

Creating Buffers and Calculating Area

Your state has enacted Drug Free Zones at 1000 feet around schools.

Add your data

1. Open ArcGIS Pro and create a Blank project.
2. Go to Insert and create a New Map.
3. Go to Add Data and add in the schools and CityExt shapefile.

Create 5-mile buffer around each place polygon

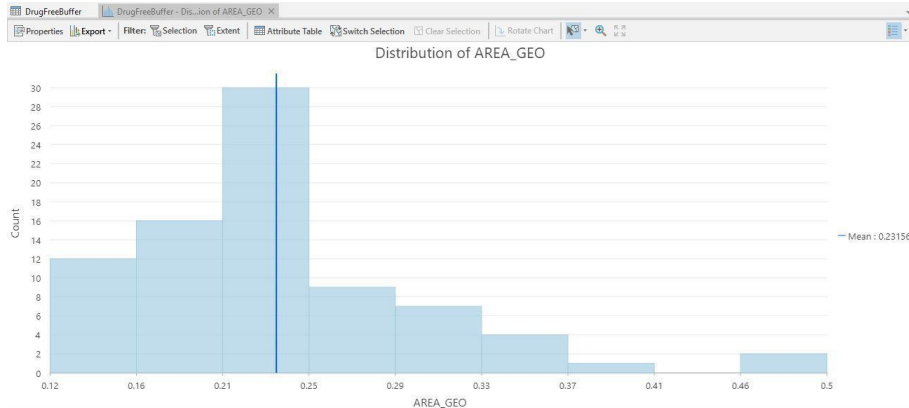
1. Go to the Analysis tab and select Tools. Search for Buffer.
2. Click on Buffer (Analysis Tools). Enter the following:
 - a. Input Features: tl_2016_01_place
 - b. Output Feature Class: DrugFreeBuffer
 - c. Distance: 1000 (and select Miles from the dropdown list)
 - d. Side Type: Full
 - e. Method: Planar
 - f. Dissolve Type: (select No Dissolve from the dropdown list)
 - g. Hit Run (this process will take a few minutes)

Calculate total buffered areas

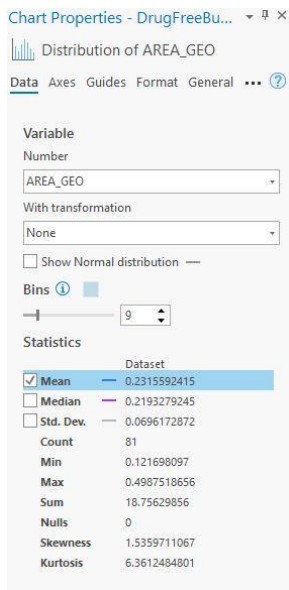
1. To gather the sum of all the buffered areas, we need to first calculate the size of each buffer in our map. Go to the Analysis tab and select Tools. Search for Add Geometry Attributes. Enter the following:
 - a. Input Features: DrugFreeBuffer
 - b. Geometry Properties: Geodesic area
 - c. Area Unit: Square Miles (United States)
 - d. Coordinate System: Current Map (Map)
 - e. Hit Run.
2. Right click on the DrugFreeBuffer layer and select Attribute Table.
3. Scroll to the rightmost column in the table. Look for the column called AREA_GEO (ignore the Shape_Area column).

ORIG_FID	Shape_Length	Shape_Area	AREA_GEO
0	9616.255681	7134916.283308	0.255902
1	9011.194664	6304982.949349	0.226134
2	9547.769169	7040850.965774	0.252527

4. Right click on the heading of AREA_GEO and select Statistics.
5. You should now see a Chart window similar to the following. This window contains a histogram showing the range of buffered areas in your maps and the frequency of their occurrence. Click on Properties (if necessary) to see the Chart Properties pane with other basic statistics.



- In the Chart Properties pane, you can see other basic statistics like Median, Standard Deviation, and Skewness. The Sum value tells us the total area occupied by all the buffers (in square mile) in our map.



Make sure that the sum of the buffers is 18.75 sq mi as shown in the graphic above.

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