

**2011 CAP – Category 4:
Business Plan Development for a Wisconsin Aerial Imaging Program**

Final Report: February 25, 2011 – April 29, 2013

Report Date: July 25, 2013

Cooperative Agreement Number: G11AC20047

Organization

Wisconsin State Cartographer's Office
University of Wisconsin-Madison
550 North Park Street
Madison, WI 53706
<http://www.sco.wisc.edu/>

Principal Investigator

Dr. Howard Veregin
State Cartographer
(608) 262-6852
veregin@wisc.edu

Collaborating Organizations

- Wisconsin Department of Military Affairs (Chris Diller, 608-242-3626, chris.diller@wisconsin.gov)
- North Central Wisconsin Regional Planning Commission (Andrew Faust, 715-849-5510, afaust@ncwrpc.org)
- Wisconsin Department of Administration – Geographic Information Office (Curtis Pulford, 608-261-5042, curtis.pulford@wisconsin.gov)
- U.S. Geological Survey (Ronald Wencl, 763-783-3207, rwenc1@usgs.gov)
- Wisconsin Geographic Information Coordination Council (Jon Schwichtenberg, (414) 266-9278, jon.schwichtenberg@graef-usa.com)

Executive Summary

In 2011-2013, the Wisconsin State Cartographer's Office (SCO) at the University of Wisconsin-Madison led a collaborative effort to identify the steps needed to implement a statewide aerial imagery program in Wisconsin. Through a series of surveys, Webinars, regional meetings, and interviews, we gathered input from stakeholders regarding their needs and expectations for a sustainable statewide aerial imagery program. In response to the extensive input received, we created a program implementation "blueprint."

The primary tangible output of the project is a 51 page business plan that summarizes the current state of aerial imagery projects in Wisconsin, proposes a number of unique models that could be used to implement an imagery program, and identifies the broad steps needed to build the program. While less tangible, we also developed a better understanding of the steps required to conduct a formal statewide

geospatial business plan project. These “lessons learned” are already being applied to a new enhanced broadband mapping¹ effort happening in Wisconsin.

While we made excellent progress during the project, much work remains. We were not able to clearly identify a lead agency/organization to manage a future aerial imagery program. The community was also deeply divided over the potential funding sources needed to support an ongoing program, which made it difficult to provide definitive recommendations on funding sources. Despite these two shortcomings, we learned a number of important lessons during the process, and have a good framework to build on for the future.

Project Narrative

For the past 15 years, most of Wisconsin’s 72 counties have developed, paid for, and maintained their own high-resolution digital orthophotography projects. Funding assistance from state and federal agencies toward these efforts has been, for the most part, inconsistent and unpredictable. As a result, imagery acquisition partnerships between all levels of government in Wisconsin are often forged on personal relationships developed *ad hoc* over time, and are not based on a planned, repeatable, or systematic approach that addresses statewide imagery needs.

This project developed a statewide business plan for a Wisconsin aerial imaging program. Through the project, we: 1) conducted a comprehensive and participatory information-gathering process that assesses the needs, benefits, drawbacks, and risks associated with a statewide imagery program; 2) created a written business plan that outlines the steps necessary to implement a statewide imagery program; 3) developed an improved understanding of business planning procedures that may be used in the future for other geospatial data themes such as elevation, parcels, or street centerlines.



Key Findings

There is a very large and diverse community of aerial imagery users in Wisconsin. Users depend on available imagery to support a wide variety of business processes. Based on the feedback provided by the user community, we made the following high-level observations:

- There is a long and successful tradition of voluntary collaborative imagery projects in Wisconsin (e.g., the Wisconsin Regional Orthophoto Consortium). Past efforts have resulted in statewide data sets, but are generally not perceived by the imagery user community as sustainable and repeatable programs, or sufficient to meet their long-term business needs.
- Public entities in Wisconsin spend an average of \$2.3 million annually on a wide variety of aerial imagery projects
- While the vast majority of funding for aerial imagery projects has been provided by city and county governments, the benefits derived from that data flows to users at every level of

¹ <http://www.sco.wisc.edu/news/project-will-add-address-and-parcel-layers-to-statewide-broadband-map.html>

government and in the private sector. Through an on-line survey, users in Wisconsin identified at least \$8.4 million per year in benefits from having imagery available.

- Many users rely on current and historic aerial imagery from public domain (no cost) sources to support their business processes.
- Opportunities for cost savings through “economies of scale” are not maximized under the current piecemeal approach to aerial imagery projects in Wisconsin. Past collaborative efforts that have been successful in reducing costs to participants, but additional savings could be gained through improved efficiencies in contracting, data delivery, and quality control/quality assurance procedures.
- Specialization in imagery related activities such as quality control evaluation and on-line web service provision could improve efficiency. The potential savings are not maximized under the current aerial imagery procurement system. Federal and private partnership opportunities may not be maximized and are difficult to implement due to the lack of an on-going and formal coordinated statewide program, resulting in missed opportunities for cost savings.

The diversity of the imagery user community in Wisconsin requires that any program implemented be structured to allow participants the flexibility to purchase optional products and services such as higher resolution imagery, imagery-derived data products, and variable projections or other upgrades from the standard product.

Built on the information provided by the user community it is clear that Wisconsin should move forward to implement a statewide program of aerial imagery that is sustainably funded, provides a predictable and regular update of aerial imagery, and is governed with input from the user community.

Our major recommendations include:

- **Identify a source of sustainable funding.** A critical issue will be sustainable annual funding for any statewide program. Wisconsin has opportunities based on existing programs to provide the necessary funds without requiring an increase in taxes or user fees. Potential sources of funds with a direct relationship for funding statewide geospatial programs include the Wisconsin Land Information Program, and the E-911 charges that are designed to support the implementation and maintenance of that system.
- **Establish a participatory governance structure.** Any program that is implemented will require extensive participation from the user community to be effective and to make sure that over time the imagery produced by the program meets their needs. Our plan presents several models for implementation of the program, but constant to each is the need for the user community to be directly involved in determining imagery standards and schedules.
- **Identify a program administrator.** An organization must be identified as the permanent home of the aerial imagery program. This administrative home should have a tradition of working cooperatively with local and county governments and administering cooperatively funded programs.
- **Identify an aerial imagery services organization.** To maximize the efficiencies possible from technical specialization, an organization in government should be identified and accept responsibilities for providing the technical services to support the statewide program.

- **Establish a State Minimum Imagery Standard.** Once a governance structure has been identified and established by the imagery user community a state minimum imagery standard should be established. This standard would then drive the collection of statewide imagery.

Stakeholder Participation and Engagement

We intentionally placed a strong emphasis on the information-gathering phase of the project, and we feel in hindsight this was the right decision. We wanted to conduct an objective and thorough study that considered all possible stakeholder input.

- We attempted to reach out to as many stakeholders groups as possible using a variety of different methods. Our focus was primarily on traditional government producers of aerial imagery (city, county, state, and federal) and major non-profit and private sector user groups. We did not attempt to assess the needs of the general public. Land surveying professionals seemed particularly appreciative of our efforts to include them in the discussion. They traditionally have not been included in past statewide geospatial coordination efforts.
- In addition to an online survey, we conducted a series of five meetings around the state, hosted several online Webinars, and made site visits for in-person interviews.

Activity	Location	Date
On-Line Survey	On-line	21-Aug to 21-Sept
Regional Meeting	Stephens Point	24-Sep
Regional Meeting	Middleton	25-Sep
Regional Meeting	Waukesha	26-Sep
Regional Meeting	Neenah	27-Sep
Regional Meeting	Eau Claire	28-Sep
Webinar		16-Oct
Webinar		17-Oct
Webinar		18-Oct
Webinar		19-Oct
WLIA Presentation	Appleton	23-Oct
WLIA Meeting(s)	Appleton	24-Oct
EWUG Meeting	Appleton	25-Oct

- We established a Steering Committee of 16 key stakeholder representatives. These representatives provided feedback on our process, provided ongoing advice, and reviewed draft documents.
- We developed and maintained a project Web site (orthpolan.sco.wisc.edu) to keep stakeholders informed of progress.
- During major meetings, we used Twitter to send out live updates to people who could not participate in person. We also used Twitter (via the State Cartographer’s Office) at other times to keep stakeholders informed of project updates.
- We delivered multiple presentations at all of the key geospatial conferences in Wisconsin, and also presented our project at the fall 2012 National States Geographic Information Council (NSGIC) annual meeting in Orlando, Florida.
- We held a “doctor’s office” during a major Wisconsin GIS conference where anyone could show up in a room and ask questions and provide feedback on the project.

Changes to Statewide Coordination

We found stakeholders were very supportive of the concepts behind a statewide aerial imagery program. However, they are deeply divided over who should take the lead on implementing such a program. Specifically, there continues to be much doubt at local levels of government in Wisconsin

regarding the ability of state agencies to manage large data acquisition projects on behalf of statewide partners.

Until our community can take steps to resolve or at least better manage larger governance issues, we feel future statewide data development efforts in Wisconsin will face many challenges. The findings of this project further highlight the need to improve coordination between all levels of government and private industry in Wisconsin.

We are hopeful that recent statutory updates made to the WLIP², along with a renewed interest in improved cooperation across organizational boundaries, will significantly improve our ability to fully implement a statewide aerial imagery program in the next five years.



Lessons Learned from the Process

Although appreciative of our efforts during this project, many stakeholders were skeptical it would result in any new action. Given a past history of many studies, committees, tasks forces, and reports related to geospatial coordination in Wisconsin, this is understandable.

Throughout the process, we found it helpful to describe what is “different” this time. Notably, most previous efforts sought to identify and inventory issues. Our project gathered information, identified problems, but also proposed solutions and steps needed to implement a statewide imagery program. Continued support from the State Cartographer’s Office to maintain the work started in this project is another key difference.

Our online survey was sent to approximately 2,100 stakeholders around the state, and we obtained an almost astonishing response rate of 46%. We put significant energy into obtaining many different stakeholder mailing lists, and combined these lists into one master contact database. This allowed us to personalize each request, and also reduce the number of duplicate mailings that would have resulted in sending to multiple e-mail “listservs” maintained around the state. The positive reputation and existing strong community relationships held by the State Cartographer’s Office also helped with the response rate.

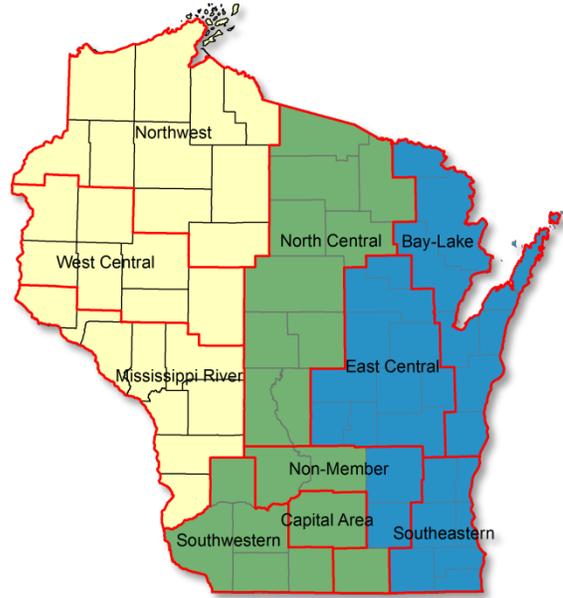
Similarly, we found it was critical to gather input from stakeholders using a variety of methods. While the survey provided excellent information, we also wanted to create opportunities for stakeholders to provide free-form comments and participate in open discussions. As noted earlier, we conducted a series of five meetings around the state, hosted several online Webinars, and made site visits for in-person interviews.

Due to the volume of information gathered from stakeholders, the analysis phase took much longer than expected. This resulted in delays to the publication of the final business plan. In hindsight, we would have allowed more time for the analysis phase of the project.

² <http://www.sco.wisc.edu/news/new-memo-outlines-changes-to-wisconsin-land-information-program.html>

Next Steps and Future Sustainability

- Continue making revisions to the business plan based on feedback from stakeholders.
- Develop briefings for decision-makers to explain the business need for a statewide aerial imagery program. These briefings will cite the findings of the business planning process.
- Seek endorsements for the plan from major geospatial organizations in the state, such as the Wisconsin Land Information Association, Land Information Officers Network, Wisconsin Society of Land Surveyors, and the Wisconsin Geographic Information Coordination Council.
- Work with the Wisconsin Department of Administration to explore requirements for submitting an aerial imagery proposal as a “strategic initiative” project under the Wisconsin Land Information Program (WLIP).
- As part of the State Cartographer’s Office 2013-2015 strategic plan³ we will continue to promote the business case for statewide aerial photography, and continue working with our partners to sustain the work started during the aerial imagery business plan project.
- We will also continue work to identify a lead organization ultimately responsible for the implementation of the statewide aerial imagery program.



Feedback on Cooperative Agreements Program

CAP Strengths and Weaknesses

- Program provides seed funding that might not otherwise be available to kick-start statewide geospatial initiatives. (strength)
- FGDC program managers are very flexible and willing to consider no-cost extensions when reasonable justifications are made. (strength)
- FGDC program managers make a strong effort to connect CAP participants to each other, and help facilitate communication throughout the process. (strength)
- Long-term sustainability and future funding for the CAP Program seems uncertain from year to year. (weakness)

³ http://www.sco.wisc.edu/images/stories/SCO/SCO_Strategic_Plan_2013-2016.pdf

Where did it make a difference?

- We would not have funding to hire a private project consultant without the aid of the Cooperative Agreements Program.
- CAP funding allowed us to move the business planning process along more quickly and professionally than would have been possible otherwise.
- Hiring a consultant allowed us to learn how to conduct a statewide business planning project for other data themes in the future.
- Lessons learned during the CAP-sponsored project are already being applied to a statewide parcel and address points project.

Program Management Concerns

- Although the intentions are good, we feel the requirement to attend a NSGIC Mid-Year meeting for training was an unnecessary expense. The same results could be obtained through an online Webinar.
- In order to pay for the required NSGIC Mid-Year travel from project funds, we were required to start the project sooner than anticipated (February 2011 versus September 2011). This led to some confusion and additional paperwork to change the agreement terms.

What would we do differently?

- Accelerate the process to hire a project consultant, and get them started on the project sooner.
- Cast a wider net when looking for the project consultant. There are several firms around the country widely known for their geospatial business planning expertise. In hindsight, we could have achieved equal or greater success working with a local consultant with first-hand knowledge of the Wisconsin geospatial community.
- Allow more time for deeper data analysis and drafting of the final business plan.
- Conduct more research on other state aerial imagery business plans.