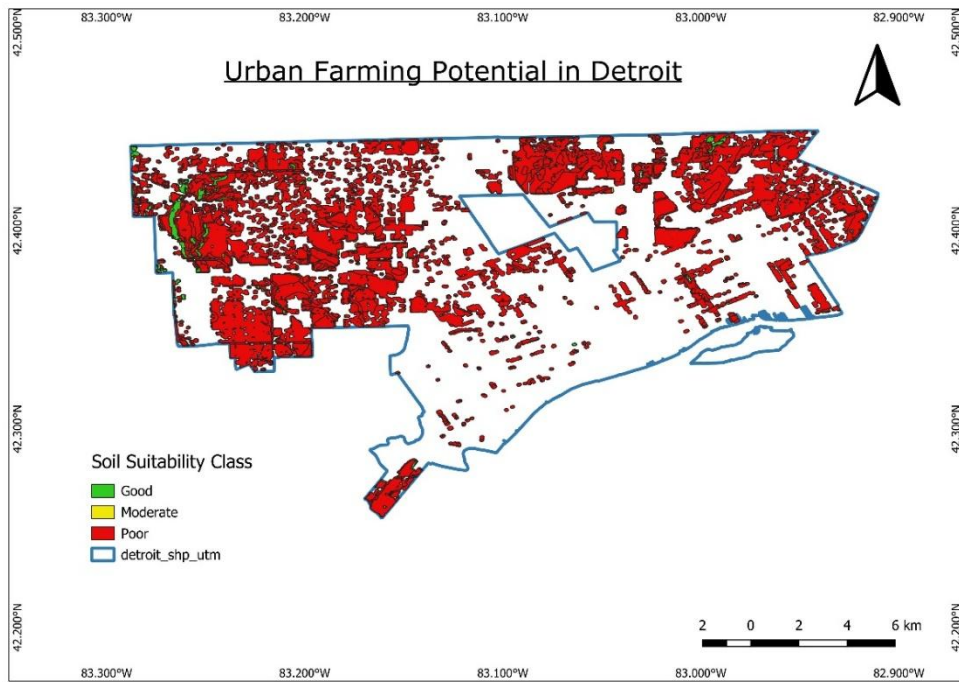
- Now we can identify the individual parcels that are suitable.
Extract only the “Good” zones from the categorized soil map
Use the Difference tool to select only the parcels under “Good” zones using difference tool
Vector> Geoprocessing tools> Difference> Input layer: (Vacant parcels)> Overlay layer: (“Good” soil zone)> Run



Output:



Final Outputs and maps:



Examples of Vacant plots that are under the “Good Zones”

Conclusion:

soil_class	Area_Ha
Poor	13360.458
Good	389.985
Moderate	58.505

Here, only less area is suitable for urban farming

Also from the analysis, around 700 vacant plots (having area > 250 sq mt) has been identified as best for urban farming.