MINNESOTA
GEOSPATIAL ADVISORY COUNCIL

Minnesota Geospatial Advisory Council - Archiving Workgroup Summary Report

Introduction

The Minnesota Geospatial Advisory Council (GAC) partners with a cross-section of organizations that include city, county, regional, state, federal and tribal governments as well as education, business and nonprofit sectors, and other stakeholder groups that benefit from geospatial technology to further the coordination among the Minnesota geospatial community.

Data archiving of geospatial information encompasses a wide range of considerations and practices for preserving public geospatial records and historical materials. In 2018, the GAC authorized the creation of an **Archiving Workgroup** http://www.mngeo.state.mn.us/workgroup/archiving/ with the purpose of defining the guidelines, best practices, and procedures for archiving geospatial data in Minnesota, so that a wealth of valuable geospatial data can be preserved and available for future use. The Archiving Workgroup aimed to engage with data stewards and stakeholders at various levels of government, academic institutions, private sector interests, non-profit organizations and citizens of the state, and to collaborate with MnGeo to propose datasets and methods for geospatial data archiving

Statement of Purpose

The Archive will be a repository for geospatial data with permanent historical/archival value.

Accomplishments

The Archiving Workgroup focused on describing the need for geospatial data archiving and laying the groundwork to signal potential pathways forward. Members collected initial findings about the level of interest in archiving, identified datasets to target, outlined the available technology, and clarified data archiving concepts. Where feasible, the Workgroup developed approximations and estimates of data sizes, data sources, staffing models, and costs. Finally, several aspects of the archive's policies, guidelines, and procedures were defined.

Stated Task	Result
Engage with data stewards at various levels of government, academic institutions, private sector, and relevant stakeholders	Public Geospatial Data Archive Survey
Create a priorities list of datasets to focus on for archiving purposes	Priority Datasets Report
Create an archiving strategy that includes policies, best practices, and procedures	Archiving Strategy Report
Explore ways to streamline or eliminate license agreements Explore what an archiving agreement would look like	Archiving Agreement
Collaborate with MnGeo on a strategy for how they will archive their historical aerial imagery layers (archiving pilot)	- Compressed MySQL imagery not a good candidate for archiving as it requires a custom viewer to visualize the data - Uncompressed imagery (geotiff) should be archived - Metadata should include a bounding box to give some sense of coverage - Further investigation needed, including the possibility of converting uncompressed imagery to a more consumable format and the potential for creating indexes to allow users to determine which imagery files they need
Educate the geospatial community about archiving	Communications sent or planned via MnGeo Newsletter and MN GIS/LIS Newsletter - Archiving Update - Cost of archiving - Call for testimonials
Present at 2019 MN GIS/LIS Conference	Workgroup members presenting: - Poster (data survey) - Panel (GAC activities) - Lighting Talk (Archiving)

Key Findings

Support for data archiving is strong across the Minnesota geospatial community. Of the 87 persons polled by our Public Geospatial Data Archive Survey, 90% agreed that government agencies should make their historical geospatial data available. This survey also identified three data layer themes, **Aerial photography and Imagery**, **LiDAR**, and **Land use & Landcover** as the top candidates for archiving among Minnesota stakeholders.

The Priority Datasets Subgroup weighed the survey results with other factors, particularly layer and metadata availability, and recommended prioritizing **Aerial Photography and Imagery, Parcels**, **Address points**, and **Road centerlines.** LiDAR and Land use & Landcover data will also be priorities, but will require further research to determine the availability and storage space needed for archiving these layers.

The Archiving Strategy Subgroup conducted research into existing geospatial data archiving projects and developed preliminary suggestions for technology, curation, and funding plans. Key recommendations include:

- Build a sustainable spatial data infrastructure that includes stored archival files and access copies
- Place the data repository portion of the archive under the stewardship of an existing infrastructure initially
- Integrate the archive's metadata records into the Minnesota Geospatial Commons for discoverability
- Hire a curator to coordinate ingest and preservation activities
- Designate agencies as being responsible for submitting data to the archive

The Archiving Agreement Subgroup explored license and archiving agreements in order to develop preliminary recommendations for deposit policies and license language. Key recommendations include:

- The archive will only accept geospatial data that includes all or a portion of Minnesota
- Data will be non-restricted and will be deposited for open access use
- Data should be in a final publishable state.
- Data for deposit should be accompanied by metadata records that adhere to the Minnesota Geographic Metadata Standard
- Data producers will need to agree to standard language for the Access Constraints, Use Constraints, and Distribution Liability fields in the metadata
- Content submission to the archive should be considered permanent

Future Considerations

The accomplishments of the Workgroup created a foundation upon which a more specific systems design for the archive can be developed. In particular, the estimates of the staffing needs and storage sizes and the generalizations about planning for format obsolescence and long term

preservation support policies will demand further analysis. Additional considerations include the risk that some agencies will not wish to participate. Future investigations should also include clarifications of the assumptions made in the initial reports and a potential revision of cost estimates.

Next Steps

Create an **Archiving Implementation Workgroup** to define and facilitate the implementation of an archive for Minnesota geospatial data. Discussions within the Archiving Workgroup indicated the effort would need to work in these areas:

- **Program**: Develop a detailed program for archiving geospatial data, including governance, guidelines, procedures, and the necessary social infrastructure
- **Technology**: Develop detailed technical infrastructure plans and workflows for archiving geospatial data
- **Outreach & Education**: Continue to build support for the archiving effort
- **Funding**: Research and secure funding for the archiving effort

Future Plans

Establish an **Archiving Committee** to coordinate strategies for archiving geospatial data. It would advise the state geospatial community about relevant archiving issues and make recommendations about policies and procedures related to archiving geospatial data in Minnesota. The establishment of this committee would occur once there is a firm timeline for implementation of an archive.

List of Workgroup Members

Ryan Mattke - University of Minnesota Libraries (Chair)
Karen Majewicz - University of Minnesota Libraries (Vice Chair)
David Bendickson - Minnesota National Guard
Art Botello - Minnesota Department of Transportation
Melinda Kernik - University of Minnesota Libraries
Len Kne - University of Minnesota
Mark Kotz - Metropolitan Council
Mike Koutnik - Esri
Andra Mathews - Minnesota Department of Transportation
Colleen Paavola - City of St. Paul
Dan Ross - MnGeo
Ben Timerson - Minnesota Department of Transportation
Denise Tingstad - City of Maple Grove
Brandon Tourtelotte - Pro-West & Associates
Hal Watson - MN.IT Natural Resources