Minnesota Geospatial Advisory Council Meeting Minutes

September 28, 2022

Hybrid, with online via Teams

11:00 a.m. – 2:00 p.m.

Members Present (in-person): Kari Geurts, MNIT Department of Natural Resources; Leanne Knott, City of Red Wing; Alison Slaats, MnGeo; Benjamin Timerson, Department of Transportation

Members Present (remote): Heather Albrecht, Hennepin County; Mitch Bergeson, USGS; Ryan Bonney, Shakopee Mdewakanton Sioux Community; Shana Crosson, University of Minnesota; Britta Maddox, Anoka County; Chris Mavis, Hennepin County; Matt McGuire, Metropolitan Council; Victoria Reinhardt, Ramsey County; Cory Richter, City of Blaine; Stacey Stark, University of Minnesota; Alex Steele, Minnehaha Watershed District; Shawn Strong, City of Brainerd; Patrick Veraguth, Douglas County

Members Absent: David Brandt, Washington County; Jeff Bloomquist, USDA Risk Management Agency; Len Kne, University of Minnesota; Kendis Scharenbroich, Pro-West & Associates Inc.; Gerry Sjerven, Minnesota Power; Dale Watt, The Nature Conservancy

Non-Members Present (in-person): Curt Carlson, MnGeo; Jennifer Corcoran, MNIT Department of Natural Resources; Nancy Rader, MnGeo; Sean Vaughn, MNIT Department of Natural Resources

Non-Members Present (remote): Norman Anderson, MnGeo; Andrea Bergman, MNIT Department of Natural Resources; David Chase, North Memorial Health Ambulance; Will Craig, retired; Mike Eull, MNIT Department of Transportation; Randall Cutting, ERM; Michael Forstner, Martin County; Margaret Johnson, Kandiyohi Soil and Water Conservation District; Melinda Kernik, University of Minnesota; Randy Knippel, Dakota County; Mark Kotz, Metropolitan Council; Linse Lahti, Department of Natural Resources; Geoff Maas, Ramsey County; Karen Majewicz, University of Minnesota; Andra Mathews, Department of Natural Resources; Ryan Mattke, University of Minnesota; Rick Moore, MNIT Department of Natural Resources; Meggan Nadler, MNIT Department of Natural Resources; Pamela Jo Peters [no org known]; Jeff Reinhart, MNIT Department of Natural Resources; Justin Roberts, Department of Transportation; David Schardin, MNIT Department of Natural Resources; Jamie Schulz, MNIT Department of Natural Resources; Molly Shoberg, MNIT Department of Natural Resources; Ryan Stovern, St. Louis County; Molly Swanson, City of Eden Prairie; Brett Thomassie, Surdex; Clayton Watercott, Metro Transit; Ryan Wendt, Marshall Municipal Utilities

1. Call to Order

Meeting presentation slides

Richter welcomed GAC members and guests, and members introduced themselves. Shana Crosson from the University of Minnesota U-Spatial is the GAC's new representative for the K-12 sector.

- **Motion**: Approve today's agenda – Motion passed
- **Motion**: Approve meeting minutes from 5/25/2022 – Motion passed

2. Review and Accept Committee Summaries (All)

Richter thanked the committees for sharing their accomplishments through their summaries.

Richter highlighted several items in the agenda packet:

- The Archiving Imagery Workgroup will have a presentation and survey at the MN GIS/LIS conference
- The Criminal Justice Information Services (CJIS) workgroup has drafted a best practices document
- The Emergency Preparedness Committee has been very active
- The Emergency Service Zone Data standard is ready for the GAC to approve

Motion: Accept the committee and workgroup summaries (Maddox/Knott) – Motion passed.

3. Emergency Service Zone Data Standard (Kotz, Carlson)

Kotz reviewed the purpose of the standard: To provide a single, commonly accepted set of attribute specifications (field name, type, and length) for transferring emergency service zone boundary data. The standard was proposed by the Minnesota Statewide Emergency Communications Board (SECB), NG9-1-1 Committee GIS Workgroup and draws from the National Emergency Number Association (NENA) geospatial data standards. The following members of the Standards Committee were the subject matter experts:

- Curt Carlson, MnGeo
- Vic Barnett, Ramsey County
- Marcia Broman, MESB
- Mark Volz, Lyon County

The standard was open for public review for 90 days, ending 7/31/22. Thirty-three comments were submitted which provided minor but useful improvements. The standard and supporting materials, including the public comments and committee responses, are published on the emergency service zone data standard webpage.

Motion: Approve the Emergency Service Zone Data Standard v. 1.0 (Geurts/Maddox) – Motion passed

4. Criminal Justice Information Services Best Practices update (Maddox)

Maddox reported that the CJIS Workgroup has met often; the Bureau of Criminal Apprehension (BCA) has assisted the group. The workgroup has drafted a CJIS Best Practices Guide for GIS, included in the agenda packet.

She then reviewed the main sections of the draft document: mission, objectives, glossary, audience, training requirements, BCA's requirements and authoritative sources. The group plans to present a final version at the GAC's December meeting.

Maddox noted that the number of critical incidents in Minnesota is increasing. Also, since the pandemic, many more staff are working remotely and sharing data; they may need CJIS and security awareness training, especially as more GIS staff are being called into public emergency service response. Staff should know who at their agency is the expert on these issues and should prepare in advance of an emergency.

Action Item: Review the draft CJIS Best Practices Guide for GIS document (in the agenda packet) and provide feedback to the workgroup (All)

5. Public Land Survey System legislation update (Veraguth)

Veraguth reported that the Remonumentation Subcommittee of the Parcels and Land Records Committee continues to advocate for passage of legislation to remonument Minnesota section corners. Last session, Sen. Ann Johnson Stewart introduced it in the Minnesota Senate as SF 4037 (Sen. Bakk is a co-author), and Rep. Paul Anderson introduced it in the House as HF 4456. The bills were heard in committee. Sen. Mary Kiffmeyer revised the idea to be a legislative report and added it to an omnibus bill which was not voted on.

Senator Ann Johnson Stewart is retiring, so a new senate sponsor is needed. Rep. Paul Anderson met with the remonumentation subcommittee and proposed a four-year, $40 million pilot project, rather than the original 10-year project.

The Association of Minnesota Counties has provided good support. This issue is still on AMC's platform; it would be very helpful to get on AMC's priority list. The Minnesota Rural Counties Board is also an important group, and this issue is on their watch list. Remonumentation was a feature article on the front page of AMC's Summer 2022 newsletter!

The Meet Me at the Corner session was held in Spicer in Kandiyohi County on May 4 and will be held again October 12 at the MN GIS/LIS Conference in Bemidji.

See the Preserving the PLSS Hub site for more information.

Action Items:

- Help the Remonumentation Subcommittee get more support from county commissioners (All)
- Update the business case on the PLSS Hub site (PLRC Committee)

6. 3D Geomatics Committee update (Vaughn)

Vaughn noted that lidar acquisition relies on subject matter expertise from different sectors of the 3DGeo Committee, including:

- **Hydrogeomorphology Subcommittee**: Its mission is to "promote the consistent development of Minnesota's hydrography data and to enable data exchange through coordination, cooperation and standards development." The group meets monthly; has developed a roadmap for Next Generation hydro development; has engaged with national hydrography programs (3D Hydrography Program (3DHP), 3D National Topography Model (3DNTM)); has updated the Streams ID standard; is working with DNR data governance administrator on standards; and is partnering with the LCCMR-funded Lake

Inventory Update to inform and guide that project. For summaries of their meeting activities, see the Hydrogeomorphology Workgroup's webpage.

- **DEM Hydro-modification Subgroup**: This subgroup of the Hydrogeomorphology Subcommittee is using the Goodhue County high resolution DEM as a pilot project to inform future efforts to use existing breachlines with high-resolution DEMs. They are creating a breachline dataset, exploring its database structure and updating it with the most recent datasets being completed. They are developing a DEM hydro-modification review web application which will detail the locations and completeness of breachline datasets and will help define project boundaries and data voids. See the DEM Hydro-modification Subgroup webpage.
- **Data Acquisition Workgroup**: This group promotes procurement of foundational 3D data for Minnesota. See the Data Acquisition Workgroup's webpage for more information.

Vaughn then reviewed the process of lidar acquisition and classification and then the role of USGS's 3D Elevation Program (3DEP) and its Broad Agency Announcement (BAA) grant coordinating mechanism. The BAA guides partnerships between the USGS and other federal agencies with other public and private entities seeking high-quality 3D lidar elevation data acquisition. To date, contributions to collect 51,405 square miles of new lidar in Minnesota have totaled $18.09 million ($11.6 million from USGS, $6.05 million total from 48 Minnesota partners, and $0.45 million from other federal sources). See the slides for detailed maps and descriptions of the different areas collected to date and planned for future.

He next issued a "Call to Action" for the Minnesota River East and West lidar acquisition blocks to make it possible to collect this lidar in Spring 2023 with data delivery in late 2024. Without stakeholder support and funding partnerships established by September 2022, the process will be delayed by a full year.

Vaughn then presented the 3DGeo Tiling Scheme (see slide for a map illustrating the tile grid). The goal is to "develop and make available a uniform, statewide, consistent, gridded index system that aids in alignment of adjacent lidar data procurement projects, brings efficiency to storage of voluminous lidar data, and provides cost savings for data dissemination egress charges." The grid is comprised of both 1-kilometer x 1-kilometer tiles and 500-meter x 500-meter tiles maintained as separate tile index files. The files will be available on the Minnesota Geospatial Commons and will be accompanied by a guidance document.

He concluded with several slides illustrating examples of visualization and extraction of hydrography and infrastructure features that is possible using high density lidar. The examples are from the Le Sueur County lidar collect in 2021.

7. Minnesota County GIS Association (Maas)

Maas gave a presentation planned as a panel discussion at the MN GIS/LIS Conference in early October, "The Role of GIS in County Government: Successes and Challenges". The presentation publicizes the reinvigoration of the Minnesota County GIS Association (MCGISA) and is divided into two parts: 1. The "What and Why" of MCGISA and 2. The Role of GIS in County Government.

What and Why of MCGISA: County government fulfills many diverse roles, and many different county professional organizations provide services for their members. GIS would benefit from having an active professional organization.

MCGISA was originally formed in 2007 and is already an officially affiliated professional organization with the Association of Minnesota Counties. Its original goals were to:

- Foster support for GIS among public officials
- Cultivate leadership and professional development through workshops, seminars, and meetings
- Provide a forum to share knowledge, information, and experience among the members and identify shared issues
- Advocate MCGISA views and needs to policy makers on regional, state, and federal issues
- Assist in the use, promotion and advancement of GIS technology in county government
- Support the development and implementation of standards

The current question is how can MCGISA respond to the continually increasing use of and demand for GIS? Examples of the increasing demand:

- More publicly available GIS data
- Publicly facing web mapping applications
- Geospatial analysis for problem solving
- Voting, demographics, commissioner districts, etc.
- 'Data driven' decision making
- NG9-1-1 needs for our GIS data

MCGISA is structured with four officers: president, vice president, treasurer and secretary. There are 10 regional representatives, one from each of ten regions that align with AMC regions. The original by-laws need to be revisited.

Maas then covered examples of what MCGISA could do:

- Improve information sharing among county GIS departments
- Awards and recognition for county GIS work (individuals, projects, departments)
- Mentorship and scholarships to GIS students
- Liaison/partner with other county-level groups
- Increase the visibility of our work to our leadership and to other professions
- Meaningful connections to other disciplines that can leverage GIS in county government
- Promote the increase in both the quality and availability of geospatial data
- Increase/enhanced exchange of knowledge between counties – mutual assistance on shared problems
- Provide an effective means for sharing our concerns and challenges

Resources that MCGISA could provide include:

- Resources that support shared needs
- Notification on actions by state and federal government that may impact GIS work at the county level

- White papers, research, foundational knowledge base available to all county GIS practitioners on shared topics

The Role of GIS in County Government: The panel discussion will ask attendees to provide examples of successful projects and feedback on challenges that they face, such as funding, staffing, project prioritization and support from leadership.

Discussion:

- Vaughn: It would be very beneficial to have a designated MCGISA liaison with the GAC to know who to contact for support for lidar acquisition.
- Slaats: Many GAC priorities are foundational datasets for which the counties are the source. How can MnGeo better partner and support counties, especially with challenges with foundational data?
- Reinhardt: GIS is still under the radar, and GIS is not at the AMC annual conference. The fall policy conference could include underground utility mapping, remonumentation and broadband. So many decisions are location-driven. For example, mapping tells you where broadband isn't and where new infrastructure money should be directed. Don't be shy about presenting the case to elected officials; tell them about real problems and offer solutions and make it personal. Once they notice you, they will remember you.

8. Break

9. Sector report: Hennepin GIS (Albrecht)

Albrecht is a business analyst with Hennepin GIS and is an At-Large member of the GAC. Hennepin GIS "produces data and creates maps in support of Hennepin County's mission to enhance the health, safety and quality of life of their residents and communities in a respectful, efficient and fiscally responsible way."

The Hennepin GIS + Community Connectivity group is part of the county's Operations Line of Business, within the Information Technology Enterprise Development group, along with Development Services, and Business and Operations Intelligence. Hennepin GIS is a team of geographers, analysts, designers and technology professionals, which include coordinators, analysts, developers, a database administrator, a systems administrator and a business analyst. The Community Connectivity group works to connect facilities and traffic signs to outside fiber. Hennepin GIS has 16 staff; Community Connectivity has 2 staff and an intern.

Hennepin GIS works to support and sustain innovative use of geospatial technology across the organization in the following areas:

- Maps and visualization
- Spatial analysis and location intelligence
- Software support and licensing
- Application development and configuration
- Data administration

- Collaboration and program support
- Exploration and discovery

They use Esri data and map services and are involved with address points, NG911, stormwater and control points for 3DGeo's lidar collect over Hennepin County.

Albrecht is involved on three GAC committees:

- Standards: to promote cross-jurisdictional collaboration
- 3D Geomatics: to connect it with the Hennepin GIS remote sensing program
- Outreach Committee: to promote free and open data and development of statewide datasets

For more information, see the Hennepin GIS webpage

Discussion:

- Corcoran: How many cities contributed to the lidar partner collect? Albrecht: Nine partners (8 cities and 1 watershed district). New partners after the deadline could contribute money to help fund the creation of derivative products. Corcoran: It helps to let 3DGeo know the true number and kind of partners.

11. NSGIC membership (Slaats)

Slaats noted that every GAC member has a membership in the National States Geographic Information Council (NSGIC). NSGIC is a state-led forum for developing, exchanging and endorsing geospatial technology and policy best practices. The group facilitates connections between people and organizations across multiple sectors, holds two conferences per year (annual and mid-year), and a number of webinars. Many issues that Minnesota is working on have groups at NSGIC, including 3D Elevation, Parcel and Land Records, Elections and Redistricting. For more information, see the NSGIC website.

12. Legislative update (Slaats)

Slaats reported that a surveyor-led team will pursue PLSS legislation. Also, MnGeo will request an increase in its appropriation to cover a surveyor position, to provide support for lidar data storage and distribution, and to support additional foundational dataset work.

She added that broadband access is becoming an increasingly important issue. The Federal Communications Commission (FCC) is using a set of addresses as part of the process to determine where broadband funding is most needed. There are two challenges that states can provide to the FCC addresses. The first is to the actual addresses themselves – the number and locations of the addresses. The second is to challenge the level of broadband service at each address. In Minnesota, DEED is leading the review and potential challenges of FCC data. MnGeo will assist DEED as requested. Work may include reaching out to counties to use their address points to verify the ones from FCC. The number of addresses will impact federal funding to the state. We are still learning the details of their programs. Staff from DEED will attend the MN GIS/LIS conference.

Discussion:

- Reinhardt: The issue of broadband provides a great business reason for funding GIS. It can bridge the disconnect with officials who can see the value to residents.
- Geurts: The pandemic forced so many DNR staff to work online. Connectivity was a huge issue for field foresters who have a wide range of access to high-speed internet.

13. Annual priorities survey (Richter)

Richter reviewed the reasons that the GAC conducts an annual priorities survey:

1. To create a voice for the MN geospatial community
2. To direct work plans of the GAC and its committees
3. To advise MnGeo on needs of the community
4. To allow other organizations to compare priorities and align efforts
5. To inform outreach and policy related efforts
6. Having clear direction helps motivate people to participate

The process involves the following steps:

- Create a list of proposed projects and initiatives from:
    - GAC members and committee chairs
    - Outreach to sectors
- Assess the **value** of each (the degree of business need) via the MN Geospatial Priorities Survey
- Assess **likelihood of success** of each: Is there an owner, work team, champion and funding?
- Preliminary priority calculation
- GAC then discusses, adjusts and finalizes the priorities for the following year

She presented this year's timeline:

- September
    - Set survey list
- Early October
    - Create and open survey
    - Announce at the MN GIS/LIS Consortium conference
- Mid-November
    - Close survey, score
- December
    - Set 2023 priorities

Discussion:

- Geurts: The survey needs to get out to more people. Geurts and Timerson will distribute to state agency staff.

- Richter: It will go to the League of Minnesota Cities to reach assessors, officials and engineers. We could involve past GAC members from other sectors.
- Corcoran: Could we assess the return-on-investment and the measurable outcomes for each priority? Lidar, hDEMs and culvert priorities are linked.
- Vaughn: The survey can help to promote awareness of these priorities, especially to hard-to-reach officials.
- Geurts: We need a fully staffed Outreach Committee.
- Vaughn: Identify an initial list of decision-makers, especially for hDEM which is a big-ticket item.
- Veraguth: Remonumentation is costly. Need to keep making the case to the Association of Minnesota Counties and legislators.
- Richter: Anyone interested in joining the Outreach Committee should let her or Rader know. A playbook on how to reach out to each sector would be useful.
- Geurts: Advertise via MN GIS/LIS Consortium.

Action Item: Finalize the priority list for the survey by September 30 – send any suggestions to Richter ASAP.

10. Updates on MN GAC priority projects and initiatives

Richter 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?

She showed the map of the 49 Minnesota counties that consider themselves to have free and open data, either with or without a policy (no change from the May meeting).

- **New Lidar Acquisition** - Vaughn
    - See lidar report in Item 6 above

- **Updated and Aligned Boundary Data** – Veraguth
    - Most recent success: The group is meeting monthly.
    - Issues: The location of water bodies can change (e.g., rivers shift) which then affects political boundaries. This priority is related to the work on PLSS locations.

- **Parcel Data** – Slaats
    - Most recent successes:
        - Individual outreach to counties from the PRLC team
        - The public GAC-standard compiled dataset now includes 38 opt-in counties, adding Fillmore, Lake, Olmsted, Winona and Wright counties since the May GAC meeting
    - Next task: Continuing individual outreach to counties from the PLRC team

- **Road Centerline Data** and **Address Points Data** – Slaats
    - 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.
    - Barriers:
        - Final 1Spatial validation steps need to be completed so that MnGeo can pull data in a streamlined process
        - Need to define an "opt-in" process to ask counties if they'd like to be included in a public dataset (MnGeo, GAC Outreach Committee, input from MCGISA)
    - Next tasks:
        - Complete 1Spatial validation process and steps (ECN, 1Spatial, MnGeo)
        - Create process to move data from 1Spatial to public dataset (MnGeo)
        - Outreach to counties to ask if they'd like to "opt-in" to be included in a public dataset (MnGeo, GAC Outreach Committee, input from MCGISA)

- **Imagery update** – Slaats
    - Most recent success: Added county imagery from Steele County to the WMS
    - Barriers:
        - Time constraints to work on committee recommendations; did not accomplish removal of suggested retirement image layers
        - Lyon County data delayed due to processing issue
    - Next tasks:
        - Adding county imagery from Lyon County
        - In discussion: Le Sueur, Lincoln and Aitkin counties

- **Critical Infrastructure Data** – Stark
    - Most recent success:
        - Recruitment of workgroup members. Now representing federal, state, and local jurisdictional interests. State agencies include Homeland Security Emergency Management, MnGeo, MN Department of Health, Commerce, and MnDOT.
        - Best available information is cataloged on the critical infrastructure resource page on MnGeo's website. We are learning about new data initiatives all the time.
    - Barriers:
        - Finding avenues to publicize beyond GIS community. Trying to reach staff with other roles at local governments.
    - Next tasks:
        - Review NREL (National Renewable Energy Lab)-prepared report CI data + Reliability and Equity metrics which examines how dependent are CI facilities on energy if the power goes out? How accessible are CI facilities to under-represented groups? Review and identify other uses for these data. May be able to share the report in future.

        - Workflow development: How can we help Homeland Infrastructure Foundation-Level Data (HIFLD) get info from the states and how can national collaborations help us meet our goals?
        - Richter: Commented that the GAC Outreach Committee can coordinate outreach so each committee and workgroup isn't contacting the same groups separately.

- **Underground Utilities Data**
    - Most recent successes:
        - Prototype system functionality is complete (prototype can aggregate diverse utility geospatial data and make available for other project identified needs)
        - Article featuring UUMPT Leadership Team member Geoff Zeiss of Ottawa, Canada was published in July issue of Damage Prevention-Pro
    - Next tasks:
        - Presentation at MN GIS/LIS October 13-14
        - Gopher State One Call is preparing to contract for development of Open Source product to leverage concepts and approaches used during development of prototype

- **U.S. National Grid Materials** – Knippel
    - Most recent success: Worked with SharedGeo to complete a new USNG mapbook publishing application on USNG Center
    - Next task: Scheduled for two presentations at upcoming MN GIS/LIS Conference, October 13-14

- The implementation of an **archive** for Minnesota geospatial data – Majewicz
    - Most recent success: Conducted three interviews with representatives from MnDOT, MnGeo, and the Metropolitan Council to learn more about their aerial imagery collections
    - Next tasks:
        - Attend the GIS/LIS conference to present our poster
        - Work with GIS/LIS to distribute our community survey
        - Complete a final report by the next GAC Quarterly meeting

- **Accurate Hydro-DEMs** – Vaughn
    - Next tasks:
        - Continue to build awareness that new lidar will require DEM hydro-modification and funding
        - Identification of culverts in new lidar will facilitate DEM hydro-modification

- **Culvert Data Standard** – Moore
    - Most recent successes:
        - Initial email sent out to subject matter experts and individuals identified who volunteered to participate
        - Researching culvert data practices of other states to identify best practices

- Barrier: Culvert Data Standard will become high priority in Fall 2022. Crossover of key personnel between Culvert Standard and DEM Hydro-modification membership has delayed formation of new subgroup.
- Next tasks:
  - Schedule a kickoff meeting in October to bring interested parties together
  - Recruit additional members and map out the process in creating the standard

- **Remonumentation of Section Corners**
  - See PLSS legislation report in Item 5 above

- **CJIS Data Best Practices**
  - See CJIS report in Item 4 above

11. Announcements or Other Business

- **Knott**:
  - The Minnesota GIS/LIS Consortium onsite conference is in Bemidji, October 12-14. Visit the GIS/LIS Consortium website for more information.
  - The MN GIS/LIS board has open seats. You can nominate yourself or someone else.
- **Geurts**: Tim Loesch, DNR's Deputy Chief Business Technology Officer, is retiring from the DNR in early November. Hal Watson will fill the Deputy CBTO position on an interim basis.
- **Mavis**: Meet Me at the Corner will be held at the MN GIS/LIS Conference in Bemidji on October 12.

12. Next Quarterly GAC Meeting

- December 14
  - 10:00 – noon (online only)

13. Adjourn

Richter thanked everyone for attending the meeting.

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