MnGeo State Government Geospatial Advisory Council
May 11, 2010 Meeting Notes

Participating:
Members: David Arbeit, MnGeo (Chair); Mary Arveson, Human Services; Mike Dolbow, Agriculture; Jessica Fendos, Employment and Economic Development; Greg Fetter, Commerce; Jennifer Johnson, Corrections; Tim Loesch, Natural Resources; Sean Mangan, Public Safety; Denton Peterson, Health; Craig Rhombs, Education; Tad Schindler, Pollution Control; Cindy Valentine, Labor and Industry; Ed Valencia, OET and Paul Weinberger (for Dan Ross), Transportation. Rebecca Foster, City of Edina, represented the Statewide Geospatial Advisory Council.
Non-members: Chris Cialek, MnGeo; Dan Falbo, ESRI; Mark Kotz, Metropolitan Council; Fred Logman, MnGeo; Nancy Rader, MnGeo; Kent Treichel, Revenue

David Arbeit called the meeting to order. Participants introduced themselves.

Meeting Notes:
There were no changes to the March 12, 2010 meeting notes.

Office of Enterprise Technology Briefing: Technology Governance
Valencia summarized three main OET initiatives:
1. **Governance (iGov)**: This effort provides a concrete plan of action via seven strategies. Four strategies (architecture; IT products and standards; information security; project and portfolio management) will be ongoing and three strategies (data center consolidation; enterprise email; e-licensing) are project-oriented and will sunset as they are completed. Find more information on OET's website under "iGov".
2. **Data Center Consolidation**: The State has approximately 70 data centers and OET is determining how best to consolidate many of them. Outsourcing may be an option for some State needs.
3. **Enterprise Architecture**: In consultation with stakeholders, OET is currently developing procedures to make architectural policy decisions.

Valencia then asked for feedback on what council members most wanted to learn about from his OET report. Cialek asked how data standards will be handled within the architecture? Valencia replied that the process for developing policies, standards and best practices will be worked out with stakeholders, and OET will be asking the affected GIS community to provide feedback on what is needed.

Arbeit noted that MnGeo recently shut down its data center and moved it to OET. OET provides 24/7 power, backup and staffing; MnGeo manages the site remotely and has saved money with the new arrangement. MnGeo can help arrange co-hosting of GIS servers and data for other state agencies that want either to start services or to move their services from in-house to OET.

Arbeit reminded the council that he is a member of OET's Enterprise Architectural Review Board representing the geospatial community and seeks and receives advice from both geospatial advisory councils. Valencia chairs the Board and has added GIS as a standing item on the Board's agendas. Maintaining communication between the GIS advisory councils and the Board is very important.

MnGeo Briefing:

Arbeit covered the following items:

- **Spring 2010 Floods and GIS Activities**: During the recent flood, much progress was made in building a GIS response team to work with Homeland Security and Emergency Management's (HSEM) State Emergency Operations Center (SEOC). A number of state agencies provided staff (Arbeit specifically thanked Mn/DOT, DNR, and the Office of Pipeline Safety) and DNR provided a copy of their Data Resource Site. In addition to providing staff, MnGeo maintained a 24/7 phone line and hosted a daily conference call to coordinate requests for imagery with federal agencies and other states. More training and standardization is clearly needed, but HSEM and SEOC staff are increasingly seeing the value of GIS for their work.
- **Central Minnesota Orthophotos; 2010 FSA Orthophotos; LiDAR**: See handout.
- **Enterprise License Agreement (ELA)**: Thirteen state agencies are currently members of the ELA. The ELA has provided significant cost avoidance to the State so far and more is expected in the coming years.   See handout.
- **NSGIC's Annual Meeting** will be in Minneapolis on September 12-16, 2010. Gopal Khanna, state CIO, has agreed to speak at the introductory part of the meeting. If council members are interested in attending, they should contact Arbeit to find out about a possible reduced member rate.
- **Grants**: Arbeit noted three recent grants that MnGeo and its partners have received from:
  1. **FGDC**: Streamlining the process of maintaining administrative boundaries for cities, townships and unorganized territories.
  2. **EPA**: Further work on National Hydrography Dataset (NHD) editing tools.
  3. **Minnesota Historical Society**: Scanning and indexing original Public Land Survey field notes. See handout.
- **LCCMR proposals**: Arbeit distributed a handout listing all the proposals submitted to the Legislative-Citizen Commission on Minnesota Resources for FY2011-12 funding. Many involve using LiDAR data. MnGeo and the Legislature are working to ensure that data created using these funds is in compliance with standards and guidelines adopted by OET and published by MnGeo and that data is accessible and free to the public unless made private under the Data Practices Act.
- **Legislative Report**: Arbeit submitted five legislative change action amendments to carry out the "housekeeping" changes proposed in the Review of Legacy Language report. They are included in House and Senate state government funding bills.
- **Diagram**: Arbeit distributed a revised diagram representing the relationships between parts of the Minnesota geospatial community. The main change from the previous version is the addition of dashed lines indicating communication between the two advisory councils and the MnGeo committees, workgroups, and communities. Logman added that committees have been asked to write quarterly reports which will be compiled and made available to the councils. All groups are encouraged to communicate in other ways as needed.
- **Feedback**: Arbeit asked for feedback on how MnGeo is fulfilling its mission and expectations so far, noting that comments are welcome at any time, and can be made offline rather than at a meeting.
  - **Dolbow**: Has any progress been made on developing committee webpages that committee members can edit directly?
    Logman replied that these are in-progress.
  - **Loesch**: Does MnGeo have a staffing plan? He expressed concern that present staff are stretched too thin.
    Arbeit replied that staffing and succession planning is in progress. As documented in the Applied Geographics report, MnGeo needs, at minimum, 2.5 more FTE in order to accomplish its core tasks, especially in the areas of coordination and of technical administration. In the current budget climate, however, that has not been feasible. To address this shortfall in the immediate term,

MnGeo applies for and receives some grants and will receive some reimbursement for administrative costs from the ELA and LiDAR projects.

- In the longer term, a possible migration of MnGeo from Administration to OET is under discussion. Succession planning is also beginning since the CGIO (Arbeit) and several other MnGeo staff will likely retire in the next several years. Currently, Arbeit not only serves as CGIO but also directs the Office of Geographic and Demographic Analysis (GDA), which includes the State Demographic Center, the Environmental Quality Board, and the State Archeologist's Office. When Arbeit retires, the position should become solely a CGIO and should not also include directing the GDA. The main sources of additional sustained funding would be a larger appropriation from the legislature and provision of services that people are willing to pay for.

    Dolbow suggested that we revisit the Applied Geographics report recommendations to "recalibrate and readjust" on a periodic basis.

Project updates:
- **Broadband Mapping:** (see summary in handout) Fetter reported that:
    1. ConnectMN (Connected Nation) reported to the Minnesota legislature's Telecom Committee on May 5, 2010. See a PDF of the presentation.
    2. ConnectMN submitted an initial dataset to NTIA on April 30, 2010, representing broadband data from 100 Minnesota broadband providers (83%).
        a. Initial findings include that ~2 million Minnesota households (95%) have access to broadband service of at least 768kbps downstream.
        b. BroadbandStat maps are to be publicly available the week of May 17, 2010.
        c. Two non-responding broadband providers were identified
            i. One is requesting funding for an ARRA project (an RUS BIP proposal, which requires their participation in Broadband Mapping).
            ii. ConnectMN remains hopeful they will obtain 100% participation
    3. Community Anchor Institutions (CAI)
        a. ConnectMN reported ~7,000 identified CAIs (approximately equal to the number in the structures dataset that MnGeo provided to them – see handout for entry on "Critical Infrastructure Data: Structures" – this is a prime example of data collected for one purpose being reused for another).
        b. ConnectMN is working with Commerce and associations of townships, hospitals, counties, etc., to gather contact information at CAI sites to facilitate completion of the Broadband Mapping survey.
    4. Commerce is planning to form a broadband advisory committee; its members likely will be selected via the Open Appointments process coordinated by the Secretary of State Office.
    5. FCC has proposed regulating broadband as a telecommunication service; this is controversial.
    6. ConnectMN will provide the GIS data it collects to MnGeo for distribution; Arbeit will make sure this occurs.

2010 Legislative Session:
Arbeit updated the Council on SF3134 / HF3449 which would encourage enhanced public access to information about projects receiving appropriations. The legislation, however, provides no funding for the effort. Other changes reflect "housekeeping" updates that are described in MnGeo's Review of Legacy Language report. See handout for details.

Workgroups:
See handout for updated list of committees, workgroups, and communities.

Geospatial Commons Workgroup: Cialek provided an overview of the workgroup's mission: to help streamline the process of discovery, access and use of Minnesota's GIS data. The workgroup (a joint effort of the MetroGIS Technical Leadership Workgroup and the MnGeo Standards Committee) has drafted a charter. It specifies that they will develop a prototype of a "next-generation" enterprise-focused site that will provide a single identity in one place for the public to access Minnesota GIS data, especially that from state agencies. There will still be roles and responsibilities for many agencies, and likely there will be options to host data centrally and to have a federated network of sites maintained by agencies inhouse. The workgroup is evaluating several candidate applications, including ESRI's Geospatial Portal Extension and a web enterprise suite from Compusult.

The workgroup is conducting a survey of data users, and council members are encouraged to view the survey results-to-date and to take the survey. Kotz, the workgroup chair, added that the site should be viewed as a community-owned resource that the MN GIS community can contribute to, rather than a site providing info one-way out from state agencies. For more info, including a link to the survey, see the Geospatial Commons workgroup website.

Public Review of Draft National Address Data Standard: Kotz reported that the MetroGIS Address Workgroup and the MnGeo Standards Committee are coordinating a state response to the draft FGDC United States Thoroughfare, Landmark, and Postal Address Data Standard – note that although addresses are related to geocoding, this draft standard is NOT a geocoding standard. Comments should be submitted to Kotz by May 17, the meeting will be held May 26, and final comments are due June 16. For more information, click here.

Geocoding Workgroup: Dolbow and Treichel have volunteered to co-chair this workgroup. Logman drafted a charter, based on the format used by the Geospatial Commons workgroup, and the co-chairs are refining it. They intend to focus their efforts on core needs, especially the need to batch geocode Minnesota addresses. They propose using a small "skunkworks" group of 3-4 people to work on the technical details and bring results and questions to the rest of the workgroup. Dolbow and Treichel will be in the small group, and Arvesen will ask John Wiersma from the MN Department of Human Services if he is also able to participate. Additional members are also needed for the larger workgroup to provide input on requirements from agencies that have business needs for geocoding, especially human services. The co-chairs asked: Is the charter OK? Is the approach of the small and large group OK? Members did not voice any objections.

Presentation: DNR GIS Organization, by Tim Loesch
Loesch provided an overview of how GIS is organized, governed and funded at the MN Department of Natural Resources. See slides.

Agency Issues and Needs: Datasets that do not fully comply with standards:
Discussion postponed to a future meeting due to time constraints.

2012-3 Budget – Geospatial Initiatives that MnGeo Should Carry:
Dolbow suggested an initiative to facilitate acquisition of proprietary LiDAR data from several counties not covered in the current LiDAR collect; the goal is to complete statewide coverage of LiDAR available to the public at no charge.

Members should let Arbeit know of any other possible initiatives.

Future Meetings:
The next state government council meeting will be July 13, 2010. The September 14 meeting needs to be rescheduled since it conflicts with the NSGIC Annual Meeting – Logman will contact council members about a new date.

Meeting adjourned.

Meeting notes by Nancy Rader and Fred Logman.

# MnGeo State Government Geospatial Advisory Council Meeting
## PROJECT UPDATES
July 13, 2010

2010 Metro Orthoimagery

Eleven of thirteen East-Central MN counties have been flown this spring for high-resolution 4-band digital imagery from which stereo and ortho-rectified data products will be produced. The project is being funded by the DNR, Metropolitan Council, NGA (through the USGS) and Metropolitan Mosquito Control District. MnGeo is managing federal and vendor contracts and interagency agreements.

- Surdex Corporation began flying on April 7. Due to early spring weather, flights were curtailed after April 18. Data collection status:
    - Wright, Sherburne, Isanti and Chisago Counties collected at 20-inch resolution
    - Five Metro counties collected at 1-foot resolution
    - Dakota and Scott counties collected at 6-inch resolution
    - Rice and Goodhue counties not collected due to early leaf-out conditions; will be rescheduled Spring 2011
- The state is also exercising an unsolicited option proposed by the vendor for increased horizontal accuracy.
- Sample data have been received, evaluated and accepted for processing
- AT, color balancing and county composite mosaic generation is underway
- Vendor on-site status meeting held in St. Paul earlier this month.
- Media for stereo imagery has been delivered to the vendor, who will provide those data to DNR early in July.
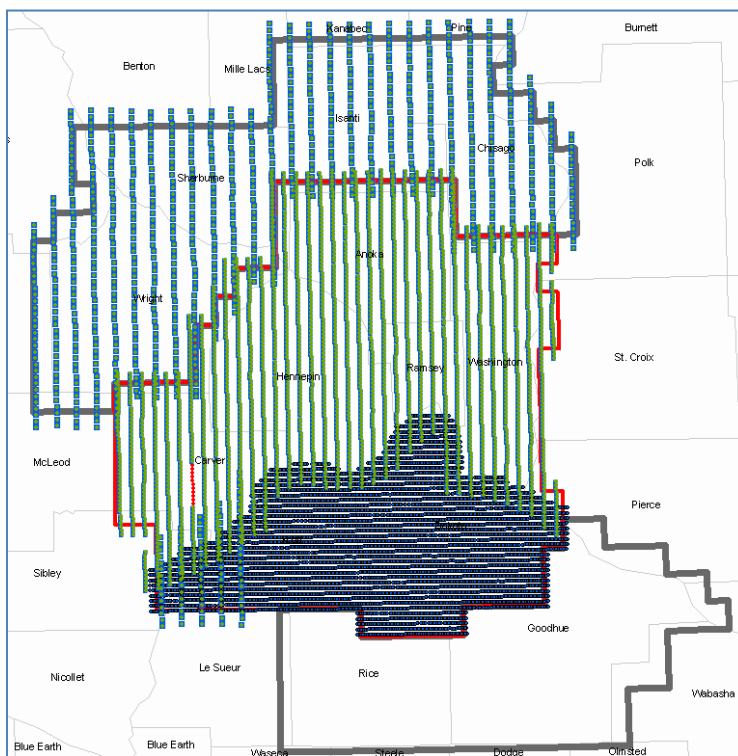
2011 Orthoimagery Planning
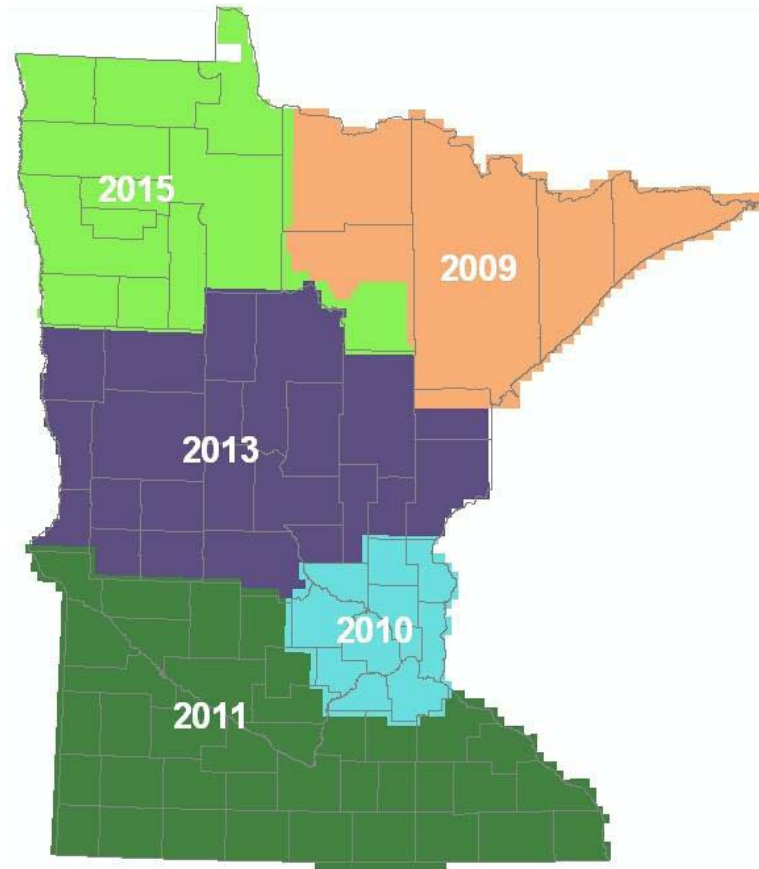
Thirty-six southern Minnesota counties will be flown next spring as the next phase of a statewide, leaf-off project (see map). Informational materials have been prepared and county partnerships are being sought. Three information meetings were held to gauge interest in local buy-ups: Marshall – June 22; Rochester and Mankato – July 1.

For more information on these projects, see the spring air photo project website or contact Chris Cialek, MnGeo, at chris.cialek@state.mn.us or 651-201-2481.

2010 LiDAR

Phase one of the Minnesota Elevation Mapping Project got underway in early April and continued through the month. The weather and ground conditions this spring across Minnesota made for very challenging collection conditions. A rapid and early onset to spring with heavy snow cover, and flooding compressed an already small window of opportunity for aerial acquisition flights. The flights started April 8th and continued through May 4th when crop development (alfalfa) and vegetation leaf out shut

down flight operations. During that time 13,800 square miles or 80% of the project area was captured (see graphic). The remainder of the project area will be collected this fall.

Local project partners provided real time updates of the ground conditions using digital photography. This information was critical, providing guidance for the LiDAR vendor and to the project team. Project partners have also supplied ground validation points for 17 of the 25 counties. The remaining areas will be completed by MnDOT survey crews this summer.

Data deliveries are expected to begin in early October and continue through the winter months.

The project team is currently preparing work orders for the Arrowhead and Metro regions and anticipates that these areas will be collected in the spring of 2011.

Detailed status and project information can be found on the [Minnesota Elevation Mapping Project](#) web site.
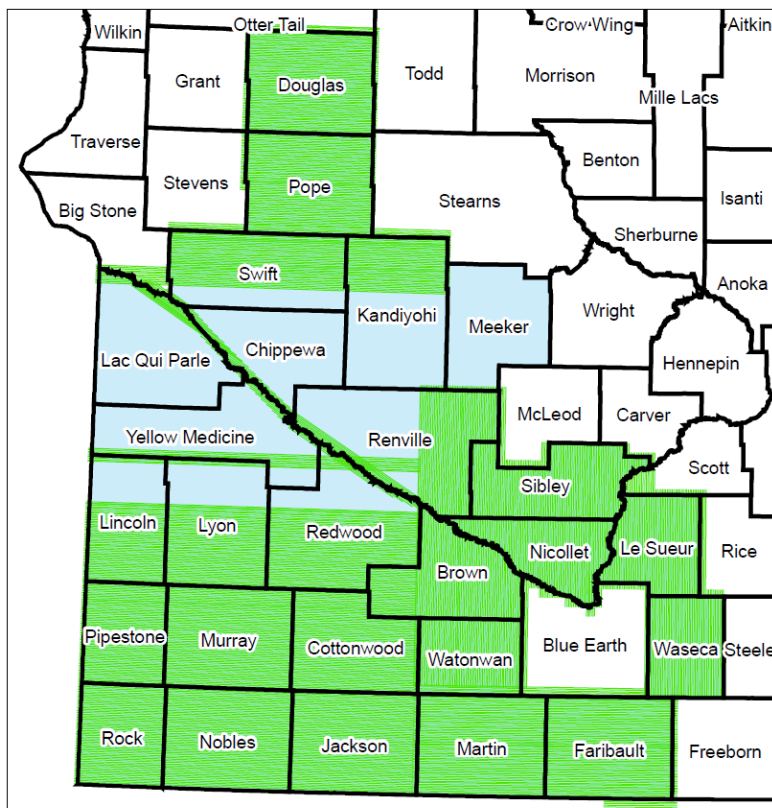
LiDAR Project Phase 1 Collection Status
Spring Collect - 2010

Legend
— Completed in Spring 2010
▨ To be Completed in Fall 2010

Broadband Mapping

1. In May 2010, ConnectMN launched its BroadbandStat interactive map application at: http://connectmn.org/mapping/_interactive_map_interface/?q=map

2. On July, 1 2010, Connected Nation submitted an application to the NTIA for supplemental funding to extend the broadband mapping project for three additional years (to five years), to establish local/regional multi-constituent technology planning teams, and to enlist students from Minnesota's high schools, community colleges, and universities as technology ambassadors within their communities. The application also proposed county-level research on technology usage, needs, and barriers to adoption. Deadline for awarding funds is Sep 30, 2010.

3. On July 6, 2010, an Open Appointment notice from the Secretary of State's office announced that the Commerce Commissioner will be appointing a broadband advisory task force of 15 members. Applications are due July 27, 2010. The advisory task force will assist in the preparation of annual reports to the legislature on Minnesota's progress in achieving the broadband goals set by 2010 law and recommendations for achieving the goals. (If the supplemental funding from NTIA is also awarded to CN, the task force will be integrated into the additional broadband activities being funded to provide guidance and oversight.)

Field Notes

The Minnesota Historical Society has awarded a Minnesota Historical and Cultural Heritage Grant to MnGeo to scan, index and make more accessible Minnesota's General Land Office (GLO) Field Notes. The field notes were created for the federal government between 1847 and 1911, prior to opening Minnesota to land sale and to European settlement.

MnGeo will work in partnership with the Minnesota Historical Society, Office of the Secretary of State, Minnesota Department of Transportation, Minnesota Association of County Surveyors and the U.S. Bureau of Land Management to digitize, index and publish via the web these exceptional documents. The project's anticipated completion date is June 30, 2011.

Contained in 1410 volumes totaling nearly 250,000 pages, the notes serve as the legal foundation for all land ownership in the state. All property titles in Minnesota ultimately rest on these descriptions. They are also uniquely valuable for historical, environmental, genealogical and legal purposes and are the only comprehensive representation of Minnesota's landscape prior to development. However, access to the actual notes has posed challenges due to their unique nature and fragile condition. This project will ensure that the public will have full access to them for generations to come.

Some of the field notes and all of the maps derived from the notes are currently available online:

- **Selected field notes**: See a GIS/LIS News article about a pilot project to scan and index the notes; selected notes from Anoka, Chisago, Hennepin, Isanti, Pipestone and Traverse counties are online.

- **GLO maps**: Over 3,600 GLO maps derived from the notes are already available for download at www.mngeo.state.mn.us/glo/ and will be tied to the field notes.

Minnesota Historical and Cultural Heritage Grants are made possible by the Minnesota Legislature from the Arts and Cultural Heritage Fund created with passage of the Clean Water, Land and Legacy Amendment to the Minnesota Constitution in November 2008. The grants are awarded to support projects of enduring value for the cause of history and historic preservation across the state.

More Information

For more information about the project, check the project webpage or contact John Hoshal at john.hoshal@state.mn.us, or 651-201-2482.

Critical Infrastructure Data: Structures

The initial phase of the critical infrastructure data project, funded by a 2008 FGDC CAP grant, has been completed. The project has received an additional $25,000 grant from the U.S. Geological Survey to add new data to the prototype web application, to enhance the security and accessibility of the data, and to update the 10K maps that show the infrastructure data on a U.S. National Grid base. The State Fire Marshall's Office has agreed to review the data on fire stations.

The project activities and deliverables can be found on the project landing page. http://www.mngeo.state.mn.us/committee/emprep/structures/index.html

INTERESTED IN PARTICIPATING?

please contact:

Chris Cialek
Minnesota Geospatial Information Office (MnGeo)
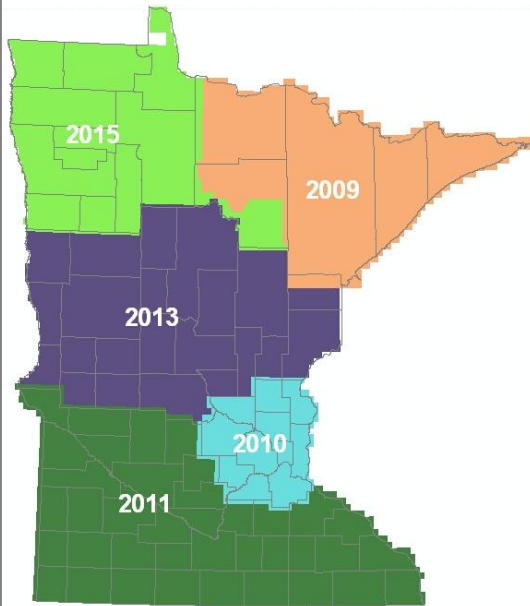651-201-2481
chris.cialek@state.mn.us

Or

Steve Kloiber
Minnesota Department of Natural Resources
651-259-5164
steve.kloiber@state.mn.us

Anticipated Schedule

PARTNERS

This project is collaboratively funded. Project partners vary from one phase to the next. Funding partners thus far include:

NORTHEAST MINNESOTA
• MN Department of Natural Resources
• MN Pollution Control Agency
• U.S. Geological Survey
• St. Louis County

EAST-CENTRAL MINNESOTA
• MN Department of Natural Resources
• Metropolitan Council
• U.S. Geological Survey
• Dakota County
• Scott County
• Metropolitan Mosquito Control District

ADDITIONAL PARTNERS
• MN Department of Transportation
• MN Geospatial Information Office

MORE INFO @
http://www.mngeo.state.mn.us/chouse/airphoto/

Minnesota Spring Aerial Imagery Project

Spring Leaf-Off Image

Summer Leaf-On Image

WHY SPRING IMAGERY?

Spring leaf-off aerial imagery is important for a variety of land management and planning activities including:

- Transportation/urban planning
- Natural resource assessment
- Water/flood management
- Emergency response
- Utility/facility siting

Spring leaf-off imagery provides a clear view of the ground conditions underneath the tree canopy, which can obscure infrastructure and other important mappable features.

Statewide leaf-off imagery has not been collected since 1991. The National Agricultural Imagery Program (NAIP) has acquired imagery for the entire state on a number of occasions since then, but only during summer leaf-on conditions. The goal of the Spring Aerial Imagery Program (SAIP) is acquire statewide imagery in leaf-off conditions.

BASELINE PROJECT

The State of Minnesota has provided funding through the Environmental and Natural Resources Trust Fund for a phased update of the National Wetland Inventory. The update of the NWI requires up-to-date, spring leaf-off aerial imagery. The State is seeking partnership opportunities to leverage this funding to acquire high quality, high-resolution spring imagery statewide.
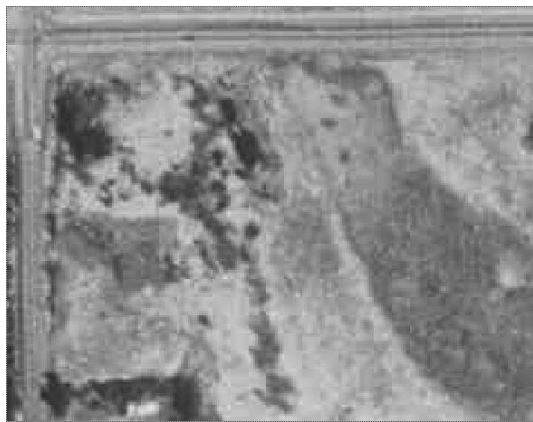
1991 spring 1-meter black and white

2009 spring 1-foot natural color

2009 spring 1-foot color infrared

The State expects to have funds sufficient to provide 0.5-meter resolution imagery acquired with four spectral bands, such that imagery can be displayed as either natural color or color-infrared. The imagery will be ortho-rectified to create map-ready images with a horizontal accuracy of 11.6 feet (3.5 meters) or better (expressed as root mean square error).

PARTNERSHIPS

Phases of the spring aerial imagery program conducted in 2009 and 2010 used partner funding, added to existing State funds, to increase the size of the acquisition area and to improve the resolution. The State is currently seeking additional partners to enhance the imagery acquisition for upcoming phases in southern, central, and northwestern Minnesota.

COST

The precise cost of imagery for each phase won't be known until a contractor is selected through a competitive process, which will ensure the best value.

As an example, however, the average unit costs from the first two phases of SAIP provided 0.5-meter resolution imagery for $16/mile^2, and 1-foot resolution imagery for $41/mile^2.

2011-2012 MAIN PROPOSAL

PROJECT TITLE: Common Ground – The Minnesota Environmental Mapping Commons

I. PROJECT STATEMENT

Minnesota is among the nation's leaders in using GIS to protect its environment. Forty years ago the LCMR funded a system to help protect the state's lakes. Before GIS existed, this "watershed" project mapped land use and modeled environmental impacts of development. Since then, Minnesota's investments in data to guide environmental policies and practices have been impressive: imagery, LiDAR, atlases, wetlands, contaminated sites, impaired waters, wells, storage tanks, feedlots. The investments continue, but a persistent complaint remains – data cannot be quickly assembled to inform policies or decisions. We need seamless access to data, models and maps to protect our resources – especially surface and groundwater.

Recent flood emergencies usefully illustrate the need and project goals. Imagine flooded rivers inundating areas containing hazardous wastes, storage tanks, wellheads or feedlots with high concentrations of contaminants. Rising waters cover these sites, carrying contaminants into a network of streams, rivers and lakes or to aquifers through pervious soils. Result: degraded surface water and groundwater. As stewards of our environment, we must be able to quickly identify flooded areas, pollution sources exposed to floods, and environmental risks from contaminants transported "downstream." This project would accomplish that.

Working with state agencies, local governments, academia, nonprofits, and the State's Geospatial Advisory Councils, MnGeo will implement a "public commons" for finding and downloading environmental data -- the Environmental Mapping Commons, along with an interactive mapping and modeling system (ECOView) that uses "real-time" data feeds from state, local and federal agencies. ECOView will use new methods for publishing map services and model inundated areas, contaminant migration through water networks, and underground impacts on groundwater through diffusion. The project builds on work of a Geospatial Commons work group chartered by MnGeo and tools developed for emergency response.

II. DESCRIPTION OF PROJECT ACTIVITIES

Activity 1: Establishing Common Ground   **Budget: $ 35,000**
Project advisors will meet shortly after the start date, followed by retreats and workshops to strengthen stakeholder commitment and refine project scope and priorities. Workshops will be held at various locations around the state to ensure active stakeholder participation.

Outcome	Completion Date
1. Initial meeting of project advisory committee	July 22, 2011
2. Environmental Commons "Kick-Off" retreat	August 19, 2011
3. Design priorities and detailed technical specifications finalized	September 16, 2011

Activity 2: Create Environmental Commons "One Stop Shop"   **Budget: $ 130,000**
Create a searchable catalog of all environmental data, mapping sites, and web services. Web services use open standards used to integrate data from multiple sources in <u>real-time</u>. The Commons will tie together the Data Deli, DataFinder, and MN Geospatial Clearinghouse.

Outcome	Completion Date
1. Interface for "Environmental Commons" designed	December 31, 2011
2. Existing data, mapping, and services identified and cataloged	March 31, 2011
3. Interface for "Environmental Commons" tested and implemented	June 30, 2012

Activity 3: Develop Real-Time Geospatial Web Services   **Budget: $ 135,000**

Using best practices, MnGeo and technical contractors will develop geospatial web services needed for real-time integration of data. The team will work with organizations that hold data to develop web services where they do not already exist and enhance other services, if needed.

Outcome	Completion Date
1. Needed data sources not supported by web services documented	March 31, 2012
2. Services needed to feed integrated map services developed	June 30, 2012

Activity 4: Environmental Commons Map Viewer - ECOView   **Budget: $ 125,000**

Design and implement an integrated map viewer that presents available data through an easily used map interface. ECOView will assemble data in real-time so that it will be up-to-date, be accessible to the public through standard web browsers, and require no special GIS skills.

Outcome	Completion Date
1. ECOView (Beta): Environmental Commons Map Viewer completed	September 30, 2012
2. ECOView (V1): Environmental Commons Map Viewer available	December 31, 2012

Activity 5: Environmental Modeling and Analysis Prototypes   **Budget: $ 250,000**

Develop prototype "flood inundation" and "water network trace" models. The inundation model will use elevation data to identify areas affected by a range of crest levels of the Minnesota, Red, and Mississippi rivers. The trace model will use high-resolution hydrography network data to identify downstream impacts of surface water contamination.

Outcome	Completion Date
1. Complete flood inundation and impact model prototype	February 28, 2013
2. Complete surface water trace model prototype	March 31, 2013
3. Models integrated into Environmental Commons Map Viewer	June 15, 2013

III. PROJECT STRATEGY

A. Project Team/Partners

- Sponsor: David Arbeit – Geospatial Information Officer, MnGeo (In-kind)
- Project Staff: Fred Logman (Funded), MnGeo staff (In-Kind and funded)
- Technical Consultants: TBD (Funded as contractors)
- Web Support and Hosting: MnGeo (Partially funded)
- Advisors: EQB, DNR, Agriculture, Health, BWSR, organizations on state Geospatial Advisory Councils (including DNR, Agriculture, MPCA, Health, BWSR, Metropolitan Council, USGS, US Fish & Wildlife, 1000 Friends, University of Minnesota)

B. Timeline Requirements
This project will be completed and a final report prepared within two calendar years.

C. Long-Term Strategy and Future Funding Needs
This is an important component of ongoing work to develop a statewide "enterprise" GIS solution, coordinated and supported by MnGeo. Systems implemented will be hosted by MnGeo in compliance with its legislative mandate specified in 2009 legislation as MS 16.99. The project complements a plan being developed by a team sponsored by MnGeo, DNR, MnDOT and the Metropolitan Council for a "One Stop" solution for geospatial data and services. Environmental Commons will be maintained by MnGeo or its designees and located in a secure data center maintained by the Office of Enterprise Technology. Future funding may be needed to fully implement and support the modeling prototypes.

The Minnesota Environmental Mapping Commons

The Environmental Mapping Commons will provide a "One Stop" source for locating data and mapping services needed to manage and protect Minnesota's resources, infrastructure, and people. Illustrated here are three examples of specialized web mapping services created by state and local agencies and that were available to support responses to the 2010 spring floods.

The conceptual diagram illustrates how data available through the Environmental Mapping Commons would be used to support ECOView and web mapping applications like those shown here.
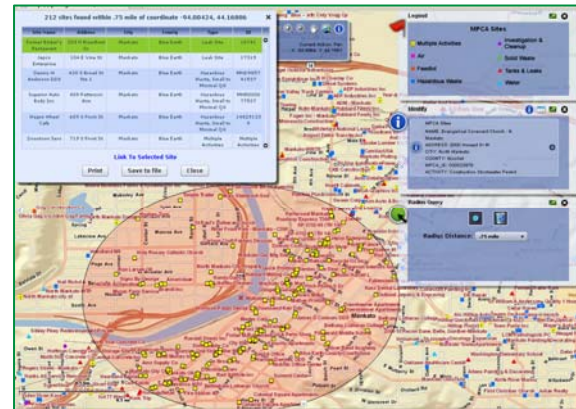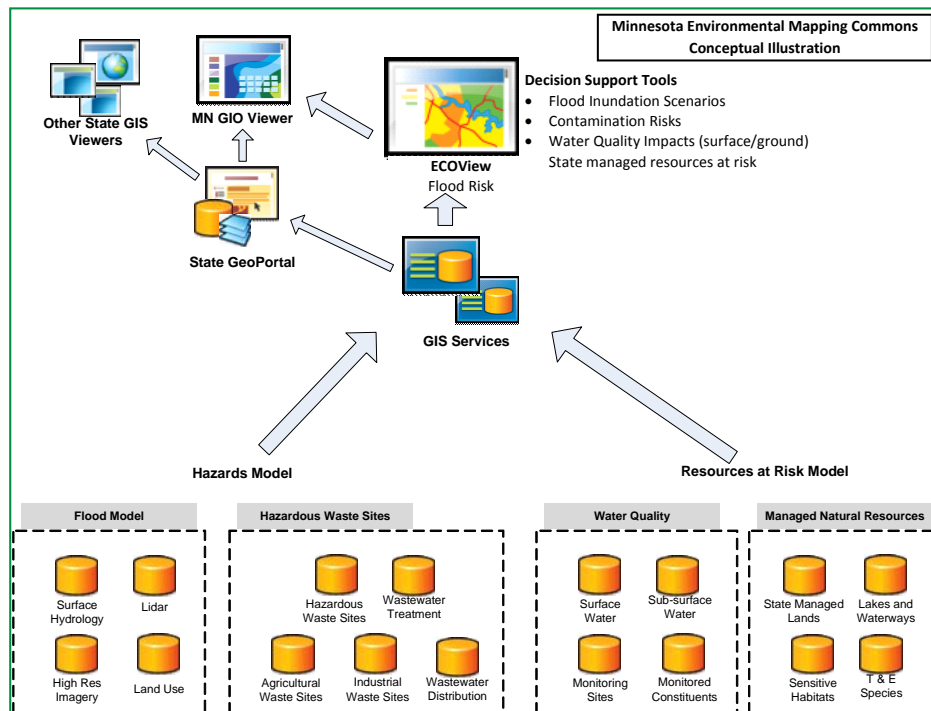

MPCA "What's in My Neighborhood" viewer showing monitored sites, identifying hazardous sites within ¾ mile of Mankato bridge.
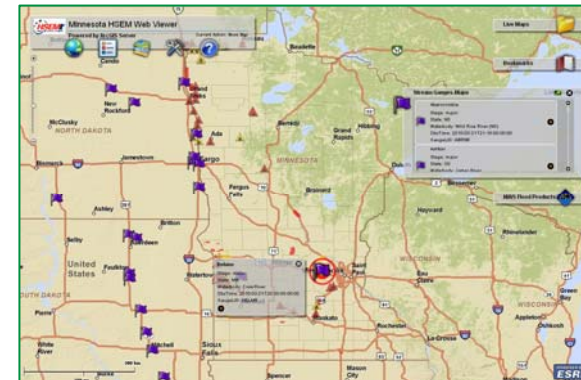
State Emergency Operations Center Viewer showing "real-time" data from stream gauges, highway closures and weather service.

Minnesota Environmental Mapping Commons Conceptual Illustration

Decision Support Tools
- Flood Inundation Scenarios
- Contamination Risks
- Water Quality Impacts (surface/ground)
- State managed resources at risk

Other State GIS Viewers • MN GIO Viewer • ECOView Flood Risk • State GeoPortal • GIS Services • Hazards Model • Resources at Risk Model

Flood Model: Surface Hydrology, Lidar, High Res Imagery, Land Use

Hazardous Waste Sites: Hazardous Waste Sites, Wastewater Treatment, Agricultural Waste Sites, Industrial Waste Sites, Wastewater Distribution

Water Quality: Surface Water, Sub-surface Water, Monitoring Sites, Monitored Constituents

Managed Natural Resources: State Managed Lands, Lakes and Waterways, Sensitive Habitats, T & E Species

Moorhead's viewer showing inundated areas at projected cresting for spring 2010, derived from LiDAR overlayed on imagery data.
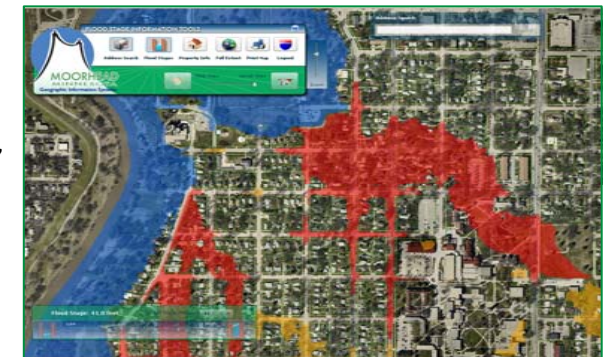
Minnesota Environmental Mapping Commons

2011-2012 Detailed Project Budget

IV. TOTAL TRUST FUND REQUEST BUDGET *[2]* years

BUDGET ITEM	AMOUNT
Personnel: Manager, MnGeo: 0.25 FTE (Sal & Ben, 24 mo. @ $90,000/yr) Analyst, MnGeo: 0.75 FTE (Sal & Ben, 24 mo. @ $80,000/yr)	$ 165,000
Contracts: Web Portal -- Consultant on State Master Contract (TBD) - $50,000 Data Integration & Services -- Consultant contracts (TBD) -- $100,000 Env Commons Map Viewer -- Consultant contract (TBD) - $75,000 Environmental Modeling -- Consultant contract (TBD) - $240,000	$ 475,000
Equipment/Tools/Supplies: Dedicated Environmental Commons Server and Storage Server estimate (4 Quad Core Processors, 128 GB Memory, 3 TB Storage)	$ 30,000
Acquisition (Fee Title or Permanent Easements): NA	$ -
Travel: *Travel to Workshops and Retreats for Team and Stakeholders*	$ 5,000
Additional Budget Items:	$ -
TOTAL ENVIRONMENT & NATURAL RESOURCES TRUST FUND $ REQUEST	$ 675,000

V. OTHER FUNDS

SOURCE OF FUNDS	AMOUNT	Status
Other Non-State $ Being Applied to Project During Project Period: MnGeo currently has funding from the USGS to develop procedures to improve and maintain a statewide hydrologic dataset. The data ties all surface water features (streams, lakes, wetlands, ditches, etc.) into a unified network that can be used to trace downstream impacts. The data and tools resulting from this EPA-funded project will support hydrologic network trace modeling for Environmental Data and Mapping Commons. A recently awarded grant of $200,000 will support work that will begin in the summer of 2010 and continue into 2012. The USGS has invited MnGeo to submit a proposal for an additional $75,000 for this project. About 75,000 of this amount is estimated to relate directly to this project.	$ 75,000	*Secured Pending*
Other State $ Being Applied to Project During Project Period: Software Licenses: ArcGIS Server (20,000); Hosting Charges for Server (2,500)	$ 22,500	
In-kind Services During Project Period: MnGeo: Arbeit, Cialek, Maeder, Rader, IT Staff -- (1500 hrs, est.) ~ $75,000 Partners and Advisory Groups: -- (1000 hrs, est.) ~ $50,000	$ 125,000	
Remaining $ from Current ENRTF Appropriation (if applicable):	$ -	
Funding History:	$ -	

Common Ground: The Minnesota Environmental Mapping Commons

Project Manager

David Arbeit is Minnesota's Chief Geospatial Information Officer, chairs the State Government Geospatial Advisory Council, is an ex-officio member of the Statewide Geospatial Advisory Council, and serves on the state's Information Technology Architectural Review Board, created to advise the state CIO. He also directs the Office of Geographic and Demographic Analysis, a division of the Minnesota Department of Administration. As GDA Director, he oversees programs of the Minnesota Geospatial Information Office, the State Demographer, the State Archaeologist, and the Environmental Quality Board. David holds an undergraduate degree in Engineering and master's and doctoral degrees in Regional Planning from Cornell University. Dr. Arbeit served as Director of the Land Management Information Center 1994 until 2009, when he was appointed as the state's first Chief Geospatial Information Officer. David has worked with geospatial technologies for more than 40 years as an educator, researcher and practitioner in municipal, county and state government.

MnGeo: The Minnesota Geospatial Information Office

The Minnesota Geospatial Information Office, known as MnGeo, was established in May 2009 as the first state agency with legislatively defined responsibility for coordinating GIS within Minnesota.

It was created following an extensive analysis of GIS use in state government and as a strategic Drive to Excellence initiative to pursue an enterprise strategy to implementing GIS within the state. It is headed by the State's Chief Geospatial Information Officer and advised by state agencies through the State Government Geospatial Advisory Council and other stakeholders through the Statewide Geospatial Advisory Council – both created by legislative action.

MnGeo succeeds the Land Management Information Center. Created in 1977 as the first state agency anywhere exclusively devoted to providing GIS services within state government, LMIC's role had evolved since that time from a project-oriented program to Minnesota's "ad hoc" GIS coordinating organization. With the passage of legislation to create MnGeo, LMIC ceased to exist. However, all of LMIC's functions essential to MnGeo's coordination responsibilities, along with LMIC's resources, were transferred to the new office. MnGeo works closely with the Office of Enterprise Technology in fulfilling its mission: *Improving services statewide through the coordinated, affordable, reliable and effective use of GIS*.
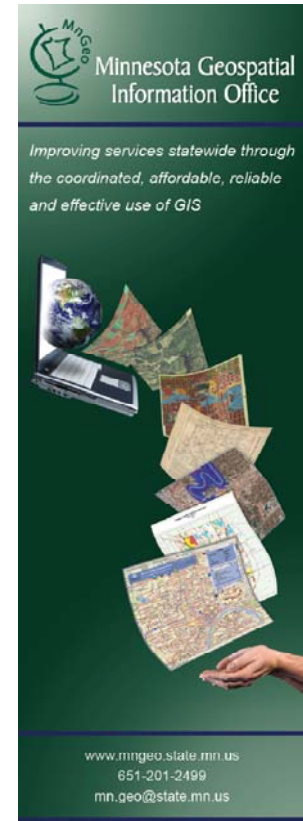
MnGeo staff is recognized both within the state and nationally for its dedication, capabilities and successes. Equally important, MnGeo has a successful record of leading collaborative projects that have resulted in Minnesota's reputation as a leader in the GIS field. With active involvement of partners participating on the Common Ground project team, this project will add to Minnesota's reputation for innovation and success.

Committee or Workgroup: Digital Cadastral Data Committee (DCDC)

Co-chairs: Curt Carlson, Regional Multiple Listing Service, Sally Wakefield, 1000 Friends of Minnesota

FY 10 Work Plans and Objectives: Work to research and develop support for statewide land records modernization.
Our work is focused in three areas –
- Parcel data transfer standard/best practice – research and propose a model for sharing integrating parcel data across the state.
- MN Control Point Inventory – make recommendations and monitor progress toward a unified control point inventory for MN.
- Promote potential funding for control and cadastral data through recorder's compliance fee – Document fee structure and how these funds can be used for data update/development to support digital parcel data.

FY10 Accomplishments to Date:
- Create and share matrix of potential transfer attributes based on MetroGIS parcel data standard for counties to review
- Coordinated with standards committee to present and discuss potential parcel data standard/best practice
- Host speaker to learn more about recorder fee and potential to support parcel data development and other topics
- All meetings held via ITV and recorded for web access

Meetings: 10 AM on the first Friday of even-numbered months.   Meetings are at the Centennial Building with ITV connection to several sites across the state.
Future meetings scheduled: July 23, October 1, and December 3, 2010.

Committee or Workgroup: Digital Elevation Committee

Co-chairs: Tim Loesch and Ron Wencl

FY 10 Work Plans and Objectives:
Strategies:
- Assist in the development of partnerships that support data collection projects
- Deliver technical standards and information to partners to ensure coordinated data collection
- Support data services that host data resources and deliver them economically

Goals:
- Develop a work team to investigate funding opportunities including prospects for LCCMR grants
- Populate the Statewide Elevation and Imagery Inventory (SEII) with information that links data collection projects
- Create and maintain a website containing all critical documents, white papers, guidelines, policies and best practices to meet a statewide elevation data goal
- Design and present a workshop session that addresses the most important questions of county and local government
- Update brochure
- Develop a work team that will establish critical technical specifications for high resolution digital elevation data that meet FEMA requirements
- Develop a work team that will study data collection costs and establish guidelines to guide budgets
- Prepare a white paper and briefing paper for a legislative proposal
- Work with DNR and others to determine physical specifications required to serve very large elevation databases
- Establish architecture to optimize data access
- Establish governance policies that assign roles and responsibilities for data import, maintenance and access

Regional Activities
Red River Basin – The spring flooding in the Red River Basin focused attention on the LiDAR data acquired in 2008. Several partners in the Red River Basin Mapping Initiative supported data distribution and applications development to allow access to the high resolution digital elevation data in preparation for and during the event. Tim Loesch, Mn DNR, processed the elevation data to produce contours for much of the region and Chuck Fritz, International Water Institute, distributed data to numerous organizations. Several web services were also stood up to provide data access for flood activities. Coordination efforts continue to complete LiDAR acquisition for adjacent Minnesota counties.

Meetings: Last meeting: May 25, 2010 and the next scheduled meeting is: August 31, 2010

Committee or Workgroup: Emergency Preparedness Committee (EPC)

Chair: Steve Swazee

FY 10 Work Plans and Objectives:
- As requested by competent authority, be prepared to provide geospatial support in the event of Red River (and other spring) flooding.
- Through MOU or other appropriate documentation, create an official recognition of "Go Team" status that will facilitate FEMA reimbursement for disaster related response activities.
- Work closely with MnGeo and HSEM to develop geospatial resources "typing" in line with NIMS/EMAC concepts.
- Complete development of the GEMS training program so that it is available to quantify the geospatial and emergency management training of GIS professionals.
- Significantly upgrade and refine current EPC public web services as a means to promote outreach, education, and transition as much of the SharePoint effort as possible to public access.

Other challenges and opportunities facing the EPC going forward include:
- Developing a formal understanding of the EPC's roles and responsibilities within Minnesota government,
- Continuing the Minnesota Structures Collaborative through further technical developments and outreach to the emergency services sector, and
- Supporting other regional and national efforts that have compatible goals and missions.

Accomplishments
- Concluded the CAP Grant "Minnesota Structures Collaborative" in partnership with MnGeo,
- Released the final version of the 2009 Red River After Action Report,
- Provided lectures at the WLIA Regional Conference, Metropolitan Emergency Managers Association Quarterly Meeting, and GITA National Conference,
- Activated the "Go Team" in partnership with MnGeo in anticipation of spring flooding,
- Commenced participation in a project that will introduce geospatial topics in the U.S. Fire Academy's national curriculum, and
- Held discussions with the leadership of MN Voluntary Organizations Active in Disasters concerning opportunities for partnerships.

Meetings: Next meeting 2:00PM, June 10th, 2010, MESB Building in St. Paul.

Committee or Workgroup: Hydrography Committe

Co-chairs: Susanne Maeder and Mark Olsen

FY 10 Work Plans and Objectives:

- Plan for an integrated approach to statewide hydrography data management
- Plan for implementation, use and maintenance of the framework
    - Refine roles and responsibilities
    - Implement MN NHD data update process
    - Implement event creation and maintenance process
    - Foster development and sharing of applications and tools
    - Integrate DNR 24K hydrography data improvements into MN NHD (2008 EPA Grant)
- Plan for future maintenance and stewardship of MN Watershed Boundaries
- Continue Phase 1 wetlands mapping activity and maintenance strategy
- Continue development of storm water mapping guidance

FY10 Accomplishments to Date:
- Submitted draft standard for Digital Stormwater System Data Exchange to Standards Workgroup – 3/1/2010
    - Digital Stormwater System Data Exchange reviewed at Standards Committee Meeting – 4/16/2010
- Award of USGS cooperative agreement grant: NHD Stewardship – June 2010

Past Meetings:
- December 10, 2009 – Stormwater Standards Workgroup
- February 24, 2010 - Statewide hydrography data management (MnGeo, DNR, MPCA)
- January 27, 2010 – Stormwater Standards Workgoup
- March 10, 2010 - US/Canada Hydrographic Data Harmonization meeting (DNR, MnGeo, MPCA, USGS)

Future Meetings:
- Joint Elevation/Hydrography Committee meeting on Lidar and Hydrography – TBD

Committee or Workgroup: Standards Committee

Chair: Mark Kotz

FY 10 Work Plans and Objectives:
- Work with the Stormwater Standard Workgroup to approve a Standard for Digital Stormwater System Data Exchange.
- Work with the MetroGIS Address Workgroup to submit a Minnesota response to the draft national address data standard.

FY10 Accomplishments to Date:
- Reviewed and provided detailed comments for draft stormwater data exchange standard

Dates of FY10 Meetings: The Committee meets irregularly, only when there is a need. The only FY10 meeting was held May 16th.

Future Meetings: No meetings are scheduled at this time.

Committee or Workgroup: Geospatial Commons Workgroup

Chair: Mark Kotz

FY 10 Work Plans and Objectives:

Business Objectives for the project are:
- Define the needed functions of the Commons
- Implement a test bed version of the Commons
- Make recommendations and develop a project plan for a full production Commons
- Report to MnGeo and the geospatial community

FY10 Accomplishments to Date:
- Project charter approved
- Draft project plan awaiting approval of executive sponsors
- Implementation planning has begun

Past Meetings: Workgroup generally meets the first Thursday of each month at 1:30.

Future Meetings: See above

Committee or Workgroup: Geocoding Workgroup

Co-chairs: Mike Dolbow, Kent Treichel

FY 10 Work Plans and Objectives:

- Charter Drafted
- First Work Team Meeting

FY10 Accomplishments to Date:
- Charter Finalized
- Initial Timeline Sketch Approved
- Initiated Review of Scope & Requirements

Dates of FY10 Meetings: First Work Team Meeting was June 11, 2010

Dates of Future Meetings: July 2010 Meeting TBD

U.S. National Grid Location Marker Proposal

To complement the United States National Grid (USNG) method for defining location, *a standardized system for marking locations with USNG coordinates* is being considered -- it would be used when and where appropriate and desired.

The proposal has been developed by MnGeo's Emergency Preparedness Committee after discussion with experts within and outside of the state.

The Best Practices Proposal

USNG Location Marker: Minnesota "Best Practices" Proposal Draft 2.1, July 7, 2010 (11 p., 1.2 MB, PDF)

The document is divided into four main sections:

1. U.S. National Grid background
2. The proposal, with example graphics showing vertical and horizontal signs
3. Amplifying points, issues and suggested changes
4. More information on the USNG

Public Review Period

Please email comments to Steve Swazee, chair of the Emergency Preparedness Committee, by **September 15, 2010**, at steve.swazee@state.mn.us

A 25-page revision history and received comments compendium is available upon request to Steve Swazee.

MN GIS/LIS NEWS

The Newsletter of the Minnesota GIS/LIS Consortium

MN Geospatial Commons Being Planned   By Mark Kotz, Metropolitan Council

A joint MetroGIS and MnGeo advisory workgroup is moving forward at full steam to define and facilitate a test-bed implementation of what they are tentatively calling the "Minnesota Geospatial Commons".

What is the Commons?
The Commons is envisioned to be a next-generation data discovery site, and much, much more. The organizations that brought you the Data Deli, MN Geographic Data Clearinghouse and MetroGIS DataFinder, along with others from state, regional, county and city government, are working together on a coordinated, next-generation site that is planned to allow users to:

- Search for, view and download data
- Find, acquire and use applications
- Find and use web services

The planned site would include the following functions:

- Web service ratings and monitoring
- Back-end broker that connects applications to web services
- User reviews of data, web services and applications
- Geospatial community news and discussion
- Shared development space for application developers
- State standards and user-provided tips and how-to documents

A list of the preliminary proposed functions and priority level can be found here. Additionally, a survey will be used to collect more information about the needs of potential users of the Geospatial Commons.

Test Version
The workgroup is planning to implement a test version of the high priority functions using the ESRI Geoportal Extension. MnGeo has agreed to host the test implementation. The multi-agency implementation group includes MnGeo, the Metropolitan Council, the Minnesota Department of Transportation and the Minnesota Department of Natural Resources. They will be directed by the full Geospatial Commons Workgroup which will also be involved with testing.

The group hopes to have something tangible to test and report at the 2010 MN GIS/LIS Conference in October.

It is too early to know if the MN Geospatial Commons will replace the existing major MN geospatial data discovery sites, or work with them to better coordinate the effort, but the intention is to make one main location where people can find and share geospatial resources in Minnesota.

More Information
For more information, visit the Geospatial Commons Workgroup site or contact Mark Kotz at mark.kotz@metc.state.mn.us or 651-602-1644.

Fact Sheet
MetroGIS Quantify Public Value (QPV) Study
(*June 2010*)

Introduction and Context:
Does this situation sound familiar? You are a GIS program manager. Your intuition tells you that sharing geospatial data produced by your organization would likely result in substantive efficiency improvements for your organization but without hard numbers to prove your case, sharing remains a novel thought. If so, MetroGIS's Quantify Public Value (QPV) Study, summarized below, will hopefully provide a means to act on your intuition. Our goal is to create a replicable methodology capable of quantifying value (direct and indirect) to both the taxpayer and participating government organizations attributable to data sharing, specifically parcel data.

David Claypool, a visionary active in the early Twin Cities (Minnesota) geospatial community, asserted that "organizations that are using GIS on their own are not getting the full benefit of the technology". Subsequently, MetroGIS was created to foster knowledge sharing and sharing of resources to accomplish collaborative solutions to shared geospatial needs. The mission being "to expand stakeholders' capacity to address shared geographic information technology needs and maximize investments in existing resources through widespread collaboration of organizations that serve the Twin Cities metropolitan area". The culture of the geospatial profession, which serves the Twin Cities, has enthusiastically embraced the notion of using the natural intra-organizational integrating capacities of geospatial technology to improve organizational effectiveness and understands that public value is created in so doing.

Need for Quantitative Measures of Value:
Over the past decade, MetroGIS completed eleven stakeholder testimonials to document public value created through its efforts. Substantive organizational efficiency improvements have been described. These testimonials, or qualitative measures of value created, provide insight and value but leadership acknowledged, in adopting MetroGIS's second performance measurement plan, that quantitative measures are needed to fully realize MetroGIS's mission because more complex, cross-sector solutions are desired than the current structure is capable of accomplishing.

Study Funded:
Acting on this need, a proposal for a 2010 NSDI CAP Grant was submitted. The awarded project proposes development of a methodology capable of quantitatively measuring public value created when organizations actively participate in a geospatial commons. The study is entitled *"Measuring Public Value of Geospatial Commons: A MetroGIS Case Study"*, "*MetroGIS Quantify Public Value (QPV) Study*" for short. The lead proposers represent major stakeholders in the Twin Cities geospatial community (spatial data infrastructure) – 1000 Friends of Minnesota, Hennepin County, MetroGIS, and the Metropolitan Council. The 300 local and regional organizations that serve the seven-county, Minneapolis-St. Paul metropolitan area - the MetroGIS community - comprise the study domain. The territorial focus of the study is Hennepin County, the 32nd largest county in the United States by population. The study involves participation by representatives from multiple government, non-profit, utility, industry, and academic interests.

Understanding the public value of data sharing is a key issue in discussions surrounding spatial data infrastructure (SDI) development and continued support. The proposed QPV methodology extends the Return on Investment (ROI) methodology developed by the Geospatial Information & Technology Association (GITA) to account for multiple uses and reuse chains of parcel data produced by Hennepin County. Due to limited resources, the scope of this prototyping effort has

been limited to parcel data, in particular, that which adheres to standards that support interoperability. QPV takes into account value chains and reuse benefits over a longer-term perspective. The results of the Hennepin County-based ROI component will be shared with an international team of scientific advisors who are experts on SDI. These experts will assist in defining shortcomings in the ROI methodology that must be resolved to effectively account for value chains and reuse benefits which create public value.

Status of QPV Study:
The federal cooperative funding agreement was executed in April. W4Sight was then retained to assist with major components of the study. The study officially launched on May 10, 2010. It consists of four major tasks. Completion is anticipated by June 2011. Task 1 involves conducting GITA's ROI analysis for Hennepin County; defining costs and value internal to Hennepin County of utilizing geospatial technology to manage parcel data. Task 2 involves defining benefits for a SDI environment, initiating the outward looking QPV analysis, and is scheduled to begin in September 2010. Experts specializing in SDI development will be invited to participate, beginning with Task 2.

Contact Information:
-Study Administrative Matters: Randall Johnson, MetroGIS Staff Coordinator,
  randy.johnson@metc.state.mn.us
-Study Research Matters: Francis Harvey, University of Minnesota, francis.harvey@gmail.com
-The project website is http://sdiqpv.net
-MetroGIS's website is http://www.metrogis.org