Minnesota Geospatial Information Office

Report

2023-2025

MINNESOTA IT SERVICES
GEOSPATIAL INFORMATION OFFICE

Contents

Foreword

By Alison Slaats, Minnesota Chief Geospatial Information Officer and MnGeo Director

I am pleased to share the Minnesota Geospatial Information Office (MnGeo) report for January 2023 to June 2025. The report highlights the significant achievements and progress MnGeo and partners have made in advancing geospatial technology and services in state government and the Minnesota geospatial community.

The 2023 legislative session provided one-time funding for a Public Land Survey System Monument Grant Program. Thanks to the legislature's vision, MnGeo provided grants to 34 counties in 2024 to improve our state's property infrastructure. MnGeo added a Survey Coordinator position, fulfilling a long-term goal of the Minnesota geographic information systems (GIS) and surveying communities to have a certified land surveyor on staff. The legislative session also provided a small increase in MnGeo funding, allowing for more geospatial data coordination work to support foundational datasets, including hosting new statewide lidar data and derivatives. High-quality lidar data was collected in Minnesota, a $27 million investment that will provide an incredible return on investment into the future.

We've seen significant progress in data completion and sharing of foundational datasets in this reporting period. Minnesota counties are sharing their authoritative parcel data and contributing address points and road centerlines to the Next Generation 911 (NG911) program. MnGeo aggregates these into statewide datasets and shares them, as guided by counties, on the Minnesota Geospatial Commons.

Our coordination work at MnGeo continues through newsletters, Minnesota GIS user group meetings, and our coordination with the Minnesota GIS/LIS Consortium, the National States Geographic Information Council (NSGIC) and other partner organizations. I would like to extend my gratitude to the Minnesota Geospatial Advisory Council (GAC) members for their continued support and guidance. Their expertise, volunteer time, and dedication is invaluable in driving geospatial work forward in Minnesota.

MnGeo's collaboration and support of state agency partners continued with projects supporting over 30 agencies. These projects reflect the wide adoption of geospatial technology to support the efficient and effective work being done across the executive branch. In 2024, Governor Tim Walz highlighted the importance of Minnesota's use of GIS in a keynote address to an audience of 20,000, sharing maps he and his team use, including a map portfolio developed by MnGeo to demonstrate policy.

As we look ahead, MnGeo remains committed to providing geospatial data, technology, and innovation to inform decision makers and improve outcomes for all Minnesotans. Thank you for your continued support and partnership.

About Minnesota's Geospatial Information Office

The Minnesota Geospatial Information Office provides coordination, guidance, and leadership for the state's use of geographic information systems. It is an office within Minnesota IT Services (MNIT), the state's IT agency, and is led by the State of Minnesota's Chief Geospatial Information Officer (GIO), Alison Slaats.

GIS offers a collection of tools to create, manage, map, and analyze location data. Simply, it is a system of record, visualization and analysis, and engagement using location-based technology and techniques. GIS is used to inform decision makers and improve outcomes around public safety, transportation planning, access to health services, preservation of resources, and more.

State of Minnesota agencies use GIS for a modern government approach that enhances customer experience and improves the lives of Minnesotans. The MnGeo team supports state agency and geospatial community efforts ranging from a public geospatial data sharing web portal to providing tools for optimizing urban planning for bicycling and protection of historic resources.

The Minnesota Geospatial Advisory Council advises MnGeo, helping identify geospatial community needs and opportunities to better serve the public with GIS technology and data. Council members represent a cross-section of organizations that include counties, cities, universities, businesses, nonprofit organizations, federal and state agencies, Tribal governments, surveyors, and other partner groups that use and benefit from geospatial technology.

2023-2025 by the numbers

25
Geospatial applications supported and hosted

294
GIS web services supported and hosted*

1,000+
Resources on the Minnesota Geospatial Commons

225M+
Views of the geospatial image server (about 90 million/year)

33
Agencies and boards supported by MnGeo (11 new)

*A GIS web service is a geospatial resource, such as a map or location data, made available over the internet for use within various applications. GIS services enable multiple users to access and use a resource without needing to download or install it on their own device.

Goals and priorities

As part of Minnesota IT Services, the Geospatial Information Office aligns its work with Governor Walz's One Minnesota goals and MNIT's Strategic Plan to create an innovative digital government that works for all. MnGeo produces and improves geospatial services and systems that benefit the statewide community.

MnGeo strategic priorities

1 Improve access to statewide foundational geospatial data

PLSS Monument Grant Program

The Public Land Survey System (PLSS) is the foundational database for all land ownership in Minnesota. Physical survey markers called monuments are used to identify key locations and land information. Fewer than half of the original 306,675 PLSS monuments in Minnesota are certified with published geographic positions and many monuments are damaged, buried, or missing.

Enacted in 2023, Minnesota Statutes chapter 381.125 initiated the creation of a grant program to help counties restore, maintain, and update PLSS survey markers. The GAC created the PLSS Preservation Committee to guide the PLSS Monument Grant Program.

In May 2024, the GIO, with guidance from the committee, led by MnGeo's Survey Coordinator, awarded 34 counties with $9.1 million in grants to fund the restoration and certification of monuments by licensed land surveyors.

This significant investment is an important first step towards statewide PLSS restoration. The land surveying community estimates it will take 35 years and a total of $350 million to complete PLSS restoration statewide.

The PLSS framework affects a wide spectrum of life in Minnesota, including land transactions, emergency service areas, natural resources access, utilities to school districts, commercial and residential zoning, and property taxes. Developing a program that connects historical PLSS information with modern tools to meet present-day needs is important work that has earned the PLSS Preservation Committee recognition from the National States Geographic Information Council for its extraordinary effort.

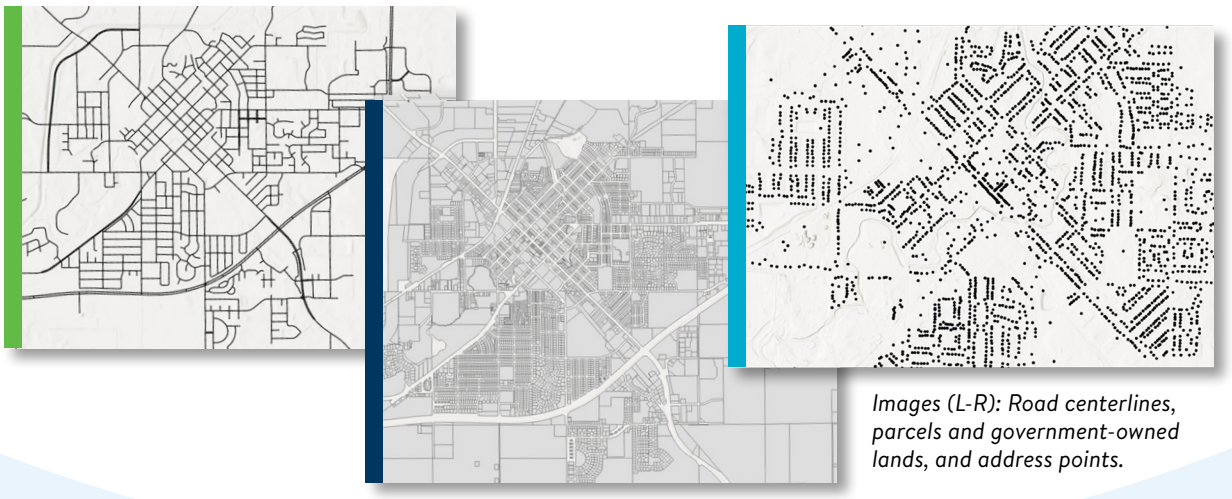
$9.1 million
Grant funds awarded to 34 counties in 2024 for monument restoration and certification.

Minnesota Geospatial Commons

MnGeo and a cross-agency team support the Minnesota Geospatial Commons, a web portal for users and publishers of Minnesota's geospatial resources. The portal provides GIS data for researchers, cartographers, web and application developers, journalists, planners, and others for their projects.

The Commons currently has 48 publishers and includes over 1,000 geospatial resources, including downloadable data and online mapping applications. Over the past 2.5 years, more than two dozen resources were added and three additional organizations began publishing their data to the platform (one state agency, one state regulatory board, and one county).

In 2024, MnGeo received funding through the Technology Modernization Fund (TMF) to modernize the Commons. This modernization will move the Commons platform from a file-based system to a web service model and aims to improve the user experience. MnGeo held meetings and published a survey to better understand the needs of users and data publishers in the geospatial community. Feedback from partners across several sectors will inform the redevelopment process. MnGeo is collaborating with state and external partners to complete this work in 2026.



Images (L-R): Road centerlines, parcels and government-owned lands, and address points.

Statewide foundational datasets

Each year, the Minnesota Geospatial Advisory Council identifies statewide foundational datasets — such as parcels, address points, and road centerlines — as top priorities for their work with the Minnesota geospatial community. MnGeo uses these priorities to focus staff and resources to support these important initiatives.

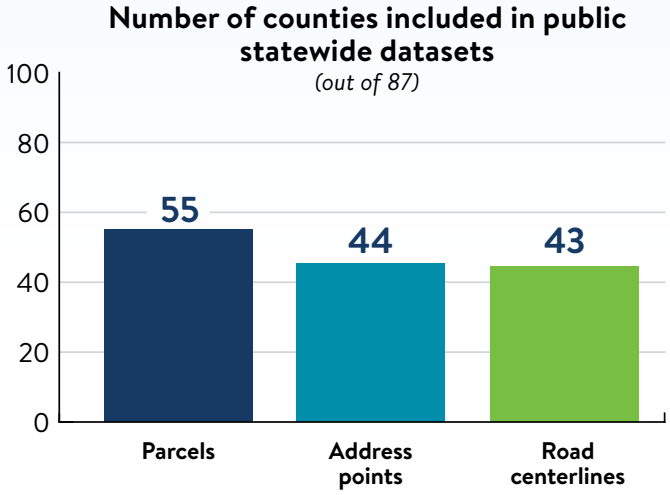
Parcels and government-owned lands

Parcel data is an essential part of information the state uses to manage forest fires, facilitate land exchanges, protect the environment, and respond to emergencies. Each of Minnesota's 87 counties provides parcel data quarterly to MnGeo. MnGeo then converts the data to a common format and coordinate system, aggregates the data into a statewide dataset, and shares the resulting dataset with all state agencies and the University of Minnesota. This process reduces the number of individual data requests to counties from state agencies and boards.

Making this data publicly available expands the many ways it can be used to inform decision making across the state. When the first public version of the parcels dataset was published on the Geospatial Commons in 2022, 24 of 87 counties participated. Now, 55 counties have agreed to include their data in the public dataset, representing over 80% of Minnesota's parcels.

MnGeo's parcel resources web page links to county-provided parcel datasets, web maps, and additional data sources. The Minnesota Parcel Data Story Map provides more information about parcel data and the benefits of this statewide dataset.

During the 2024 parcel aggregation process, MnGeo derived government-owned lands using a workflow originally created by MNIT partnering with the Department of Natural Resources (DNR). The workflow uses information within the parcel data to identify government land ownership in the following categories: county fee, federal, state, tax forfeit, and Tribal. The government-owned lands dataset is available on the Commons and is refreshed quarterly along with the parcel data. Future updates to this data may include additional government ownership types like municipalities. See the Government-Owned Lands of Minnesota Story Map to explore more about the dataset's creation and many uses.



Address points and road centerlines

Like parcel data, address points and road centerlines are compiled into statewide datasets. However, these datasets are collected through the Next Generation 911 data submission process. In this process, counties and other local entities submit their data in a standardized format designed to support NG911 and other emergency response systems. MnGeo then extracts, stores, and shares this data in a standardized format recommended by the GAC Geospatial Standards.

The first publicly shared address point and road centerline datasets were made available in late 2023 and early 2024 on the Minnesota Geospatial Commons. The datasets are updated quarterly and the number of participating counties nearly doubled over the first year. Currently, 44 and 43 counties are included in the public statewide address points and road centerlines, respectively.

For MnGeo to provide these datasets to the public, counties must have the data in the NG911 database and allow public sharing. As more counties complete data readiness for NG911 and opt-in to have their data shared, coverage will increase. See the NG911 project highlight for more information about the NG911 data readiness effort.

The Open Data Subcommittee of the GAC Outreach Committee continues to lead efforts to increase participation in the opt-in parcel, address point, and road centerline datasets. Expanding authoritative, locally-created datasets delivers broader impacts, like the National Address Database including Minnesota data published on the Commons.

Aerial imagery

MnGeo continues to provide a popular set of web map image services for the Minnesota geospatial community, averaging 90 million views annually. These two image services provide historic and recent imagery that can be loaded into web and desktop mapping tools.

- The Geospatial Image Service provides access to aerial photos, hillshades, and scanned topographic maps. The image service includes over 70 imagery datasets that cover either the entire state or different regions or counties of the state. Counties voluntarily provide MnGeo imagery to include in this image service – these requests are completed on an ongoing basis.
- The Composite Image Service provides a single layer image service that automatically switches to an appropriate set of aerial photos or satellite imagery depending on the scale and extent of the view.

The National Agricultural Imagery Program (NAIP) collected statewide aerial imagery in the summer of 2023. To meet community demand, MnGeo coordinated with the U.S. Department of Agriculture (USDA) to process and incorporate the imagery into these image services in early 2025.

Aerial images

Lidar

From 2021 to 2024, statewide lidar data was collected in Minnesota for the first time since 2012. The GAC 3D Geomatics Committee led the effort in Minnesota to coordinate with the U.S. Geological Survey's (USGS) 3D Elevation Program (3DEP). By working together, and collaborating with many local, state, and federal partners, Minnesota saved millions of dollars. The new lidar data will produce several valuable datasets, including statewide digital elevation models (DEMs), hillshades, and contours. These datasets are crucial for natural resources management, watershed monitoring, land use planning, and many other purposes across various industries.

The quality of this new lidar data collection is much improved compared to the 2008-2012 collection, with resolution of some derivatives being 30 times greater. The acquisition of higher quality data also means an increased volume of data. The raw lidar data alone contains over 2 trillion lidar elevation points—and this is only one of the many datasets to be delivered.

To serve this massive amount of data to the community, MnGeo is building a new cloud-based platform called MnTOPO 2 to replace the existing MnTOPO application that serves the previous lidar dataset. MnTOPO 2 will provide both the previous and new lidar data collections and derivatives. It is expected to launch publicly in fiscal year 2026.

In addition to the new lidar data collection enabling an accuracy never reached before, users will be able to compare lidar-based elevation datasets over time. This is a significant opportunity to assess Minnesota's changing landscapes.

Some areas of statewide lidar data are redacted from the publicly available dataset due to the sensitive nature of the data in these areas. Example areas of redaction include military bases and Tribal lands. MnGeo has coordinated a workflow led by the Fond du Lac Band of Lake Superior Chippewa to accommodate access requests for the redacted Tribal data in their area.

To learn more about the lidar collection and derivative development effort, see the Minnesota Geospatial Advisory Council section.

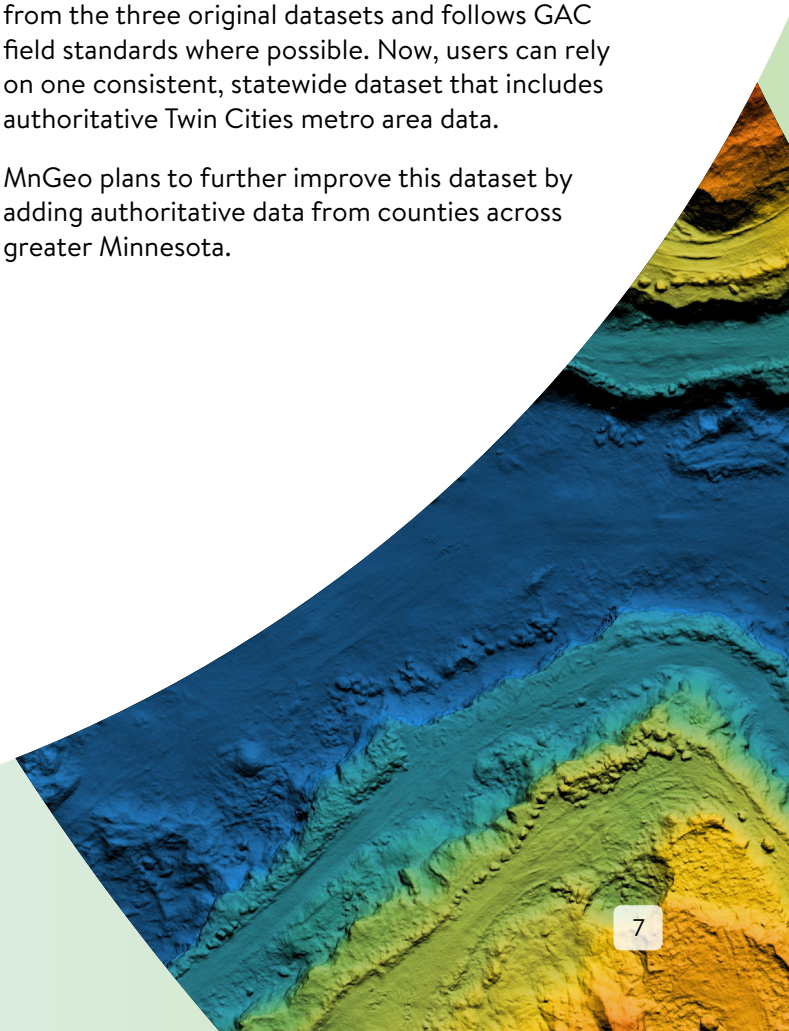
County boundaries

Across the executive branch, many state agencies create GIS datasets for their own needs and share them with other agencies and the public. MnGeo, charged by statute to reduce data duplication and unnecessary effort, brings separate teams together and combines similar datasets into a single, multipurpose resource. This is what MnGeo did with county boundaries.

At one time, three different county boundary datasets were available on the Minnesota Geospatial Commons. The DNR and the Department of Transportation (MnDOT) each provided a statewide dataset, and the Metropolitan Council provided a regional dataset for the Twin Cities metro area. Users reported confusion about the differences in age, attribution, and geometry of the overlapping datasets and didn't know which to use. MnGeo led an effort to bring these organizations together to combine the varying datasets into one.

MnGeo created both short-term and long-term plans to manage this single Minnesota county boundaries dataset. Groups from the GAC and State Agency GIS Collaborative reviewed and steered the process. The final dataset blends geometry and attribution from the three original datasets and follows GAC field standards where possible. Now, users can rely on one consistent, statewide dataset that includes authoritative Twin Cities metro area data.

MnGeo plans to further improve this dataset by adding authoritative data from counties across greater Minnesota.



2 Lead coordination and communication for Minnesota's geospatial community

Resource navigation

In addition to the Minnesota Geospatial Commons, MnGeo maintains a series of web pages cataloging GIS data and map resources for the public to navigate the many sources of this information. As the state's lead for geospatial information, MnGeo provides several Info by Topic pages to help provide more guidance about geospatial resources. Through collaboration with state agency and external partners, MnGeo maintains awareness of the current state of geospatial technology and data in Minnesota and connects information seekers to appropriate resources.

In addition to proactively sharing information about geospatial topics, MnGeo invites open inquiries from the public by phone and email, and publicizes this service online and at various events throughout the year. The office regularly receives questions from the public and state agencies for spatial information —an estimate of over 500 inquiries per year. While many of these questions are answered by pointing to resources on the Geospatial Commons or MnGeo website, several others require hands-on assistance or connecting inquirers to another state agency or external organization.

Regional coordination

MnGeo collaborates with regional geospatial groups whenever possible, including MetroGIS—a regional GIS initiative serving Minnesota's Minneapolis-St. Paul metropolitan area. The Minnesota GIO is a member of the MetroGIS Coordinating Committee. MnGeo staff participate in and present at regional GIS user group meetings including the Northeast, Southeast, and Pine to Prairie GIS User Groups. Additionally, MnGeo works to connect organizations that share similar challenges, sometimes connecting across regions to build each area's network of support.

MnGeo coordinates meetings of the Arrowhead Geospatial Collaborative, a group composed of county, regional, Tribal, state, and federal government agencies working to improve the accuracy and availability of GIS data in the northeast region of Minnesota. Since 2023, MnGeo helped double the group's participating organizations. The Collaborative worked with the U.S. Bureau of Land Management to create a common data model for the region's Public Land Survey section corners that will facilitate incorporation of this local data into national datasets. The group then brought this model to the GAC Parcels and Land Records Committee to put forward as a state standard. Concurrently, the Collaborative is working on aligning administrative boundaries between the various government entities. This effort could serve as a model for other regions of the state.

Culture of collaboration

This reporting period saw exciting momentum for GIS in Minnesota, especially with respect to collaborative impact. In October 2023, MnGeo and Governor Tim Walz gathered his cabinet and state agency leaders to share opportunities for using geospatial tools to take on the biggest challenges in state government. The group welcomed esteemed GIS innovator and Esri President Jack Dangermond, who shared his vision for how state agencies can use GIS to solve real-world issues facing Minnesota communities. MNIT Commissioner Tarek Tomes moderated discussion with Walz, Dangermond, Alison Slaats, and Minnesota Department of Health's Chief Data Strategist, Chris Brueske, to explore how GIS can be applied to meet agency objectives. This event inspired increased partnership across the agencies to leverage geospatial technology.

Governor Walz kept the momentum going in 2024 by presenting as keynote speaker at the world's largest GIS conference, the Esri User Conference, in San Diego. The keynote echoed messages delivered to agency leaders in October and highlighted the impactful GIS work happening across the State of Minnesota and partnering organizations such as the University of Minnesota. See the Executive Map Portfolio section of this report for more details about some of the featured work.

In November 2023 and November 2024, Governor Walz proclaimed GIS Day in Minnesota. Read the full 2024 GIS Day proclamation.

> *"...It is necessary to promote GIS awareness, education, and technical training throughout the state and encourage the understanding of how leveraging GIS data enhances the lives of all people living in and visiting Minnesota..."*
>
> **– 2024 GIS Day Proclamation**

Agency connectedness

Through cross-agency collaboration, MnGeo can better understand state agency needs and allocate resources and attention for priority efforts. One of the major pathways for this collaboration is the State Agency GIS Collaborative, a group of state agency and MnGeo staff that plans, promotes, and facilitates communication and collaboration for state employees interested in geospatial topics and technology. The Collaborative provides education, networking opportunities, and technical resources while also creating a space to learn from one another and optimize an enterprise approach to geospatial technology at the State of Minnesota. The group is led by the GAC State Government members, helping facilitate exchange of information between the two organizations, and communicate necessary guidance back to the council.

The Collaborative expanded its work in 2024, partnering with MnGeo to celebrate GIS Day with an event titled, *A Geospatial Approach to Equity & Inclusion*, emphasizing the transformative power of geospatial technology in solving real-world problems. State agency program managers, GIS professionals, and equity practitioners came together to learn about how GIS is being applied to consider equity in the design and delivery of state services.

The day included presentations from Minnesota's geospatial community, hands-on demonstrations, and networking. Showcased projects highlighted GIS applications in areas such as environmental management, public health, and urban planning.

MnGeo also hosted training during 2024 MNIT Week, an annual opportunity for MNIT employees to come together, celebrate accomplishments, and explore new ideas through professional development.

Communications

To further statewide collaboration, MnGeo publishes Minnesota GIS News, an e-newsletter that shares updates from MnGeo, Minnesota state agencies, and the Minnesota Geospatial Advisory Council. These messages also highlight major activities from across the community, delivering over 2,000 subscribers regular updates on geospatial datasets, services, activities, and meetings. Similarly, MnGeo sends newsletters exclusively to over 600 state agency subscribers. Combined, this averages to 50 newsletters annually.

External partnerships

MnGeo also connects with other GIS organizations. Each year, a representative from MnGeo serves on the board of the Minnesota GIS/LIS Consortium, a nonprofit organization made up of geospatial professionals from various sectors focused on developing and supporting the GIS/LIS community in Minnesota for the benefit of its people and contributors. At the Consortium's annual conference, the state Chief Geographic Information Officer presents the State of the State presentation, summarizing the great work completed by the community throughout the year to an audience of 600 attendees. MnGeo and the Consortium increasingly work together to uplift one another's missions.

MnGeo also coordinates with the Minnesota County GIS Association to support shared goals, stay informed on activities, and best meet the needs of the geospatial community.

In 2024, MnGeo presented at two important community events.

GEOFEST

Hosted by the Minnesota Alliance for Geographic Education (MAGE), the University of Minnesota, and the Minnesota GIS/LIS Consortium, this event provided educators with valuable information and resources to support the integration of GIS into K–12 curricula. Minnesota's Chief Geospatial Information Officer, Alison Slaats, welcomed attendees, and MnGeo Program Manager, Sally Wakefield, provided an overview of MnGeo and examples of how the State of Minnesota uses GIS. The session highlighted the wide-ranging applications of GIS across disciplines and offered practical insights for educators to bring back to their classrooms. The goal: to inspire the next generation of GIS professionals and underscore the critical role of geospatial tools in everyday decision-making.

Community Mapping Expo for Minnesota Nonprofits

At this event, representatives from 30 nonprofit organizations learned from MnGeo and other presenters about the power of location-based data and how to access affordable geospatial tools to advance their work. The event was hosted by GAC nonprofit member Jessica Fendos and Local Government Information Systems (LOGIS).

State and national committees

Minnesota Geospatial Advisory Council

The Geospatial Advisory Council is the statutory statewide coordinating body for the Minnesota geospatial community. The GAC advises and complements the work of MnGeo to improve services statewide through the coordinated, affordable, reliable, and effective use of geospatial technology.

Council members represent a variety of sectors, including local, county, regional, Tribal, state and federal government, higher education, business, nonprofit, and land surveying. The council frequently updates its membership to reflect changing technology and community needs. MnGeo supports the GAC with logistical support, web content management, and hosting collaboration sites for committees.

The GAC has expanded its work by adding a K-12 Committee, a Data Endorsement Ad-Hoc Committee, and a re-envisioned Archiving Committee. With input from the geospatial community, the GAC set priorities in these areas:

- Open data
- Emergency preparedness, services, and criminal justice
- Data standards, guidelines, and best practices
- Data development, storage, and services
- Outreach
- Public Land Survey preservation

Among the GAC's many accomplishments, the 3D Geomatics Committee's Data Acquisition Workgroup worked with partners to complete the last of the $27 million statewide lidar data collection effort with the USGS's 3D Elevation Program. This multi-million dollar effort involved 59 partnering contributors, leveraging $7.5 million in local contributions that were matched by nearly $20 million in federal funds. By 2025, new lidar data was collected for the entire state and the 3D Geomatics Committee is working to create a series of derivative datasets from this collection.

MnGeo helps this effort by participating in the committee, leading the financial management, and creating a platform to serve the collected data and derivatives to the public. See the lidar section of this report for more information about the data and delivery platform.

The GAC PLSS Remonumentation Legislation Subcommittee and PLSS Preservation Committee were nationally recognized by the National States Geographic Information Council with their Geospatial Excellence: Catalyst Award. This award recognizes "extraordinary effort and/or results in getting things done," and these two groups have together exemplified this by securing and awarding over $9 million in legislative funding to support the PLSS. GAC Chair Heather Albrecht accepted the award on behalf of the recipients at NSGIC's Annual Conference in San Antonio. See the Minnesota IT Services press release and PLSS section of this report to learn more about this outstanding achievement.

GAC leadership worked closely with MnGeo to improve internal processes, optimizing GAC and committee operations. As highlighted in the statewide foundational datasets section, the GAC's Open Data Subcommittee continued to reach out to counties about opting-in to share their parcel, address point, road centerline, and emergency service zone data publicly, maximizing the benefit of MnGeo's collection and normalization efforts. See the Fiscal Year 2023-25 GAC Term report for more information about the GAC's accomplishments.

Together with the Minnesota geospatial community, MnGeo and the GAC are advancing excellence in leveraging GIS to best serve the public and the profession.

National States Geographic Information Council

MnGeo and Geospatial Advisory Council members are members of the National States Geographic Information Council and participate in many of its activities, committees, and workgroups. Participation ensures that Minnesota is represented and provides input to national conversations about geospatial policy and initiatives. National initiatives that Minnesota has been involved with include Geo-Enabled Elections work, the Parcels and Land Records and Geospatial Preparedness Working Groups, and others.

NSGIC recognized Governor Walz with its 2023 Distinguished Service Award, honoring him as one of only two governors to ever receive such recognition in the organization's 30 years of awards. NSGIC's mission is to promote "the coordinated, impactful, and cost-efficient application of GIS and other location-based information and analytics to best serve the nation." This resonates well with the Governor's efforts to support investments in GIS and raise awareness of how the state utilizes GIS to improve government services.

At the 2024 NSGIC Annual Conference, MnGeo presented on the Executive Map Portfolio, participated alongside GAC Chair Heather Albrecht to learn more about facilitating state advisory council impact, and applauded Chair Albrecht upon accepting NSGIC's Geospatial Excellence: Catalyst Award on behalf of the GAC recipients.

Statewide Emergency Communications Board

In October 2023, the Statewide Emergency Communications Board reestablished its Next Generation 911 GIS Workgroup to support the community's development, maintenance, sharing of, and transition to the geospatial data necessary for NG911 service. Both MnGeo and the GAC have representative members on this workgroup. MnGeo brings its expertise in geospatial coordination, standards, and requirements for NG911 to contribute to conversation, participate in workgroups, and develop statewide guidelines for the public safety and GIS communities. In return, these efforts help inform MnGeo's NG911 support for the Department of Public Safety.

National Emergency Number Association

As part of MnGeo's work with the Department of Public Safety's Emergency Communication Networks Division on the state's NG911 GIS readiness program, MnGeo works closely with the National Emergency Number Association (NENA)—the standard-setting body for 911 in the United States and Canada. Several MnGeo staff members serve on various NENA working groups and partake in national NENA conferences, enhancing the state's ability to support those seeking assistance with NG911 data preparation, while also keeping state government informed about changes coming to NG911 GIS data requirements.

Conversely, alongside other Minnesota representatives at NENA (local government, private sector, etc.), MnGeo and its partners are ensuring that Minnesota has a voice in developing standards and best practices that work for Minnesota and the benefit of all.

Rising Star Award

In 2024, MnGeo staff member **Megan Sisko** received the first annual NENA Development Steering Council Rising Star Award. The Rising Star Award recognizes a person who is new to the co-chair duties of a working group, has embraced this important leadership role, and has exemplified what it means to be a NENA Development Group Working Group Co-Chair.

3 Provide outstanding technical support for statewide geospatial technologies

MnGeo supports MNIT's mission to partner with other state agencies and deliver secure, reliable technology solutions to improve the lives of all Minnesotans. Between January 2023 and June 2025, MnGeo supported 33 agencies, boards, and councils with over 37 different efforts, including the following small selection of projects.

Governor's Office support

Executive Map Portfolio

In 2024, the Office of Governor Tim Walz and Lieutenant Governor Peggy Flanagan asked MnGeo to create a single map application to help them quickly assess how Minnesota is progressing on the priorities of the One Minnesota Plan.

MnGeo built the Executive Map Portfolio, a collection of 59 maps and applications organized into three different priority collections:

- Children, Youth, and Families (26 maps)
- Climate (19 maps)
- Jobs, Workforce, and Economy (14 maps)

The goal was to create a simple application that could show opportunities, track the impact of policies, and provide up-to-date information on critical issues. MnGeo customized a template map collection from Esri with data from trusted sources to showcase our state and meet the needs and interests of state leaders.

Governor Walz shared the portfolio during the 2024 Esri Annual User Conference keynote, presenting it to thousands of geospatial professionals worldwide. In 2025, Esri recognized this work with a Special Achievement in GIS Award for setting a new standard in the GIS community.

The portfolio leverages several Esri technologies and combines data from state agencies, the Minnesota Geospatial Commons, the University of Minnesota, and the U.S. Census, including American Community Survey data.

Collaboration with agency partners allowed the portfolio to tell a more compelling story about their work. For example, the Minnesota Department of Education provided data to create the "Free School Meals" map, to highlight the impact of the Minnesota Free School Meals program. The portfolio makes it easy to create impactful maps using geospatial resources from the State of Minnesota.

Agency experts, MnGeo, Esri, and the Governor's Office worked together to design the portfolio and maps. Some stand-out maps include Farm to School, Youth Skills Training, and Natural Gas/Electricity Consumption. The portfolio continues to get daily views and has garnered interest from other states' GIS teams and Governor's offices.

Judicial Appointments interactive map experience

Selecting and appointing judges when vacancies arise on Minnesota's Supreme Court, Court of Appeals, and 10 Judicial District Courts is one of the Governor's key constitutional responsibilities. In early 2024, the Walz-Flanagan Administration Judicial Appointments staff asked MnGeo to develop a wall map with all the locations where appointments had occurred during the Governor's tenure. After working with MnGeo, the team decided that an interactive online map would be more useful than a static wall map. The online map stays current as new appointments happen and can be shared easily with the public.

MnGeo worked closely with the Governor's staff on the design and functionality of the mapping application, displaying each judicial district and courthouse location across the state. MnGeo created a workflow that lets staff easily update information as appointments occur. The map is now available on the administration's Judicial Appointments website.

Now, the public can easily identify where appointments have occurred and find additional details, including the judge's name, appointment date, press release, and photograph. People can search by address, city, or zip code—or simply explore the map to see the full scope of appointments.

Photo: Paul Vincent

MnDOT Suitability for the Pedestrian and Cycling Environment Tool

The Minnesota Department of Transportation's Office of Traffic Engineering (DOT-OTE) is working to create safer, more equitable environments for pedestrians and cyclists across the state. MnGeo partnered with DOT-OTE to develop the Suitability for the Pedestrian and Cycling Environment (SPACE) analysis tool to help local, regional, and state transportation planners address equity and safety concerns for non-motorists.

The SPACE analysis tool is a free, web-based mapping application that provides pedestrian and cyclist suitability scores statewide. Planners can identify areas with the highest need based on demand, safety risks, and equity concerns. Users can draw a path or area on the map to get an average SPACE score and details for each of the 19 demographic and safety-related factors that shape the score. They can download the results in several formats for seamless use in their own applications and planning workflows.

PUC Electric Utility Service Areas

Minnesota residents need to know which utility company serves their home, and providers need to know their neighboring service providers. The Minnesota Public Utilities Commission (PUC) partnered with MnGeo to improve how this information is tracked and shared with the public, and created the PUC Electric Utility Service Areas (EUSA) web mapping application and associated GIS data.

MnGeo refined and digitized service area information using descriptions from providers, PLSS, and legal property records. The interactive map shows each electric utility's service area. People can search an address or browse the map to find their utility provider. Solar energy developers can use the application to connect solar fields to the correct electric grid and associated service provider.

MnGeo also built a separate, secure tool for utility providers to submit service boundary updates directly, replacing the old paper-based process. Once a provider submits changes, MnGeo, PUC, and the provider work together to review and approve them for the public map. What started as a quarterly update process now happens more often, so the public can access up-to-date information faster.

Since its update in late 2022, the EUSA application has become MnGeo's most-used ArcGIS Online tool with over 500,000 views and 10,000 views each month over the last year.

DHS Minnesota Adult Abuse Reporting Center web app

The Minnesota Adult Abuse Reporting Center (MAARC) is the statewide entry point for reporting suspected abuse, neglect, or financial exploitation of vulnerable adults. MAARC provides a 24/7 toll-free number for the public and a web reporting option for mandated reporters. Every report MAARC receives is sent to the agencies responsible for the location of the vulnerable adult and the incident. When a report suggests criminal activity, MAARC also refers it to local law enforcement.

MAARC uses a web-based mapping application provided by MnGeo to help identify where an incident took place. A user can enter an address, city, county, or landmark. The application maps the location and provides the contact information for the appropriate adult protection and law enforcement agencies. This tool puts key contact details directly into the hands of users, so they don't have to search external sources. MAARC, as required by Minnesota law, must immediately notify a county adult protection program if emergency protective services are needed and contact law enforcement right away if the incident may be criminal. The map service supports quick responses to protect vulnerable adults and ensures MAARC meets its legal obligations.

In 2024, MAARC received a MNIT Achievement Award for enhancing this tool through strong partnerships between MnGeo, the Department of Human Services, and other MNIT teams. The location technology updates allow law enforcement agencies to receive more than 34,000 annual required notifications directly into their data systems, replacing the older secure email method.

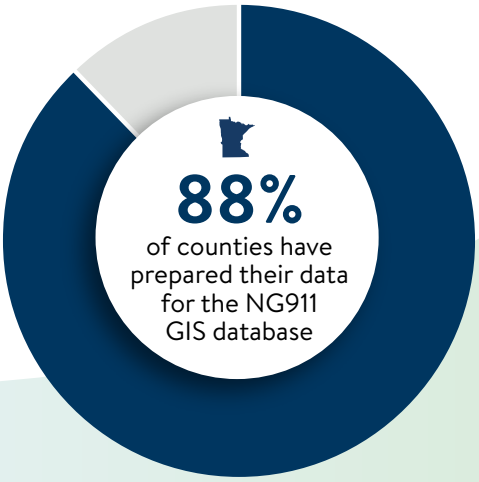
DPS-ECN Next Generation 911 GIS data preparation

Across the country, 911 systems are moving from outdated analog technology to NG911, an advanced system that uses internet protocol (IP). This upgrade helps emergency services keep pace with modern communication technologies and better serve communities and first responders.

Accurate GIS data is at the core of NG911. This data includes road centerlines, address points, provider boundaries, and emergency service boundaries. High-quality GIS data ensures 911 operators can quickly locate callers, send their calls to the right public safety answering point (PSAP), and assign the correct emergency response team.

Since 2015, MnGeo has worked with the Department of Public Safety's Emergency Communication Networks Division (DPS-ECN) to help Minnesota prepare for this transition. MnGeo helps local data providers meet national and state GIS standards needed for NG911. So far, 88% of Minnesota's counties have prepared their GIS data, and 83% of that data has been added to the statewide NG911 GIS database.

This is the first time Minnesota has created a single statewide collection of these GIS datasets. While the main goal is to support NG911 and emergency services, the data also offers many other valuable uses for state agencies and the public. Learn more about how this data is available on the Minnesota Geospatial Commons in the statewide foundational datasets section of this report.



Minnesota Statewide Historic Inventory Portal

The State Historic Preservation Office (SHPO) of the Department of Administration and its partners, including MnDOT, rely on accurate, complete, and current historic inventory records to assess how planned development projects might affect above-ground historic properties. In the past, SHPO managed these records using a mix of a Microsoft Access database, emails, phone calls, and file sharing. This process didn't allow partners to explore historic locations on a map.

To modernize the workflow, SHPO and MnDOT partnered with MnGeo to build the Minnesota Statewide Historic Inventory Portal (MnSHIP). This web-based application and database enables users to view and work with historic data in a geospatial context. Through MnSHIP, SHPO and its partners can search, view, add, and update information about historic properties. They can also see related information, such as historic aerial photos, railroad routes and stops, and administrative boundaries.

By providing clear information on the location and features of historic properties, MnSHIP helps agencies plan public projects with a better understanding of potential impacts.

Researchers, historians, and the public can also explore the physical places that represent Minnesota's history and see what historic properties exist in their communities.

MnSHIP uses Azure artificial intelligence (AI) technology to allow fast, free-text searches across millions of pages of documents. This innovation makes it easier to find connections and patterns in the records—something that wasn't possible before. This new approach has transformed how agencies, historic preservation consultants, and the public access and interact with information about more than 100,000 historic buildings and structures in Minnesota. The platform offers a single, reliable source of information that users can access from anywhere. It gives SHPO staff and partners faster, more complete access to historical data, and supports research in a geospatial context.

In 2024, MnSHIP was a finalist for MNIT's Project of the Year Award for its high impact on multiple business partners. The application unleashed the potential of SHPO's historic inventory, modernized record workflow and stewardship, and changed the way that Minnesotans access the records that document our shared past.

> *Prior to the launch of MnSHIP, interested parties did not have direct access into the [SHPO database], there were no statewide GIS data showing the locations of recorded properties, and accessing the documentation required a visit to the SHPO office to peruse the paper files. Thousands of properties were/are updated or added to the historic inventory every year, so managing the [database] and paper files was a significant, and at times cumbersome, task for SHPO staff… The drafting, submission, review, acceptance, and editing of records occurs within the application, which greatly reduced SHPO staff time in managing the records.*
>
> **– Jacob Foss (MnDOT) on the increased transparency and cost-savings that MnSHIP has provided**

OCM equity mapping and permitting

The Office of Cannabis Management (OCM) was established in 2023 to oversee the running and regulation of the cannabis industry in Minnesota. For this huge undertaking, the new state agency partnered with MnGeo to streamline their licensing and inspection processes. This collaboration resulted in the Social Equity Verification Map, a tool that has had nearly 14,000 views to date.

The Social Equity Verification Map is a web map that analyzes census data to determine if a location meets the criteria for social equity in accordance with Minnesota Statute, section 342.17. The application uses a variety of sources, including Esri's Living Atlas, the U.S. Census Bureau (including the American Community Survey), and Center for Disease Control, to determine potential social equity qualifications. Applicants can enter their address and decide the best application route for their cannabis business license. Application reviewers also use the same map, saving time and effort for everyone involved in the licensing process.

This work earned a One Minnesota Budget Implementation Technology Champion Award in 2024 as an executive branch project that meets One Minnesota goals and makes a positive impact on the lives of Minnesotans.

MnGeo also provides parcel-based data services that help OCM manage permitting and inspection records for fields and dispensaries.

DOT-OTE intersection editing applications

The Minnesota Department of Transportation's Office of Traffic Engineering analyzes crash statistics to support data-informed decision making that enhances safety on Minnesota's roads. DOT-OTE compiles intersection crash statistics to determine how intersection design can impact safety.

DOT-OTE worked with MnGeo to map and analyze about 250,000 intersections in Minnesota. They used an automated process to create intersection shapes based on various factors such as road networks, bridges, traffic lights and sign locations, and traffic volumes. Manual adjustments, like separating large intersections, are saved as procedures and automatically applied each night.

MnGeo developed tools that allow users to easily add manual changes. Roundabouts are automatically recognized and labeled. This system lets MnDOT users throughout Minnesota contribute their local knowledge to improve data accuracy. This statewide data tool helps enhance safety analysis and supports better decision making for road safety improvements across Minnesota.

Looking ahead

By Sally Wakefield, MnGeo Program Manager

MnGeo is excited for the future! Minnesota is committed to smart and efficient government, data-informed decision making, and customer centered technology. GIS can help meet these objectives by integrating location information as an essential business intelligence component. As the application of data-driven web-based maps meets the demand for modern service delivery, the critical role MnGeo provides to state government and our external partners becomes even more evident. We look forward to several large-scale projects reaching maturity during the next fiscal year, providing even more value for Minnesotans.

MnTOPO 2 will go live in the coming quarter. MnGeo has worked diligently with our partners to develop the tools required to leverage the multi-year, multi-million dollar investment in lidar data. Once launched, this application will be used by experts at every level of government and throughout the state to manage our natural systems and mitigate natural disasters like fires and floods.

The transformation of the Minnesota Geospatial Commons introduces a modernized, streamlined approach to accessing and utilizing geospatial data. By shifting from file-based distribution to web services, users across Minnesota will be able to search for spatial data from multiple partners through a unified portal—and seamlessly integrate that data into their applications or analyses. It will also allow for greatly expanded access to students, from K-12 classrooms to college campuses, within and beyond our borders. Limited functionality will begin to be shared by the end of the calendar year with final development on schedule for 2026.

We also eagerly anticipate the next stage of the NG911 development effort. After many years of collaboration between the Minnesota Department of Public Safety, MnGeo, and local government data providers, Minnesota is nearing 100% completion of the road and address data required to move the state toward building out a state-of-the-art, statewide emergency management response network. Over the next year, MnGeo stands ready to support the final data and systems development needed to realize improved Next Generation 911 system implementation in Minnesota.

In short, the core of our work at MnGeo is rooted in making sure that quality location information is available in an appropriate digital format to support informed decisions by state agencies, local and federal partners, academia, private businesses, nonprofit partners, and other service providers throughout Minnesota. We understand that our personal and collective wellness revolves around where we live, work, and play. Managing the natural environment, building out transportation networks, ensuring access to nutritious food, providing adequate education and childcare opportunities, and other essential services all rely on accurate information about where people and things are, and on their proximity to each other.

Toward that end, MnGeo will continue to focus its resources on advancing geospatial capabilities in Minnesota by expanding access to foundational geospatial data for all, providing cutting-edge spatial development services to our state partners, supporting statewide initiatives that require a spatial approach, and collaborating within our technology community whenever possible to stay alert to emerging trends and maintain a forward-facing approach—not only in the coming year, but for the foreseeable future.

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