

A Geospatial Vision for Wisconsin

A report by the Geospatial Strategy Working Group

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In This Document

This document is a high-level summary of important statewide applications of geospatial data and near-term needs in Wisconsin, as determined by an ad hoc Geospatial Strategy Working Group with membership from many of Wisconsin's geospatial associations and organizations.

The document describes and prioritizes the geospatial datasets and services the state requires. The goal is to assist policy-makers in making informed decisions about geospatial activities.

Several appendices are included in a separate document. Appendix A lists the people and organizations involved in the Geospatial Strategy Working Group. Appendix B is an overview of priority datasets with estimated completion costs. Appendix C provides some examples of geospatial data uses. Appendix D and Appendix E map out the network of responsibilities for geospatial data development and stewardship in the state. Appendix F was originally prepared by the Wisconsin Land Information Association as a report of the status of geospatial datasets.

The Need for Geospatial Data

High-quality, statewide geospatial data is essential for Wisconsin to move forward with its efforts to streamline governance and grow the state's economy.

Geospatial data is location-based information that can be put on a map. Common examples include tax parcels, streets and roads, building addresses, aerial photography, elevation, floodplains, zoning, and land use. This information is critical to the operations of government, private businesses, non-profits, and the citizens of Wisconsin.

The Wisconsin geospatial community is actively advancing the wealth of geospatial data assets available at the local and state level. With the initiation of the statewide parcel project under Act 20 in 2013, we are beginning to develop the resources necessary to compile and distribute statewide data. We need to continue these efforts, not just with parcels, but with other foundational location-based information through continued statewide prioritization and a better vehicle for public access to these datasets.



A section of County Highway A washed away in the floods of June, 2008. U.S. Air Force photo by Master Sgt. Paul Gorman/Released (www.defenseimagery.mil 080609-F-6967G-137) [Public domain], via Wikimedia Commons.

Moving Forward Through Engaged Prioritization

With current levels of funding through the Wisconsin Land Information Program (WLIP), Wisconsin is poised to secure an increased return on

investment through the applied use of integrated statewide geospatial information.

Leadership through the state's Geographic Information Officer and the State Cartographer's Office provide the first tier of coordination for Wisconsin's geospatial community. But as the pace of progress quickens, we anticipate the need for an additional mechanism to provide advice and help prioritize geospatial initiatives and investments. An advisory body would provide equitable

representation of stakeholder voices representing data-producing organizations as well as user communities that will benefit most as the state moves forward.

Building on Wisconsin's rich history of geospatial data stewardship and coordination will require the development and maintenance of statewide geospatial datasets, the provision of online public access to these datasets, and a commitment to community input in the geospatial governance process.

Examples of Geospatial Data in Action

Tax parcel data can be used to assess the impacts of changes in property tax rates, assist in emergency response, help identify properties suitable for economic development, improve public access to hunting resources, and assist in transportation planning.

Streets and roads data can be used for traffic analysis, accident reporting and mapping, and transportation project planning.

Elevation data can be used to assist mining operations, model phosphorous pollution, and inform transportation planning.

Floodplain data can be used to predict the economic impact of flood events, identify threatened structures, and improve equity in flood insurance coverage.

Aerial photography can be used for emergency response, public safety, infrastructure management, and land cover change assessment.

Local geographic data — such as parcels, municipal boundaries, land use, and zoning — are relevant for economic and workforce development efforts.

Initiatives that Require Access to Statewide Geospatial Data

“With accurate and accessible statewide parcel maps, organizations and agencies with a vested interest in property taxation can make more informed decisions.”

Property Taxation

The accuracy and availability of tax parcel data has many implications for property taxation in the state.

Property taxes are based on parcel size, value of land and improvements, and other factors. Accurate tax parcel maps are essential to the accurate assessment of land and improvements, and to

ensure that districts that impact taxation – such as sewer districts, utility districts, school districts, and legislative districts – are correctly aligned to tax parcels.

Equally important is broad, open access to tax parcel data. With accurate, accessible statewide tax parcel maps, organizations and agencies with a vested

interest in property taxation will be able to make better, more informed decisions. Access to parcel data will allow users to model different property tax relief scenarios, and permit fairness and equity to be assessed by the county, the legislature, the tax district, or individual tax payers.

Economic and Workforce Development



Shirley Wind Farm, Green Bay. By ENERGY.GOV (Flickr) [Public domain], via Wikimedia Commons.

Many geospatial datasets have important uses for economic development efforts. Timely access to accurate base data is necessary to ensure that analytical measures are correct and effective.

Important base data includes municipal and minor civil division boundaries, infrastructure locations, and structure characteristics.

Many of these economic and workforce development building blocks are based

on local geographic data, such as parcels and municipal boundaries, land cover and land use, zoning, and transportation. Federal census data, updated regularly using information supplied by local data custodians, is also essential.

Deer Habitat and Access to Hunting Lands

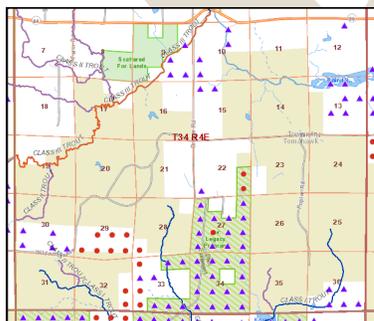
The need to improve understanding of deer habitat is documented in the Deer Trustee Report by Dr. James Kroll. Several key statewide datasets are needed, including updated land cover and a statewide parcels.

Other datasets that support this effort include

hydrography, floodways, civil division boundaries, street centerlines, land use, zoning, public lands, and the Public Land Survey System.

These datasets can also be used to improve upon the tools available to the public for identifying potential hunting areas,

thus helping to preserve Wisconsin’s hunting heritage. One such example is the Department of Natural Resources’ Private Forest Lands online map, which shows the approximate locations of private lands open to the public for hunting and other forms of recreation.



Department of Natural Resources, Private Forest lands online map. <http://dnr.wi.gov/topic/forestanalysts/opentopublicapp.html>

Healthcare Access

Access to healthcare is an issue in Wisconsin's communities. Healthcare companies are doing more analysis on where the population is residing and how they access healthcare. Companies are using census data, parcel taxation statistics, and other demographics to determine where to position themselves

strategically when building new facilities. Not only is physical access an issue, but financial access is as well.

In addition, a growing segment of the population is relying on government subsidized healthcare. These programs need to use demographic and census information to

assist in monitoring the need for further reform, for transportation support, and for medical professionals.

Healthcare also has strong workforce development needs due to strong projected demand for healthcare workers.



By CDC (<http://www.cdc.gov/VitalSigns/Issues.html>) [Public domain], via Wikimedia Commons

Transportation

Wisconsin's transportation system is extremely important to the economic viability of the state. To effectively manage and respond to transportation needs, we need to accurately map the transportation network and other contributing factors. By doing so we can start to analyze environmental, economic, and social impacts, and prioritize needed improvements.

In order to accomplish these tasks, accurate and

accessible statewide datasets are needed for roads, wetlands, floodplains, parcels, ownership and taxation data, census data, environmental data, and other variables.

A current example is the proposed conversion of US Hwy 41 to an Interstate. This route is a major backbone for the state and serves many purposes including long range travel of goods. Accurate geospatial data is needed to plan for the future of

this route and prioritize the work needed to keep it functioning into the future.

The Wisconsin Department of Transportation is currently undertaking a similar project for the freeway system in the southeast part of the state. A process for determining needs and prioritizing them is being established along with a mechanism for repeating the process as needed.

“To effectively manage and respond to transportation needs in the state, we need to accurately map the transportation network and other contributing factors.”

Emergency Response and Next Generation 911

Location-based information is essential to the ability of communities to respond to disasters and emergencies. Emergencies can occur without warning and often cut across administrative boundaries, underscoring the need for access to critical datasets

at a statewide level.

Next Generation 911 (NG911) is a federal initiative to update the county's 911 system to align with modern communications technology. NG911 uses geospatial datasets to

respond to emergency calls, locate callers, and route emergency services. Important datasets include roads and streets, address points, emergency service area boundaries, and community boundaries.



Geospatial data for emergency response: Searching for a lost autistic child in Wood County, 2006.

Moving Forward with a Vision

Data Access

Timely access to statewide data is an essential element of success for any of the initiatives detailed in this report. Without access to data, these initiatives will never get off the drawing board. The negative effects include lost economic growth, lost revenue, and less effective decision-making. As a state we cannot afford to pass opportunities by due to a lack of investment in critical geospatial data.

Geospatial data is developed directly and indirectly using the tax dollars of the citizens of Wisconsin. For this reason alone, we need to ensure that all data is readily accessible for use by all citizens, including the general

public and professional users in government, the private sector, academia, and non-profits.

A policy ensuring open, online access to geospatial datasets is needed to ensure that citizens and businesses have access to data developed locally throughout the state. This might be achieved through changes to administrative rule or grant funding requirements. Clear requirements are needed for data-producing organizations to publish datasets through a “geoportal” enabling easy access, cataloging, searching, and consuming of these datasets.

While Wisconsin has several functioning geoportals, these only handle a portion of all potentially available data. A geoportal for the state should be a near-term priority for Wisconsin in order to manage and maximize its return on investment in valuable statewide data. Much can be learned from what other states have accomplished.

A Geoportal for the State

The Department of Administration’s geoportal project report describes the need for a geoportal and a plan for the system, including staffing, funding, and maintenance. This is a useful starting point for further discussion.

ftp://ftp.wi.gov/DOA/public/GIS/Geoportal/GIS_Enterprise_Geoportal_Report.pdf

Lessons from Other States

Several states have developed geoportals and we can learn from their accomplishments. For example, Indiana has an effective statewide geospatial initiative called “IndianaMAP” as well as a formally recognized Geospatial Council that manages their state geospatial activities. Their geoportal (<http://gis.iu.edu>) is managed through Indiana University.

Wisconsin Geoportal Examples

WisconsinView aerial imagery site
<http://www.wisconsinview.org>

Department of Natural Resources repository
<ftp://dnrftp01.wi.gov/geodata>

State Cartographer’s Office GeoData@UW
<http://www.sco.wisc.edu/uw-geodata/uw-geodata.html>

Wisconsin has a rich history of geospatial data stewardship, coordination across levels of government, and outreach by academic institutions and professional organizations. What is missing is the collection of statewide data into a single system accessible by all.

Governance

Geospatial governance is an issue that needs to be addressed with the needs of all users in mind. Wisconsin has a rich and complex network of statutes, administrative rules, and local government ordinances that cover various aspects of geospatial data production and stewardship in the state.

While this structure has been successful, as the pace of progress increases we anticipate the need for an additional mechanism to provide advice and help prioritize geospatial initiatives and investments in the state. A volunteer committee should be established to advise the state’s Geographic Information Officer (GIO) in relation to geospatial priorities. This committee’s operations should be open

and transparent, and should include stakeholders from data-producing organizations and key user communities.

Advisory committees are effective and in use by state and local government already, including the State Cartographer’s Office and county Land Information Boards.

The committee should advise the GIO in the following areas:

1. state geospatial priorities, including data, projects, funding, and portals and repositories;
2. updating state statutes and administrative rules affecting the geospatial data production,

stewardship, maintenance, and distribution;

3. analysis of Wisconsin Land Information Program (WLIP) functions, including return on investment, continuous improvements, education of processes, and documentation; and
4. community issues, stakeholder involvement, and communication.

Wisconsin has a successful history of geospatial data production and stewardship. The time is right to leverage these successes and move forward as a national leader in the geospatial arena.