Esri International User Conference | **San Diego, CA**

Technical Workshops | **July 14th, 2011**

Road Ahead – Analysis Capabilities (ArcGIS 10.1)

Jian Lange

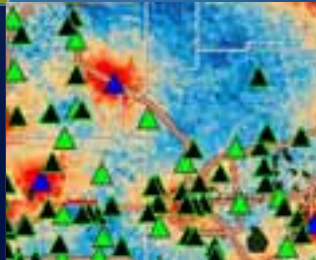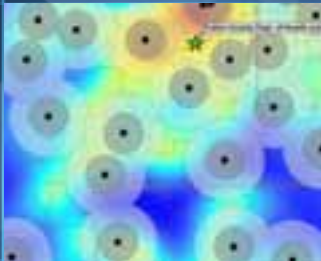# Spatial Analysis in 10.1

Make it Easy
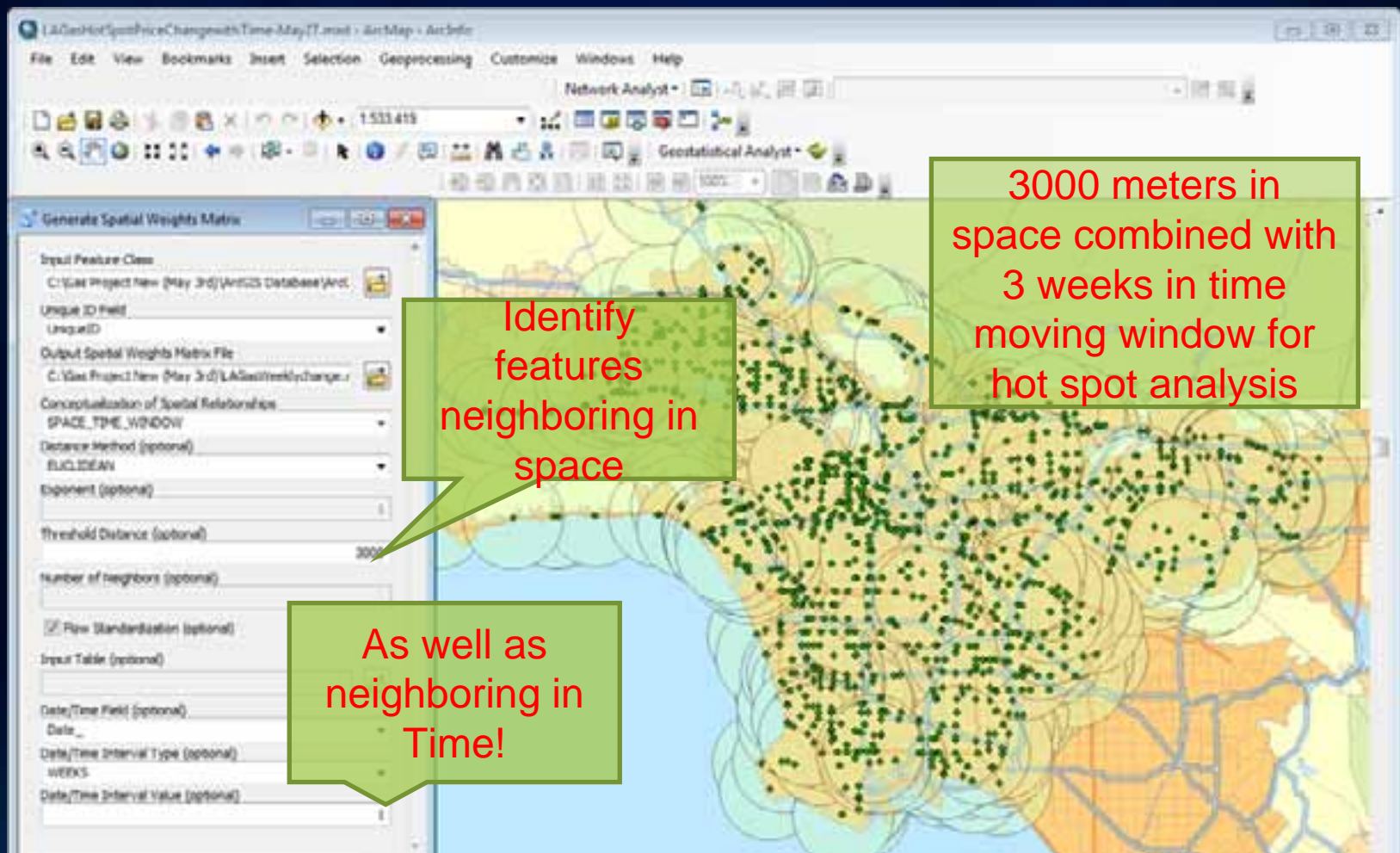
Make it Accessible

Improve the Science

Agenda

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

- Improvements in Network Analyst Extension

New Analysis Tools and Enhancements
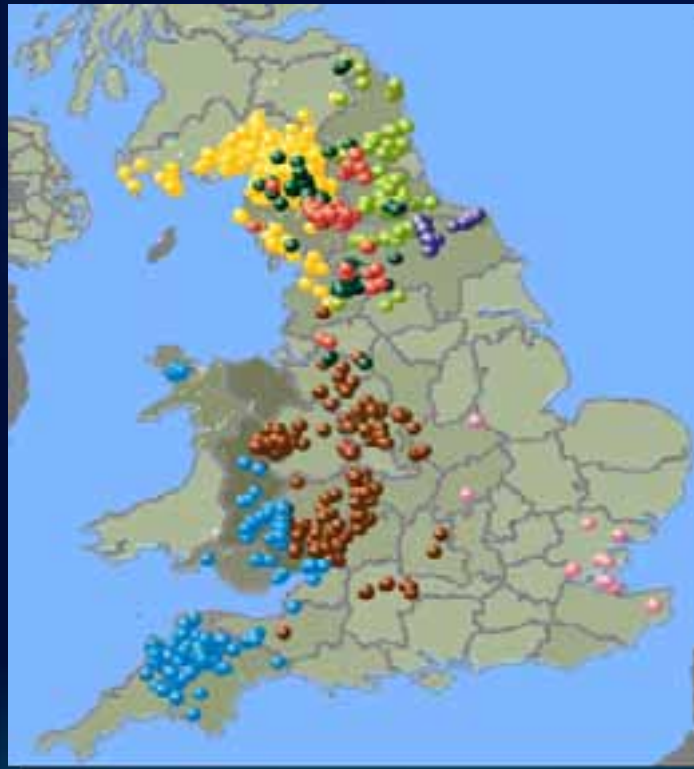
Identify space-time clusters
(Considering both space and time in Hotspot analysis)

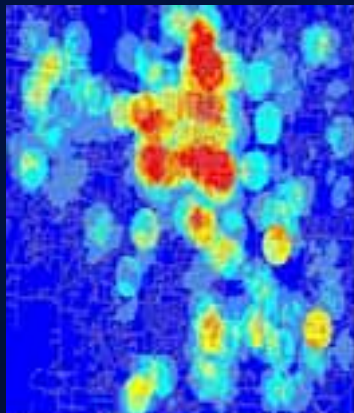# New Analysis Tools and Enhancements

- ## Group Similar Features
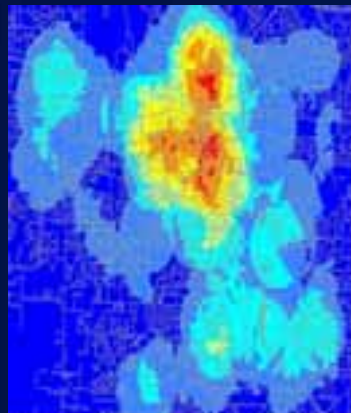
Foot and Mouth outbreaks in 2001
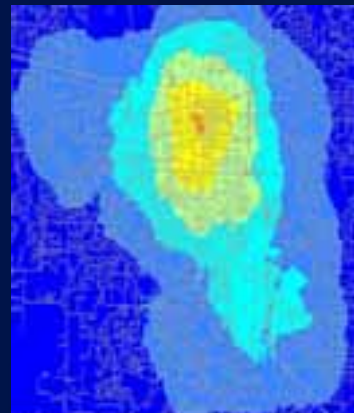
New Analysis Tools and Enhancements

- **Find appropriate scale of analysis (Incremental spatial autocorrelation)**

¼ Mile Radius   ½ Mile Radius   1 Mile Radius

Available in ArcGIS 10 for as a Sample Script
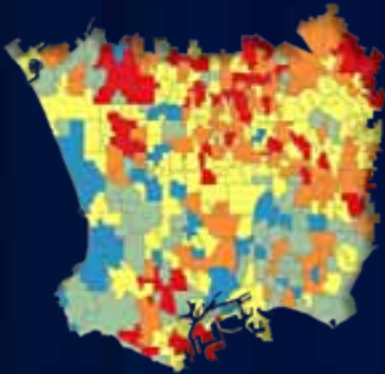
New Analysis Tools and Enhancements
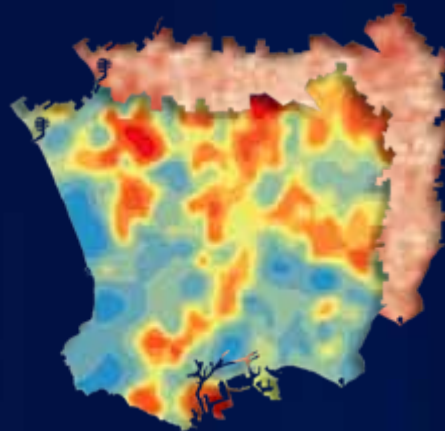
- ## Exploratory regression

Available in ArcGIS 10 for as a Sample Script

New Analysis Tools and Enhancements

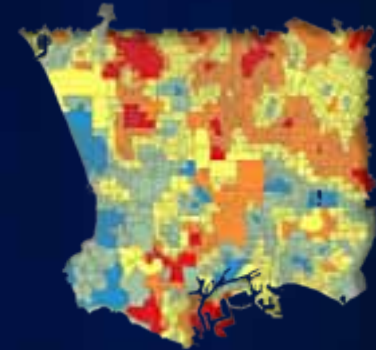## Areal Interpolation

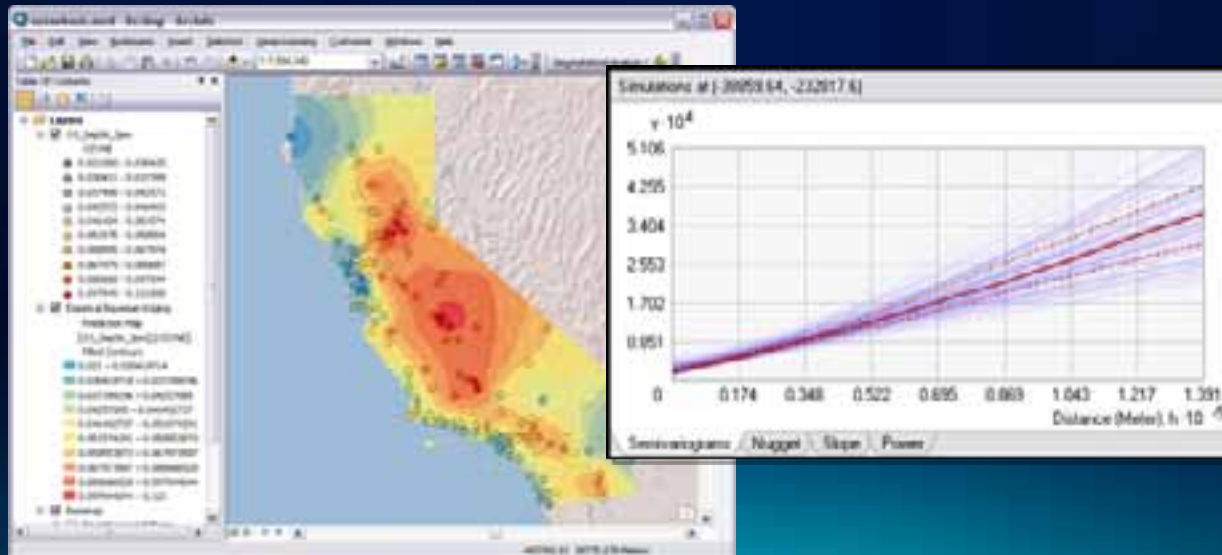Obesity by school zone

Obesity surface and error surface

Obesity by census block

- **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
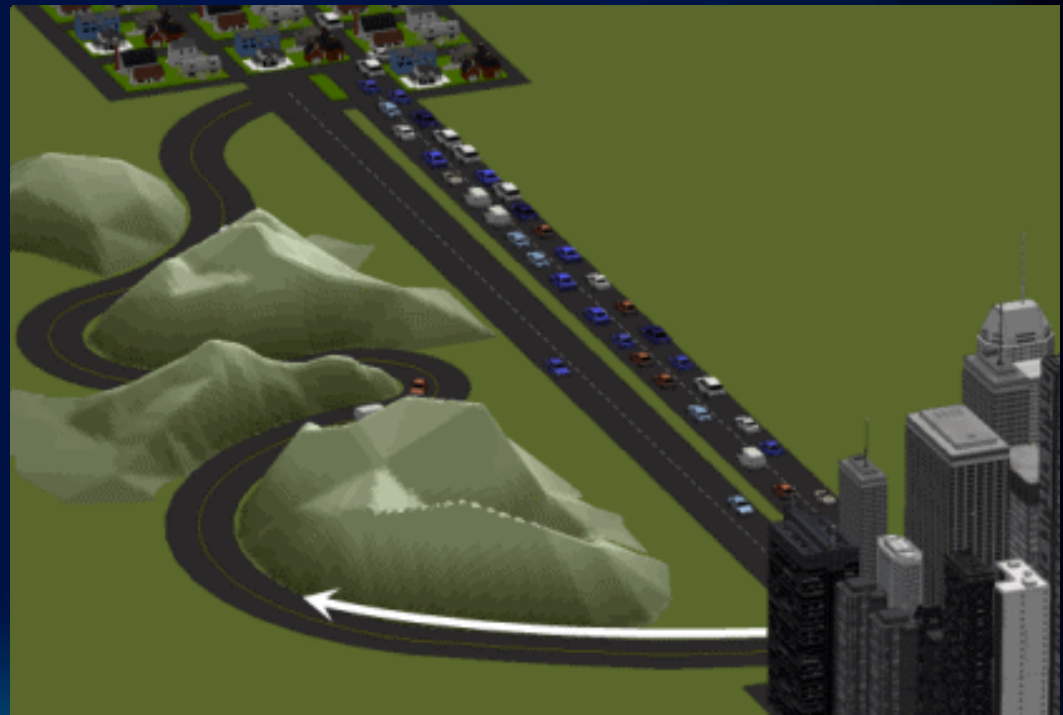
Faster Network Analysis
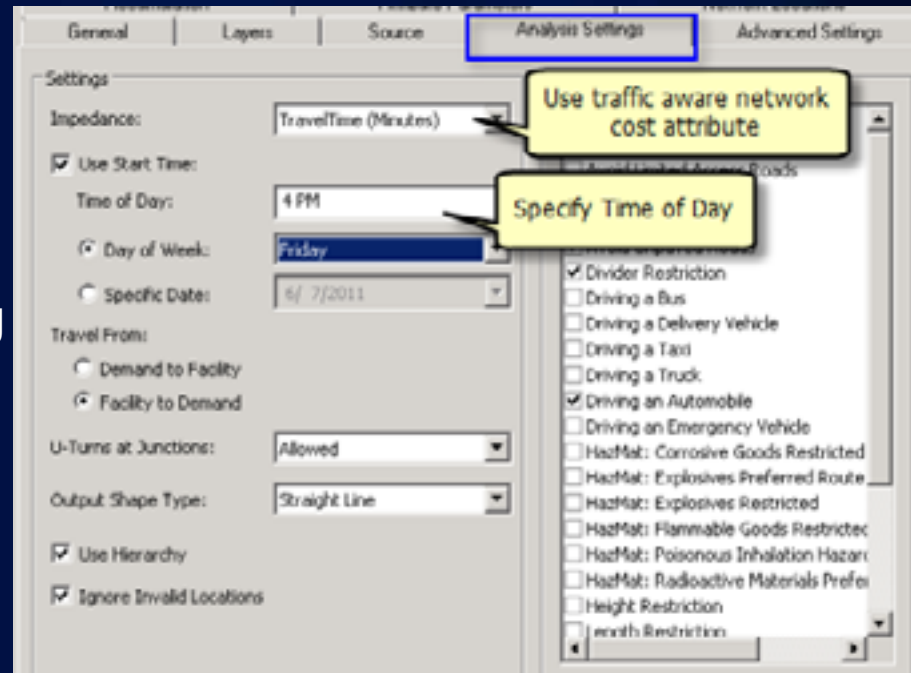
- **Significantly faster service area solver**

Service Area

Routing with Historical and Real-Time Traffic

- **Point to point routes**
- **Optimize stop sequence**
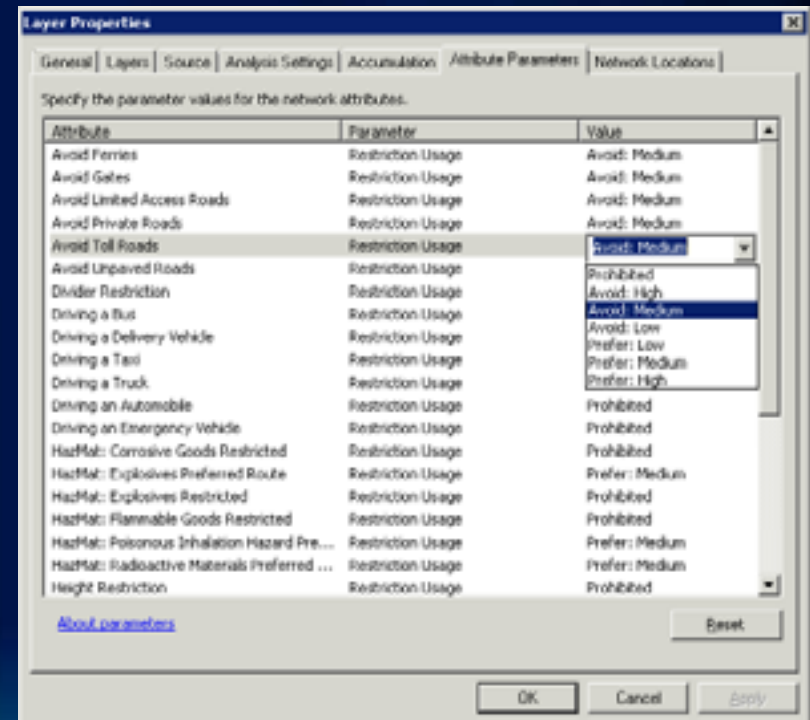- **Time windows**
- **Time aware**

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**
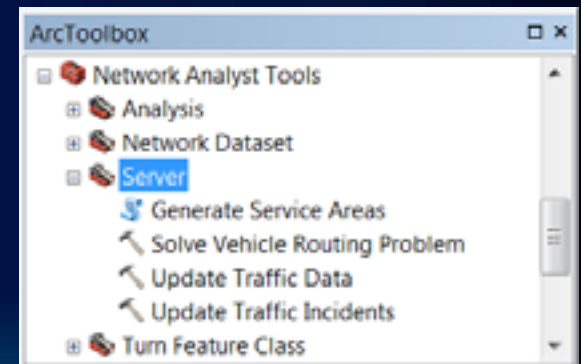   - **Avoid toll roads**

DEMO

- 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: