



CRP 4080: Introduction to Geographic Information Systems for planners

Lecture 4.2: Geoprocessing

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City and Regional Planning
Fall 2024

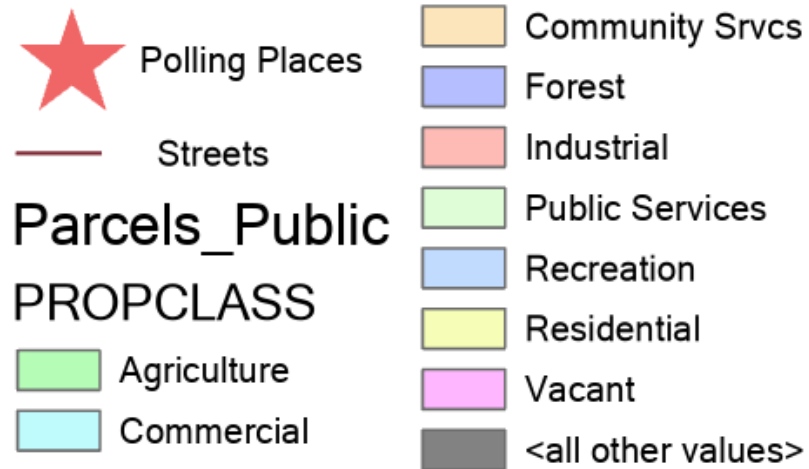
Announcement

Schedule for the following labs:

- Lab 3 – due on Sept 20th (Friday) at 11:59pm
- Lab 4 – due on Sept 27th (Friday) at night
- Lab 5 (a small lab with 3 maps) due on Oct 3rd (Thursday)
- Final Project options:
 - work in teams (a group of two at most) – submit the proposal as a team
 - or work individually.
- Final Project Examples

Lab 1 common issues

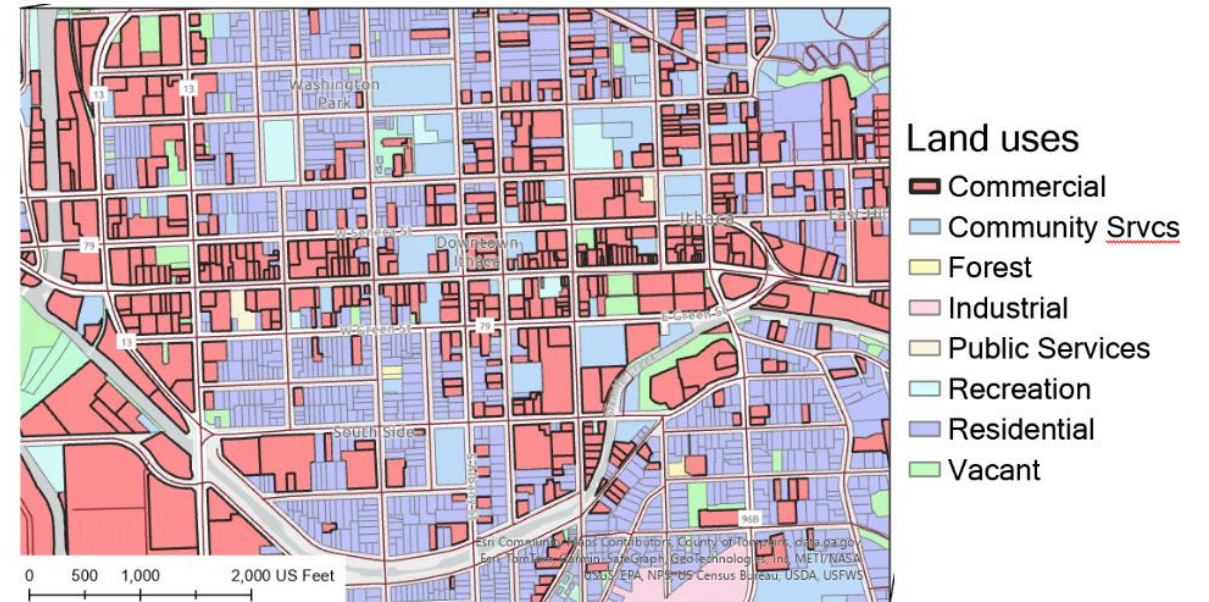
Legend



my default legend



- delete “legend”
- Only show features in the map extent
- Rename title of layers
- Layer names or headings – you keep one (here I keep headings)

[illegible]

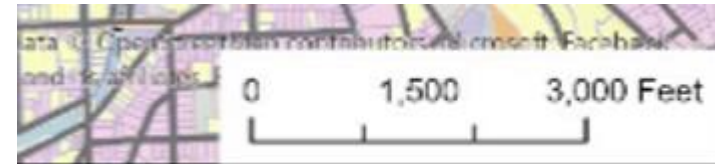
Scale bar

- Scale bar: stretch out/shrink the scale bar to make it a less arbitrary number, e.g. 0-5, 0-10 mile. Scale bar should use whole numbers and has easily understandable divisions



Rounded, sensible breaks

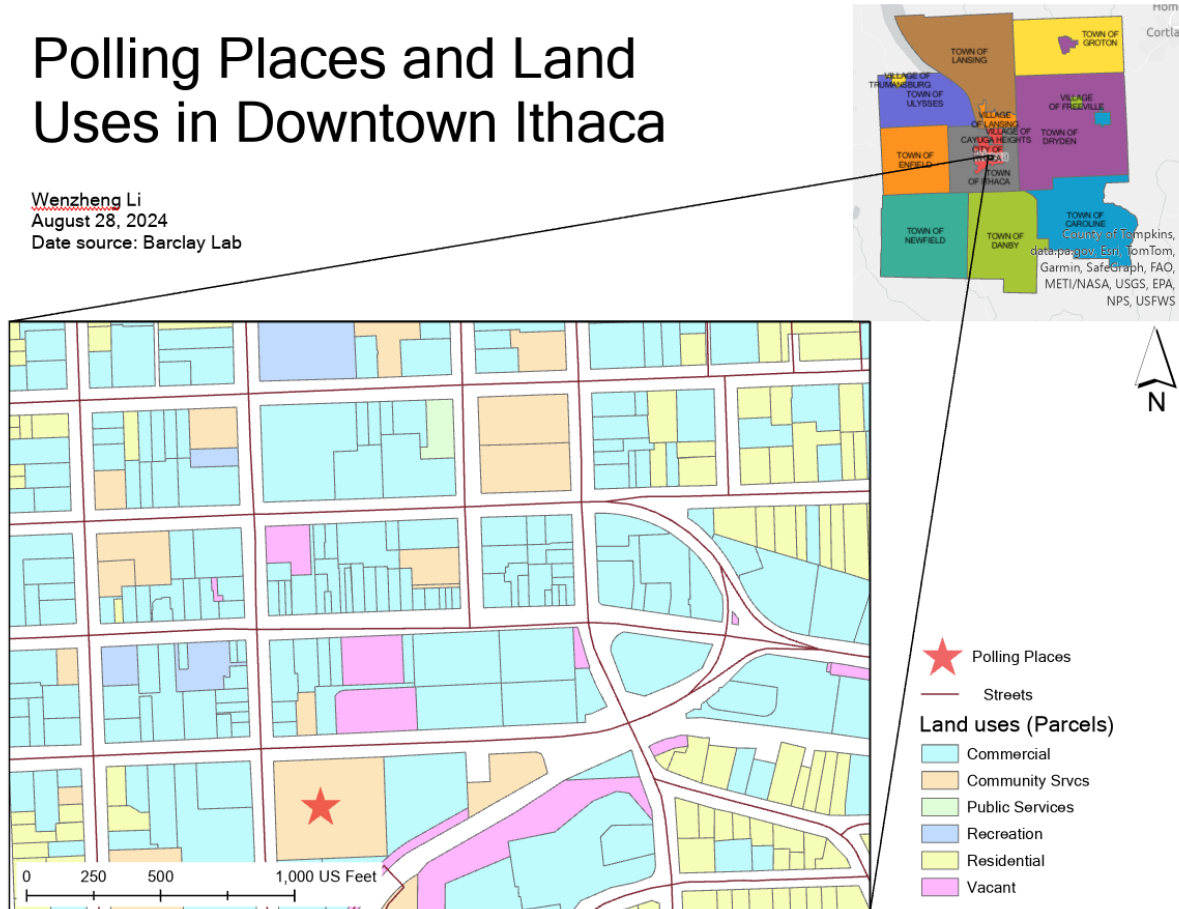
- To ensure the scale bar stands out on the map, please add a boundary around it and apply a light background color for better visibility.



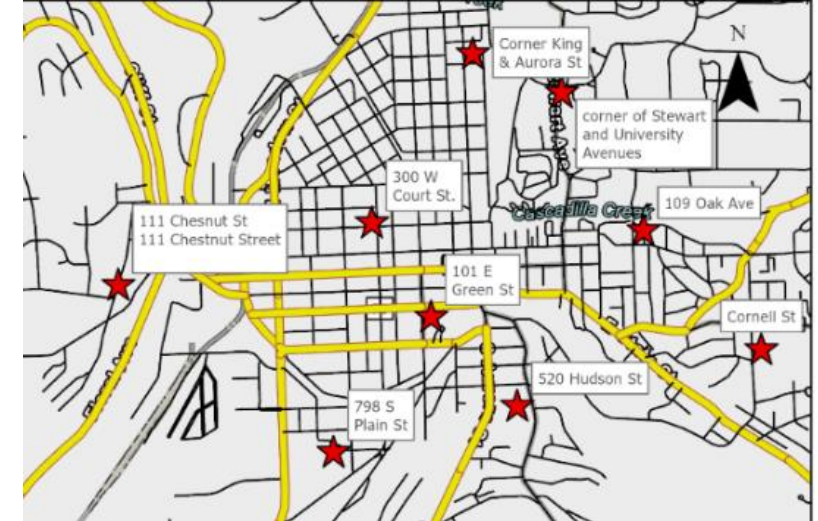
Ithaca downtown area and city of Ithaca?

Polling Places and Land Uses in Downtown Ithaca

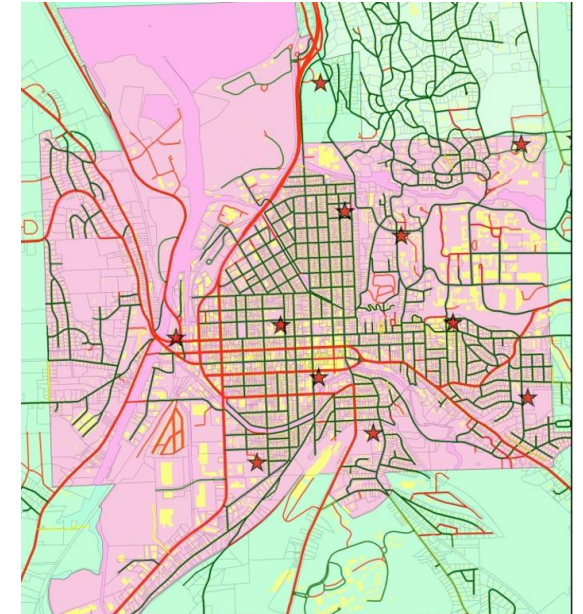
Wenzheng Li
August 28, 2024
Date source: Barclay Lab



places around the Seneca street and Ithaca public library, which is the heart of downtown Ithaca.

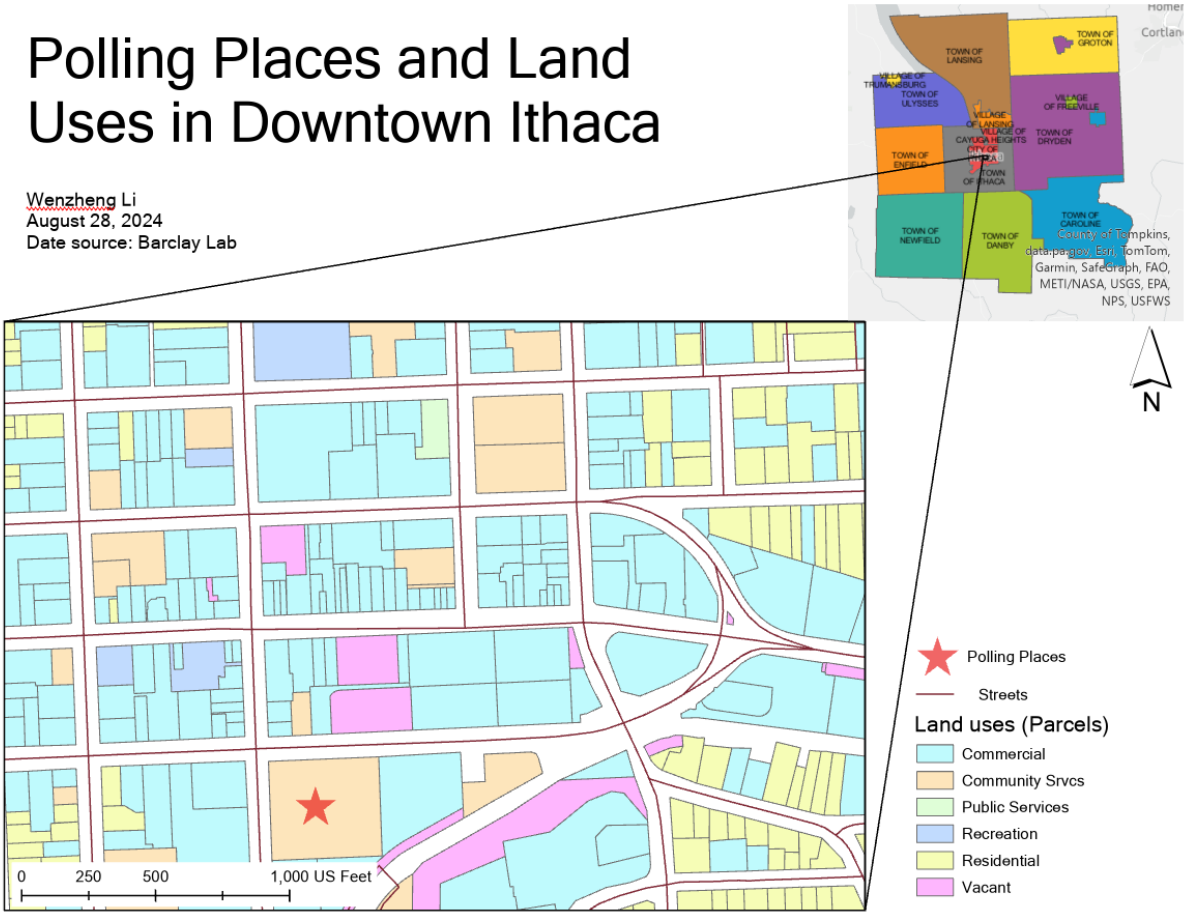


City of Ithaca

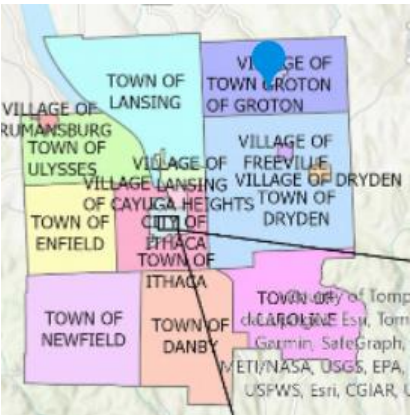
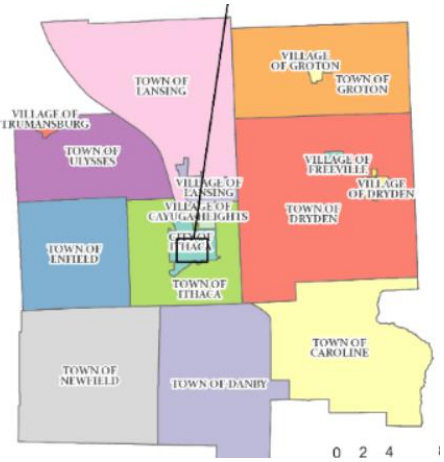


Polling Places and Land Uses in Downtown Ithaca

Wenzheng Li
August 28, 2024
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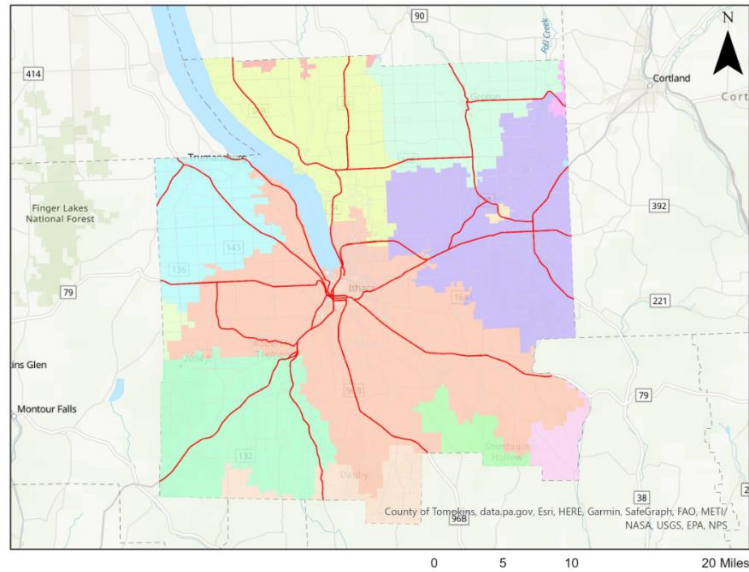


Use a smaller font size for the labels so that the township names won't be crowded together.



Think about your map layout...

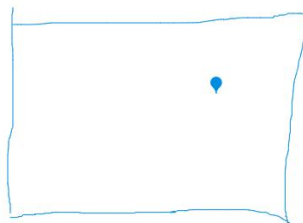
Tompkins County School Districts



Tompkins County Roads
 NYS DOT
 other roads

Tompkins County School Districts

- Candor
- Cortland CSD
- Dryden
- George Jr
- Groton
- Homer
- Ithaca City
- Lansing
- Moravia
- Newark Valley
- Newfield
- Odessa-Montour



Map by Julian Cunningham
31 August 2022

Lab #1

Part 1: Making Maps

Downtown Ithaca City Parcels According to Property Class, Polling Locations, and Streets



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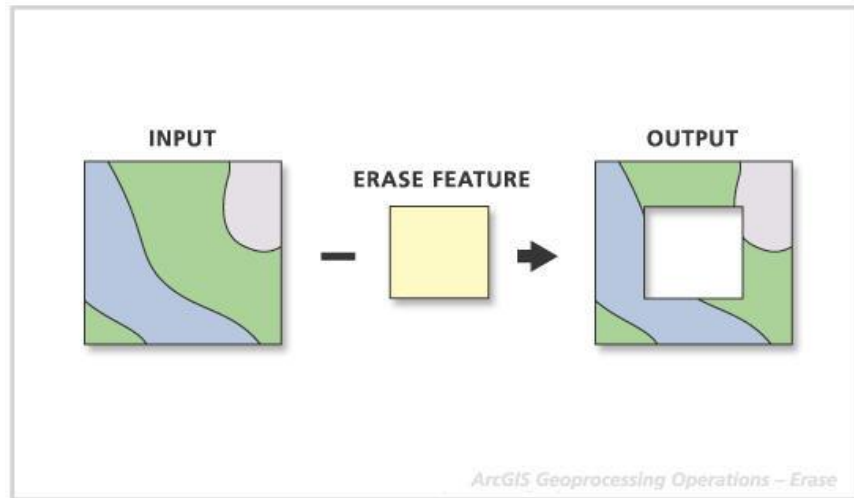
the major map should be much bigger than the context map in our case.

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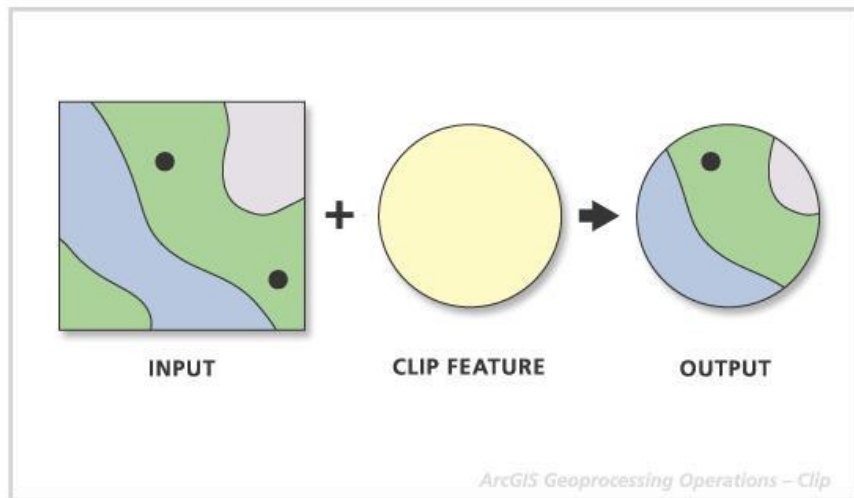
labels too big

Geoprocessing – continue...

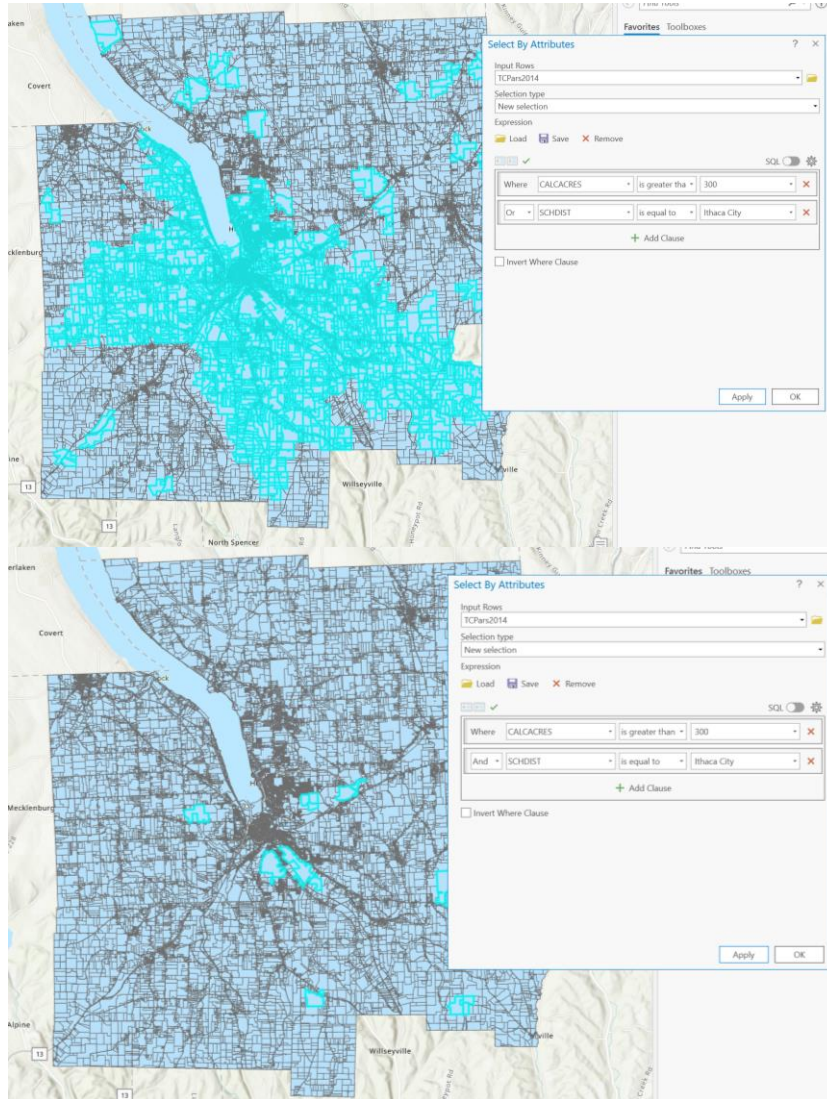
Erase



Clip



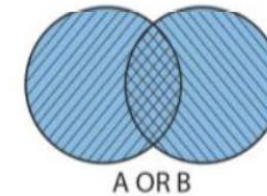
Types of spatial analysis: SQL Queries



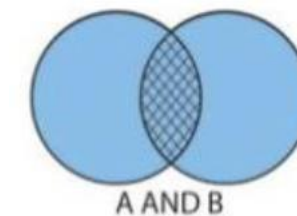
Parcel area is greater than 300 acres
OR School district is equal to City of Ithaca

Or = expansive

Boolean Operation



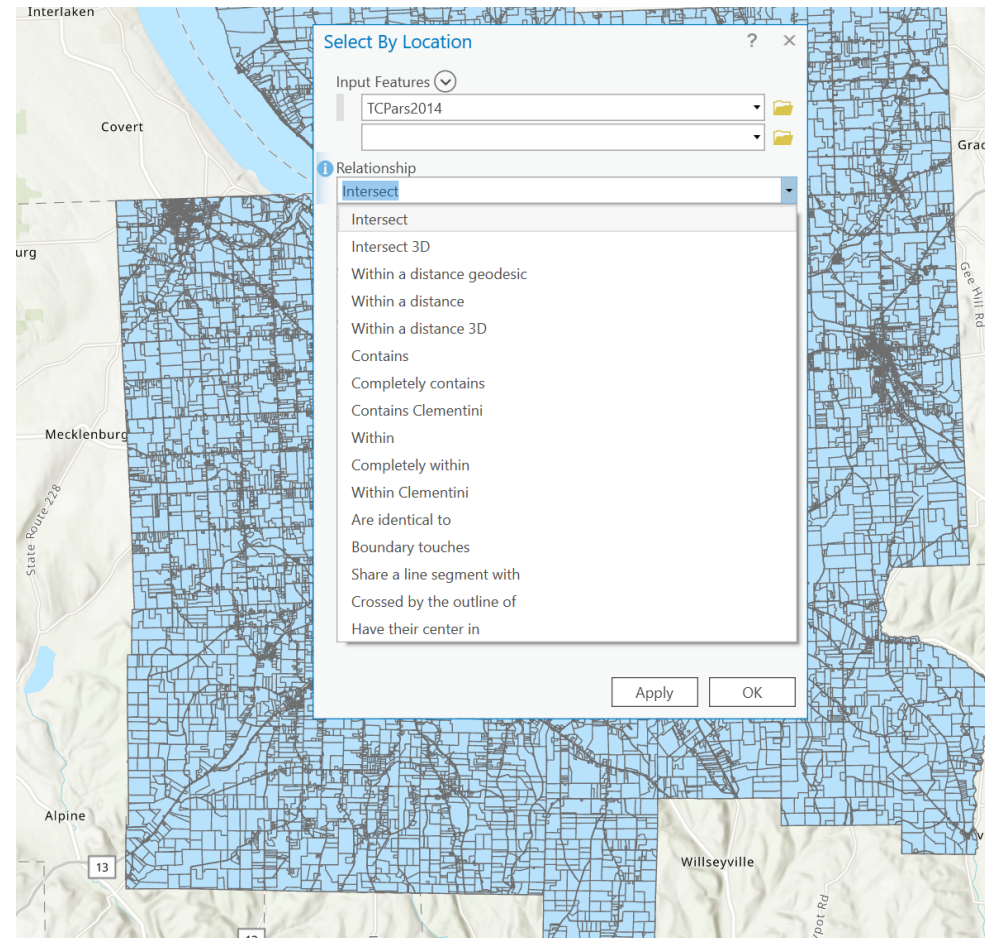
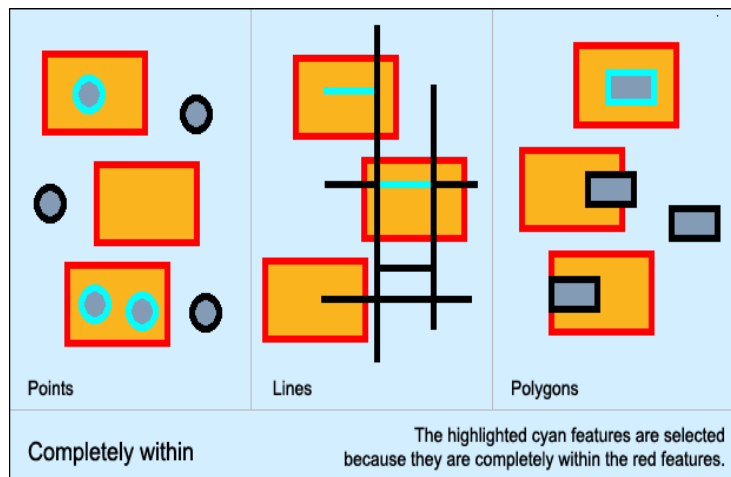
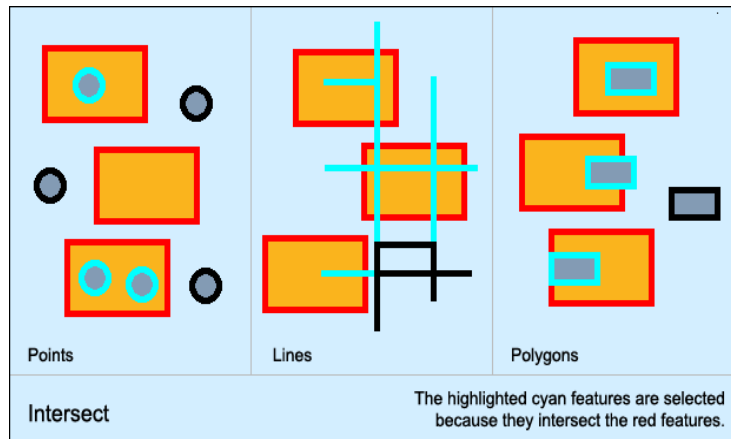
Parcel area is greater than 300 acres
AND School district is equal to City of Ithaca
And = restrictive



Select by attribute: “and” vs “or” statement

Select by location

Select features from layers that meet specified criteria relative to the location of features in another layer.



A Problem

find tax parcels that could possibly be used for a nature center

- Are at least 20 acres in size
- Have both forest and Agricultural lands
- Are within 6 miles of each of the town's schools
- Contain a stream or river (or be on a riverbank)
- Preferable the parcel should be owned by the town or the state

Workflow

A collection of Steps and data that define the paths that can be taken to complete a task. ...

- What tools would be used for each of the criteria?
- In what order would these tasks be undertaken?

find tax parcels that could possibly be used for a nature center

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-
- Step 1: Use the Select by Attribute Tool
 - Step 2: Identify Parcels with Both Forest and Agricultural Lands
 - Use the Intersect Tool - Intersect the filtered tax parcels with the land use dataset
 - Step 3: Select Parcels Within 6 Miles of Schools
 - Use the Buffer Tool - create a 6-mile buffer around each school location
 - Use the Select by Location Tool - Select parcels that intersect with the school buffer zones.
 - Step 4: Identify Parcels Containing a Stream or River
 - Use the Intersect Tool
 - Step 5: Filter Parcels by Ownership
 - Use the Select by Attribute Tool

Schematically

