Road Ahead – Analysis Capabilities (ArcGIS 10.1)

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Spatial Analysis in 10.1

- Make it Easy
- Make it Accessible
- Improve the Science
Agenda

• **New Analysis tools and enhancements**
  - Spatial Statistics
  - Geostatistical Analyst extension

• Improvements in Network Analyst Extension
New Analysis Tools and Enhancements

Identify space-time clusters
(Considering both space and time in Hotspot analysis)

Identify features neighboring in space
As well as neighboring in Time!

3000 meters in space combined with 3 weeks in time moving window for hot spot analysis
New Analysis Tools and Enhancements

- Group Similar Features

Foot and Mouth outbreaks in 2001
New Analysis Tools and Enhancements

- Find appropriate scale of analysis (Incremental spatial autocorrelation)

Available in ArcGIS 10 for as a Sample Script
New Analysis Tools and Enhancements

• Exploratory regression

Available in ArcGIS 10 for as a Sample Script
New Analysis Tools and Enhancements

Areal Interpolation

- Cast data to a different geometry
  - School zones to census tracts
- Model and fill-in missing data
New Analysis Tools and Enhancements

Empirical Bayesian Kriging

• Spatial relationships are modeled automatically
  - Very easy to use (few parameters)
  - Available as a GP tool

• Results often better than traditional kriging

• Uses local models to capture small scale effects
  - Doesn’t assume one model fits the entire data
Faster Network Analysis

- Significantly faster service area solver
Routing with Historical and Real-Time Traffic

- Point to point routes
- Optimize stop sequence
- Time windows
- Time aware
All Solvers Are Time Aware

- Can use historical or real-time speeds
- Solution is different based on time of day
  - Provides better or updated ETAs for existing routes
- To perform time aware analysis, specify...
  - Traffic aware cost attribute
  - Time of day
Enhanced Restrictions

• Frequently requested enhancement

• More flexible restriction model
  - Managed using restriction attributes with parameters
  - Roads can be:
    - Preferred
    - Avoided
    - Prohibited entirely
  - Examples:
    - Prefer truck routes
    - Avoid toll roads
• Find route that avoids toll roads
• Find route that uses designated truck route roads
New Network Analysis Services in ArcGIS 10.1

- Use network analysis services from ArcGIS Online
- Easily publish your own services using tools in Server toolset
Questions?

Please complete the session evaluations at:
http://www.esri.com/sessionevals