Wisconsin State Cartographer's Office

SCO

Moving Forward on a Statewide Wisconsin Geospatial Data Portal

The lack of a statewide repository (or geoportal) for Wisconsin geospatial data is a longstanding problem dating back to the earliest days of the Wisconsin Land Information Program (WLIP). There have been attempts in the past to address this issue, both formally and informally. Perhaps most notably, considerable resources were expended in the late 1990's and early 2000's to develop concepts and technical next steps for a statewide Wisconsin Land Information System (WLIS)[1]. Nearly 20 years later, such a statewide *data access* system has yet to be realized.

Recently the Wisconsin Land Information Council (WLIC) passed a resolution asking the state's Geographic Information Officer (GIO) to "continue to explore a statewide repository/portal solution." Whether this advisory resolution will be backed with resources to investigate and then implement a solution remains to be seen.

The 2016 WLIP Survey, published by the Wisconsin Land Information Program on Nov. 30, 2016, touches on numerous aspects of geospatial data access in the state, including an "open data benchmark" and a "WLIP Portal" solution. The latter – essentially a tabular listing of online county geospatial datasets – is described as serving immediate needs as an "intermediate step in advance of a more comprehensive solution to the land information community's data access needs."

Meanwhile, a variety of organizations across the state are discussing data access issues or researching solutions with little coordination. These include state agencies, university centers and libraries, and professional geospatial organizations and associations. The lack of coordination reflects, in part, varying ideas about the purpose and audience for a statewide geospatial data portal.

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This document is presented as a concept for a state geospatial data portal that goes beyond "immediate needs" and attempts to address some of the critical issues related to user needs for geospatial data access. This proposal tries to consider how the state of Wisconsin should invest in geospatial infrastructure for the future, in order to maximize the return on the investment made over the last three decades through the Land Information Program.

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[1] http://www.sco.wisc.edu/news/gio-and-wlis-are-priorities-for-chief-information-officer.html

Who (and What) is a Geoportal For?

Our starting point is the assertion that a state geoportal *should be designed to serve the needs of the state's citizens,* including the private sector, non-profit organizations, private citizens, educators and students, and government agencies at all levels. The purpose of a geoportal should be to provide streamlined geospatial data access to individuals and organizations that can use the data in ways that expand its utility, thus enhancing return on investment and demonstrating the value of and need for quality geospatial data.

Focusing future geoportal efforts on the user – rather than the data producer – necessarily focuses attention on the needs of the user community, including ease of discovery, access, and use. This underscores the importance of usability as an essential element in geoportal design. A statewide geoportal cannot be effective when viewed merely as a "checkbox" to fulfill an administrative requirement.

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This focus on usability has implications for the design of a geoportal. There are numerous dimensions to be considered, including the completeness and quality of metadata, the ability to perform searches by keyword or geographically, a degree of standardization in data format, consistency in interface design and system behavior when accessing different datasets, etc. In short, hosted data must be curated, its metadata must be created and managed, older versions of datasets must be archived, spatial footprints and keywords must be created, and so on. The ability of users to effectively make use of the data is dependent on these characteristics.

Exposing all WLIP-funded data to the public – as proposed in the 2016 WLIP Survey – is a worthwhile future goal, but there is little to be gained by the exercise if users cannot make use of the data effectively. Providing access to all of these datasets without considering quality, metadata, completeness, and standardization will inevitably cause confusion. We cannot expect the increasingly heterogeneous user community to adopt and accept the terminology and logic of the geospatial community. If we really want to make our data usable and expand the breadth of geospatial data use in the state, we need to make an effort to communicate with users in ways that they will understand.

More Than a Table or List

Even an initial solution to a statewide geoportal needs to be more than just a table or list of datasets available online. An "open data benchmark" that can be achieved through a multiplicity of access options, websites, and formats will not provide users with the capabilities they need to be successful. Once this solution is put in place there will be tremendous inertia associated with improving it, since data producers will have invested time, energy and resources in its development. It will be hard to move toward a more managed solution; hence it makes sense to have this managed solution in mind as we develop the first iteration.

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Rather than asking data producers to deliver their entire warehouse of data at once, we should – in consultation with the user and producer communities – develop priority datasets (PLSS? addresses? road centerlines?) and invest in these datasets to ensure they have decent metadata, are discoverable, and are adequately managed and curated. This approach will not only ensure that priority datasets will be of high quality and high value to the user community, but will also reduce the amount of extra "busy work" that local data producers (i.e., the counties, primarily) will need to do to assemble and release their entire repository of data.

"We should prioritize the development of and access to the most important layers that impact the greatest number of users."

Simply stated, we should focus on quality, not quantity. We should prioritize development and access for the most important layers that impact the greatest number of users. Other, less critical, layers can be phased in over time. We should spend time up front to ensure that data is as consistent as possible. We do not need to have complete standardization of data layers across counties to begin, but we should be moving in that direction.

We also need to distinguish between open data benchmarks which deal primarily with policy issues, and a statewide geoportal which the WLIP has identified as a separate area of investigation for the GIO. Meeting an open data benchmark will not solve all data access problems.

Leveraging Existing Resources

It also makes sense for us to leverage existing data access initiatives and tools to develop a statewide portal in the most economical, cost-effective, and timely manner. There are several key assets already in the state, including the **Robinson Map Library**, which has developed a working repository of county geospatial data in the form of GeoData@Wisconsin and is also a partner in the Big Ten Academic Alliance Geoportal Project[2]; **WisconsinView**, which has been hosting large-volume raster imagery and LiDAR-derived DEMs for many years; and the **Legislative Technology Services Bureau** (LTSB), which maintains a variety of electoral and administrative boundary datasets, hosts the statewide parcel layer, and provides software-based services to update geospatial data. These are three examples of possible partners in a statewide repository project, and there may be others as well, such as the geospatial data libraries at UW-Milwaukee and other UW system institutions.

In leveraging these assets, we should define clear roles for each group to avoid duplication of effort and focus on each group's strengths, with the ultimate goal of providing data access capabilities that meet the needs of users throughout the state.

For example, the Robinson Map Library might focus on vector data cataloging, metadata, discovery and access, and curation and archiving, while WisconsinView would more naturally focus on raster data. The LTSB could serve as the ingest point for local data, perhaps also developing validation and QA tools, and assist with standardization and integration.

Appropriate funding will be required if a successful geoportal is to be developed. The level of funding does not necessarily need to be large if we set our sights appropriately and scale the effort over time by focusing on priorities.

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[2] https://geo.btaa.org/

Next Steps

Who should lead the coordination and development effort to create the geoportal? According to Wisconsin Statute 16.967(3), the Department of Administration has the clear authority to lead the development of a statewide geoportal, presumably in collaboration with other organizations and agencies.[3]

Some suggested next steps for the DOA and the broader community are as follows.

1. DOA needs to identify a champion for, and then establish a formal project to begin work on the geoportal.

2. DOA should develop a stakeholder working group to provide guidance on the development of the geoportal. This could be achieved via a subgroup of the WLIC.

3. The working group should initially focus on assisting DOA with developing short- and long-term scopes of the project, and mostly importantly, identifying critical stakeholder needs.

> *"[The Department of Administration] shall direct and supervise the land information program and serve as the state clearinghouse for access to land information."*
> *s. 16.967(3)*

4. The working group should not focus on software and technology until a later date.

5. DOA should be prepared to invest financially in moving the geoportal project forward.

6. The geoportal project should start small, tap into existing resources, and grow incrementally over time as dictated by needs of the user community.

As a practical matter, the SCO believes that enhancing access to geospatial data is a critical activity for the state, and we are willing to commit resources and be part of the solution. We are willing to work closely with the Department of Administration in whatever role that agency, the Land Information Council, and the community at large deems appropriate for us.

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[3] https://docs.legis.wisconsin.gov/statutes/statutes/16/VI/967/3