Management
Analysis
& Development

Compass Points Retreat

June 25, 2007

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EXECUTIVE SUMMARY

On June 25, 2007, the Minnesota Governor's Council on Geographic (GCGI) held a full-day retreat to help shape a strategy for improving GIS coordination within Minnesota. The retreat, *Compass Points*, was planned by a team formed by the Council's Strategic Planning Committee and was sponsored by Commissioners Dana Badgerow of the Department of Administration and Gopal Khanna of the Office of Enterprise Technology, the state Chief Information Officer. The retreat was facilitated by a team from the Management Analysis Division of the Department of Administration. It was held at the Mn/DOT training facility in Arden Hills.

A total of 54 representatives from a wide range of GIS providers, users, policy makers and other stakeholders attended the retreat. The day was organized into three major components: (1) a briefing about the history of GIS development, use and coordination within Minnesota, (2) an assessment of the status and use of GIS within the state, and (3) an exploration of possible roles for a state coordinating authority. Except for the first component, attendees participated in a series of facilitated large group and small group exercises. Products generated during the retreat include:

- Lists that identify Accomplishments, Setbacks, Strengths, Weaknesses, Opportunities, Threats, and Issues facing GIS
- A chart identifying GIS stakeholders and the roles that the GIS community perceives they play in coordinating GIS
- Possible roles for a Recognized Coordinating Authority

Based upon discussions of participants at the retreat, the facilitator recommends the following:

1. **Revise vision statement.** The vision statement presented at the retreat should be revised to reflect the concern raised in the meeting that it places too strong an emphasis on national leadership, distracting from the focus on Minnesota.
2. **Develop coordination structure for state government.** Place a high priority on developing and implementing an effective organizational and governance structure for coordinating GIS within state government. It should clearly identify and assign roles and responsibilities and balance the authority of the coordinating entity with autonomy needed by state government stakeholders, including checks and balances that provide for guidance and oversight of the coordinating entity. The organizational plan for state government should address the need for active engagement of partners and customers of the state within Minnesota's broader GIS community. The governance structure should be capable of identifying priorities for meeting state GIS needs and implementing strategies to implement them effectively. Legislative changes, if needed, should be proposed.
3. **Identify opportunities for statewide coordination.** The dialogue about relationships between the state and other GIS participants should continue, with the specific intention of identifying appropriate roles, responsibilities and relationships for all stakeholder groups within Minnesota's GIS community.

4. **Leverage opportunities related to emergency functions.** The GIS community should continue efforts to support emergency operations planning and response, emphasizing support for homeland security and pandemic emergencies.
5. **Develop a marketing plan.** The GIS community should develop and implement a proactive and robust communications and marketing plan, designed to demonstrate to local officials the applicability of GIS in their areas.
6. **Identify and communicate funding priorities.** State agencies and the community as a whole should identify funding priorities for GIS investments and communicate those priorities in advance of the next legislative budget cycle.

OVERVIEW

The *Compass Points* retreat was held June 25, 2007. Hosted by the Minnesota Governor's Council on Geographic Information (GCGI) and sponsored by Commissioners Dana Badgerow of the Department of Administration and Gopal Khanna of the Office of Enterprise Technology, this event was designed to build upon previous planning efforts of the Council and the GIS community. In particular, the Council's 2004 planning report, *Foundations for Coordinated GIS*, provided the focus and impetus for the retreat discussion. That plan contained recommendations on how Minnesota could maximize benefits by strengthening the capacity to coordinate and leverage investments in GIS technology.

The GCGI chose to host the retreat to extend the dialog about GIS coordination and provide stakeholder input about recommendations made in *Foundations*, especially the recommendation that a coordinating authority be established in an executive branch agency of state government. The recommendation had previously been discussed with members of the GIS community at several venues, but the retreat was considered the most effective way to open the conversation about coordination to a broad array of stakeholders. The Council's Strategic Planning committee convened a core group of stakeholders to plan the retreat. This planning group included:

David Arbeit, Director
Office of Geographic and Demographic Analysis, Department of Administration

Fred Logman, Planning Coordinator
Land Management Information Center, Department of Administration

Rick Gelbmann, Chair
Governor's Council on Geographic Information

Randall Johnson, Staff Coordinator
MetroGIS

John Lally, Director of Strategic Planning
Office of Enterprise Technology

Larry Palmer, Director of Information Technology
Department of Agriculture

Mike Barnes, Chief Information Officer
Department of Transportation

Dan Ross, Systems Analysts Supervisor
Department of Transportation

Annette Theroux, President
Pro-West Associates

Participants invited to the Compass Points retreat were chosen to represent a diversity of sectors that extend beyond the historic GIS community. In addition to members of the GCGI, they included policy makers, elected officials, legislative staff, Chief Information Officers, managers of programs that potentially benefit from GIS, academics, local government organizations, and others. A full list of participants is included in Appendix A.

The goal of the retreat was to inform this broader group about GIS, explore issues related to GIS use and coordination, and to review and discuss the vision statement and key recommendations contained in *Foundations for Coordinated GIS*, a strategic planning document of the Governor's Council on Geographic Information completed in 2004 and widely circulated within the GIS community. In particular, the retreat was designed to focus on the recommendation to establish a recognized coordinating authority (RCA) within the executive branch of state government. The retreat also was designed to explore issues involving specific roles and responsibilities for the RCA recommended in the 2004 plan.

To coordinate the conversations of this large group meeting, the Governor's Council requested assistance from a team of facilitators from the Management Analysis & Development Division of the Department of Administration. Facilitators for this event were Judy Plante, Director, and Charlie Petersen, Pam Belknap, and Ralph Brown, Senior Management Consultants. A mix of small group session and large group discussions were employed. All small group sessions were also support by group reporters Mike Dolbow from the Department of Agriculture, Mark Kotz from the Metropolitan Council, Nancy Rader from the Land Management Information Center and Dan Ross from the Department of Transportation.

The event provided an opportunity for education, broad cross-community dialogue, and reflection on the best ways to coordinate GIS activities. The product of the meeting will serve as the basis for future meetings that will focus on key topic areas.

SESSION NOTES

I. Introduction and Background

Welcome

Participants were greeted by Gopal Khanna, the state's Chief Information Officer and a retreat executive sponsor. Commissioner Khanna welcomed participants and underscored that the GIS conversation is part of a cross-boundary transformation taking place in state government. Success for Minnesota will require collaboration and the effective use of technology.

Historical Timeline

Next, Rick Gelbmann, Governor's Council on Geographic Information chair, presented a history of GIS in Minnesota, focusing on milestones and events that have demonstrated Minnesota's historic commitment to coordination. The historical timeline documented more than thirty years of GIS activity, highlighting the commitment to working together that has characterized Minnesota's GIS community. The presentation traced the development of GIS from early work at the University of Minnesota during the 1960s through efforts to develop recommendations made by the Council's 2004 strategic plan, *Foundations for Coordinated GIS*. During that period, GIS emerged from a highly specialized tool used by only a few organizations, such as the Land Management Information Center, to a technology widely used by public and private organizations throughout Minnesota.

Context for Retreat

David Arbeit, Director of the Office of Geographic and Demographic Analysis completed the introduction to the day by reviewing the recommendation of the National States Geographic Information Council that states strengthen their capacity to coordinate and recommendations in *Foundations for Coordinated GIS* to achieve that in Minnesota.

Foundations for Coordinated GIS recommended the following to improve the capacity for GIS coordination within Minnesota.

- Explicit authority and responsibility for overseeing the MSDI should be assigned to a state cabinet level agency.
- Adequate resources should be provided to coordinate, develop, and implement the MSDI.
- Public expenditures in GIS should reflect MSDI priorities.
- GIS implementation by state agencies should be coordinated with the state's IT architecture framework.
- GIS implementation by state, local and regional agencies should be coordinated with similar efforts by state and federal agencies.
- Emphasis should be placed on emerging opportunities for effectively using GIS, joint projects and leveraging private and federal resources.

- The continued development of the MN Geographic Data Clearinghouse should be supported.

The Council's 2004 strategic plan also recommended the following roles and responsibilities for the Coordinating Authority.

- Oversee statewide GIS infrastructure, including data plans.
- Monitor the effectiveness of adopted policies and recommend actions.
- Coordinate state agency implementation of GIS within guidelines established for the state's IT architecture framework.
- Coordinate GIS initiatives to identify opportunities for joint projects and leverage private and federal resources.
- Work with state, regional, local and tribal governments, and nongovernmental stakeholders to identify GIS needs and investment priorities and recommend initiatives.
- Work with stakeholders to identify new and emerging opportunities that improve the effectiveness of state programs through use of GIS.
- Advocate for Minnesota's GIS stakeholders to Minnesota's executive branch and legislature, federal agencies and other organizations.
- Serve as the state's designated liaison and representative to federal mapping agencies and national GIS organizations.
- Develop and maintain MN Geographic Data Clearinghouse services.

Retreat Purpose

The intent of planners in organizing the Compass Points retreat is to work with stakeholders to explore the Council's 2004 recommendations and to identify and develop strategies for achieving the vision of coordinated GIS within Minnesota. Intended outcomes include recommendations that concern:

- Organization of state government functions
- Relationships among agencies, their partners and customers
- Assignment of roles and responsibilities
- Strategies for securing and sustaining resources

II. Vision Review

Judy Plante invited the full group to consider the following vision statement endorsed by the 2007 Governor's Council on Geographic Information for discussion with the GIS community.

> *Minnesota is a national leader for the Coordinated, Affordable, Reliable, and Effective use of GIS technology to enhance services throughout the state.*

Participants were asked to review the statement and assess its value as a working vision statement for the retreat. Comments ranged from general support of the key concepts (coordinated, affordable, reliable and effective) to concern that the emphasis on national leadership potentially detracted from the focus on Minnesota's needs. While participants recognized the worthiness of being a national leader, some expressed the opinion that national leadership should not be an explicit goal for the state.

Participants accepted the vision statement as a basis for the retreat but also expressed interest in a refinement of the vision statement to focus more clearly on Minnesota.

III. Situation Assessment

The purpose of the Situation Assessment was to establish a common framework for understanding the issues facing Minnesota's GIS community. It was designed to serve as an extended version of what is sometimes called a SWOT assessment (Strengths, Weaknesses, Opportunities and Threats) by also looking backwards to document Achievements and Setbacks. This process was considered especially important as an effective way to create a common foundation for understanding the importance of GIS coordination and engaging the diverse cross section of retreat participants in a common conversation.

Participants were assigned to four small groups for the Situation Assessment, each facilitated by staff from the Management Analysis Division. Each group separately discussed short initial lists generated by the retreat planning committee for Achievements, Setbacks, Strengths, Weaknesses, Opportunities and Threats. Based upon the discussion, the initial lists were modified. These lists were then expanded within each group during a one-hour discussion.

After the small group activity, all participants reconvened and the work of each of the groups was presented and discussed before the entire group. No attempt was made to rank or evaluate the ideas documented during these exercises as all opinions were considered important to the ongoing dialog. The following narrative summarizes the ideas presented during these exercises. Unedited lists of ideas generated by the small groups are included in the Appendix.

Achievements

- **Collaborative efforts**. The GIS community has a significant history of voluntary collaboration. Formal collaboration efforts include the GIS/LIS consortium annual conferences, regional efforts such as Metro GIS, and the Governor's Council 2004 strategic plan. Much of the discussion in small groups focused on the sense of "good citizenship", camaraderie, and partnership that has been present in GIS efforts.

- **Technology advancements.** The establishment of the clearinghouse, access to data 24/7, and the availability of data to the public through various portals were mentioned. Minnesota is a leader in hydrography. Minnesota was a national leader in GIS in the past.

- **Data.** Metadata standards were adopted. Data resources are being used in decision making in a variety of situations.

- **Acceptance.** Some local governments are beginning to develop GIS capability, and policy makers in general are more aware of GIS and its possibilities for informing decision making. State agencies recognize the value of GIS. Increasingly it is being recognized as necessary for emergency response situations. More IT professionals are aware of and interested in GIS.

Setbacks

- **Difficulty implementing plans.** Several planning efforts have been made. While many of the specific projects generated by those efforts have been implemented, little progress has been made particularly in the area of formal coordination and governance.

- **Data.** Efforts to maintain statewide data haven't all be successful. One example is statewide parcel mapping. Not all localities have the resources to complete the mapping, not all are willing, there are issues relating to standards and some hesitancy to share data.

- **Resources/coordination.** Because there is no recognized coordination point, on many issues everyone is in charge and therefore no one is in charge. While the GIS community has a history of coordination, inevitably there have been situations where there have been duplications of effort, lack of coordination, or gaps. Because of the soft money funding for GIS, the threatened and actual reductions to LMIC's budget, and other funding issues, there has not been a coordinated plan for GIS investment. For counties, the dependence of many on grant funds for GIS improvements means that counties are not moving at the same pace or in a coordinated fashion.

- **Technology.** The technology for GIS has been rapidly developing, making it difficult to keep up, particularly for smaller entities with limited resources.

Strengths

- **Coordination.** The GIS community has a long history of collaboration and partnership. The Governor's Council has been a positive force since its creation. LMIC has served as a de facto coordinator. Metro GIS provides a model for regional coordination. There is a strong desire at the county and municipality level for collaboration. Participants referenced the overall commitment to data sharing across agencies and levels of government.

- **Technology.** The technology exists that can support the enterprise. The quality of Minnesota's GIS work force is very high and will be augmented by returning service personnel trained in military GIS. The existing technology is good, accessible and in some cases excellent. DNR has a mobile unit used in fire situations which is capable of providing emergency services.

- **Acceptance.** Among non-GIS personnel, retirements will provide the opportunity for a more technology savvy workforce to emerge. There is widespread knowledge about and acceptance of GIS in the professional societies. Colleges are involved in supporting GIS projects, teaching GIS and preparing the workforce in this field.

- **Track record.** Minnesota has a positive reputation with the federal government for getting GIS projects done well. There is a long history of specific legislators supporting GIS funding and investment. Minnesota has a history as the best state and national leader. Most importantly, the GIS community has a recognized history of working together for the common good.

Weaknesses

- **Coordination.** There is no official coordinator or assistance resource. In some cases, the perspective is within an agency or unit of government, rather than enterprise wide – a horizontal look. The competing demands of various government entities are sometimes unresolved.

- **Investment and ROI.** Because funding is uneven, localities and agencies are in haves/have not situations. Investments that should be made across the board are made

piecemeal. Lack of coordination leads to duplication of investment. Investment in GIS is often separate from investment in IT – and in some cases those investments are in competition for the same dollars. There is potential to provide more GIS support for Homeland Security efforts, which could support some much needed development in order to provide the needed data.

- **Technology/Infrastructure.** Infrastructure varies county by county. Standards are voluntary and not always clear. Decision support tools are in their infancy.

- **Acceptance.** Some policy makers and elected officials do not understand the value of GIS or its applicability to decision making in their areas. GIS needs to be championed: the community needs policy makers to advance the case. It was noted here and in the vision discussion that emphasis on once again becoming a national leader in GIS technology and services, while an admirable goal, would not resonate with local elected officials. The vision emphasis needs to focus on the benefits and values of GIS to Minnesota communities.

Opportunities

- **Coordination.** Several opportunities for further coordination were identified, including the Minnesota Counties GIS Association (MCGISA), the Minnesota Counties Information Technology Leadership Association (MNCITLA), the state CIO, and existing annual conferences. Regional efforts suggest that not every county needs to build its standalone GIS capability. Several other states have coordination models that should be reviewed.

- **Technology.** Current GIS technology supports data and service sharing, and most users have the same or interoperable software. Vendors support standards, and new technology is likely to lead to new uses and users. There will be opportunities to have more data on the Internet as technology advances. There is a highly skilled workforce available for GIS activities.

- **Acceptance.** There is a growing recognition of GIS as important to informed decision making. Both citizens and decision makers are becoming familiar with GIS through tools such as Google, and with that familiarity, the understanding of what is possible and expectations for what will be provided are increasing. Business needs, such as pandemic planning or homeland security issues, give urgency to the discussion.

- **Resources**. Several funding options – the Minnesota Recorders Compliance Fund and the Fifty State's initiative, which might lead to funding through a grant, were mentioned.

Threats

- **Technology.** Rapid changes in technology make it difficult to keep up. People take technology for granted, not realizing what it takes to stay current and accurate.

- **Resources.** Funding has been shrinking and fragmented. Compliance fund moneys are not sufficient for rural counties, which are being left behind. Continued fragments, limited funding will not produce the robust GIS systems needed to support the state in security, development and other areas.

- **Acceptance.** The public's growing expectations may become unrealistic. Conversely, some local officials may not have clear expectations of GIS; they are unaware of the benefits possible, and don't see an investment in GIS as a necessary investment in infrastructure.

- **Coordination**. There are entire systems that don't interact in the GIS community. The GIS community is growing, which makes it even harder to achieve the voluntary coordination that's been key to success in the past. The many data gatherers are sometimes competing in their collection efforts. The concern for some is that, if an organizational change is made, it will be unsuccessful and not advance coordination.

- **Staffing.** There is instability in staffing. While a high level GIS talent pool exists in the area, there is a talent drain particularly from state agencies, due to a combination of the retirements of senior staffers and the competition for GIS talent. Competition comes in the form of higher pay from the private sector as well as counties and other units of government.

- **Resistance to change.** The individuals who have owned a process may be protective of that process, or at least reluctant to change it and to rely on computerized GIS records rather than hand-drawn maps and boundaries. In some cases, the cost of changing to the new system may play a part in the reluctance to change.

Issues

- **Resources.** There is a clear need for sustained, sufficient funding for GIS development, maintenance and coordination. The budget process needs to eliminate competition between GIS projects. Cost recovery policies limit access to data and resources. A resources plan needs to address if or how the needs behind those cost recovery policies can be met.

- **Expectations.** The demand may exceed capacity, unless funding is provided.

- **Coordination.** There is no mandate to connect the disparate parts of the GIS community. A shared, compelling public purpose has not been articulated and is not clear. Standards are voluntary and not universally an integral resource for decision makers.

IV. Current Roles in GIS

In the third full group discussion, participants were asked to complete a matrix which reflected perceptions about current roles and responsibilities of GIS stakeholders. The intent of this exercise was to clarify expectations that stakeholders have of one another and reflect on the extent to which those expectations were consistent with assigned or authorized responsibilities and capabilities. The exercise uncovered a range of assumptions and perceptions about the formal authority and responsibilities held by key entities. Among those assumptions:

- The Land Management Information Center was one of only a few organizations identified as influencing or performing almost every functional dimension of statewide coordination. The perception expressed in this exercise is that in the absence of a more formal authority, LMIC serves as the state's de-facto or informal GIS coordinator. It is not clear if this perception is widely held, but it persists despite LMIC's lack of formal authority to serve in this capacity or the fact that many of the coordination functions are duplicated by other organizations.

- For other state agencies, some roles, such as setting policy, establishing priorities, and directing investments, were identified as internally focused on their specific business functions. In contrast, some externally-oriented functions were recognized, such as establishing de facto standards, maintaining statewide data libraries, and distributing tools. Other state entities such as the Office of Enterprise Technology and state Legislature were perceived to have more limited roles.

- Within regions of the state, the Metropolitan Council and regional development commissions were perceived to provide important coordination functions. The MetroGIS collaborative was especially singled out as serving coordination functions within the Twin Cities region. Other stakeholder groups also were identified as having interests or roles in aspects of coordination.

Chart 1 documents the results of this group exercise. The vertical axis lists possible functions that could be performed by a public GIS entity. Each column of the horizontal axis represents the a GIS stakeholder group, as identified by retreat participants. The completed chart indicates the consensus view of roles play by each stakeholder group.

Chart 1: Current Roles in GIS

Who: / Function:	State Agencies (MnDOT, DNR, PCA)	OET	Admin/ LMIC	Governor's Council	Met Council	Metro GIS	GIS/LIS Consor-tium	Counties/ Regional Agencies (RDC's)	Munici-palities	Federal Agencies	Legisla-ture	Colleges	Vendors	Utilities	Prof. Associa-tions	Public, Private, Non-profit School Districts
Statewide/Cross-Jurisdiction Policy	Internal/ partners	Broad policies application	Informal	Advise	Influences	Yes/ imple-ments	No	Yes (regional) collaborative	Mixed	[As] umbrella: yes	Yes	R & D	–	[Create data layers we'd like to share] Internal only	–	Users
Priorities and Strategies	"	–	Through choices/ investments	Advise	Influences (internal)	Implements	"	"	"	"	No/ influence through money	"	–	"	–	
Investment	"	–	Facilitate money	–	Facilitates internal/ metro GIS	Leverages Partners	"	"	"	"	Yes	–	–	"	–	
Standards and Achievement	De facto standards	Standards	Assists in developing & writing	Creates & recommends	Participants in input	Develop/ influence	"	"	"	"	No	–	Yes	"	Standards	
Communications	Internal	–	Web	Facilitates	Metro GIS	Yes	Yes	"	"	"	No	Yes	–	"	Informal	
Coordination	With partners	–	Yes – not informal	"	Region	Yes, region	Yes	"	"	"	No	–	Yes	"	Within Assn.'s	
Data Library	Statewide data library	–	Clearing-house	–	Region implement	Develop data finder	–	"	"	"	Leg. GIS office	Some	Yes	"	–	
Infrastructure	Maintain statewide	Yes	Yes	–	Yes	No/ influence	–	"	"	"	No	Yes	–	"	–	
Tools	Distribute free tools	–	Yes	–	Yes	Yes	–	"	"	"	No	–	Yes	"	–	▼
Assistance	On agency products	–	Yes	–	Yes	Yes	Yes	"	"	"	No	Yes	Yes	"	–	
Consulting	Informal	–	Yes	–	Yes	Yes	–	No/ manage	"	"	No	Yes	Yes	"	Informal	

V. Roles and Responsibilities of a Recognized Coordinating Authority

Following the exercise to identify current roles and responsibilities, the small groups reconvened to discuss possible roles of the recognized coordinating authority recommended in *Foundations for Coordinated GIS*. The intent of this exercise was to elicit, to the degree possible, a shared supportable portrait of the functions, activities and relationships of a coordinating authority if one were to exist. Only two of the four groups completed the exercise, but all of the groups presented their lists to all participants in a full group session that ended the day. The small group responses resulted in a composite sketch of the possible RCA.

The exercise used the same set of functions as were used to assess current roles and responsibilities as a starting point for their discussions. In addition, small group participants were asked to identify more specifically one or more of the following characteristics of the RCA role for each function:

R = Responsibility (performs the tasks)
C = Coordinating (brings others together to do the tasks)
A = Authority (approves or enforces)
I = Inform (Shares information)

What follows are lists compiled from the small groups discussions. Although the exercise revealed no strong consensus about the degree of control or authority needed for each function, it clearly confirmed the need for a coordinating authority. The future challenge will be to establish a comfortable balance between control and autonomy within the GIS community that provides the benefits of coordination and that sustains and builds upon the positive, collaborative community that now exists.

Policy

- Certifier of Policy/arbitrator (A, R)
- Enforce/Monitor on things that need uniformity (A, C)
- Convene/facilitate; develop and maintain policies, framework for policy, and guideline development (R, C)
- Recommend to Legislature (funding, priorities, etc.)
- Provide policy background to policymakers, especially champions
- Coordinate policies between levels of government
- Develop a vision (most important) (A)
- Coordinate, develop and maintain policy (R, I)
- Understand/define stakeholder needs and develop metrics to show needs are met (A, R)
- Set operational standards (A, R)
- Liaison with decision makers to advise/influence policy (A, R)
- Enforce policy (intent of policy is met) (A, R)

Priorities and Strategies

- Holistic view/ongoing; scan synthesizer; consult with end-users – know what's needed across Minnesota to scan. Bridge federal/local (A)
- Leadership proactive: Identify GIS role in issues; set priorities; develop strategies; technical leadership/guide shape direction (A)
- Create a business plan based on identified statewide GIS priorities, needs, and roles (R)
- Facilitate implementation of the business plan (R)
- Seek input, consolidate, set, and develop
- Provide focus for all agencies
- Tie priorities to real-world issues and concerns
- Long-range strategic planning and ability to implement the plan (A, R)
- Define shared needs and be the enabler for a federated business model to leverage each other's investments (A, R)
- Adjudicating authority (A, R)

Investment

- Leveraging, coordinating investments, maximizing purchasing, reviewing purchases (consultation, may be approved for state agency) (R, C)
- Able to accept money (A)
- Grant making: Disburse money for base-level GIS (A)
- Define shared investment opportunities based on business plan (R, C)
- Advocate to funders for investment
- Participate on federal level to acquire money
- Seek funding from variety of sources – public and private
- Coordinate funding and grant opportunities (R)
- Identify and coordinate defined investment requests (A, R)
- Develop economies of scale for common good (A, R)

Standards and Architecture

- Convey federal standards and feedback to feds (R, C)
- Coordinating standards: Consult with end users. Identify needs, possibilities, availability for purchase. Federal studies. Liaison to subject matter experts (R, C)
- Document and communicate standards (R, C)
- Monitor standards as developed/facilitate discussion (R, C)
- Develop standards

- Document/educate
- Use to guide investments
- Participate in national/international standard-making bodies (A, R)
- Facilitate the development of, and endorsement of, standards (A? R)
- Suggest guidelines and best practices (C)
- Establish policies (A, R)
- Advocate policies to Minnesota (A, R)

Communication

- Communicator: outreach, proactive, marketing, message, advocate; bridge among all partners; resource clearinghouse (I)
- Get buy-in from policymakers
- Communicate relevancy to potential users
- Distribute information
- Talk with stakeholders (C, I)
- Facilitate knowledge sharing, advocacy, and awareness (A, R)
- Articulate what decisions made and who on policies, dates, source documents, etc.; institutional memory (A, R)
- Documenting and marketing the benefit (A, R)

Coordination

- Clearinghouse – make sure others know what's available
- Strategic coordination – avoid duplication, find incentives (funds), identify barriers; convene groups ((GIS or others) (R)
- Identify shared/common needs
- Become the first stop for data inquiries
- Ensure coordination among state agencies
- Facilitate collaboration among different levels of government (C)
- Connect and coordinate with the IT community (C, I)
- Be information broker and common point for data sources (A, R)
- Define roles and responsibilities to maintain all solutions (including documentation) (A, R)
- Facilitate acceptance of roles and responsibilities by specific organizations (A, R)

Data Library

- Common framework data holdings (imagery, transp. elev., etc.)
- Provide/get funding for data library
- Administer and provide access to common data (R)
- Coordinate access to data, tools, and services (R)
- Common storefront for distributed data and services network (A, R)
- Adhere to standards/policies (enforcement) (A, R)

Infrastructure

- Maintain state website
- Provide means to link separate centers
- Data WH and applications consistent with federal, state, local standards and protocols
- Influence investment and enterprise direction (A, R)

Tools

- Research and development for coordination and identification of common tools needed by GIS community (A, R)
- Central store for tools
- Coordinate/share applications development
- Test/verify usability of tools

Assistance

- Start-up assistance to have-nots (A, R)
- Provide information regarding available assistance (not technical support)
- Referral
- Identify duplicative efforts and coalesce them
- Provide training for software classes

Consulting

- Facilitate contracts to get work done
- Refer to experts
- University/college programs to solve GIS problems/projects
- Define need for staff recruitment, staff augmentation, and staff training

VI. Facilitator Observations and Recommendations

Participants at the June 25th Compass Points meeting were generally engaged and provided a wealth and diversity of experience to the discussion. Based upon a review and analysis of the exercises and discussions during the retreat, the facilitation team offers the following observations and recommendations.

1. **The Vision Should Focus on Minnesota.** Incorporating a broader audience into the ongoing strategic planning discussion of the Governor's Council was both exciting and risky. The participants overall seemed comfortable with the mid-stream nature of the discussion, and the fact that they were being asked to focus on the particular area of a recognized coordinating authority. That said, the vision adopted by the Governor's Council was not accepted without question. While being first in the nation may be an indicator of the desired success, participants expressed a desire that the mission focus more on what is needed and beneficial to Minnesota.

   Recommendation: Provide an input and dialogue process for revision of the vision statement to reflect the concerns raised at the meeting.

2. **Coordination within State Government is Critical.** The planning group debated whether or not the retreat's focus should be on state agencies "getting their act together" or on the broader GIS community. It was clear from several of the small group discussions and comments made during reports back to the large group that there is a need for state agencies to clarify relative roles and responsibilities, standards and priorities, while keeping in mind the broader context and needs of the Minnesota GIS community. Any relationships with GIS community members should balance the need for authority and coordination with the collaborative and autonomous atmosphere needed to retain the strong community that exists today.

   Recommendation: Develop a model for state agency coordination. One possible approach is reviewing models used elsewhere. Use a roles and responsibilities chart outlining the role for the recognized coordinating authority and determining the relationship of the RCA to existing entities. (A small sample is attached.) Follow this with shared planning on priorities and strategies for state GIS activities, including proposing legislative changes if necessary.

3. **GIS Should be More Widely Used.** Several areas were identified where GIS could provide meaningful input into decision making. Examples included natural resources information for the Legislative Citizens Commission on Minnesota Resources (LCCMR) and in assisting the Homeland Security and Emergency Management Office (HSEM) for pandemic and other planning.

   Recommendation: Determine the best ways to continue pursuing these specific areas, demonstrating to both agency personnel and policy makers the utility of GIS information and tools in addressing these key needs. In addition to political champions for GIS, the business need can help provide an urgency in addressing GIS issues.

4. **Duplication Should be Minimized.** Particularly as the number and variety of players increases in the GIS community and the user community, it will be important to minimize duplication of investment and effort.

Recommendation: As the state roles and responsibilities are sorted out (above), continue the dialogue on relationships between the state and other GIS participants

5. **GIS Needs to be Better Understood.** The gap in knowledge about GIS, even among participants, was illuminating. Clearly, there is a challenge in getting elected officials, program heads, and policy makers to understand what GIS is, what it can do for the decision makers, and what the benefits will be to citizens and local communities.

   Recommendation: a proactive and robust communications and marketing plan needs to be developed and implemented. The goal would be to provide the clear, non-technical explanations about GIS and compelling examples and illustrations which would allow officials to see applicability in their areas.

6. **Resources are needed.** Resource needs were mentioned in every discussion.

   Recommendation: The community – or at least the state agencies – needs to have coordinated funding priorities for discussion with the legislature well in advance of the next budget cycle.

SAMPLE ROLES AND RESPONSIBILITY CHART

	ORGANIZATION				
FUNCTION	**Recognized Coordinating Authority**	**Organization A**	**Organization B**	**Organization C**	**Organization D**
Develop a vision	**A**				
Convene/facilitate, develop and maintain a framework for policy and guideline development	**R, C**				
Liaison with decision makers to advise/influence policY	**A, C**				

APPENDIX A: Situation Assessment – Wall Chart Notes

Achievements

- Data/clearinghouse provides access to data 24/7
- Partnerships to acquire statewide imagery
- Adoption of metadata standards for data documentation
- Metro GIS as successful regional model
- Being a “gee whiz” to credibility with policymakers – value of GIS – awareness
- Local governments inclined to invest in GIS – beginning to develop
- 2004 strategic plan – get at organizational issues
- Minnesota is in strong position – get federal grant for coordination and data development
- GIS/LIS Consortium’s annual conference 2006, every year since 2003 (actually 1991)
- Recognition of GIS value by state agencies
- Natural resource information used for specific landfill decision
- State data resources used for decisions
- Public health applications – targeting outbreaks, etc.
- Public access to data via available portals
- Road network’s grids
- Effect on emergency response and private service providers
- Informal user groups
- Minnesota leader in national hydrography set – technically
- We honor and reward good citizenship
- GIS/LIS and LIMC have provided a foundation for local efforts
- Greater awareness and acceptance of GIS by IT community

Setbacks

- Little progress implementing 1991 strategic plan
- Efforts to maintain statewide data have not succeeded
- Failure to help statewide parcel mapping
- Threatened and reduced budgets for LMIC
- 2004 plan – today is beginning of implementation
- Not awareness of 2004 plan – no awareness of GIS
- Fast developing technology – needing to keep up with latest/greatest
- Unknown ownership with statewide data bases – city/county/school district (weakness)
- "Everyone responsible"/no one responsible" – lost connecting points – decentralized focus
- Little progress implementing the organizational component of strategic plan
- Disparate data fee structure and licensing
- All data not available through data clearinghouse: doesn't exist, not standard format
    - Creating statewide data: data sets come from local level
    - Need 87 counties in same direction to create sets
    - Funding hasn't been there to coordinate this
    - Has to be done from the ground up
    - Horizontal coordination
    - Counties don't have land records in same way/standards; need shared business purpose, for example, difference in trans. data needs
- Rely on soft money for GIS (no consistency)
- County success not consistent (relying on grants): funding, prioritizing issues, ownership, contracts, proprietary, information security.
- Some counties not sharing data; state agencies and others
- Other obstacles to sharing data, i.e., perceived threat and paranoia

Strengths

- Strong community with collaboration history
- Commitment to data sharing
- Quality of Minnesota's GIS work force
- Governor's council on geographic information since 1991
- LMIC as "de facto" coordinator (void filled but not permanent)
- Tradition of creating and relying on metadata
- Metro GIS as model
- We now have technology that would support "enterprise"
- Retirements provide opportunity for technologically literate work force
- More data information than ever before
- State has positive reputation for getting things done from federal level – getting grants
- The professional societies all know GIS
- Desire to collaborate at county, municipal level – standards work/multicounty
- Colleges involved: using it, developing work force, involved – example, University managing storm water project
- DNR mobile GIS support unit
- Long history of legislative support for investing in GIS
- History of being known as best state/national leader
- Accessibility of DNR "data deli"
- Technical base is good – accessibility: infrastructure and software islands of excellence
- Minnesota demonstrated a non-bureaucratic focus – work together for common purpose – public good
- Not perceived as weakness – uses data from state system – very helpful; make use of tool

Weaknesses

- No “official” coordination authority
- “Haves” and “have-nots” limit benefits
- Investments in GIS made independently by organizations (statewide, regional, holistic) [across the various entities]
- No funding for “enterprise” GIS investments; needs to be explained more
- Supported separately from other IT – ambiguity, technology, or data for business purposes; evolving (the new place to collaborate/coordinate, for example, central Minnesota collaborative) (many other GIS will . . .)
- Infrastructure not in place for all counties, etc.
- Regional infrastructures vary
- Perspective has been “vertical” rather than horizontal
- Lack of standards being used
- Lack of engaged policymakers
- Lack of full-time coordination staff
- Decision support tools in infancy – good data but limited information
- Not certain of common theme for public query – outcome expectation
- GIS and IT are working separately, independently
- All data needed not available through data warehouse
- Many of the involved organizations are disconnected
- GIS lacks a state champion
- Marketing of GIS benefits/value is lacking
- Our insistence on metadata limits - what we accept
- No single coordination point for state and local government
- No “official” assistance resource
- Haven’t marketed the value of GIS to local elected officials (AMC could help?)
- Perhaps vision emphasis on “national leader” doesn’t connect for local leaders – needs to connect back to local needs, making investments more valuable
- Disconnect between state and local
- ROI – could do more to develop Homeland Security?

Opportunities

- Growing recognition of GIS
- GIS technology supports data and service sharing
- Most Minnesota organizations use same software or are interoperable
- Vendors support industry standards
- State now has CIO
- Stay in front of technology curve – more information on Internet
- Best technology experts in Minnesota; technology-literate policymakers
- Business needs that force to come together; sense of urgency: health care – pandemic influenza; budget – build capacity
- As technology increased – streamline personnel time – move to paperless society and more cost-effective decision making
- New ideas/strengths/tools of analysis/new staff
- National Guard returnees – highly trained/understand value
- Helps simplify complex information – helps understand problem
- Build on annual conference
- Common information model for shared needs
- Recognizing data across agencies – multitiered, technical supports
- MCGISA has been formed
- Minnesota Recorders Compliance Fund now established: a resource for parcel mapping
- MNCITLA – county IT leadership – has been formed
- The promise of new technology
- Technology broadens uses and users of GIS
- Growing citizen expectations
- Successful coordination models in other states
- General public is using, likes it – huge citizen engagement; possibility: citizens get in, play with options
- Fifty states' initiative grant might lead to funding at federal level
- Should be able to leverage money, get some to locals, get Homeland Security money
- Regional entities mean every county doesn't need its own
- Open source movement of software has increased
- Google, etc. really helping public and policymakers appreciate (GIS) applications
- Data editing/cleaning as it's posted
- Need to explain "enterprise model"
- Need to communicate beyond planning/technology experts (market promote)

Threats

- Rapid technology change (opportunity to use better tools)
- Shrinking budgets; fragmentation of budgets
- Unrealistic expectations – reasonable expectation seen in other areas
- Reorganization that doesn't work – (many unofficial leaders)
- Staff instability, including retirements: not matching salaries; we train – they move; competition with private, state agencies/counties
- Some staff resistance to change in process – from cards to computer, updating computing records
- There are great opportunities to invest in GIS, but some localities might not be aware of benefits
- Products – engrained processing
- Compliance fund leaves most rural counties even further behind
- Growing citizen expectations
- Community growing – unwieldy, harder to coordinate
- Data not seen as infrastructure
- Lack of school district/water management district not engaged – other districts – broken by other lines
- Ignorance/lack of marketing – what exists and what it can be used for
- Competing data collection efforts – not complete
- Right questions not asked in emergency preparedness to respond to crises
- People taking technology for granted
- Assumption that data/maps on sites are accurate
- People don't understand relevance of GIS to their work

Issues

- Lack of sustainable funding for GIS, including for coordination
- Budget pressures increase competition for funds
- Demand for GIS is growing faster than capacity
- Adoption and use of data standards is limited
- Cost recovery policies of some organizations limit access to data and resources – intellectual property regulation/licensing
- Compelling public purpose – no mandate to connect the dots –include coordinating authority
- Government disruption – pandemic issue – disruption of technology
- Expense in implementation – develop good data: data requirement to fulfill needs, not talking about technical hardware; talk about business need – value of technology
- Need a good understanding in information – shared needs throughout the state
- Wouldn't develop without the people resources to do it – core resource
- Fundamental broad, integral resources to decision making
- State law on data privacy (federal, local also)
- Lack of state GIS for Homeland Security – not coordinated between feds, state, locals
- More sophisticated technical approaches could be implemented for inter-operability
- Need a plan for priorities for future investments
- Coordination for both: what we've got, filling our gaps, who – what groups
- Policies of working across agencies.
- Technology disruption is possible due to government disruption.

APPENDIX B: List of Participants

Dr. Paul Anderson	Board of Animal Health
David Arbeit	Office of Geographic & Demographic Analysis
Mike Barnes	Department of Transportation
Pam Belknap	Management Analysis Division, Administration
Todd Bleess	Secretary of State's Office
Ralph Brown	Management Analysis Division, Administration
Oriane Casale	Department of Employee & Economic Development
Chris Cialek	Land Management Information Center
Will Craig	University of Minnesota
Kari Craun	Federal Geographic Data Committee/US Geological Survey
Mike Dolbow	Department of Agriculture
Nancy Doucette	Department of Human Services
Ash Durham	Department of Public Safety
Lon K. Erickson	Department of Corrections
Dan Falbo	Environmental Systems Research Institute
Reno Fiedler	Scientific Technology Corporation
Scott Freburg	Department of Education
Rick Gelbmann	Metropolitan Council/Governor's Council on Geographic Information
Nicky Giancola	Department of Administration
Jeffrey Grussing	United Services Group/Great River Energy
Myrna Halbach	Minnesota Pollution Control Agency
Jerry Hunt	Department of Finance
Randy Johnson	MetroGIS
Phyllis Kahn	House of Representatives
Greg Knopff	Senate State Government Budget Division
Charlie Kost	Southwest Minnesota State University
Mark Kotz	Metropolitan Council
Jonette Kreideweis	Department of Transportation
John Lally	Office of Enterprise Technology
Carolyn LaViolette	Senate State Government Budget Division
Fred Logman	Land Management Information Center
Kathleen Lonergan	Senate State Government Budget Division
Robert Maki	Department of Natural Resources
Lee Meilleur	Legislative Coordinating Commission/GIS Services
Wendy Nelson	Department of Health
Larry Palmer	Department of Agriculture
Charlie Peterson	Management Analysis Division, Administration
Deborah Pile	Department of Commerce
Judy Plante	Management Analysis Division, Administration
Nancy Rader	Land Management Information Center
Victoria Reinhardt	Ramsey County
Dan Ross	Department of Transportation
Ken Saffert	City of Mankato
Brian Shekleton	House of Representatives
Mark Sloan	Clay County
Bill Swing	Wright County
Annette Theroux	Pro-West & Associates
Mark Thomas	MNSCU

Kathy Tinglestad	House of Representatives
Cindy Valentine	Department of Labor and Industry
John Velin	Legislative Commission on Minnesota Resources
Jean Wagenius	House of Representatives
Ron Wencl	US Geological Survey
Mary Zindren	League of Minnesota Cities