

Practical Session

Practical Session Questions

As a project manager for Climate Change department of your city, flood will most likely occur due to continuous torrential rainfall, leading to potential dam breach (The spontaneous release of water from a barrier built to hold back the flow of water), causing rapid flooding, loss of life, damage and destruction of property and forcing evacuation of people and vital resources.

1. List the types of data you would need to generate a flood risk map for the area. Also briefly state what the specific data will be used for.
2. Generate a flood risk map from the York city satellite imagery, showing the zones with flood risks – as low, medium and high levels.

For the purpose of rapid response and other vital decision making by stakeholders for action implementation to the affected victims and infrastructure.

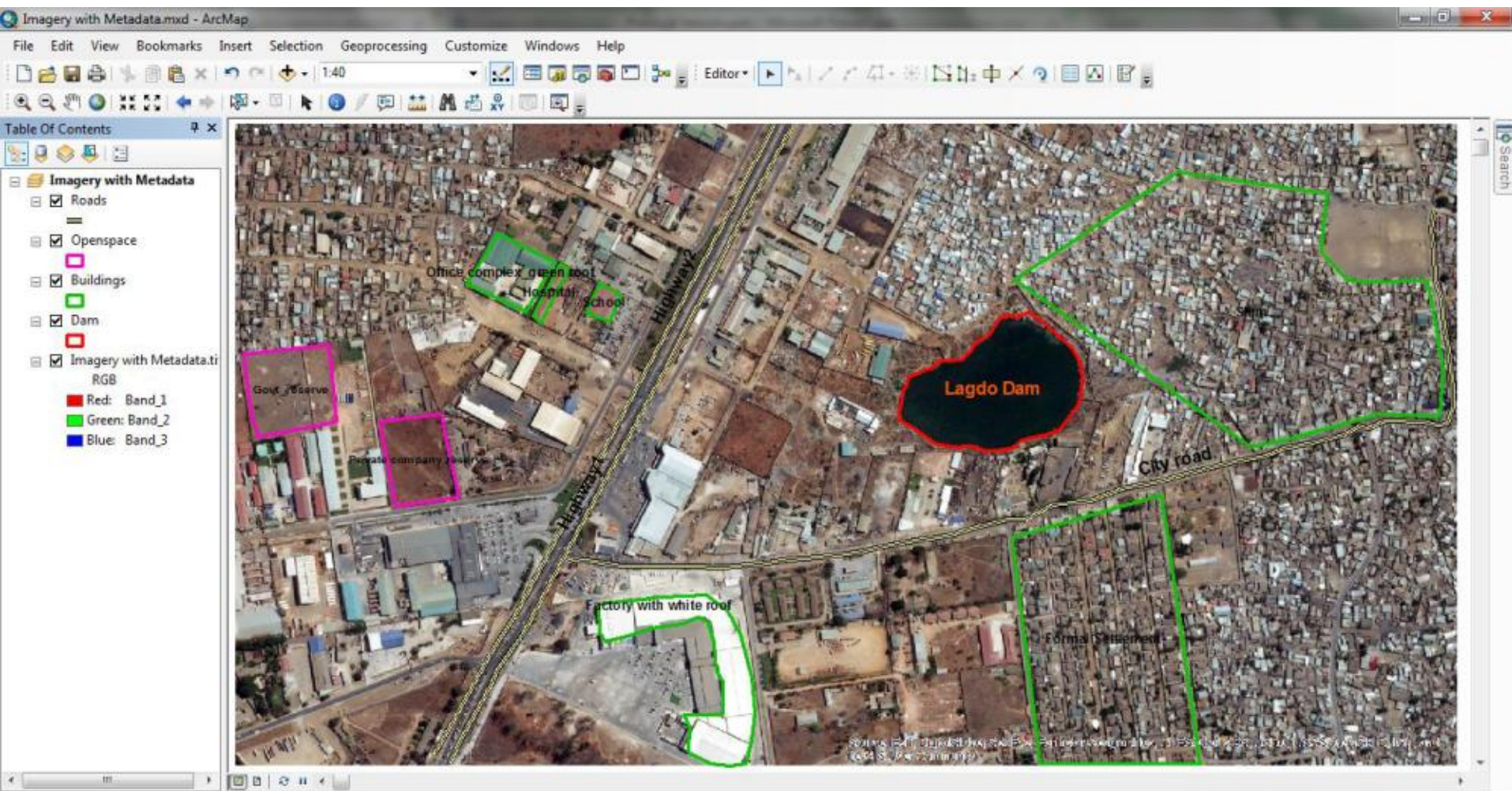
3. Assuming the breached dam, flooded different parts of the area, identify the affected roads and their levels of risk
- 4a. Estimate the number of people to be evacuated by the government from the slum and formal settlement areas separately. Do these different areas have approximate number of people living in each house? Why?
- 4b. Is the formal settlement areas exposed to the same level of risk as the slum area? Why if yes or no?
- 4c. Is the slum area liable to be more or less vulnerable to the flood than the formal settlement area? Why if more or less?

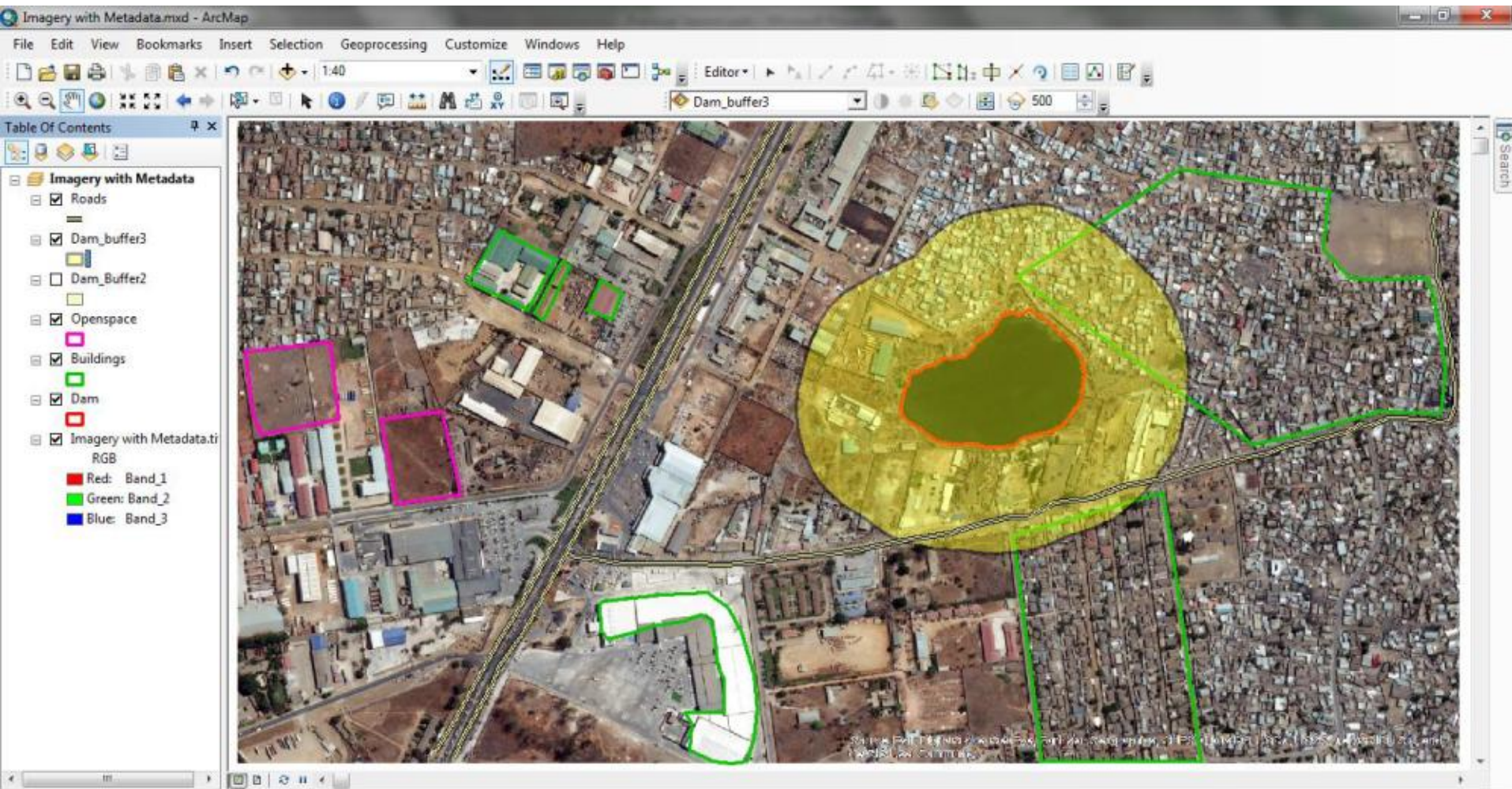
5. Identify potential open spaces enough to serve as Internally Displaced Persons (IDP) settlements which is away from the flood? State reasons why you chose these open spaces. Are they big enough to accommodate the potential flood victims?
6. Calculate the total length of the road to be mainly affected by the flood in meters.

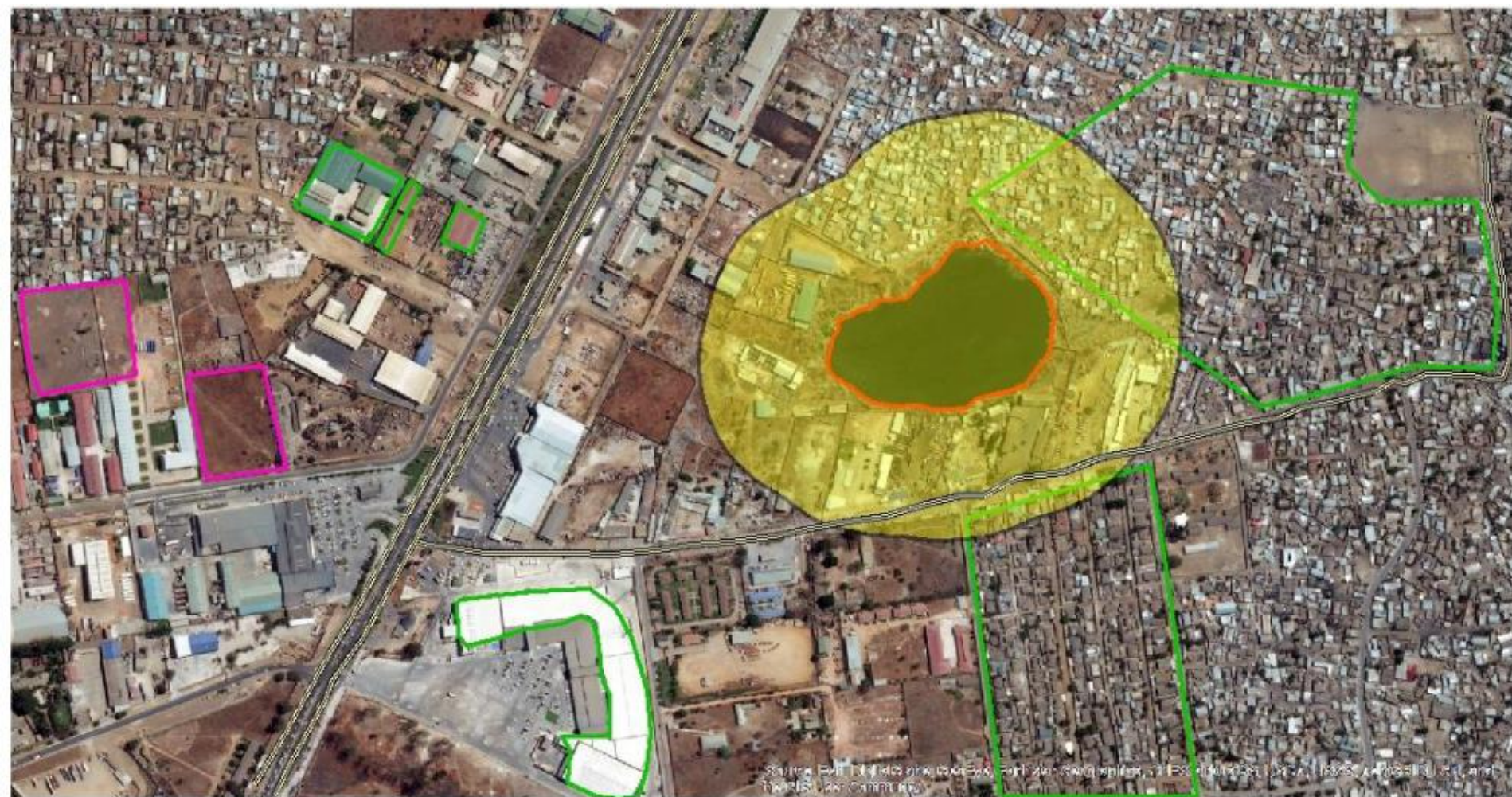
Take home assignment - Optional

6. Make an approximate budget proposal to the financial department based on the estimation made so far based on the number of houses to be affected with potential number of people living inside. Example to purchase things like tent, blanket, food, water, clothing, mobile toilets, payment of workers/volunteers, temporary clinics, medicine, etc.

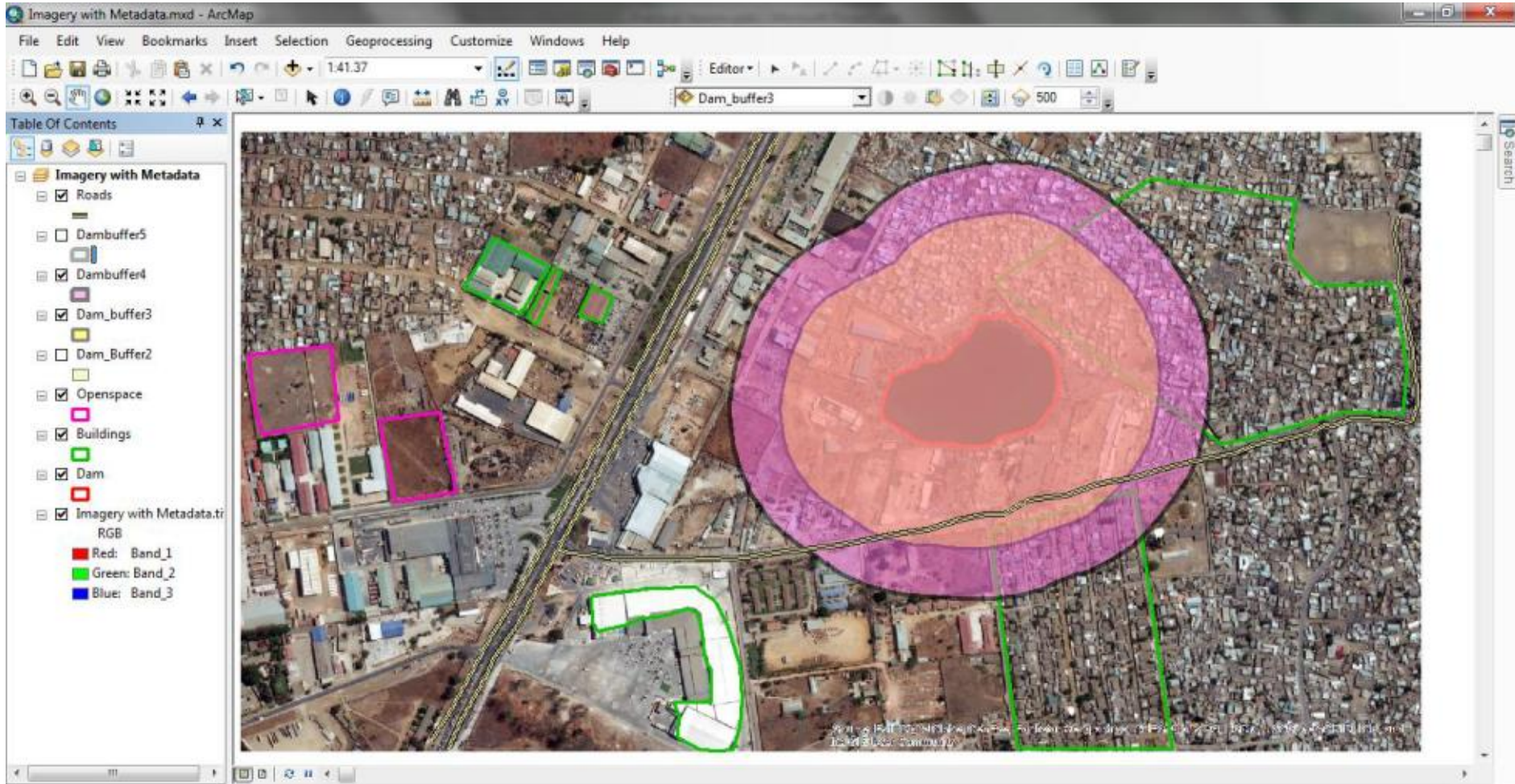
Print screens as further guide

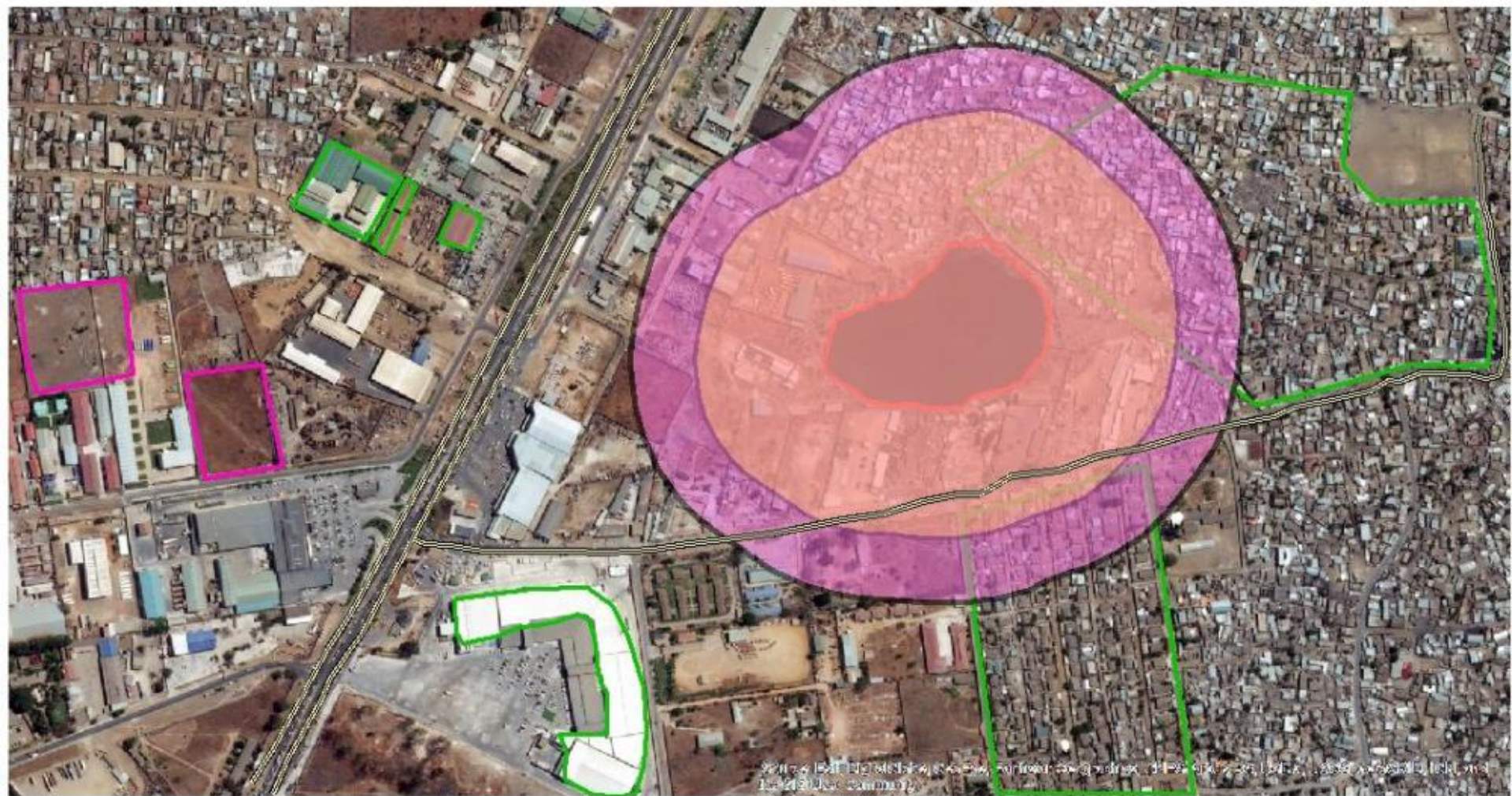






Source: Field data on the ground, Fort de la Liberté, 15th November 2017. Data collected by the author and the research team.





Source: Map of the community, showing the location of the community in the district, and the community's boundaries.

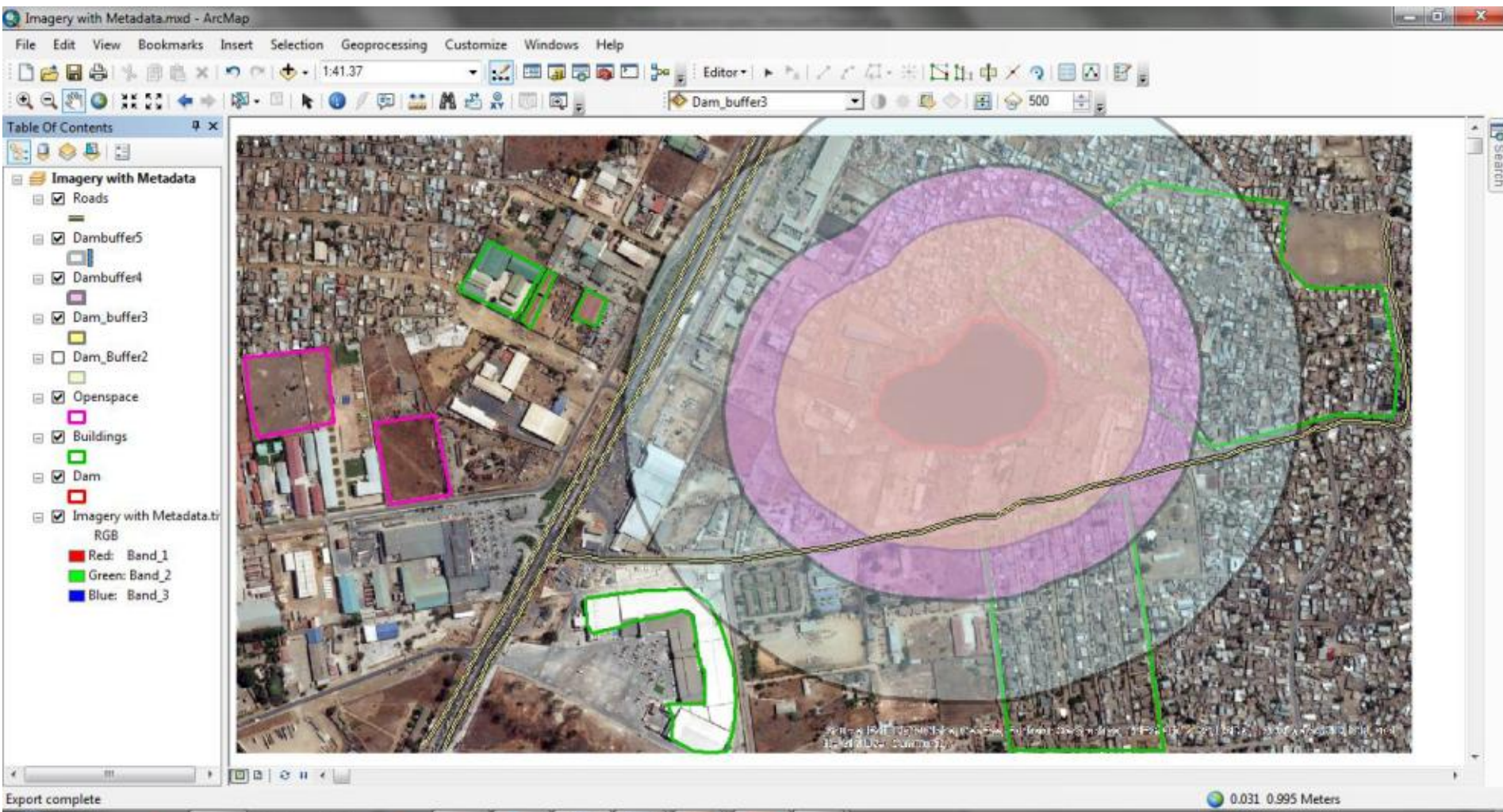
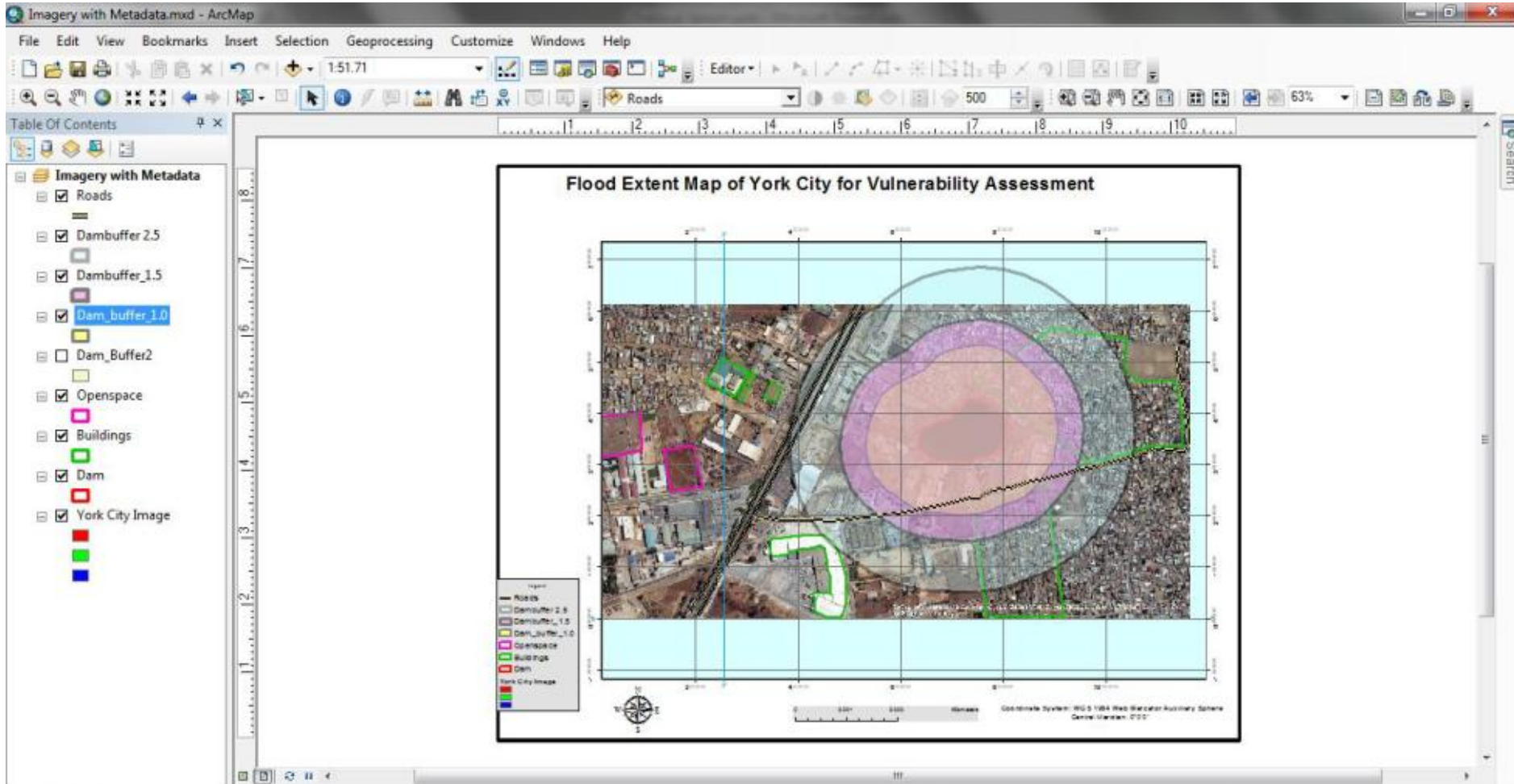
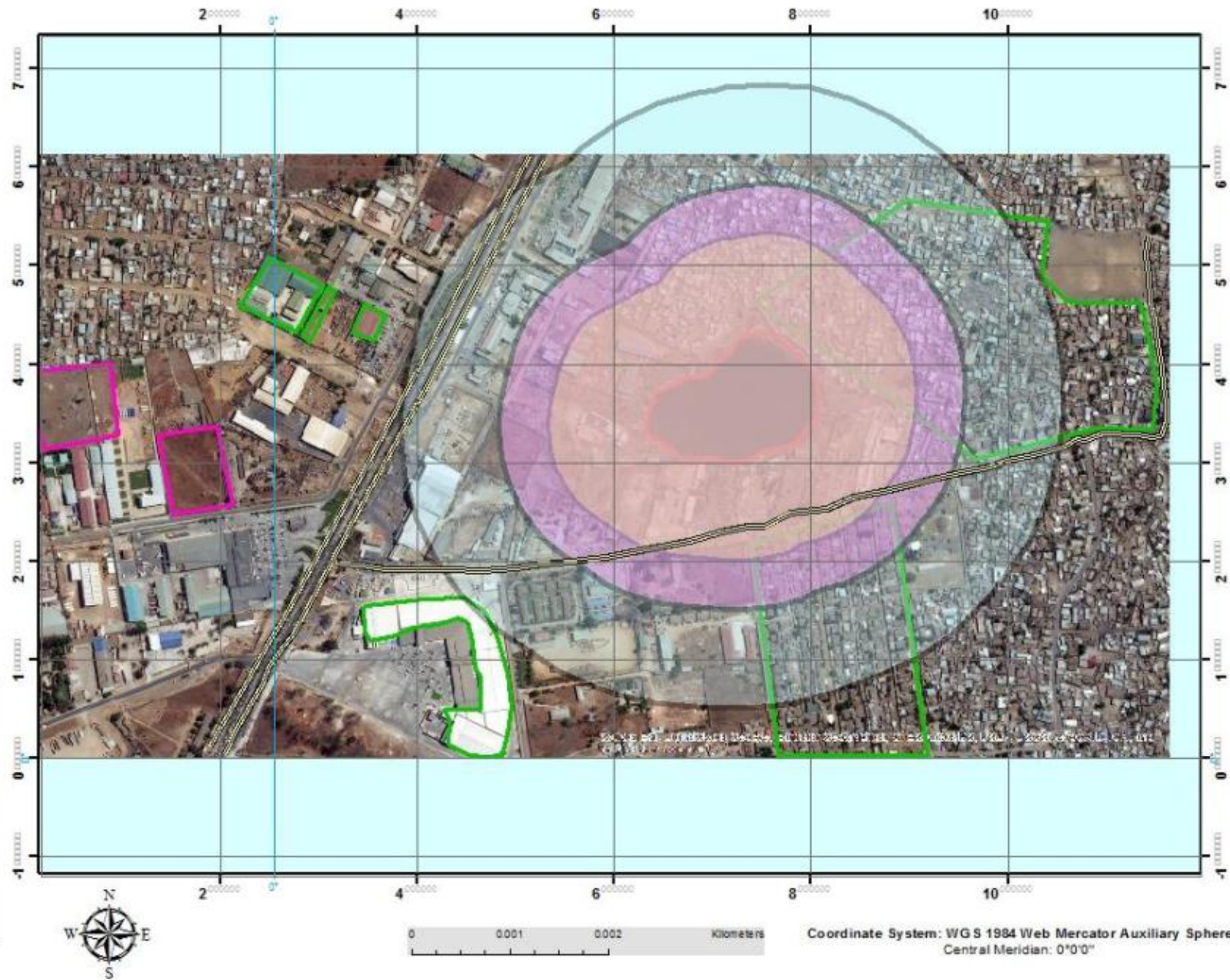




Figure 1: The map shows the location of the study area in the city of Harbin, China. The lake is the central feature, and the surrounding areas are marked with different colors to indicate different land use types.



Flood Extent Map of York City for Vulnerability Assessment



STEPS USING arcGIS

1. Load arcMap
2. Add the York image using the add data. Use the Geographic coordinate systems of world – WGS 1984 for all data layers.
3. Using the arc catalog, create a geo-database, feature dataset and feature class of line (for roads), polygons (for buildings, open spaces and dam).
4. Click on editor and start editing. Click on create features to digitize all needed shape files of lines and polygons mentioned in 3.
5. Right click on the data layer on the table of contents and open the attribute table. Click on table and add fields. Stop editing to enable the add field. And start it again to add attribute data to the created fields.

- Use the buffer tool from the arc-toolbox to generate a 1m (high risk), 1.5m (medium risk) and 2.5m (low risk) buffer respectively around the dam polygon layer.
- Using the effects layer, adjust the transparency levels of all the 3 buffer zones see through all.
- Click on view and put it in layout view and then click on insert, to add all map elements needed, such as north arrow, scale, title, e.t.c.
- Label data layers as required by right clicking on it and clicking on properties to choose desired parameters for labeling.
- Your map is ready!!!

THANK YOU