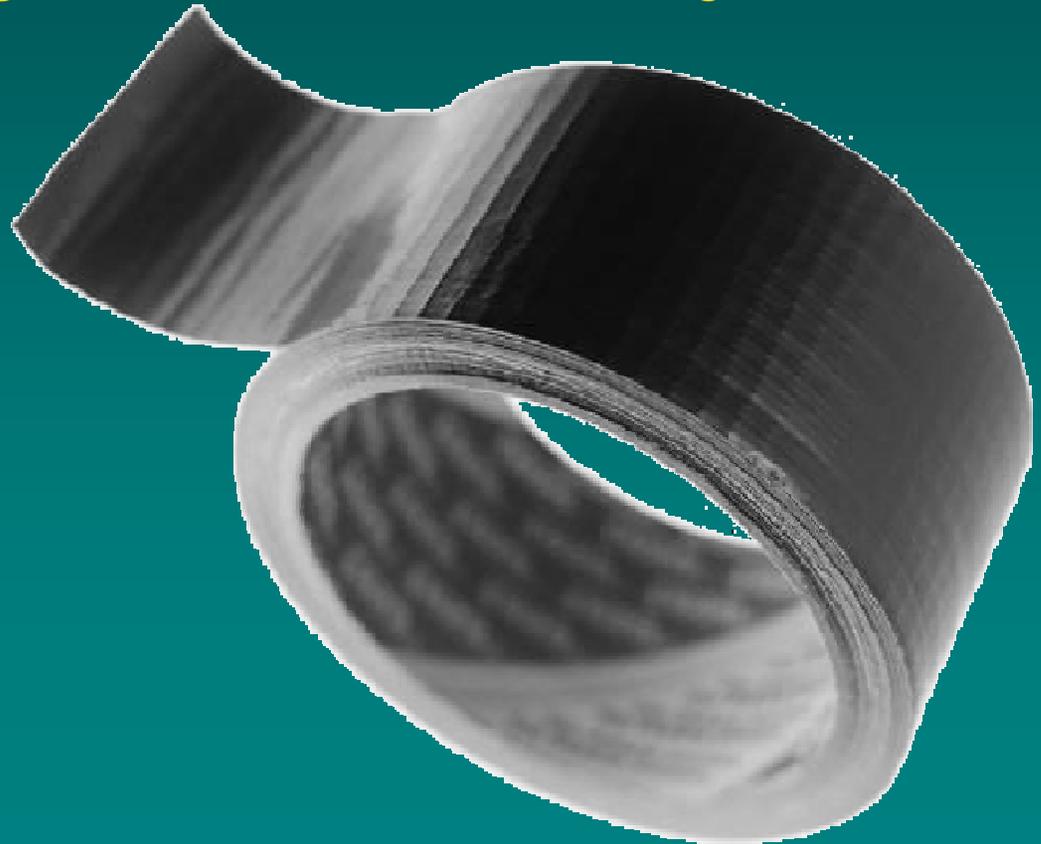


# Using GIS Tools

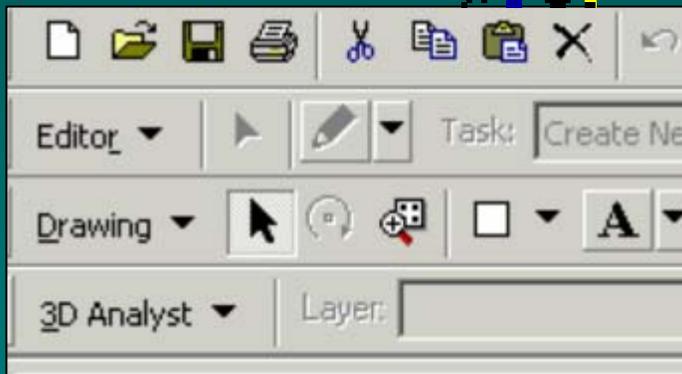
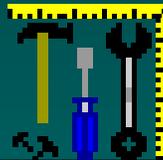
- Basic Tools
- Geo-processing tools
- Creating new data sets and layers



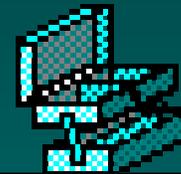
# Using GIS Tools

You can access tools via...

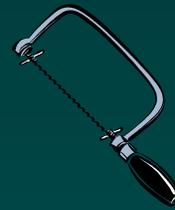
... Toolbars



... Toolbox







# Basic GIS Tools

**Select By Location** [?] [X]

Lets you select features from one or more layers based on where they are located in relation to the features in another layer.

I want to:

select features from [dropdown]

the following layer(s):

- Main Towns
- Main Roads
- geogrid

Only show selectable layers in this list that:

[dropdown] are within a distance of [dropdown]

the features in this layer:

Main Roads [dropdown]

Use selected features (6 features selected)

Apply a buffer to the features in: Main Roads

of: 0.500000 Miles [dropdown]

Preview

The red features represent the features in Main Roads.  
The highlighted cyan features are selected because they are within a distance of the red features.



Points      Lines      Polygons

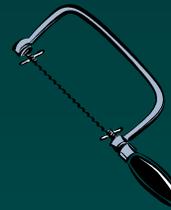
[Apply]      [Close]



Selection by attribute  
Selection by location

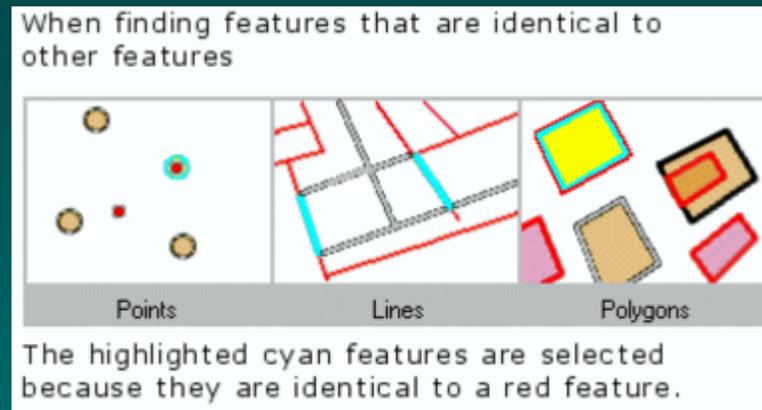


# Basic GIS Tools



## Various selection options:

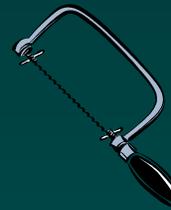
- **Are Identical ...**
- **Do Intersect ...**
- **Are within Distance ...**
- **Do Contain ...**
- **Are Contained By ...**
- **Completely Contain ...**
- **Are Completely Within ...**
- **Have Their Center in ...**



- **Selection by attribute**
- **Selection by location**



# Basic GIS Tools

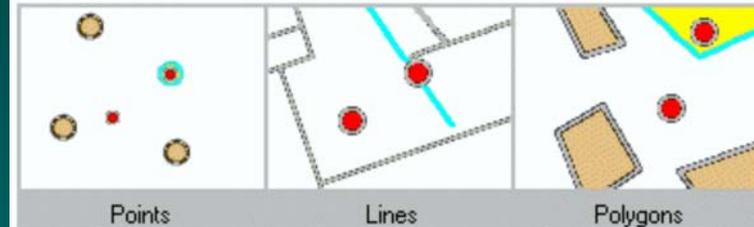


## Various selection options:

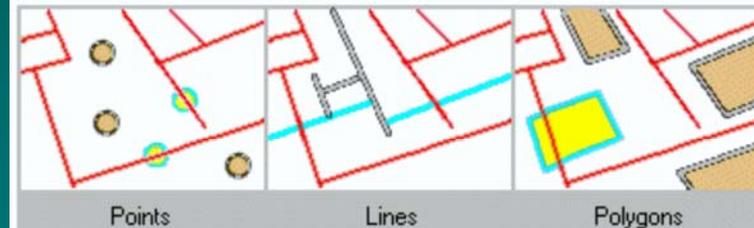
- Are Identical ...
- Do Intersect ...
- Are within Distance ...
- Do Contain ...
- Are Contained By ...
- Completely Contain ...
- Are Completely Within ...
- Have Their Center in ...

- Selection by attribute
- Selection by location

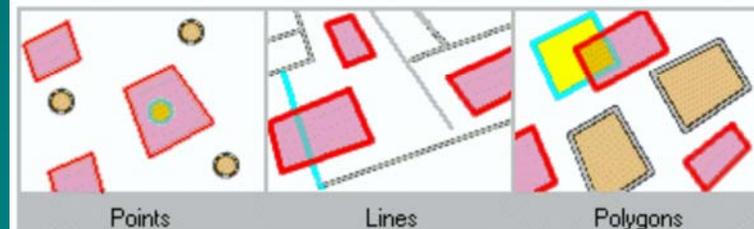
When finding features that intersect with point features



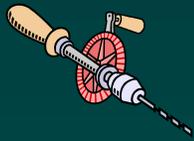
When finding features that intersect with line features



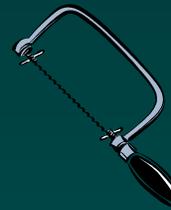
When finding features that intersect with polygon features



The highlighted cyan features are selected because they intersect the red features.



# Basic GIS Tools

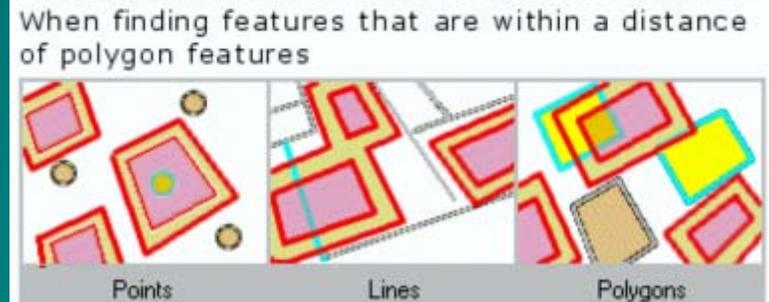
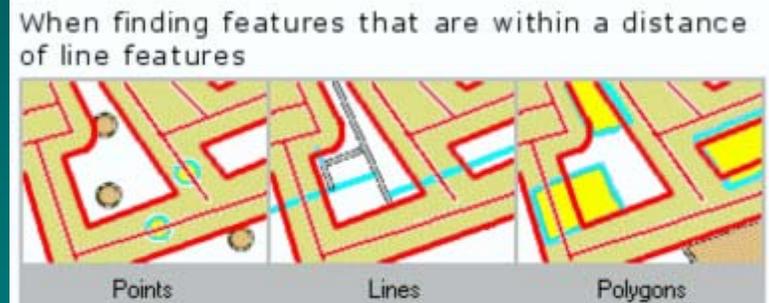
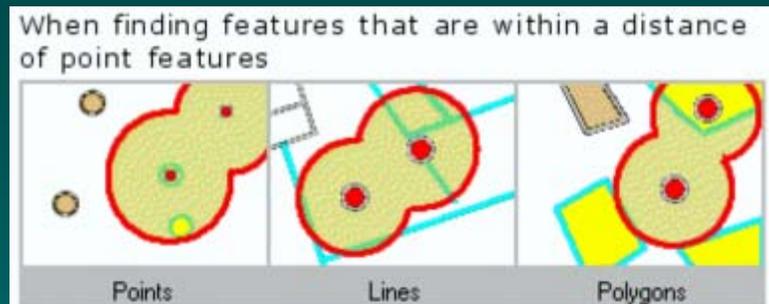


## Various selection options:

- Are Identical ...
- Do Intersect ...
- Are within Distance ...
- Do Contain ...
- Are Contained By ...
- Completely Contain ...
- Are Completely Within ...
- Have Their Center in ...

• Selection by attribute

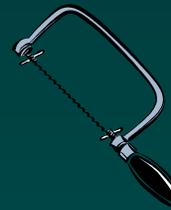
• Selection by location



The highlighted cyan features are selected because they are within the selected distance of the red features.



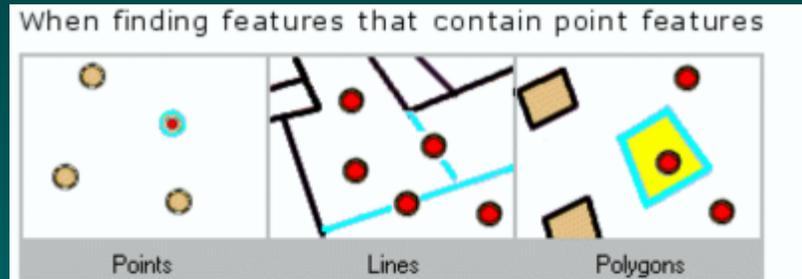
# Basic GIS Tools



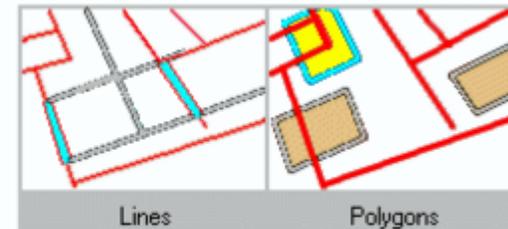
## Various selection options:

- Are Identical ...
- Do Intersect ...
- Are within Distance ...
- Do Contain ...
- Are Contained By ...
- Completely Contain ...
- Are Completely Within ...
- Have Their Center in ...

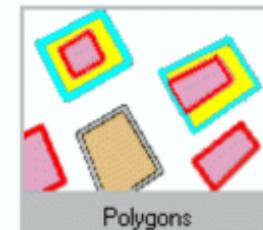
- Selection by attribute
- Selection by location



When finding features that contain line features



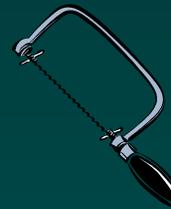
When finding features that contain polygon features



The highlighted cyan features are selected because they contain a red feature.



# Basic GIS Tools



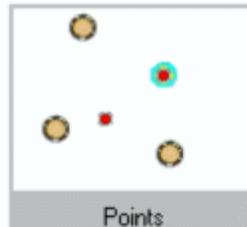
## Various selection options:

- Are Identical ...
- Do Intersect ...
- Are within Distance ...
- Do Contain ...
- Are Contained By ...
- Completely Contain ...
- Are Completely Within ...
- Have Their Center in ...

• Selection by attribute

• Selection by location

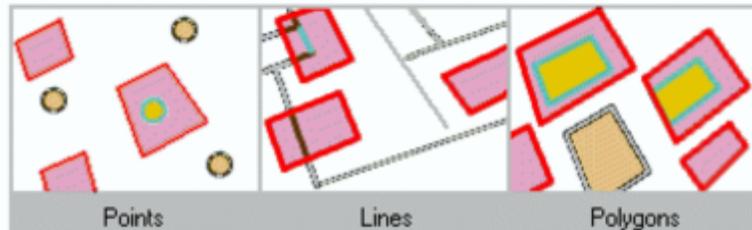
When finding features that are contained by point features



When finding features that are contained by line features



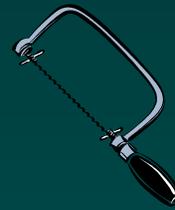
When finding features that are contained by polygon features



The highlighted cyan features are selected because they are contained by a red feature.



# Basic GIS Tools



## Various selection options:

- Are Identical ...
- Do Intersect ...
- Are within Distance ...
- Do Contain ...
- Are Contained By ...
- Completely Contain ...
- Are Completely Within ...
- Have Their Center in ...

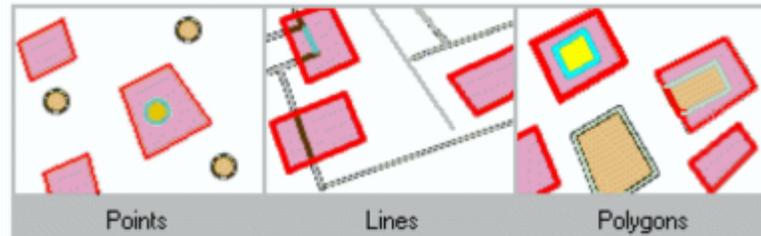
- Selection by attribute
- Selection by location

When finding point, line and polygon features completely contained by polygon features



The highlighted cyan features are selected because they completely contain the red features.

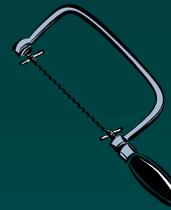
When finding features that are completely within polygon features



The highlighted cyan features are selected because they are completely within the red features.



# Basic GIS Tools

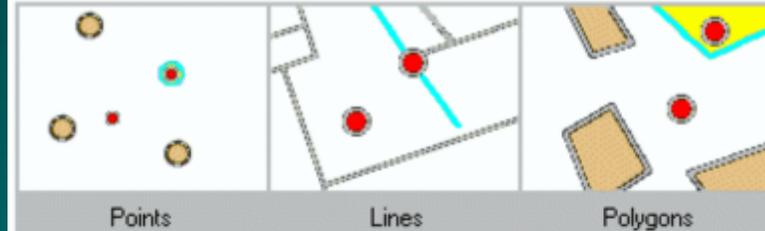


## Various selection options:

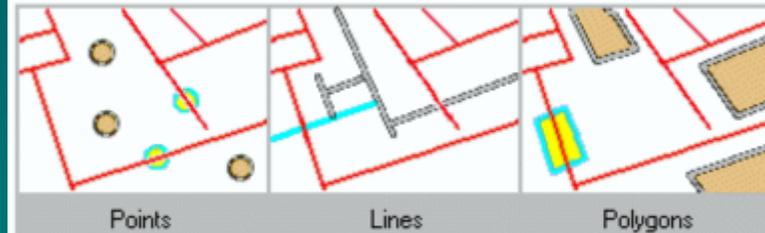
- Are Identical ...
- Do Intersect ...
- Are within Distance ...
- Do Contain ...
- Are Contained By ...
- Completely Contain ...
- Are Completely Within ...
- Have Their Center in ...

- Selection by attribute
- Selection by location

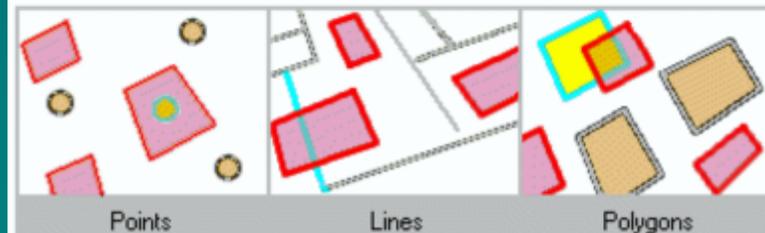
When finding features that have their centers within a distance of point features



When finding features that have their centers within a distance of line features



When finding features that have their centers within a distance of polygon features



The highlighted cyan features are selected because they have their centers in the red features.



# Basic GIS Tools



FID	Shape*	APN	ADDRESS1
0	Polygon	46036062	166 FRANK WEST CIR
1	Polygon	46036052	C/O ABLE RENT A CAR
2	Polygon	46036060	P O BOX 775
3	Polygon	46036045	6197 USHER DR
4	Polygon	46036061	P O BOX 1511

	A	B	C	D
1	APN	Owner	License #	DBA
2	46036060	Dina Dozer	6112345	Demolition and so forth
3	19087003	Harry Hammer	4367890	Carpenter
4	34001031	Paul Plug	9872345	Plumber
5	57010006	Tom Yum	2345878	Asian Cuisine

Joining attributes by common fields

# Basic GIS Tools



Joining  
attributes  
by common  
fields

**Join Data** [X]

Join lets you append additional data to this layer's attribute table so you can, for example, symbolize the layer's features using this data.

What do you want to join to this layer?

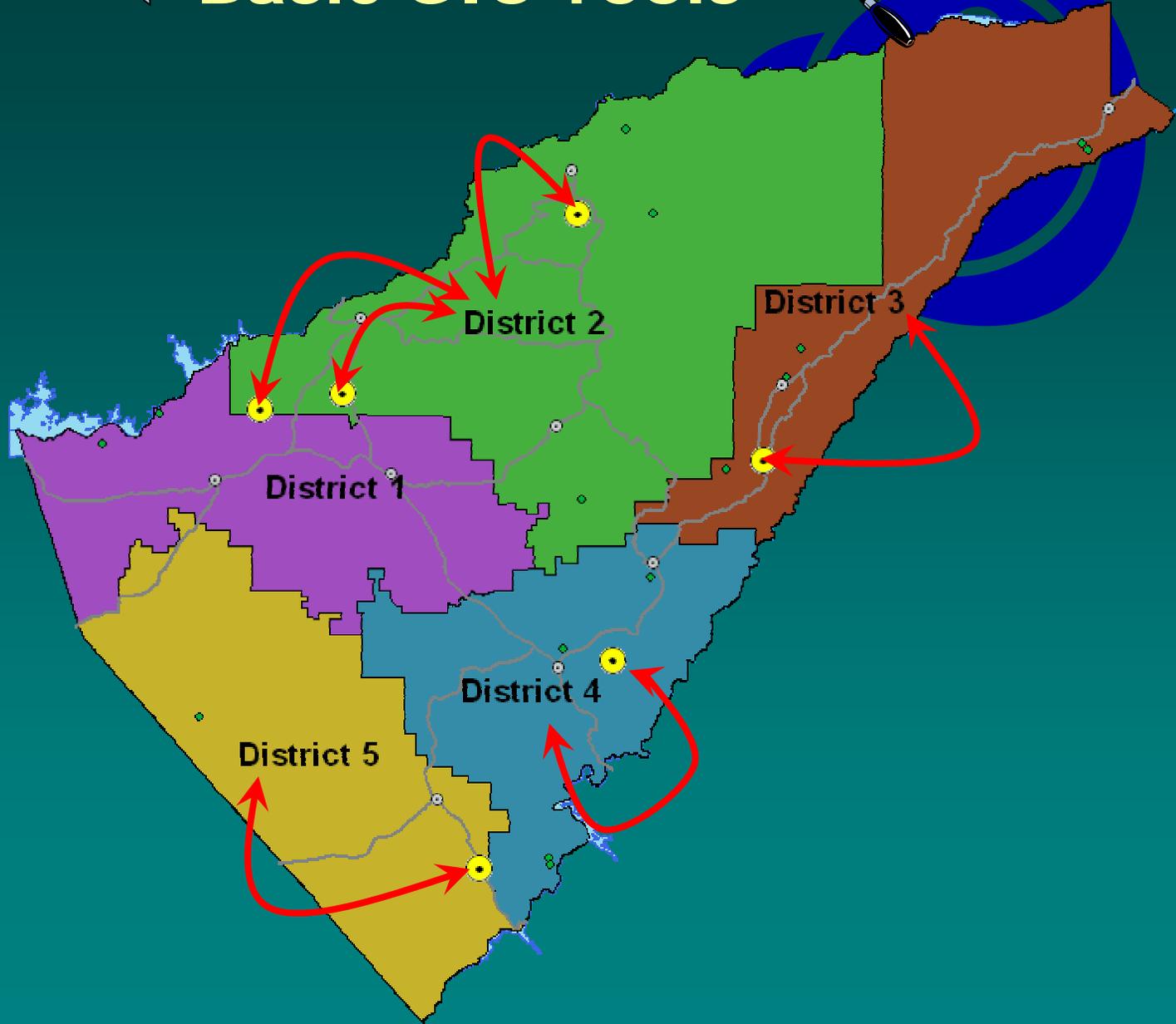
Join attributes from a table [v]

1. Choose the field in this layer that the join will be based on:  
APN [v]
2. Choose the table to join to this layer, or load the table from disk:  
Table\_Solidwaste [v] [Folder icon]  
 Show the attribute tables of layers in this list
3. Choose the field in the table to base the join on:  
APN [v]

Advanced...

About Joining Data [v] OK Cancel

# Basic GIS Tools



Joining  
attributes  
by location



# Basic GIS Tools



## Joining attributes by location

**Join Data** [X]

Join lets you append additional data to this layer's attribute table so you can, for example, symbolize the layer's features using this data.

What do you want to join to this layer?

Join data from another layer based on spatial location [v]

1. Choose the layer to join to this layer, or load spatial data from disk:

ParcelsWithLatLong [v] [Folder icon]

2. You are joining: Polygons to Points

Select a join feature class above. You will be given different options based on geometry types of the source feature class and the join feature class.

Each point will be given all the attributes of the polygon that:

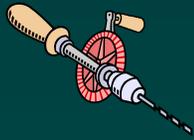
- it falls inside.  
If a point falls inside more than one polygon (for example, because the layer being joined contains overlapping polygons) the attributes of the first polygon found will be joined.
- is closest to it.  
A distance field is added showing how close the polygon is (in the units of the target layer). A polygon that the point falls inside is treated as being closest to the point (i.e. a distance of 0).

3. The result of the join will be saved into a new layer.

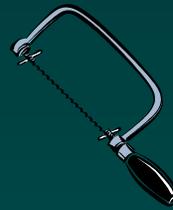
Specify output shapefile or feature class for this new layer:

G:\=Henning\Tasks\GIS Training Solid Waste\CD\GIS\Data [Folder icon]

About Joining Data [OK] [Cancel]



# Basic GIS Tools



- Selection by attribute
- Selection by location
- Calculate field values

- Joining attributes by common fields
- Joining attributes by location