MnGeo Priority Projects and Initiatives

May 31, 2017

While there are many worthwhile geospatial projects and endeavors, MnGeo is focusing its efforts and its limited resources on a few projects in order to make meaningful progress. All of these projects are in collaboration with other organizations and are either underway or anticipated to be initiated in the coming months. In alphabetic order, MnGeo's priority projects are:

Geospatial Commons

Operations: The long-range objective of the Commons is to be the best source for the widest variety of geospatial data, services, information, ideas and news in Minnesota. Now fully operational, it allows users to find, view and download data; publish metadata and data; and find and use web services and applications. Operations are headed by MnGeo and supported by MN.IT staff who serve Agriculture, DNR, MnGeo, and MPCA, along with one staff member from the Metropolitan Council GIS Team.

Status:
MnGeo and the support team are moving to implement operational improvements that:
1. Stabilize the system's ability to respond to increased demand (completed)
2. Add capacity for new publishers and resources (completed)
3. Reduce excessive or unwanted duplication and replication to agency file servers ("GDRS nodes") (completed)
4. Diversify available methods for publishers to provide resources (implementing)

These improvements will take place over the remaining months in the fiscal year, and are slated behind other projects in terms of timing and priority. During that time, the team continues to focus on governance issues and adding content from new and existing publishers.

Twenty resources have been published since our last report, and two new publishers have been brought on board (Steele County and Metropolitan Mosquito Control District). As of May 12, the count of published resources accessible through the Commons totals 655:

Organization	Resource Count
Natural Resources Department	166
Metropolitan Council	146
Geospatial Information Office	79
Dakota County	61
Agriculture Department	30
Pollution Control Agency	26
Minnesota Geological Survey	26
Legislative GIS Office	20
MetroGIS	19
Education Department	14
Transportation Department	12
University of Minnesota, Twin Cities	11
Ramsey County	8
Health Department	6
Rice County	6
Board of Water and Soil Resources (BWSR)	5

Waseca County	5
Lake County	4
Itasca County	4
Revenue Department	2
Minnesota Valley Transit Authority	1
Minnesota Board of Animal Health	1
Secretary of State	1
Saint Louis County	1
Steele County	1
Metropolitan Mosquito Control District (MMCD)	0

Funding: Agencies currently provide funding for the operations of the MN Geospatial Commons. Currently there are no dedicated funds for enhancements to the site, although a small amount of project funding has been provided this biennium for a series of improvements. MnGeo is providing a quarter time Operations Manager, technical and administrative support. Staff members from several State agencies (most notably: DNR, Agriculture and MPCA) have committed to assisting with operational support. Other resources are expected to be made available by MN.IT Services as needed.

Issues, Concerns and Risks: Several issues that will likely require future input from leadership and advisory Councils/Committees have arisen, including a precise definition of *how* those decisions are made, and *when* leadership input is required. A draft governance model has been created and is expected to be shared soon. It addresses issues including, but not limited to:

- Scope of allowable data formats
- Stewards for federal agency datasets (customized for MN) and datasets that do not have an "obvious" steward
- Large data set replications to multiple GDRS nodes
    - Related: do we continue to store/serve/host "purely local" data, or do we aggregate first?

Contact: Mike Dolbow (Operations Manager)
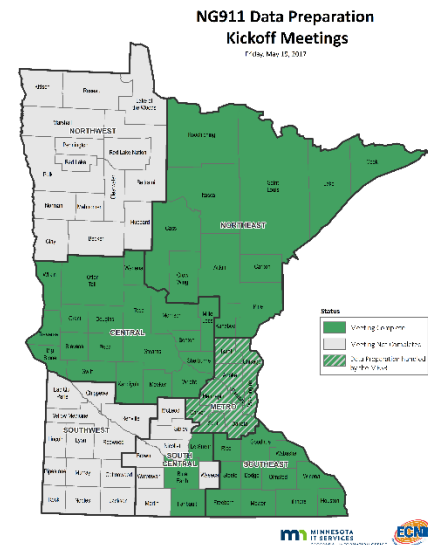

Next Generation 9-1-1 (NG9-1-1)

Project Goal: NG9-1-1 implementation will depend on current and accurate GIS data. Geospatial data will be used for location validation, call routing and emergency response. With the Minnesota Department of Public Safety serving as the lead state agency for NG9-1-1, MnGeo will identify, inventory and collaborate with the public-safety answering points (PSAPs) and 9-1-1 entities to obtain, develop and distribute core geospatial data required to support the program. To succeed, this effort will require several critical, statewide data sets:

- Street centerlines, with address ranges (described below)
- Site/structure address points (described below)
- PSAP boundary polygon(s)
- Emergency response – law enforcement, fire and EMS boundary polygon(s)
- NG9-1-1 Data Maintenance boundary polygon(s) – GIS data authority for a given area

All GIS data will need to be validated with legacy Enhanced 9-1-1 data, which include Master Street Address Guides (MSAGs), Automatic Location Information (ALI), and English Language Translations (ELTs).

Project Status:

- MnGeo is collecting GIS data from all regions in the state. The GIS data are being compared to corresponding 9-1-1 data (MSAG, ALI, ELT) to gain a better understanding of data readiness for each county and PSAP. The results are compiled into data readiness profiles and reports, which are shared with each county and PSAP during their Data Preparation kickoff meetings. MnGeo is meeting individually with each PSAP and their GIS agencies/vendors to discuss their data readiness findings and kickoff their Data Preparation effort. Thus far, MnGeo has met with all counties in the Central, NE, and SE regions. Kickoff meetings in the NW, South Central, and SW regions are being planned and scheduled. The Metropolitan Emergency Services Board (MESB) is working with the Metro region on their data preparation. The goal is to meet with all counties by fall of 2017. Another major goal is to complete all necessary Data Preparation work in the Metro and NE regions by the end of 2017.

- The Data Preparation projects involve six phases of NG9-1-1 GIS data cleanup, including Community Name Validations, Street Name Validations, Address Validations, Geospatial Validations, Emergency Service Boundary Validations, and Edge Matching. The primary objectives of these Data Preparation projects are to improve and qualify the local GIS data for mission-critical use in NG9-1-1.

- Development is underway for the MN NG9-1-1 GIS Standards, which will serve as a guide for preparing and maintaining GIS data for NG9-1-1 in Minnesota. A NG9-1-1 GIS Standards WG has been tasked with recommending and developing standards needed to integrate locally collected and maintained GIS data into statewide layers deemed critical for the Emergency Call Routing Function (ECRF) and Location Validation Function (LVF) of NG9-1-1. The workgroup has been meeting weekly since the beginning of September 2015. The draft MN NG9-1-1 GIS Data Standards and associated materials were distributed on May 3rd to all MN PSAP and GIS stakeholders for the third review and comment period. PSAP and GIS Managers were asked to work together to complete a single response on behalf of their PSAP. Responses are due back to the state by Friday, June 2. From there, the Standards Workgroup, along with ECN, MnGeo, and the MESB will attempt to finalize Version 1.0 of the standards. The goal is to gain formal approval of Version 1.0 by this summer.

- MnGeo is currently documenting requirements and workflows for the recurring data upload, normalization, and validation maintenance processes. MnGeo will begin focusing on the aggregation and provisioning process requirements this summer. ECN and MnGeo would also like to conduct 2-3 proof of concept projects related to GIS-based MSAG creation, ECRF, and LVF in the coming year, which will include 1-2 counties in the Metro and Northeast regions.

- MnGeo is developing a map viewer and associated user documentation to manage the emergency service boundaries (PSAP, Fire, Law, and EMS) statewide. The initial goal is to resolve gaps and overlaps among PSAP boundaries in order to produce a seamless, relatively accurate statewide PSAP boundary layer for use in text-to-911 and eventually the ECRF. The map viewer was piloted in the NE region and is currently being expanded to cover the entire state. Local 9-1-1 GIS Authorities are being asked to work with their PSAP Managers to resolve the gaps and overlaps. The goal is to resolve all gaps and overlaps by this Fall, so the seamless PSAP boundaries are available for the text-to-911 deployments.

- The latest project newsletter is available on the "GIS Information" page of the ECN website:

<u>Anticipated Completion and Milestones</u>: Although an official completion date has yet to be established, it is anticipated that geospatial data will need to be ready for NG9-1-1 deployment in 2018. Below is a list of current project tasks with estimated completion dates.

- **Outreach to PSAPs and GIS Sources** – ongoing
- **Project newsletter** – quarterly
- **MN NG9-1-1 GIS Standards** – approve Version 1 by Summer 2017
- **Seamless statewide PSAP boundaries** – complete by Summer 2017
- **Data Preparation kickoffs** – complete by Fall 2017
- **NG9-1-1 Portal onboarding** – complete by Fall 2017

<u>Project Funding</u>: $600K per year for 3 years
<u>Project Issues, Concerns and Risks</u>: Issues, concerns and risks are being identified and logged throughout the project.
<u>Project Contacts</u>: Dan Ross (Executive Sponsor), Adam Iten (Project Manager)

OSA Portal Project
<u>Project Goal</u>: A project for the Minnesota Office of the State Archaeologist (OSA) that was designed to create a branded web application providing a digital, secure, and up-to-date inventory of archaeological sites and associated forms. This system streamlines internal administrative tasks for OSA and also those of tiered external users in an effort to better preserve historical cultural resources across Minnesota. This project is made possible through an inter-agency agreement between MnDOT and MnGeo on behalf of OSA and in consultation with the Minnesota State Historic Preservation Office (SHPO).

The project consisted of:
- Redesigning the database model
- Migrating all records from an old Access database into a secure, maintained enterprise environment
- Providing administrative functionality to interactively manage existing sites and propose new site entries
- Implementing a geospatial data entry application
- Standing up complementary map services to be utilized for browsing and querying the database at a variety of levels based on user role
- Providing an additional publicly accessible view of the data generalized to protect vulnerable sites

<u>Project Status</u>: This project has been completed and has been moved to operations. MnDOT and OSA are considering adding additional enhancements. The scoping for Phase Two would be during the Summer and Fall of 2017.
<u>Anticipated Completion and Milestones</u>: The design and development phase of this project was completed and the application and database were moved to production May 15-17, 2017.
<u>Project Funding</u>: $180,000 through a federal grant managed and administered through MnDOT. $20,000 in a separate hosting contract with MnDOT and the MN Department of Administration.
<u>Project Issues, Concerns and Risks</u>: None
<u>Project Contacts</u>: Michael Bergervoet (MnDOT/CRU), Dan Ross (MN.IT Services)

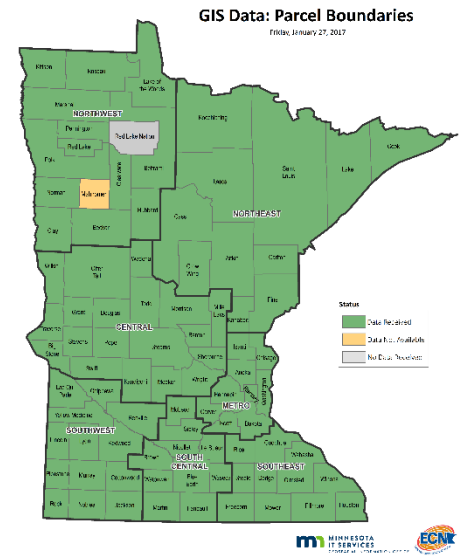**Parcels, Street Centerline and Address Point Collection**

Project Goal: To collect, standardize and aggregate county parcel, street centerline and address point data into statewide datasets for use by NG9-1-1 as well as for other state agency purposes. MnGeo asks for parcel, centerline and address point data in a single request to counties.

GIS Data: Parcel Boundaries
Friday, January 27, 2017

Project Status:
Parcels
The parcels project has been underway for several years. MnGeo has collected parcels for 86 counties to date *(see full-size map). There is no data available for the Red Lake tribal nation.* The MN.IT @ DNR team has been able to create a standardized and aggregated file for internal state use.

The Parcels and Land Records Committee and the Standards Committee are proceeding with standards approval for an updated version of the DCDATS proposed standard in the interim.

Anticipated Completion and Milestones: The data has been standardized and aggregated for internal state agency use. Data updates from county partners occur every 6 months. When new data is received it is integrated into the statewide file. The state team is working on creating a web map service of the data for agencies to use.
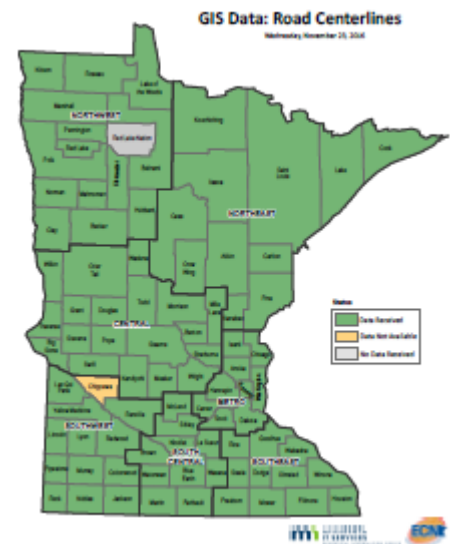Project Funding: There are no dedicated funds for this project.
Project Issues, Concerns, and Risks: Project success is dependent on counties developing and sharing both spatial and attribute data. Some counties have been reluctant to openly share their data, data content and quality varies between counties (and in some cases within counties), no accepted standard for parcel data in MN currently exists (although we are working toward the draft standard), and time/personnel are needed to complete collection, standardization and aggregation processes. **While the data will be available to government agencies, many counties have asked the state not to share parcels obtained for their counties. With that approach it is likely we will never achieve a statewide shared parcel layer.**
Project Contact: Dan Ross (Executive Sponsor)

Road Centerlines
Project Goal: Create an authoritative, multi-purpose, public-domain centerline spatial dataset representing the entire state of Minnesota that can be relied upon to accurately represent (to the best extent possible) the actual roadway assets of the state. This data layer is to be collaboratively built and maintained to reduce cost, eliminate redundant efforts, facilitate better data capture, provide inter-agency reporting and address a variety of needs from roadway data consumers.

GIS Data: Road Centerlines
Wednesday, November 23, 2016

Project Status: The MnDOT LRS tools were put into production internally earlier in 2016. MnDOT has been working to update the data that was frozen during the project. MnGeo is working with MnDOT and has defined data workflows that provide data updates from both non-state road authorities and state agencies to a single repository where the data will be standardized and aggregated. The project team is currently working on implementing a database

model within MnGeo that will meet the needs of NG9-1-1 that can be shared with non-state participants; 86 counties have provided data so far *(see [full-size map](#))*. The statewide team has agreed to use the data model created from the NG9-1-1 effort for centerlines which used the Metro Region Centerline Collaborative work as a starting point. MnGeo will be responsible for bringing data together from MnDOT and from other state and non-state road authorities.

Anticipated Completion and Milestones: The draft of the standard is being vetted by stakeholders and should be available Summer 2017. A secure repository, data model and database has been set up within MnGeo and many counties are currently submitting their centerlines and other NG9-1-1 data to the repository.

Project Funding: DPS and MnGeo are covering staff time and infrastructure to build out the repository, data model, and work flow as the data and system will be used for NG9-1-1.

Project Issues, Concerns and Risks: The project is heavily dependent on requirements, tools, adoption of standards and timelines being provided for the NG9-1-1 project.

Project Contacts: Dan Ross (Executive Sponsor), Adam Iten (Project Manager)

Address Point Collection

Project Goal: Create an authoritative, multi-purpose, public-domain address point dataset representing the entire state of Minnesota that can be relied upon to accurately represent (to the best extent possible) the actual location of addresses in Minnesota. This data layer is to be collaboratively built and maintained to reduce cost, eliminate redundant efforts, facilitate better data capture, provide inter-agency reporting and address a variety of needs from address data consumers.

GIS Data: Address Points
Tuesday, May 02, 2017

Project Status: MnGeo is working with PSAP (Public Safety Answering Points) and local authorities, and the Metropolitan Council to define data standards that will be used to build out a standard statewide dataset. The NG9-1-1 draft standard was compared to the Metro Address Standard. The two teams have come together to create a crosswalk between the two with a goal to come out with a single standard for the state. Some form of address point data has been obtained from 79 counties *(see [full-size map](#))*. Many, however, show gaps in the data where cities are located. MnGeo will continue to work with local partners in the coming months to fill in those gaps.

Anticipated Completion and Milestones: The second draft of the standard and data model are available for review by stakeholders. The data flow and repository to support moving data from partners into the NG9-1-1 repository have been put in place and counties are submitting their data to the repository.

Project Funding: DPS and MnGeo are covering staff time and infrastructure to build out the repository, data model, and work flow as the data and system will be used for NG9-1-1.

Project Issues, Concerns and Risks: The project is heavily dependent on requirements, tools, adoption of standards and timelines being provided for the NG9-1-1 project.

Project Contacts: Dan Ross (Executive Sponsor), Adam Iten (Project Manager)