Minnesota Geospatial Advisory Council Meeting

December 6, 2017

Blazing Star Room, Ground Floor, Centennial Office Building

658 Cedar St., St. Paul, MN 55155

11:00 a.m. – 2:00 p.m.

Agenda

1.	Call to order (Chair) a. Introductions b. Approval of agenda c. Approval of meeting minutes from 9/19/2017	11:00	15 min
2.	Review and accept committee summaries (All)	11:15	5 min
3.	Request for approval of Minnesota Address Point Data Standard (Maas)	11:20	15 min
4.	Proposed changes to sectors (Kotz)	11:35	5 min
5.	Committee collaboration (Brandt)	11:40	5 min
6.	Geospatial Data Act update (Ross)	11:45	5 min
7.	NAIP imagery possible licensing (Bloomquist)	11:50	5 min
8.	Sector Report – Metro Cities (Richter)	11:55	10 min
9.	Break Networking	12:05	30 min
10.	2018 projects and initiatives prioritization exercise (Kotz)	12:35	30 min
11.	DEM hydro-modification (hDEM) (Vaughn)	1:05	25 min
12.	Approval of 3D Geomatics Committee work plan (Sjerven, Vaughn)	1:30	5 min
13.	Updates on MN GAC priority projects and initiatives	1:35	10 min
14.	Announcements or other business	1:45	15 min
15.	Adjourn	2:00	

Agenda Item 2. Review and Approval of Committee & Workgroup Summaries

3D Geomatics Committee

No report

Emergency Preparedness Committee

Report date: November 22, 2017

Prepared by: Steve Swazee, sdswazee@sharedgeo.org, 651-456-5411

Meetings:

- March 9, 2017
- October 10, 2017
- Next: December 12, 2017

Progress on work plan (since last report)

1. **Damage Assessment Tiger Team**
    a. Submitted by: Cory Richter
    b. Meetings:
        i. Past Meetings
            1. January 10, 2017, 1:00pm-2:00pm, teleconference
            2. February 13, 2017, 2:00pm-3:00pm, teleconference
            3. March 7, 2017, 9:00am-10:00am, teleconference
            4. May 25, 2017, 11:00am-12:00pm, teleconference
            5. August 30, 2017, 8:30am-9:00am, teleconference
            6. October 6, 2017, Damage Assessment Data Standard Panel Discussion at MN GIS/LIS Annual Conference, Bemidji, MN
            7. November 6, 2017, 8:30a.m.-9:30a.m., teleconference
        ii. Future meetings on hold pending outcome of State project with WebEOC
    c. Progress on work plan:
        i. The workgroup presented a panel discussion at the annual MN GIS/LIS conference held in Bemidji, MN October 4-6, 2017. A draft version of the data standard was distributed to attendees for discussion purposes. There was limited feedback given.
        ii. Cory R. presented an update to the EPC October 10, 2017. Feedback from the EPC was to include greater detail in definitions of attributes before distributing the first proposal for community review.
        iii. The workgroup was able to get John Moore from HSEM to join the teleconference November 6, 2017. It was announced the State had purchased WebEOC and was moving ahead with their configuration of ArcGIS Collector for Damage Assessment and will be deploying the applications before Super Bowl LII in 2018. WebEOC and the Collector app will be made available to all counties and cities of the first class in Minnesota through HSEM. In light of the information provided the workgroup has decided to suspend all activity with the data standard until the State completes their work. John Moore asked us to nominate one or two individuals to assist with the GIS configuration. David Bendickson and Todd Lusk from the workgroup have volunteered. All workgroup activities are on hold at this time and will be re-evaluated after the State project is complete. David and Todd will communicate with the workgroup and EPC on the activities with the State.
    d. Additional comments: None.

2. **Situational Awareness Sharing Initiative Tiger Team**
    a. Submitted by: No report received
    b. Meetings: No known meetings held
    c. Progress on work plan: A misunderstanding about administrative ownership of this tiger team delayed creation for an extended period. Unfortunately, that circumstance appears to have led to its demise as lead proponent, Guy Konietzko of GeoComm, has become heavily involved in development of a proprietary product for that company.
    d. Additional comments: Unless other individuals come forward interested in championing this tiger team focused on development of Common Operating Picture (COP) technologies by March of 2018, anticipate suspending any further efforts in this area.

3. **U.S. National Grid Tiger Team**
    a. Submitted by: Steve Swazee
    b. Meetings:
        i. October 5, 2017, Introduction to the U.S. National Grid, Randy Knippel, MN GIS/LIS Annual Conference, Bemidji, MN
        ii. October 26, 2017, online meeting with Institute for Defense Analyses, Steve Swazee
        iii. Next meeting: January 17, 2018, online as part of the Fire Rescue East Conference, Daytona Beach, FL
    c. Progress on work plan (in conjunction with SharedGeo):
        i. Assisted as requested
            1. Installed USNG code in One Call Concepts CAD system for 16 states
            2. Corrected several coding errors in the FEMA USNG shapefile database
            3. Distributed USNG mapbooks and locally developed software during Hurricanes Harvey, Irma and Maria
            4. Coordinated with ESRI Labs on development and deployment of MyUSNG, an USNG app based on concepts of www.USNGapp.org
        ii. Noteworthy changes in national directives which have geospatial community impact:
            1. Effective October 2017, USNG is now fully incorporated into the National Incident Management System (NIMS).
            2. The Society of Automotive Engineers International (http://www.sae.org/) is currently fast tracking a USNG standard (http://standards.sae.org/wip/sae1002/)
    d. Additional comments: None.

Outreach Committee

Report date: December 6, 2017

Prepared by:
Kari Geurts, kari.geurts@state.mn.us
Len Kne, lenkne@umn.edu
Geoff Maas, geoffrey.maas@metc.state.mn.us

Meetings:
The Committee has not met during the previous quarter, although a sub-group working on the Open Data has made some progress on an Open Data Survey for cities. The Committee is scheduled to meet after the GAC meeting on December 6th.

Progress on work plan:

- Activities: The committee had a few informal online meetings to discuss the upcoming survey of free and open GIS data at cities across Minnesota.
- Accomplishments:
  - Developed a survey to send to Minnesota cities about their support and questions about free and open data. We have city contact lists from MnGeo and the League of Minnesota Cities. The survey includes several questions on the awareness and use of the US National Grid. The survey is ready and will be sent to city officials before the end of December.
  - Evaluate the use of the GAC YAK newsletter as another form of outreach for the committee. The committee continues to explore how to support the publishing of the GAC YAK.
  - Started collecting GIS success stories to promote the value of GIS to a wide range of stakeholders.
- Progress toward achieving proposed goals:
  - The Outreach Committee participated in a **Panel Discussion** titled "**What is the MN Geospatial Advisory Council and Why is it so Fabulous?**" at the MN GIS/LIS conference in October.
  - From the MN GIS/LIS Conference presentation, four new members were added to the Outreach Committee.
  - We have started discussions with other GAC committees on how committees can collaborate with each other. For example, the Outreach Committee has some expertise and resources for conducting surveys and may be able to help other committees when needed. There will be discussion at the GAC on how to enable cross-committee collaboration.
- Problems or impediments: None
- Required assistance: None

Additional comments:
None

Parcels and Land Records Committee

Report date: 11/22/2017

Prepared by:
George Meyer
Lead Developer
Otter Tail County GIS Dept.
Office# 218-998-8310
Direct# 218-998-8313
gmeyer@co.ottertail.mn.us

Meetings:
Meeting was planned for Nov 8, postponed pending results from the Standards Committee. After the results of the last Standards Committee meeting, a joint meeting with Standards committee was suggested for review of version 3 of the proposed standard. The meeting is scheduled to be held in St Cloud, Nov 30.

Progress on work plan:
2017 work plan goals on schedule to approve the standard, initial work on 2018 goals in process. Additional work will continue into 2018 developing the scripts that will assist counties in submitting data.
2018 goals remain to pursue development of a PLSS sharing standard. The Parcels and Land Records Committee welcomes input from interested parties to develop the framework needs. Please feel free to distribute my contact information to them.

Additional comments:
A Presentation was given at the 2017 annual GIS/LIS conference. Similar to previous presentations, several members of the committee gave an informational review of the needs, history, and current details of the standard. Several representatives from counties and agencies attended, and it was well received; generating additional interest and outreach possibilities.

It was determined that the results from the Standards Committee meeting on the Address points, the current iteration (version 3) of the parcels standard warranted another joint meeting with the Standards committee to verify any changes and detail any information prior to it's eventual forwarding to the GAC.

Standards Committee

Report Date: November 20, 2017

Prepared By: Geoff Maas, geoffrey.maas@metc.state.mn.us, 651.602.1638
MetroGIS Coordinator, Metropolitan Council
Chair, Standards Committee

Meetings: Last meeting (in-person) occurred on Wednesday, October 25, 2017 in St. Paul, MN
Minutes from the October 25, 2017 are available here: http://www.mngeo.state.mn.us/committee/standards/

Next Standards Committee Meeting will be a ***joint meeting*** with the
Parcel and Land Records Committee on November 30, 2017 in St. Cloud, MN

Current Standards Committee Progress and Accomplishments:

A) Work Plan Document

The current Standards Committee Work Plan document was developed in August 2016 and approved by electronic mail vote in September 2016. The Work Plan document is continually updated and modified to reflect current work, upcoming work and anticipated standards-related activity as appropriate by the Committee. The most recent modifications to the Work Plan were approved by the Committee on June 21, 2017. The current Work Plan will be more fully revisited and revised at the first Standards Committee meeting of 2018, the date of which yet is to be decided and set.

B) October 25, 2017 Committee Meeting

The October 25, 2017 meeting was well attended by Committee members; key decisions and actions resulting from the meeting included the following:

- Recap of the Address Point Standard development and public review process;
- Detailed review, discussion and decision on the individual Address Point Standard specifications;
- A motion and second to approve the Address Point Standard as revised during the meeting, with provision for a discussion period and electronic vote to determine final approval no later than November 7, 2017;
- Updates to the membership on upcoming standards;
- A decision to meet again in person on November 30, 2017 in St. Cloud;

Minutes from the October 25, 2017 meeting (updated to include post-meeting discussion on approval of the Address Point Standard) are available here: http://www.mngeo.state.mn.us/committee/standards/

C) Address Point Standard acceptance and advancement

After its review, discussion and revision during the October 25, 2017 meeting—followed by a period of online discussion and electronic survey vote—the Standards Committee voted to approve the Address Point Standards on November 7, 2017. The Address Point Standard will now be advanced to the Geospatial Advisory Committee on December 6, 2017 for its review and to offer a decision on its acceptance or direction for its further refinement.

Following the meeting and the vote, two very minor additional revisions were suggested:

- Potentially changing the field width of the Parcel ID (PIN) attribute from 25 up to 28.
- Potentially changing the name of GIS911POC to GIS_POC;

These changes were requested to better align the forthcoming Address Point Standard with the Parcel Data Transfer Standard (in progress) and the Minnesota Road Centerline Standard (in development)
The Standards Committee will have the opportunity to review these minor change requests at its upcoming November 30, 2017 meeting.

D) Parcel Data Transfer Standard development

After the public review period of the Parcel Data Transfer Standard from October 2016 through January 2017, the Parcel and Land Records Committee (PLRC) put the advancement of the parcel standard on hold until all the comments from the Address Point Standard are received and published and that standard had advanced to a point of acceptance. As the Parcel Standard also contains address information attributes, it would be beneficial to have both standards align in their addresses to the extent possible.

All materials relevant to the current version of the Parcel Data Transfer Standard can be found here:
http://www.mngeo.state.mn.us/committee/standards/parcel_attrib/parcel_attrib.html

The Parcel and Land Records Committee will be participating in a joint committee meeting with the Standards Committee on November 30 in St. Cloud. An agenda item of that meeting will be the review of the Parcel Data Transfer Standard, as well as some movement toward agreement on the specifics of how the address attributes from the Address Point Standard will align with the needs of the parcel standard. Next steps anticipate a possible additional public review period as significant changes have been made and suggested to the standard.

E) Minnesota Road Centerline Standard development

A collaborative of agencies and interests are in the process of advancing a standard—the Minnesota Road Centerline Standard (MRCS)—as a candidate for a statewide standard and potential public stakeholder review. This forthcoming MRCS standard capitalizes on the recent work of both the Metro Regional Centerlines Collaborative (MRCC) effort (May 2014 – present) and the NextGen9-1-1 Standards Work Group (2015 – present). The MRCS standard is based primarily the attributes and specifications of the MRCC standard with some modifications to field width, alias names, data base names and domain values to accommodate the NextGen9-1-1 specific business needs.

Discussions on the advance of a merged MRCC/NG9-1-1 standard began in earnest in August 2017 with initial support from the MetroGIS Data Producers Work Group, Metro Emergency Service Board, NextGen9-1-1 Standards Work Group and the Minnesota Department of Public Safety in response to an invitation from the Standards Committee to these interests to offer a single road centerline solution in July 2017.

The interests above have tendered an initial version of the MRCS to the Standards Committee for its review. The Committee will decide on the next steps for this candidate standard at its meeting on November 30, which could include sending it back for additional revisions, publishing it out to the public for a stakeholder review period, or, some other action as deemed appropriate by the committee.

F) Additional Committee Work Activity

Presentations on standards at the 20127 GIS/LIS Conference in Bemidji.

The Parcel Data Transfer Standard. Members of the Parcel and Land Records Committee presented a 25-minute presentation session on the Parcel Data Transfer Standard. This presentation described the standard's development, past and recent review by the public, maturation and changes as well as its recent advances toward finalization.

Taking the Pain out of Data Standards. Committee Chair Geoff Maas gave a 25-minute presentation 'Taking the Pain out of Data Standards' at the conference this fall. This presentation will highlight the origin and tradition of developing standards in Minnesota with a summary of progress to date.

Agenda Item 2. Request for Approval of MN Address Point Data Standard

Address Point Data Standard

See attachments:

- MN Address Point Data Standard V1.0.docx
- MN Address Point Data Standard Schema V1.0.xlsx

Purpose. 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 address point data in Minnesota. The standard is primarily intended to be used when data are being transferred in any direction between cities, counties, state agencies, and external customers. Its use will improve the ability to share data resources by reducing incompatibilities when acquiring, processing and disseminating address point data.

The importance of address point data. Address points are one of the core data infrastructure needs of the geospatial profession in Minnesota. Having an adopted data standard for address points will greatly enhance the efficiency and effectiveness in the use of this data for meeting the needs of emergency notifications systems, 9-1-1 response, emergency services, public safety, law enforcement, health and human services, planning and zoning, tracking and analysis of permits of all kinds, documentation of addressable structures, geocoding, tracking rates and intensities of development, supporting Census and demographic analysis and many others.

Development of the standard. The Address Point Data Standard represents many years of dedicated work by geospatial professionals representing a range of interests. The standard can trace its origins to the work of the Metro Address Work Group in 2004 which began its development based on the attributes of the Federal Geographic Data Committee's *'United States Thoroughfare, Landmark, and Postal Address Data Standard'* with accommodation for the specific expressed needs of the partners in the metropolitan region.

A first metro version was adopted in 2010 with minor revisions made in 2015. The year 2015 also saw the emergence of work on an address points standard to meet the specific needs of the NextGen9-1-1/Enhanced 9-1-1 effort. Late 2016 saw the successful merger of metro and 9-1-1 efforts to create a single address point standard. This standard was out forward for a public review period in the summer of 2017 with the comments resulting in additional modifications and revisions to best align with the needs of the geospatial community.

Advance toward adoption. The Address Point Data Standard was presented to the Geospatial Advisory Council's Standards Committee by the Metro Address Work Group and NextGen9-1-1 interests at its October 25, 2017. The committee reviewed the standard in detail and, after a period of additional discussion, voted to approve the standard for advancement by electronic vote on November 7, 2017. Minor final additions and revisions were suggested, reviewed and approved by the Standards Committee at its meeting on November 30, 2017. The Standards Committee now advances the Address Point Data Standard to the Geospatial Advisory Council for its review and consideration for approval.

Agenda Item 3. Proposed Changes to Sectors

Proposal 1:

- Change University of Minnesota seat and Minnesota State Colleges and Universities seat to two Higher Education seats.

Reason:

- This provides representation for other higher education organizations like private colleges and universities and community colleges.

Proposal 2:

- Change Metropolitan Council seat to less specific Twin Cities Metro Regional Government seat

Reason:

- Provides representation to other metro regional governments (MAC, MESB, Mosquito Control)
- Provides consistency with other government sectors
    - City greater MN and city metro
    - County greater MN and county metro
    - Regional greater MN and regional metro

Agenda Item 7. NAIP Imagery Possible Licensing

A summary from GISLounge.com

The Farm Service Agency (FSA) is considering moving its National Agriculture Imagery Program (NAIP) from a free aerial imagery service to a licensing model starting the 2019 fiscal year. NAIP is a program that acquires high resolution imagery during the agricultural growing season across the continental United States every three years. Started in 2003, the imagery program makes the aerials available for free via the USDA Geospatial Data Gateway, https://gdg.sc.egov.usda.gov/.

A presentation about the 21019 NAIP indicates that the agency is considering moving from a public domain program to a licensing model. This means that governmental agencies, researchers, and members of the public that rely on this freely available source of high resolution aerial imagery would have to start paying for this service. The presentation notes that "*To date, FSA has not identified any regulatory or statutory requirements that mandate the release of NAIP dataset to the general public.*" A final decision on whether to move the imagery program to a licensing model will be made by May 1, 2018. A decision to do so will not be a popular one among many of the groups that rely on this imagery. Indeed, the presentation acknowledges that the decision is "*[l]ikely to have significant political 'blow back'.*" and acknowledges that "removing the dataset from public domain will have considerable impacts."

View the presentation: 2019 NAIP

Agenda Item 10. 2018 Projects and Initiatives Prioritization Exercise

Business Need Results

Project or Initiative Name	Value Score	Ave	Critical	Very Important	Nice to Have	No Need
All Data Free and Open	**51**	2.32	10	9	3	0
Image Service - Sustain	**48**	2.18	7	12	3	0
Updated & Aligned Boundary Data	**46**	2.09	8	8	6	0
Parcel Data	**44**	2	5	13	3	1
Address Points Data	**43**	1.95	5	11	6	0
Street Centerline Data	**39**	1.77	3	12	6	1
Image Service - Dozens of Years	**39**	1.77	3	11	8	0
EM Damage Assess Data Standard	**36**	1.64	2	12	6	2
Basemap Services	**36**	1.64	1	12	9	0
Image Service Enhancements	**35**	1.59	3	8	10	1
Archiving Policy/Procedure	**34**	1.55	2	9	10	1
LiDAR data and related standards	**33**	1.5	1	12	6	3
Geocoding Service (public)	**32**	1.45	0	11	10	1
Current Wetland/Hydro Data	**31**	1.41	2	8	9	3
Parks and Trails Data Standard	**26**	1.18	1	4	15	2
Real-Time Assess/Planning Tool	**18**	0.82	0	4	10	8
Fall Leaf Color Infrared Imagery	**17**	0.77	1	2	10	9

Preliminary Likelihood of Success Factors and Priority Score

Project or Initiative Name	Status	GAC Rank	Priority Score	Value Score	Success Score	Owner Exists	Work Team Exists	Active Champ Exists	$$ Exists
All Data Free and Open	Active	**1**	561	**51**	**11**	3	2	2	2
Image Service - Sustain	Active	**2**	528	**48**	**11**	3	2	2	2
Address Points Data	Active	**3**	430	**43**	**10**	3	2	2	2
Street Centerline Data	Active	**4**	390	**39**	**10**	3	2	2	2
Image Service Enhancements	Active	**5**	385	**35**	**11**	3	2	2	2
Archiving Policy/Procedure	Proposed	**6**	374	**34**	**11**	3	2	2	2
Parcel Data	Active	**7**	352	**44**	**8**	3	2		2
Image Service - Dozens of Years	Active	**8**	351	**39**	**9**	3	2	2	
EM Damage Assess Data Standard	Active	**9**	324	**36**	**9**	3	2		2
LiDAR data and related standards	Active	**10**	297	**33**	**9**	3	2		2
Basemap Services	Active	**11**	288	**36**	**8**	3	2	2	
Parks and Trails Data Standard	Active	**12**	260	**26**	**10**	3	2	2	2
Updated & Aligned Boundary Data	Proposed	**13**	92	**46**	**2**				
Current Wetland/Hydro Data	Proposed	**14**	62	**31**	**2**				
Real-Time Assess/Planning Tool	Proposed	**15**	36	**18**	**2**				
Fall Leaf Color Infrared Imagery	Proposed	**16**	34	**17**	**2**				
Geocoding Service (public)	Proposed	**17**	32	**32**	**1**				

Descriptions

Project or Initiative Name	GAC Rank	Description
All Data Free and Open	1	All public geospatial data in MN is free and open to everyone
Image Service - Sustain	2	Assurance that the current MnGeo imagery service will be maintained and improved via a sustainable funding model, including policies on what layers are added and removed over time
Address Points Data	3	State wide publicly available address points data (including a data standard)
Street Centerline Data	4	State wide publicly available street centerline data (including a data standard)
Image Service Enhancements	5	Improvements to MnGeo imagery service capabilities, such as HTTPS, tiling, downloading options, and increased refresh frequency
Archiving Policy/Procedure	6	A policy and procedures for archiving and preserving historical geospatial data
Parcel Data	7	State wide publicly available parcel data (including a data standard)
Image Service - Dozens of Years	8	Having aerial photography collections from dozens of years and geographic areas, with no retirement or removal of layers within a freely accessible imagery service
EM Damage Assess Data Standard	9	An emergency management damage assessment data standard for rapid, post-event damage assessment GPS field collection
LiDAR data and related standards	10	Support to move us forward toward updated LiDAR data and related standards.
Basemap Services	11	MN-focused basemap services
Parks and Trails Data Standard	12	Parks and trails data standard
Updated & Aligned Boundary Data	13	Updated and aligned boundary data from authoritative data
Current Wetland/Hydro Data	14	Support to keep Wetland / Hydrography data available and current
Real-Time Assess/Planning Tool	15	A real-time assessment and planning tool similar to Oregon's
Fall Leaf Color Infrared Imagery	16	Peak fall leaf color- true infrared imagery collection for northern MN
Geocoding Service (public)	17	State wide publicly available geocoding service

Agenda Item 11. DEM Hydro Modification (hDEM)

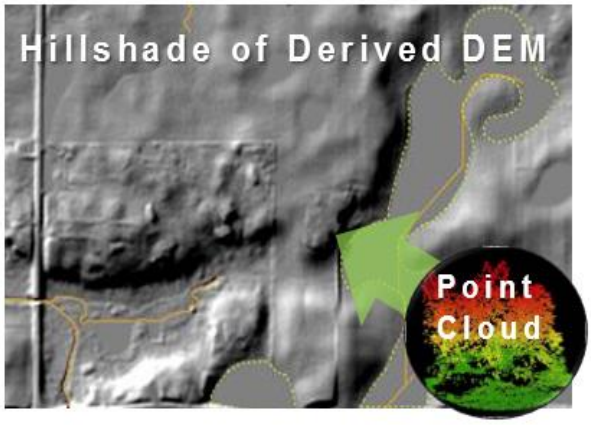
DNR's Next Generation Hydrography (NXG-Hydro) – Fact Sheet

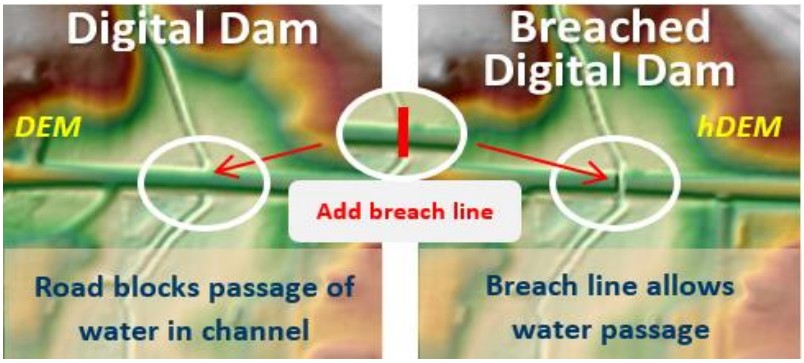
WHAT IS LiDAR?

- *LiDAR* (Light Detection and Ranging) is a remote sensing technology which uses light and radar to map the Earth's surface. The initial product is a 3-D point cloud with elevation values from which a digital surface called a Digital Elevation Model (**DEM**) is created.

DEMs represent water conveyance landforms and other terrain features that route or impede modeled flow.

Although LIDAR captures highly accurate surface elevations, the derived DEMs are unsuitable in their raw form for most hydrologic system-based watershed modeling and hydrography extraction (i.e., watercourses and watersheds) due to ***digital dams***.





Contacts: ***Sean Vaughn**, MNiT@DNR, 763-689-7100 ext. 226; **Rick Moore**, MNiT@DNR, 507-389-8810;*

DEM HYDRO-MODIFICATION

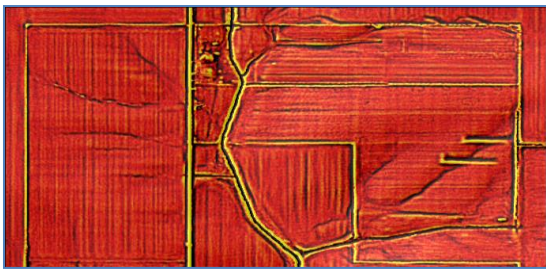
Digital dams are 3-D landforms in DEMs that exist perpendicular to water conveyance landforms that impede modeled flow (i.e., roads and dams) on the DEM surface.

Digital dams are removed from the DEM by lowering the elevation values of using "breachlines" to simulate water flow through culverts.

This process, known as ***DEM hydro-modification***, creates a new product called a hydro-modified DEM (hDEM).

HYDROGRAPHIC POSITION INDEX (HPI)

A unique DEM-derived product called hydrographic poistion index (HPI**)** is a DEM-derived product that enhances the hydrologic signatures of ***water conveyance landforms*** on Earth's surface. These features, illustrated in black on the HPI (right), are not mapped features in agency GIS data holdings.



DEM HYDRO-MODIFICATION LEVELS

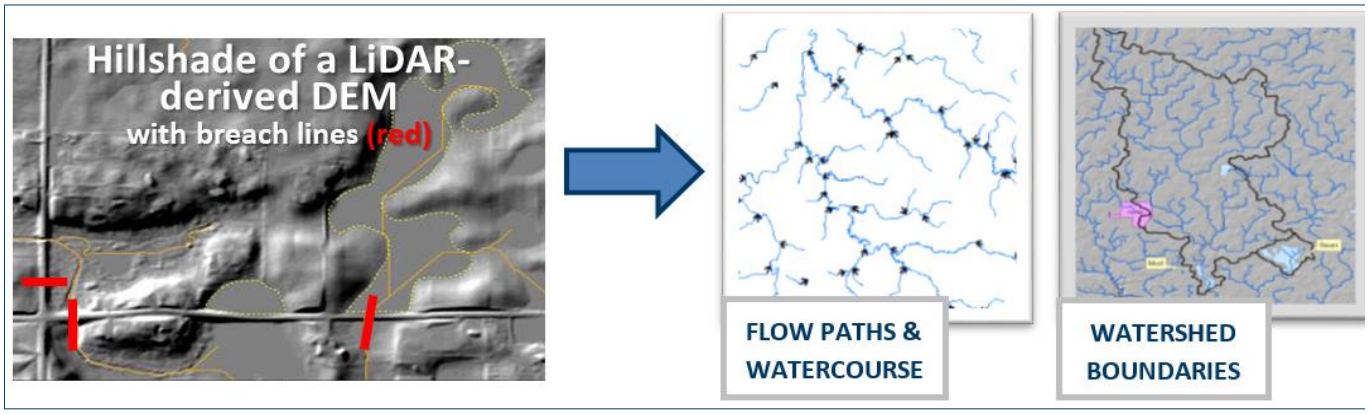
Level 1 – minimal digital dam removal
Level 2 – partial digital dam removal
Level 3 – complete digital dam removal

DERIVED PRODUCTS

A ***Level-3 hydro-modified DEM*** most accurately represents the hydrology of Earth's surface for use in tools and models.

HYDROGRAPHY DEVELOPMENT

- Level-3 hydro-modified DEMs (h3DEMs) are required to derive new watercourses and watershed boundaries, and detailed hydrologic modeling. These highly accurate LiDAR-derived hydrography features will gradually replace the existing DNR's authoritative hydrography datasets statewide.



NXG-HYDRO WORKFLOW

Source DEM	→	h3dem Process	→	Accurate Flow Paths	→	Flow Network (watershed-wide)	→
NXG-Hydro (Watercourses & Watersheds)	→	Attribute NXG-Hydro	→	Publish	→	Customer Applications	☺

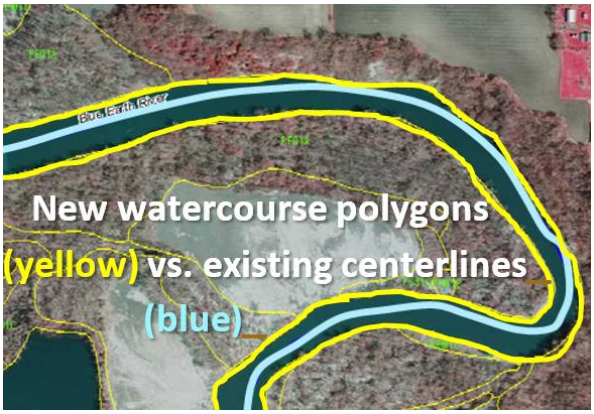
LiDAR-derived **source digital elevation model (DEM)** → Create a level-3 hydro-modified DEM (**h3DEM**) → Iterative h3DEM process develops locally **accurate flow paths** that represent channelized flow at the field scale → Use accurate flow paths to build **watershed-wide flow network** → The h3DEM is then suitable for hDEM-derived, next generation hydrography watercourses and watersheds **(NXG-Hydro)** → Use DNR attributes from existing legacy watercourse and watersheds data (1:24K) to **populate attributes** of NXG-Hydro watercourse line work and watershed polygons → **Publish** new NXG-Hydro watercourses and watersheds → Internal and external **customer application** → **Satisfied** customers.

POLYGONAL STREAMS

As an addendum to the current **National Wetland Inventory (NWI)** update for MN, all public water watercourses (~ 30% of MN watercourses) are digitized as polygons using LiDAR and aerial imagery.

Polygonal data is useful for determining setbacks from shorelines where existing legacy stream centerlines lead to inaccurate results.

Contact: Steve Kloiber, MNiT @ DNR 651-259-5164



Agenda Item 12. Approval of 3D Geomatics Committee Work Plan

Work Plan Date:
November 30, 2017

Chairs:

Sean Vaughn, Co-Chair
Minnesota IT Services@DNR
763-689-7100 x226
sean.vaughn@state.mn.us

Gerry Sjerven, Co-Chair
Minnesota Power
218-355-3990
gsjerven@mnpower.com

Link to Committee Charter:
The 3DGeomatics Charter (http://www.mngeo.state.mn.us/committee/3dgeo/3dgeo_committee_charter.pdf)

Accomplishments from 2017
[N/A – To be established in 2018]

Work Plan for 2018

Planned Activities and Deliverables:

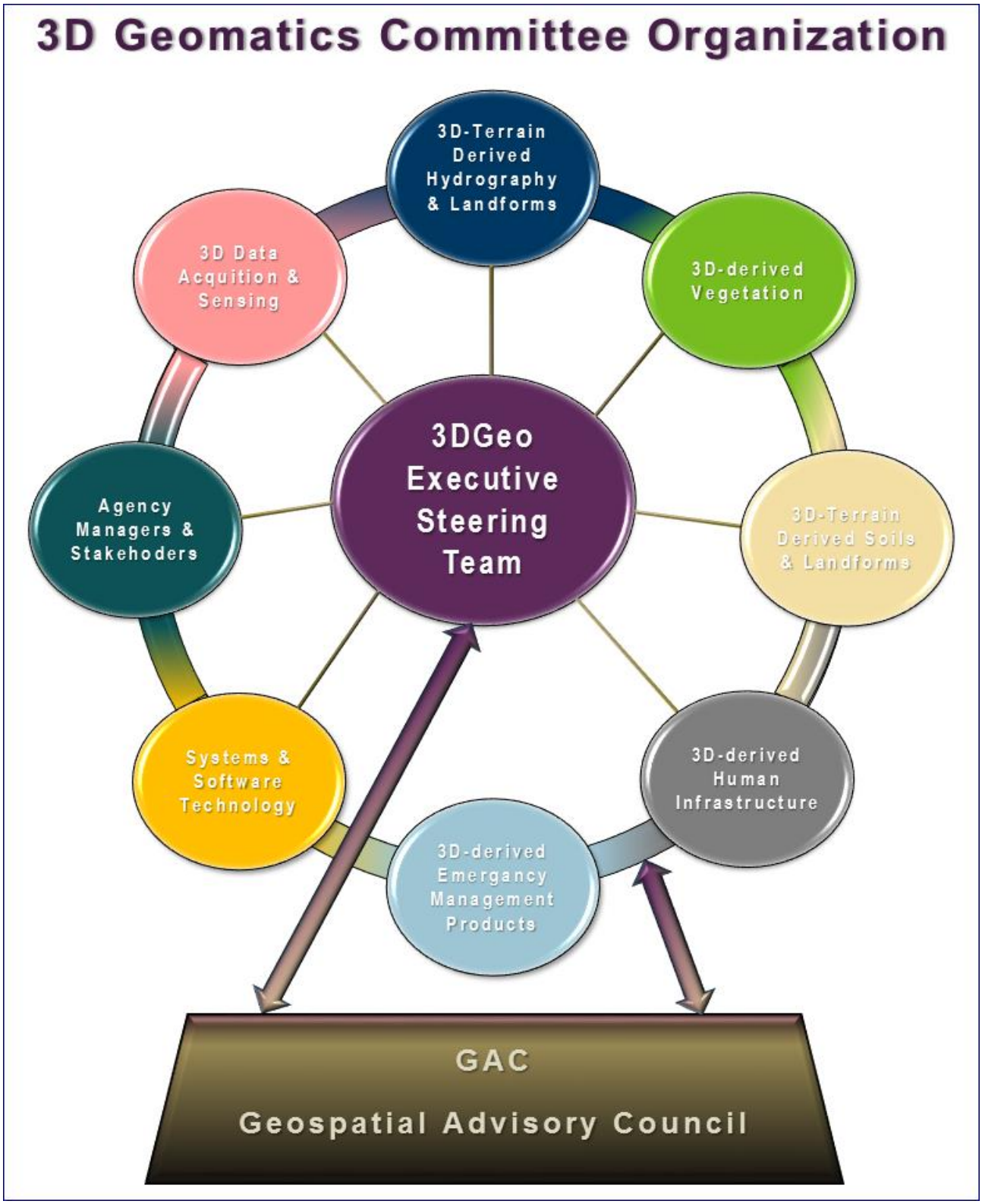
- Engage GIS, remote sensing, and 3D geospatial communities to determine needs for specific data standards, products and workgroup focus. This will be accomplished by:
    - Engaging users through email survey of past committee members
    - Communications through MN GIS/LIS Consortium E-announcements
    - Review previous surveys to identify potential needs and areas of focus
    - Conduct surveys of other sectors of the state using the Geospatial Advisory Council's (GAC) - Outreach Committee, and Minnesota Geospatial Advisory Council meeting summary (GAC Yak publication)
- Create a Workgroup development template containing a generic mission statement, goals, and reporting procedures to guide Workgroup work plan establishment.
- Identify at least two 3DGeo Committee Workgroups by March 2018 and begin to solicit membership and assist with the development of Workgroup work plans.
    - Identify workgroup champions to lead formation of workgroups.
        - Each Workgroup will have a chair or co-chairs.
        - Each workgroup will have at least one member serving on the 3DGeo Executive Steering Team
        - Each Workgroup will strive to represent a wide range of expertise with active participation, minimum 6 meetings a year
        - Chair or Co-Chair will be available for 3D Geomatics Committee panel at the annual MN GIS/LIS Consortium Conference
    - Steer development of Workgroup mission statements, goals, work plans, and timelines
- Establish timelines for Workgroups.
    - Workgroups will develop drafts of work plans for 2018 for the March 2018 GAC meeting
- Explore the potential for a Workshop or user group meetings in 2018
- Expand content on MnGeo website for the distribution of 3D Geomatics Committee educational materials and serve as a clearinghouse of 3D technology information

Committee Structure

Potential Workgroups (sectors of expertise):

- Hydrography
- Vegetation
- Infrastructure
- Emergency Management
- Managers and Stakeholders
- Soils
- Outreach and Education
- Data Standards, Management, and Governance
- Data Acquisition Planning and Funding

Committee Organizational Diagram



Roles and Responsibilities:

The current 3DGeo Committee Development Team is listed below. This Committee Development Team will transition into the 3DGeo Executive Steering Team. Some listed will be on a workgroup. Membership will expand for each workgroup and will solicit invitations to members of related historical committees and workgroups.

Committee Development Team

Name	Workgroup/ Sector	Agency	Email
Gerry Sjerven	**Infrastructure/ Utility (Co-Chair)**	**MN Power**	gsjerven@mnpower.com
Sean Vaughn	**Hydro/State (Co-Chair)**	**MNIT@DNR**	sean.vaughn@state.mn.us
Dan Ross	**At Large**	**MnGeo**	dan.ross@state.mn.us
Clinton Little	**Stakeholder/ Manager**	**DNR**	clinton.little@state.mn.us
Jennifer Corcoran	**Vegetation**	**DNR**	jennifer.corcoran@state.mn.us
Joel Nelson	**Hydro/Education**	**U of MN**	nels1945@umn.edu
Mark Reineke	**Hydro/Private**	**WSN**	mark.reineke@wsn.us.com
Chris Sanocki	**Hydro/Federal**	**USGS**	sanocki@usgs.gov

Resources:

The 3DGeo Committee will use the work and accomplishments of many earlier committee efforts.

Past Committees

Digital Elevation Committee (http://www.mngeo.state.mn.us/committee/elevation/index.html)

LiDAR Research and Education Subcommittee (http://www.mngeo.state.mn.us/committee/elevation/research_education/index.html)

Hydrography Committee (http://www.mngeo.state.mn.us/committee/hydro/)

Data Resources

Elevation Data for Minnesota (http://www.mngeo.state.mn.us/chouse/elevation/index.html)

LiDAR Elevation Data for Minnesota (http://www.mngeo.state.mn.us/chouse/elevation/lidar.html)

Committee/Workgroup Needs:

The Committee Development Team will be working with the GAC Outreach Committee and the MN GIS/LIS Consortium to help solicit membership for each workgroup, and identify workgroups missing from this plan. The development team and workgroups will utilize the GAC YAK as way to connect and inform state and local agencies.

Dependencies and Interrelationships:

[To be established in 2018] As the workgroups are formed and identified, relationships and dependencies will be identified by those groups.

Risks:

- LiDAR and other 3D data procurements will not be standardized.
- Inaccuracies will be incorporated into future derived elevation data.
- Lack of standards for data development and data application of 3-D data derived products.
- Projects utilizing state funding will produce data not suitable for distribution and application in other projects.

Additional Comments:

[To be established in 2018]

Date approved by the Geospatial Advisory Council:

[To be established at time of approval]

Agenda Item 14. Update on 2017 GAC Priority Projects and Initiatives

GAC Rank	Project or Initiative Description	Status	Project Owner	Champ
1	**All public geospatial data in MN is free and open to everyone**	**Active**	Len Kne	Ross
2	**Assurance that the current MnGeo imagery service will be maintained and improved via a sustainable funding model, including policies on what layers are added and removed over time**	**Active**	Mike Dolbow	Ross
3	**Development of an active LiDAR Committee and additional support to move us forward toward updated LiDAR data and related standards**	**Proposed**		
4	**Improvements to MnGeo imagery service capabilities, such as HTTPS, tiling, downloading options, and increased refresh frequency**	**Active**	Mike Dolbow	Ross
5	**State wide publicly available parcel data (including a data standard)**	**Active**	George Meyer	
6	**State wide publicly available address points data (including a data standard)**	**Active**	Adam Iten	Ross
7	**State wide publicly available street centerline data (including a data standard)**	**Active**	Adam Iten	Ross
8	**An emergency management damage assessment data standard for rapid, post-event damage assessment GPS field collection**	**Active**	Anderson/ Richter	
9	**MN-focused basemap services**	**Active**	Sonia Dickerson	Ross
10	**State wide publicly available Geocoding service**	**Active**	Mike Dolbow	Ross
11	**Parks and Trails Data Standard**	**Active**	Jim Bunning	Ross