

Introduction to GIS

Lab 1: Introduction to ArcGIS Pro

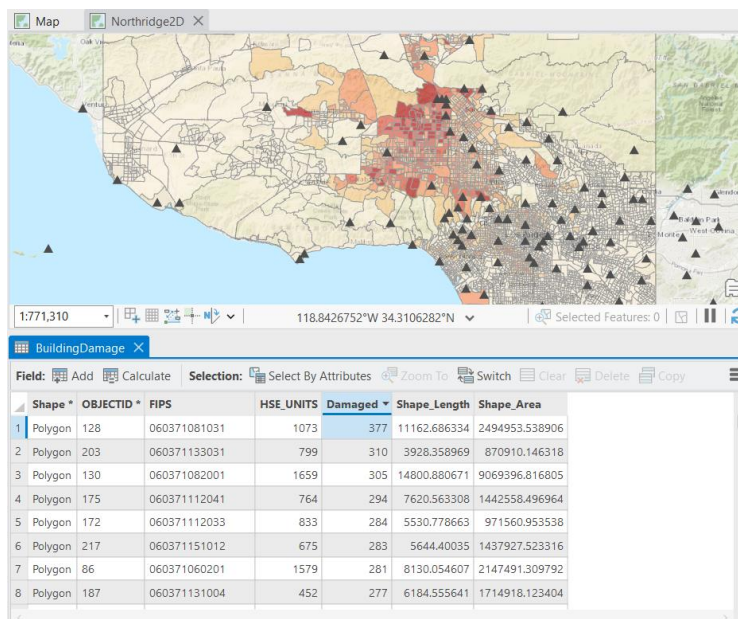
Exercises:

Part I: Explore the ArcGIS Pro interface and structure

Please follow the document of Exercise 1 and answer the following questions.

Q-1 What is the area of the most damaged region (polygon)? (2 marks)

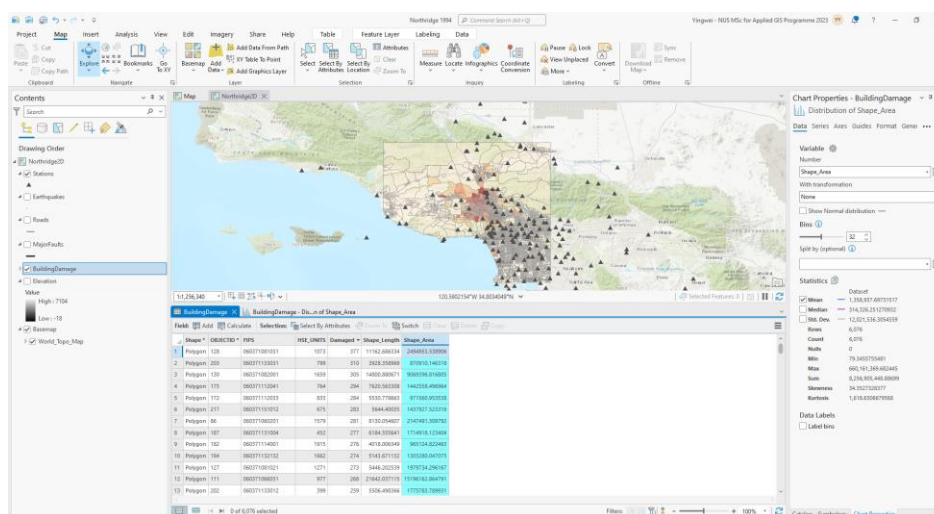
- **2494953.54 Square Meters (Unit is necessary)**



Q-2 What is the mean area of polygons in the BuildingDamage layer? (2 marks)

- **1,358,937.697 Square Meters (Unit is necessary)**

Right-click on the field Shape_Area in the attribute table of the layer “BuildingDamage”, then click **Visualize Statistics**.



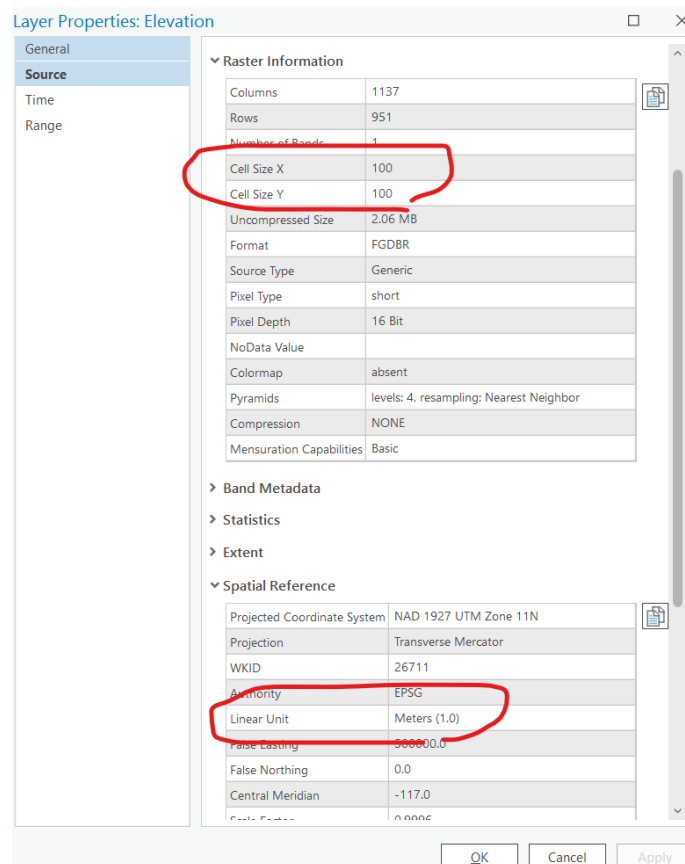
Part II: Working with map views

Please follow the document of Exercise 2 and answer the following questions.

Q-3 What is the cell size of the elevation layer? (2 marks)

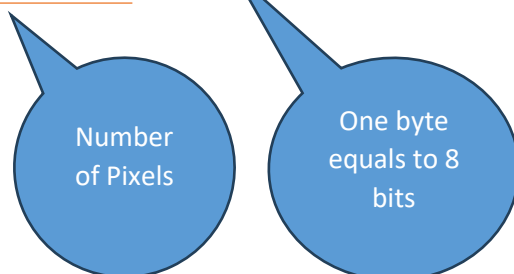
100 m × 100 m. or 10,000 square meters (Unit is necessary).

Right-click the Elevation layer and choose Properties.



Q-4 Given a DEM layer covering an area of $80,000 \times 80,000 \text{ m}^2$ with a spatial resolution of 10 m. Each pixel has a cell depth of 16 bits. What is the least data volume required (in bytes) for storing this DEM layer? (3 marks)

$$\frac{80000 \text{ m}}{10 \text{ m}} \times \frac{80000 \text{ m}}{10 \text{ m}} \times 2 \text{ Bytes} \times 1 \text{ band} = 128,000,000 \text{ bytes (Unit is necessary)}$$



Q-5 What is “.lyrx” file? (2 marks)

- “.lyrx” is a layer file or is for a layer file (must mention)
- It is more like a link/reference to a data file (it does not store the spatial data, but the path of the data) (must mention)

- It stores the properties of a layer, e.g., the symbolization and the display extent (must mention)
- Any other reasonable/relevant description...
 - <https://pro.arcgis.com/en/pro-app/latest/arcpy/mapping/layerfile.htm>
 - <https://www.loc.gov/preservation/digital/formats/fdd/fdd000626.shtml#:~:text=L YR X%20files%20are%20the%20extension,layer%20at%20the%20root%20level.>

Please send your inquiries on the marking to your respective TA who assist with the marking as shown in the table below within 7 days from today. Please Cc me.

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TANG HAO MING WHELAN	Baoyan
TANG KAI EVAN	Baoyan
TARA LINGARAJ	Baoyan
TARNOVSKAYA ALISA	Baoyan
TEO KAI WEI	Baoyan
TEO YUN YEW JARRETT	Baoyan
TEOH WEN XUAN	Baoyan
TUNG ZHI YONG, IAN	Baoyan
WAYNE WONG HOI YIN	Baoyan
WEE JING WEN	Baoyan
WEE YI XUAN	Baoyan
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WONG WEI	Baoyan
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