Minnesota Geospatial Advisory Council Meeting Minutes

December 14, 2022

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

Non-Members Present: Andrea Bergman, MNIT Department of Natural Resources; Curt Carlson, MnGeo; Jennifer Corcoran, MNIT Department of Natural Resources; Will Craig, retired; Randall Cutting, ERM; Nathan Drews, Department of Transportation; Jason Ewert, Pollution Control Agency; Brad Henry, University of Minnesota; Brandon Hirsch, MNIT; Melinda Kernik, University of Minnesota; Randy Knippel, Dakota County; Mark Kotz, Metropolitan Council; Karen Majewicz, University of Minnesota; Ryan Mattke, University of Minnesota; Andrew Meyer, Department of Transportation; Rick Moore, MNIT Department of Natural Resources; Akiko Nakamura, Department of Transportation; Nancy Rader, MnGeo; Jeff Reinhart, MNIT Department of Natural Resources; Dan Ross, Ecopia AI; Jamie Schulz, MNIT Department of Natural Resources; Molly Shoberg, MNIT Department of Natural Resources; Kiah Sagami, Houston Engineering; Kevin Trappe, Beltrami County; Sean Vaughn, MNIT Department of Natural Resources; Sally Wakefield, MNIT Department of Natural Resources; Clayton Watercott, Metro Transit

1. Call to Order

Meeting presentation slides

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

- **Motion**: Approve today's agenda (Maddox/Mavis) – Motion passed
- **Motion**: Approve meeting minutes from 9/28/2022 (Reinhardt/Veraguth) – Motion passed

2. Review and Accept Committee Summaries (All)

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

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

3. Stream ID Standard (Kotz, Carlson)

Kotz reviewed the purpose of the standard: To provide common coding schemes for **watercourses** (the entirety of a stream) and **reaches** (a portion of a stream) for transferring stream data. The sources of the coding schemes are the federal Geographic Names Information System (GNIS) and the DNR Fisheries Stream Survey Manual.

This standard was originally adopted in the 1990s by the Minnesota Governor's Council on Geographic Information, as "Codes for the Identification of River Reaches and Watercourses in Minnesota". This revision updates the standard to the current GAC format, updates the language and structure to be more intuitive and clearer, and more explicitly describe how to use and comply with the standard.

The following subject matter experts and members of the Standards Committee reviewed the proposed standard:

- Jamie Schulz, MNIT DNR
- Andrea Bergman, MNIT DNR
- Jennifer Crea, MNIT PCA
- Mark Kotz, Metropolitan Council
- Curt Carlson, MnGeo

The standard was open for public review for a 90-day period that ended 7/31/22. Five 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 stream ID standard webpage.

Motion: Approve the Stream ID Standard v. 1.1 (Brandt/Mavis) – Motion passed

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

Maddox reported that the CJIS Workgroup has finalized the CJIS Best Practices Guide and Resources for GIS; she had presented the draft version at the GAC's September 28 meeting.

Motion: Approve the CJIS Best Practices Guide for GIS document (Reinhardt/Veraguth) – Motion passed

5. 2023 Priority Project Scores (Brandt)

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

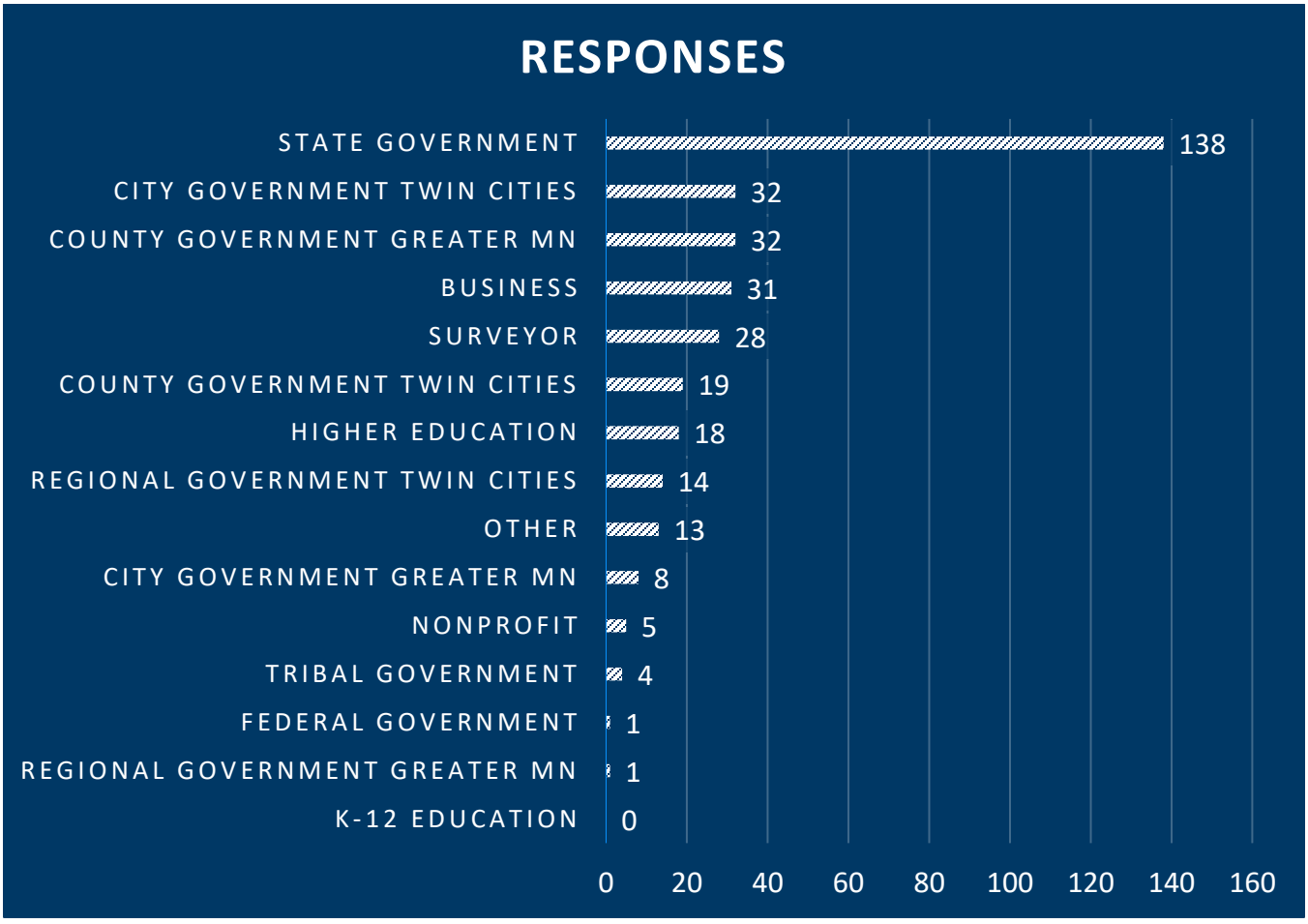
1. To create a voice for the MN geospatial community
2. To direct work plans of the GAC and its committees

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

This year, 344 survey responses were submitted, down 13 from last year's 357. As in past years, the most responses were from state government sector, but the results are very similar when weighted by sector.



Thirty-seven comments were submitted. The main topics were the importance of standards and data sharing; needs for statewide aerial imagery, road centerlines, parcels, 911-related data and more REST services; climate-related data; pedestrian network data; and diversity, equity and inclusion issues. There was also a question about whether critical infrastructure data should be shared.

Brandt then showed the spreadsheet with the priority scores and members discussed whether adjustments were needed.

Discussion:

- Parcel Data
    - Craig: Agreed that parcel data should be rated highly.
    - Slaats: Ryan Stovern is now the priority owner and Slaats is the champion.
- Critical Infrastructure Data Workflow
    - Stark: This group could use more members.
    - Henry: Is this the same as the Emergency Preparedness Committee's Underground Utilities Data Sharing team?
        - Stark: No, the CI group has been concerned with above ground infrastructure (fire and police stations, hospitals, schools, communications and correctional facilities), typically collected as point features.
        - Henry: Perhaps the name of the CI priority could be clarified.
        - Stark (from chat): We have been using "critical infrastructure assets" for our workgroup. Again, our focus is different than the underground utilities team, but hard to say in just a title for the priority.
        - Rader (from chat): See the MN Critical Infrastructure GIS Data Guide for the type of infrastructure included.
- Updated and Aligned Boundary Data
    - Veraguth: This group meets every other month. The Wisconsin/Minnesota boundary may be a next project.
- Address Points Data and Road Centerline Data
    - Albrecht: The Outreach Committee will be working on open data promotion, especially address point and road centerline data. They will meet with the Parcels and Land Records open data group to discuss lessons learned from the parcel data outreach effort.
    - Slaats: The work of the Outreach Committee is just one aspect of the work needed on address points and road centerline data, so I believe that MnGeo could still be the priority owner.
- Culvert Data Standard
    - Moore: This group has started meeting. They need a new champion since Jonathan Lord has retired. Andrea Bergman may take that over. They will also need assistance from the Standards Committee.
      Action Item (Moore): Check with Andrea Bergman about becoming the champion of the Culvert Data Standard priority.

- Lidar Data
    - Sjerven: Acquisition work will continue regardless of the priority rating. The emphasis will change as acquisition is done and the focus moves to derived products and how the data and products are delivered.
    - Drews (from chat): Is the "Lidar" data specifically the roadway/roadside data collection, the aerial/topo data collection, or all of it? (I believe MnDOT will be updating its centerline data next year with roadway-collected lidar.)
        - Sjerven (from chat): You may be able to find answers on the 3DGeo Committee's webpages, especially the Acquisition Workgroup page and its FAQ.
        - Vaughn (from chat): We have laid the groundwork to bring more emphasis as 3DGeo being the Data Steward for lidar data which strengthens what Gerry was describing that the Lidar Data Priority over the next couple of years will likely transition from data acquisition to data development, maintenance, and dissemination. But don't be surprised to see data acquisition to be ongoing as we prepare for increased management of temporal lidar data.
        - Vaughn (from chat): I think the answer to Nathan's question above regarding the Lidar Data Priority is that the Lidar Data Priority as it is listed currently was and remains as a Priority to support Statewide Lidar Acquisition. It's the initiative to bring QL-1, Second generation, high-density lidar data update to Minnesota. As Gerry and I have indicated in comments today, that data procurement may evolve. That said, we will likely see the Geospatial Community use "Lidar Data" as an umbrella description for all things lidar. 3DGeo will take guidance from the GAC for how to describe all that goes along with lidar and priority descriptions.
- US National Grid Materials
    - Knippel: This is an on-going national initiative that will continue regardless of the priority rating.
- Remonumentation of All Section Corners
    - Veraguth: The group is talking with legislators about getting the money for this effort – that will continue regardless of the priority rating.
- MnGeo Image Service Improvements
    - Slaats: This priority needs a new owner (which should not be from MnGeo since this priority is to advise MnGeo on suggested changes from the community). The priority is not well-enough defined.
    - Drews (from chat): Re: The Image Service Sustainability Committee: I have a funding comment. Changes to 405c language (as part of the IIJA passing) seem to have opened the door for states to use much more federal funds for improvements to "Traffic Safety" Data needs. It's a hot topic at our Traffic Records Coordinating Committee (TRCC). If there is overlap with GAC priorities, I'd like to discuss that more in a future call/meeting. More info: eCFR :: 23 CFR 1200.22 -- State traffic safety information system improvements grants.
      Action item: Slaats will follow up with Drews about these grants
- Geospatial Archive Implementation
    - This group will keep working.

- Underground Utilities Data Sharing Team
    - This group will keep working.

[Note: The Legislative Update (item 6 below) was covered here due to Brandon Hirsch's schedule. The priorities discussion then resumed.]

- Criminal Justice Information Systems Data GIS Best Practices
    - Maddox: This priority is complete.
    - Ross (from chat): If done you should celebrate and perhaps outreach could communicate about that via GovDelivery? Maddox: Yes
- Hydro DEMs
    - Vaughn: These derived products are needed and are always unfunded since the emphasis is on acquisition. The cost of these derived products is the cost of doing business.
    - Ross (from chat): Sean, could there be a one-time request to the legislature to fund [lidar] either in an agency or university budget? Brandon identified a large amount of one-time money available.
    - Vaughn (from chat): hDEM Priority description should be expanded to include Digital Dam Breachline development and association with hDEM Subgroup.
- Summary Crime Data
    - Maddox: Start now that Criminal Justice Information Systems project is done. Determine next steps.
- Success Stories for Geospatial Technology
    - Kne: Has volunteered to be the champion.
    - Drews (from chat): Reduced Conflict Intersection Safety Evaluation in MN. The impact of reduced conflict intersections on traffic crashes in Minnesota.
    - Ross (from chat): I'll help.
    - Mattke (from chat): We gathered some stories for the Archiving effort -- people were very willing to contribute when asked: https://www.mngeo.state.mn.us/workgroup/archiving/uses.html
        - Drews (from chat): Are you still looking for more? Mattke: Yes!
    - Maddox (from chat): I may have some after working through the Outreach Committee project for a handout for open address and center lines. I will share if/when I get them.
    - Rader (from chat): Stories collected long ago for use of lidar for water quality and air photos
- Publication of Open Foundational Datasets
    - Slaats, Brandt and Knippel are discussing what this priority might involve, including the possibility that address point data could be added in future to the National Address Dataset.
- Parks Data Standard
    - The metro standard could be considered by the Standards Committee.
- Parking restrictions
    - A discovery effort would be needed to decide if this is an appropriate priority for the GAC.

Brandt: There has been sufficient discussion to be able to vote on the 2023 priorities. The group can revisit details as the year goes along.

Priorities after discussion:

	Project or Initiative Name	Status	Do in '23	GAC Rank
2	**Parcel Data**	Active	Y	1
3	**Critical Infrastructure Data Workflow**	Active	Y	2
4	**Updated & Aligned Boundary Data**	Active	Y	3
5	**Address Points Data**	Active	Y	4
6	**Road Centerline Data**	Active	Y	4
7	**Culvert Data Standard**	Active	Y	5
8	**Publication of Open Foundational Datasets**	Inactive	Y	5
9	**Lidar Data**	Active	Y	6
10	**U.S. National Grid Materials**	Active	Y	7
11	**Remonumentation of all Section Corners**	Active	Y	8
12	**MnGeo Image Service Improvements**	Active	Y	9
13	**Geodata Archive Implementation**	Active	Y	10
14	**Underground Utilities Data Sharing Team**	Active	Y	11
15	**Success Stories for Geospatial Technology**	Active/Recruitment underway	Y	12
16	**Geospatial Commons Advisory Group**	Recruitment underway	Y	13
17	**Hydro-DEMs**	Active	Y	14
18	**Summary Crime Data**	Active - 2023	Y	15
19	**CJIS Data GIS Best Practices**	Done		
20	**NG9-1-1 Geospatial Forum**	Recruitment underway	?	
21	**Parks Data Standard**	Inactive	?	
22	**State Business License Data**	Inactive	?	
23	**Street Parking Restrictions Data Standard**	Inactive	?	
24	**Snow Emergency Parking Data Practices**	Inactive	?	
25	**Strategy Team for All Types of Imagery**	Inactive	?	
26	**Basemap Services**	Inactive	?	
27	**Inventory of MN GeoData Assets**	Inactive	?	

Motion: Accept the revised priorities (Veraguth/Stark): Motion passed

6. Legislative update (Slaats, Hirsch)

Brandon Hirsch is MNIT's legislative director. He spoke about the upcoming legislative session and how GAC members could support proposals for legislation that would serve Minnesotans. He stressed the value of collaborative relationships, both public and private, and mentioned the Minnesota County IT Leadership Association.

The state has a strong budget outlook this year. The budget surplus has two parts: a $12 billion one-time surplus and $6 billion structural surplus. There will be no shortage of healthy conversations about how to allocate the surplus. The goal should be to keep Minnesota as a place with the best quality of life. During this session, the budget will dominate, policy will not.

The legislature will look very different due to a significant turnover in members and change in party control of the Senate. The State Government committees will have new leadership: Erin Murphy in the Senate and Ginny Klevorn in the House. This will provide many opportunities for educational discussions. The legislature will meet in-person as much as possible.

Discussion:

- Veraguth: Thank you! The Minnesota Society of Professional Surveyors is looking to hire a lobbyist.
- Better communication with legislators:
    - Vaughn: We need better ways to describe lidar as a foundational dataset to high-level officials.
    - Hirsch:
        - How does lidar help Minnesotans? What is foundational data? Changing from a "map" to "digital" – these are all "products".
        - Start with a story, for example:
            - More accurate section corner locations lead to more accurate property boundaries and assessments. Make sure everybody is paying fairly.
            - Accurate topography helps mitigate floods, prevent fertilizer runoff, protect people who hunt and fish.
        - Do not use industry buzzwords!!!
        - What is the advantage of collecting this now, in terms of timeliness and efficiency
        - Have data in-place and current, in a standardized form, so that when a need arises, it is ready to be used. For example, with COVID, we were well-positioned to react to threats and challenges. Be prepared for rapid response to future events such as disease, floods or other disasters.

7. Break (not taken)

- The group decided to not take the scheduled break

8. Archiving Imagery update (Majewicz, Kernik)

Majewicz reviewed the Archiving Imagery Workgroup's objectives:

- Research the historical and current formats of imagery data
- Assess the monetary investment involved in the original creation of Minnesota imagery
- Consult with the Image Service Sustainability Committee on planning workflows for image service retirements
- Identify any major challenges with archiving imagery data, such as space considerations due to the size of the files
- Evaluate existing practices and potential strategies for transferring, storing, transforming, documenting, and archiving imagery data

According to the previous Archiving Workgroup's 2018 survey, the most important need for historical data is aerial photos and imagery. Statistics from the Minnesota Historical Air Photos Online site support this need (5,300 average number of site visitors per month and 17,200 average number of site downloads per month); also, the Wisconsin Historic Aerial Imagery Finder is the most commonly visited page on the Big Ten Academic Alliance Geoportal (BTAA Geoportal).

There are two general eras of imagery:

- Analog: 1920s-1990s: Film images are stored on physical media at libraries and agencies. Scanned images may be available for download.
- Digital: 1990s-present: Digital files are stored on hard drives and servers. Images may be available as raster downloads or stitched together as geospatial image services. Currently, there is no workflow to deconstruct services to recreate archival files, so it's important to look for files in the original format.

The workgroup then reviewed imagery inventories at the University of Minnesota's John R. Borchert Map Library collection and at MnGeo to assess collection size and imagery formats. Most of the imagery files are stored as TIFs, the file format recommended for images by the Library of Congress, but a variety of other formats are used, including some that are either proprietary or legacy. Slide 33 is a table of the top 10 raster file formats by size from the workgroup's inventory of imagery currently held by MnGeo. However, these numbers were calculated before duplicate copies were identified, so the file sizes should be seen as relative quantity, not exact numbers.

To reach a wider audience, the workgroup created an online survey to gather information about what types of imagery exist across the state that would be suitable for archiving. Responses were collected from November 2-28, 2022. Twelve responses were received from a variety of organizations including those representing county, city, university, private company, and tribal nation. Again, the most common format is TIFF, most of the data is stored on servers, and the most common reason for archiving the imagery was its value for temporal or spatial analysis.

Summary of the workgroup's findings:

- Historical aerial imagery is highly valued and used by the community

- Various agencies are spending hundreds of thousands of dollars per year collecting new imagery
- Digital image files are stored inconsistently and are at risk of loss
- Digital image files take up considerable server space
- Digital image files are often unknowingly stored on duplicate drives across the state
- Imagery is being stored in a variety of file formats including formats that are proprietary or legacy
- There is no clear workflow for retroactively archiving images from geospatial image services
- Providing access to archived files may look different than the way existing services provide access to imagery as the focus is on long term availability and preservation rather than immediate use

For more information, see the workgroup's final report.

Discussion:

- Ross: Has this topic been discussed with the Minnesota Historical Society? Yes, working with MNHS staff on general archiving workflows and retention policies, but haven't been talking with them about this specific resource type. MNHS's photo collections are not georeferenced.
- Mattke: Shawn Rounds, MNHS archivist, does not have time to devote to digital versions of geospatial data and imagery. Her preference was for UofM staff to go ahead with this project and keep in contact.

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?

- **New Lidar Acquisition** - Vaughn
    - See slides 46-48 for updated status maps of data acquisition and funded partnerships, for an update on the Minnesota River East and West Lidar Acquisition Block, and for details about funding agreements and acquisitions.

- **Updated and Aligned Boundary Data** – Veraguth
    - Next tasks: The group is working on issues concerning the Wisconsin/Minnesota boundary near La Crosse.

- **Parcel Data** – Slaats
    - Most recent success:
        - The public GAC-standard compiled dataset now includes 42 opt-in counties, adding Big Stone, Mille Lacs, Pennington and Renville counties since the September GAC meeting
    - Next task: Continuing individual outreach to counties from the Parcels and Land Records Committee 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 Lyon County to the WMS
    - Barriers: Time constraints to work on committee recommendations; did not accomplish removal of suggested retirement image layers
    - Next tasks:
        - Add county imagery from Le Sueur County
        - NAIP 2021 GeoTIFF imagery currently being downloaded
        - Review Lyon County imagery shift
        - Build out new development/staging image server
        - In discussion: Lincoln and Aitkin counties
    - Albrecht (from chat): What is the process to add imagery to the WMS? Hennepin County would like to submit most recent. Rader: Thanks! Email MnGeo and we'll follow up.

- **Critical Infrastructure Data** – Stark
    - Most recent success:
        - Working on updating correctional facilities dataset on the MN Geospatial Commons.
        - New priority initiative proposal: *To publish foundational data nationally through open data and commercial sources. Foundational datasets are defined as parcels, addresses, road centerlines, and critical infrastructure.* This is a great idea to move this aspect of the C.I. workgroup to another new workgroup. We've talked about this a lot and it has become a whole separate project.
    - Barriers: Few meetings and little time for forward movement 4th quarter.
    - Next task: Refresh goals for 2023 and invite new members.

- **Underground Utilities Data**
    - Most recent successes:

        - Dedicated support website is created (www.fuzionview.org) and outreach to the Minnesota utility community has begun
        - Presentation at MN GIS/LIS October 13-14
        - Gopher State One Call COO Barbara Cederberg now working closely with the Common Ground Alliance GIS Working Group. The Minnesota project is seen as leading the nation and is receiving community wide support.
    - Next tasks:
        - Review promotional flyer
        - 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: Two presentations at MN GIS/LIS Conference, October 13-14 (full session and lightning session)
    - Next tasks:
        - Next quarterly meeting of the USNG Implementation Working Group is Jan. 18; next meeting of the group's Board of Directors is Jan. 17
        - Anticipate release of a new USNG mapbook publishing application on USNG Center by the end of the year

- **Archiving**: The implementation of an archive for Minnesota geospatial data – Majewicz
    - See Archiving Imagery Workgroup update above in Item 8.

- **Accurate Hydro-DEMs** – Vaughn
    - Issues:
        - No success to report related to progress
        - 3D Geomatics is starting to receive more questions about the new high-density lidar coming and the need for DEM hydro-modification
            - New lidar will require DEM hydro-modification
            - Previous state investments in DEM hydro-modification and resulting datasets will support new DEM hydro-modification
    - Barrier: Funding
    - 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. See slide 60 for more detail and graphics.
- An additional slide reported on activities of 3DGeo's Hydrogeomorphology Workgroup:
    - Key Meetings
        - Sept – Lidar Update, Guest Presentation: Met Council Priority Waters Project presentation

        - Oct – Lidar Update, 3D Geo DEM Hydro-modification Subgroup – “Standards, Breachlines and Pilot Projects”
        - Dec – Lidar Update, Guest Presentation: USGS 3DHP Update
    - Workplan Progress
        - Developed roadmap for NXG-Hydro Development – Communication and Outreach
        - Engaged with national hydrography programs – 3DHP, 3DNTM
    - Foundational Data Stewards
        - GAC Stream ID Standard presented for approval
        - Working with DNR Data Governance Administrator on standards
        - Partnering with LCCMR-funded Lake Inventory Update to inform and guide

- **Culvert Data Standard** – Moore
    - Most recent successes:
        - Kickoff meeting December 12 with 16 members present. Developed infrastructure for the group, reviewed other culvert standard projects and identified roadmap forward.
        - Researching culvert data practices of other states to identify best practices
    - Barrier: Culvert Data Standard has become high priority in Fall 2022. Culvert Standard will move forward with every-other-month meetings and collaborative workspace for action items.
    - Next tasks:
        - Recruit additional members and map out the process in creating the standard.
        - Identify culvert datasets within the state; develop comprehensive attribute list.

- **Remonumentation of Section Corners**
    - This group is waiting for the legislative session to start.

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

10. Announcements or Other Business

- There was no time for announcements.

11. Next Quarterly GAC Meeting

- March 15, 2023: 10:00 – noon (online only)

13. Adjourn

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