

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

Federal Geographic Data Committee - National Spatial Data Infrastructure
Fiscal Year 2011 Cooperative Agreements Program - Announcement Number 11HQA0011
Category 4 - Fifty States Initiative: Business Plan Development and Implementation

Proposal Summary

- a) **Project title:** Business Plan Development for a Wisconsin Aerial Imaging Program
- b) **Applicant organization:** Wisconsin State Cartographer's Office (SCO)/University of Wisconsin-Madison, 550 North Park St., Madison, WI, 53706
- c) **Collaborating organizations:**
1. State Cartographer's Office: SCO will coordinate the project, and act as the primary point of contact for a consultant hired to perform the business plan development.
 2. Department of Military Affairs (DMA): DMA led the effort to acquire a \$700,000 U.S. Department of Homeland Security grant to partially fund orthophotography acquisitions in Wisconsin in 2010. DMA will provide guidance on how homeland security needs can be met in the proposed statewide business plan.
 3. North Central Wisconsin Regional Planning Commission (NCWRPC) – NCWRPC was one of the leaders of a 2010 regional orthophotography project that partnered with state and federal agencies. NCWRPC routinely works with and understands the needs of county governments.
 4. Department of Administration - Geographic Information Office (DOA-GIO): The Wisconsin GIO is an advocate for the effective and efficient use of geospatial resources to support the business of state government. The GIO (and DOA) will assist in communicating with state government leadership.
 5. U.S. Geological Survey (USGS) – The USGS will be the primary federal advisor to the project, and recommend ways in which we can interact effectively with federal agencies.
 6. Wisconsin Geographic Information Coordination Council (WIGICC): The project team will be formally organized as a committee under the auspices of WIGICC. WIGICC will also assist with outreach to the Wisconsin geospatial community.
- d) **Organization Internet address:** www.sco.wisc.edu
- e) **Principal investigator:** Howard Veregin (SCO), 608-262-6852, veregin@wisc.edu
- f) **Other key contact personnel:**
- James Lacy (SCO), 608-262-6850, lacy@wisc.edu
Chris Diller (DMA), 608-242-3626, chris.diller@wisconsin.gov
Andrew Faust (NCWRPC), 715-849-5510, afaust@ncwrpc.org
Curtis Pulford (DOA-GIO), 608-261-5042, curtis.pulford@wisconsin.gov
Ronald Wencil (USGS), 763-783-3207, rwencil@usgs.gov
- g) **Previous NSDI cooperative agreement participation:**
1994. DOA: Wisconsin NSDI Clearinghouse Initiative. \$25,000.
1999. DOA: Wisconsin Metadata and Clearinghouse Project. \$30,000.

- 2000. SCO: Wisconsin Digital Ortho Access and Information Initiative. \$54,584
- 2001. SCO: Wisconsin Metadata Training Project. \$21,960.
- 2003. SCO: Wisconsin Open Geospatial Web Services. \$22,103
- 2004. DOA: NSDI Institution Building and Coordination. \$15,000
- 2004. SCO: Wisconsin Consolidated Geodetic Control OGC-WFS Service Project. \$56,997
- 2005. Wisconsin Land Information Association: Building a GI Strategic Plan. \$20,000.
- 2006. DOA: Wisconsin Geographic Information Coordination Council: Process and Prospects. \$47,000.
- 2008. SCO. Implementation and Business Plan Development for the Wisconsin Geographic Information Council. (not funded)
- 2010. DOA. Integrating Wisconsin Road Centerline Data. (not funded)

h) Short project description:

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 seeks to develop a statewide business plan for a Wisconsin aerial imaging program. Three outcomes are expected from the project: 1) a comprehensive and participatory information-gathering process that assesses the needs, benefits, drawbacks, and risks associated with a statewide imagery program; 2) a written business plan outlining the steps necessary to implement a statewide imagery program; 3) 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.

1. Project Scope

a. **Status of existing Wisconsin strategic and business planning activities**

The Wisconsin Land Information Association (WLIA) received a 2005 FGDC CAP award to develop Wisconsin Location Matters: A Statewide Geographic Information Strategy¹. As an organization, WLIA devoted considerable energy to the strategic plan, and was successful in implementing a comprehensive process that reached out to many geospatial professionals throughout the state. The most tangible outcome of the strategic plan was the formation of the Wisconsin Geographic Information Coordination Council (WIGICC).

Development of a WIGICC business plan was conducted with the assistance of a USGS Partnership Grant awarded to the SCO in 2008. The business plan was ratified by WIGICC and published in February, 2010.² The business plan is the working document of WIGICC and provides insight into what the council is doing and how it operates. The document identifies the core activities of the council as establishing policies and procedures to facilitate effective coordination and information sharing, providing stakeholders with a voice in the decision-making process regarding statewide initiatives, and acting upon the goals and recommendations identified in Wisconsin Location Matters.

Under the Wisconsin Land Information Program (WLIP), all of Wisconsin's 72 counties are required to maintain a county-wide plan for land records modernization that is submitted to the state Department of Administration (DOA) every five years. These plans outline the status and future directions of land information operations in each of our counties.

Similarly, some, but not all, state agencies are required by Wisconsin statute 16.967(6) to independently respond to an annual Land Information Integration and Modernization Survey³ designed to inventory the status and future of individual state agency geospatial plans. While the survey results are ultimately intended to aid business planning, most observers would not describe these independent survey responses as "business plans" in the traditional sense.

While there are certainly many government organizations in Wisconsin that develop formal business plans, the Wisconsin geospatial community, when viewed as a whole, is generally inexperienced in traditional business planning. Wisconsin has no inter-governmental business plans in place, for example, for the shared development of a statewide parcel data layer, a statewide roads network, or a statewide orthoimagery program.

Several recent initiatives relate directly to the acquisition of orthophotography at a statewide level in Wisconsin. First, in 2009 the State of Wisconsin received a one-time U.S. Department of Homeland Security grant of \$700,000 to help fund orthophotography acquisition in the state. This grant ultimately contributed toward a statewide, 18-inch resolution imagery product funded in cooperation with federal, state, and local units of government. Coordination activities were led

1. See http://www.sco.wisc.edu/download/WI_GIS_StrategicPlan_Jan_05_2007.pdf

2. See http://wigicc.org/Portals/5/Repository/WIGICC_Bus_Plan_final_v1.2%5B1%5D.pdf

3. See <http://gio.wi.gov/Projects/LIIMS/tabid/230/Default.aspx>

through the Wisconsin Regional Orthophotography Consortium (WROC)⁴, a regional consortium initiated in 2005 offering improved unit pricing for county and municipal governments. WROC was created largely through the efforts of the North Central, Bay-Lake, and East Central Wisconsin Regional Planning Commissions.

While WROC has demonstrated the success of local governments banding together to draw in state and federal funding partners, under the WROC model local governments still need to expend significant effort to contract and manage their own independent aerial imaging programs, using the unit pricing provided through the consortium. More cost and time savings are possible, and additional understanding of needs and requirements can be achieved through a statewide approach. A statewide business plan is the next logical step in the effort to improve the efficiency of imagery acquisition strategies.

b. Proposed business plan development and implementation

This project seeks to develop a statewide business plan for a Wisconsin aerial imaging program. Three outcomes are expected from the project: 1) a comprehensive and participatory information-gathering process that assesses the needs, benefits, drawbacks, and risks associated with a statewide imagery program; 2) a written business plan outlining the steps necessary to implement a statewide imagery program; 3) 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.

Alignment with Strategic Plans

The proposed project directly aligns with several existing strategic plans in the state of Wisconsin:

- The State of Wisconsin Homeland Security Strategy⁵ calls for the creation of a “Wisconsin Land Imaging Strategy” that establishes a sustainable and recurring statewide aerial photography program in Wisconsin. Limited progress has been made in further developing the strategy beyond the conceptual stage.
- The proposed aerial imagery business plan grows from, and directly addresses, several critical needs outlined in our statewide GIS strategic plan¹:
 - Implement mechanisms to improve program coordination. “Coordinated Digital Orthophoto acquisition” is cited as one example in need of further attention.
 - Build and improve critical geographic data.
 - Support the creation of statewide and regional views of geographic information.
 - Establish adequate and reliable funding mechanisms dedicated to the coordinated development and maintenance of GIS resources and activities in Wisconsin.
- The State Cartographer’s Office 2010-2013 strategic plan⁶, published in August 2010,

4. See <http://www.ncwrpc.org/WROC/>

5. See <http://www.homelandsecurity.wi.gov/docview.asp?docid=17168&locid=129>. Pg B-2, objective 1.2.8.

6. See http://www.sco.wisc.edu/about/documents/SCO_Strategic_Plan_2010-2013.pdf. Item I-c.

includes one strategic objective directly relevant to the current proposal: “Working in cooperation with other state and local partners, develop and then promote the business case for an ongoing statewide aerial photography program.”

- The Final Report of the 2007-2008 WLIA Orthophoto Task Force⁷ concludes that a statewide aerial photography program is necessary to avoid duplication of effort among local governments. It also suggests the community needs to “document to the extent possible the orthoimagery requirements over the next three years for all levels of government, the private sector and tribes.”
- The Wisconsin Geographic Information Coordination Council (WIGICC) business plan² states WIGICC’s intention to broadly support geospatial initiatives of the Governor’s Homeland Security Council the objectives of the Homeland Security Strategy. WIGICC has a vested interest in supporting the development of a sustainable statewide aerial imagery program that meets the needs of the emergency management community.

Advancing SSDI and NSDI

We expect the proposed project to improve our State Spatial Data Infrastructure, and ultimately the National Spatial Data Infrastructure, in several ways. From a practical standpoint, the proposed business plan will give Wisconsin a solid plan for improving the collection of a mission-critical framework data layer that is needed by a wide range of stakeholders, including the federal government.

Less tangible but equally important, the project will improve the Wisconsin geospatial community’s understanding of business planning best practices. Notably, a systematic statewide elevation data collection is another need in Wisconsin that could benefit from a statewide business plan. Our expectation is that lessons learned through the proposed project will prove valuable when developing other data-centric business plans.

In addition, Wisconsin is not currently prepared for national initiatives such as Imagery for the Nation (IFTN). As proposed by the National States Geographic Information Council (NSGIC), a prerequisite for IFTN participation is that “each statewide GIS coordination council will specify its digital orthoimagery requirements in a business plan.”⁸ This project will directly facilitate Wisconsin’s participation in IFTN through the development of such a business plan.

Improving Geospatial Coordination

The proposed project provides an opportunity to advance statewide coordination efforts for aerial imagery acquisition, to help ensure that such imagery is acquired in the most efficient way possible. More broadly, the proposed project provides an opportunity to model a multi-jurisdictional geospatial coordination effort to demonstrate the viability of such efforts for statewide data integration and define the governance structure needed for developing effective partnerships. A business plan will outline the steps necessary for improving our existing governance model, thus enhancing the success of future partnership opportunities with various

7. See http://wlia.affiniscap.com/associations/11328/files/task_force_ortho_final_report.pdf

8. See http://www.nsgic.org/hottopics/iftn_brochure_0308.pdf

levels of government. Without a business plan such opportunities will continue to be impeded, as in late 2009 and early 2010 when the USDA Farm Service Agency (FSA) struggled to develop a partnership with the state of Wisconsin to fund the collection of the fourth near-infrared band for their National Agriculture Imagery Program (NAIP).

Coordination efforts will be conducted under the auspices of WIGICC, which was created on an interim basis in 2008. WIGICC has broad representation in various levels of government, non-profits, academia, and the private sector, and will be able to assemble a committee representing a diverse array of stakeholders. WIGICC is ideally situated to support the proposed project due to its broad ties to the geospatial community and its own business planning which aligns to the goals of the proposed project.

Federal Agency Involvement

While by most measures the 2010 WROC project was highly successful, more can be done to clarify and streamline orthoimagery partnership opportunities with federal government partners. To that end, our requirements-gathering process will also include staff from federal agencies with field offices in Wisconsin. In addition to the support received from our USGS Geospatial Liaison, we expect direct involvement and support from the Wisconsin Natural Resources Conservation Service and FSA Wisconsin Office.

2. Project Plan and Managerial Capacity

If funded, the proposed project will formally begin on September 15, 2011. However, in order to expedite the work and maximize time available, some preparatory work will begin in the late spring of 2011. This includes more formally defining the structure of the management team, selecting appropriate members of that team, and then developing a list of deliverables for a consultant hired to perform the majority of a needs analysis and business plan development.

The following points describe the key aspects of the proposed project. A full project timeline appears in Table 1.

- The project will be managed on a day-to-day basis by the SCO, under the direction of principal investigator Dr. Howard Veregin. (Refer to “skills and capabilities” below.)
- Information will be gathered from stakeholders via three regional collaboration meetings held around Wisconsin (specific locations to be determined), online “webinars,” online surveys, and other one-on-one meetings as necessary. We will also review any relevant reports (e.g., WLIA Orthophoto Task force) while conducting the needs assessment.
- We will use the June 2011 meeting of the Wisconsin Land Information Association to announce the project, and lay the groundwork for the work planned over the ensuing 15 months.
- Working with our project partners, the SCO will release an RFP or RFQ during the summer of 2011, with the goal of having a qualified consultant hired and ready to begin work in September 2011. The consultant will lead us through the requirements gathering and business plan development processes.
- Project status reports will be delivered at WLIA meetings, and directly to the FGDC.

Final results will be presented at both the 2012 NSGIC Annual conference, the fall 2012 WLIA conference, and via one or more printed publications from the SCO. Other conference presentations will be pursued as appropriate.

- For our final business plan to be completed in September 2012, we will follow the FGDC business plan guidelines⁹ published in May 2009.
- The deliverables due to the primary partners from the consultant will include the following: 1) A formal business plan outlining the steps needed to develop a statewide orthophotography program in Wisconsin. The plan will be based on the needs gathered from the Wisconsin geospatial community, and include an analysis of benefits, challenges, and opportunities for such a program. 2) All research notes, completed surveys, and meeting minutes collected during the duration of the project.

3. Skills and Capabilities

The State Cartographer's Office has a long history of successfully leading CAP agreements to a positive outcome. The project team assembled by the SCO represents organizations and individuals having a wide range of skills, all of whom have contributed significantly to successful imagery projects in Wisconsin over the last 10 years.

Howard Veregin (State Cartographer, SCO) – Howard is an ex officio member of WIGICC, a member of the WLIA Board of Directors and, along with Curtis Pulford (the Wisconsin GIO), the state representative to NSGIC. Howard has experience administering numerous research and instructional grants from state and national sources. As State Cartographer he assumed principal investigator status on two research grants, one a USGS Partnership Award to further the development of WIGICC, and the other an endowment grant to develop an online archive of historic air photos of Wisconsin. Howard has several decades of experience with geospatial technology and data from academic, private sector, and government perspectives.

James P. Lacy (Associate State Cartographer, SCO) – Jim represents (NSGIC) on the National Digital Orthophotography Programs (NDOP) Steering Committee. In this role, Jim works regularly with key managers of federal imagery programs, and also has frequent contact with imagery program managers in other states. He also made significant contributions to the 2009 U.S. Department of Homeland Security Investment Justification proposal that ultimately resulted in the state of Wisconsin receiving a one-time grant of \$700,000 towards statewide orthoimagery in 2010.

Chris Diller (GIS Coordinator, DMA) – Chris managed all aspects of the 2009 U.S. Department of Homeland Security Investment Justification proposal noted earlier, and devoted considerable energy to securing state agency partners for the 2010 imagery acquisitions. He currently serves on the NSGIC Board of Directors, where he leads numerous homeland security-related initiatives on behalf of the organization.

Andrew Faust (Senior GIS Analyst, NCWRPC) – Andrew was a leader in the 2005 and 2010 regional orthophotography consortia designed to create efficiencies in county-managed imagery

9. See http://www.fgdc.gov/policyandplanning/newspbp/BusinessPlanGuidelines_v2_052809_FinalVersion.pdf

projects. Andy was also the primary liaison who worked with Richard Vraga (USGS Geospatial Liaison for Wisconsin, currently on temporary assignment) on several federal cost-sharing agreements to support statewide orthoimagery in 2010. Andy has a clear understanding of local government imagery needs.

In addition to the above individuals, we will expand the management team to include at least two county and two municipal representatives to assist with the project. We will look to WIGICC county and municipal representatives, along with the Land Information Officers Network¹⁰, to help us select individuals most capable of representing local government interests on the team.

4. Commitment to Effort

The primary partners (SCO, DMA, and NCWRPC) all have a vested interest in promoting the efficient acquisition of aerial imagery in Wisconsin, and have already demonstrated a commitment to the proposed project through past work and/or future strategic directions.

As noted earlier, the current SCO strategic plan includes an objective to develop and support the business case for a statewide aerial photography program. The SCO will contribute 310 hours of in-kind support to the project, primarily from Howard Veregin (State Cartographer) and James Lacy (Associate State Cartographer).

As noted the DMA led the efforts in 2009 to obtain a one-time grant of \$700,000 to help fund statewide imagery acquisition. However, the DMA cannot rely on grants to fulfill their critical business need for an ongoing, high-resolution, and sustainable imagery program. The proposed project is expected to jump-start work towards a “land imaging strategy” described in the Wisconsin Homeland Security Strategy.

For NCWRPC, a statewide business plan is the next logical step in their efforts to improve services to its member counties. Under the WROC model, local governments still need to expend significant effort to contract and manage their own independent aerial imaging programs. A formal business plan that addresses needs and requirements explicitly is necessary to further enhance the quality and efficiency of an imagery acquisition program.

Finally, the Wisconsin Geographic Information Coordination Council (WIGICC) is committed to fostering this effort by establishing a committee to support the proposed project, and assisting with outreach to the Wisconsin geospatial community. The WIGICC Federal “community of practice” will offer assistance reaching out to other federal partners interested in the project.

In addition to primary project partners, several other organizations have expressed interest in the outcome of our project. Please refer to the attached letters of support.

10. See <http://www.wlion.org/>