

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 Viewer - Microsoft Internet Explorer provided by NCSU Libraries

Address: http://gisdata.usgs.net/website/NC_OneMap/viewer.asp

nc one map The National Map

NC OneMap Viewer Back to the Main Page The National Map Viewer

Zoom

Query

Tools

Docs

ncONEmap Use Survey

Scale Information

Layers

- Location-Geodetic
- Structures
- Transportation
- Cadastral
- Boundaries
- Hydrography
- Utility-Telecom
- Economy
- Health
- Environment
- Socio-Demographic
- Bio-Habitat
- Geophysical
- Weather
- Land Cover
- Imagery-Basemap
- Elevation

- Zoom in for higher resolution data -
Participating local governments outlined in orange

U.S. Department of the Interior || U.S. Geological Survey || EROS Data Center
URL: http://gisdata.usgs.net/website/NC_OneMap/ || Maintainer: webmapping@usgs.gov || Modified: June 28, 2004

Map: -74.25, 32.71 -- Image: 980, 526 -- ScaleFactor: 0.01158238172920061

start Internet Expl... Hayslett, Michele... Inbox for Michele... GID6 - WMS lets... arcims.ppt maps - maps.lib.n... 1:05 PM



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)
 - <http://www.nconemap.org/>
Click on Launch to use the Map Viewer
- GIDB OpenGIS Web Services (“catalog” of existing WMSs)
 - <http://columbo.nrlssc.navy.mil/ogcwms/servlet/WMSServlet>
- Minnesota MapServer (open source software)
 - <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

Function

- How to connect
- Requests supported
- Style layer descriptors
- Max scale

Content

- Source of layers; when created; purpose; original filename
- Use constraints
- Whom to contact for more data and help



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