Leveraging Resources through Partnerships

A Case Study of a Distributed Web Mapping Service
Overview

- Technical Set-up
- Partners
- Content (including metadata)
- Implementation issues
Technical Setup in brief

- Open Geospatial Consortium (OGC)
  - Web Map Service (WMS) protocol

- Prevalence of WMSs – Naval Research Lab/Mapping Branch project claims 1,506 services in its catalog with 300,000 layers
In Partnership with…

- NC OneMap - Component of the National Map
NC OneMap Content

- Contributed by local, state & federal agencies and institutions.
  - Boundaries
  - Structures
  - Transportation
  - Cadastral
  - Hydrography
  - utility/telecom
  - Economy
  - Health
  - Environment
  - Sociodemographic
  - Biohabitat
  - Geophysical
  - Weather
  - Landcover
  - Imagery
  - Elevation
Sociodemographic - No content

- Options
  - State
  - Census – most convenient (already in GIS format); most requested
  - ACS – anticipate future demand since will be available every year
Choosing Variables

- Useful for economic planning but choice complicated by

- Limited space

- Very general - expect feedback
Choosing Geographies

- Want people to be able to aggregate but each has to be included as a separate layer, just like the variables.

- Concluded that would include boundary layers for most frequently used geographies and only present data for smallest geographies.
Opportunity for Libraries

- Currency vs. archived GIS data
- Local/Mission-specific data
- Cooperate with existing services
Implementation Issues

- Required close cooperation between tech, mapping and data professionals
  - Overall process – who does what
  - Standards – metadata; symbolization; naming
  - Set-up of server and servlet
  - Set-up and creation of IMS files
  - Troubleshooting problems
Resources

- NC OneMap (portal for NCSU’s pilot WMS)
    Click on Launch to use the Map Viewer

- GIDB OpenGIS Web Services (“catalog” of existing WMSs)

- Minnesota MapServer (open source software)
  - [http://mapserver.gis.umn.edu/](http://mapserver.gis.umn.edu/)
Application Software

- ArcIMS 9.1

- ArcIMS 9.1 WMS Connector – enables serving ArcIMS content as WMS source
Server Software

- Apache 2.0.48 web server
- Tomcat 5.0.28 servlet engine with mod_jk2
- JSDK 1.4.2
- Internet Explorer 6 or higher (for ArcMap server)
- MDAC 2.5 or higher (for ArcMap server)
### Metadata – Functional vs. Content

**Capabilities file**

<table>
<thead>
<tr>
<th>Function</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>How to connect</td>
<td>Source of layers; when created; purpose; original filename</td>
</tr>
<tr>
<td>Requests supported</td>
<td></td>
</tr>
<tr>
<td>Style layer descriptors</td>
<td>Use constraints</td>
</tr>
<tr>
<td>Max scale</td>
<td>Whom to contact for more data and help</td>
</tr>
</tbody>
</table>
Metadata for Variable Layers

- Geographic summary level at which aggregated
- Statistical method by which data is classed (Natural breaks, Jenks)
- From which summary file it came & related caveats
- If data is joined, its source