Minnesota Geospatial Advisory Council Meeting Minutes

March 15, 2023

Online via Teams

10:00 a.m. – noon

Members Present: Heather Albrecht, Hennepin County; Mitch Bergeson, USGS; Jeff Bloomquist, USDA Risk Management Agency; Ryan Bonney, Shakopee Mdewakanton Sioux Community; David Brandt, Washington County; Kari Geurts, MNIT Department of Natural Resources; Len Kne, University of Minnesota; Leanne Knott, City of Red Wing; Britta Maddox, Anoka County; Chris Mavis, Hennepin County; Victoria Reinhardt, Ramsey County; Cory Richter, Ramsey County; Gerry Sjerven, Minnesota Power; Alison Slaats, MnGeo; Stacey Stark, University of Minnesota; Alex Steele, Minnehaha Watershed District; Shawn Strong, City of Brainerd; Benjamin Timerson, Department of Transportation; Patrick Veraguth, Douglas County

Members Absent: Shana Crosson, University of Minnesota; Matt McGuire, Metropolitan Council; Kendis Scharenbroich, Pro-West & Associates Inc.

Non-Members Present: Andrea Bergman, MNIT Department of Natural Resources; Curt Carlson, MnGeo; Jennifer Corcoran, MNIT Department of Natural Resources; Will Craig, retired; Robert Diedrich, Department of Transportation; Nathan Drews, Department of Transportation; Rachel Funke, Capitol Region Watershed District; Brad Henry, University of Minnesota; Brandon Hirsch, MNIT; David Holm, Fugro USA Land, Inc.; Quentin Ikuta, University of Minnesota; Erica Insley, AXIS GeoSpatial, Inc.; Randy Knippel, Dakota County; Linse Lahti, Department of Natural Resources; Karen Majewicz, University of Minnesota; Martin Mollenhauer, Otter Tail County; Rick Moore, MNIT Department of Natural Resources; Akiko Nakamura, Department of Transportation; Nancy Rader, MnGeo; Jeff Reinhart, MNIT Department of Natural Resources; Jesse Reinhardt, Hennepin County; Justin Roberts, Department of Transportation; Mike Robinson, Department of Natural Resources; Dan Ross, Ecopia AI; Kiah Sagami, Houston Engineering; Ruojing Scholz, Department of Transportation; Jamie Schulz, MNIT Department of Natural Resources; Molly Shoberg, Department of Natural Resources; Steve Swazee, SharedGeo; Brett Thomassie, Surdex, Inc.; Sean Vaughn, MNIT Department of Natural Resources; Sarah Voje, EOR, Inc.; Mark Volz, Lyon County; Sally Wakefield, MnGeo; Clayton Watercott, Metro Transit

1. Call to Order

[Meeting presentation slides](#)

Richter welcomed GAC members and guests, and members introduced themselves.

- **Motion**: Approve today's agenda (Reinhardt/Brandt) – Motion passed
- **Motion**: Approve meeting minutes from 12/14/2022 (Brandt/Mavis) – Motion passed

2. Review Committee Reports and New Quarterly Reporting (All)

Richter thanked the committees for sharing their 2022 accomplishments and 2023 workplans. She noted the following highlights:

- 3DGeo Committee: Data acquisition will begin in the Minnesota River East and West blocks. Data for some portions of the state are now available on The National Map. Their next task is to release the ground conditions reporting tool for the Minnesota River.
- Awards Committee: Thanks to Andra Mathews for migrating the Awards Committee website to the new Hub Site. Next task is to promote the next round of Governor's geospatial certificate award nominations (draft nominations are due June 1, 2023)
- Parcels and Land Records Committee: The Minnesota Society of Professional Surveyors has hired a lobbyist to work on the remonumentation legislation. The legislation has been submitted in the House (6 authors) and Senate (3 authors) and has been submitted for inclusion in the House Financial Omnibus Bill. The committee may need help setting up a commission to run this program if legislation goes through; it will depend on the level of funding. Reach out to your legislators to help support this. The next hearing is March 18 in the Senate State Government Committee.

Richter then introduced a new way to submit quarterly reports for GAC meetings (for committee and workgroup activities and for project priority updates). The input forms use Survey123 and the questions are streamlined from the previous Word document forms.

Motion (members agreed to vote on the following three parts combined into one motion) (Reinhardt/Maddox) – Motion passed:

1. Accept the submitted committee and workgroup quarterly reports
2. Accept the submitted committee 2022 accomplishments and 2023 workplans
3. Accept the revised method of submitting committee and workgroup quarterly reports

3. Outreach Committee Update (Richter, Albrecht)

Richter reported that she and Albrecht will co-chair the revitalized Outreach Committee. The committee proposes using an opt-in model for publishing foundational datasets to the Commons – this expands the scope of the model currently used for publishing parcel data compiled from open data counties.

Motion: Authorize the Outreach Committee and associated workgroups for opt-in foundational datasets to work directly with MnGeo to publish said datasets to the Minnesota Geospatial Commons; updated lists of opt-in datasets to be reported at quarterly GAC meetings. (Reinhardt/Mavis) – Motion passed.

4. Success Stories for Geospatial Technologies Workgroup (Kne)

Kne presented a charter for a new proposed Outreach Committee workgroup, the "Success Stories for Geospatial Technologies Workgroup" (see this meeting's agenda packet for the full charter). The mission statement is: "To create a framework and toolkit that can be used to highlight the importance of all of the

amazing work our colleagues perform every day to stakeholders outside the geospatial community". The focus would be on how to increase the visibility of existing stories to a wider audience of policy makers and elected officials, not necessarily to write new stories. This group will work on the GAC's priority, "Success Stories for Geospatial Technology".

Discussion:

Reinhardt: At a recent NASCIO meeting in Washington D.C., a very popular session on EV infrastructure highlighted using GIS for decision-making. Comments from session attendees were very positive, including that they "had no idea" about the importance of GIS. There's a hunger for this type of information, but it's hard to know who to turn to if you don't know what's out there. Many people at the county level (such as surveyors) help with decision-making. We've been talking about this for a long time, including a previous effort to stress the importance of geospatial work to meet the State's One Minnesota goals. It would be great to move these ideas forward.

Motion: Approve the Success Stories for Geospatial Technologies Workgroup charter (Steele/Geurts) – Motion passed

5. Culvert Data Standard Workgroup (Moore)

Moore reviewed the organization of the 3D Geomatics Committee, noting that the Culvert Data Standard Workgroup is an effort of the DEM Hydro-modification Subgroup of the Hydrogeomorphology Workgroup. Moore (MNIT DNR), Kellie Thom (DOT) and Mike Becker (Morrison SWCD) co-chair this workgroup.

He then explained that the workgroup is focused on the following GAC priority:

> Development of a culvert data standard for data sharing across the geospatial and infrastructure asset management communities and to support development of a future statewide culvert inventory.

The purpose of this standard is to provide a single, commonly accepted set of attribute specifications (field name, type, field width and order) for transferring and aggregating culvert data in Minnesota for a wide variety of applications. The standard will:

- Support development of a future statewide culvert inventory and to integrate data from multiple data sources across the state
- Provide a single, commonly accepted set of attribute specifications (field name, type, field width and order)
- Allow for transferring and aggregating culvert data in Minnesota
- Provide a resource to entities that have not collected culvert data to help them implement their culvert inventory

A first step is to develop a common understanding of what a culvert is. Definitions vary depending on the business needs for the information. See the slides for details about different definitions from MnDOT and DNR, from Ayres, and a humorous interpretation involving an elephant and a raccoon(!). The slides also include

information about whether a culvert can be a bridge. The GIS representation of a culvert can be a single point, two points, a line, or a polygon.

Moore then presented the group's plan to conduct a survey that will be distributed to counties, SWCD's, watershed districts and others to determine the status of culvert mapping in their local unit of government (see the slides for the survey questions). They have pre-tested the survey with workgroup members and will work with the GAC to disseminate. What are the steps GAC groups follow to conduct a survey?

- Richter: Surveys have been done many ways, including through U-Spatial and through MnGeo. They should follow brand guidelines.
- Stark (in chat): Would love to have a database for this group of contacts - we should aggregate asks whenever possible. I think we should work on extending that to other jurisdictional and agency contacts that we regularly ask about data, geospatial stories, etc.
- Rader (in chat): FYI, MnGeo maintain lists of county, city and tribal govt. GIS contacts
- Veraguth: The Minnesota County Engineers Association could be included (he is a member of this group)
- Richter: Outreach can help with this. Provide ideas for targeted groups (e.g., Association of Minnesota Counties, Minnesota County GIS Association) and contact them for help.

Moore then showed a list of attributes contained in the Minnesota DNR Culvert Inventory Application, followed by an example of the Wisconsin Coastal Management Data Infrastructure which could provide a useful relational database model.

The group's next steps are to:

- Develop a data submission process
- Create a preliminary universal attribute list
- Sort these attributes into categories
- Propose a schema

Discussion:

- Vaughn: He confirmed that he will be a liaison to the workgroup to keep them connected to the other 3DGeo groups.
- Swazee: Is the Army Corps of Engineers participating? Moore: The group does not yet have a Corps member but would welcome one.
- Ross and Corcoran (in chat): Terry Zien from the Army Corps is on the 3DGeo Acquisition Workgroup and may be able to help recruit for these other efforts.

6. Lidar Data Acquisition (Vaughn, Sjerven)

Sjerven provided an update on the following collection areas:

- Northeast – Rainy and Lake Superior blocks
- Southwest – Missouri River Big Sioux block

- Upper Mississippi River block
- Central Mississippi River block
- Southeast – Driftless block
- Minnesota River – East block
- Minnesota River – West block

See the slides (including the slide notes) for maps of each area and details on acquisition status, funding, and availability of deliverables.

Corcoran (in chat): [What is Lidar data and where can I download it](#) (USGS site)

The 3DGeo Committee will again be using the [Conditions Reporting tool](#), a crowdsourcing tool that uses ArcGIS Survey123 to track conditions of ice, vegetation, and the ground in support of timing and coordinating lidar data procurement throughout 3DGeo lidar acquisition blocks. Information collected is shared in a [dashboard](#) that allows cooperators to monitor changing conditions.

Sjerven concluded with a slide summarizing the total funding contributions to the Minnesota lidar project, the number of funding partners, the square miles of new lidar and the cost per square mile for Minnesota partners. The cost per square mile has been decreasing due to economies of scale.

Vaughn then provided more detail about the U.S. Geological Survey's 3D Elevation Program (3DEP). Key tenets of this program are that it involves partnerships and that USGS rigorously reviews the data to ensure it meets standards before accepting it as final. The program produces foundational data and is consistent, transparent, and trusted. Slide 46 shows annual status maps from 2019-2023 of the areas of the U.S. covered by high-resolution elevation data that meets 3DEP base level specifications; the area covered has increased dramatically in that time. The 2023 map shows nearly complete nationwide coverage.

He then described more about the review and acceptance process to clarify the difference between interim and final data and to help people understand why it takes time for final data to become available. Within each Lidar Acquisition Block (LAB), there are several "work units" or "work blocks"; each one functions as a separate process for the vendor to collect data, submit it to USGS for initial review, and correct errors. All vendor work units within a LAB need to be done before USGS can tie the data to control points and conduct the final review. The control points are established by surveyors by the time flights are begun.

Data can be released as "provisional" for use with the understanding that it isn't certified to be final. The final version will be tied to ground control and has a final accuracy report. 3DGeo is grateful for the standardized processes since the goal is final certification. All these steps take time but are essential.

After the final data is received from the USGS to complete the 3DGeo-managed lidar acquisition footprint for Minnesota under the 3DEP program, the lidar data will be compiled into mosaicked datasets within six months and published for public consumption. Data will be mosaicked for the entire state, as well as by county and by major/HUC 8 watershed.

See the slides for more details about the process, timeline, and products.

Slaats then thanked all lidar funding partners, especially the federal agencies that have contributed significant funding.

Discussion (in chat):

- Shoberg: The dashboard is showing condition reports from previous years, I wonder if Dakota County may consider hiding those so it isn't mis-leading for current 2023 conditions. Corcoran: Yes, Joe is working on that!
- Knott: [The maps are a] Great way to show flight coverage change over time!
- Funke: Did you mention when we could expect the 'in review' portions to be available (Central Mississippi)? Corcoran: To support what Sean is saying - generally, lidar data is available on the USGS National Map approximately a year to 18 months after the acquisition is complete. We've seen a variety of timelines play out and it's all dependent on the Block. Partners may be able receive provisional data before the final data is release on TNM.

7. Legislative updates (Slaats and Hirsch)

MnGeo has requested an increase in appropriation for lidar data storage and distribution support, and to support additional foundational dataset work. Brandon Hirsch, MNIT's legislative director, said that this session provides the opportunity to modernize and secure Minnesota's IT, especially by moving to a cloud infrastructure. Modernizing apps and other use of technology will give citizens time back.

The [Technology Advisory Council](#) continues to advise Minnesota IT Services (MNIT) and executive branch agencies on strategic information technology initiatives and service delivery.

The PLSS remonumentation update was covered in item 2 above.

8. Break

9. Updates on MN GAC priority projects and initiatives

Brandt introduced three update items that priority and initiative owners should report on:

1. What is your most recent success?
2. Are you are experiencing a barrier?
3. What is your next task?

- **Parcel Data** – Slaats
    - Most recent success:
        - The [public GAC-standard compiled dataset](#) quarterly update was published 2/1/2023 and includes 42 opt-in counties

- o Next task: Continuing individual outreach to counties from the Parcels and Land Records Committee team

- **Critical Infrastructure Data** – Stark
  - o Continuing to work on updating correctional facilities dataset on the MN Geospatial Commons. Goals have been refreshed for 2023 and the group is meeting regularly.
  - o MN Dept. of Commerce has been informing the group about utilities-related datasets.

- **Updated and Aligned Boundary Data** – Veraguth
  - o Next tasks: The group is working on issues concerning the Wisconsin/Minnesota boundary near La Crosse, as well as standards for PLSS remonumentation.
  - o Ross (in chat): For boundaries we are also doing some work in NE MN to use common control and focusing on aligning along county borders. Progress is being made there...

- **Address Points Data** and **Road Centerline Data** – Slaats
  - o Most recent success: More counties are submitting their data through the NG9-1-1 data ECN 1Spatial Portal. Progress can be seen on the [NG9-1-1 hub](#) on the [status page](#).
  - o Barriers:
    - ▪ Final 1Spatial validation steps need to be completed so that MnGeo can pull data in a streamlined process
    - ▪ Request to GAC to approve an "opt-in" process to ask counties if they'd like to be included in a public dataset (covered in Item 3 above)
  - o Next tasks:
    - ▪ ETLs are in progress to pull data from 1Spatial NG911 validation to statewide dataset
    - ▪ PLRC Open Data subcommittee will work with the Outreach team to ask counties if they'd like to "opt-in" to be included in a public dataset

- **Culvert Data Standard** – Moore
  - o See Item 5 above
  - o Most recent successes:
    - ▪ The Culvert Data Standard workgroup officially formed in December 2022. We have identified co-chairs (Kellie Thom - MNDOT) and Mike Becker (Morrison SWCD) along with Rick Moore (MNIT DNR). The group has met twice, and we have developed a definitions document that details a definition for culverts that meets the needs of all members. We will be expanding this to include other definitions that pertain to the standard. We have also developed a survey that will be distributed to counties, SWCD's, watershed districts, etc. to determine the status of culvert mapping in their local unit of government. We have pre-tested it with our members and will work with the GAC to disseminate. We are growing in membership as entities learn of our mission and want to be included in the effort.
  - o Barriers:

- Determining the process through the GAC on how to share a survey
- Assistance with disseminating the survey to a larger audience
  - o Next tasks:
    - Sharing the survey with counties, SWCD's, cities, etc. and waiting for responses. Once those responses and the inclusion of their attributes are shared with the subgroup, we will start comparing the attributes for commonality and eventually determining which attributes should make it into the standard. The next meeting is slated for early May.

- **Publication of Open Foundational Datasets** – Brandt
  - o Brandt, Knippel, Slaats, Ross and others met in early January to discuss how to move forward on having Minnesota's published statewide datasets included in Esri Basemaps, Open StreetMap, and Google Maps. Coordinating with NSGIC's addresses and transportation committees.
  - o Brandt: The metro counties have tried to submit data to Esri Basemaps and are now adjusting their datasets based on feedback from the initial attempt.
  - o Knippel: It would help to have success stories about submitting data to Google. The goal is to be able to submit statewide authoritative data rather than by individual unit of government.
  - o Ross (in chat): Getting authoritative data ingested by commercial partners discussion is also a set goal for the FGDC Address Theme Subcommittee. Randy, I reached out to Google at the recent NSGIC mid-year meeting. Google is interested in further conversation, and I have a contact there we can connect further with; send me your contact and I can see if we are speaking with the same person/team. TomTom also has a program.

- **New Lidar Acquisition** - Vaughn
  - o See Item 6 (slides 32-49) for updated information on new lidar acquisition.
  - o Most recent success:
    - A new Data Governance subgroup of the Data Acquisition Subcommittee is forming to help work on lidar-derived products
  - o Next task:
    - Continue to reach out to stakeholders to create lidar-derived products through coordinated development, best practices, exploration of new technologies, and emerging technologies

- **U.S. National Grid Materials** – Knippel
  - o Most recent success:
    - Most recent quarterly meeting of the USNG Implementation Working Group was Jan. 18
    - Most recent meeting of the group's Board of Directors was Jan. 17
  - o Next tasks:
    - Anticipate release of a new USNG mapbook publishing application on USNG Center by the end of the year
    - Will participate at the MN GIS/LIS conference in the fall

- **Remonumentation of Section Corners** – Veraguth
  - Covered in Item 2
  - The last day for hearings in the Senate State Government Committee is March 24; the legislative effort to fund remonumentation may be voted into an omnibus bill.
  - Encouraged counties to apply for LCCMR grants to do remonumentation projects (application deadline is March 31). Even though funding is unlikely at this point, it would help to show widespread interest in getting this work done.

- **Imagery update** – Slaats
  - Most recent successes:
    - The service gets approximately 100 million views/year
    - Added county imagery from Le Sueur County to the WMS
    - Added storage to the production server so that additional imagery may be added
    - NAIP2021 GeoTIFF imagery downloaded; shared NAIP imagery with the University of Minnesota
    - Received Hennepin County imagery via SFTP upload
    - Received Douglas County imagery
    - Completed build out of new development/staging image server
  - Barrier:
    - Time constraints are the biggest issue; additional funding would greatly help
  - Next tasks:
    - Add county imagery from Polk County
    - Process Hennepin County imagery
    - Process Douglas County imagery
    - In discussion: Lincoln and Aitkin counties

- **Archiving**: The implementation of an archive for Minnesota geospatial data – Majewicz
  - Most recent success:
    - The Archiving Imagery Workgroup report was submitted December 2022
  - Next task:
    - Working on next steps for how to move forward with an archiving plan

- **Underground Utilities Data** – Swazee
  - This public/private initiative is moving rapidly. $100,000 for follow-on proof-of-concept. The system will be used by locators, excavators, and planners.
  - The Common Ground Alliance is promoting this effort widely in trade publications
  - The Emergency Preparedness Committee's next meeting is March 28 to discuss spring flooding and the availability of Civil Air Patrol imagery and other datasets
  - Reminder that there is a Damage Assessment Data Standard for Minnesota

- **Success Stories for Geospatial Technology** – Kne
    - See Item 4 above

- **Accurate Hydro-DEMs** – Moore
    - Issues:
        - Still collecting breachlines; waiting for new lidar before adjusting breachlines
    - [Minnesota DEM Hydro Modification Review Application](#) (an ArcGIS web application)

- **Summary Crime Data** – Maddox
    - Next tasks:
        - Meet to review and understand scope of this priority

10. Applications for Next Term (Rader)

Rader explained that all GAC member terms end June 30, 2023. The next two-year term will run July 1, 2023 – June 30, 2025. Applications are submitted through the [Open Appointments process](#) administered by the Minnesota Office of the Secretary of State. Current GAC members who wish to continue will need to re-apply.

Publicity about applying for the next term will go out soon, including details about the application deadline and process.

11. Announcements or Other Business

- Veraguth: Support for the remonumentation legislation is welcome. More information is at the [Public Land Survey System Perpetuation Initiative](#)
- Sjerven: The next Minnesota GIS/LIS Consortium conference will be in Duluth October 4-6. Workshop instructors and presentation abstracts are needed. The call for abstracts will be out later this week. There are five very creative submissions for the conference logo – members will vote to select the winning design.
- Knott: The [Minnesota GIS/LIS Consortium's spring workshops](#) will be May 11 at the University of Minnesota.
- Brandt: MetroGIS is working on guidelines or best practices for assignment of addresses so that the information can transfer from communities to counties to then be included in compiled address point and road centerline datasets. This is a statewide need as well, although perhaps not specifically a GAC priority.
- Thomassie: Surdex was awarded the contract to collect 2023 NAIP imagery. Acquisition will begin in mid-June and run through the end of August. There is high probability that the resolution will be increased from 60 cm to 30 cm due to an influx of funding from the infrastructure bill, especially since USDA's [urban agriculture program](#) requires 30 cm or better.
- Albrecht: Hennepin County is hiring an intern at the masters level for the GIS office.

12. Adjourn

- **Motion**: To adjourn meeting (Reinhardt/Brandt) – Motion passed.

Next Quarterly GAC Meeting

- May 25, 2023: 11:00 – 2:00
- Hybrid, with both in-person and online options available
- In-person location TBD