



**NSDI Cooperative Agreements Program
50 States Initiative Project
Final Project Report
November 15, 2007**

Project Name: *Implementing an Enterprise Strategy for Minnesota's Spatial Data Infrastructure*

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Organization: Minnesota Governor's Council on Geographic Information
c/o Land Management Information Center
300 Centennial Office Building
658 Cedar Street
St. Paul, MN 55155
www.gis.state.mn.us

Project Leader: David Arbeit
(651) 201-2460
david.arbeit@state.mn.us

Collaborating Organizations:

Land Management Information Center	Office of Enterprise Technology
Department of Administration	450 Centennial Office Building
300 Centennial Office Building	658 Cedar Street
658 Cedar Street	Saint Paul, MN 55155
Saint Paul, MN 55155	www.oet.state.mn.us
www.gis.state.mn.us	

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PROJECT OVERVIEW

The Minnesota Fifty States Initiative project's intent was to help improve Minnesota's capacity for coordinating GI technology by implementing recommendations made in *Foundations for Coordinated GIS*, adopted by the Governor's Council on Geographic Information (GCGI) in 2004 as a strategic plan for implementing the Minnesota Spatial Data Infrastructure (MSDI). The grant provided critical funding needed to supplement long-term efforts devoted to achieving the goals of the 2004 plan and developing a second-generation strategic plan that focused on organizational and operational issues. Although a new strategic plan has not yet been completed, significant progress was made to achieve the project's principal objective to strengthen relationships with the state's Chief Information Officer and achieve closer integration of Minnesota's GIS infrastructure with initiatives being developed by the state's recently created Office of Enterprise Technology, headed by the state CIO.

The Minnesota Fifty States Initiative project began with a specific goal of developing a second-generation strategic plan for statewide integration of geospatial technology that focused on organizational and operational issues, as recommended in *A Foundation for Coordinated GIS*. The new plan would serve as a roadmap for building an MSDI that enabled Minnesota organizations to achieve more effectively their business goals by using GIS. The project resulted in significant advances towards developing a strategic plan to guide the future, but it is best to view the immediate results as a sketch rather than a detailed roadmap.

The project did succeed in launching a healthy strategic planning process and has helped promote recognition and support for GIS as an essential enterprise technology. Important outcomes of the project are: the strategic planning will continue during the next year; the process has engaged an expanded range of participants that include key legislators, agency heads, and business managers; the state CIO has identified GIS as an important enterprise resource; GIS is on the verge of being formally adopted as a strategic enterprise initiative for the state; widespread support for a formally designated and resourced GIS "coordinating entity" exists; and several specific coordination initiatives have resulted.

Progress will continue beyond the end of the FGDC grant period, funded by an increased budget for the Land Management Information Center and funds from collaborating agencies. Work will continue towards establishing a formally recognized State GIS coordinating entity with its roles, responsibilities, relationships, resources, authorities and governance defined, understood, and supported by the community. Additionally, a model will be developed for identifying data and service needs and meeting them, focusing on specific functional "lines of business," starting with natural resources and emergency management. Based on the outcome of a community-wide retreat of GIS stakeholders in June 2007, the immediate focus will be on improved coordination of state government activities, but the long-term vision of coordination among all members of the Minnesota GIS community will continue to guide the effort.

PROJECT NARRATIVE

Project Context

GIS within Minnesota has a long history of coordination, but no organization has formal authority for coordinating the state's GIS activities. Although it has no legislatively defined coordinating responsibilities, the Land Management Information Center (LMIC) has initiated or supported many of the state's GIS coordination activities and supports the work of the Minnesota Governor's Council on Geographic Information (GCGI). It also has developed and operates the Minnesota Geospatial Data Clearinghouse, which offers web services for data discovery and distribution, web mapping services, and other services that facilitate coordination at an operational level. Several other state agencies also provide GIS data and services through their web sites. While state agency GIS units are relatively independent services providers, there is a significant level of cooperation and data sharing among them. In addition, cooperation and data sharing within the broader Minnesota GIS community is extensive.

The Governor's Council on Geographic Information, authorized by Executive Order, serves as an advisory council that promotes coordination, but has no independent budget authority or staff. It receives administrative support from LMIC, which also carries out many of the Council's technical tasks, and provides advice to LMIC that guide its activities. The Council helps fill the statewide community GIS coordination gap by providing a forum for discussion, promoting collaborative initiatives, and serving as a voice for the GIS community. The Council is successful because of the dedication and hard work of its diverse group of volunteer members and others working on its committees. The Council recognizes the need for statewide coordination and for a stronger governance framework that may dramatically change its role.

In response to the I-Plan initiative sponsored by the federal Office of Management and Budget early in this decade, the Governor's Council generated *A Foundation for Coordinated GIS: Minnesota's Spatial Data Infrastructure* in 2004 (Attachment A). In this strategic plan, the Council acknowledged the need for "an organizational structure that promotes, nurtures, and guides the development and management of the MSDI (Minnesota Spatial Data Infrastructure)" to succeed. *Foundations* made the following recommendations:

1. Explicit authority and responsibility for overseeing the development and implementation of MSDI should be assigned to a state cabinet level agency, supported by legislation if necessary.
2. Adequate resources should be provided to support the sustained development and implementation of Geographic Information Systems, including necessary funding to sustain the coordination effort.
3. Public expenditures in geospatial data and technology should reflect the Minnesota Spatial Data Infrastructure's priorities.
4. GIS implementation by state agencies should be coordinated within guidelines established for the state's IT architecture framework and consistent with the policies of the state's Office of Technology and Department of Finance.

5. GIS implementation by state, local and regional agencies should be coordinated with similar efforts by state and federal agencies as they relate to the MSDI.
6. A strong emphasis should be placed on identifying emerging opportunities for effectively using GIS, identifying opportunities for joint projects and leveraging private and federal resources not otherwise available to Minnesota.
7. The continued development of the Minnesota Geographic Data Clearinghouse should be supported, emphasizing e-government solutions for distributing geospatial data.

When the Minnesota Fifty States' Initiative project began, the state had made little progress towards implementing most of the 2004 recommendations. Although the community had generally supported the idea of stronger coordination for some time, no comprehensive attempt to achieve this goal had been initiated. LMIC continued to fill much of the void, despite a substantial budget reduction for 2006 and 2007. Partly as a result of activities enabled by this grant, much of LMIC's budget was restored for the 2008/2009 budget cycle. LMIC's Director has determined that much of the restored budget will be used to sustain the planning and coordination process initiated by the Fifty States Initiative.

Project Activities

Project activities have included both GIS strategic planning and coordination. The project started with the goal of developing a second generation strategic plan, but by design has evolved into an effort to refine and implement some of the 2004 strategic plan recommendations. Project activities have included:

1. **Analysis of Minnesota GIS Environment.** To understand the state of the State of Minnesota's GIS environment, time was spent interviewing staff from state agencies that currently utilize GIS to learn about their environment, organizational structure, needs, issues, opportunities and business uses. The extent, sophistication, and integration of GIS into various business practices within State agencies are greatly varied.

The Land Management Information Center (LMIC) was the State's first agency to use and promote GIS when established in 1978, but is only one of many in today's environment. Several "line" agencies, notably the departments of Natural Resources (DNR) and Transportation, were "early adopters" that have developed significant GIS capabilities over several decades. They both maintain departmental GIS units and have GIS capabilities at division and program levels throughout the state. A few agencies, such as the Agriculture and Health departments, the Minnesota Pollution Control Agency, and the Board of Soil and Water Resources, have more recently adopted GIS as an important technology and have been actively expanding their capabilities. Others -- the departments of Education and Human Services as examples -- have only recently hired their first full-time GIS support staff. Most other agencies have invested little in GIS, but acquire GIS services from third parties when they are needed. The Homeland Security Emergency Management office, for example, contracts with LMIC as its GIS service provider rather than developing its own staff.

The mode of GIS deployment and support varies greatly among agencies. Only a few, attempt to integrate GIS into their agency IT framework. The Department of Natural Resources is notable among them. Several hundred DNR non-GIS professionals now use GIS on a regular basis, supported by the agency's professional GIS staff. The DNR Chief Information Officer views GIS as a component of the agency's IT portfolio and seeks to integrate geospatial capabilities wherever possible in agency applications. In most agencies, however, professional staff depend upon GIS experts who may work independently of the mainstream IT environment. The vast majority of GIS software used by State agencies is licensed from ESRI, although there is a growing use of open source GIS software.

Most agencies indicated that they often work with federal, local and regional government agencies and other state agencies to meet their business needs. Coordination between and among agencies is voluntary and usually occurs on a one-on-one basis. Most agencies published some "public" GIS data on the Internet and catalog some of their data in the state's GIS Data Clearinghouse. A majority of those interviewed indicated that demand for GIS services within their agency exceeds their capacity to deliver. Many expressed a business need for GIS data and/or services that either was not available or inadequate to meet their needs. Many GIS professionals expressed frustration about time spent contacting agencies and individuals to acquire needed data. It also was apparent that some datasets are replicated by agencies for their own use. Everyone interviewed expressed the belief that GIS functions within state government and statewide could and should be better coordinated and integrated.

Opportunities identified within the interviews include:

- Enterprise Agreement for ESRI software
- Pooling of resources to acquire critical data sets such as parcels, elevation and imagery
- Potential for sharing of technical GIS support services (i.e. ARC IMS) as not all agencies have multiple GIS staff and there are some redundancies
- Acquisition of services such as geocoding as an enterprise vs. individual procurements
- Greater sharing of data – having more common data layers vs. individual copies
- Establish curators responsible for specific enterprise data layers
- Sharing of agency developed software
- Better coordination, liaison and communications with federal, local and region government agencies through a focal point
- Better use of State's IT infrastructure for GIS services and data
- GIS promotion and education
- Creation of a GIS technical "user group"

2. **Review GIS Coordination Activities in Other States.** To avoid “reinventing the wheel” and benefit from successful experiences elsewhere, the project coordinator reviewed GIS activities in other states, studying their web sites and conducting several phone interviews; attended two NSGIC meetings, where he attended special sessions held for the Fifty States Initiative and consulted with GIS coordination staff in other states; and studied materials from NSGIC and NASCIO.

The review revealed that many states have been trying to determine how to organize their GIS functions to improve effectiveness and efficiency, but that none have found a perfect solution. Several states have created Geographic Information Officers who report to the state CIO to elevate the GIS coordination function, as recommended as a key to successful coordination by NSGIC. The amount and source of funding for GIS coordination is varied, but there is consensus that funding for coordination is inadequate. Many States have established councils with stakeholder representation, though their composition, authorities, resources, and effectiveness varies greatly. Where a GIO or coordinating council exist, their roles, responsibilities, and authorities generally have been specified by executive order or legislation. It is too early to judge the effectiveness of organizational changes made to strengthen state coordination, most of which follow NSGIC “factors for success” recommendations.

There is a clear trend to establish a Geographic Information Office headed by a Geographic Information Officer that reports to the state CIO. The consensus is that this is a positive step, although there is inadequate evidence to judge its effect; some GIOs have been created without adequate resources and several have encountered problems meeting expectations.

Based upon the experiences in other states, formally authorizing a state Geographic Information Office (GIO) through an executive order or legislation should be seriously considered, but that serious attention should be given to the scope of its roles and responsibilities. Based upon the review conducted during this project, such an office would have many of the following characteristics:

- Be directed by a Geographic Information Officer
- Have a formal relationship with the state CIO and central IT organization
- Be accountable to stakeholders through a governance structure that ensures customer and partner input
- Coordinate GIS functions for state government
- Provide leadership and support for statewide GIS coordination
- Provide coordination, liaison and communication services with and between the state and federal, local and regional governments
- Have the authority needed to perform assigned responsibilities
- Be resourced to enable it to provide coordination and meet service expectations
- Consolidate and centralize some, but not all, GIS functions and services
- Provide some GIS services to other agencies and entities on a fee and/or free basis

- Provide education about GIS to the State's business managers and decision makers

Based upon the experience of other states, Minnesota should not expect organizational changes to be made without problems and should provide mechanisms to evaluate the changes and make adjustments, especially during the first several years.

- 3. Bring Stakeholders Together for a Planning Retreat.** Actively involving stakeholders in the strategic planning process was a fundamental premise of this project. Two basic assumptions for this project were that it should build on some of the recommendations in the Council's 2004 strategic plan *Foundations for Coordinated GIS*, and that it should actively seek input from a full range of stakeholders that included representatives of federal, state, local, regional and tribal government agencies, educators and academic researchers, non-profit organizations, and the private sector. *Compass Points*, a full-day facilitated retreat took place on June 25, 2007. It was attended by 54 participants, representing a diversity of stakeholder groups with roles ranging from policy to technology, and guided by a team of four facilitators. The retreat report is included as an attachment.

Planning for the retreat began during the spring of 2006 with members of the Strategic Planning Committee of the Governor's Council on Geographic Information and continued with an expanded group of strategic partners comprising a "core" planning group. Careful attention was given to the retreat's scope and design, which was modified several times as it was being developed. The original intent was to hold a retreat before the 2007 Minnesota legislative session began in January 2007. When it became evident that the target would be missed, it was rescheduled to take place after the session ended to ensure active participation of legislative representatives. The adjustment also allowed for an improved relationship with a related retreat for MetroGIS, which was designed to shape strategies for GIS coordination within a seven-county Minneapolis-St. Paul region, which took place in February.¹

The retreat was designed by the project staff and planning team with assistance of a facilitation consultant, chosen because of past experience and extensive experience working with state government in Minnesota. Its original intended scope included facilitated exercises that would result in recommendations about specific roles and responsibilities for a GIS coordinating "authority" and, possibly, recommendations about organizational structure and relationships. It became clear during the planning process that the expectation was too ambitious for a one-day workshop, however skillfully designed and facilitated it might be. Funding was not adequate to support a second retreat, so the scope for *Compass Points* was scaled back and a commitment was made to a second event that would be guided by results from the retreat.

Compass Points participants were chosen to provide an effective balance of stakeholder interests. A list of stakeholder organizations representative of the broad Minnesota GIS community was identified, along with specific individuals from those organizations who were positioned to shape GIS programs of those organizations. The project team, with advice from the core planning workgroup, made a conscious effort to balance non-technical

¹ See http://www.metrogis.org/about/business_planning/sdw/workshop_summary_07_0626.pdf for the report from the MetroGIS retreat.

and technical invitees. To ensure upper management recognition and support, the Commissioner of the Department of Administration and the State CIO served as project sponsors and signed the invitation letters.

Through a series of presentations, large group discussions, and small group exercises, participants at the June strategic planning workshop documented the characteristics of Minnesota's GIS community, issues that it faces, and the existing coordination environment. Participants also explored roles, responsibilities, authorities and functions that might be assigned to a state coordinating authority. Although coordination responsibilities are not now formally assigned and some functions are duplicated elsewhere, the Land Management Information Center was one of a few organizations identified as influencing or performing almost every functional dimension of statewide coordination. Detailed findings are included as an attachment to this report.

Finally, the retreat provided the basis for the following observations and recommendations from the facilitator:

- Rewrite the vision statement to focus more on Minnesota
- There is a need for State government to improve coordination of its GIS activities and it should be considered a high priority. Any efforts should recognize the broader needs of the statewide GIS community.
- Expand the use of GIS for some state functional "lines of business," especially emergency management
- Minimize duplication
- Promote GIS with education of business managers and decision makers
- Resources – identify and coordinate State GIS funding priorities and legislative requests

These recommendations, supplemented by the specific details documented in the *Compass Points* report and recommendations from the 2004 strategic plan, *Foundations for Coordinated GIS*, will provide the basis for continued progress for the Minnesota GIS community.

4. **Develop Closer Relationship with CIO.** During the course of this project the LMIC project team and others worked closely with senior staff in the Office of Enterprise Technology to maintain a high profile for GIS and to help ensure that GIS would be recognized as a key technology for the state. The legislature created OET in 2005 as the state's first agency with enterprise-wide responsibilities for IT, under direction of the state's first Chief Information Officer. When this project began, GIS was not yet considered to be an enterprise technology. An important objective of the Minnesota Fifty States Project was to change that perception and elevate GIS coordination to an enterprise function.

During 2006, OET was engaged in a strategic planning process of its own as it was directed

to prepare a master plan for state government IT for the 2007 legislative session. OET formed several teams of state agency staff to develop strategies to improve the effectiveness and responsiveness of the State's IT infrastructure. To ensure that GIS was recognized as a component of that plan, LMIC staff and staff from other agencies actively participated in the process. This active participation improved GIS's visibility and propelled GIS into OET's planning process. GIS was identified in the final plan as a high value opportunity for implementing shared services within the enterprise. The strategies were presented to the Governor and the Legislature for approval and formed the basis of OET's 2007 funding requests. We believe that the elevation of GIS as an opportunity in OET's plan ensures that GIS will continue to be recognized as an integral and valuable part of the State's information technology future.

To further reinforce the relationship, OET's Director of Strategic Planning was invited to participate as a member of the *Compass Points* planning team and joined the Director of the Office of Geographic and Demographic Analysis and the project coordinator as a presenter at two statewide conferences – one for GIS professionals and another of IT professionals – on panels devoted to strategic planning for GIS. The support for the effort shown by the state CIO as an executive sponsor for *Compass Points* is a clear expression of his support for effective GIS coordination.

5. Supported a Shared Services Future. During the past year, the Strategic Planning Committee of the Governor's Council on Geographic Information recognized the need to better understand opportunities for shared services, driven by a vision for an enterprise services oriented architecture for the state. As a first step, it worked with LMIC to develop a web application to catalog Shared Services. LMIC developed the application without grant funds, but it is considered to be an important tangible product to communicate a vision for the future. The Shared Services Catalog² comprises three components:

- An entry process that allows developers to provide some basic metadata about the computerized software.
- A search/selection tool that allows potential users to look for software that might meet their needs vs. developing it themselves.
- Information about software including links, to allow potential users to find out more information about the listed software and have a means to acquire it.

The original effort has since been augmented. With funding help from MetroGIS, LMIC is expanding the catalog to include: additional metadata fields, additional search criteria, incorporation of ISO services metadata standards where possible, a test library where examples of sharable code will be stored, and a test execution environment for selected internet services. LMIC will be working with several state, local and regional organizations to list, load and test this updated and expanded shared services catalog and library functionality. Over time, it is anticipated that developers will make available services, standalone applications and code that can be used by others. Sharing software will speed

² See www.lmic.state.mn.us/GeoSpatialServices/ for a closer look at the web application.

development, optimize staff resources, reduce duplication and improve overall efficiencies. It also will promote collaboration and standardization.

Pandemic GIS Needs Analysis. The importance of coordinating GIS data and services across agency lines for a specific project or to fulfill a responsibility that involves the enterprise is nowhere more evident than in responses to an outbreak of disease or an emergency. During this project, LMIC had the opportunity to examine the GIS data and services needed to plan for and mitigate a flu pandemic. This *Pandemic GIS Needs Analysis* study was not funded by the FGDC grant, but it provided a meaningful opportunity for the project team to learn how to identify and coordinate GIS components related to a complex business issue. The *Pandemic GIS Needs Analysis* study has enough importance for ongoing strategic planning efforts for GIS coordination that it is included here as a project activity.

Pandemic GIS needs are a subset of “all hazards” emergency planning and mitigation needs, which are in turn only a portion of overall state government GIS coordination needs. The *Pandemic GIS Needs Analysis* study identified the numerous GIS interdependencies among agencies, which need to be addressed if GIS is to be effectively used in an emergency. The study also revealed the considerable complexities that are likely to be encountered during attempts to coordinate GIS within Minnesota State government. Most importantly, it demonstrated the critical importance of proactive coordination of the state’s GIS resources.

LMIC is seeking funding to examine GIS data needs for natural resources programs during the next budget year. The process used to assess needs for the pandemic response “line of business” will help inform the approach used to identify natural resources needs. A standardized methodology for identifying, analyzing, prioritizing and coordinating GIS needs for lines of business would be a great asset to effective GIS coordination; the *Pandemic GIS Needs Analysis* is a first step in that direction. A copy of the project report is submitted as an attachment to this report.

Project Accomplishments

The Minnesota Fifty States Initiative project has accomplished a great deal directly and has been the catalyst for several other important accomplishments during the grant period.

- 1. Increased Visibility GIS within State Government.** The project was able to increase the visibility of GIS in several ways both directly and indirectly. By enlisting the Commissioner of Administration and State CIO as project sponsors, we achieved upper management visibility and support not only for the project but also for formalizing the GIS coordination function. Participation on OET strategic planning work groups provided the opportunity to inform CIOs and IT Directors from a number of State agencies about GIS and its potential value to their agency functions. Through interviews, public presentations at conferences, and the *Compass Points* retreat, many non-technical managers and decision-makers were introduced to GIS, its potential value to them, and the importance of improved coordination. Participants included several key legislators and members of their staff. The *Pandemic GIS Needs Analysis* project documented the critical need for ongoing GIS coordination. Unplanned and unfortunate, the recent Highway I35W bridge collapse and summer flooding

in Minnesota have provided visibility for GIS as a critical emergency management tool for the State.

2. **Implemented Shared Services Catalog.** The implementation of the Shared Services Catalog represents a tangible portion of the GIS coordination vision for Minnesota. It is a small step, but one that will allow Minnesota to build on its long history of data sharing and technical collaboration. Positive user experience with the GIS Services catalog and library is an important key to building confidence in enterprise solutions that potentially trade-off benefits of enhanced services with risks related to dependencies on partnering organizations.
3. **Enhanced Commitment to IT and GIS Integration.** This project has greatly enhanced understanding of and support for GIS by the IT community and its integration with IT resources. Historically, GIS has received only minimal attention in the state's IT investment and management strategies and policies. This project has resulted in a firm commitment by the CIO and his staff to recognize GIS as a strategically important IT resource. The CIO actively sponsored *Compass Points* retreat and has publicly expressed his commitment to GIS and the strategic plan presented by the Office of Enterprise Technology to the legislature in January 2007 identified GIS as an important opportunity for developing enterprise shared services. Within state agencies and in organizations represented by project participants, the project reinforced the importance of more closely integrated GIS and IT in meeting the business goals of those organizations.
4. **Identification of Priority Lines of Business.** The project has elevated the importance of enterprise solutions to GIS for activities related to specific issues, especially those related to emergency management and homeland security. Although GIS professionals were keenly aware of the importance of GIS to emergency preparedness and response, agencies with responsibilities for those functions generally had not made major commitments to taking advantage of GIS. Where GIS had been considered a resource for specific agencies, the absence of an enterprise approach to developing, maintaining and providing access to data and GIS services that support such "lines of business" was clearly revealed as a problem. The Pandemic Needs Analysis project modeled a process for identifying and managing GIS resources of all agencies and represents an important step towards developing enterprise solutions for other "lines of business." LMIC, with partner agencies with responsibilities for the state's natural resource and environment programs have developed a proposal to identify GIS data and services needs for the State's natural resource line of business as a result. Coordination may subsequently be organized around other state lines of business, if this approach succeeds.
5. **Identify Priorities.** The project identified several priority tasks that need to be accomplished in order for the State to establish formal GIS coordination. The consensus of the stakeholders participating in the June Strategic Planning workshop was that the project should:
 - Focus on building GIS coordination capacity within state government while accounting for needs of the broader state GIS community as stakeholders.
 - Focus on coordinating GIS for lines of business, starting with emergency management.

- Promote GIS through education of state decision makers, managers and professionals.
- Identify opportunities to coordinate state agency GIS priorities and funding requests.

In addition through interviews, research and input from various committees not directly related to this project, staff has identified other areas that also will be explored:

- Enterprise license and procurement.
- Coordinated acquisition or development of data and services that address compelling business needs of multiple agencies, including imagery, parcels, jurisdictional boundaries, geocoding services.

These represent areas where strong stakeholder consensus exists and can provide a foundation for subsequent activities that demonstrate the benefits of formalized coordination. The focus on the state government should allow the project team to develop and implement changes within the next year that provide visible results.

6. **Elevate Support for GIS.** This project has greatly enhanced the visibility of GIS as an enterprise resource for the state and has set the stage for strong support by Executive Branch leaders. In late 2004, Minnesota Governor Pawlenty announced his Drive to Excellence initiative “as part of a continuing effort to make state government more accountable and efficient.” The intent was to move “from the current practice of each department being relatively autonomous to a more enterprise or ‘whole State’ approach.” The Office of Enterprise Technology was the first major result of Drive, which is business-focused, not necessarily technology-focused. Drive projects are highly visible and receive special attention from the Governor and his cabinet as priorities for organizational change and investments. GIS has never been identified as a Drive project, despite attempts by GIS advocates at state agencies. As a result of the Fifty States project, Department of Administrator Commissioner Dana Badgerow has suggested that GIS coordination be elevated to a Drive project. Commissioner Badgerow chairs the group of state commissioners that serves as the Drive Sub-Cabinet for the Governor. Achieving Drive status would dramatically improve prospects for successfully developing and implementing a coordination initiative that involves both organizational change and enhanced funding. If this happens, it may be the project’s most important accomplishment.

Changes to Statewide Coordination

Minnesota has been working towards creating a formal, recognized and empowered coordination environment for some time. This project has resulted in some meaningful steps in that direction, especially in helping to increase the visibility of GIS and support for more formalized coordination. Stakeholder participants in the June *Compass Points* retreat voiced their opinion that GIS coordination for State government and the broader Minnesota GIS community was needed and desirable, although they also expressed concern about unfunded mandates. The issue also has been brought to the attention of key legislators and agency department heads. Elevating GIS coordination to a Drive to Excellence project will further enhance prospects for enhancing the state’s GIS coordination capacity. Prospects for Minnesota achieving the conditions for coordination recommended by the National States Geographic Information Council’s (NSGIC)

Coordination Criteria are better than ever.

Stakeholder Involvement

The project has had extensive and comprehensive stakeholder input throughout. The Council and the project team have worked hard to include representatives of the various interest groups in deliberations, plan development and decisions. Project staff and the Strategic Planning Committee of the Governor's Council on Geographic Information also have involved members of the state's GIS and IT communities at conferences and informed them periodically through publications such as the Minnesota GIS/LIS Consortium newsletters. Interest in the process has been strong and stakeholders have provided important input that has shaped the process. It is abundantly clear that no formal coordination entity will be successful without the support of the state's GIS community; stakeholders will be actively engaged on an on-going basis as work continues towards this goal. As a formalized governance structure for coordination is developed and implemented, it will include mechanisms for sustained and meaningful stakeholder involvement.

Assessment of Project Activities

This has been a successful project, but it did not achieve all of its initial objectives. In retrospect, the goals were too ambitious and the available resources too limited. Added to that were some very real constraints related to timing; regardless of the importance of this effort, fundamental competition existed between maintaining focus on the strategic planning process and obligations of many of the key participants relative to the legislative and budget cycles in state government.

The project planners and some others were disappointed about not accomplishing more within the timeframe of this project, perhaps with justification. The project plan relied heavily upon a well-designed and facilitated stakeholder retreat, but a single well-designed and facilitated retreat was not enough – it did not produce a specific plan to authorize and fund an executive branch agency with clear roles and responsibilities and adequate funds to coordinate GIS. The project planners assumed that retreat participants would accept most of the recommendations of the 2004 Strategic Plan, *Foundations for Coordinated GIS* and work on implementation strategies. In reality, the planners intentionally involved policy makers and program managers who were not GIS professionals and who needed to be engaged differently. This was an important choice – the GIS community alone was not capable of achieving a coordination solution without these people. The consensus reached at the retreat was strategically important, but it was more limited than had been hoped.

The competition of this project with other priorities could have been better anticipated. So long as technical people drove the process, these conflicts were avoidable. But engaging non-technical stakeholders – especially agency managers and legislators – was considered to be strategically important to the long-term success of the strategic planning effort. These new participants had other priorities that resulted in a partial suspension of activities during the budget/legislative period, which was most active from January to May this year. Attention from this project was especially diverted by a budget proposal that would have resulted in a severe reduction in funding for GIS coordination. Strong testimony from the GIS community and the

heightened visibility of coordination needs actually resulted in a funding increase and probably accentuated the need for GIS coordination.

Actively involving the stakeholder community was an essential priority for this project and chose to take the time to “get it right” rather than rushing to achieve all of the initial goals of the project. The approach has paid off -- a strong consensus now exists to proceed towards formalized coordination. By engaging stakeholders throughout the project and by adjusting the schedule to involve non-technical participants, the process also succeeded in achieving support from policy makers and decision makers responsible for setting state policy and approving budgets. This will help ensure project continuance and the ability to implement organizational changes, if needed.

The importance of the FGDC grant in supporting this project cannot be overstated, but related efforts and funding from state agencies was essential to make this project meaningful in ways that can sustain the strategic planning process. The grant funds barely covered the costs of organizing and holding the *Compass Points* retreat. State funds, not just from the Land Management Information Center but also from partner agencies and from other grants have been needed to sustain the strategic planning process and will continue to be needed to achieve its goals.

NEXT STEPS

The strategic planning process will continue beyond this FGDC project and this final project report, to a large extent because continuing funding for the Land Management Information Center was assured by actions during the 2007 Legislative session. Guided by the Minnesota Council on Geographic Information, LMIC and its partners within the Minnesota GIS community are committed to improving the state's capacity to coordinate GIS, both among state agencies and within the broader GIS community. If the Drive to Excellence program adopts GIS coordination as a Drive project, it will become a high priority for the state, with support from the Governor and his executive branch commissioners. The project is planning to work on the following during the next year:

1. **State Government Coordination.** Participants in the June *Compass Points* retreat identified this as a high priority, as has the project team. The current plan is to identify the relationships, responsibilities, roles, duties, authorities, of a formally established State agency GIS coordinating entity. Current plans include engaging stakeholders in a process to identify GIS services needed to support all state agencies and then determine which of them could and/or should be provided by a coordinating entity. We will do this in the context of the needs of the broader statewide GIS community. After the GIS coordinating capacity is in place for state government, needs of the statewide community will be more directly assessed. A governance structure for state government will be developed to guide the activities of the coordinating entity and provide for an acceptable balance between central authority and stakeholder control.
2. **Minimize Duplication and Maximize Economies.** Attention will be given to identifying opportunities to minimize duplication of services and maximize economies through enterprise procurements. The effort will focus on state agencies to identify opportunities for enterprise approaches to GIS data, software, and service procurements that provide better pricing and/or additional opportunities. LMIC will continue its work with other state agencies, regional and local units of government, and partners to ensure coordination of the development and acquisition of enterprise data layers to leverage resources within the state, similar to its current initiative to coordinate a partnership with the Farm Services Agency to acquire orthoimagery and with other organizations to acquire elevation data. If successful, these solutions also will result in a greater degree of standardization.
3. **Focus on Lines of Business.** There is a clear need to develop the capacity to coordinate data and services across various State "lines of business." The findings and recommendations of the *Pandemic GIS Needs Analysis* project highlighted the importance for the State to develop this type of coordinating capacity sooner rather than later. This function is likely to be identified as a responsibility of the functions of a State coordination entity. At this time, efforts have been initiated to seek grant funds for two lines of business: (1) emergency preparedness and management and (2) natural resource management and environmental protection.

ATTACHMENTS

Three documents that provide details about the context for this project and the project's activities are attached to this final report.

- *Foundations for Coordinated GIS: A Framework for the MSDI*. This Strategic Plan was developed by the Minnesota Governor's Council on Geographic Information as an outgrowth of the I-Plan initiative advocated by the Office of Management and Budget. Its recommendations about strengthening coordination functions within Minnesota provided the basis for much of work funded by the Minnesota Fifty States grant.
- *Compass Points Retreat*. This is a report prepared by the facilitation team for the stakeholder strategic planning retreat funded by the Fifty States Initiative grant. It includes complete documentation of the retreat and the information and stakeholder perspectives recorded at the event. Strategic plan development and implementation activities planned for the immediate future will be derived from the results of this retreat.
- *State of Minnesota Pandemic Needs Analysis*. This report includes findings and recommendations made by the Scientific Technologies Corporation, which conducted a comprehensive assessment of capabilities, needs and opportunities of Minnesota agencies with assigned responsibilities for the state's response to highly pathogenic avian flu and other flu pandemic outbreaks. The report was conducted in parallel with the Fifty States Project with non-CAP funds but provided an opportunity to develop and test an approach to assessing GIS needs to support an important line-of-business for the state.

FEEDBACK ON COOPERATIVE AGREEMENTS PROGRAM

CAP Program Strengths and Weaknesses

The strengths include focusing on a particular area and providing funding over time for all states to address that specific issue. Working with NSGIC to promote the program and provide information exchanges, workshops and models is great. We also liked the periodic conference calls to hear what others are doing and exchange ideas. The ability to extend the timeframe was also very helpful. One weakness is that for planning efforts, many states may also need additional resources to start implementation.

Where CAP Grants Make a Difference

Funding made possible staff time to work on the strategic plan and its implementation that would not have been possible without the grant.

Was Assistance Sufficient and Effective?

We think we received most of the help we asked for.

What Should the FGDC Do Differently?

More funding could always be spent although we realize there are limits to available resources.

What's Missing from the Grant Program and Should be Considered?

Nothing comes to mind.

Program Management Concerns

A longer time frame than the initial one year was needed in Minnesota due to an extended illness, but a six month extension was provided. Milo Robinson, the program manger, has been especially helpful and responsive to our needs.

What We Would Do Differently Next Time

Hold a large stakeholder event earlier in the process, possibly followed up by a second event, which would have provided a more comprehensive understanding of the shared commitment to coordination and an opportunity to work towards developing and implementing specific elements of a coordination strategy.

12/11/2007