RICE UNIVERSITY MAPPING PROJECT

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FEATURE CLASSES

- Strategic Coffee Locations
- Computer Labs
- Public Art
- Unchained Bicycles (hopefully transient?)

STRATEGIC COFFEE LOCATIONS

- Building
- Whether you need special access after business hours
- Free (Y / N)
- Do you need to use your own mug (Y/N)
- Room Number
- "Grade" of coffee
  - A (good!)
  - B (decent)
  - C (last resort)
 - D (how does this even qualify as coffee)
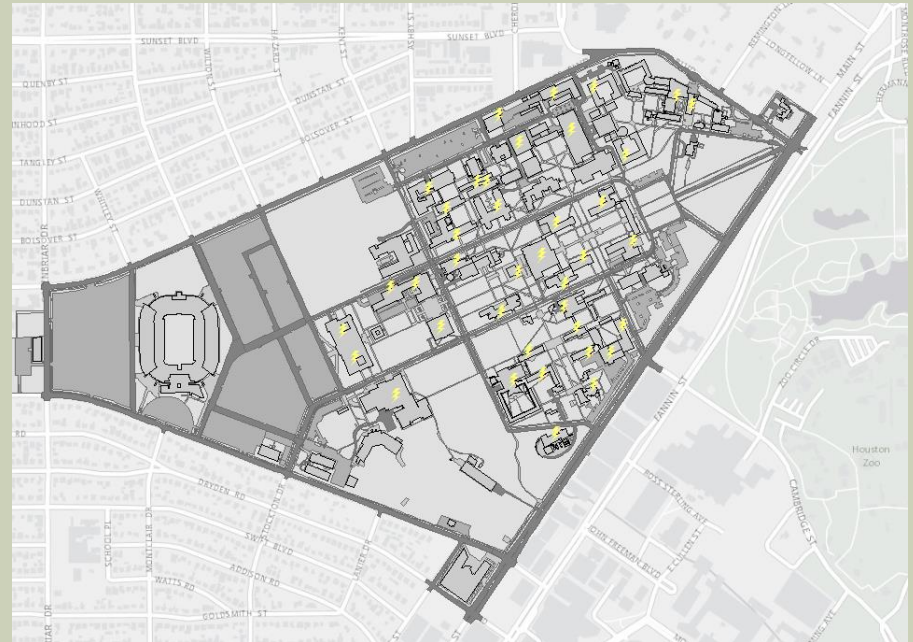
ANALYSIS, PT. 2

- "Given my access level, and given the time of day, where is the closest location I can obtain coffee?"

- "If I have no money during standard business hours, where can I obtain the highest grade of coffee?"

FID	Shape *	OBJECTID	building	access	free	room	grade
17	Point	18	Anderson Biology Labs	Y	Y	every floor	C
3	Point	4	Architecture Building	Y	Y	every floor	B
29	Point	30	Autry Court and Gymnasium	Y	Y	3rd floor	C
33	Point	34	Baker College	Y	N	servery	B
7	Point	8	Brochstein Pavilion	Y	N	1st floor	A
20	Point	21	Brockman Physics Building	Y	Y	every floor	B
21	Point	22	Brockman Physics Building	Y	Y	every floor	B
27	Point	28	Brown College	Y	Y	every floor	C
28	Point	29	Brown College	Y	Y	every floor	C
1	Point	2	Duncan College	Y	Y	every floor	C
2	Point	3	Fondren Library	Y	Y	5th floor	B
31	Point	32	Hanszen College	Y	Y	every floor	C
36	Point	37	Hanszen College	Y	Y	every floor	C
22	Point	23	Herman Brown Hall	Y	Y	every floor	C
9	Point	10	Herring Hall	Y	Y	every floor	C
4	Point	5	Herzstein Hall	Y	Y	every floor	B
37	Point	38	Humanities Building	Y	Y	every floor	B
16	Point	17	James A. Baker Hall	Y	Y	every floor	B
14	Point	15	Janice and Robert McNair Hall	Y	Y	every floor	B
15	Point	16	Janice and Robert McNair Hall	Y	Y	every floor	B
18	Point	19	Keith-Weiss Geological Labs	Y	Y	every floor	C
10	Point	11	Lovett College	Y	Y	every floor	C
35	Point	36	Lovett College	Y	Y	every floor	C
0	Point	1	McMurtry College	Y	Y	every floor	C
26	Point	27	Mechanical Engineering Lab	Y	Y	every floor	D
25	Point	26	OEDK	Y	Y	1st floor	C
6	Point	7	Rayzor Hall	Y	Y	every floor	B
8	Point	9	Rice Memorial Center	Y	N	1st floor	A
24	Point	25	Ryon Engineering Laboratory	Y	Y	3rd floor	C
5	Point	6	Sewell Hall	Y	Y	every floor	D
12	Point	13	Shepherd School of Music	Y	Y	every floor	B
13	Point	14	Shepherd School of Music	Y	Y	every floor	B
32	Point	33	Sid Richardson College	Y	Y	basement	C
38	Point	39	South Plant	Y	Y	ground floor	A
11	Point	12	South Servery	Y	N	1st floor	B
19	Point	20	Space Sciences Building	Y	Y	every floor	C

COMPUTER LABS

- Building name
- Whether you need special access after business hours
- Capacity
- Operating System
 - Windows
  - Mac
  - Linux capable
- Room number
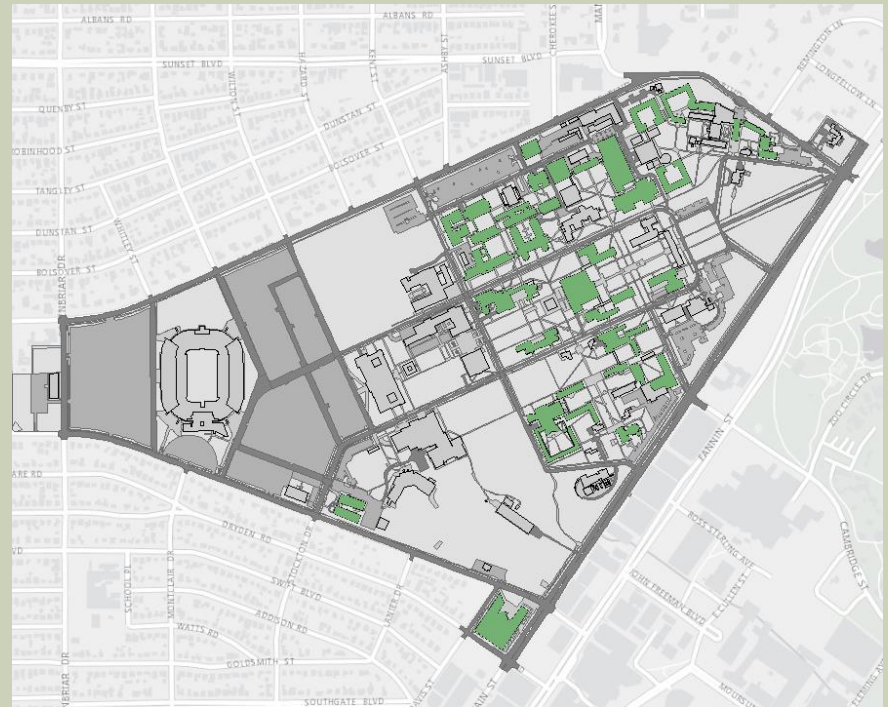
ANALYSIS

- Huge thanks to the IT Help Desk for getting me a comprehensive list of all the labs they support:
- http://edtech.rice.edu/www/?option=com_iricetv
- Most departments have computer labs specifically for their students, accessible 24/7 if you have a valid ID
- Most labs are Windows or a combination of Windows and Mac
- Speed of hardware varies greatly across different departments
  - Earth Sciences, OEDK, Duncan, and Mudd Lab are most impressive
  - Sewell Lab, RMC, and the Humanities labs = not so much

PUBLIC ART

- Used this one for the GPS coordinates (lat, long)
- Artist name
- Piece name
- Medium
  - Sculpture
  - Photo
  - Painting
- Indoors or outdoors
- Year created
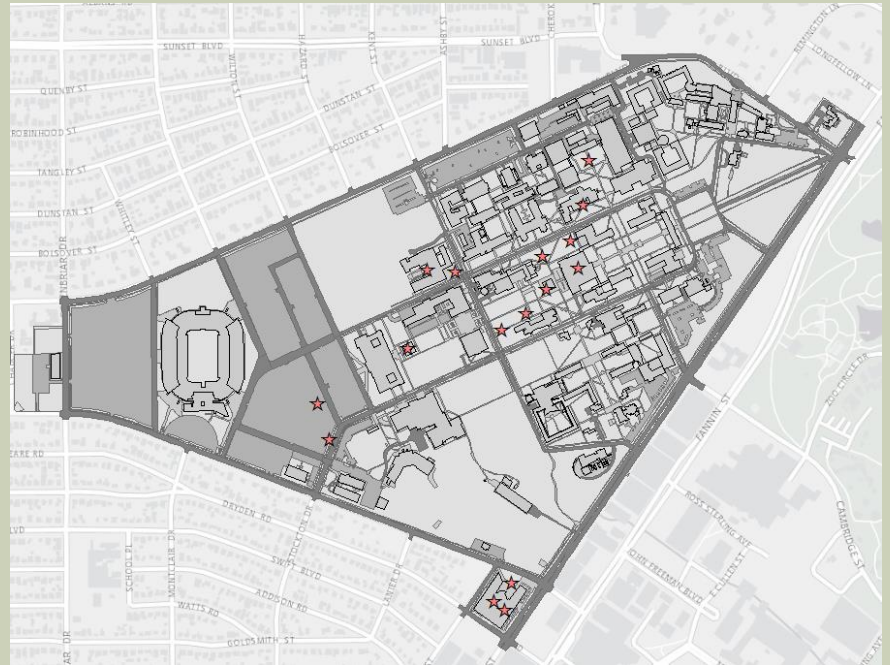
GPS TOOL USED

Garmin nuvi 760 (ca. 2007)

- **Most measurements were consistently off (when mapped, ~15ft east and ~10ft north)**
- **Many Houston roads have also not been added to its database**
- **Cell phone's GPS measurements were more accurate**

ANALYSIS

- Vast majority of art pieces are sculptures, and outdoors
- Also placed a version of the map on MapBox, with pictures of the art if you want to access it
- More information:
- https://api.tiles.mapbox.com/v4/dynamicwebpaige.h267k92e/page.html?access_token=pk.eyJ1IjoiZHluYW1p Y3dlYnBhaWdlIiwiYSI6ImJK ZzI6NHcifQ.Fv24YqwbSLpbz JVk3oIMMg#16/29.7173/-95.4044

UNCHAINED BICYCLES

- Brand
  - Trek
  - Specialized
  - Giant
  - Bianchi
  - Huff-E
  - Schwinn
- Number (lots!)
- Colors
- Date
- Time
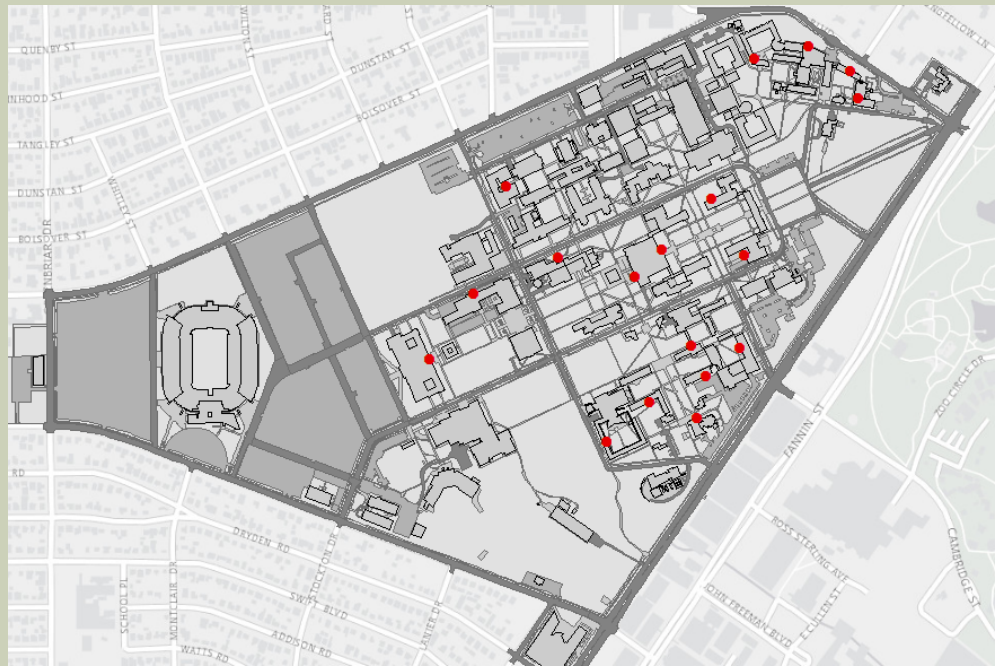
ANALYSIS

OBJECTID *	Shape *	Number	Colors	Brands	Date	Time
1	Point	3	red, blue	Specializ	3/6/201	20:01
2	Point	4	white, red, blue	Specializ	3/6/201	20:04
3	Point	2	purple, red	Bianchi,	3/6/201	20:10
4	Point	1	blue	Trek	3/6/201	20:15
5	Point	1	black	Trek	3/6/201	20:22
6	Point	5	pink, blue, red	Specializ	3/6/201	20:30
7	Point	3	green, blue, white	Giant, Tr	3/6/201	20:40
8	Point	2	white, black	Trek, Gia	3/6/201	20:45
9	Point	3	white, pink, red	Trek, Gia	3/6/201	20:50
10	Point	5	red, blue	Schwinn	3/6/201	20:55
11	Point	6	red, black, blue, white	Trek, Sp	3/6/201	21:01
12	Point	7	pink, purple, red, white	Trek, Sp	3/6/201	21:03
13	Point	3	blue, green	Trek, Hu	3/6/201	21:08
14	Point	3	black, green, blue	Trek, Gia	3/6/201	21:09
15	Point	2	white, red	Giant	3/6/201	21:12
16	Point	4	white, red, blue	Bianchi,	3/6/201	21:19
17	Point	3	blue, black, yellow	Giant, Tr	3/6/201	21:30
18	Point	3	orange, red, blue	ant, H	3/6/201	21:35
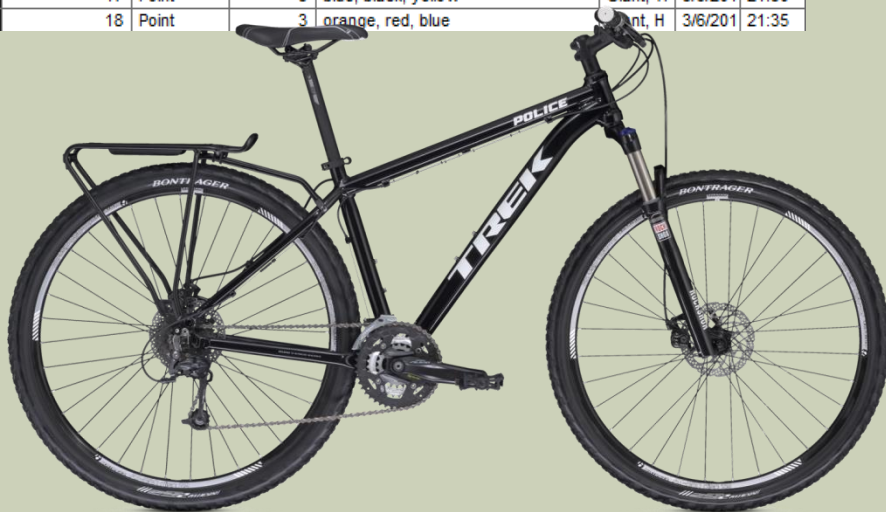
- RUPD will think you're trying to steal things if you walk around campus at night during spring break pulling at bike chains
- Blue and red are the most common colors
- Trek, Giant, and HuffE are the most common brands
- Higher quality bikes are more likely to be securely chained
- 60 unchained bikes total

LAGNIAPPE
(GEOPROCESSING WITH PYTHON)

- Geological map had a lot of pointing and clicking
- Wanted to see if there was a better way
- Starting in ArcGIS 10.2, there's a way to change a raster to a polygon automatically

```
import arcpy
from arcpy import env
env.workspace = "C:/data"
arcpy.RasterToPolygon_conversion("zone", "c:/output/zones.shp", "NO_SIMPLIFY",
                                 "VALUE")


# Name: RasterToPolygon_Ex_02.py
# Description: Converts a raster dataset to polygon features.
# Requirements: None

# Import system modules
import arcpy
from arcpy import env

# Set environment settings
env.workspace = "C:/data"

# Set local variables
inRaster = "zone"
outPolygons = "c:/output/zones.shp"
field = "VALUE"

# Execute RasterToPolygon
arcpy.RasterToPolygon_conversion(inRaster, outPolygons, "NO_SIMPLIFY", field)
```
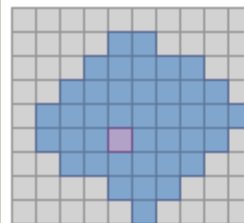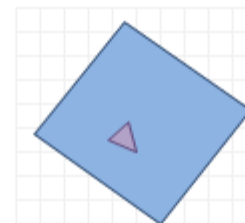

Input raster   Simplified output   Non-simplified output
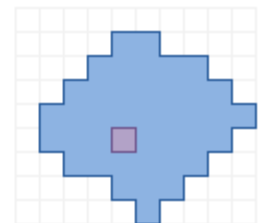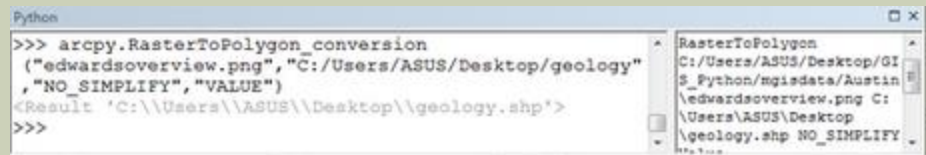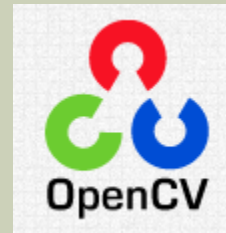
LAGNIAPPE
(GEOPROCESSING WITH PYTHON)
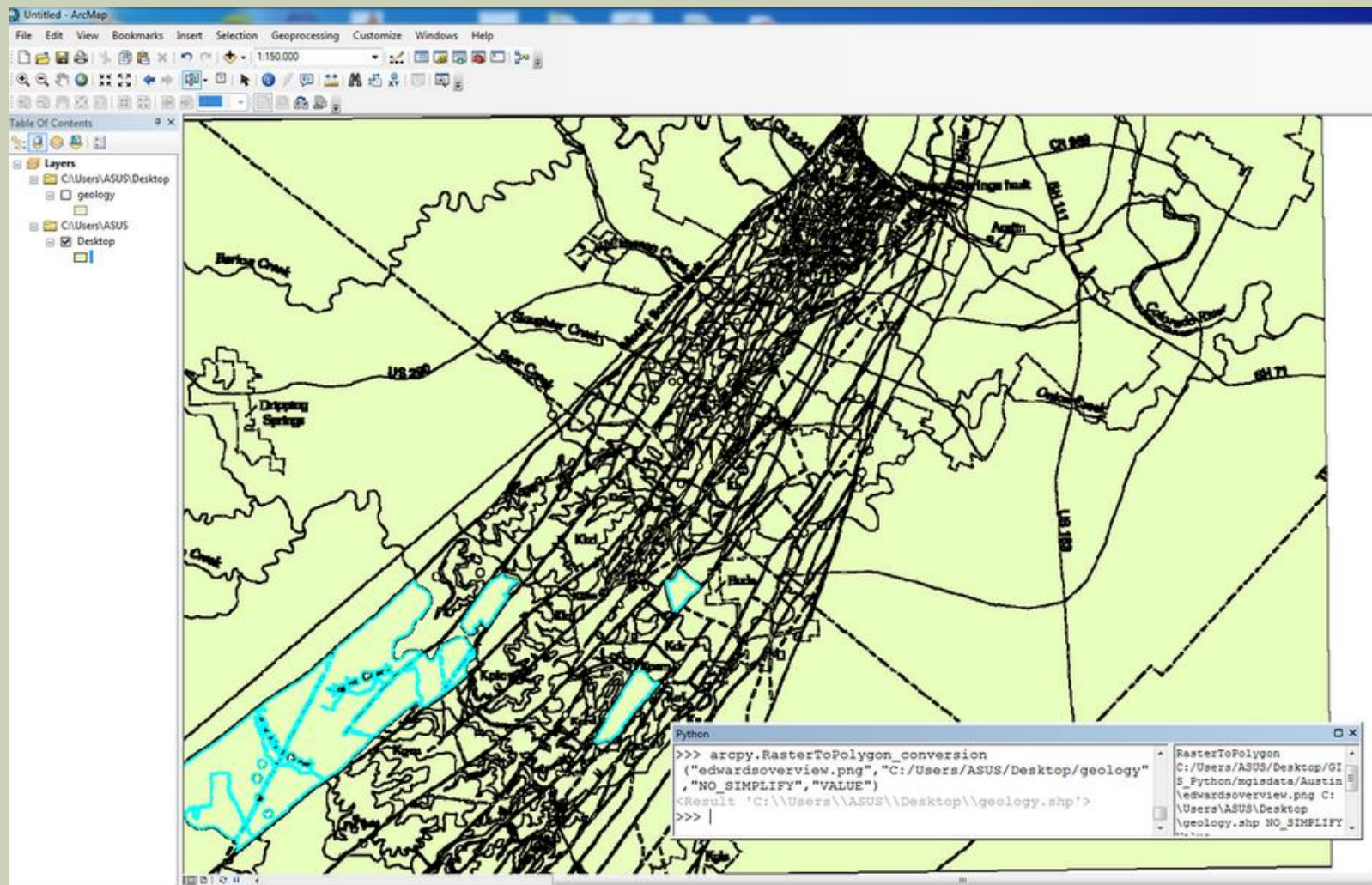
LAGNIAPPE
(GEOPROCESSING WITH PYTHON)
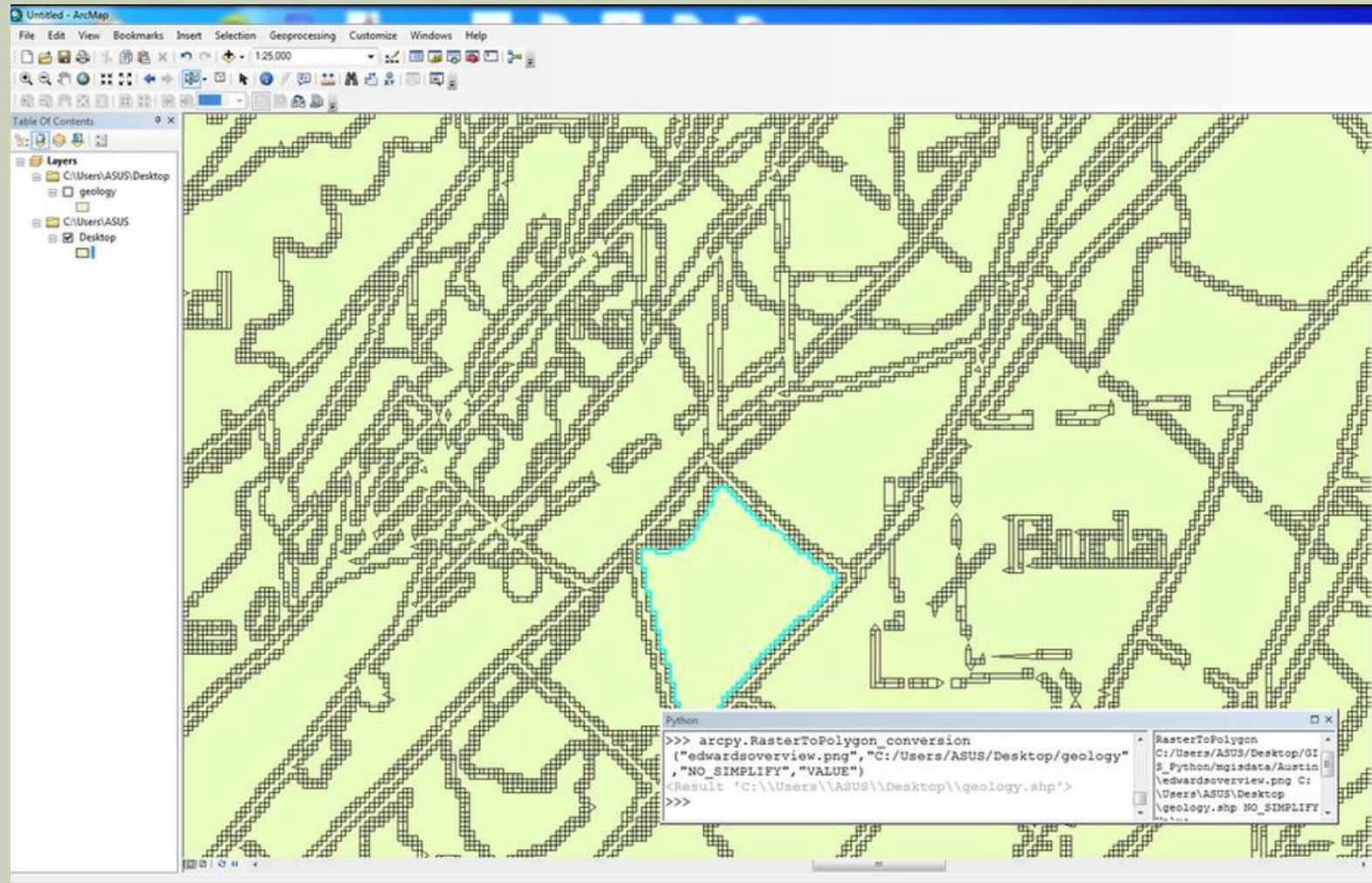
- Want to see if there's a better way to pre-process CAD / "picture" files to hone lines before importing to Arc

- Would be awesome to use OpenCV and arcpy externally without launching GIS application

THANKS!