Minnesota Geospatial Advisory Council Meeting Minutes

May 26, 2021

Online via Webex

11:00 a.m. – 12:00 noon

Members Present: Ryan Bonney, Shakopee Mdewakanton Sioux Community; Jeff Bloomquist, USDA Risk Management Agency; David Brandt, Washington County; Kari Geurts, MNIT Natural Resources; Renee Huset, City of St. Paul; Len Kne, University of Minnesota; Leanne Knott, City of Red Wing; Mark Kotz, Metropolitan Council; Chris Mavis, Hennepin County; Bryan McCoy, Headwaters Regional Development Commission; Victoria Reinhardt, Ramsey County; Cory Richter, City of Blaine; Dan Ross, MnGeo; Soren Rundquist, Environmental Working Group; Gerry Sjerven, Minnesota Power; Stacey Stark, University of Minnesota; Alex Steele, Minnehaha Watershed District; Ryan Stovern, St. Louis County; Harvey Thorleifson, University of Minnesota; Kory Thurnau, USDA Forest Service; Benjamin Timerson, Minnesota Department of Transportation; Patrick Veraguth, Douglas County.

Members Absent: Brandon Tourtelotte, Pro-West and Associates

Non-Members Present: Brad Anderson, City of Moorhead; Geoff Bitner, Minnesota Department of Transportation; Will Craig, retired; Heather Hegi, City of Golden Valley; Pete Jenkins, Minnesota Department of Transportation; Randy Knippel, Dakota County; Rachel Koch, Minnesota Department of Revenue; Karen Majewicz, University of Minnesota; Andra Mathews, Minnesota Department of Transportation; Matt McGuire, Metropolitan Council; Nancy Rader, MnGeo; Alison Slaats, MnGeo; Steve Swazee, SharedGeo; Mike Talbot, EOR; Sean Vaughn, MNIT DNR; Jenna Walz, Sherburne County; Clayton Watercott, Metropolitan Council.

Call to Order

Kotz welcomed GAC members and guests.

- **Motion**: Approve today's agenda and meeting minutes from 3/3/2021 (Richter/Mavis) – Motion passed.

Review and Accept Committee Summaries

Kotz noted that a substantial amount of work is done by GAC committees. Kotz thanked the committees for all their work and for sharing their accomplishments through their reports.

- **Motion**: Accept the committee summaries (Huset/Sjerven) – Motion passed.

GAC Appointments for Next Term – Process Update

Applications have been received for all sectors except the following, for which recruiting continues: Federal government (1); Greater Minnesota city; K-12; Nonprofit.

Ross explained that applications will be submitted to Commissioner Tomes, the State of Minnesota's CIO, and the Commissioner will make the final appointments, then Ross will notify applicants.

GAC Leadership Transition Plan

Kotz is stepping down from the Geospatial Advisory Council, and this is his last meeting as Chair. Vice Chair Richter will assume Acting Chair role for the first meeting (September 22, 2021) of the newly appointed GAC members for the next GAC term. Reappointed members of the Leadership Team will remain for that first meeting. At the second meeting in December, the GAC will elect a new Chair and Vice Chair and select members for the new Leadership Team.

GAC Web Presence

Ross and Richter spoke to GAC members about the potential of using Esri's ArcGIS Hub platform to enhance the GAC web presence. Ross and Richter explained that currently the GAC has a public presence on the MnGeo website and, in the case of the Emergency Planning Committee (EPC), a separate website. MnGeo also supports SharePoint as a document sharing and collaboration space for any committee that requests that.

Using ArcGIS Hub would provide an environment for a unified calendar, event information and a place for more interactive presentation of information, such as dashboards and interactive maps. It would bring the GAC web presence together under one new web presence. Ross noted that the functionality would require the premium version of Hub.

The proposal is to have two sites:

- Hub Premium site for public sharing. This would include multiple "initiatives" within it to represent the work of the GAC and individual committees, workgroups, and outreach. It would also allow for multiple content editors.
- SharePoint for Collaboration

MnGeo will assign a business analyst to work with a small group of GAC and committee representatives to gather requirements. Then the content would be slowly migrated from existing sites to the new site and would start with 3DGeo and lidar content.

Ross provided a demo of the 3DGeo lidar hub site. Richter added two key points:

1. This should be a slow process because we want to understand the GAC business needs
2. We want to give greater content access to GAC members and workgroups

Richter asked for discussion from GAC members.

Swazee explained that for the EPC, they have gone through four iterations of where content is hosted. Swazee has encountered problems with the SharePoint platform. Swazee would like to be involved in the needs assessment.

Kotz said he supports the idea of getting everyone on one platform and enabling the committees to get involved in direct editing. Kotz asked for more feedback and asked people to give a thumbs up if they are in favor. Many responded with a thumbs up.

Richter asked for one content editor from each workgroup, and Kotz agreed and asked for an email about this to be sent.

Action item – Richter will follow up with each workgroup.

Rader reminded everyone that, in the meantime, the current MnGeo site content can be updated anytime and to share updates needed with Rader and Slaats, and they will make changes as quickly as possible.

Ross asked specifically about the GAC being OK with publishing the 3DGeo hub site now. Vaughn added that 3DGeo would like to publish it now, adding that it is a more dynamic and informative site for stakeholders than the existing site. We will modify it in whatever way is necessary as this new initiative evolves and look forward to participating in the effort.

Kotz said we don't need a motion to move forward with the lidar hub site. Ross said this will be shared with MNIT Communications staff, and, with their approval, we will then publish it.

NAIP Update

Bloomquist shared the news that the National Agricultural Imagery Program (NAIP) will be acquiring imagery in Minnesota in 2021. All 2021 NAIP is 60cm spatial resolution and 4 bands (R,G,B,NIR). Minnesota will be flown by Surdex. See the NAIP GeoHub site for more information: https://naip-usdaonline.hub.arcgis.com/

Hoping for rain at night and clear weather during the day for good flying!

Break

Low Distortion Projection Update

Geoff Bitner provided an update on the new coordinate systems for 2022 (see handout). He is the National Geodetic Survey (NGS) State Geodetic Coordinator and works in the MnDOT Office of Land Management.

Bitner noted that it has been three years since his last presentation to this group (see 5/30/2018 GAC minutes). He reminded the group that the new datum, NATRF2022, is providing the opportunity to update coordinate

systems, that NGS has developed new State Plane and UTM grids and MnDOT has completed the replacement for the Minnesota County Coordinate System.

The new datum and Minnesota coordinate systems have much less distortion. Currently, for Minnesota statewide data, we use an extended UTM Zone 15. Going forward with the new datum, NGS has developed a single state plane coordinate system for Minnesota. This will be a great system to use for data exchange. Bitner suggested that if new data are created, then they could be exchanged in state plane whereas older data would be exchanged in UTM. This could be a way to be clear about which of two datums is being used.

The previous county coordinate systems (67 unique planes) have been reduced to 32 planes for the new datum. They won't be named for a specific county, but rather will have a zone name. The new planes will reduce distortion significantly. Bitner shared several slides to illustrate how distortion is distributed within planes.

Bitner also discussed how we will be able to move our current data to the new coordinate system. NGS will be developing conversions between coordinate systems to assist with this.

He noted that all this work was made possible by the original Minnesota lidar collection. In the 1980s, this work was done by quad maps, using 8 points per map, and calculators. In contrast, the development of the new planes was supported by the statewide lidar data, using millions of points (that were provided by Colin Lee, DOT). The millions of points were parsed into hundreds of thousands of points per region. This gave Bitner and others the confidence to make the zones and know exactly how performance will be in all parts of the zones. Multiple zone configurations were considered before the final 32 planes were created.

Bitner noted that this was an unanticipated use of the lidar data and adds to the success stories supported by lidar.

GAC members discussed and asked follow-up questions.

Kotz: Looks forward to replacing UTM zone with state plane zone. Also said that one of the standards adopted by the former Governor's Council on Geographic Information was the use of UTM Zone 15 as an interchange for data. The GAC chose not to accept this as a new standard because GIS software could handle transformations now.

Bitner responded that if a standard was to be adopted, the new state plane would be a great system to propose.

McGuire asked in the chat if the team had considered keeping the Twin Cities metropolitan urban area in one grid. Bitner said that they did consider one zone for the metro, but that it didn't perform well (especially in east/west). The final decision was to cover the metro area with three zones.

Ross: Do we have a firm date on approval for Minnesota? Bitner said he anticipates it in the next 6-8 months. The official date would be with the release of the new datum. COVID-19 and the federal government shutdown have delayed progress on this effort, so we're probably looking at 2024. The time to make a transition will be up to users to decide. DOT will have a transition phase.

Ross: Wondering about timing for a future continued discussion of this topic at the GAC? Bitner suggests discussing it and planning to adopt it when the official datum is released. Swazee mentioned that he heard that Wisconsin will be published in 2025 or later. Bitner said that could happen.

Jenkins: One of the big hang-ups on the 2022 datum was due to the GRAV-D program (Gravity for the Redefinition of the Vertical Datum) being put on temporary hold due to COVID-19. NAD is horizontal; NADV is vertical. The new datum is XYZ and has a time stamp, so the interruption in collecting gravity data needed to establish the vertical component has been a big part of the delay. NOAA airplanes are used to support the GRAV-D work and it takes a long time to get on the schedule for those airplanes. More info about GRAV-D.

Legislative Update

Ross reported that the budget requests he submitted (funding for a surveyor coordinator position and for lidar acquisition and support) were not included in legislation, but he will still try to move these key items forward.

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?

Richter also said that even though "Free and Open Data" is no longer considered a separate priority, but rather part of everything the GAC does, she wanted to note an important milestone: Now over 50% of counties (44 of 87) consider themselves to have free and open data either with or without a policy (see map).

- Parcel Data – Slaats
    - Most recent success: First meeting of the Open Data Parcel Subcommittee (Parcels and Land Records Committee) was held in April
    - If you are experiencing a barrier: None
    - Next task:
        - Subcommittee tasks will be defined to work towards sharing parcel data publicly for open data counties
        - Next Open Data Parcel Subcommittee meeting set for June 7

- Updated and Aligned Boundary Data – Stovern
    - Most recent success: Established a Boundary Alignment Subcommittee. Initiated pilot project for Arrowhead region.
    - If you are experiencing a barrier: None
    - Next tasks: Write a definition of Boundary Alignment and work with the Arrowhead region on the pilot project. Our biggest question is "what is a boundary?"

- Remonumentation of Section Corners – Veraguth
    - Most recent success:
        - Met three times as a subcommittee
        - Looked at what different states are doing – each state does it differently
        - Michigan has a good model
        - Working on a timeline and business case for legislation
    - If you are experiencing a barrier: Funding and support!
    - Next task: We are working on a Remonumentation Plan and a legislative proposal for remonumentation

- New Lidar Acquisition – Sjerven
    - Most recent success: Successful grants for NE MN and Southern MN
    - If you are experiencing a barrier: Challenges but not barriers
    - Next tasks: Completion of Joint Funding Agreements with each funding partner and completion of Task Order for each acquisition
    - Additional info:
        - Lidar acquisition has been completed in the Rainy Lake/Lake Superior blocks. The next step is to patiently wait for data.
        - In SE/SW Minnesota, USGS funding was recommended. Data are being collected in SE. Will give an update at the September GAC meeting.
        - Team is working on coordinating new grant requests to USGS and have had many outreach meetings. Looking forward to putting together BAAs for Upper Mississippi and Central Mississippi River blocks (see lidar status map on 3DGeo Data Acquisition page).

- Accurate Hydro-DEMs – Vaughn
    - Most recent success: There is a 3DGeo subgroup working on this priority that continues to meet every month as it has for the past 2-3 years. The team includes many stakeholders. They are working on an interactive web tool to show where the digital dams are. Group is working on documentation behind webpage.
    - Next task: Coordinate a presentation to this group

- Culvert Data Standard – Vaughn
    - Most recent success: Rick Moore reached out to other states and the Great Lakes Collaborative as part of the group's work to define a culvert inventory standard. DNR has an initiative moving forward to manage culverts data. Culverts are hydrologic features that influence how water flows across the landscape. There are millions of culverts.
    - Next task: Coordinate a presentation to this group

- Road Centerline Data – Ross
    - Most recent success: Continue to work on statewide aggregation. Workflow is changing and the goal is to put this data into the GAC standard and share on the Commons.
    - If you are experiencing a barrier: Challenges but not barriers

- Address Points Data – Ross
    - Most recent success: Ditto from road centerlines! Working with partners at the Minnesota Department of Public Safety's Emergency Communication Networks (ECN) to get data into the new GAC standard.

- Underground Utilities Data – Swazee
    - Most recent success: The Emergency Preparedness Committee (EPC) YouTube channel has 35 videos, focused on technologies about mapping underground utilities. The project team has been invited to the 2021 Common Ground Alliance Conference (October 12-15). Work was published in recent dp-PRO article. Reinhardt shared about a recent EPC presentation to the Clean Water Council. Swazee said EPC has been working extensively with organizations in Europe where they are further ahead on underground infrastructure, including good conversations with the Scottish Roadworks Commissioner. Free and open data efforts are key to sharing of utility data (most of which is in private hands).
    - Next task: EPC meeting on June 17 – Predictive analysis for planning for emergencies

- Critical Infrastructure Data – Stark
    - Most recent success: Stark reported that she has been working with counties, through U-Spatial, planning a small group meeting and next steps. They'd like to make a usable process and solution for local data owners. The Minnesota Department of Public Safety's Homeland Security and Emergency Management (HSEM) director is on board with the importance of this project and can help work through emergency community challenges. Additionally (credit all to Mike Dolbow, MDE!), a public school buildings dataset is now published to the Commons.
    - If you are experiencing a barrier: None
    - Next tasks:
        - Determining requirements to get police and fire station locations published to the Commons
        - Consolidating best available law enforcement and fire data (from various verified sources)

- U.S. National Grid Materials – Knippel
    - Most recent success:
        - State efforts have rolled up to the national level into the USNG national implementation working group
        - USNG Wikipedia pages
        - Training materials and video

        - Updated maps in Minnesota have been published (see: https://arcg.is/mmvSO)
        - Information will also soon be on the Commons
        - There are now Wisconsin maps too. They are leveraging work already done to update data to create nationwide map series.
    - Next task: Share USNG information on the Commons and MnGeo website.

- Imagery update – Slaats
    - Most recent success: Update of image service with Beltrami County 2020 color and cir aerial imagery
    - If you are experiencing a barrier: None
    - Next task: Follow up on recommendations of the Image Service Sustainability Committee to add and retire some image layers.

- Trails Data Standard – Kotz
    - Most recent success: The proposed bike trail data standard is working through the GAC standards process. Kotz noted that this is just for bike trails, not all trails.
    - If you are experiencing a barrier: None

Announcements or Other Business

- Reinhardt – Recently Steve Swazee worked with Reinhardt to share information with the Minnesota Clean Water Council. Through this type of outreach, we can show how geospatial information can provide value to other sectors and entities. Data from the geospatial community is helping decision makers.
- Veraguth – Actively working on GAC priorities through the Parcels and Land Records Committee
- McCoy – Working with the office of Transit and Transportation to map rural transit providers. Would like to present on the topic to this group.
- Geurts – The State Agency GIS Collaborative continues to meet, and they will be conducting another survey about training needs soon.
- Timerson – Reported that the AASHTO conference held virtually in May was very successful with over 700 people attending. This is double the normal attendance, and states reported that they could send people that didn't normally attend, so AASHTO is looking toward having a hybrid event in the future. The virtual platform, Hublio, worked well.
- Thurnau – Shared that he is working on boundary alignment at the Federal level and hopes to collaborate with local efforts through the GAC and with counties. Had an international emergency the night before where a canoe was blown into Canada by wind, and geospatial technology was used to find the canoeists and support their rescue.
- Bonney – Said he is looking forward to the hub site
- Sjerven – Thanked for support on lidar hub site, and reminded everyone about abstract submission for the MN GIS/LIS conference

- Thorleifson – Working on the County Geologic Atlas is ongoing, focusing on improved public health and water sources. U.S. Geological Mapping is working towards sharing data in a way that can be more directly applicable for modelling. In Minnesota, we are following this method in soil mapping and using the same protocols. At the Federal level, Rep. Betty McCollum is supportive. Initially the federal budget was $10 million/year, now going for $16 million/year. Internationally, working towards an improved hydro model for the Great Lakes Basin.
- Stark – U-Spatial is offering virtual workshops this summer. They are open to the public and include Intro to ArcGIS Online and StoryMaps. In the fall, workshops will be offered on-campus and in-person. The Minnesota Alliance for Geographic Education (MAGE) received a National Geographic grant for summer workshops for educators. USpatial is partnering with MN GIS/LIS, U-Spatial and MAGE.
- Brandt – MetroGIS met on May 25 and the group received an update on Census and redistricting. MetroGIS also is discussing the lidar acquisition plans and funding. MetroGIS is working with the Metro Conservation Network, and work continues with addresses and centerlines for NG9-1-1.
- Stovern – The MN GIS/LIS conference will be in-person this fall. It has been a fun four years being the GAC GIS/LIS representative. Stovern says he will be around to support ongoing GAC work.
- Mavis – Noted that the Mapping Prejudice project was covered in the AMC Spring 2021 publication, and the article explained how the project is a success story for open data. This would be a good idea for the Outreach Committee and for the hub site. The Parcels and Land Records Committee has a StoryMap in support of remonumentation. Building out maps like these will help to get support from a wide variety of people – we've come a long way in a short amount of time. The MN GIS/LIS Consortium, the Minnesota Society of Professional Surveyors and the Minnesota Association of County Surveyors recently met to collaborate and share information.
- Kne – The University of Minnesota just got a Planet imagery site license which gives the University access to daily imagery (3-meter resolution 4-band imagery). There is an interesting restroom mapping project being done by the School of Nursing which encourages bicyclists to map the locations of public restrooms which are then displayed on a crowd-sourced map.
- Richter – Is part of the Institute of Asset Management and notes there is crossover with GIS. They recently had a quarterly meeting and are planning virtual conferences. Contact Richter for more information.
- Ross – The National States Geographic Information Council's (NSGIC) geospatial maturity assessment that is conducted to evaluate data themes by state every two years is happening soon, and Dan will be working with GAC members on this. Minnesota was one of the top performing states last time. Let Dan know if you'd like to be involved.

Thanking Mark Kotz

Richter thanked Mark Kotz for his leadership of the GAC over the past six years. She shared a virtual card signed by many people that thanked Kotz for all his work (and the colorful spreadsheets). Kotz said he is really proud of the work done by the GAC over the past six years, and he has been amazed at all the volunteers and the work they do: "I love the work we do, and I know that will continue!" Kotz said that Richter will be a great interim chair and that he endorses her to be, and hopes she will be, the next GAC chair. Kotz noted that he will continue to be a part of the Standards Committee.

- Reinhardt added that Kotz was absolutely critical in the group's transition to become the geospatial community's advisory council, and is a main reason why the organization is where it is today. We are celebrating Mark's legacy.
- There was agreement from many other GAC members and in the meeting chat.

In meeting chat:

- Mathews: Thank you Mark!
- Geurts: Thank you Mark!!!
- Stark: Thank you, Mark, we will miss you!
- Mathews: Thank you Cory!
- Bonney: thanks Mark, you've done great work!
- Mathews: And Mark makes standardization fun!
- Anderson: YES, agree with Victoria, thanks Mark! For Everything!
- Koch: Thank you Mark! And thank you Cory!

Adjourn

Kotz thanked everyone for attending the meeting. Next meeting will be September 29[1], 2021.

[1] Minutes and slides updated 8/2/2021 to reflect the revised September 29 meeting date.