

INTRO TO GIS_c

SPATIAL ANALYSES

AGENDA

1. Follow-up
2. Buffer Analysis
3. Heat mapping
4. *Lab-16*
5. Final Thoughts

1 FOLLOW-UP

2 BUFFER ANALYSIS

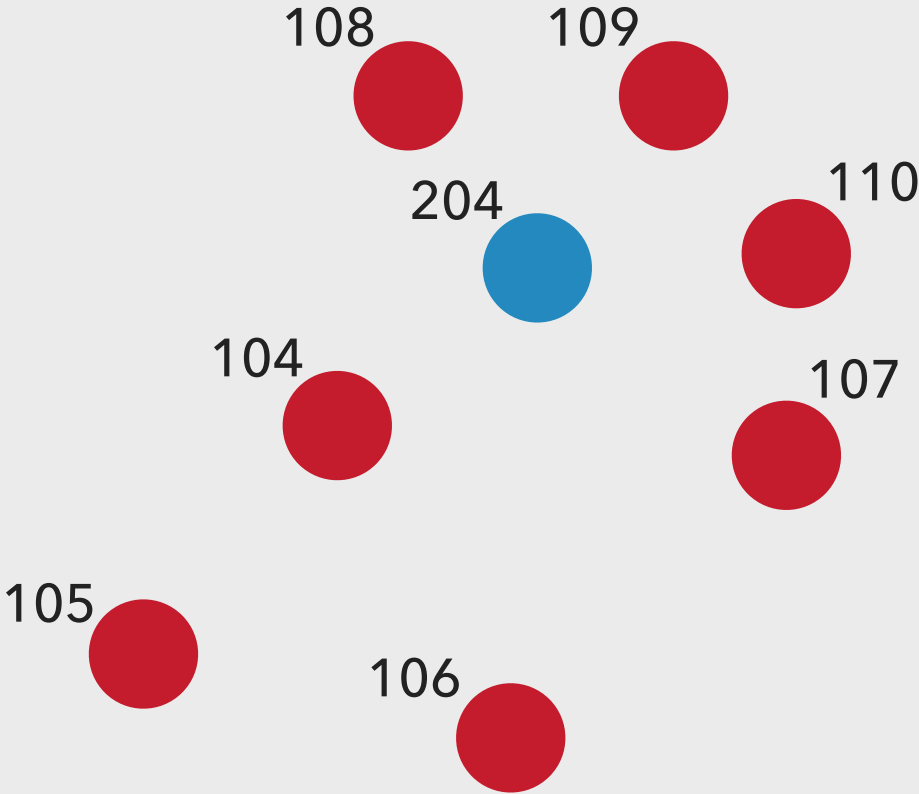
**HOW TO IDENTIFY
FEATURES WITHIN A
CERTAIN PROXIMITY
OF ANOTHER FEATURE?**

BUFFER

Input Datasets

ID	Shape	Type
104	Point	A
105	Point	A
106	Point	A
107	Point	A
108	Point	A
109	Point	A
110	Point	A

ID	Shape	Type
204	Point	B



BUFFER

Primary Dataset

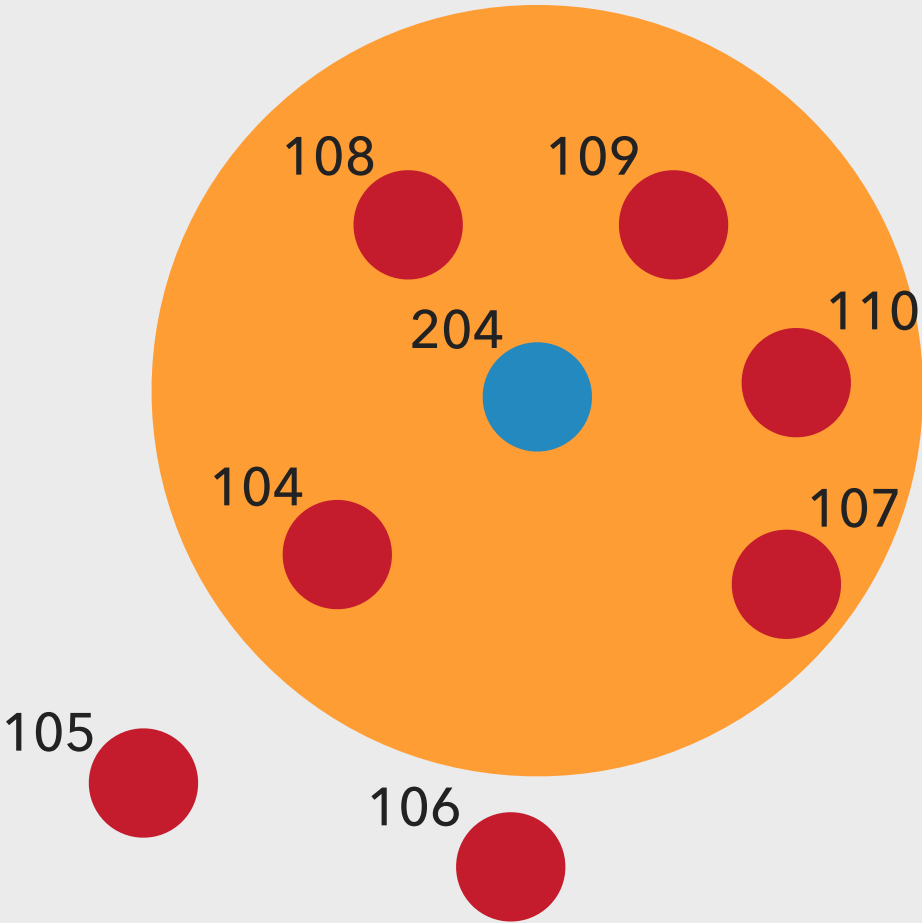
ID	Shape	Type
104	Point	A
105	Point	A
106	Point	A
107	Point	A
108	Point	A
109	Point	A
110	Point	A

Input Dataset

ID	Shape	Type
204	Point	B

Buffer Output

ID	Shape
204	Polygon



SELECT BY

Primary Dataset

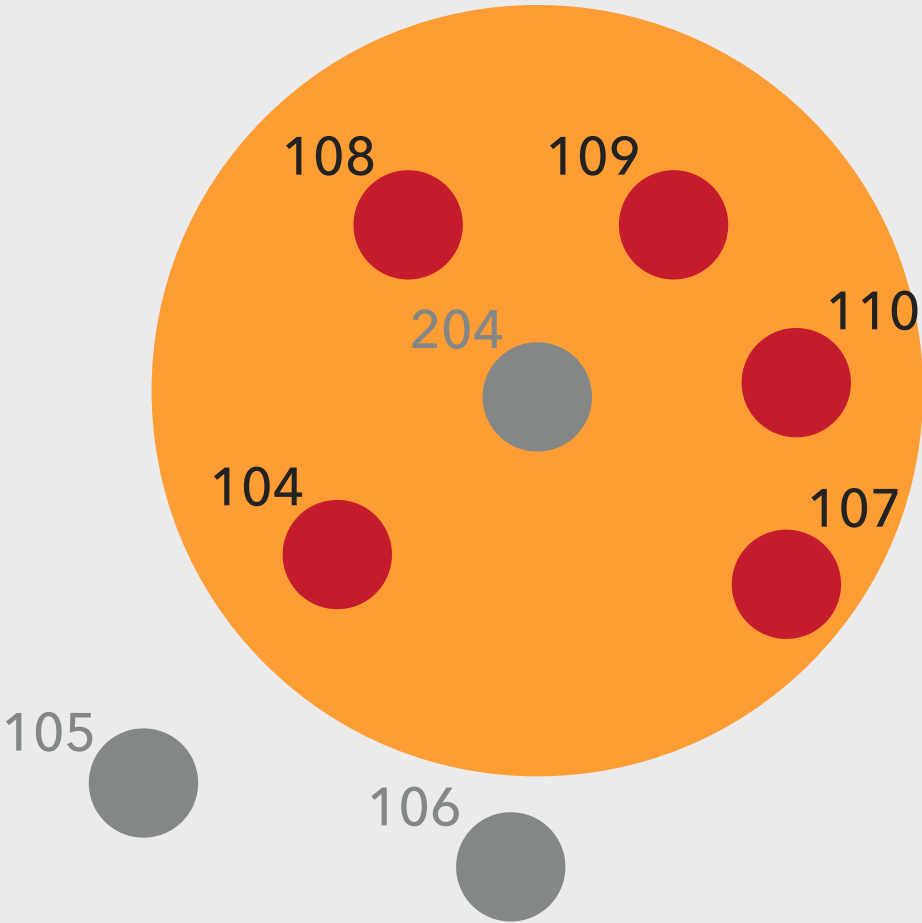
ID	Shape	Type
104	Point	A
105	Point	A
106	Point	A
107	Point	A
108	Point	A
109	Point	A
110	Point	A

Input Dataset

ID	Shape	Type
204	Point	B

Buffer Output

ID	Shape
204	Polygon



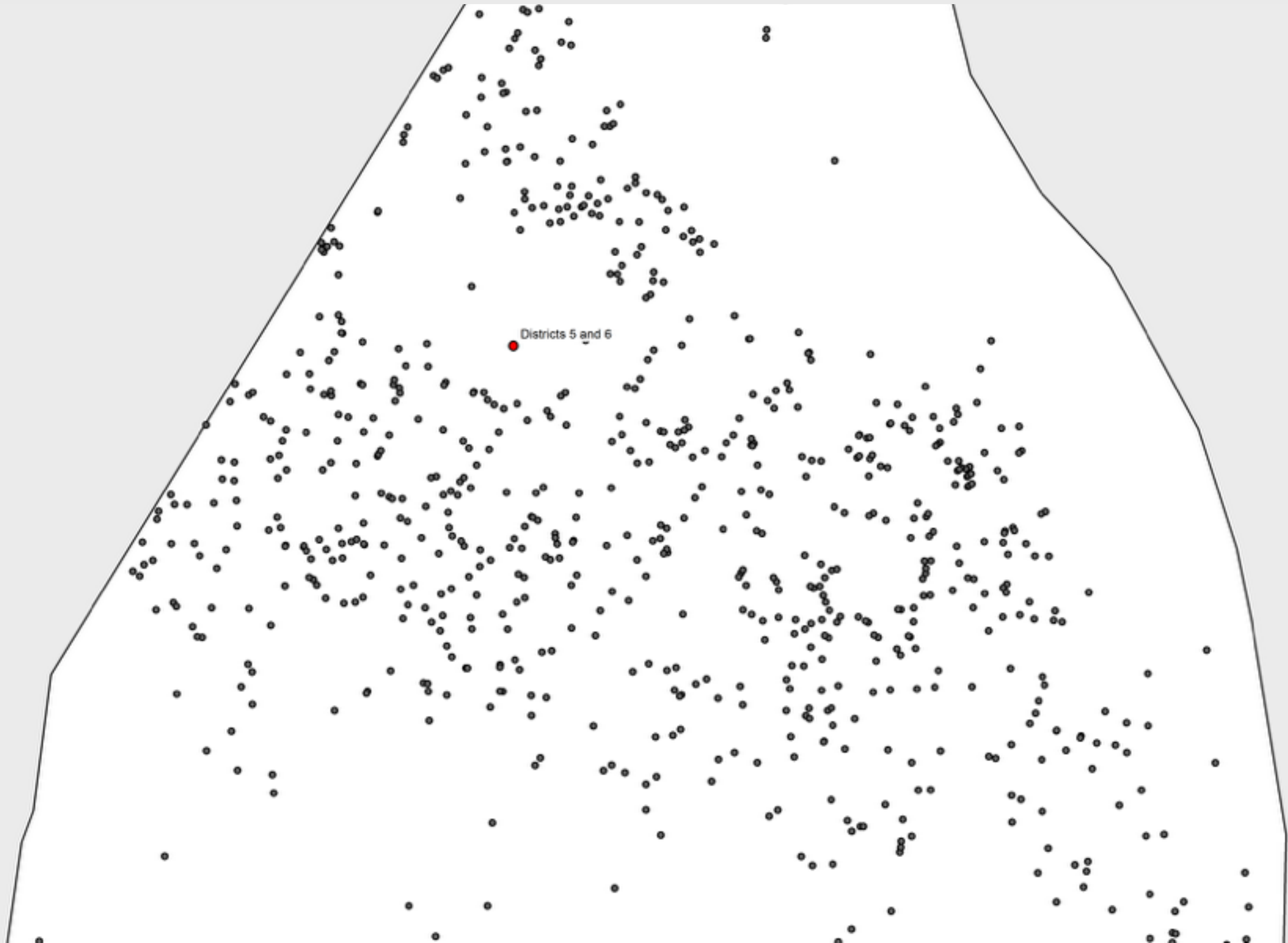
2016 MURDERS IN ST. LOUIS

How many murders have occurred within a mile of the D5/D6 station?



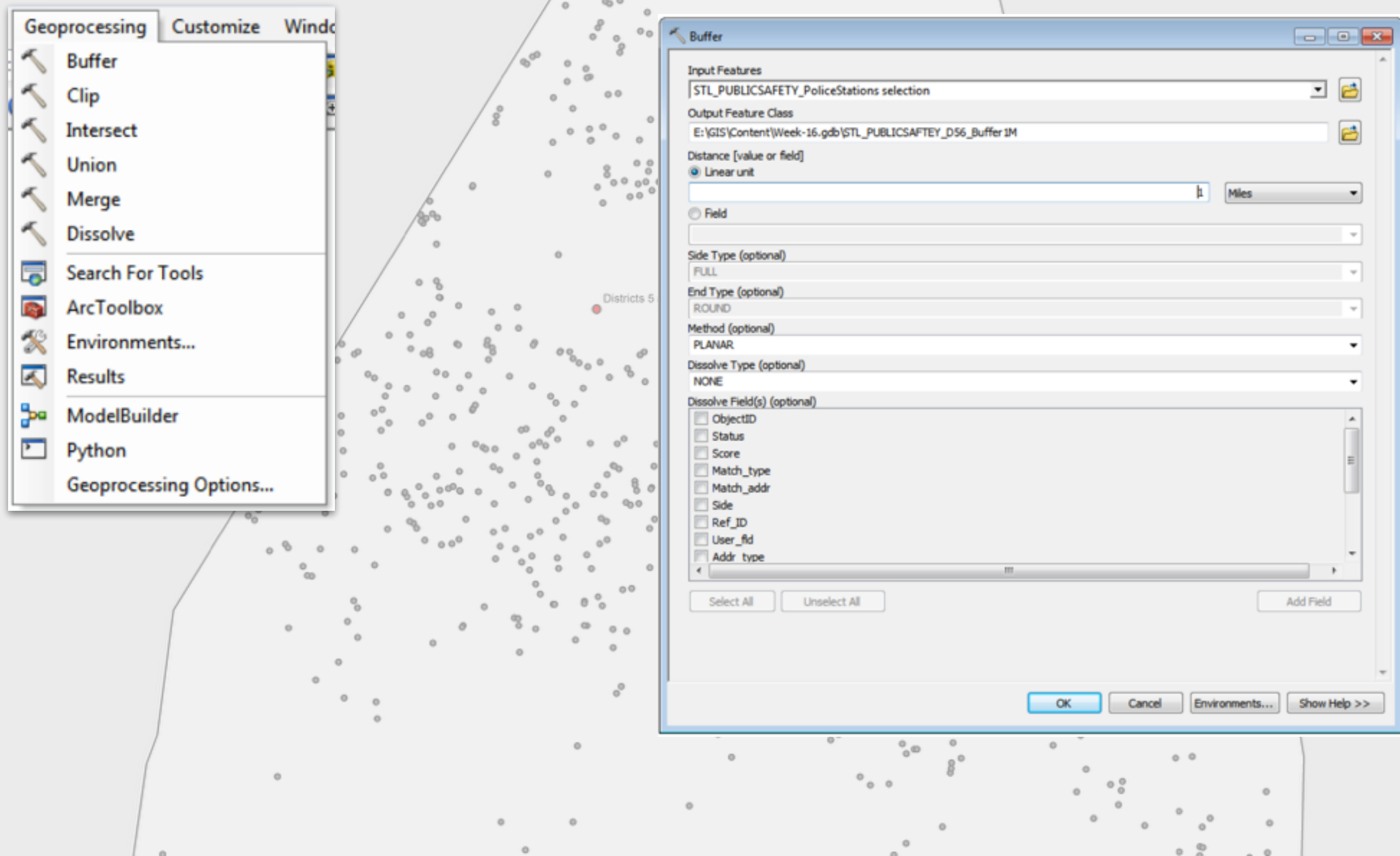
2016 MURDERS IN ST. LOUIS

How many murders have occurred within a mile of the D5/D6 station?



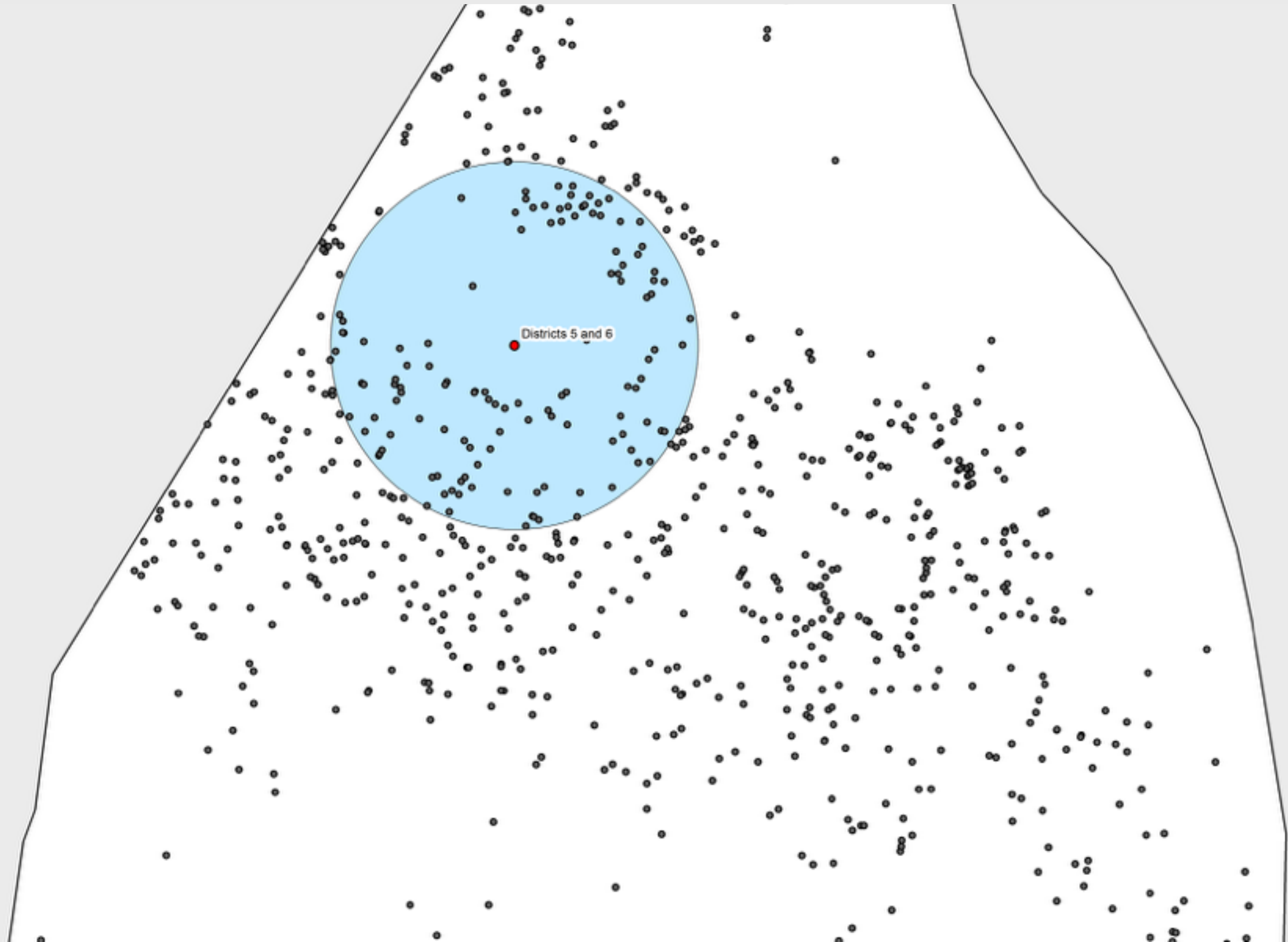
2016 MURDERS IN ST. LOUIS

How many murders have occurred within a mile of the D5/D6 station?



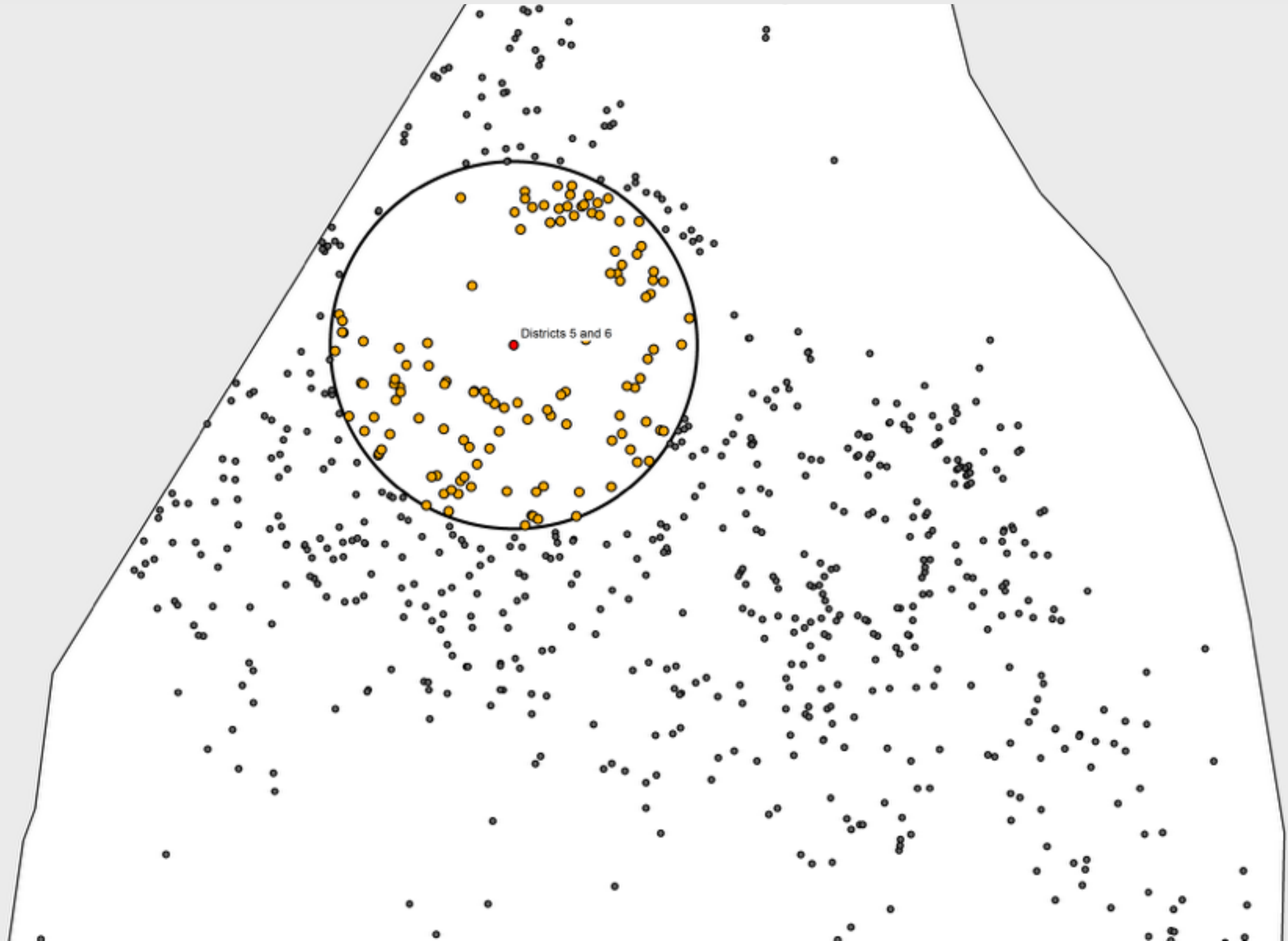
2016 MURDERS IN ST. LOUIS

How many murders have occurred
within a mile of the D5/D6 station?



2016 MURDERS IN ST. LOUIS

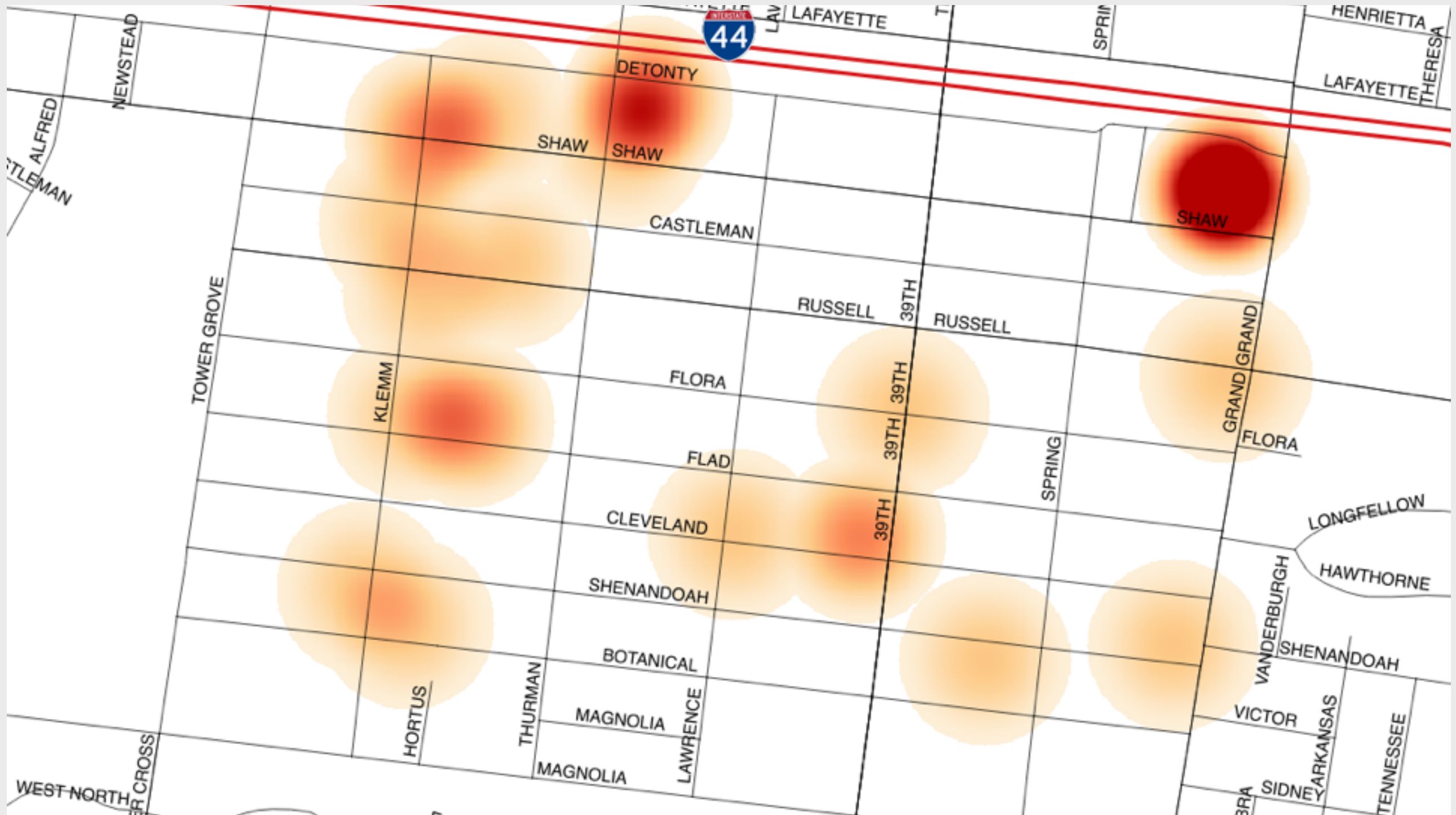
How many murders have occurred within a mile of the D5/D6 station?



3 HEAT MAPS

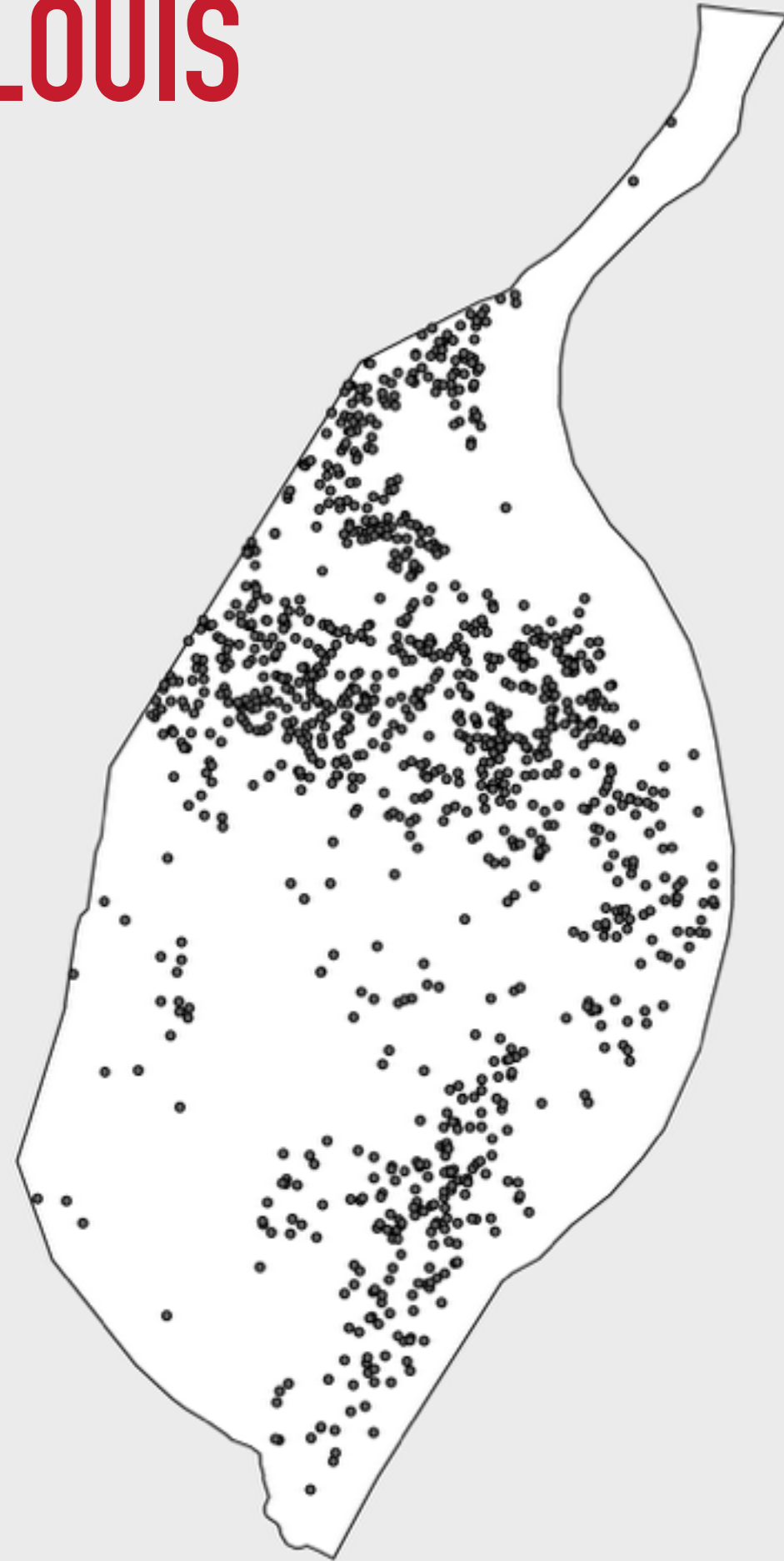
3. HEAT MAPS

FLASHBACK TO WEEK 1



**HOW TO VISUALIZE
NUMEROUS POINTS
WITHOUT
AGGREGATION?**

2016 MURDERS IN ST. LOUIS



CREATING HEAT MAPS IN ARCGIS

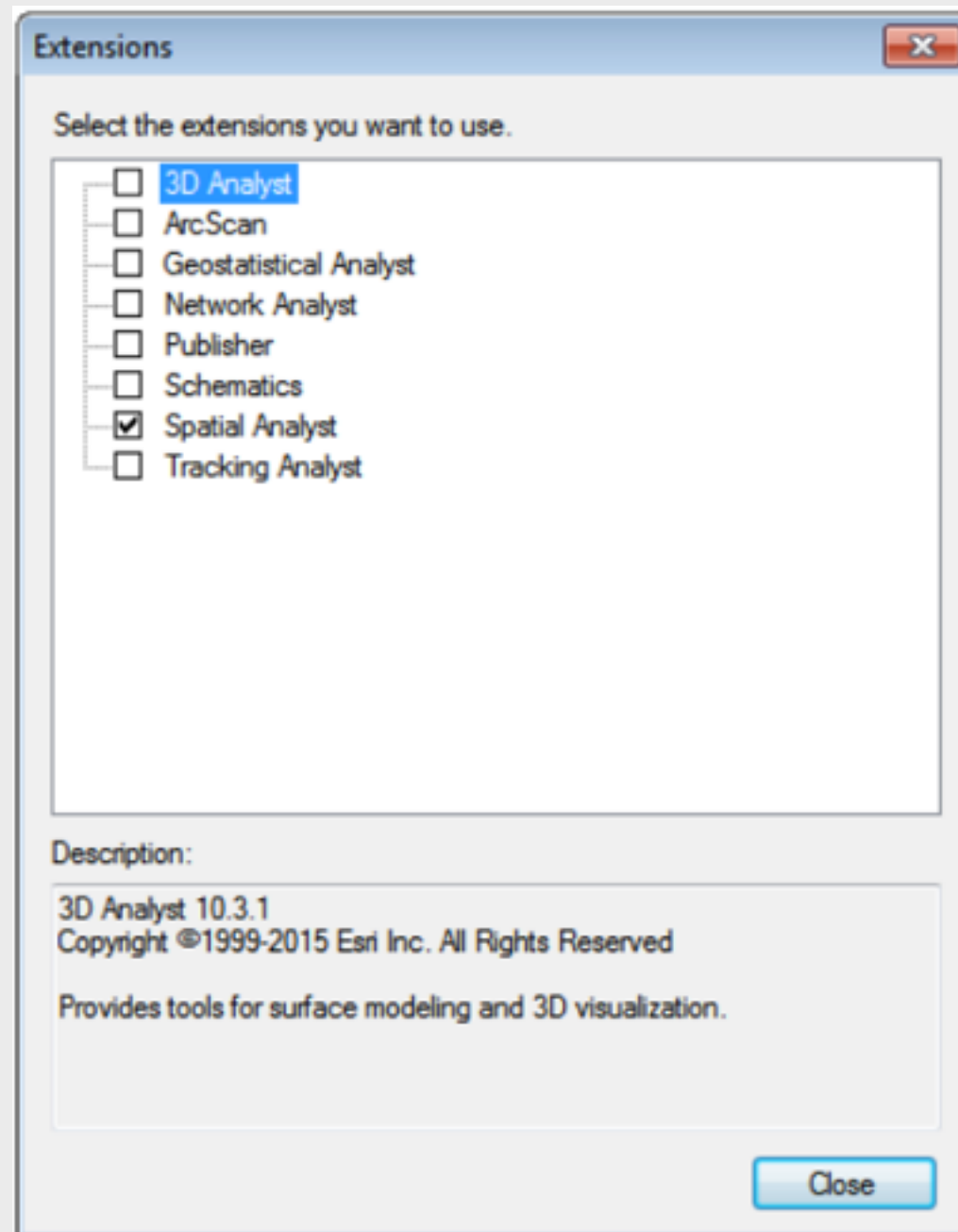
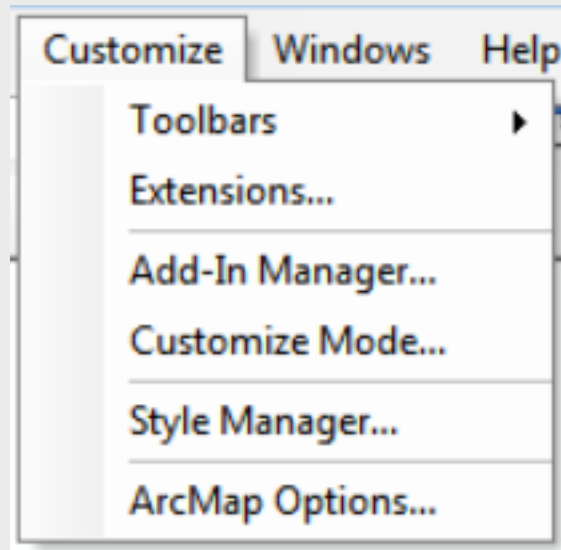
Before beginning, enable the Spatial Analyst Extension!

Heat maps are a three or four part process:

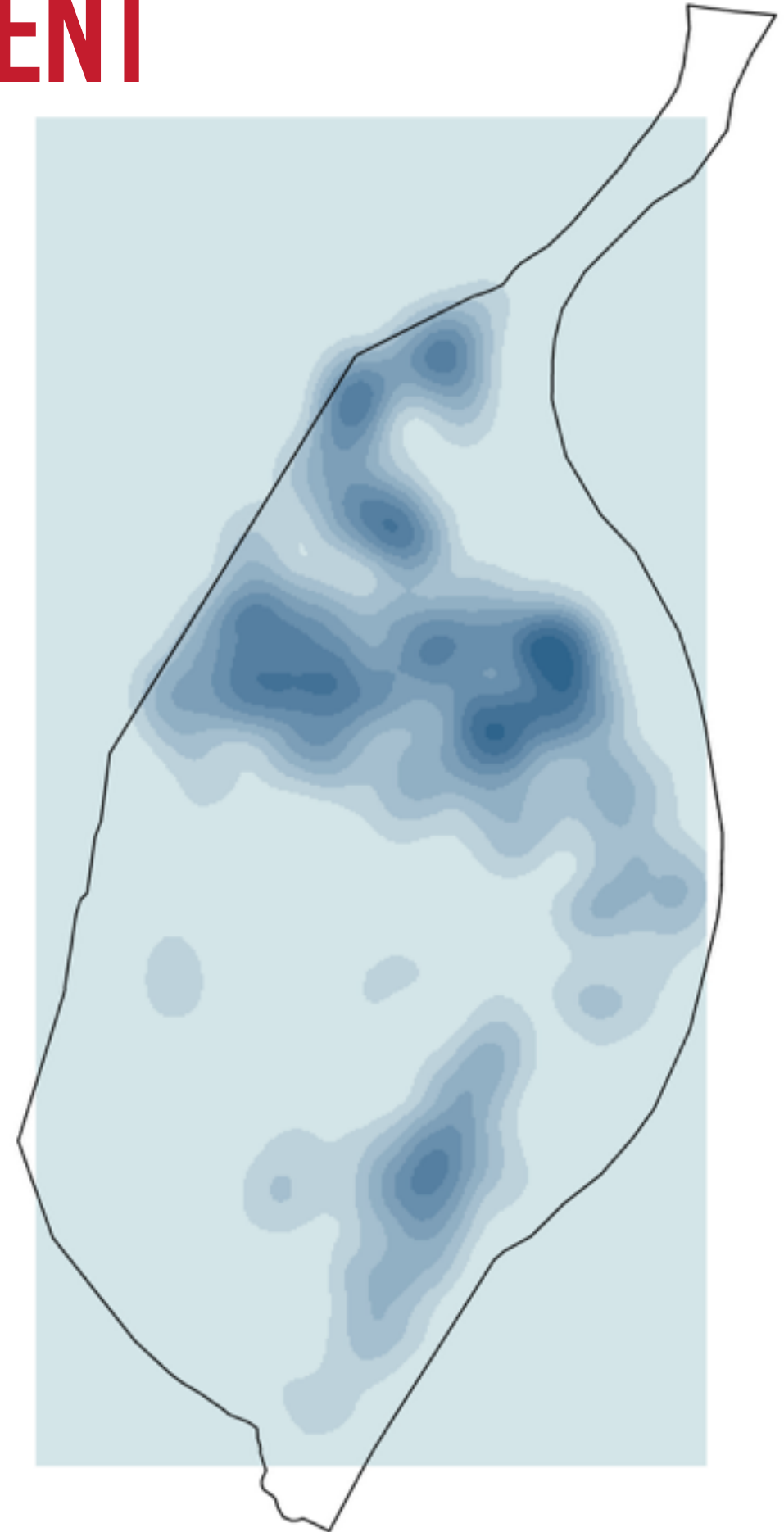
1. Set the processing extent
2. Create the heat map
3. Clip the heat map
4. Optionally exclude '0' values

3. HEAT MAPS

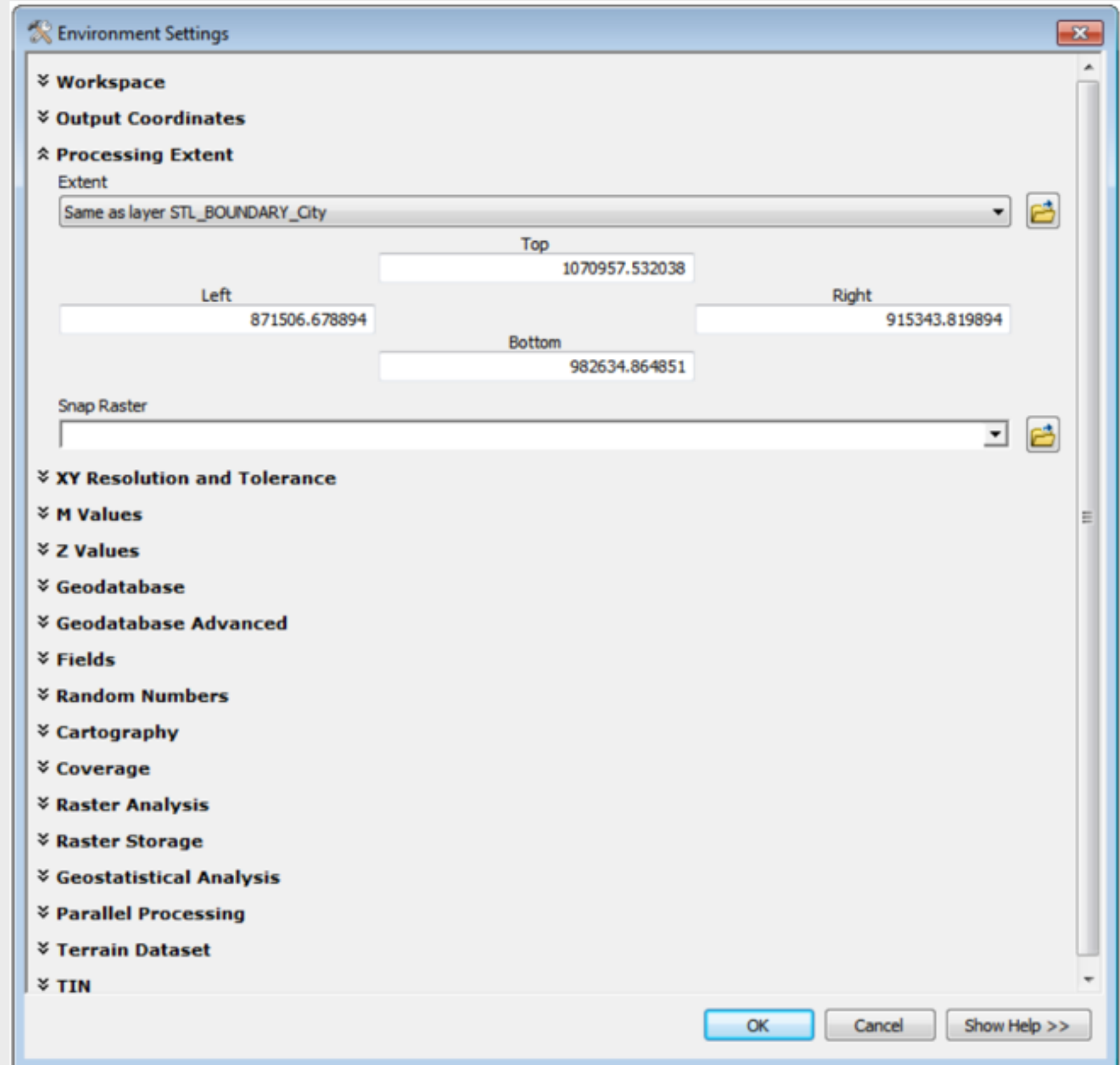
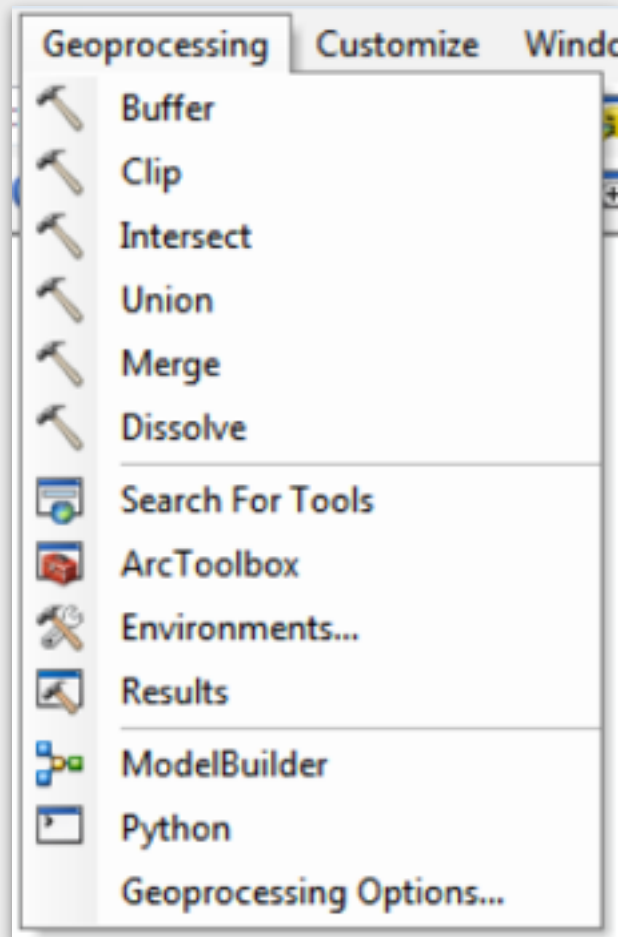
ENABLE EXTENSIONS



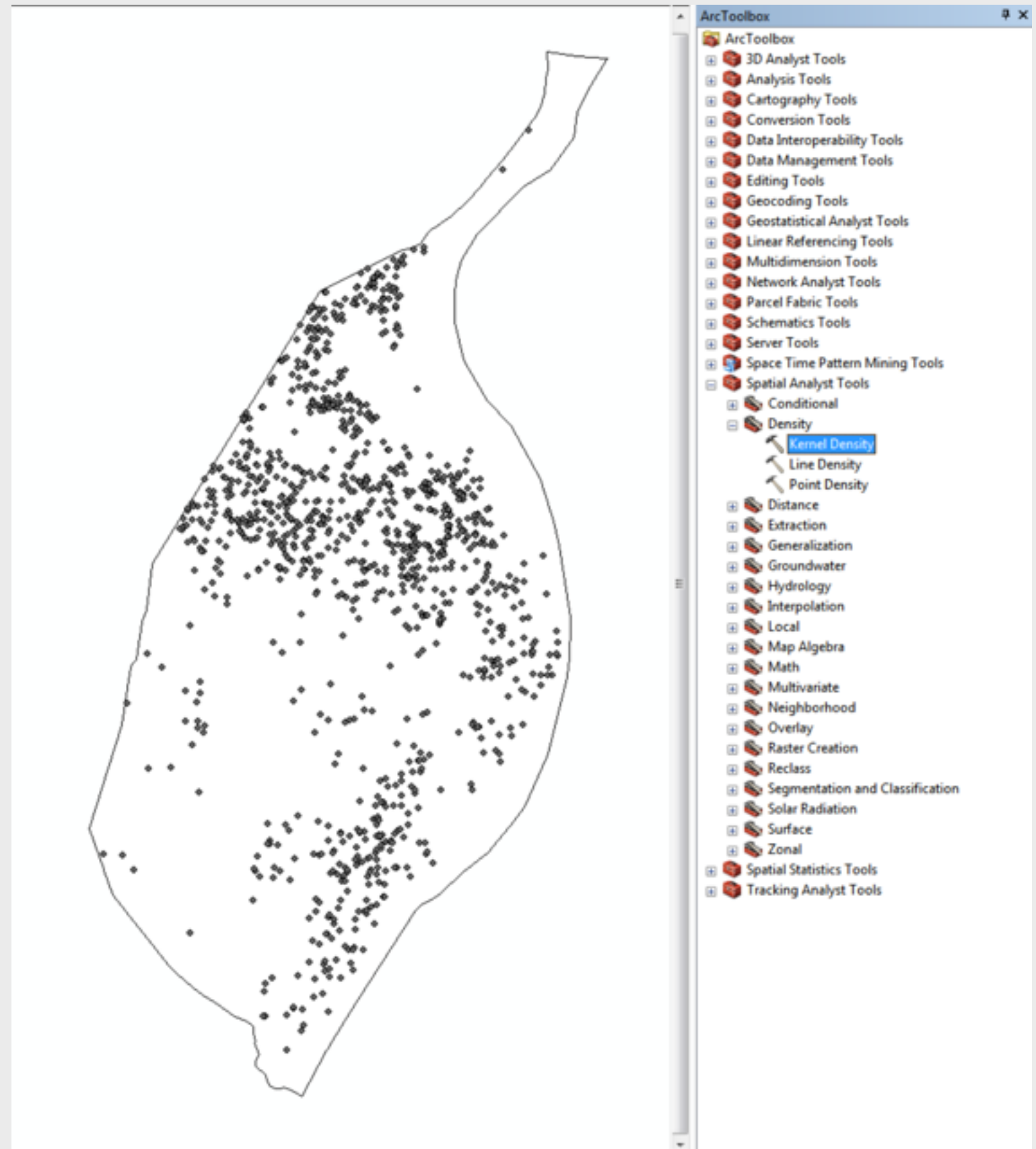
STEP 1 – PROCESSING EXTENT



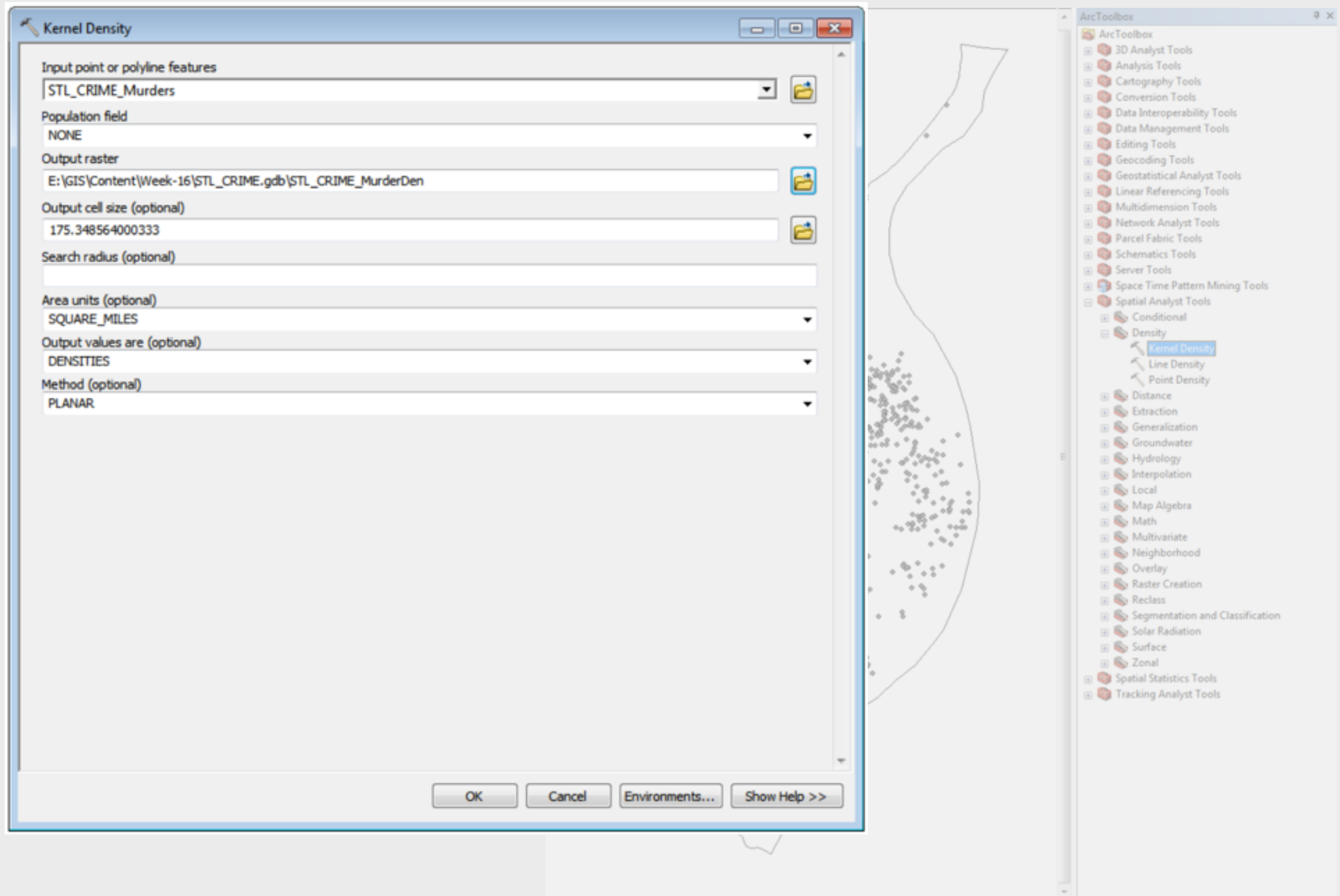
STEP 1 - PROCESSING EXTENT



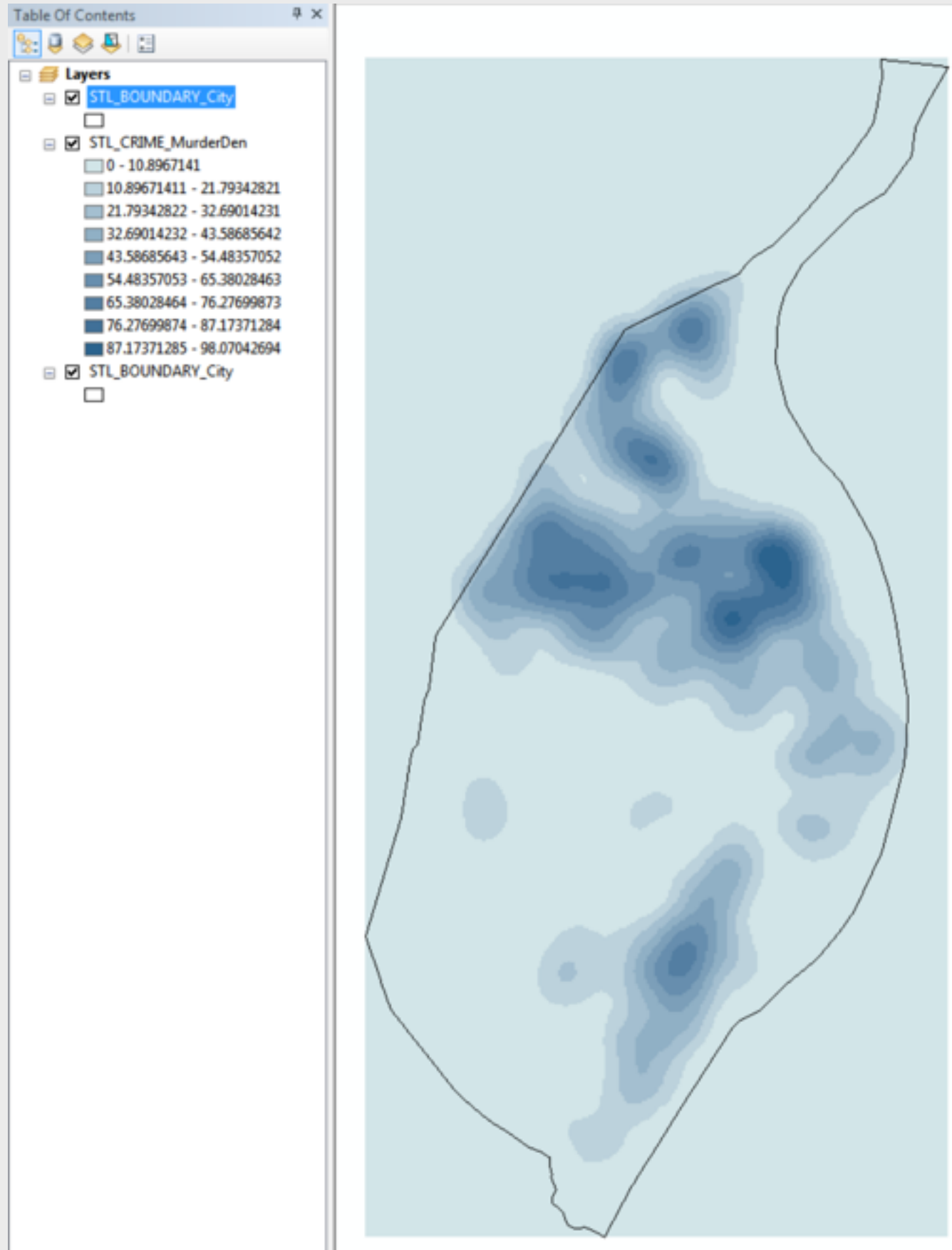
STEP 3 - CREATE THE HEAT MAP



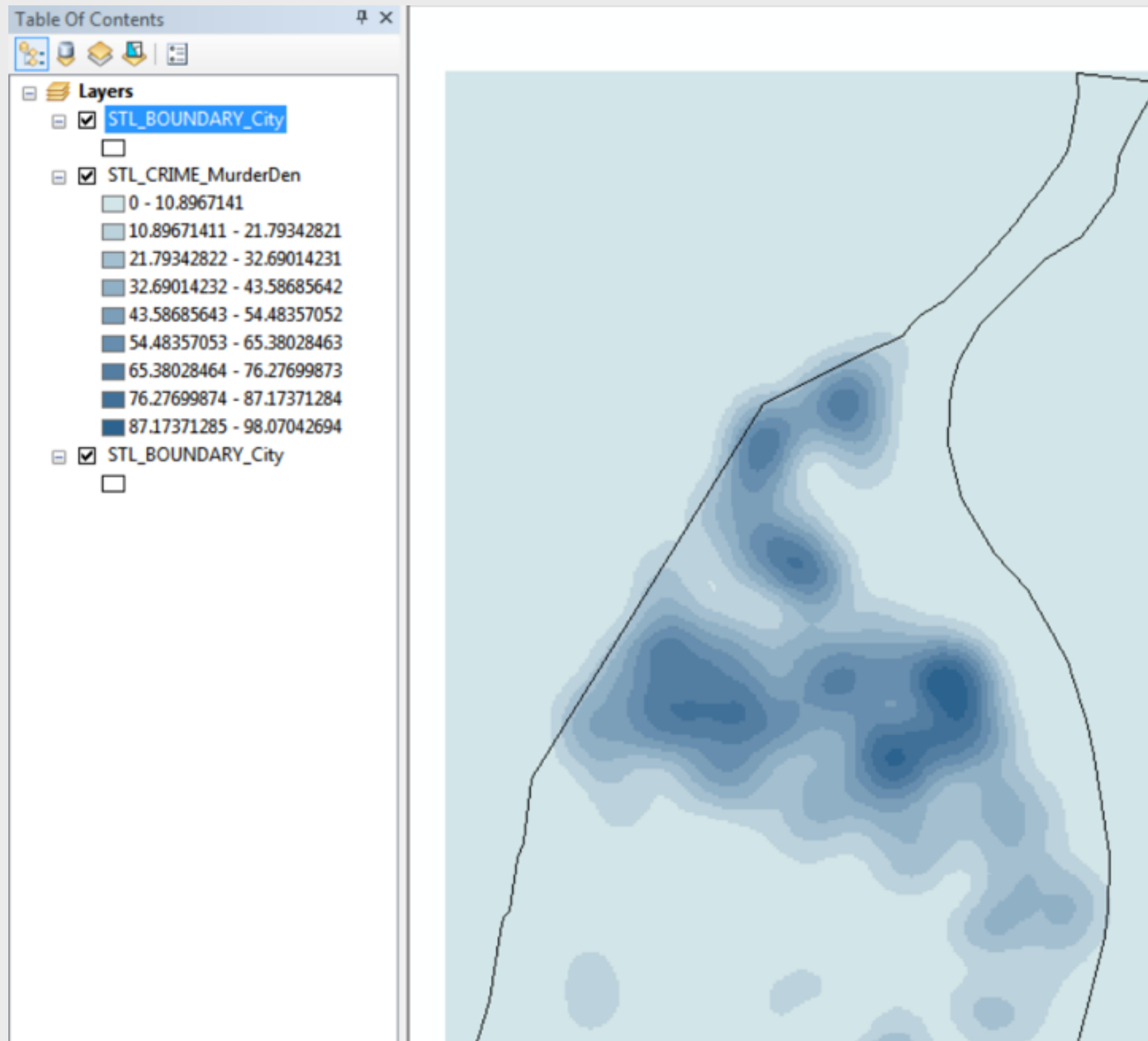
STEP 2 - CREATE THE HEAT MAP



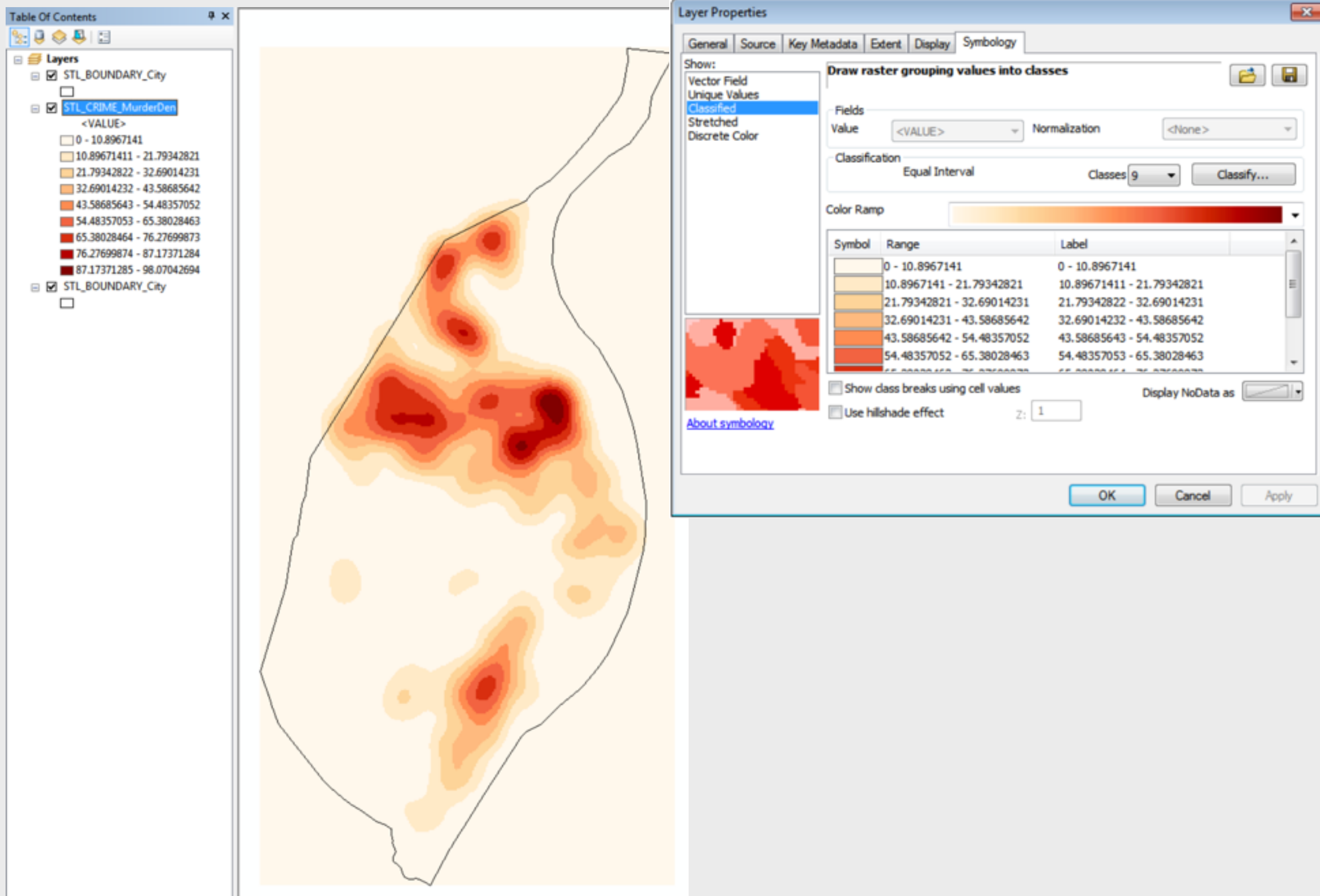
STEP 2 – CREATE THE HEAT MAP



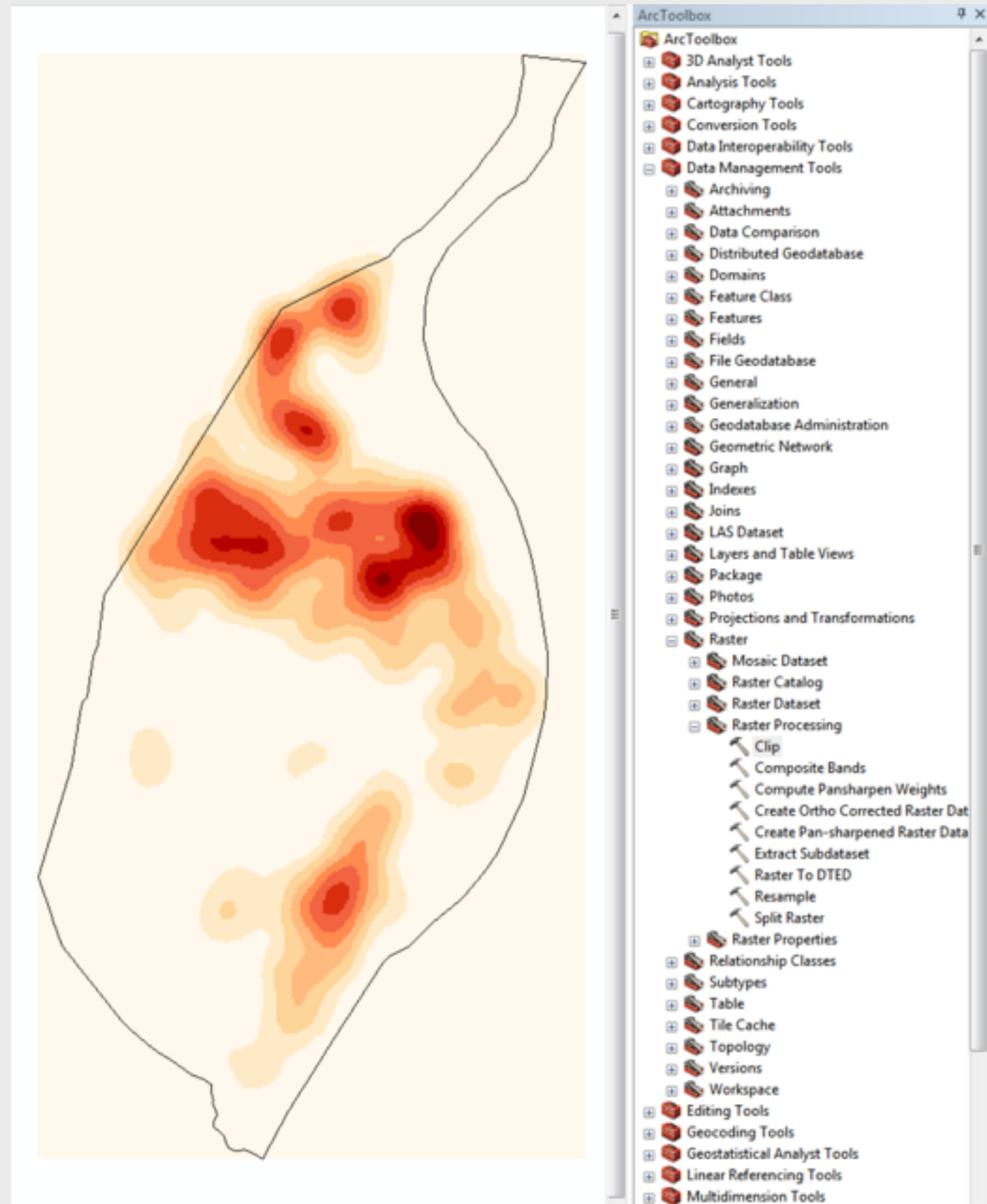
STEP 2 - CREATE THE HEAT MAP



STEP 2 - CREATE THE HEAT MAP



STEP 3 – CLIP THE HEAT MAP



STEP 3 - CLIP THE HEAT MAP

Clip

Input Raster
STL_CRIME_MurderDen

Output Extent (optional)
STL_BOUNDARY_City

Rectangle

Y Maximum
1070957.532038

X Minimum
871506.678894

X Maximum
915343.819894

Y Minimum
982634.864851

☒ Use Input Features for Clipping Geometry (optional)

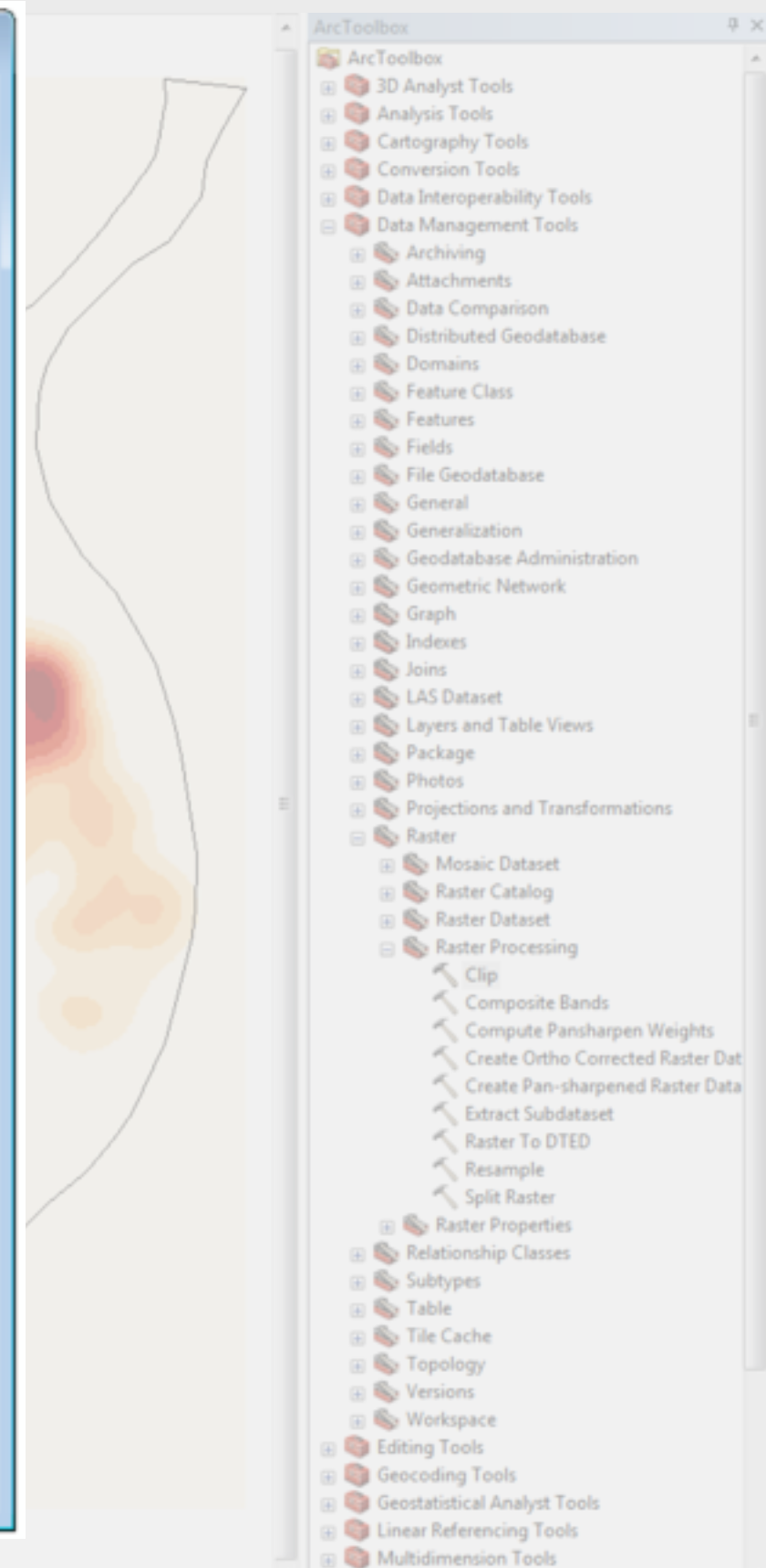
Output Raster Dataset
E:\GIS\Content\Week-16\STL_CRIME.gdb\STL_CRIME_MurderDenClip

NoData Value (optional)
-3.402823e+038

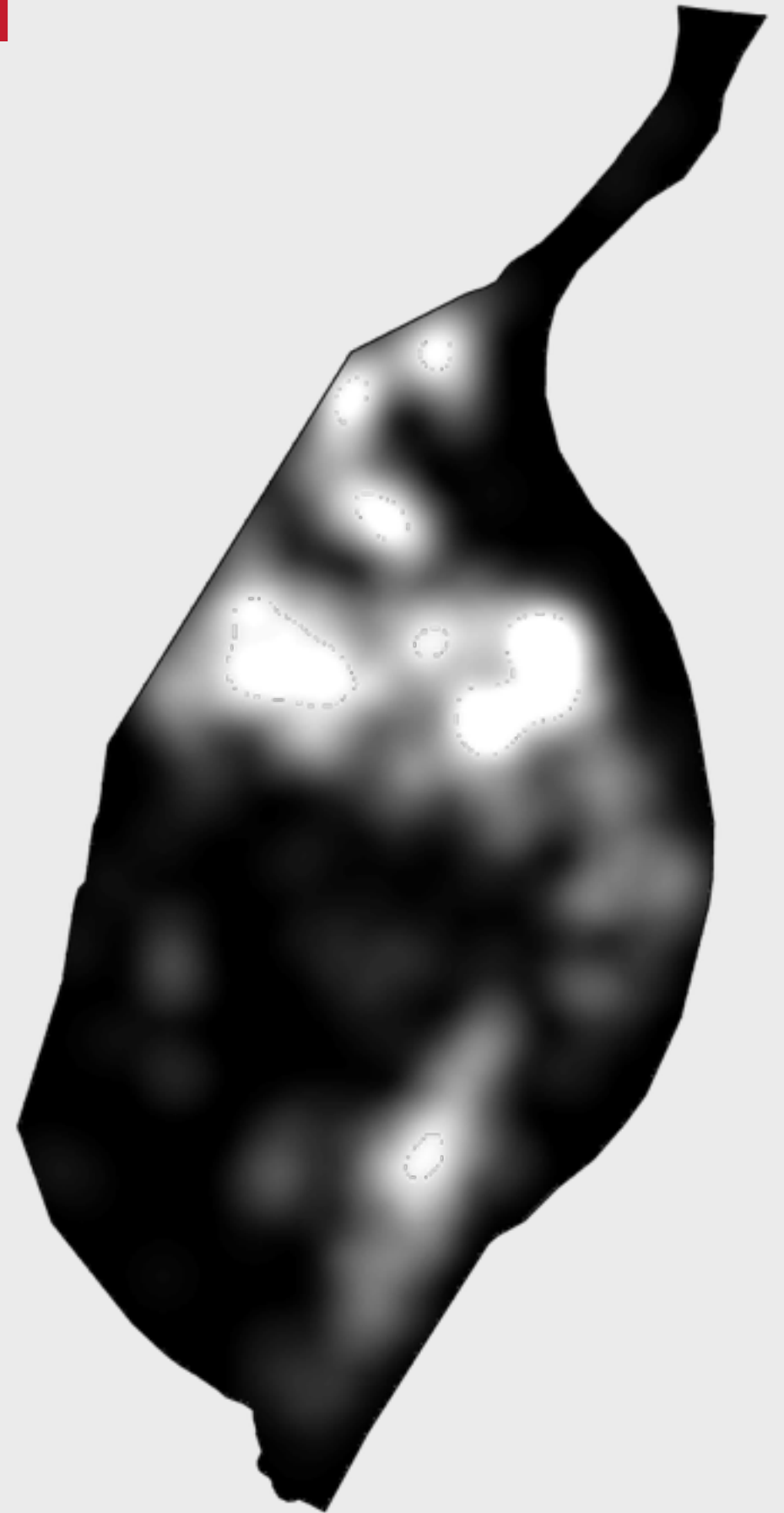
☐ Maintain Clipping Extent (optional)

Clear

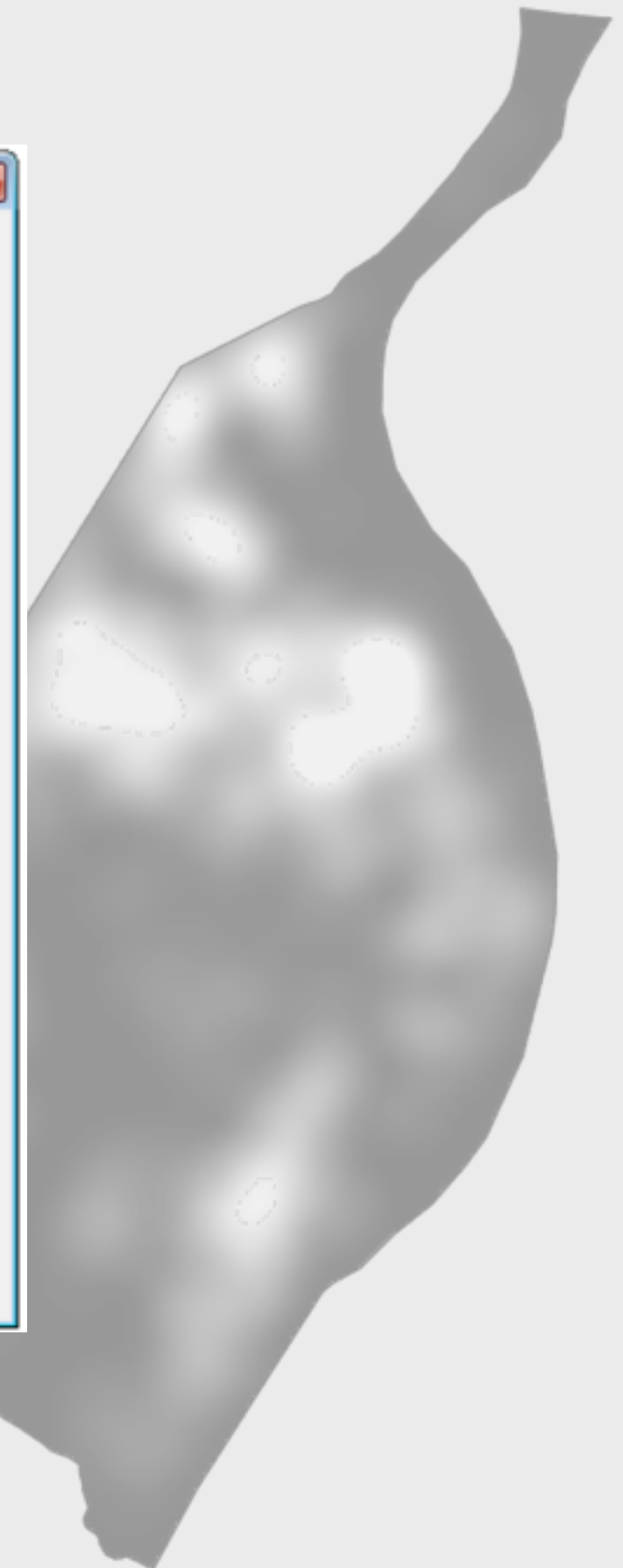
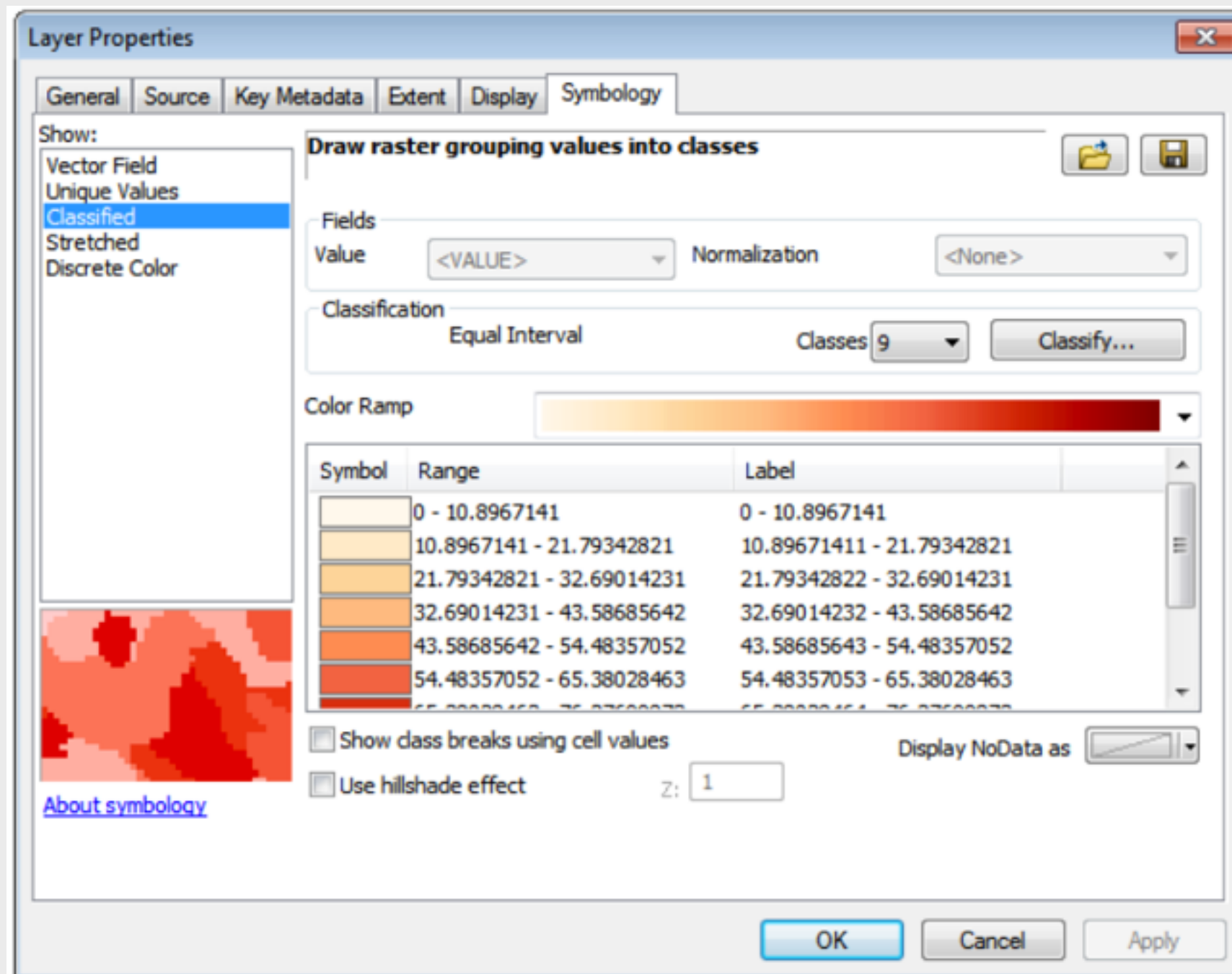
OK Cancel Environments... Show Help >>



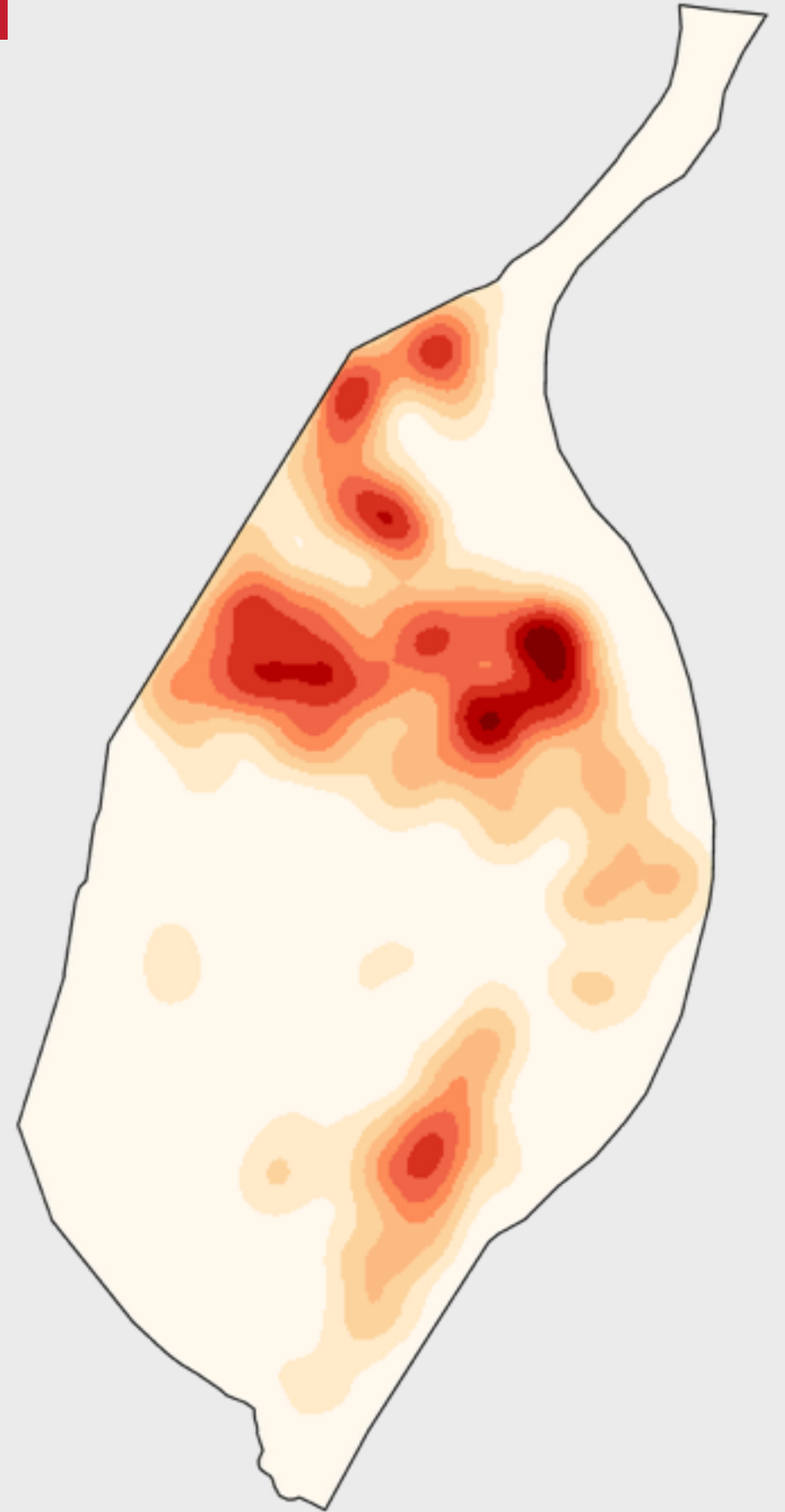
STEP 3 – CLIP THE HEAT MAP



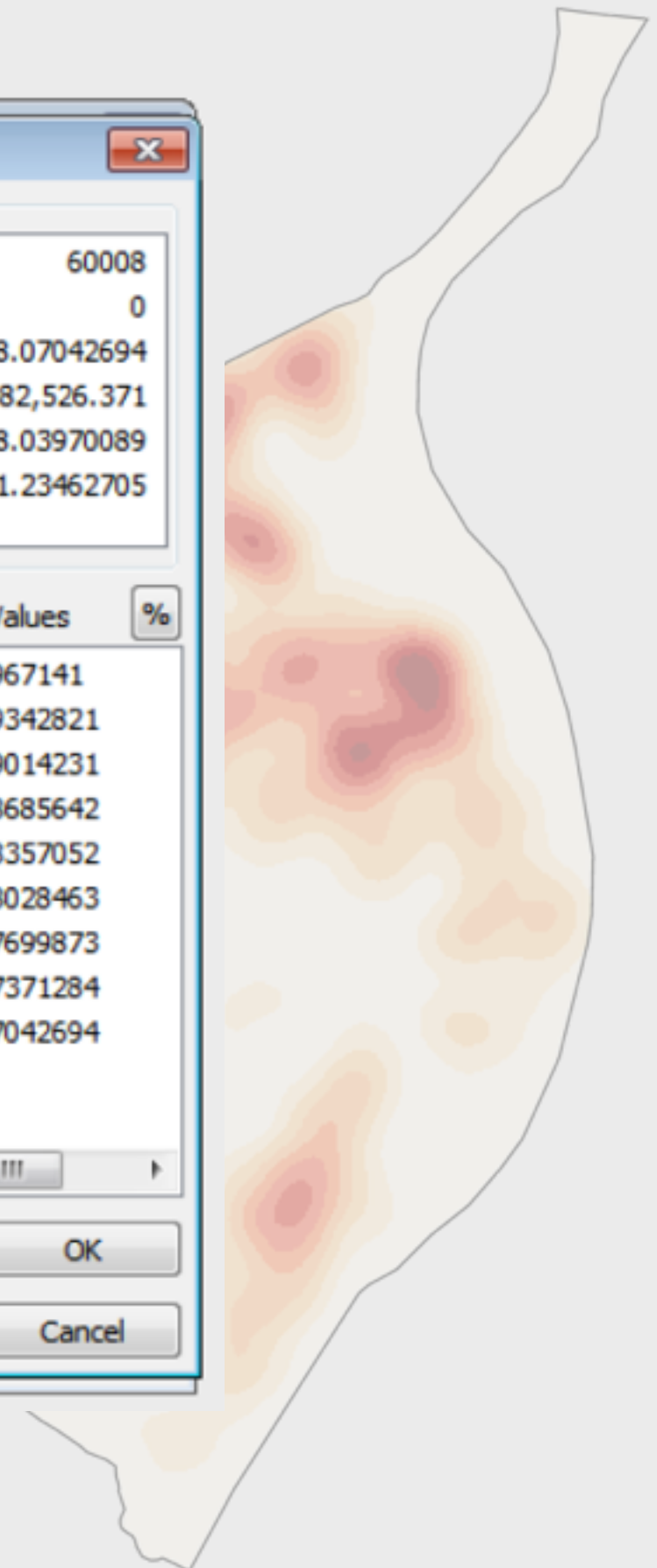
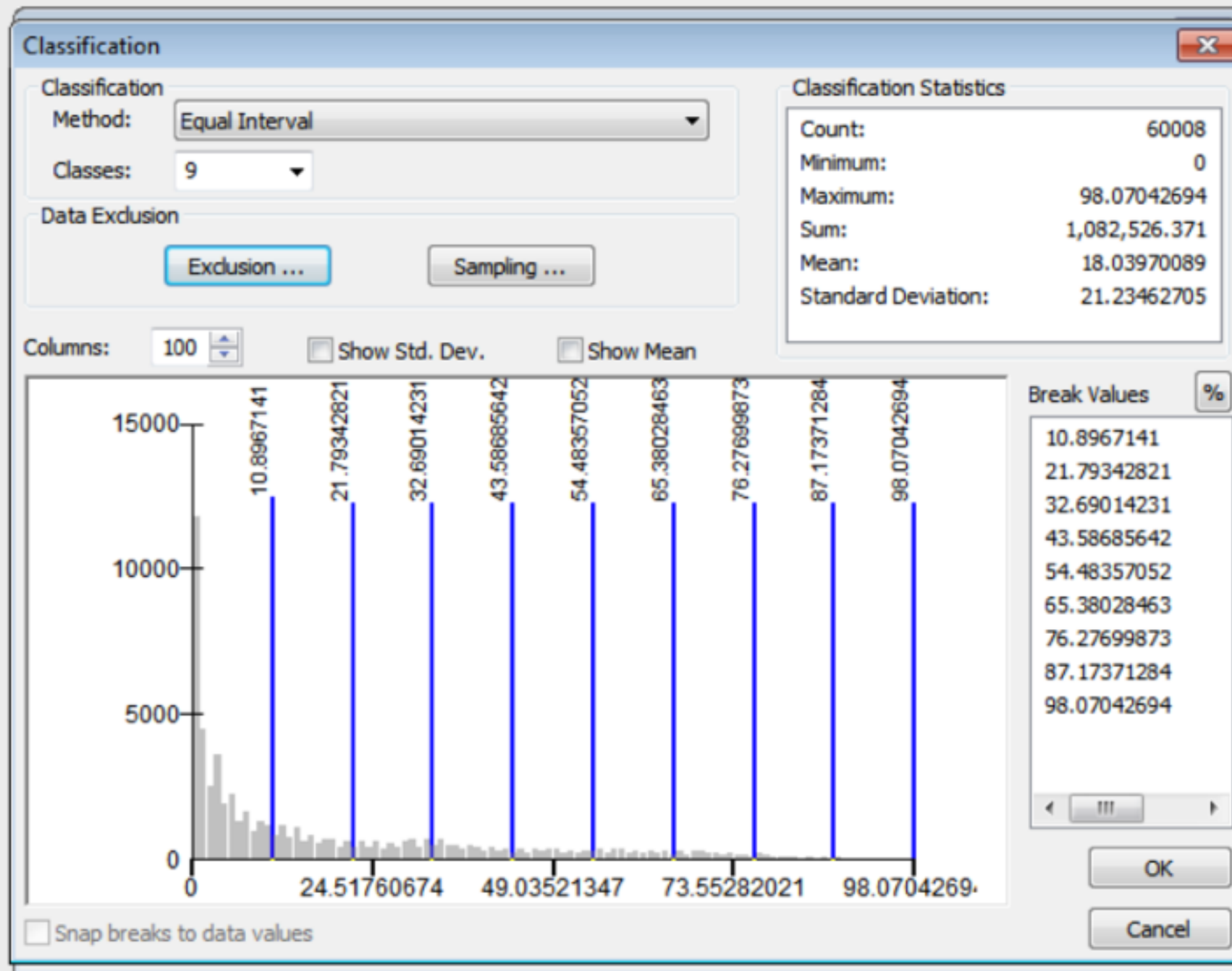
STEP 3 - CLIP THE HEAT MAP



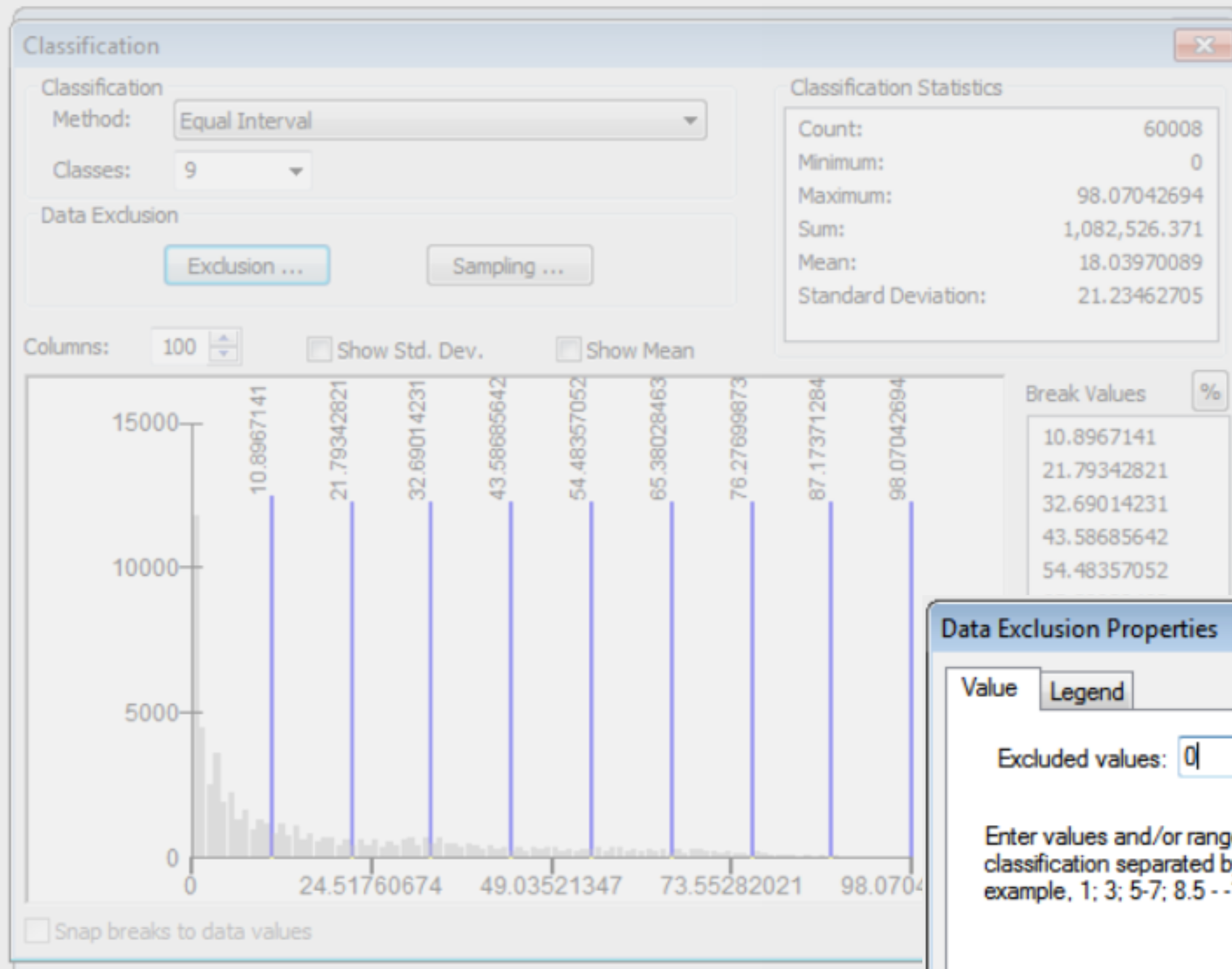
STEP 3 – CLIP THE HEAT MAP



STEP 4 - EXCLUDE '0' VALUES



STEP 4 - EXCLUDE '0' VALUES



Data Exclusion Properties

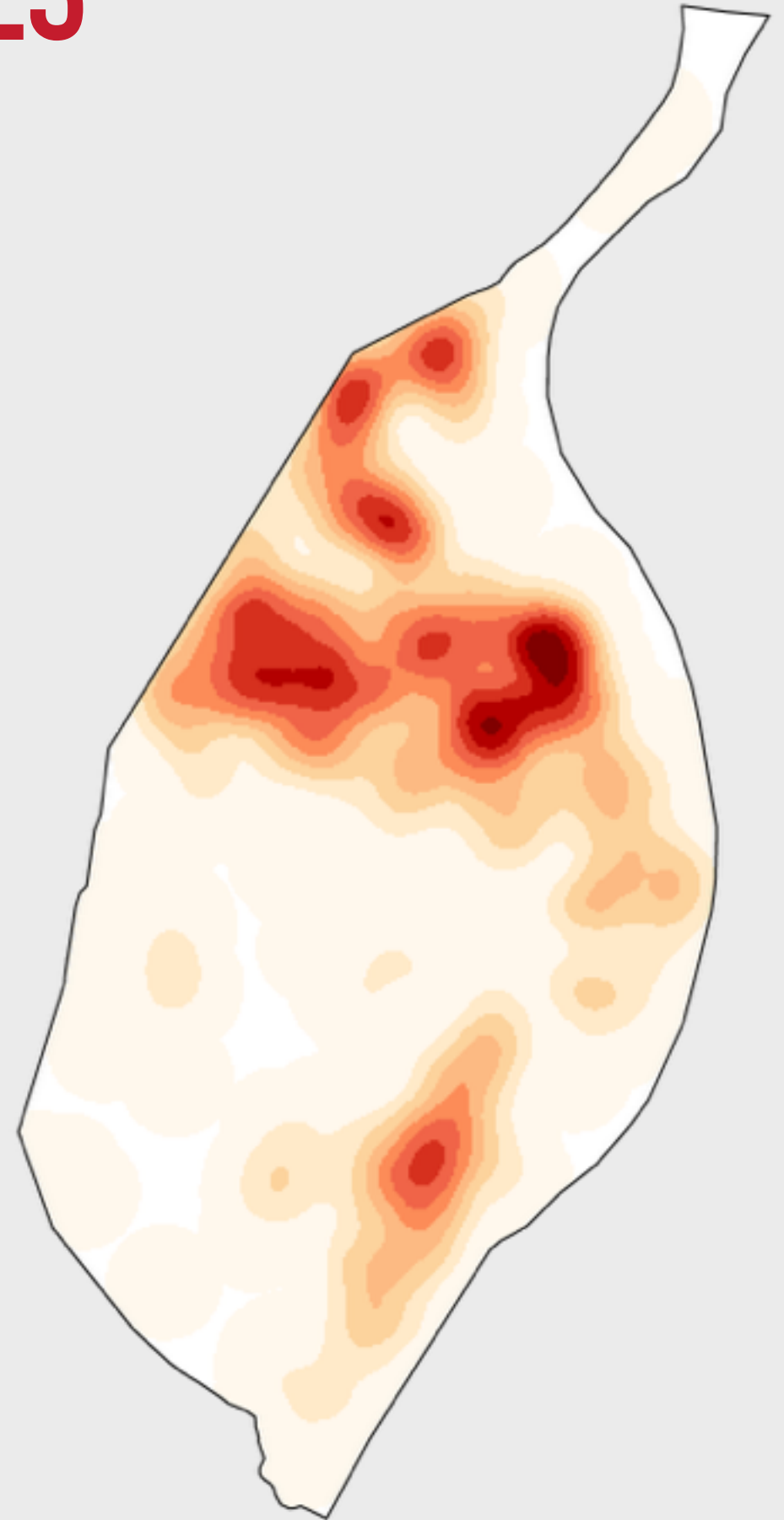
Value **Legend**

Excluded values:

Enter values and/or ranges to exclude from the classification separated by semicolons. For example, 1; 3; 5-7; 8.5 - -12.1

OK **Cancel** **Apply**

STEP 4 – EXCLUDE '0' VALUES



4 LAB-16

5 FINAL THOUGHTS

MY FIVE TAKEAWAYS

1. Reproducibility is a critical consideration for *all* research.
2. Seek out tools that make you a better researcher - the specific tool isn't as important as its benefits.
3. Avoid doing work by hand when it could be automated.
4. All data should be tidy.
5. Design matters just as much as your analysis.