MnGeo Statewide Geospatial Advisory Council

January 28, 2015 Meeting Minutes

Blazing Star Room, Centennial Office Building, 658 Cedar St., St. Paul, MN 55155

Attendees

Members: Brad Anderson, City of Moorhead; Jeff Bloomquist, Farm Service Agency; Scott Freburg, Dept. of Education; Kari Geurts, Dept. of Natural Resources (via WebEx); Blaine Hackett, Flat Rock Geographics; Len Kne, University of Minnesota; Mark Kotz, Metropolitan Council; John Mackiewicz, WSB & Associates; Chad Martini, Stearns County (via WebEx); Victoria Reinhardt, Ramsey County; Ben Richason, St. Cloud State University; Cory Richter, City of St. Paul; Dan Ross, MnGeo; Dawn Sherk, White Earth Nation; Gerry Sjerven, Minnesota Power; Trisha Stefanski, Dept. of Transportation; Kody Thurnau, Minnesota Center for Environmental Advocacy; Michelle Trager, Rice County (via WebEx); Danielle Walchuk, Region Nine Development Commission; Tim Wotzka, Itasca County.

Non-Members: James Bunning, MnGeo; Chris Buse, MN.IT; Chris Cialek, MnGeo; Will Craig, University of Minnesota; Mike Dolbow, MnGeo; Kevin Dyke; University of Minnesota; Tyler Johnson, Dept. of Revenue; Brad Henry, University of Minnesota; John Hoshal, MnGeo; Adam Iten, MnGeo; Kelly Koenig, Dept. of Revenue; Jim Krumrie, MnGeo; Geoff Maas, MetroGIS; Susanne Maeder, MnGeo; Ryan Mattke, University of Minnesota; Jane Mueller, Beltrami County (via WebEx); Nancy Rader, MnGeo; Kent Treichel, Dept. of Revenue

Welcome

Ross called the meeting to order. Participants introduced themselves. The council welcomed four new members who will fill out terms until June 2015:

- Brad Anderson, City of Moorhead (non-metro city representative)
- Scott Freburg, Minnesota Department of Education (K-12 education representative)
- Len Kne, University of Minnesota (UofM representative)
- Danielle Walchuk, Region Nine Development Commission (non-metro regional government representative)

Minutes of September 24, 2014 Meeting

The September 24, 2014 council meeting minutes were approved with no changes.

General Fund Proposal Update (slides 5-8)

Ross reported that the Governor's proposed budget for the 2015 legislative session (just announced) does **not** include the initiative proposal to support the advancement of geospatial data, technology, and activities to improve services to the broader geospatial community[1]. We will try again next year and will also continue to pursue funding from other sources. He concluded with a brief assessment of the list of priority data that had been included in the proposal:

- Parcels: MnGeo is pursuing this due to widespread business needs
- NG9-1-1 data layers, including addresses and road centerlines: The business need for NG9-1-1 is driving these priorities
- Aerial imagery: MnGeo has a coordinating role

[1] The initial proposal was to redirect a portion of the recorders fee; it was changed to request an appropriation directly from the State's general fund. See the March 12, 2014 minutes (pp. 1-4) for the initial proposal and discussion, and subsequent meeting minutes for the continuing discussion.

- LiDAR and hydrography: Not listed as a priority right now

More details on efforts on the first three bullets were provided later in the meeting.

Ross asked for feedback on whether this list of priority data is headed in the right direction? Are any layers missing?

Discussion:

1. Could legislators introduce a similar proposal during the session? Yes, it is possible that could happen.
2. The Dept. of Education needs road centerlines, parcels and imagery to accurately locate school programs and buildings.
3. Broadband information is needed for emergency services, but this is being pursued by other groups such as FirstNet (First Responder Network Authority). The Governor's Broadband initiative includes goals for border-to-border broadband coverage.
4. Will there be enough money to continue to build and maintain the Minnesota Geospatial Commons? The next steps are to ask state agencies to share the cost, and to quantify the ongoing cost of running the Commons.
5. Aquatic invasive species (AIS) is becoming a hot topic; an initiative has distributed funding to counties to support efforts to combat these species.

ACTION ITEMS:

- **Ross**: Keep the council informed of any additional information learned about why the initiative was not included in the Governor's budget.
- **Members**: Let Ross know if they have additional comments on the data priorities.

Next Generation 9-1-1 (slides 9-18)

Adam Iten, project manager for the Next Generation 9-1-1 project coordinated by MnGeo and the Department of Public Safety (DPS), provided an introduction to NG9-1-1 and to the project. He explained how GIS data has become essential to locate the origin of emergency phone calls as phone technology has evolved through the following stages:

1. Voice: Callers had to describe their location to the dispatcher.
2. Enhanced 9-1-1: This system provided the address of the landline phone in addition to the caller's voice. Related efforts began to change rural route #s to street addresses.
3. Wireless (legacy) 9-1-1: Wireless calls no longer have a fixed address, so this system provides latitude/longitude coordinates which are placed on a map in order to be more useful to the dispatcher.
4. NG9-1-1: VoIP (Voice over Internet Protocol) phone calls do not show where a person is calling from, so GIS data must be used within the phone call in order to:
    - Route the call to the proper dispatch center
    - Help the dispatcher determine which responder to notify

Iten then described main project activities, a possible data flow, GIS data layers that are required and those that are recommended (the lists are not all-inclusive), who is involved, and current project tasks (see slides for details and contact information). He also noted:

- The project is scheduled to cover three years since there are numerous partners involved including 87 counties and approximately 100 Public Safety Answering Points (PSAPs).

- A 9-1-1 GIS survey will be sent soon to data producers in order to assess existing data, including software used, layers maintained, originator and quality.
- The project will include QA/QC steps before data is accepted; this will benefit local data providers, helping them to improve the quality of their data (vendors may become involved during this process). Authoritative boundaries data will be tagged with a source ID so that the source organization can be notified if changes are needed.
- The emergency service boundaries need to be gap-free so that all calls can be routed.
- The data schema that will be developed will not affect the way local data authorities store their data.
- Software will continue to improve over time so that more sources of location information can be used (e.g., camera feeds and vehicle locators).
- A new NG9-1-1 GIS Committee will be created.

Discussion:

- Is elevation a required layer? Not yet.
- Suggested organization staff to be involved in the NG9-1-1 GIS Committee:
    - MetroGIS
    - Metropolitan Emergency Services Board (if the emphasis is on policy, include a county commissioner; if the emphasis is more technical, then include an MESB staff person)
- St. Cloud State University has a project to map campus building interiors to provide information for emergency response (e.g., building floor layout, classroom location, location of hazardous materials). The primary information sources are CAD files and Pictometry photos.

ACTION ITEMS:

- **Members**: Let Iten know if you are interested in participating in the NG9-1-1 GIS Committee, or if you have other suggestions for potential committee members.

Parcel, Centerline, Address Points Interim Collect Update (slides 19-23)

Krumrie described MnGeo's interim project to collect available parcel, road centerline and address point data from counties until the NG9-1-1 project develops an on-going process for collecting the data. The plan is to aggregate the three layers into single statewide datasets (likely with gaps) by January 2016.

MnGeo and local governments have limited resources to work on this project. To date, Krumrie has contacted 50 of the 87 counties, and has collected data from 24. Nearly all counties have parcel data, most have centerlines, and fewer have address points. See the slides for status maps showing more details for each county. The interim data can be shared with other government agencies, but county policies vary on whether it can be shared with the public.

MnGeo continues to work with the Minnesota Department of Revenue's PRISM project which is modernizing how Revenue collects, tracks, and uses the property tax data that they receive from counties. MnGeo likely would collect parcel boundaries and join them with PRISM-supplied attributes.

Discussion:

- Sharing data publicly is a cultural change that does not happen overnight; this project is one step toward building the relationships necessary to support more widespread public availability. MetroGIS started like this too; the relationships build over time.

- If a group of county attorneys can review and sign off on data sharing agreements, that may speed up the process.

Data Sharing Initiatives (slides 24-28)
Free and Open Data Initiative update: Maas submitted an updated map showing several recent changes: Washington and Clay counties have adopted policies for free and open data (Clay has been providing free and open GIS data since 1999 so this action was just to formalize their policy); Sherburne County has zeroed out their fees for GIS data; and Stearns County is publishing GIS data on their website. For more information on the initiative, see Maas' presentation from the January 10, 2014 council meeting as well as the MetroGIS Free & Open Data Resource Page. Borchert Map Library staff has volunteered to maintain the status maps in future.

Data sharing agreements: Ross reported that work continues on developing a single agreement that MnGeo/MN.IT can use with partners. MnGeo would then make agreements with individual agencies to share the data. There are several options to add information about data to the Minnesota Geospatial Commons, depending on the county's policy:

- Add the data itself and have it available publicly
- Add the data but have it accessible only to state government agencies
- Add only the metadata; it will direct anyone outside state agencies to the county for the data, subject to their distribution policy.

Digital Data Archiving Issues (slides 30-40)
Mattke clarified definitions of data archiving terms that are often used interchangeably:

- Storage: simply saving data
- Archiving: adding identifiers and checking data integrity when replicating
- Preservation: applying policies and procedures to ensure that files are continuously usable
- Curation: adding value to a trusted body of digital information for current and future use

Historical data of many types (parcels, utilities, imagery, maps, etc.) can be of great value to researchers, planners, historians, genealogists, surveyors, the curious resident, and others. As the amount and scope of digital geospatial data increases, questions about what to keep and how to keep it are becoming increasingly important.

The University of Minnesota Map Library is already the de facto archive for aerial photographs and many state-produced paper maps, and the UofM has initiatives to explore curation procedures for different types of data, including geospatial. For example, the Minnesota Digital Library aggregates, and facilitates access to, digital objects from 155 participating historical societies, special archives, libraries and other organizations. For more information on these efforts, see Digital preservation at the UofM Libraries. The State Archivist, located at the Minnesota Historical Society, does not generally collect geospatial data.

Mattke ended with several questions:

- What is the level of interest in the concept of a centralized/aggregated service model?
- Is the University of Minnesota the appropriate location for this kind of work?
- Data curation and retention:
    - Who decides what is kept?
    - How is that decision made?
    - Funding?

- Legal issues?

Discussion:

- Members indicated that if there were an easy way to give GIS data to someone knowledgeable to archive, they would do it. This is an opportunity for the UofM to lead on an important issue that has not been on anyone's priority list – the geospatial community would rally behind it.
- Is every bit of old data equally valuable? No!!!
- How do we determine what is valuable enough to archive? The Library has substantial experience with curating. Plans need to be developed that account for which resources are used the most often, and librarians need input from subject matter experts. Search statistics on the Minnesota Geospatial Commons would be useful input.
- Typical pattern: Data is in high demand when it is the most current version; demand then drops when a newer version is released; demand often rises again when the data is decades old and becomes a valuable historical record.
- How do we deal with changing technology? Keep data in an open format such as TXT, PDF or TIFF. If one of those formats becomes obsolete, then (if resources are available and the data is important enough) the data needs to be migrated to a replacement format.
- Storage space has become less expensive, but data sets are becoming larger, so there is still a significant cost to store large datasets. For example, storing several years of LiDAR data in the Fargo/Moorhead area uses a lot of space; however, the data has been valuable in tracking the changing location of the Red River channel through years of flooding so it is worth keeping.
- Some types of historical data (e.g., changing geometry of specific road segments) are special cases that would require further investigation.
- The UofM is beginning to use OpenGeoPortal, a geospatial search platform, for data discovery. The metadata and geographic extent are used to support keyword searches; results can be filtered by producer; and links are provided to other sites for data delivery.
- Funding: The Minnesota Digital Library has been a line item in the State of Minnesota's Legacy fund. Suggestions of other possible funding sources would be welcome.

FSA NAIP 2015 (slides 41-45)

Bloomquist notified members that the Farm Service Agency would be flying statewide leaf-on 1-meter resolution aerial imagery in Summer 2015 as part of NAIP (National Aerial Imagery Program). The flight was originally scheduled for Summer 2016, but was just moved a year earlier. Partnership buy-up opportunities are available; however, the deadline is in March, and partner funding needs to be paid up-front. See the slides for a U.S. map of 2015-2016 NAIP Planned Acquisitions. More details will be available the first week in February.

ACTION ITEM:

Bloomquist: Keep members informed on additional details.
Rader: Update MnGeo's NAIP webpage with information on the 2015 planned flight.

Higher Education GIS Training/Courses Survey Results (slides 46-79)

Richason presented the results of a project to inventory and categorize GIS-related courses taught at Minnesota's higher education institutions. Source materials were the courses listed on each institution's website (the project did not verify that the courses are still being taught), and course titles were used to categorize them into five categories:

- Maps and Cartography

- Surveying / GPS
- Remote Sensing and Photogrammetry
- Geographic Information Science
- Spatial Analysis

See slides for the results. For context, note that the University of Minnesota system has four campuses, and the Minnesota State Colleges and Universities (MnSCU) system has eighteen 2-year and nine 4-year institutions that offer at least one GIS-related course. Also, St. Cloud State University has the only accredited program in surveying, and Northland Community and Technical College has the only program in geointelligence.

As new technologies emerge, schools can rarely add them to the curriculum immediately since the process of changing the curriculum takes time, adding material and courses usually requires removing other material or courses, and staff expertise and resources are needed. Enterprise licensing for major software packages (Esri, AutoCAD, ERDAS) has greatly helped to keep software expenses affordable within limited budgets.

Handouts:

- Colleges and Universities Offering Geospatial Courses (Excel spreadsheet)
- GIS Courses in Minnesota, November 2014

Discussion:

- Business sector representatives emphasized the importance of programming and database skills, and computer science background.
- Student workers can help agencies keep connected with what the schools are teaching.
- It's a culture change to think about programming web apps and using APIs.
- Growing trends:
    - Embedding GIS and geospatial thinking across the curriculum, rather than only in specialized courses
    - Geointelligence
    - GIS pluggable apps vs. standalone apps
    - Design for mobile devices
    - GUI (graphic user interface) design
    - Business analysis and project management skills

ACTION ITEM:
Richason and others interested: Consider organizing a panel session on higher education GIS coursework at the Minnesota GIS/LIS annual conference, October 2015.

Discussion of Enterprise Services That Are Needed (slides 80-82)
Ross reviewed a list of existing enterprise services (Minnesota Geospatial Commons; Imagery; Geocoding (currently only within state agencies due to a dataset license restriction); MnTOPO) and a list of several under consideration (U.S. Postal Service address verification; additional web map services; a shared code repository). He then asked council members what additional enterprise services are needed by the geospatial community.

Discussion:

- Basemap backgrounds for displaying behind other data, e.g., daily weather patterns
  - What layers should be included to be widely useful?
  - The Metropolitan Council created a Twin Cities metro area basemap; other regional areas may be needed.
  - MnDOT state and county highway maps are another option.
  - Basemaps should be provided in Web Mercator, not just in UTM coordinates. This is relatively easy to do for vector data; raster data is more difficult to reproject and to store multiple versions, especially if the raster tiles are cached.
- Parcel fabric: The Arrowhead counties in northeast Minnesota are collaborating on adopting Esri's parcel fabric model and on improving their data on public land ownership.
- Code repository (GitHub or other option) is a great idea. It would allow more expertise to be shared and not reinvented.

ACTION ITEM:
Members: Communicate this discussion to your sector. Let Ross know about any other enterprise services that you think are needed.

MnGeo Priority Projects and Initiatives (slides 83-95)
See slides and handout for descriptions and status of each of MnGeo's main priority projects (all projects are done in partnership with other organizations): Addresses; Air Photos; ArcGIS Online; Drainage Records Modernization; Geospatial Commons; NG9-1-1 (including Parcels, Street Centerlines and Address Points).

Announcement: Metro Road Centerline Project Update
Maas announced that the Metro Regional Centerline Collaborative has prepared a sample dataset from a portion of Hennepin, Ramsey and Anoka counties in the new local data standard. They will be publishing it soon for interested parties to review and provide feedback.

The Metropolitan Emergency Services Board, county GIS departments, the Metropolitan Council and MetroGIS will be coordinating outreach to road data centerline producers and users to assess the fitness of the new data model to meet their needs. Input is welcome from anyone interested, including those outside the Twin Cities metropolitan area. For more information, including project contacts, see the Metro Centerline Project webpage.

Future Meetings
The council's next two meetings will be April 1 and June 24, 2015, Blazing Star Room, Ground Floor, Centennial Office Building, 658 Cedar St., St. Paul, MN 55155

ACTION ITEM:
Members: Consider whether you want apply for the next 2-year term on the council or who else you would recommend.

Meeting adjourned. Minutes by Nancy Rader.