GIS and Data Accessibility for the NEOSCC
Assessment of Alternatives for Storage, Maintenance & Sharing of Data

Draft Report
November 19, 2013

Presentation to NEOSCC Executive Committee
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1. Provide broad information about:
   • Ways to share data/GIS
   • How Consortium member GIS users currently use data & their preferences and priorities
   • How other organizations, many SCI grantees, are dealing with data/GIS
   • General costs of building out low-, medium- and high-scale options

2. Discuss preferences for data/GIS & next steps, with or without NEOSCC 2.0
Objectives

1. Provide a descriptive inventory of the databases and files developed by NEOSCC

2. Assess alternatives concerning how these data should be stored, maintained, and shared at the conclusion of the NEOSCC grant
   - Survey of NEOSCC member organizations and select data partners
   - Interviews with planning organizations, including HUD Sustainable Communities grantees, about data sharing
Data Inventory
• Excel inventory of data files and databases gathered and stored on NEOSCC’s BOX server developed spring/summer 2013
• 4,446 files, many are image files, Word and text documents, PDFs, and Excel and CSV files, while there are GIS files (both shape and geodatabase types)
• Some data gathered was incomplete (no metadata)
• Additional documentation will be developed as time permits

Assessment of Alternatives for Storage, Maintenance & Sharing of the Data
• This presentation summarizes the findings of the draft report
• Final report due early December and will be available online
Select Findings
Assessment of Alternatives for Storage, Maintenance & Sharing of Data
Methodology

A. Online survey of NEO organizations
The survey includes questions on the following topics:
1) GIS staffing and resources;
2) Policies and opinions about sharing data; and
3) GIS and related data use and priorities

B. Telephone and email survey of 14 organizations from around the country that provide examples of data sharing
GIS Staffing and Resources
How many staff use GIS and what are their proficiencies?

Averages:
- High-end experts: 1.4
- GIS professionals: 2.6
- Basic users: 4.4

Number of Organizations

Number of Staff

National Survey
- 4.7
- 8.8
- 24.6
Data Standards

Do you have data standards that are followed?

- Users maintain their own documentation and there are no standards or requirements: 9
- We have requirements and standards concerning metadata, but they are not much followed: 1
- Most of our data are well documented, but there is also much important data that is not: 3
- There are few data that are not well documented: 6
Data Maintenance

Do you maintain metadata (data documentation)?

- Users maintain their own documentation and there are no standards or requirements. 9
- We have requirements and standards concerning metadata, but they are not much followed. 1
- Most of our data are well documented, but there is also much important data that is not. 3
- There are few data that are not well documented. 6
Policies and Opinions About Sharing Data
National survey
13 of the 14 offer existing data files free
6 of 9 offer customized data at no charge
National survey found that, generally, web downloads are offered.

8 of the 14 have Internet mapping.

<table>
<thead>
<tr>
<th>Method</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Send/provide copy (e-mailed, CD, or other ad hoc staff effort)</td>
<td>13</td>
</tr>
<tr>
<td>Web portal (user fetches the data directly)</td>
<td>6</td>
</tr>
<tr>
<td>Other: FTP Access, Reports</td>
<td>1</td>
</tr>
</tbody>
</table>
Almost half (47.4%) frequently obtain data from state and federal agencies.

Universities/colleges and local governments are the next most often suppliers of data.
GIS and Related Data Use and Priorities
How often is Data Shared?

How Often Shared
Transportation Data

1 = never, 2 = occasionally, 3 = frequently
Data types with higher scores on priority for regional planning than on how much they are used and their importance to the organization’s mission may indicate that such data are recognized as important beyond their specific importance to individual organizations.
Note that LandSat and retail and manufacturing centers are seen as important for regional planning even though they are used less often by the organizations and are not strong matches for their mission.

Zoning data are needed but not used in proportion, probably because it is not very available.
Major Data Types
Average Score

5=Highest score

- Environment; e.g., Toxic Release Inventory (TRI), air quality, point source pollution, soils, wetlands, water sheds,…
  - Priority for Regional Planning: 4.24
  - How much you use such data: 3.81
  - Importance to Organization’s Mission: 4.52

- Demographic, Socioeconomic; e.g., census data on population, age, gender, race and ethnicity, household,…
  - Priority for Regional Planning: 4.19
  - How much you use such data: 4.48
  - Importance to Organization’s Mission: 4.19

- Public Health; e.g., birth and death records, data on morbidity, access to care, obesity and other health,…
  - Priority for Regional Planning: 4.40
  - How much you use such data: 3.10
  - Importance to Organization’s Mission: 3.70

- Housing; e.g., HUD data on subsidized units, affordability, Home Mortgage Disclosure Act
  - Priority for Regional Planning: 4.40
  - How much you use such data: 3.65
  - Importance to Organization’s Mission: 3.55

- Economic and Employment; e.g., employment by industry (LEHD), journey-to-work characteristics,…
  - Priority for Regional Planning: 4.48
  - How much you use such data: 3.65
  - Importance to Organization’s Mission: 3.55

- Transportation and Safety; e.g., roads and highways, airports, water ports, rail, transit (bus and rail)
  - Priority for Regional Planning: 4.48
  - How much you use such data: 3.85
  - Importance to Organization’s Mission: 3.85

- Utilities; e.g., water, sewer, electricity, natural gas, telecommunications.
  - Priority for Regional Planning: 4.20
  - How much you use such data: 3.00
  - Importance to Organization’s Mission: 3.35

- Land Use/Cover; e.g., from Landsat, property records, land use inventories
  - Priority for Regional Planning: 4.20
  - How much you use such data: 2.60
  - Importance to Organization’s Mission: 3.00

- Social and Cultural; e.g., neighborhood boundaries, cultural assets such as arts and sports venues, recreational resources
  - Priority for Regional Planning: 4.15
  - How much you use such data: 2.95
  - Importance to Organization’s Mission: 3.70

- Projections; e.g., land use, housing, transportation, and population projections
  - Priority for Regional Planning: 4.15
  - How much you use such data: 2.95
  - Importance to Organization’s Mission: 3.70

- Other
  - Priority for Regional Planning: 1.67
  - How much you use such data: 2.00
  - Importance to Organization’s Mission: 3.33
Interview Findings
What Other Planning Organizations Are Doing Concerning Web Portals and Data Updates

General cost information for alternative scenarios for future data sharing and maintenance is summarized below:

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Description</th>
<th>Similarities to interviewed organizations</th>
<th>Total Start-up and first year</th>
<th>Annual ongoing</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOW</td>
<td>Inventory of files available online, request specific files through ftp or other ad hoc methods</td>
<td>NOACA</td>
<td>$15,100</td>
<td>$6,400</td>
</tr>
<tr>
<td>MEDIUM 1</td>
<td>A mix of online files in an accessible repository along with some files in an existing viewer like NOACA’s GIS Server</td>
<td>Partly DRCOG (Denver)</td>
<td>$20,500</td>
<td>$3,700</td>
</tr>
<tr>
<td>MEDIUM 2</td>
<td>GIS coordinator obtaining data from the authoritative sources and maintaining the web site and GIS staff to maintain key layers. The website would have searching capabilities and downloading, but no editing</td>
<td>Low-end Metro (Twin Cities)</td>
<td>$148,500</td>
<td>$63,000</td>
</tr>
<tr>
<td>HIGH 1</td>
<td>Web-based GIS mapping portal using ArcGIS online and a consultant</td>
<td>Only done in pieces - Houston-Galveston and Columbus</td>
<td>$207,750</td>
<td>$81,750</td>
</tr>
<tr>
<td>HIGH 2</td>
<td>Web-based GIS mapping portal, built in-house with aid of consultant</td>
<td>Partly Boston</td>
<td>$333,000</td>
<td>$140,000</td>
</tr>
</tbody>
</table>
There is a wide range in types of technology used.

Web portals can be designed for easy access to data and also with the ability to allow shared updates and automatic transfers.

In general, members contribute to the general support of the organization and sometimes provide funding on special projects.

Some also receive additional support when purchasing aerials (digital orthophotography or other remotely imaged data).

Generally, members do not provide support for the cost of web portals. Most funding for the portals comes from federal and state grants, or was funded out of general operating budgets.
Highlights (Cont’d)

• Larger organizations have special grants or foundation funding.

• Nine of the sites were built in-house with only three hiring consultants and one planning on hiring a consultant.

• The GIS portion of the portals were generally all up in nine months or less, though more complex systems require more substantial on-going development for much longer.

• Web portals can be designed for easy access to data and also with the ability to allow shared updates and automatic transfers.
Most of those interviewed said that the portal has helped the organization’s stakeholders make better decisions.

Many stakeholders have come to depend on the regional organization as a reliable source of data.

Having a substantial set of data, and data that meets required standards, is seen as an important asset for the organization.
Discussion