Integrated GIS for Planning and Public Policy Decision Making

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Transportation Seminar Series
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Columbia, Missouri
Agenda

• What is Internet GIS, how is it different from desktop GIS and why is this important?

• An overview of our custom applications

• An overview of our main map room

• Discussion

• Conclusions
Welcome
The Rural Policy Research Institute’s (RUPRI) Community Information Resource Center provides timely, policy-relevant information and decision support to government agencies, non-profit organizations, and citizen groups across the U.S. and globally.

Our center works with stakeholders to link people and place through interactive visualization, analytical tools, and spatial analysis. Our mission is to make public information publicly accessible in a decision support framework.

Learn more

TRY interactive mapping
Utilize internet mapping software and rich database to build custom interactive maps.

VIEW our initiatives and projects
Access information developed through ongoing research between the staff at CIRC and outside organizations.

about CIRC
Learn about CIRC, the people behind the scenes, our technology and our programs

New @ CIRC
1/3/06-1/14/06 - CIRC director traveled to Pyongtaek City, Korea to present seminars on Rural and Community Development and e-governance


12/1/05 - Staff presented a workshop at the Community Indicators Consortium in Burlington, VT.

Learn more
What is a Geographic Information System (GIS?)
Geographic Information system (GIS)

A GIS is often defined as the complete sequence of components for obtaining, processing, storing, managing, and manipulating spatial data.
Creating Data Layers
…linking digital data to “geography”

- Points: Community Colleges
- Lines: Streets / Rivers / Land Features
- Network: Transportation
- Polygons: Service Areas/Counties/Zip Codes
- Spatial Analysis – (i.e. travel times)
- Service Demand / Workforce
Geographic features are represented by two types of data.

SPATIAL DATA

ATTRIBUTE DATA

Street Name
Address range on left
Address range on right
Length to travel
Directions to travel
What you can do with a GIS

• Impact Analysis
• Economic Development
• Strategic Planning
• Multi-sector Collaboration / Coordination
• Grant support
• Data Visualization
• Environmental Monitoring
• Site Location Analysis
• Advocacy
• …
Limitations of an Agency-Based GIS Framework

- Non-profit organizations and government agencies at all levels often disseminate institution-specific data in the public domain.

- Decision makers often need data from several agencies that can be used together in a decision support framework.

- Many policy makers do not have resources to readily integrate data from Agency-based websites into a decision support system that cuts across multiple agencies or institutions.
A Patchwork Quilt of Data…

- Water water everywhere but not a drop to drink…

- Data data everywhere but not a BYTE to think…
What is an Internet GIS and how is it different from a desktop GIS?
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12/5/05 – Staff presented at The Rural Early Childhood Forum on Hurricane Recovery and Emergency Preparedness in Mobile, AL
view hurricane maps here

12/1/05 – Staff presented a workshop at the Community Indicators Consortium in Burlington, VT

Learn more
Interactive Mapping: Step 1. Specify Area of Interest

Step 1. Specify Area of Interest

**ADMINISTRATIVE:**
- State
- County or Equivalent
- City
- Metropolitan Statistical Area
- High School District

**POLITICAL:**
- US 109th Congressional District

**RESEARCH PROJECT AREA:**
- CIRC Research Study Areas
- RUPRI Panels Study Areas

Select your area of interest. Click Step 2 above to proceed.

Select a State:

- US (Lower 48 States)
- Alabama
- Alaska
- Arizona
- Arkansas
- California
- Colorado
- Connecticut
- Delaware
- District of Columbia

This website is best viewed using Internet Explorer 5.x or higher or Netscape 5.x or higher, with pop-up windows enabled. Mozilla users may encounter functional errors with certain tools. [more about browser requirements...](#)

Step 2. Select Data Layers
## Interactive Mapping: Step 2. Select Data Layers

### DATA CATEGORY
- Administrative
  - Base Data
  - Census 2000
  - Economic
  - Health
  - Kids Count - Annie E. Casey
  - Political
  - Special Projects

### Administrative
- State Boundaries
- County Boundaries
- Cities and Towns
- Core Based Statistical Areas
- County Subdivisions
- Elementary School Districts
- High School Districts
- Indian Reservation Boundaries

### Rural
- Rural-Urban Commuting Areas (RUCAs)

[Step 3. Verify Selections]
Interactive Mapping: Step 3. Verify Selections

Check your selections of geographic area and data layer listed below. Click "Map Map" to start your interactive map. An interactive map allows you to change colors, label items, utilize tools, and make printable maps (HTML or PDF format).

**Geographic Area:**
US (Lower 48 States)

**Data Layer Selections:**
- Lakes and Ponds
- State Boundaries

For information on Browser Requirements, click [here](#).
### Interactive Mapping: Step 2. Select Data Layers

<table>
<thead>
<tr>
<th>DATA CATEGORY</th>
<th>Administrative</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Administrative</td>
<td>- State Boundaries</td>
<td>- Rural-Urban Commuting Areas (RUCAs)</td>
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<tr>
<td>- Base Data</td>
<td>- County Boundaries</td>
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<td>- County Subdivisions</td>
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<tr>
<td>- Kids Count - Annie E. Casey</td>
<td>- Elementary School Districts</td>
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</tr>
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<td>- Political</td>
<td>- High School Districts</td>
<td></td>
</tr>
<tr>
<td>- Special Projects</td>
<td>- Indian Reservation Boundaries</td>
<td></td>
</tr>
</tbody>
</table>
Interactive Mapping: Step 2. Select Data Layers

[Data Category]
- Administrative
- Base Data
- Census 2000
  - Age
  - Education
  - Employment by Industry
  - Gender
  - Group Quarters
  - Hispanic or Latino
  - Household by Type
  - Housing Occupancy and Tenure
  - Income
  - Labor Force
  - Population
  - Race
  - Relationship of Persons in Household
  - Urban and Rural Population
  - Work Force by Occupation
- Economic
- Health
- Kids Count - Annie E. Casey
- Political

Census 2000

- Age
  - Median Age
  - 17 and under
  - 18 to 24 years
  - 25 to 44 years
  - 45 to 64 years
  - 62 years and over
  - 65 years and over
  - 4 and under
  - 5 to 9 years
  - 10 to 14 years
  - 15 to 17 years
  - 18 to 19 years
  - 20 to 24 years
  - 25 to 34 years
  - 35 to 44 years
  - 45 to 54 years
  - 55 to 59 years
  - 60 to 64 years
  - 65 to 74 years
  - 75 to 84 years
  - 85 years and over

Note: For each interactive map, you are limited to add up-to 4 data layers with the SAME geographic unit (e.g. county) from the Census 2000 collection.
## Interactive Mapping: Step 2. Select Data Layers

<table>
<thead>
<tr>
<th>DATA CATEGORY</th>
<th>Political</th>
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</thead>
<tbody>
<tr>
<td>Administrative</td>
<td>□ State House Districts, 2000</td>
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<tr>
<td>Base Data</td>
<td>□ State House Districts, Updated</td>
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<tr>
<td>Census 2000</td>
<td>□ State Senate Districts, 2000</td>
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<tr>
<td>Economic</td>
<td>□ State Senate Districts, Updated</td>
</tr>
<tr>
<td>Health</td>
<td>□ US 109th Congressional Districts</td>
</tr>
<tr>
<td>Kids Count - Annie E. Casey</td>
<td>□ Voting Districts</td>
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<tr>
<td>Political</td>
<td></td>
</tr>
<tr>
<td>Special Projects</td>
<td></td>
</tr>
</tbody>
</table>

### Step 3. Verify Selections
### Health System

#### Health Facilities
- Community Health Centers
- Companies Providing Ambulance Services, 10/2004
- County and City Health Departments
- Critical Access Hospitals
- Respiratory Care Facilities, 2002
- Small Rural Hospital Improvement Grant Program (SHIP), 2002
- Small Rural Hospital Improvement Grant Program (SHIP), 2004

#### Health Statistics, 1998-2002
- Infant Mortality Rate
- Low Birth Weight Rate

#### HRSA Area Resource File (ARF), 2001-2002
- Nursing Facilities in 2002
- Skilled Nursing Facilities in 2002
- Total Active DOs in 2001
- Total Active MDs in 2001
- Total Nursing Facility Beds in 2002
- Total Skilled Nursing Facility Beds in 2002

#### Health Professional Shortage Areas
- Health Professional Shortage Area (Dental)
- Health Professional Shortage Area (Mental Care)
- Health Professional Shortage Area (Primary Care)
- Medically Underserved Areas/Populations
How Does Internet-based GIS Level the Playing Field?

- Effective research collaboration tool
- Effective communication tool
- No GIS software required
- No data distribution required
- Cost effective
Website and Contact Information

http://circ.rupri.org

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