Why would I use Site Selection Tools?

- Decide on an appropriate location for a new building
- Uncover areas of risk for geologic hazards
- Pinpoint areas for development
- Establish safe zones for habitation
Add Layers of Data to GIS

- Census
- Infrastructure
- Environmental

Analyze Layers Together
Keep in mind…

Data issues in vector processing

- Complex world, simplified data
- Real world becomes vector data (as points, lines and polygons)
- You choose which data to use, and how to represent it.
Selection of features for use in a GIS

- Only details of interest to the creator are stored in the data.

- Metadata: who made the data and why you should use it, or not!
Representation of data

- Tied to scale and data type
  - City as point or polygon?
  - Vector objects in a GIS have defined boundaries, unlike nature (transition in forests)
Overlay operations in a GIS

- Origins in Landscape Planning
- Set theory – polygons represent sets, overlay represents intersects, unions and symmetrical difference

[Diagram of sets A and B with intersection and difference]
Some Analysis Tools:

- Clip
- Buffer
- Union
- Symmetrical Difference
- Spatial Join
- Add XY Data
Clip
Buffer

INPUT

OUTPUT
Intersect

Site Selection - IAP 2011   January 26, 2011
Symmetrical Difference
Spatial Join

Point in polygon operation – which points are in the Polygon?

Polygon ID (id_1) is added to the point layer’s attribute table.
Add XY Data
Things to consider:

- Vector data processing is CPU intensive.
- Inaccurate data in ➔ inaccurate data out
Our project:

Find a building location for a visitor’s center at Great Meadows Wildlife Refuge in Bedford, Carlisle and Concord, MA