GARP 0344 (2 October 2013)

GIS Analysis (Part 4)

1. **Geoprocessing Overview**
2. Geoprocessing Tools
3. The Key Hole or Cookie Cutter Mask
4. The Site Selection Project
5. Homework for Monday 7 October 2013

Hidden Criteria	In Westfield	Select (by Attributes)
		Select Westfield town line, save as new feature class
Criteria 1	>10 acres	Sort attribute table of parcels layer by area
		Data Prep: Edit parcel layer, save as new feature class
Criteria 2	100 ft	Buffer Tool around hydrography
		Review in Help! (Dissolve = ALL)
		Data Prep: Merge hydrography layers
		Clip or Select by Location inside Westfield
		Save as a new feature class
Criteria 3	Zoning	Zoning Data
		Data Prep: Select by Attributes Industrial/Commercial
		Save as a new feature class

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Geoprocessing Tools

Sorting the Attribute Table
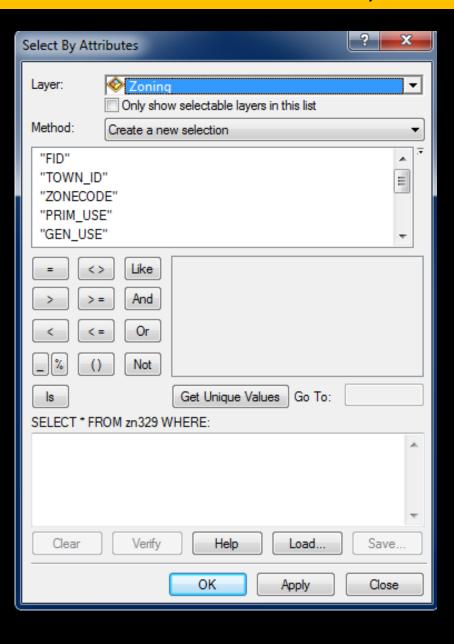
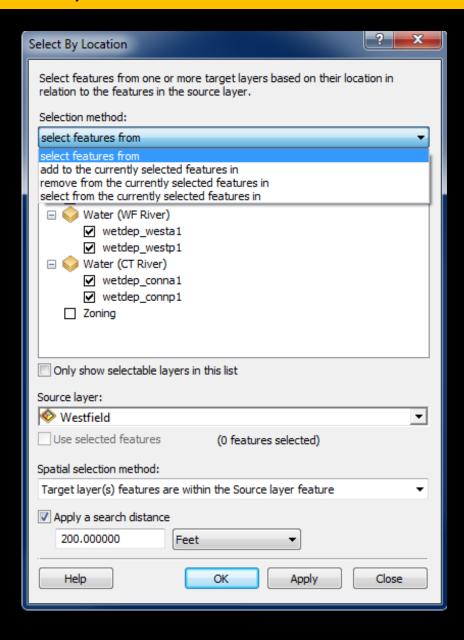Select by Attributes
Select by Location

Merge
Buffer
(Clip)

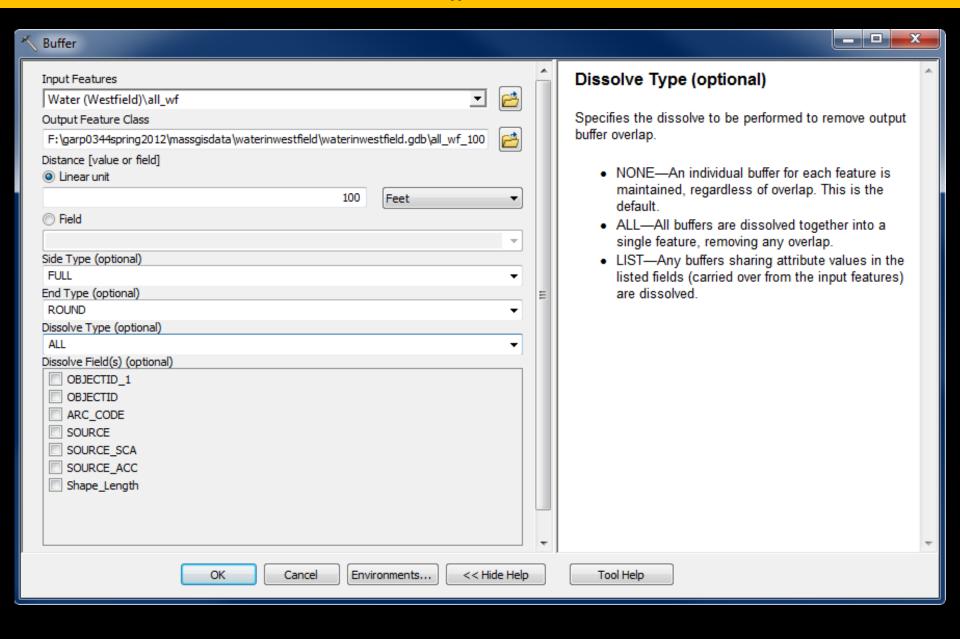***All of these tools will create new feature classes – stay organized!***

Buffer

Input Features

Water (Westfield)\all_wf

Output Feature Class

F:\garp0344spring2012\massgisdata\waterinwestfield\waterinwestfield.gdb\all_wf_100

Distance [value or field]

◉ Linear unit

100   Feet

○ Field

Side Type (optional)

FULL

End Type (optional)

ROUND

Dissolve Type (optional)

ALL

Dissolve Field(s) (optional)

- ☐ OBJECTID_1
- ☐ OBJECTID
- ☐ ARC_CODE
- ☐ SOURCE
- ☐ SOURCE_SCA
- ☐ SOURCE_ACC
- ☐ Shape_Length

Dissolve Type (optional)

Specifies the dissolve to be performed to remove output buffer overlap.

- NONE—An individual buffer for each feature is maintained, regardless of overlap. This is the default.
- ALL—All buffers are dissolved together into a single feature, removing any overlap.
- LIST—Any buffers sharing attribute values in the listed fields (carried over from the input features) are dissolved.

| OK | Cancel | Environments... | << Hide Help | Tool Help |

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This is a useful trick if you need to 'hide' or mask features outside a given polygon feature, for example outside the Westfield city limits.

- Add the TOWNS_POLYM data layer to your map = 351 polygons for the 351 cities and towns in Massachusetts.
- Select Westfield, then Switch selection. Now 350 cities and towns are selected, except for Westfield.
- Save your selection as a new feature class and add to your map.

Now you have a mask that leaves a 'hole' where Westfield is located!

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You are a team of GIS Specialist working for the City of Westfield Planning Department. The major wants to stimulate the local economy by creating a new industrial park for Bio-Tech industry based on 3 criteria:

1. The parcel has to be at least 10 acres in area.
2. The parcel has to be at least 100 feet from any wetland or water body.
3. The parcel has to be already industrial or commercial zoned to avoid a contentious rezoning process.

Prepare a meaningful map showing the suitable parcels, the industrial or commercial zoned sections, the roads, and the city limits. Your map can show only features within the Westfield city limits!

Bummer! You just got laid-off after you finished the project for Westfield!

One piece of good news: the town/city of _____ here in Western Massachusetts hired you on a part-time basis without benefits to conduct the same site selection project you just completed for the City of Westfield. Luckily you don't have to re-invent the wheel here and you can use a similar approach as you just used for Westfield. That's good because you have to work a second job at night...

- Here you conduct the same analysis twice: once for Westfield as a group and a second time for another city/town in the area on your own.
- Choose between Chicopee, Holyoke, Springfield, West Springfield, Northampton, or Easthampton as your second city or town.
- The data layers, methods, and analysis should be similar or even identical, but the results will be different. Organize you data as a file geodatabase.
- Include a base layer from ArcGIS Online that does not distract from the function of your maps.

Analysis Questions

1. How many parcels match your site selection criteria?
2. As a regional planner, which of the parcels would be the most or least suitable for a Bio-Tech Industrial Park? Why?
3. What additional site selection criteria could or should be incorporated into the analysis? Why?
4. Given the need for >10 acres – what other options exist to site this Bio-Teach Industrial Park?
5. You just performed this site selection analysis for two cities/towns – 349 more remain in Massachusetts. Is there a way to make this analysis 'portable' and more-efficient?

Deliverables

A map and a report for each city/town – the details are up to you, but here are some parameters to follow:

- Consider your audience when designing the map and preparing the report – the mayor, select board, planning board, etc.
- What information would these folks need or appreciate on the map?
- Present the results of your analysis, in addition to the map, also as a table with relevant attributes.
- What level and detail of background information and methods documentation do you need to include in your report in case there is a law suit and you are called before a court of law?
- Include your flowcharts as part of your project reports.
- Post your maps and reports on your blog or website.
- Due Date: Tuesday, 15 October 2013 at the beginning of class.

➔ *Contact me for help or clarification of this project or my expectations as needed.*

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Homework for Monday (7 October 2013)

You have team-worked on the Site Selection Project now for a week – time to show some results!

Prepare a short presentation of your progress that includes (at minimum):

- Your analysis strategy as a flowchart.
- Your draft map.
- Your draft table listing the suitable parcels.

Each team will have about 10 minutes for their presentations.