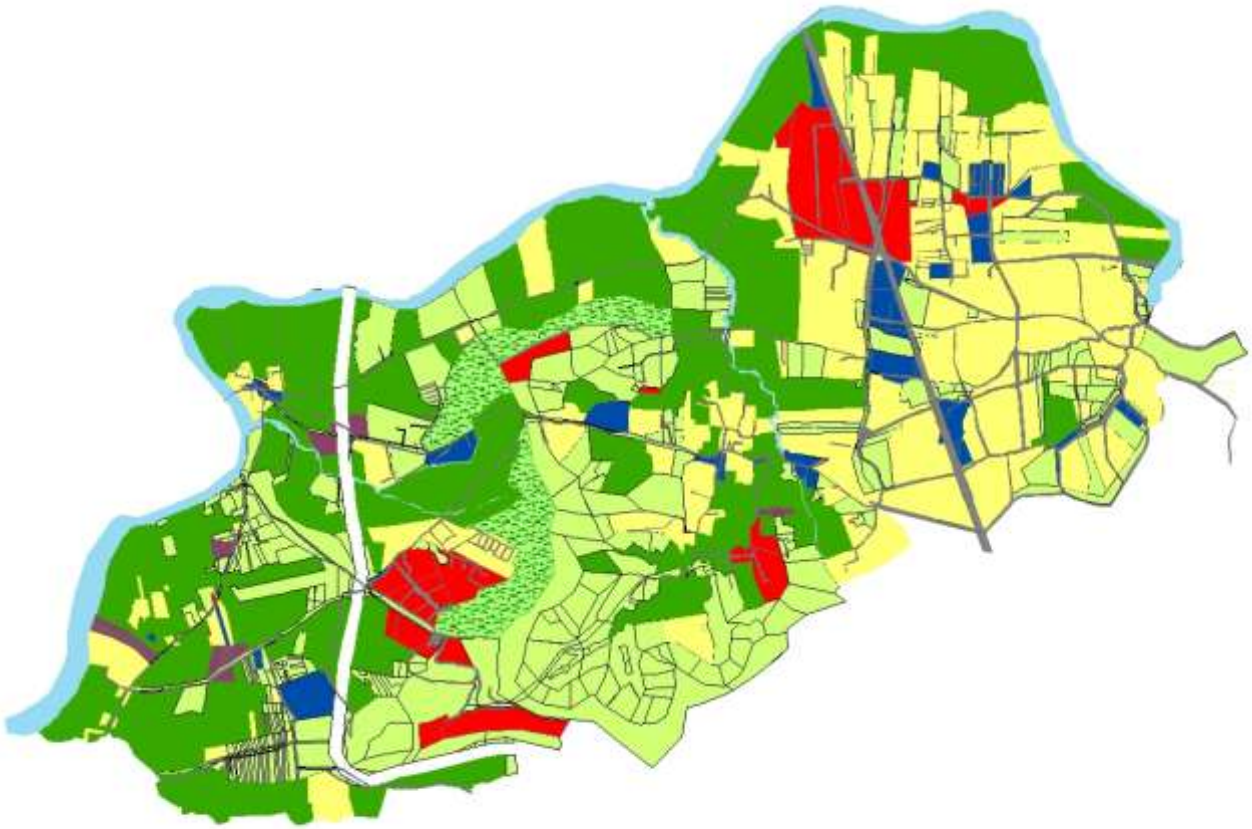


# PUNE STUDIO SITE

**Prepared by:**

**Gautamee Baviskar 16bpl008**
**Prakhar Rathi 16bpl035**

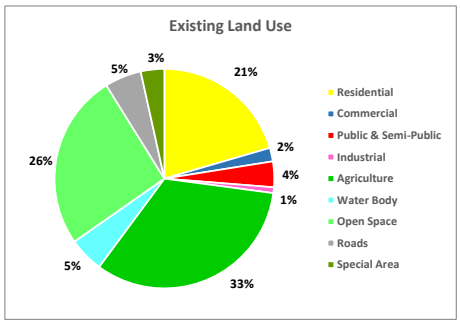
# TABLE OF CONTENT:

# SITE INTRODUCTION:

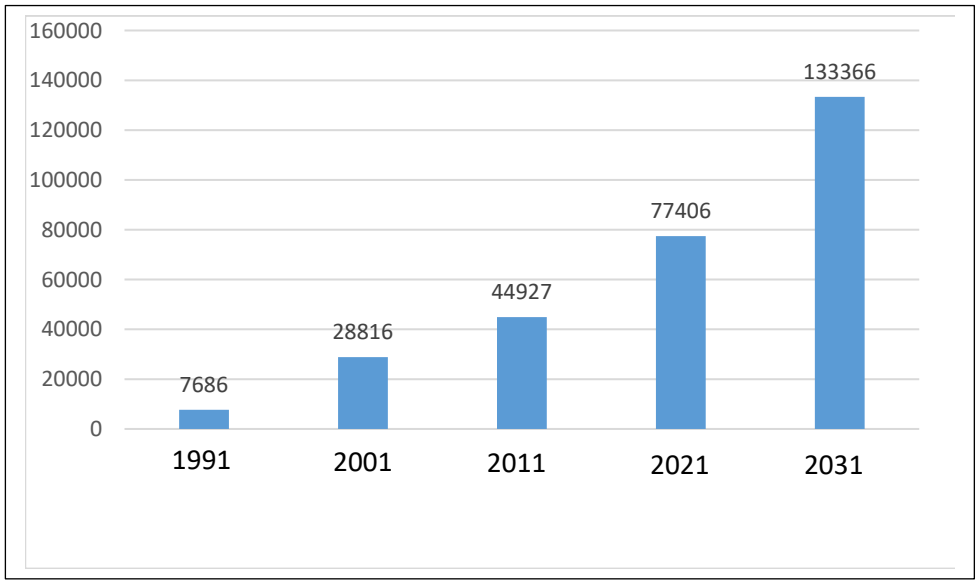
We have choose pune studio site for the GIS assignment. The total area of the site is 39 sq.km. The site comes under PMRDA and there are 5 villages under this zone; Baner, Sus, Balewadi, Nande, Mahalunge. The site is between Hinjewadi InfoTech Park and Aundh. Major Natural features: mula mutha river and forest area


**Existing Land Use of the Study Area**

| S.No. | Land Use | Area | Area | Area |
|---|---|---|---|---|
| | | sq.m | sq.km | % |
| 1 | Residential | 81,69,034 | 8.2 | 20.5% |
| 2 | Commercial | 7,96,557 | 0.8 | 2.0% |
| 3 | Public & Semi-Public | 15,08,218 | 1.5 | 3.8% |
| 4 | Industrial | 3,38,682 | 0.3 | 0.8% |
| 5 | Agriculture | 1,31,64,517 | 13.2 | 33.0% |
| 6 | Water Body | 20,51,177 | 2.1 | 5.1% |
| 7 | Open Space | 1,03,15,787 | 10.3 | 25.9% |
| 8 | Roads | 21,48,885 | 2.1 | 5.4% |
| 9 | Special Area | 13,81,956 | 1.4 | 3.5% |
| | **Total** | **3,98,74,813** | **39.9** | **100.0%** |




## Population:



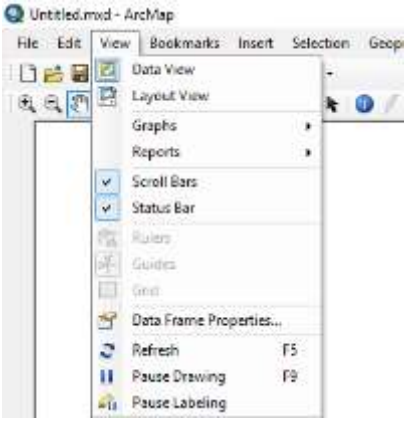
# PROCESS OF MAP PREPARATION IN ArcGIS:

## GEOREFERENCING

Georeferencing is the process of aligning imagery (maps, air photos, etc.) with spatial data such as point, lines or polygons (for example, roads and water bodies).

**Step 1**: Insert image picture or drag the image.

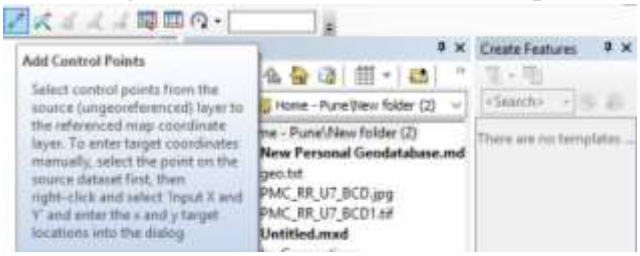
**Step 2**: Open the data frame properties dialog go to view> Data frame properties.




Projection system:
WGS (WORLD GEODETIC SYSTEM): WGS 1984
UTM (UNIVERSAL TRANSVERSE MERCARATOR)
Pune comes under UTM 43N

**Step3**: Set the coordinate system for the map document by selecting an option from the Select a coordinate system section of the dialog.

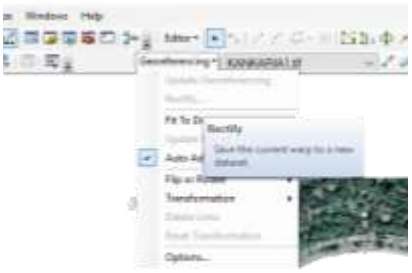
**Step 4:** open the Georeferencing toolbar
**Customize > Toolbars > Georeferencing** and dock it on the ArcMap interface.

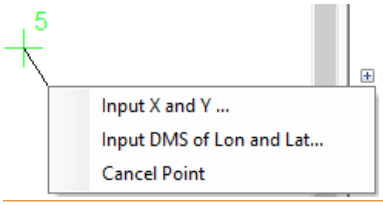


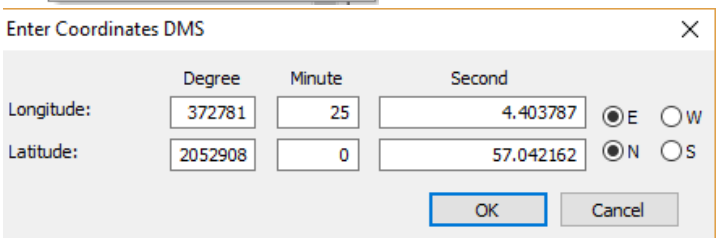

**Step5:** Select the Add Control Points tool from the Georeferencing toolbar.

**Step 6:** prompt you to enter the coordinates corresponding to your chosen location. X denotes longitude, and Y denotes latitude. Minimum of 5-6 points. A

general rule to follow is to try to locate a control point near the centre and four corners of the image.

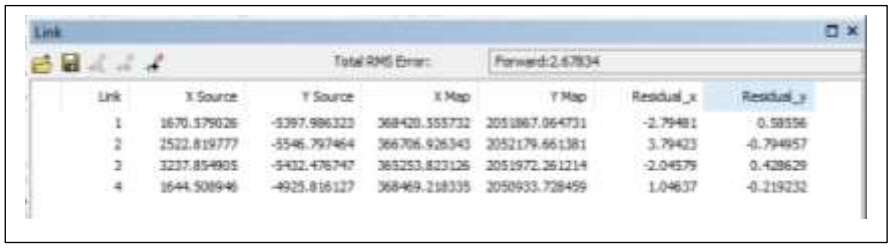





**Step 7:**

View the **Root Mean Square (RMS)** error measures the accuracy of control points and can be used to find and delete error values by opening the Link Table  from the Georeferencing toolbar.



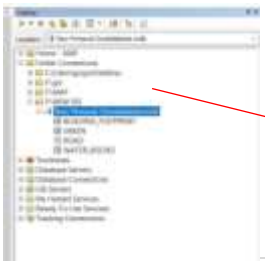

Go **to Georeferencing> Rectify** to convert the image into tiff format and to save the points. So, with this we don't need georeferenced it again whenever we open the file.

# TO CREATE FEATURE CLASS

**Step1:** Go to CataLog > right click on home> new > personal geodatabase.

**Step2:** Go to CataLog > right click on home> new > create new feature class.

While you are digitizing, it is a good idea to periodically save your edits.



After completing the polygon **right click> finish sketch or press F2 or double click.**

# TO CREATE ATTRIBUTE TABLES

A database or tabular file containing information about a set of geographic features, usually arranged so that each row represents a feature and each column represents one feature attribute.
Open layer's attribute table
Shortcut: CTRL +double click layer name or CTRL+ T

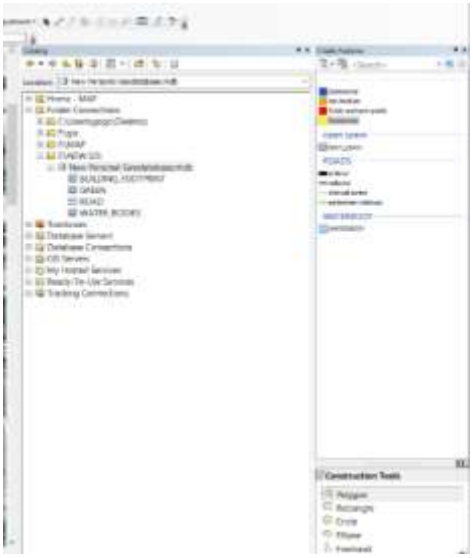
## Editing a value in a table cell

Click the **Editor** menu on the **Editor** toolbar and click **Start Editing**.
Right-click the table or layer in the **table of contents** and choose **Open Attribute Table**.
Click the cell containing the attribute value you want to change.
Type the values and press ENTER. The table is updated.

To Label the features: right click on the layer> Label feature

To edit the layer

Right click> Layer properties.



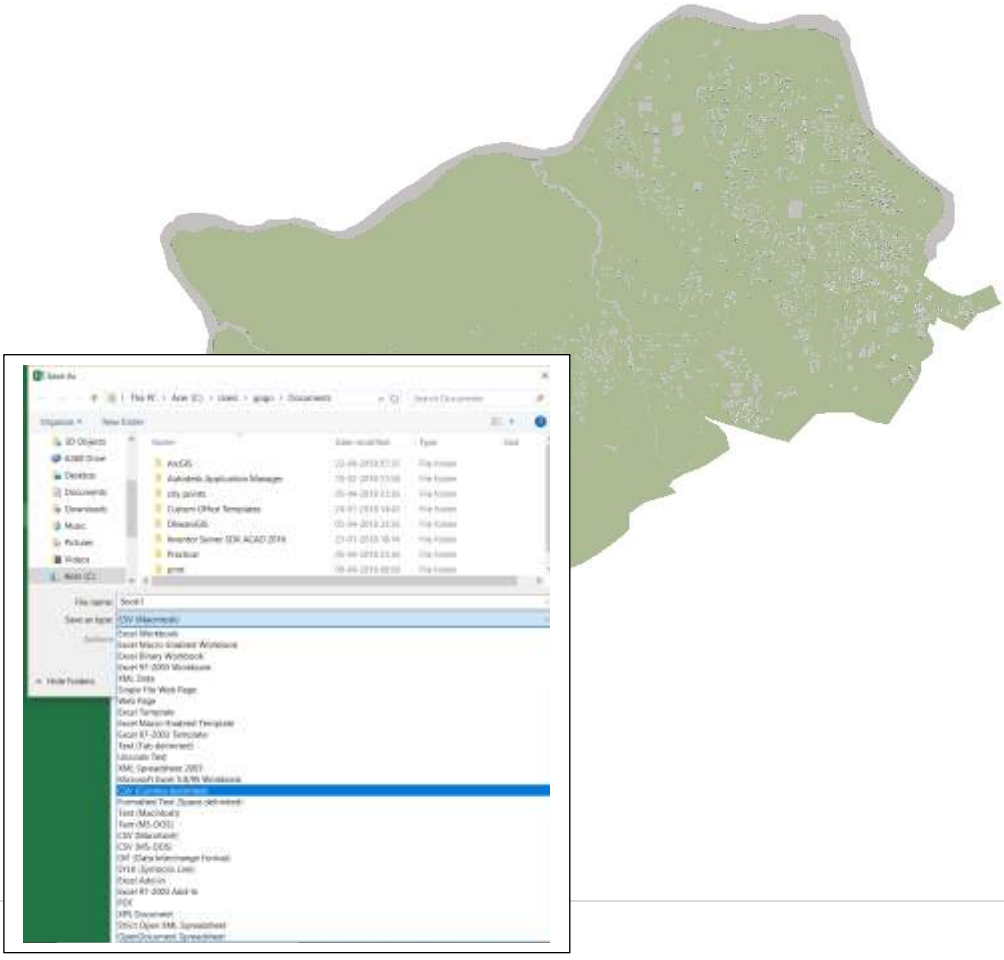
Table

Export_Output_6

| OBJECTID_12 * | Shape * | OBJECTID | SHAPE_Leng | OBJECTID_1 | Entity | Layer | Color | Linetype | Elevation | LineWt | RefName | Angle | Distance | Shape_Length | Shape_Area | height |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2112 | Polygon | 1214 | 26.7606 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 68.484018 | 26.7606 | 60.890791 | 15 |
| 2113 | Polygon | 1216 | 35.695428 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 74.250425 | 35.695428 | 77.991546 | 15 |
| 2114 | Polygon | 1218 | 59.853411 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 63.792588 | 59.853411 | 189.323168 | 15 |
| 2115 | Polygon | 1222 | 36.477403 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 79.990435 | 36.477403 | 79.85945 | 15 |
| 2116 | Polygon | 1223 | 32.0102 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 68.2925 | 32.0102 | 52.966886 | 15 |
| 2117 | Polygon | 1225 | 34.7916 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 75.12421 | 34.7916 | 60.369274 | 15 |
| 2118 | Polygon | 1227 | 31.8882 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 75.951159 | 31.8882 | 58.296879 | 15 |
| 2119 | Polygon | 1233 | 62.360874 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 99.484968 | 62.360874 | 135.166161 | 15 |
| 2120 | Polygon | 1248 | 31.515 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 86.58174 | 31.515 | 55.53057 | 15 |
| 2121 | Polygon | 1241 | 38.144941 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 83.585087 | 38.144941 | 52.842012 | 15 |
| 2122 | Polygon | 1248 | 36.493288 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 91.999991 | 36.493288 | 82.889471 | 15 |
| 2123 | Polygon | 1247 | 32.569365 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 88.507132 | 32.569365 | 60.80916 | 15 |
| 2124 | Polygon | 1251 | 44.921438 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 80.161557 | 44.921438 | 102.731675 | 15 |
| 2125 | Polygon | 1264 | 21.284012 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 88.7508 | 21.284012 | 27.696779 | 15 |
| 2126 | Polygon | 1257 | 33.2648 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 86.803123 | 33.2648 | 65.411861 | 15 |
| 2127 | Polygon | 1261 | 37.60418 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 104.789638 | 37.60418 | 87.476632 | 15 |
| 2128 | Polygon | 1264 | 59.755118 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 113.539682 | 59.755118 | 139.854691 | 15 |
| 2129 | Polygon | 1272 | 30.2692 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 94.398917 | 30.2692 | 48.6068 | 15 |
| 2130 | Polygon | 1275 | 34.120989 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 94.724177 | 34.120989 | 58.989434 | 15 |
| 2131 | Polygon | 1277 | 38.473816 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 96.110432 | 38.473816 | 80.65849 | 15 |
| 2132 | Polygon | 1278 | 62.373671 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 88.437033 | 62.373671 | 148.779484 | 15 |
| 2133 | Polygon | 1268 | 38.473816 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 106.908392 | 38.473816 | 80.65849 | 15 |
| 2134 | Polygon | 1254 | 44.376314 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 108.261188 | 44.376314 | 89.862493 | 15 |
| 2135 | Polygon | 1257 | 55.259652 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 123.991257 | 55.259652 | 174.89727 | 15 |
| 2136 | Polygon | 1267 | 51.637354 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 121.1261 | 51.637354 | 161.741408 | 15 |
| 2137 | Polygon | 1318 | 42.445878 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 136.357787 | 42.445878 | 99.831784 | 15 |
| 2138 | Polygon | 1318 | 71.293066 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 149.223164 | 71.293066 | 181.144117 | 15 |
| 2139 | Polygon | 1328 | 47.157878 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 116.418563 | 47.157878 | 138.991643 | 15 |
| 2140 | Polygon | 1333 | 61.92953 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 136.691438 | 61.929529 | 139.502667 | 15 |
| 2141 | Polygon | 1334 | 71.277922 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 166.696266 | 71.277922 | 216.289242 | 15 |
| 2142 | Polygon | 1335 | 32.884586 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 149.047364 | 32.884586 | 39.214684 | 15 |
| 2143 | Polygon | 1344 | 61.763445 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 157.385638 | 61.763445 | 191.310507 | 15 |
| 2144 | Polygon | 1346 | 61.547744 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 130.471272 | 61.547744 | 177.334691 | 15 |
| 2145 | Polygon | 1348 | 64.065553 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 131.226851 | 64.865553 | 254.865371 | 15 |
| 2146 | Polygon | 1351 | 42.582541 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 161.505237 | 42.582541 | 100.652505 | 15 |
| 2147 | Polygon | 1368 | 32.137015 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 168.655042 | 32.137015 | 41.75661 | 15 |
| 2148 | Polygon | 1362 | 28.745403 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 162.679148 | 28.745403 | 38.479874 | 15 |
| 2149 | Polygon | 1366 | 45.601085 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 163.086732 | 45.601085 | 99.622533 | 15 |
| 2150 | Polygon | 1381 | 45.601085 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 159.980584 | 45.601085 | 99.622533 | 15 |
| 2151 | Polygon | 1383 | 52.648067 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 155.284671 | 52.648067 | 146.671636 | 15 |
| 2152 | Polygon | 1398 | 35.05845 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 167.442514 | 35.05845 | 66.759861 | 15 |
| 2153 | Polygon | 1403 | 38.764448 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 167.962691 | 38.764448 | 88.965365 | 15 |
| 2154 | Polygon | 1404 | 59.714245 | 4385 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 167.318615 | 59.714245 | 159.59263 | 15 |
| 2316 | Polygon | 695 | 93.89667 | 4529 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 0 | 93.89667 | 546.19693 | 15 |
| 2317 | Polygon | 723 | 87.518799 | 4540 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 0 | 87.518799 | 476.882871 | 15 |
| 2501 | Polygon | 2678 | 245.776632 | 343 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 161.63783 | 245.776632 | 1417.864707 | 15 |
| 2502 | Polygon | 2743 | 114.499218 | 343 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 218.592561 | 114.499218 | 810.316971 | 15 |
| 2503 | Polygon | 2758 | 232.978345 | 343 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 19.433748 | 232.978345 | 1890.896868 | 15 |
| 2504 | Polygon | 2757 | 64.8336 | 343 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 136.297533 | 64.8336 | 261.641833 | 15 |
| 2505 | Polygon | 2784 | 232.620841 | 343 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 0 | 232.620841 | 2255.473695 | 15 |
| 2518 | Polygon | 3412 | 93.560886 | 881 | Hatch | g+3-g+5 | 79 | Continuous | 0 | 25 | | 0 | 317.872283 | 93.560886 | 530.269611 | 15 |

(0 out of 2000 Selected)

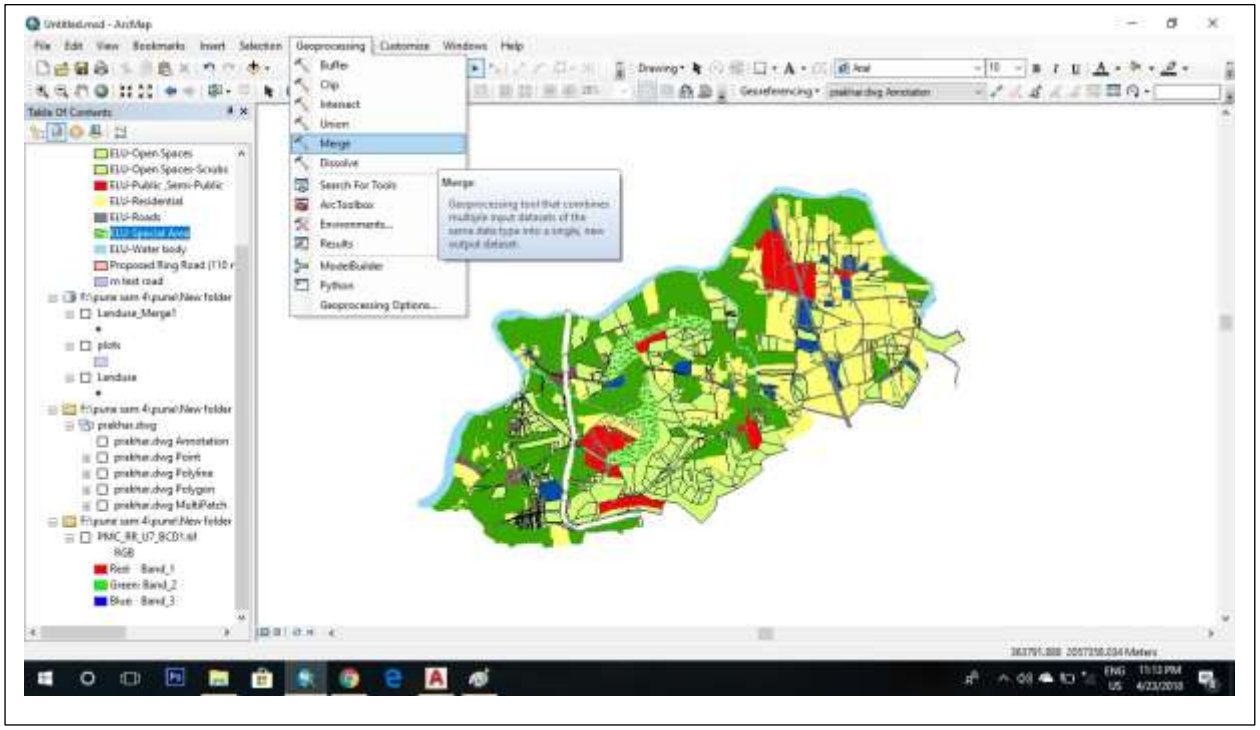
Export_Output_6



# MERGE:

Combines multiple input datasets of the same data type into a single, new output dataset. This tool can combine point, line, or polygon feature classes or tables. Use the Append tool to combine input datasets with an existing dataset. All input feature classes must be of the same geometry type. For example, several point feature classes can be merged, but a line feature class cannot be merged with a polygon feature class.

**Geoprocessing> Merge**



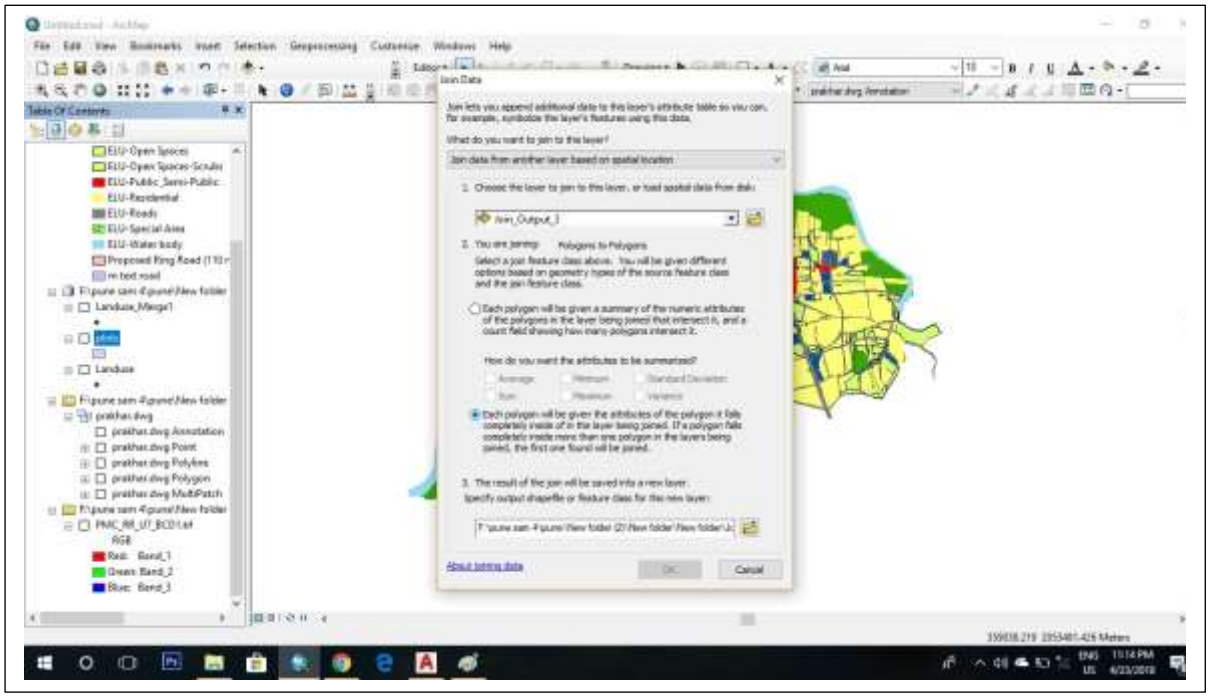

# JOIN:

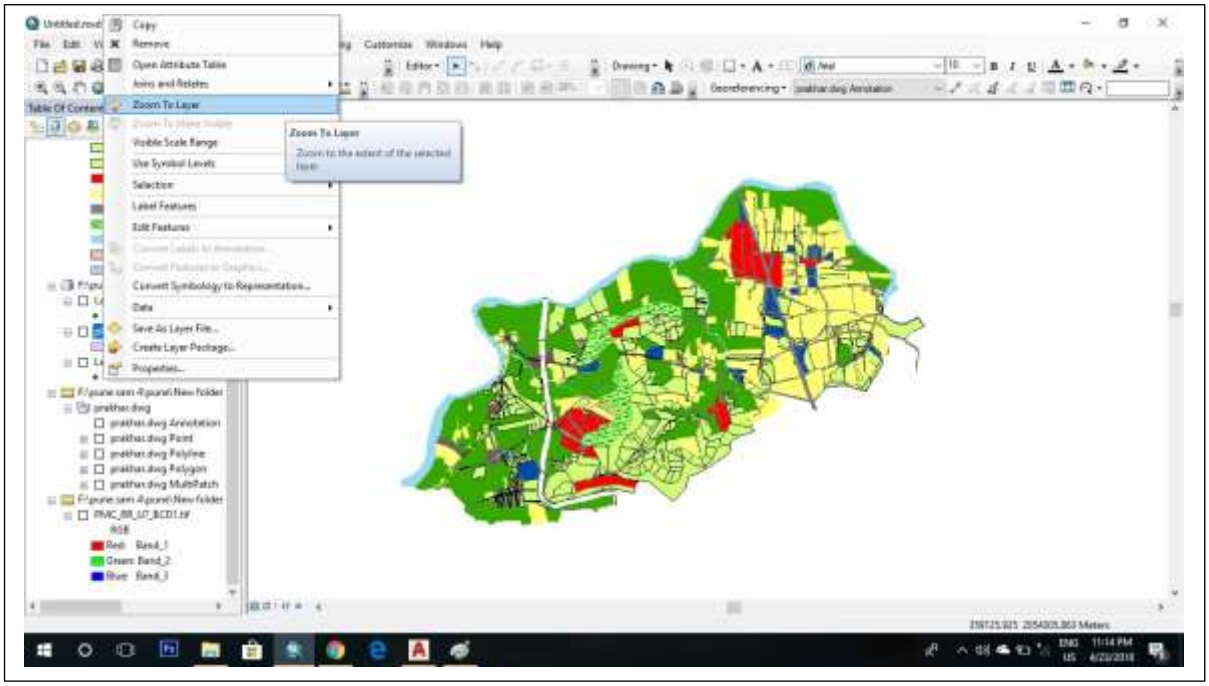
## Spatial join

Joins attributes from one feature to another based on the spatial relationship. The target features and the joined attributes from the join features are written to the output feature class.

1. Right-click the layer to which you want to join attributes, point to **Joins and Relates**, then click **Join**.
2. You can also click the **Table Options** button on an open table window to access the **Join Data** dialog box.
3. Click on **What do you want to join to this layer?** Drop-down arrow and click **Join data from another layer based on spatial location**.
4. Click the **Layer** drop-down arrow and click the name of the layer whose attributes you want to join.

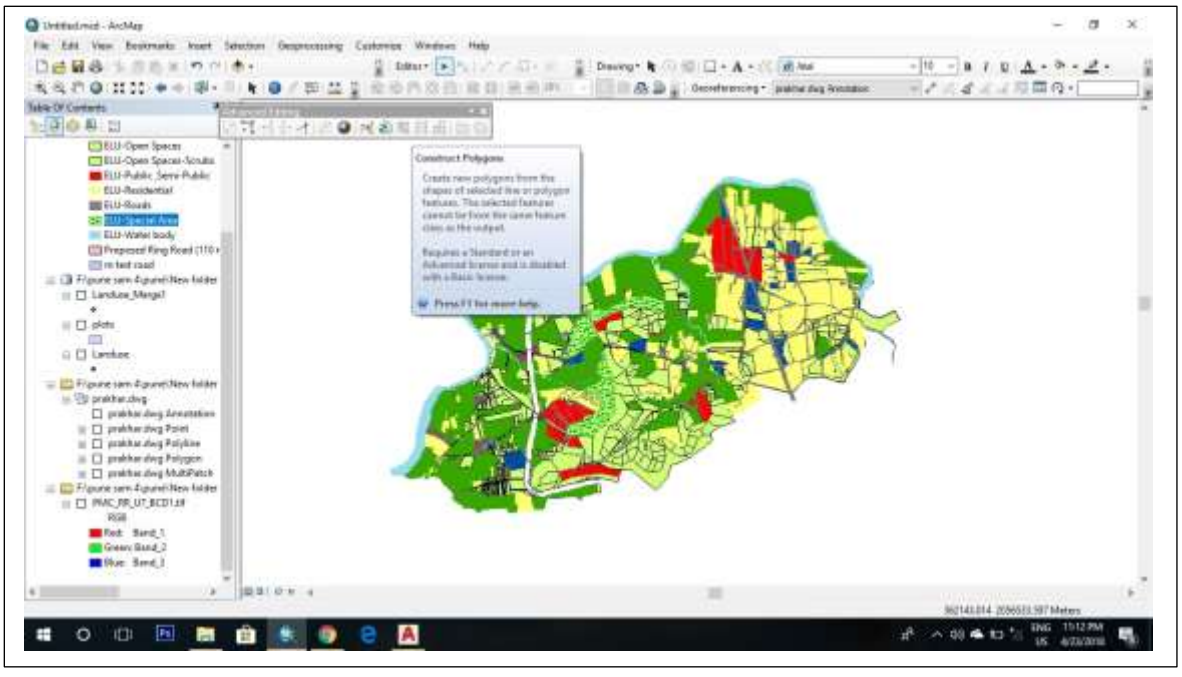
5. If the layer is not currently part of the map, click the **Browse** button to search for it on disk.
6. Each point is given all the attributes of the line that is closest to it and a distance field showing how close that line is.
7. Type the name of the output shapefile or feature class.
8. Click **OK**.
9. A new layer is added to the map.





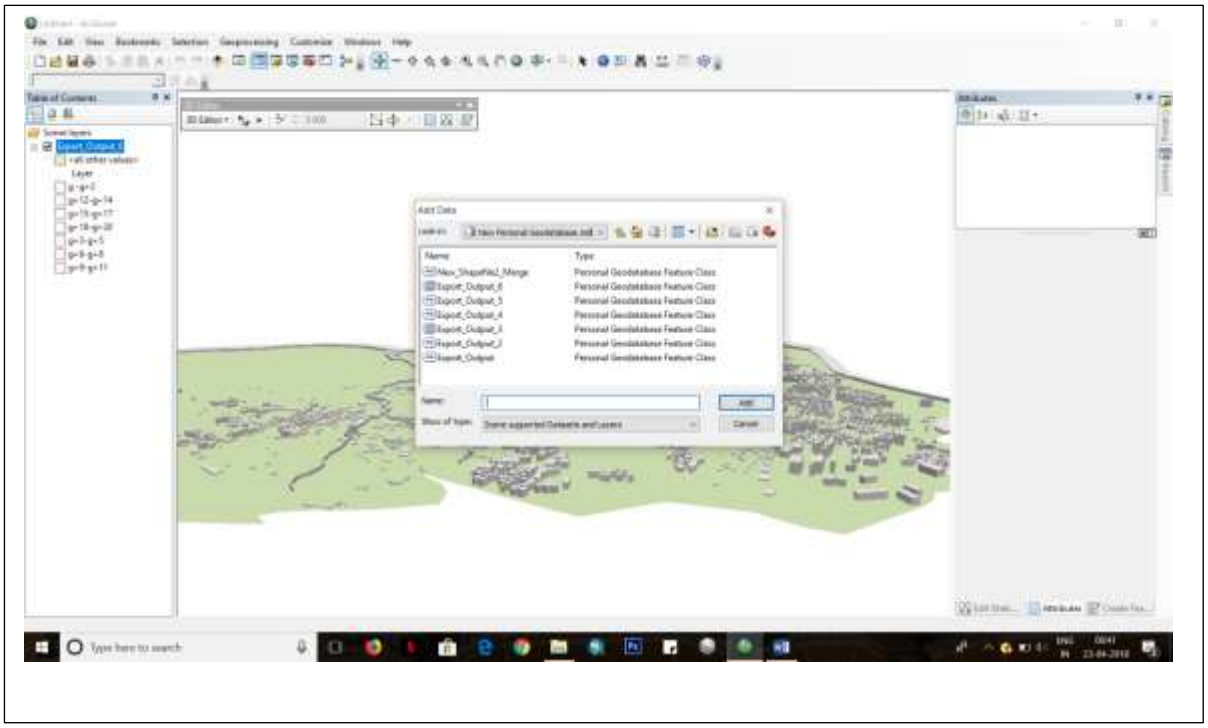
## ADVANCE EDITING:

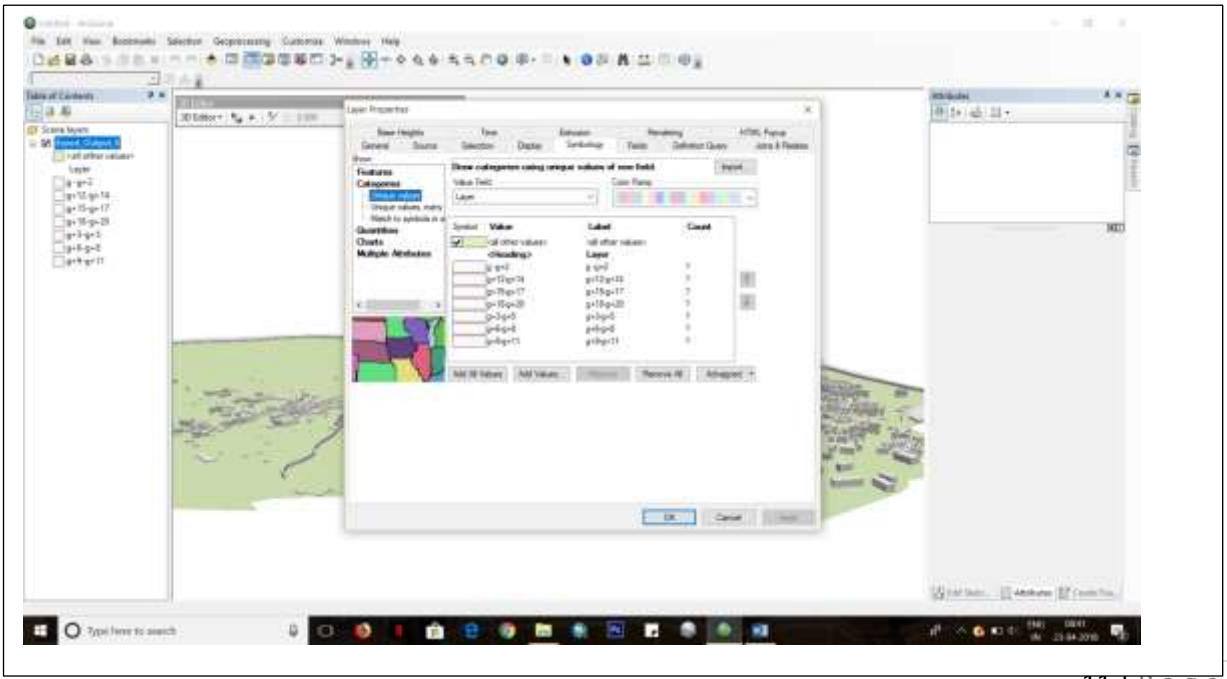
1. Click the **Edit** tool ▸ on the **Editor** Toolbar.
2. Select the features you want to use to construct new polygons.
3. Click **Construct Polygons** on the **Advanced Editing** toolbar.
4. Choose the target in which the new feature will be created.
    - If you have feature templates for the layers in your map, click the **Template** button and click the template to use to create the new feature. You can also double-click the preview of the template to choose a different template.
    - If you do not have feature templates, click the layer in which to create the feature.
5. Optionally, check **Use existing features in target** to create new polygons considering the boundaries of existing polygons as input geometry.
6. Click **OK**. The new features are created in the target feature class

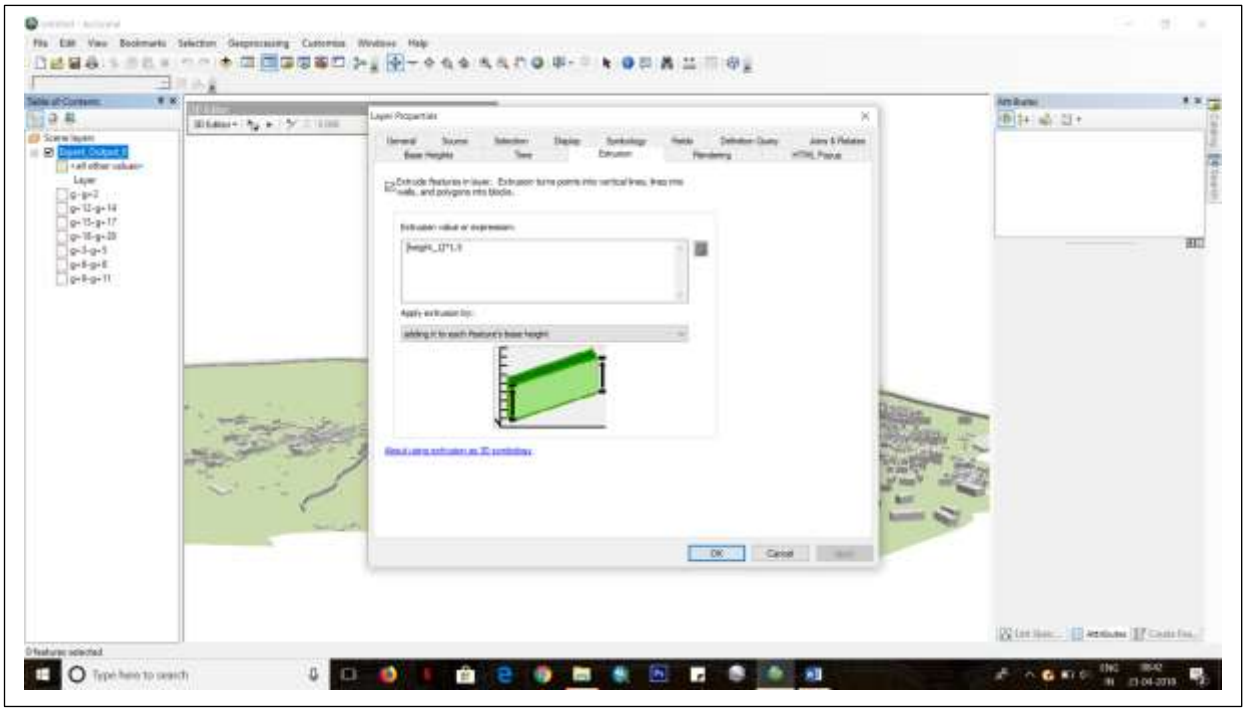


# ARCSCENE:

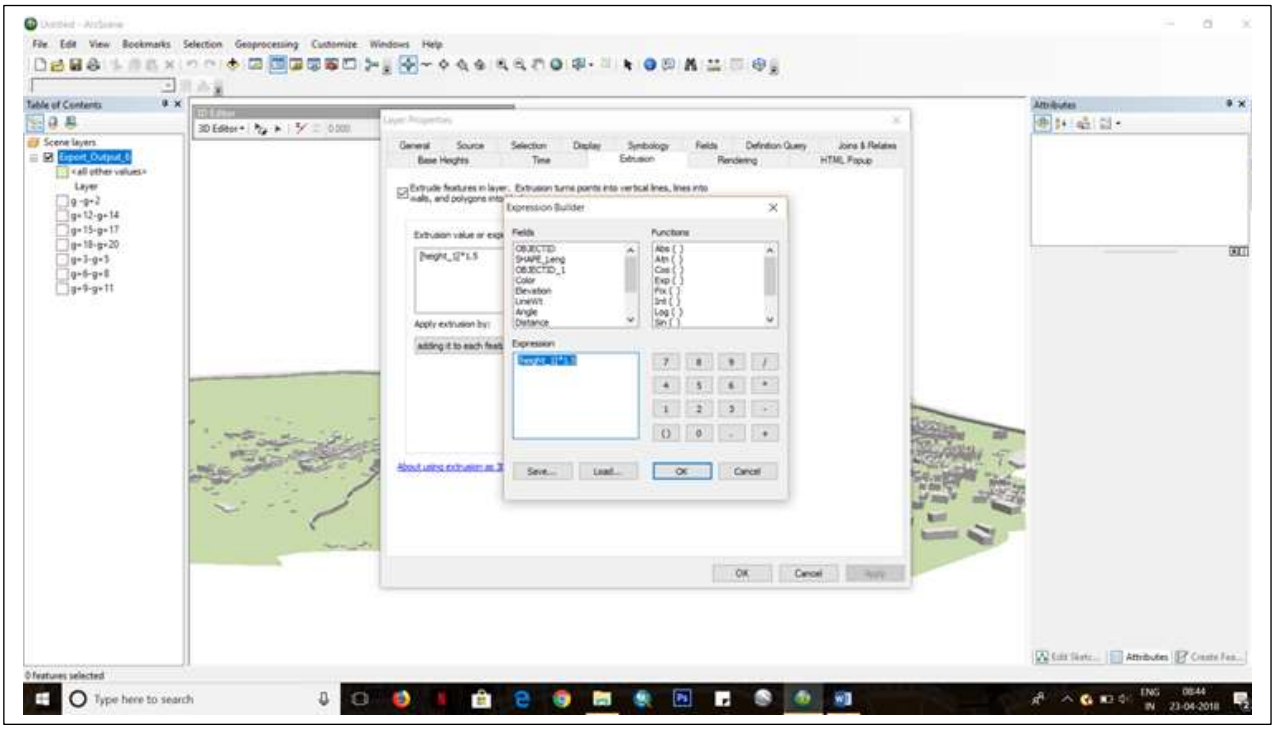
Right-click the layer in the table of contents and click **Properties**.
Click the **Extrusion** tab.
Check the box to extrude the features in the layer.
Click the **Expression Builder** button.
Double-click the attribute in the **Fields** list to populate the Expression box and click OK.



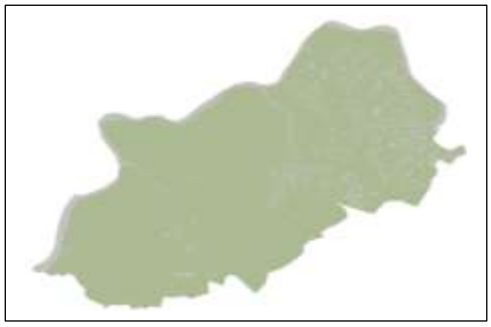


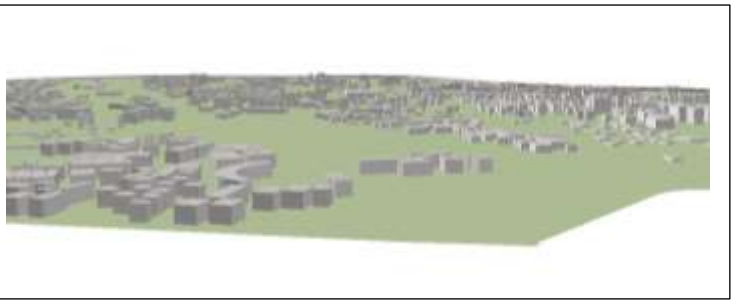


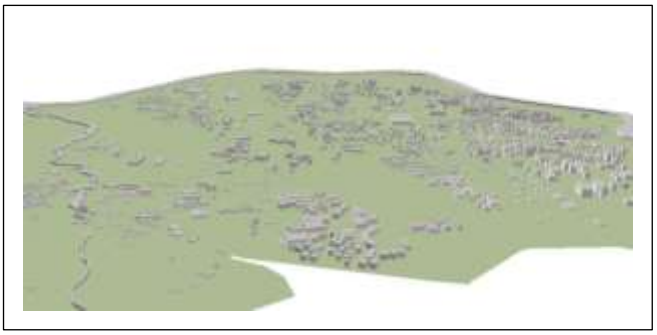
Note: For the extrusion the data type must not be in string type. It can be in double or any other numeric data type



# Final output of 3d model in arc scene

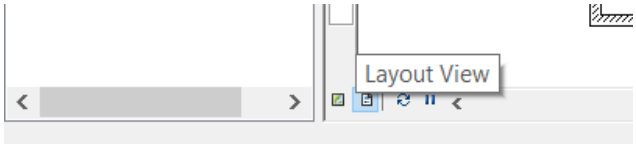


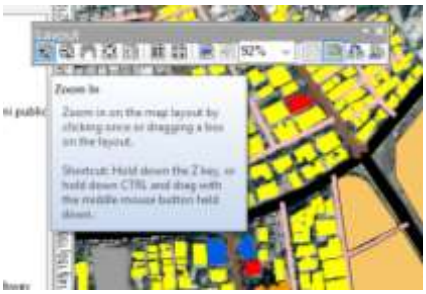




# LAYOUT :

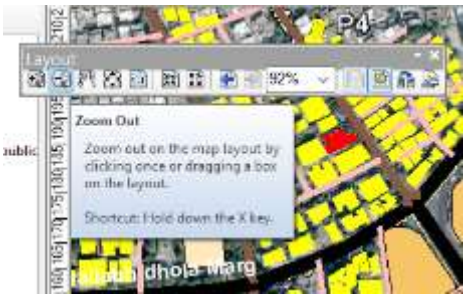
Click on the layout view from the bottom.

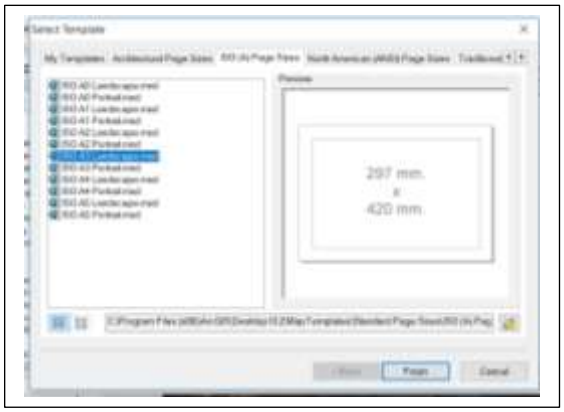


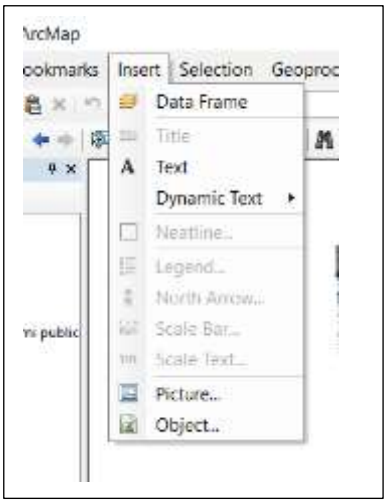
In Layout various options are:

- **Zoom in**: Shortcut- Hold down the z key
  Or hold down CTRL and drag with middle
  Mouse button.
- **Zoom out**: shortcut hold down the x key



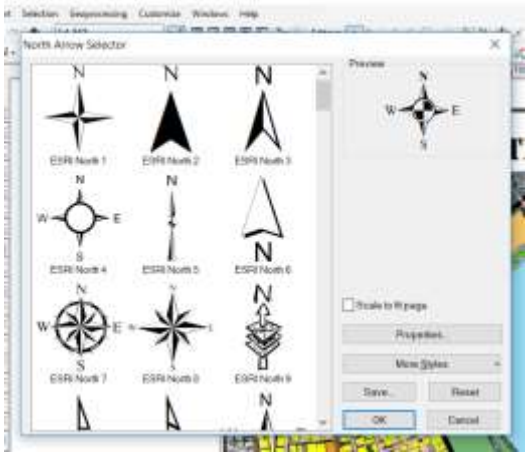
- **Pan**
- **Zoom whole page**
- **Zoom to 100%**
- **Fixed zoom in**
- **Fixed zoom out**
- **Go back to Extent**
- **Focus data frame**
- **Change the Layout:** We change the
  Paper size, orientation by predefined template.
- **Data Driven pages toolbar**

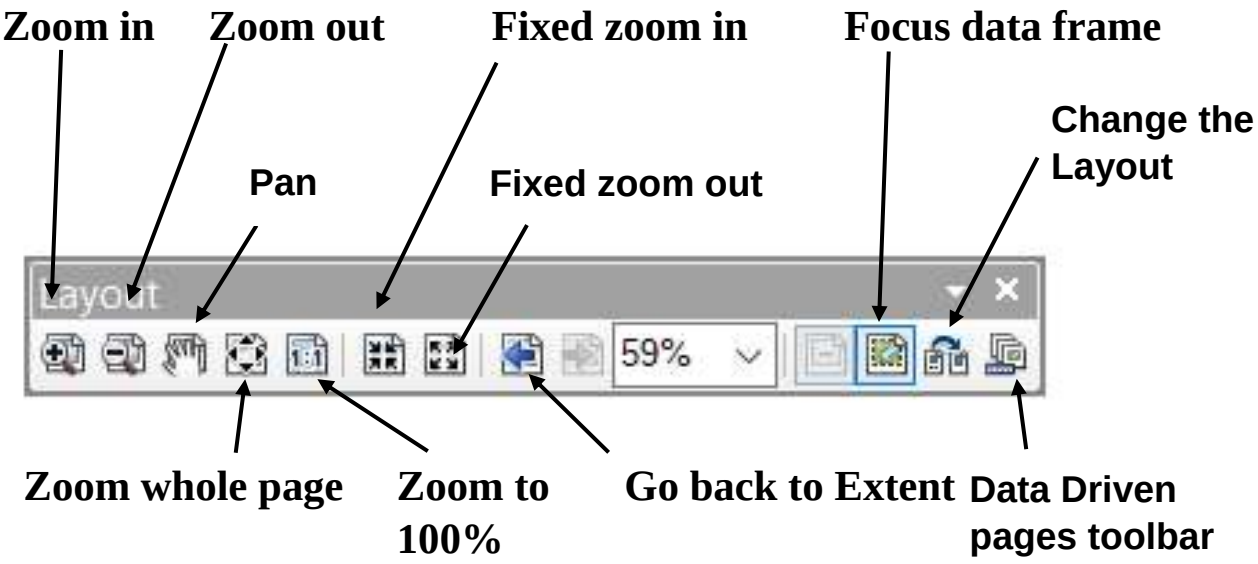



In the Map layout we can insert:

- **Tittle** **Dynamic text**
- **Text** **Scale bar**
- **Legend** **Scale text**
- **Neatline** **North arrow** **Picture object**

In north arrow, Scale text, scale bar there are different varieties to choose from the selector.






After giving the format and adding various things like scale and north, for the print out or saving the Map with Layout

**File> export map> File name and Save as type**

# FINAL OUTPUT