Bayonne, New Jersey Downtown

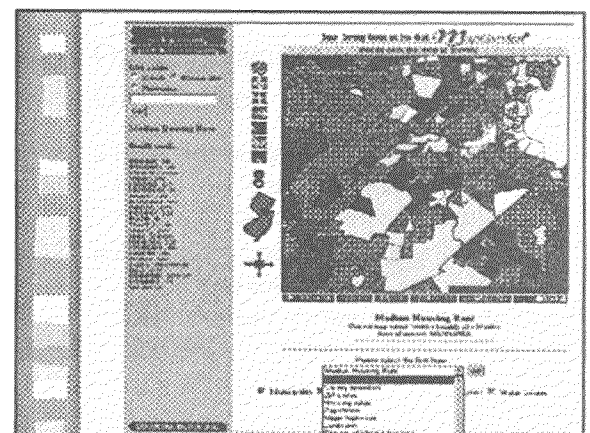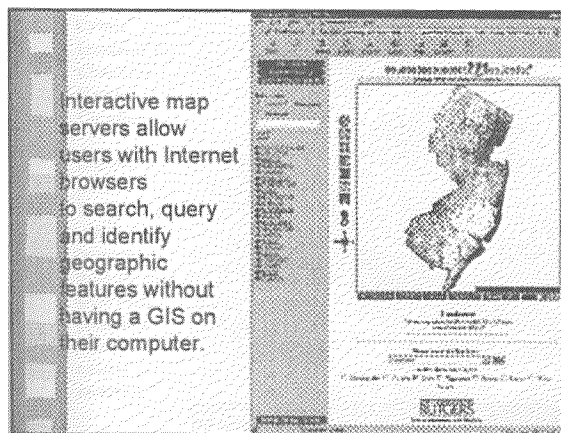Bayonne New Jersey -- An example of 3-D analysis

GIS and the Web

- The future of GIS is on the World Wide Web
- MapGarden is a web-based GIS from Rutgers
- Local government can access these maps delivered across Internet
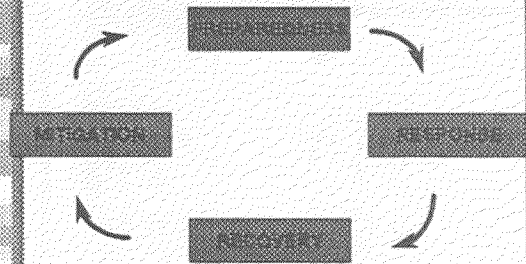- Working on providing models across the Internet

Web-Based GIS

- Growth of world wide web permits data bases to be located anywhere
- Web-based GIS means that different organizations can share data
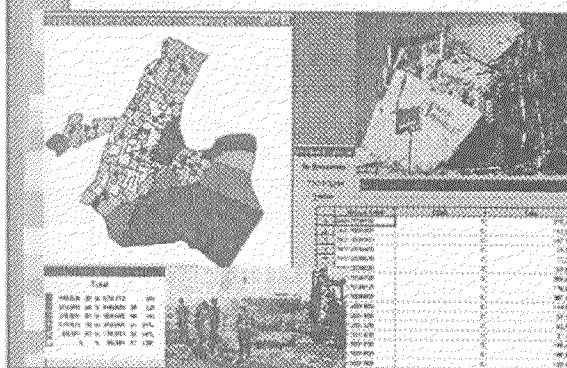- Example -- MapGarden from Rutgers University

Interactive map servers allow users with Internet browsers to search, query and identify geographic features without having a GIS on their computer.

Richard K. Brail, Rutgers University, December 1998

Disaster Management

- GIS is very useful for disaster management
  - Calculate buffers around hazards
  - Use networks to plan escape routes
  - *Important information source*
  - Develop database of damages
  - Use remote sensing data

Disaster Management

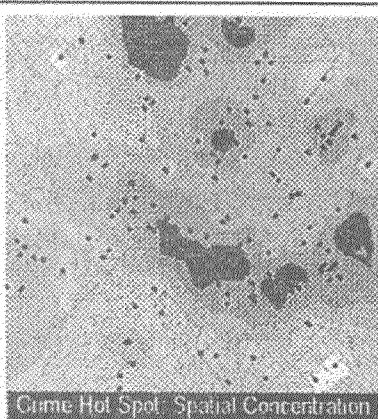## Disaster Response and Damage Assessment use GIS and Real-time Field Data

Spatial Analysis using GIS

- Can do many analyses
- For example
  - Crime analysis
  - Optimal facility location, for businesses and public facilities such as a hospital

Crime incidents in Charlotte, North Carolina

Mapped as points
Hot spots are calculated using the total distance from each event to a number of nearest incidents.

Crime Hot Spot Spatial Concentration

Optimal Facility Location with a GIS Viewer

- Planners would like to locate a new facility in a "best" location using mathematical optimization techniques
- Example -- Locate a store
  - NOT near other stores
  - AND in areas with high population density

Richard K. Brail, Rutgers University, December 1998