SMALL TOWN GIS

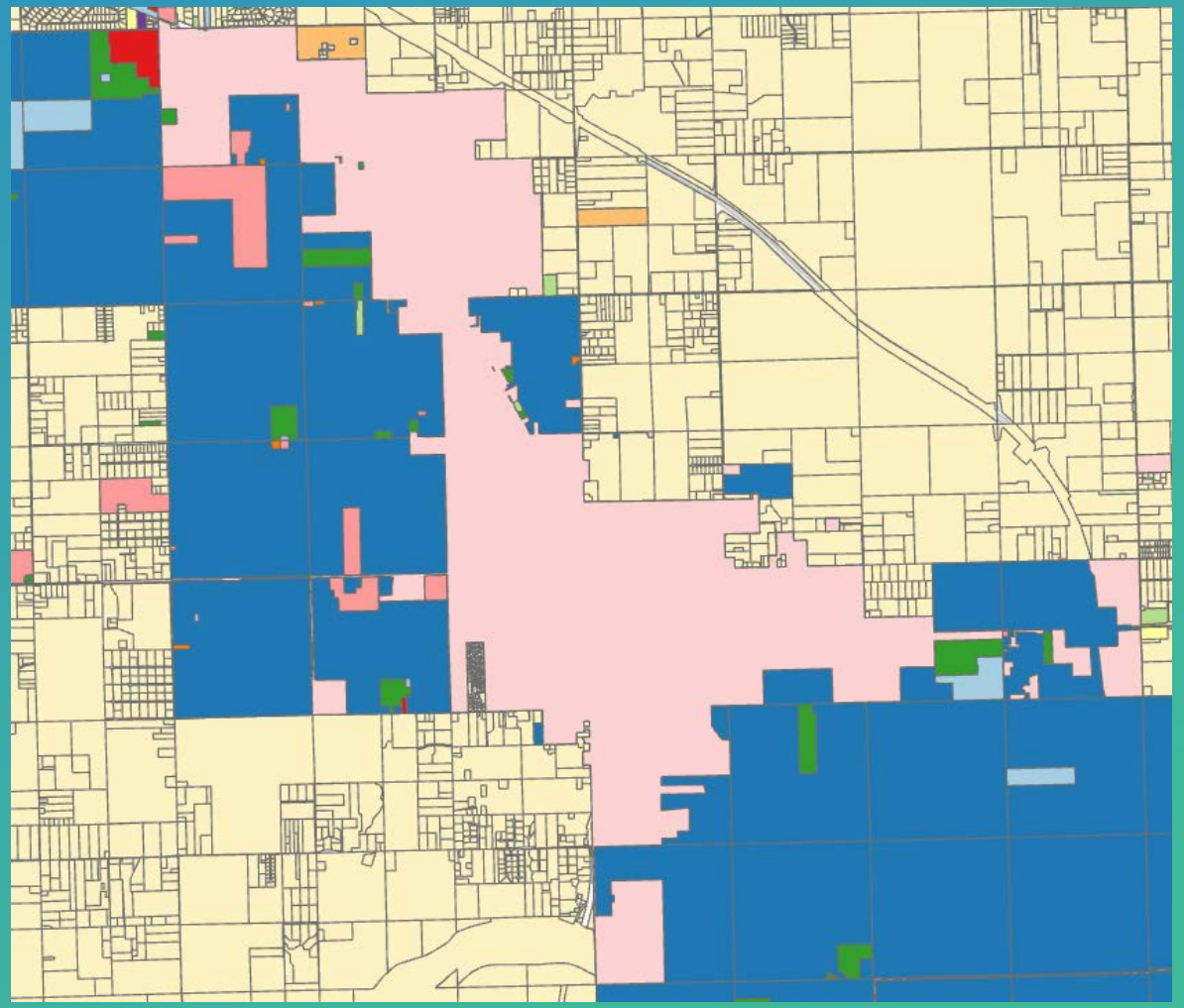
The little things that help make a big difference when answering local development questions.

Introduction

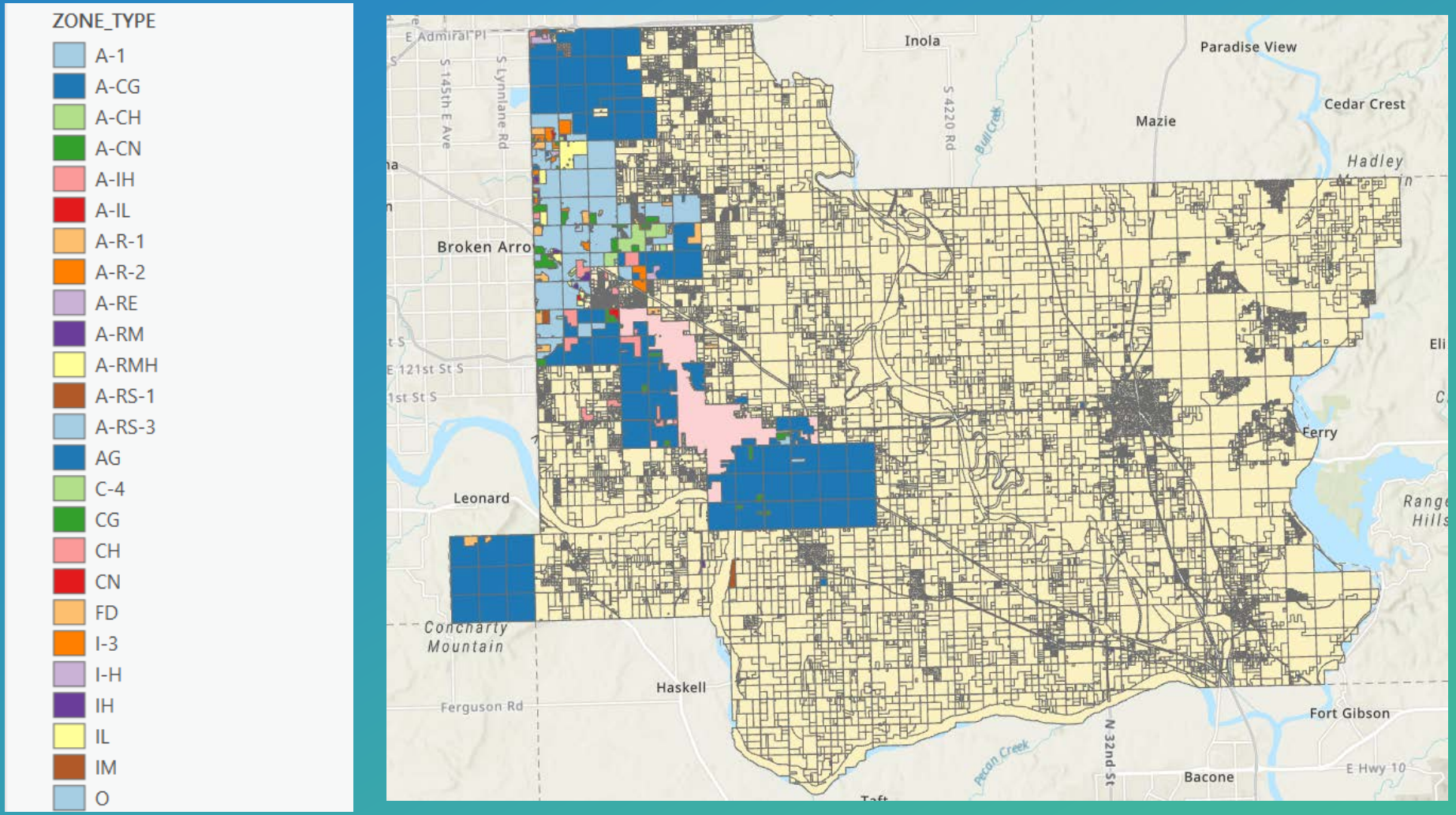
- Robyn JE Murray
- Formerly worked for the City of Coweta
- Working toward an Associates of Applied Science in GIS
  - Columbus State Community College
- Part-time GIS Consultant with Integrated GIS
  - Based out of Columbus, OH

WHERE IT BEGAN…

Extremely inefficient usage.

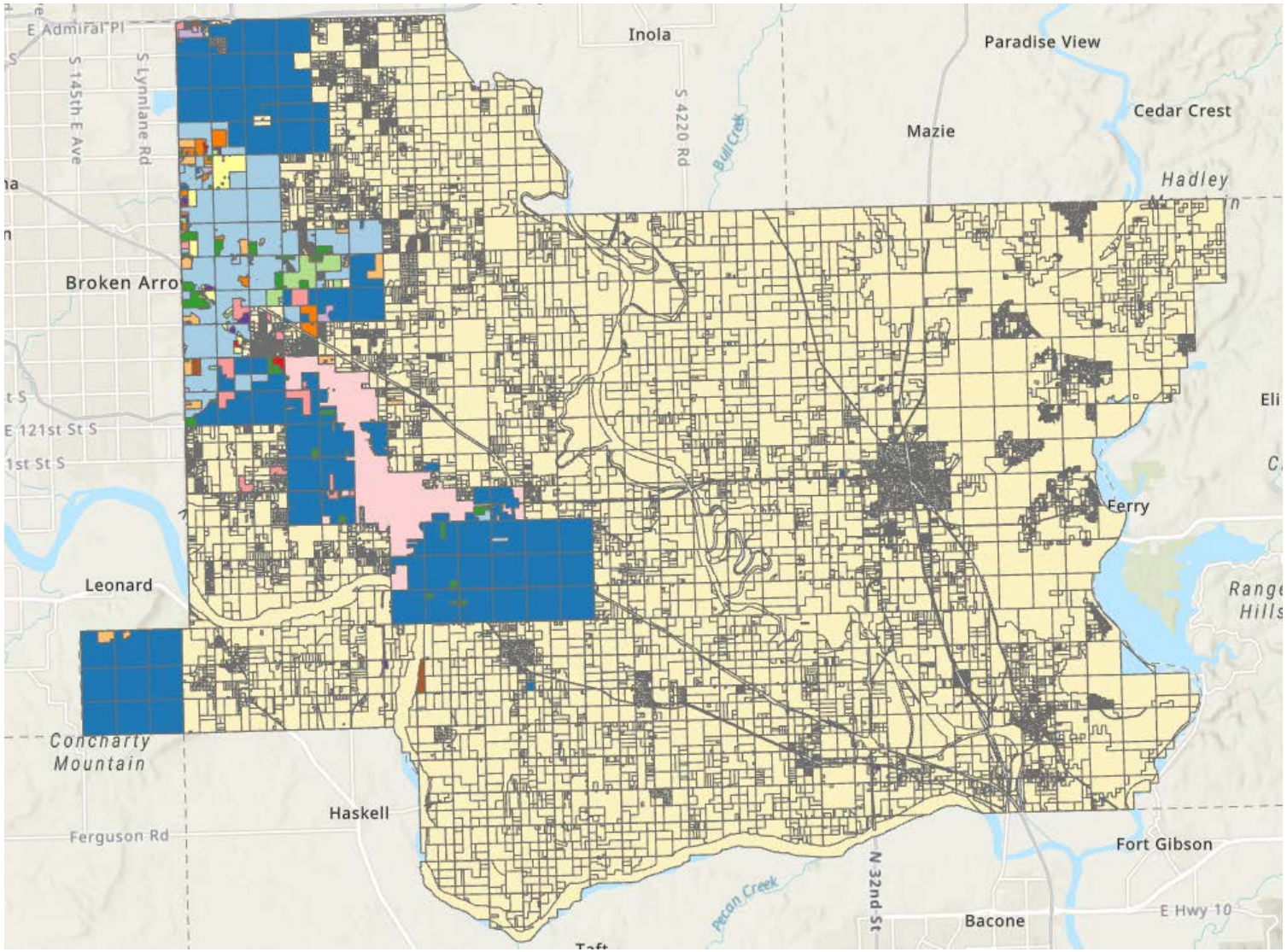


A CLOSER LOOK

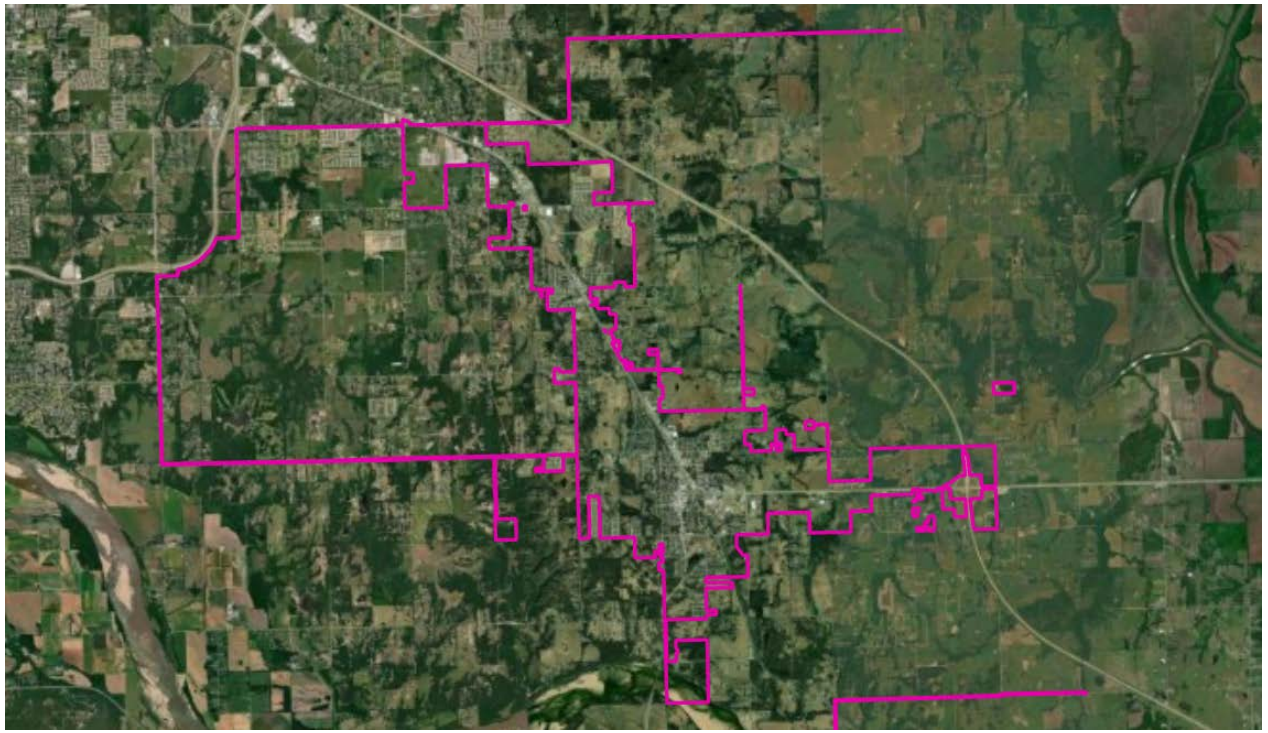


What issues do you see?

- Too much data
  - County-wide
- Unspecified
- Clunky
  - Turning layers off and on
  - Information contained on different, unconnected layers
- Stylistically chaotic
  - Symbology following no rhyme or reason
- Location difficult to ascertain
- No roads!



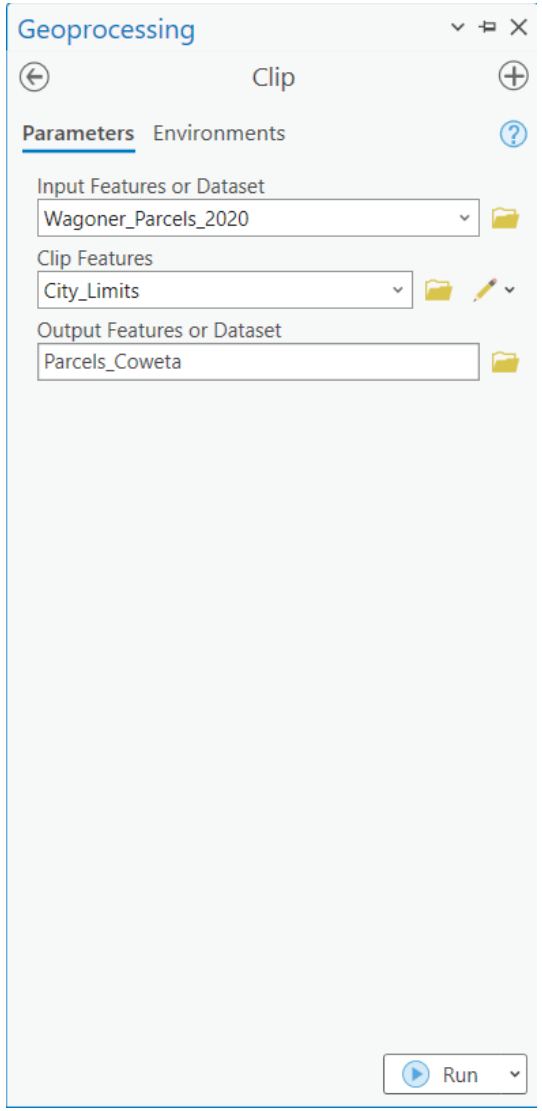
Step 1: Curate Data



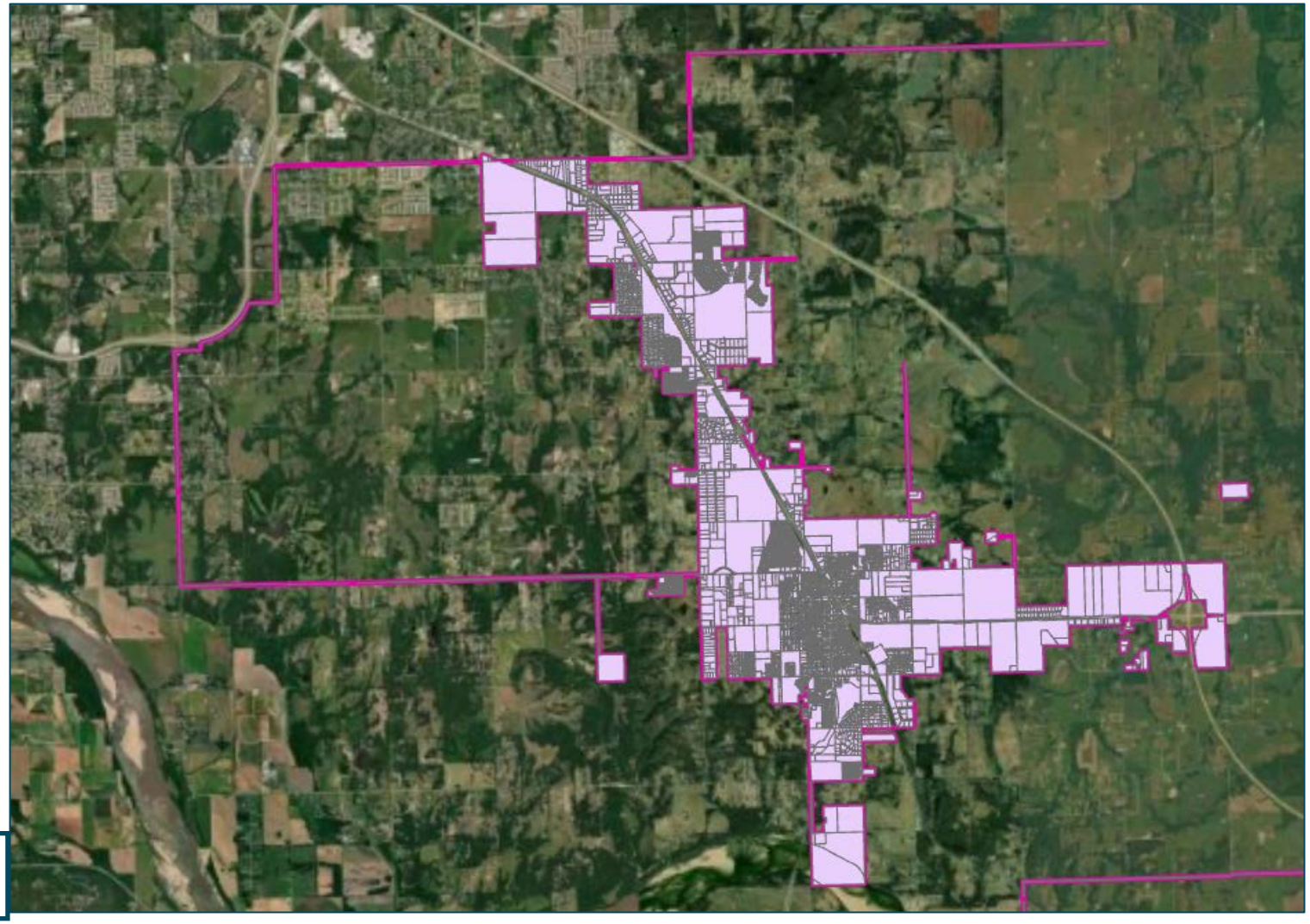
The first thing I did was limit the data to what is in the City Limits.

1. Change City Limits layer symbology
   a) No fill
   b) Border weight: 2
   c) Border outline color of choice
2. Use this layer to clip the parcels layer and the zoning layer.

Clipping Wagoner County Parcels Layer

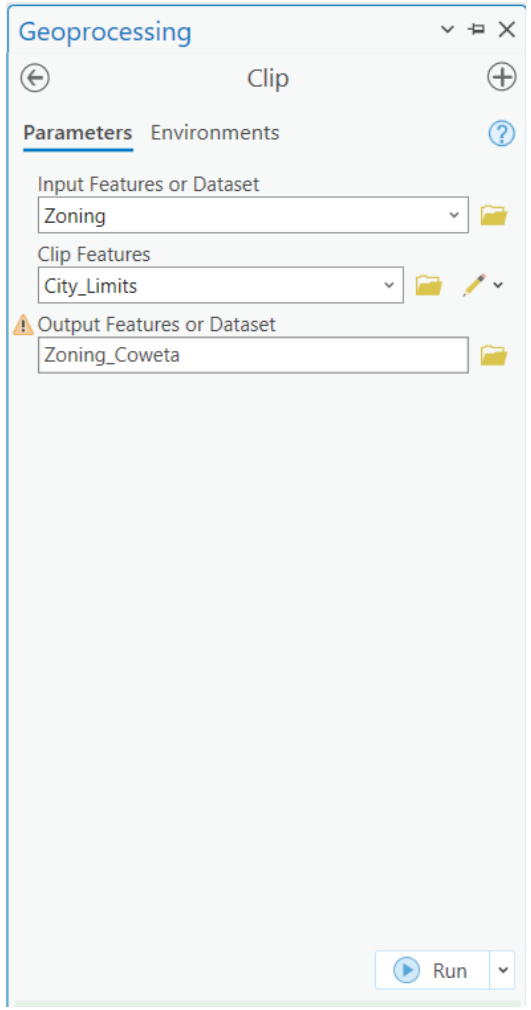


Clip Tool Parameters



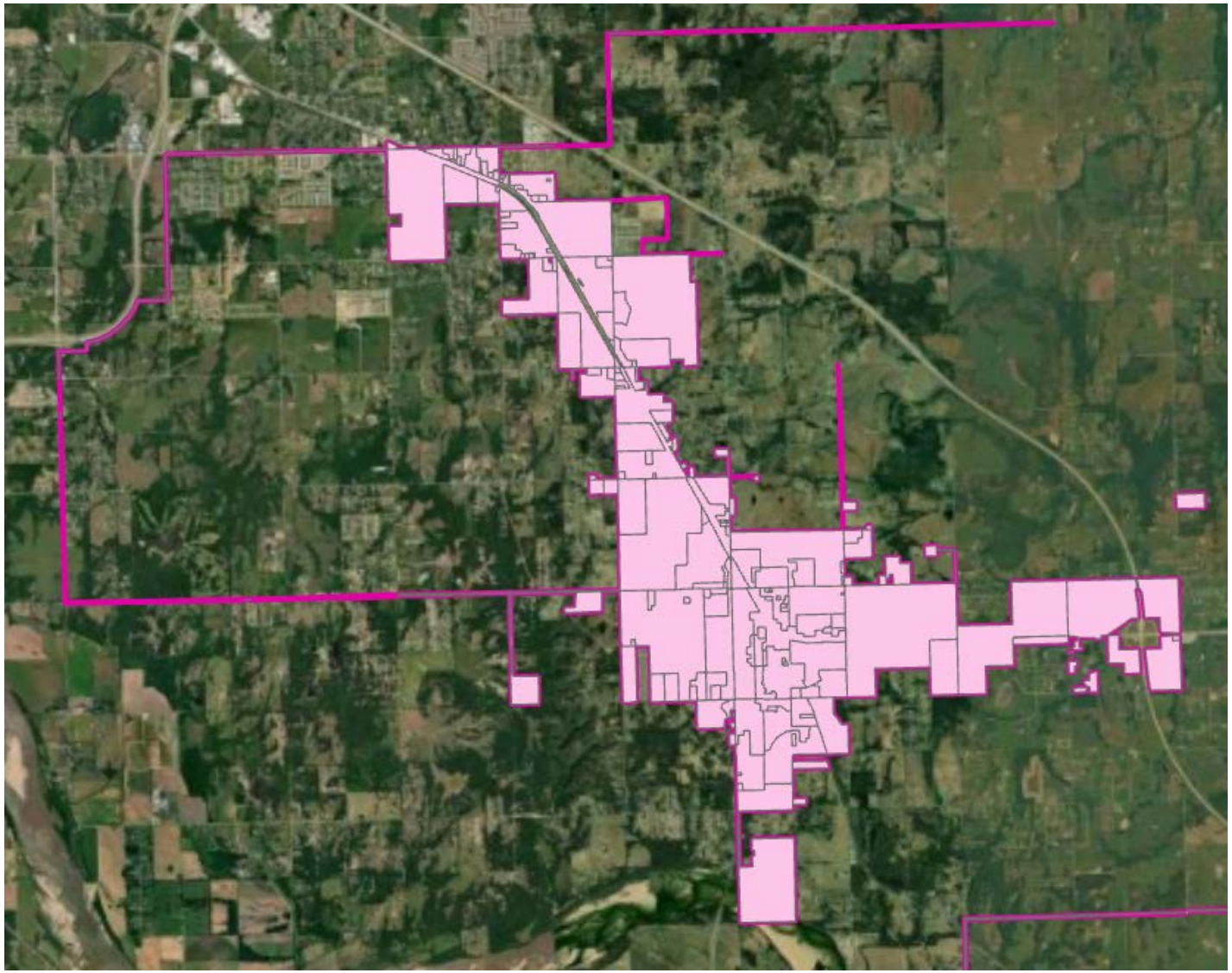
Output

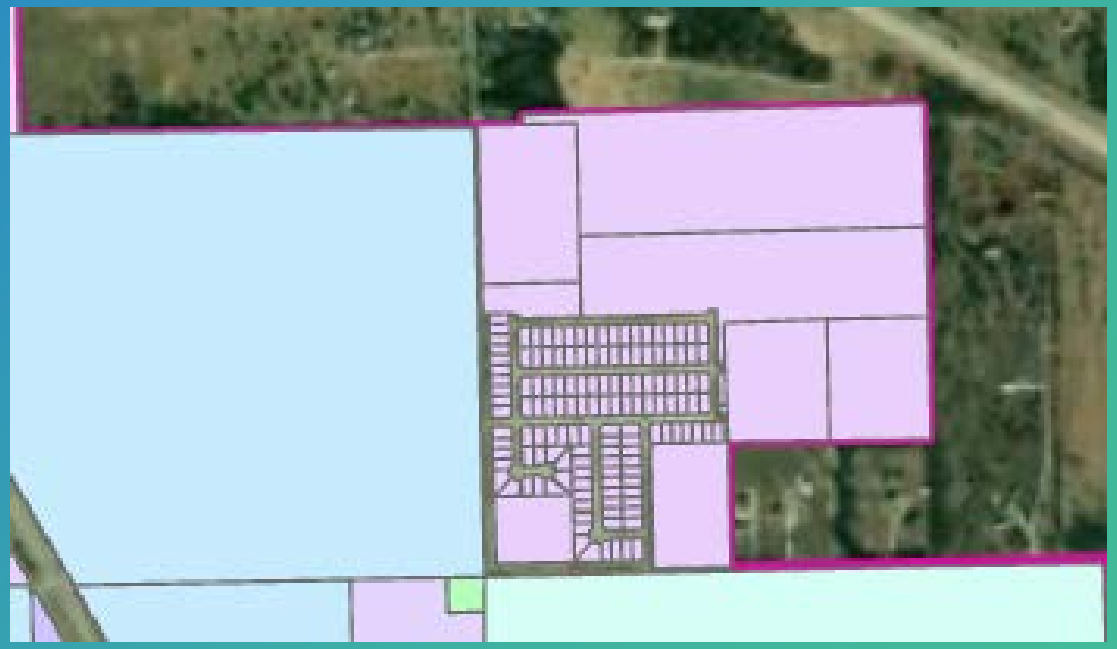
Clipping Wagoner County Zoning Layer



Clip Tool Parameters

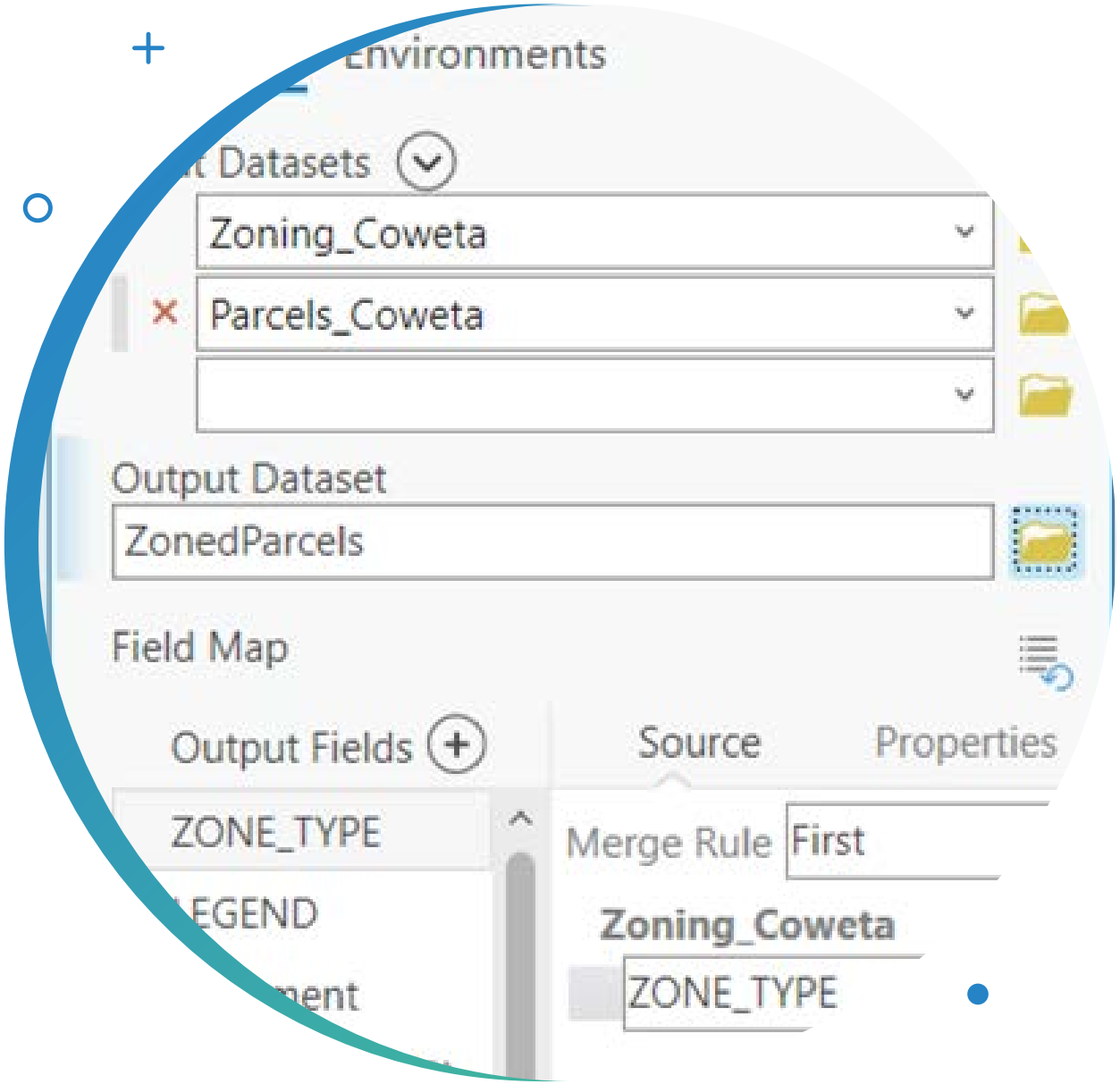
Output





Quick tip: Compare the layers

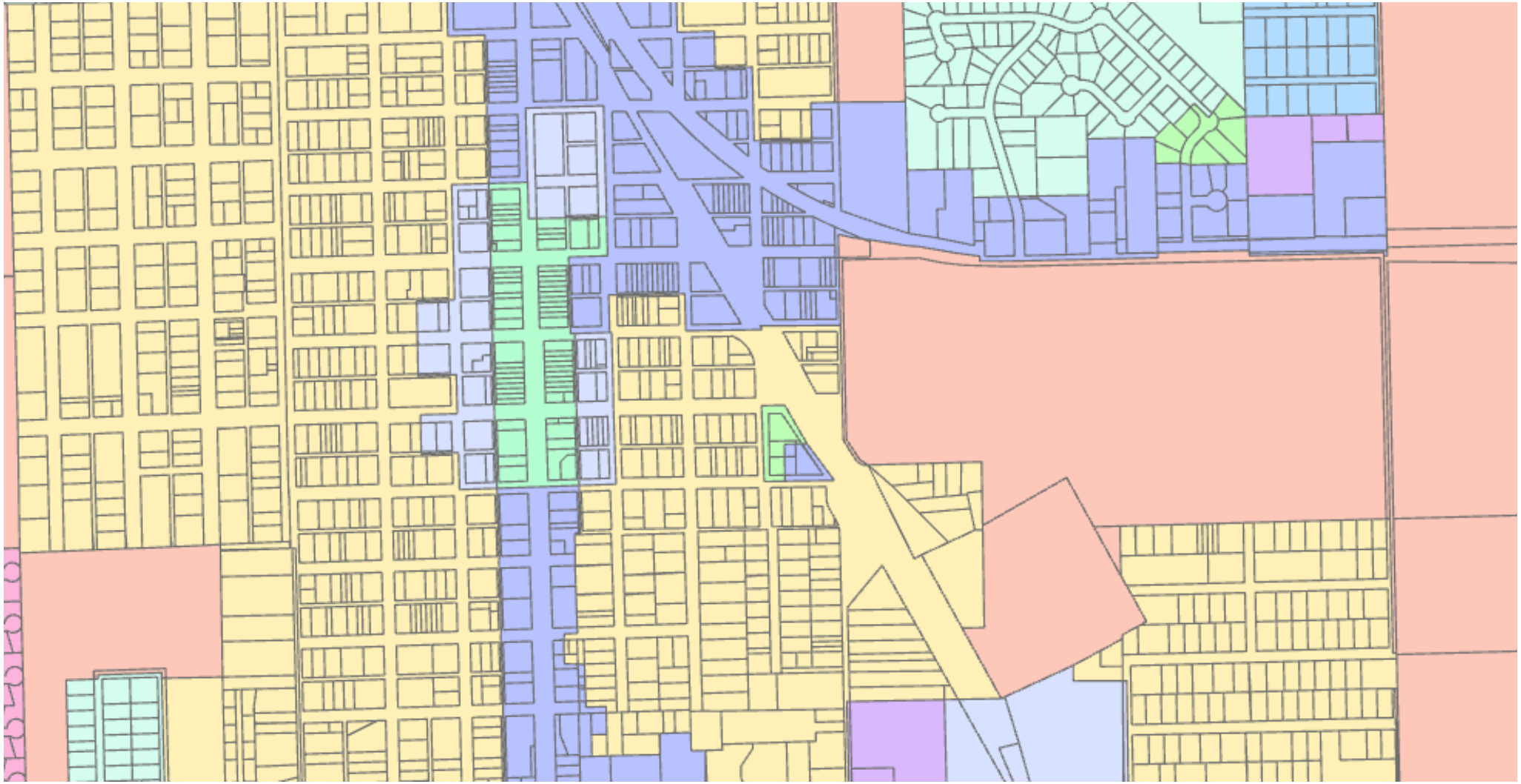
- Be aware of instances where layers may not have over lapping data.
- This indicates an area where you may need to use other sources to create the data.
- The Swipe tool is helpful for this.



Step 2: Merge Data with Union

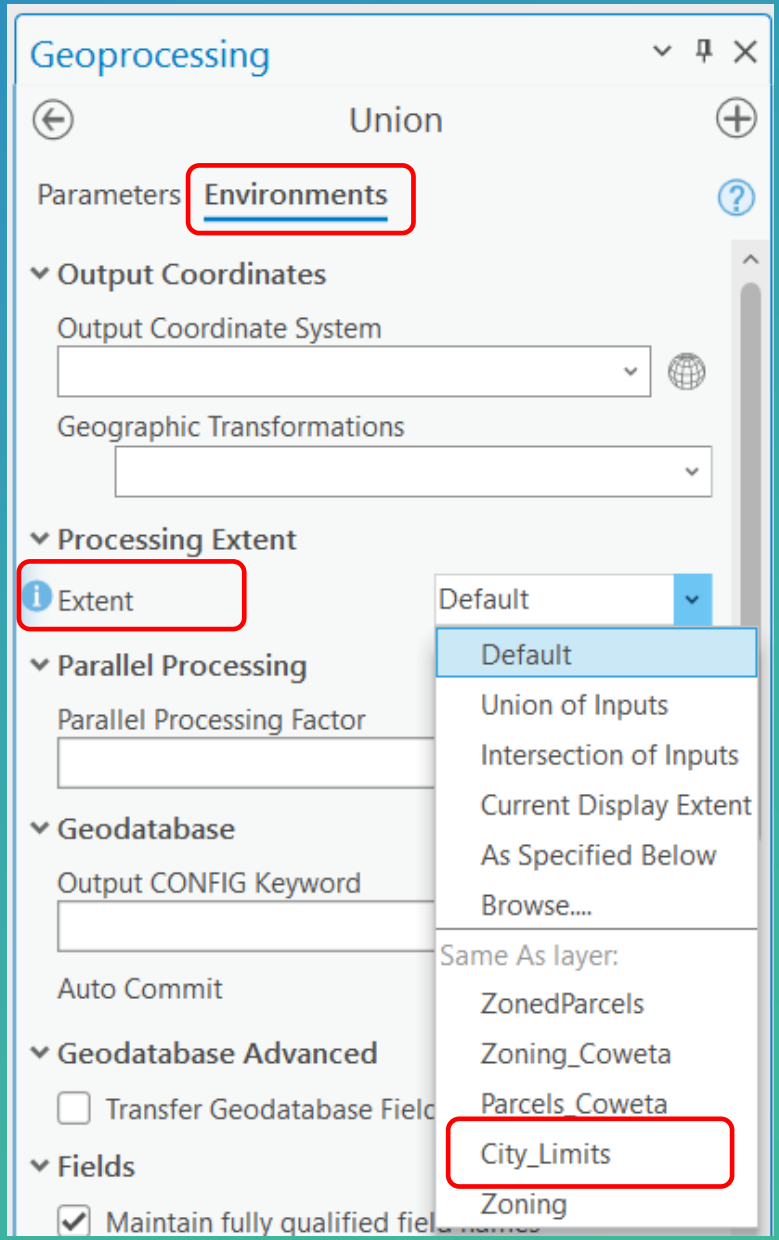
- We want all the data for a parcel to be contained in the same dataset.
- As it is, the zoning information is separated from the parcel information.
- Create a new data layer using the “Union” tool.
- Union vs Merge

What is the issue with the output?



NOTE

It is possible to combine steps 1 and 2 using just the Merge tool.



Step 3: Symbology

The parcel data layer is simple

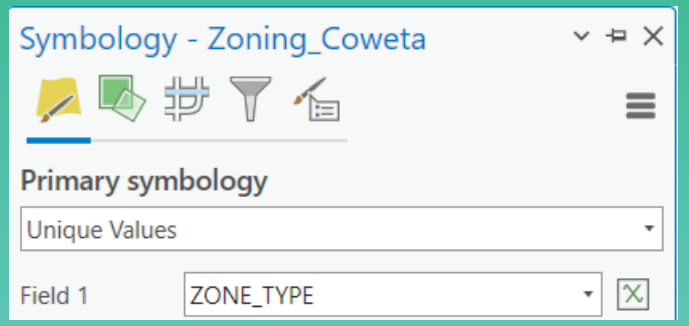
- No fill, 70% gray outline

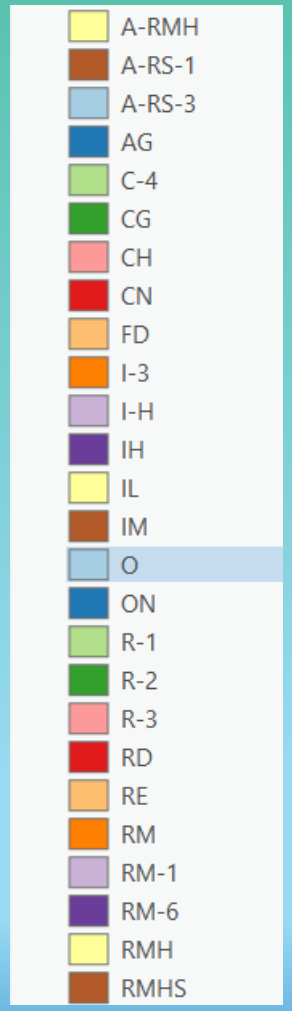
The zoning data is more complicated

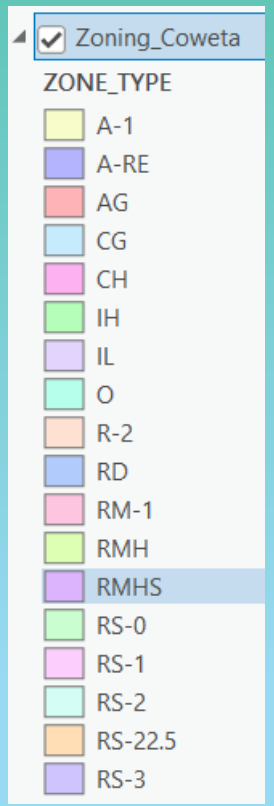
- The data started with 46 zoning designations
- After the clip there are still 18
- The Coweta Zoning Code only designates 13 zoning districts.

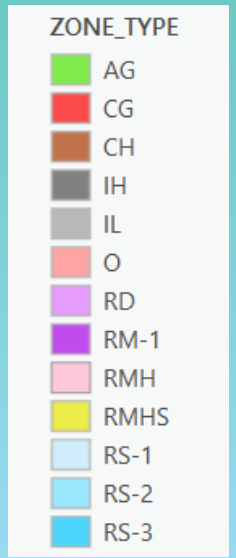
Procedure:

1. Clean the data
2. Choose colors appropriately.

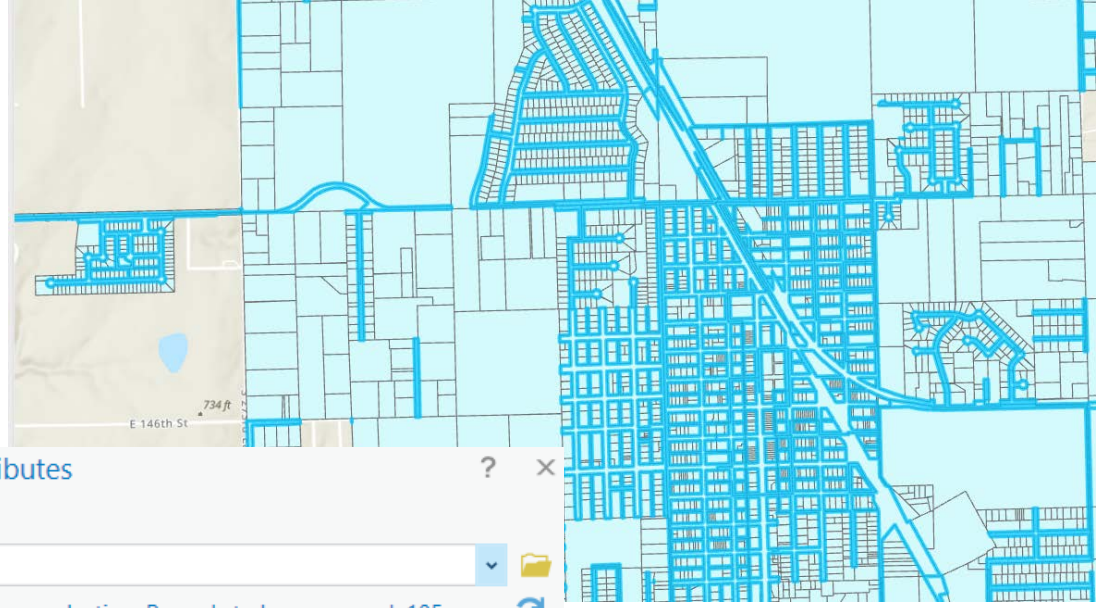








Step 3a: Clean Data



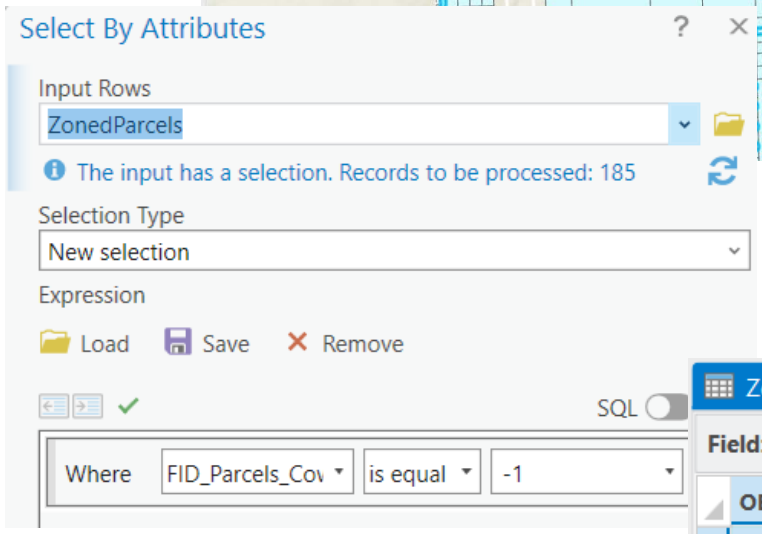
Remove data for the various rights-of-way

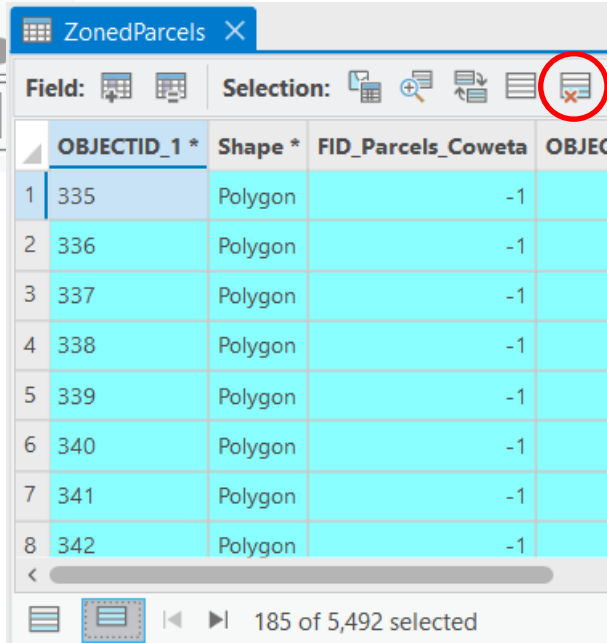
Remove errant parcels from fenceline

- Make Zoning_Coweta the only selectable layer
- Change attribute view to selected only
- Delete the lines you selected and save

Add zoning where necessary

Recategorize county and previous zoning





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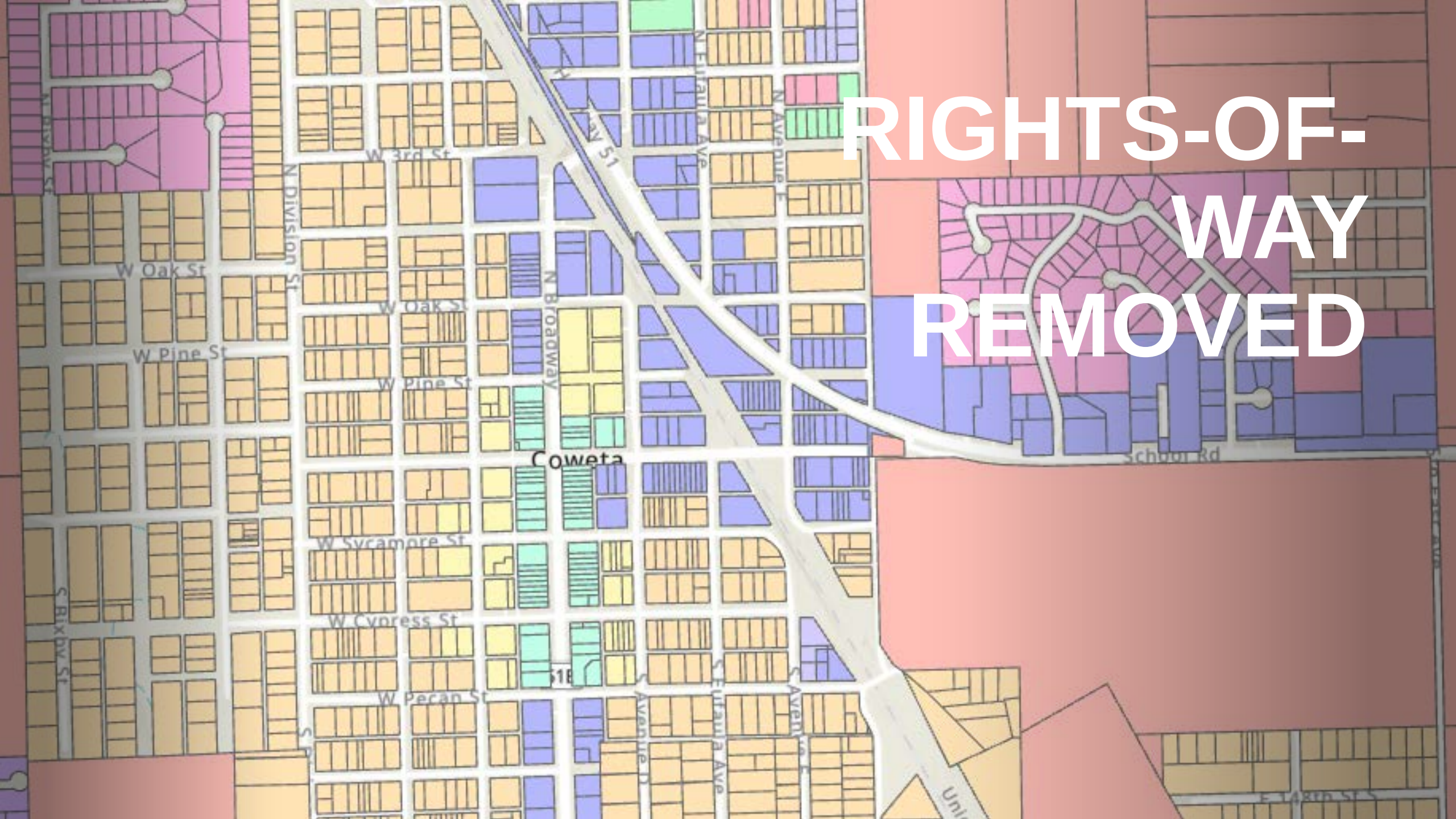
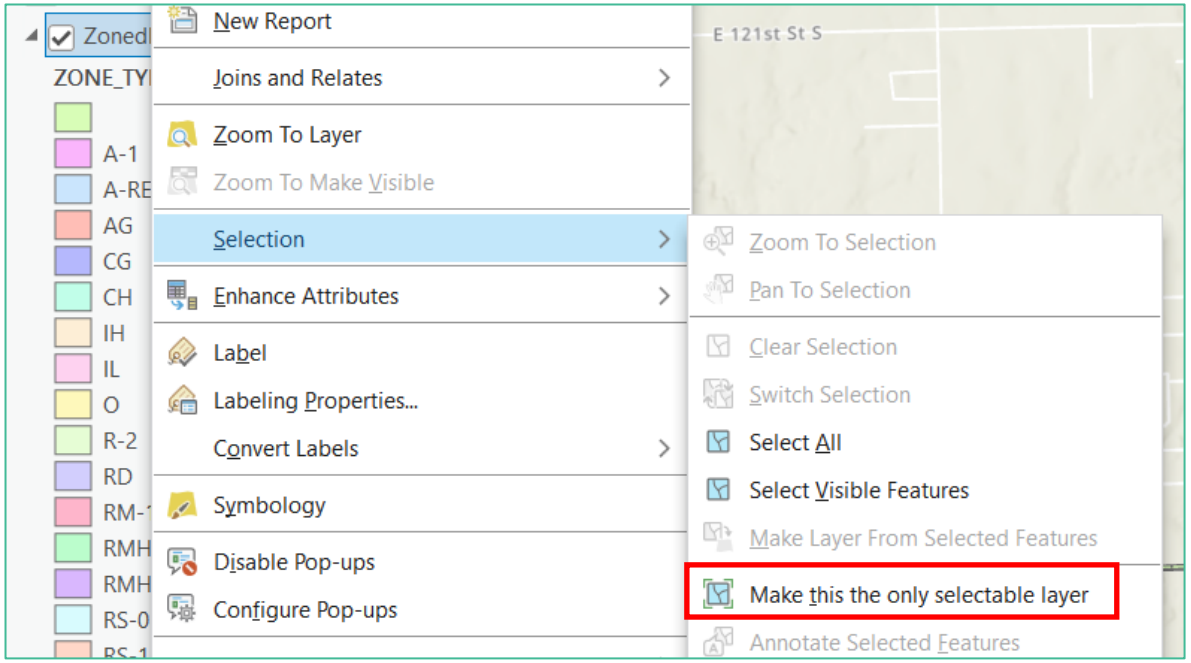
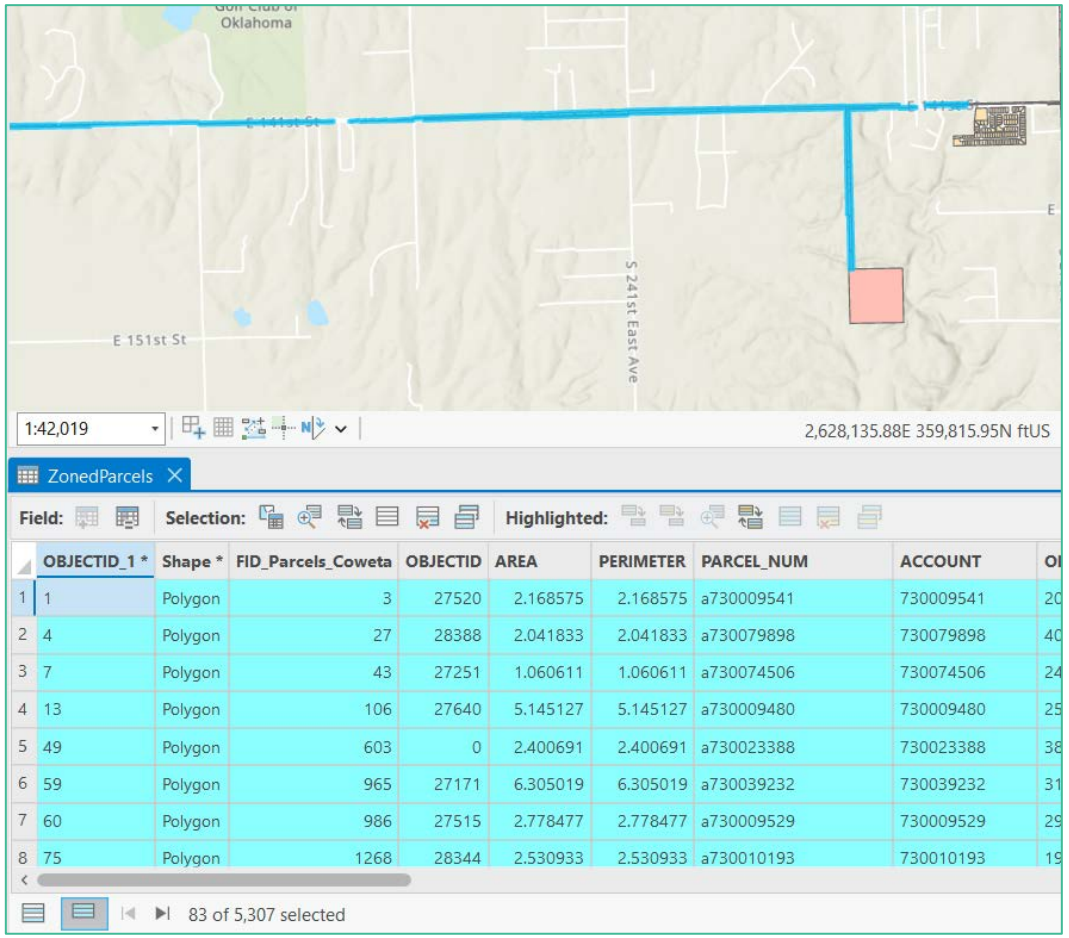
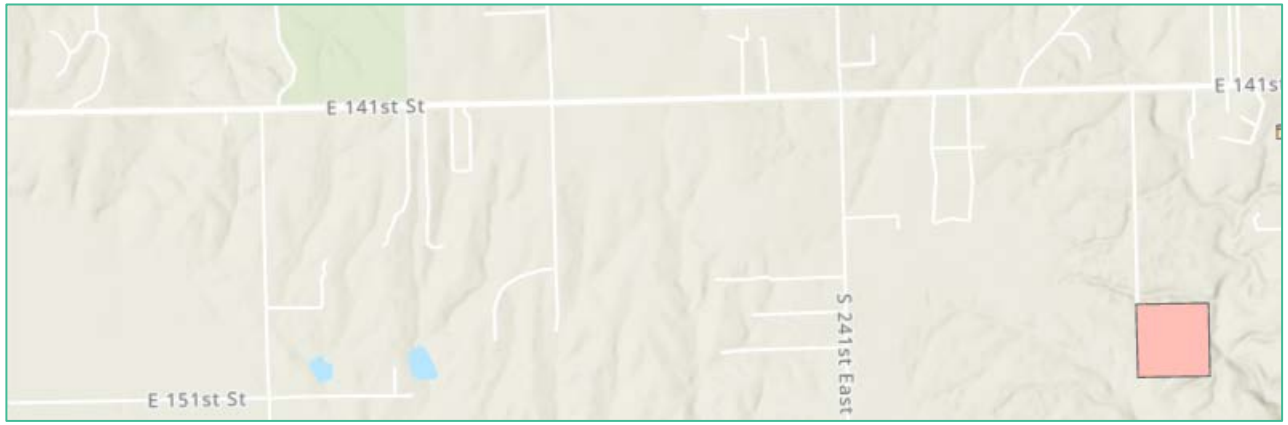
2	336	Polygon	-1	
3	337	Polygon	-1	
4	338	Polygon	-1	
5	339	Polygon	-1	
6	340	Polygon	-1	
7	341	Polygon	-1	
8	342	Polygon	-1	


RIGHTS-OF-WAY REMOVED
W 3rd St
N Division St
W Oak St
W Oak St
W Pine St
W Pine St
N Broadway
Coweta
W Sycamore St
W Cypress St
W Pecan St
S Bixby St
N Eufaula Ave
N Avenue E
S Eufaula Ave
S Avenue E
School Rd

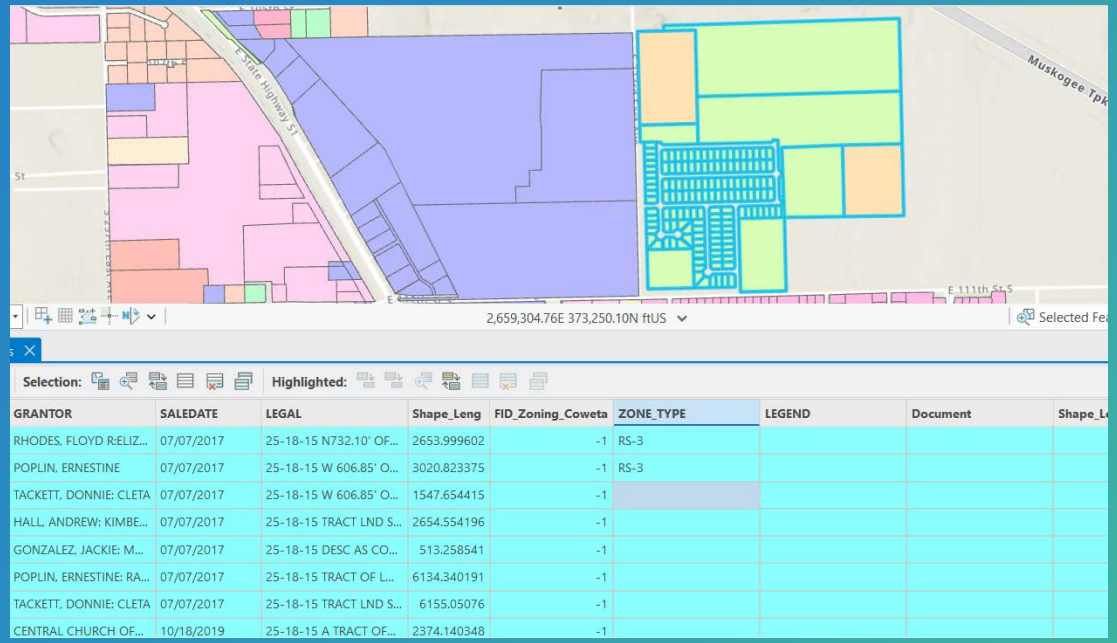




	OBJECTID_1 *	Shape *	FID_Parcels_Coweta	OBJECTID	AREA	PERIMETER	PARCEL_NUM	ACCOUNT	OI
1	1	Polygon	3	27520	2.168575	2.168575	a730009541	730009541	20
2	4	Polygon	27	28388	2.041833	2.041833	a730079898	730079898	40
3	7	Polygon	43	27251	1.060611	1.060611	a730074506	730074506	24
4	13	Polygon	106	27640	5.145127	5.145127	a730009480	730009480	25
5	49	Polygon	603	0	2.400691	2.400691	a730023388	730023388	38
6	59	Polygon	965	27171	6.305019	6.305019	a730039232	730039232	31
7	60	Polygon	986	27515	2.778477	2.778477	a730009529	730009529	29
8	75	Polygon	1268	28344	2.530933	2.530933	a730010193	730010193	19



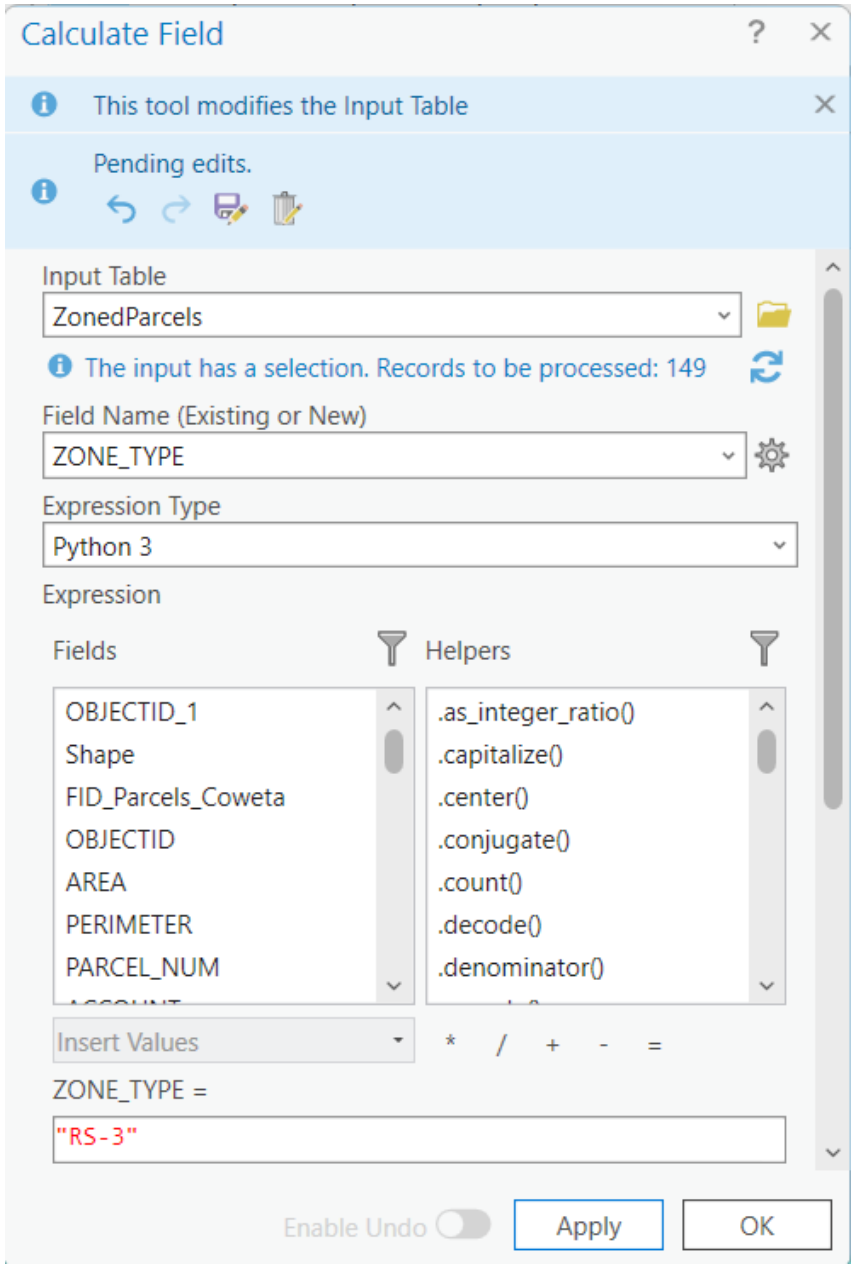
Remove Fenceline “Parcels”

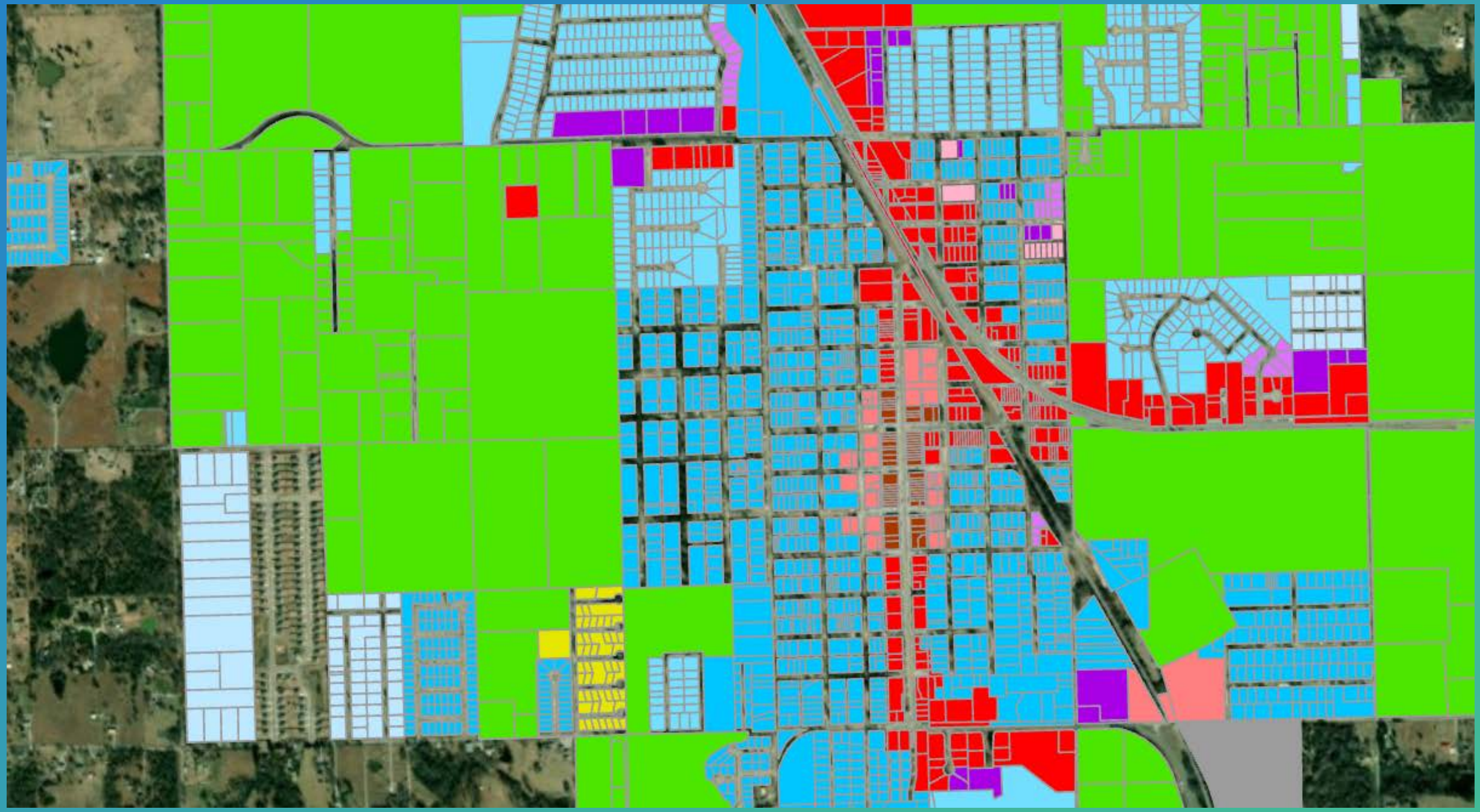


GRANTOR	SALEDATE	LEGAL	Shape_Leng	FID_Zoning_Coweta	ZONE_TYPE	LEGEND	Document	Shape_L
RHODES, FLOYD R:ELIZ...	07/07/2017	25-18-15 N732.10' OF...	2653.999602	-1	RS-3			
POPLIN, ERNESTINE	07/07/2017	25-18-15 W 606.85' O...	3020.823375	-1	RS-3			
TACKETT, DONNIE: CLETA	07/07/2017	25-18-15 W 606.85' O...	1547.654415	-1				
HALL, ANDREW: KIMBE...	07/07/2017	25-18-15 TRACT LND S...	2654.554196	-1				
GONZALEZ, JACKIE: M...	07/07/2017	25-18-15 DESC AS CO...	513.258541	-1				
POPLIN, ERNESTINE: RA...	07/07/2017	25-18-15 TRACT OF L...	6134.340191	-1				
TACKETT, DONNIE: CLETA	07/07/2017	25-18-15 TRACT LND S...	6155.05076	-1				
CENTRAL CHURCH OF...	10/18/2019	25-18-15 A TRACT OF...	2374.140348	-1				

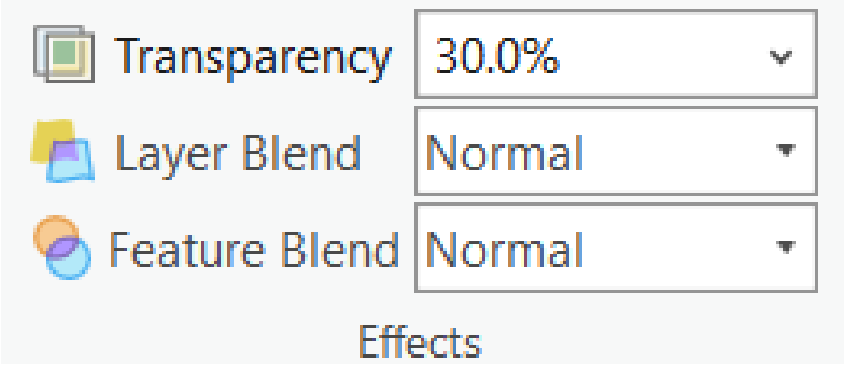
Add Zoning

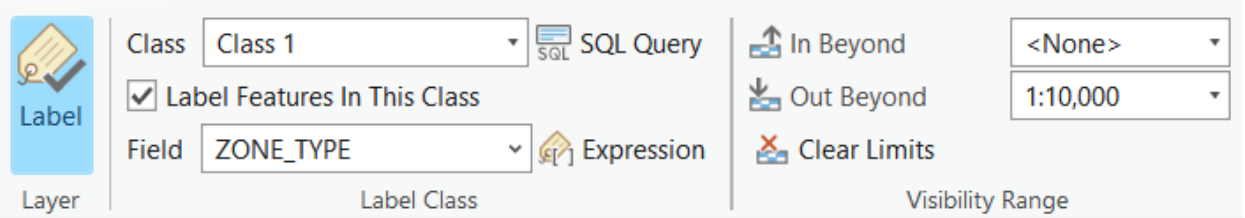
- Manually
  - 149 parcels
- Calculate Field
  - Python
  - String





Step 4: Transparency and Labeling



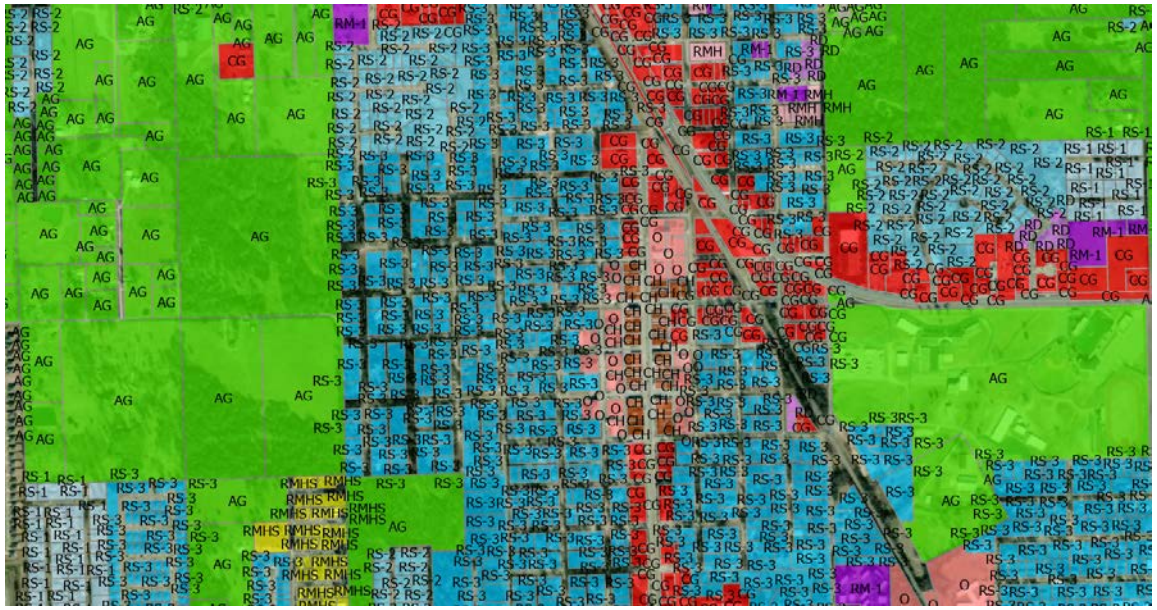


Much of what this is used for is to help answer questions about zoning.

Transparency is set to 30% to facilitate location of the lot(s) in question.

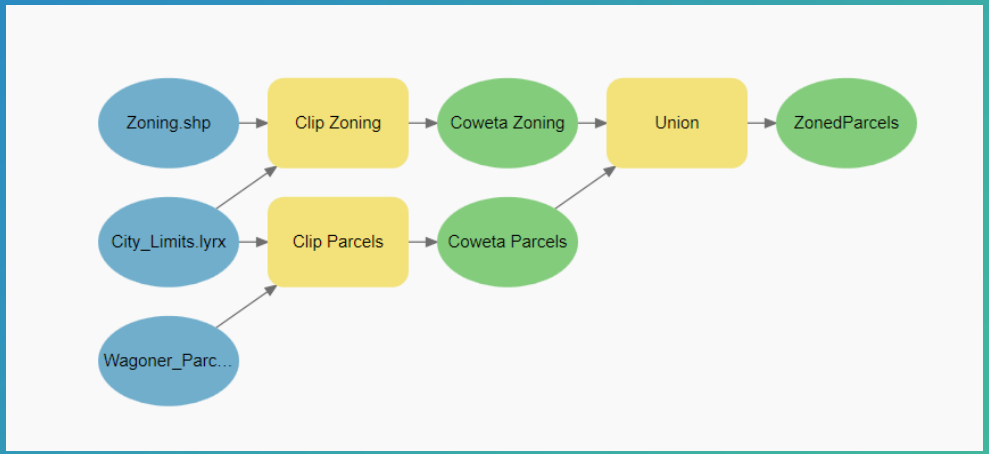
Labels for the Zone_Type are set for answers at a glance.

- The Out Beyond setting was set to 1:10,000



NEXT STEPS

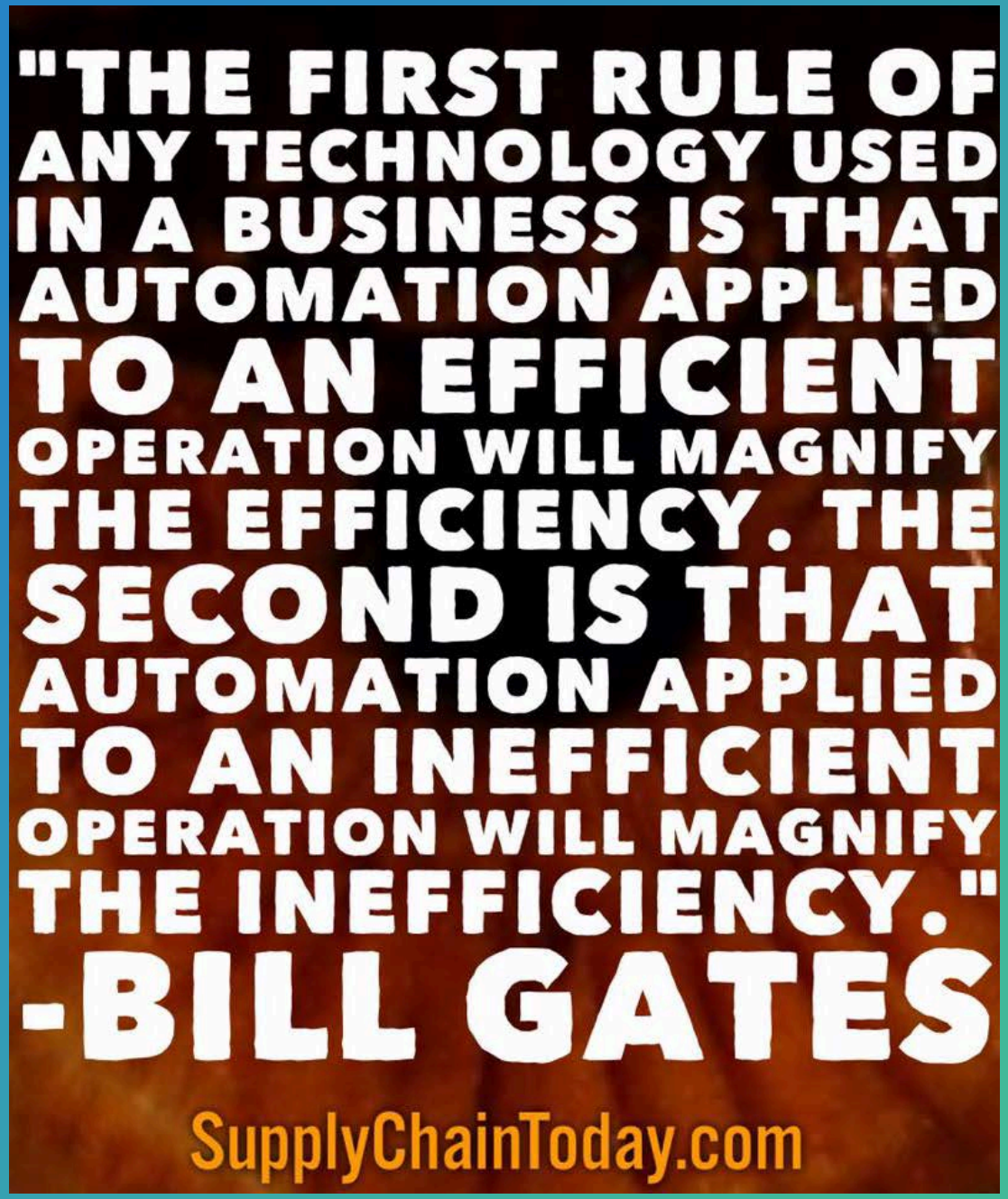
Automation Issues and Future Steps to Take



Automate the Process

USE THE MODELBUILDER OR CODE THE PROCESS

NOTE: THE DATA CLEANING THAT WAS PERFORMED ON THE UNION LAYER SHOULD BE PERFORMED ON THE CLIPPED ZONING LAYER ITSELF TO AVOID NEEDING TO DO THIS EACH TIME.



Issues

- Parcel data updates
  - Parcel updates happen at least once per month
  - Could do this manually…
  - …but it’s better to be consistent with the County Assessor
    - Helps catch mistakes, gives consistent information, is more consistent over time (work directly with the office of record, i.e., County Clerk)

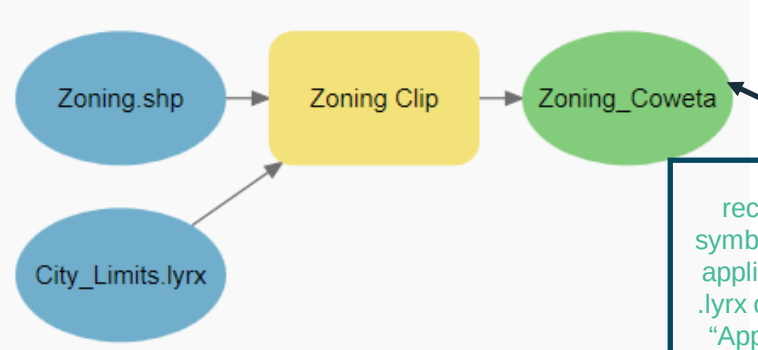
Adjustments

- Step 2 should be setting symbology and recategorizing the zoning to do so appropriately.
- Zoning_Coweta needs to become the source data for all future Unions.
  - This means:
    - As zoning changes and annexations take place, this layer must be updated (local only)
      - Annexations and additions will require editing features.
    - There will be no need to redo this part of the data cleaning.

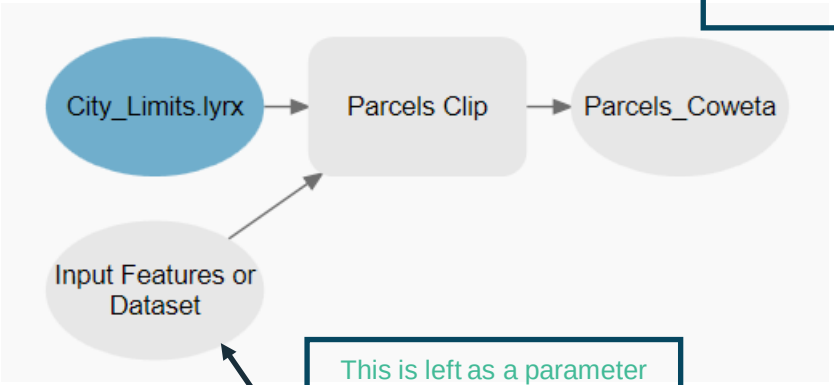
- Step 3 should now be using the Union tool to merge the data, then completing the data cleaning process.

Adjusted Automation – Three Models

Clipping Models (Step 1)

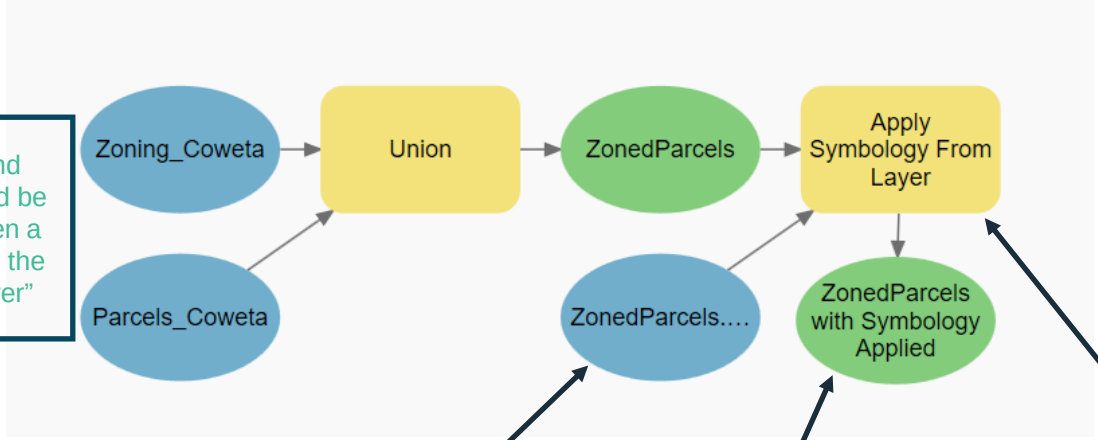


The zoning recategorization/addition and symbology from Step 2 should be applied to this new layer. Then a .lyrx of it should be saved for the "Apply Symbology From Layer" tool.



This is left as a parameter which must be filled in. The reason for this is because this is the data that changes **EVERY TIME** and needs to be updated.

Union and Symbology Model (Steps 3 and 4)



A .lyrx file created from a previously symbolized layer.

Final cleaning needs to take place here, i.e., ROW removal, removal of fenceline "parcels"

Uses a .lyrx file to apply symbology to a new layer. The layers must have the same categories.

Future Adjustments

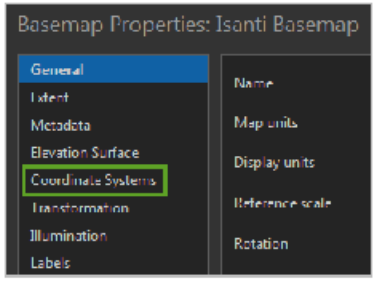
- Consider editing the City Limits feature layer (used for clipping) to be rid of the extra parcels which muddy the data.
- Implement pop-ups that contain the most commonly used data:
  - Parcel ID (taxes) and Account Number (Assessor)
  - Legal Address
  - Owner
  - Zoning
  - Area
- Create a python script for the entire process, including the data cleaning at the end. Simple actions like selecting by attributes were used to identify errant “parcels” and rights-of-way. This can be automated.
  - FID_Parcels_Coweta = -1
  - FID_Zoning_Coweta = -1

With these changes, the map can be more useful for more people. For example, much of the information included here could simplify the work of Code Enforcement officials.

QUESTIONS?

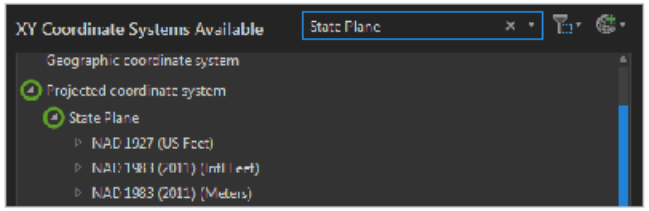
Create a Basemap

- Created this to help with ParcelFrabric and mapping subdivisions.
- Wanted a more correct basemap with locally collected data
  - INCOG collected data via aerial photography
  - Used the Raster functions
    - Raster Clip
- Mostly symbology
- Got roads from Census data
- Issue: Could not make the layer available via AGOL due to projection issues.
  - NAD 1983 (2011) StatePlane Oklahoma North FIPS 3501



A list of available coordinate systems and other coordinate systems options becomes available.

3. In the search bar, type State Plane and press Enter. In the list of results, expand **Projected coordinate system** and **State Plane**.

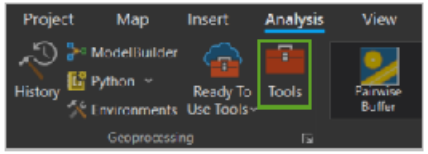


4. Expand **NAD 1983 (Meters)** and click **NAD 1983 StatePlane Minnesota Central FIPS 2202 (Meters)**. Then, click **OK**.

> **Tip:**
> You can enter more keywords of the coordinate system's name to reduce the choices and find it more easily, for instance StatePlane Minnesota Central.

The map's coordinate system is now set and the window closes. You will also change the projections of all the data you'll use in the project, that is, the data stored in the **Isanti_Data** folder you extracted. If the basemap and the data have different coordinate systems, you may encounter visual errors or incorrect geometry. You will use a tool called **Batch Project** to change the coordinate system of all your data at once.

5. On the ribbon, click the **Analysis** tab. In the **Geoprocessing** group, click **Tools**.




Hwy 51
S 273rd
East Ave
S 280th
East Ave
S Hwy 51
N Hwy 51
School
Rd
State Hwy 51 E Hwy 51
E State Hwy 51
Muskogee Tpke
S State
Hwy
51B
S 289th
East Ave
Hwy 72
72
Hwy 51B


S 273rd East Ave
S 280th East Ave
S Hwy 51
N Hwy 51
School Rd
State Hwy 51 E Hwy 51
State Hwy 51B
Muskogee Tpke
S 289th East Ave
Hwy 72
Hwy 72
Hwy 51B