# NSGIC

## National States Geographic Information Council

# Best Practices for State Geospatial Maturity

## COORDINATION

Growing from the 2019 Geospatial Maturity Assessment, this document is the second in a series of best practices collected from "honor roll" states based on individual GMA report cards. In addition to addresses and coordination, the series will cover NG9-1-1 data and transportation data in 2020, and cadastre data, hydrography data, elevation data, and orthoimagery data in 2021.

Strong statewide GIS coordination is good government: it reduces duplication of efforts; builds and maintains foundational data layers; ensures access to public data; leverages economies of scale for products, software, and services; augments the knowledge base of professionals in the field; and establishes standards and best practices through collaborative processes. In short, it supports efficiency, integration, and smart decision-making.

The National States Geographic Information Council (NSGIC) launched the Geospatial Maturity Assessment (GMA) in 2009 as a national effort to document each state's current geospatial development practices and uses. In the decade since, the GMA provided a biennial snapshot of the state of each state's geospatial maturity. Inspired by the National Spatial Data Infrastructure theme grading undertaken by the Coalition of Geospatial Organizations (of which NSGIC is a founding member), an entirely new process was developed for the 2019 GMA. Nine-grade "report cards" were produced for individual state spatial data infrastructures and state geospatial coordination, in addition to overall theme and topical analysis. [Explore the full GMA with interactive maps and dashboards](#).

States responding to the 2019 Geospatial Maturity Assessment indicate well-advanced state-level geospatial coordination efforts. All but six of those 41 states have a state Geographic Information Officer (GIO) and half of those GIOs are authorized in statute. Almost all states with a GIO are able to influence policy (97%) and coordinate activities across levels of government as well as within state government (94%). GIO or not, all but two states have a data clearinghouse (95%). On the downside, just over half of the state GIS activities are supported by the state's general funds (58%) and almost one-third of the states are struggling to operate without full-time professional staff (29%).

States receiving the highest marks for coordination have the following characteristics.

An official GIO or equivalent position that reports to a CIO or Governor. This position possesses most of these powers and abilities:

- Influence over state/federal policies
- Input to budget/financial matters
- Control over technology at the state enterprise level
- Control over statewide GIS data standards
- Coordinate activities across levels of government and within state government

A program that:

- Is authorized by statute
- Funded through general funds
- Has the ability to accept soft money, such as grants and fees for service

- Has professional staff
- Manages a clearinghouse
- Has a strategic plan less than five years old
- Has an official and active GIS coordinating council that involve relevant stakeholders

NSGIC reached out to states in the top tier of coordination and asked what made them successful. The states that made the "honor roll" share insights into the drivers of success for their state.

Minnesota | *Dan Ross, Chief Geospatial Information Officer*
A tipping point for Minnesota was when state agencies, the Governor's Council for GIS, and the broader geospatial community came together to support legislation and a request to create MnGeo, providing funding for statewide coordination. Also notable to Minnesota's success is that the statute regulates the program and that the Chief Geographic Information Officer regularly reports to champions and the broader geospatial community, including executive management, to inform them on major GIS initiatives across the state. Now with 23 team members, MnGeo receives funding through the general fund, generates revenue from shared web services, and collects fees for professional/technical service work. Lastly, connecting and communicating with all stakeholders is of the utmost importance - being visible, having an open ear, and sharing well.

Utah | *Matt Peters, Director of the Utah Automated Geographic Reference Center (AGRC)*
After a long history, including the creation of the State Geographic Information Database (SGID) with the requirement that agencies submit their data to it, the relevancy and need for the Automated Geographic Reference Center (AGRC) has grown as it maintains and stores data - specifically boundaries and voting data - identified in legislation and essential to the Lieutenant Governor's office. Under the Department of Technology Services, the Division of Integrated Services, AGRC employs 12 staff. Although the program is not 100% funded, the group has annual success balancing the scales through large and small projects, grants, and partnerships both internal and external to Utah with a consistent focus on legislative projects. By developing good products, we have built strong relationships over time and shown value. These champions, including executive management, see the value our expertise and services bring to projects. We desire to be nearly fully funded by the state. Success is not an event; it is a journey. We are still on the journey.

Kentucky | *Kent Anness, GIS Operations Manager Kentucky Division of Geographic Information*
Driven by the mapping of unmined coal and mineral assets, Kentucky was an early adopter of GIS. Currently, the Commonwealth's GIS Division is housed in the Office of Technology within the Finance Administration Cabinet, employing four staff. The program is annually funded at approximately $1 million provided through an enterprise assessment. Statutes enacted in the mid-90's have been key to the program's successful implementation of an enterprise data clearinghouse, maintenance of a statewide base map, and the promotion of data sharing and

collaboration throughout the Kentucky GIS Community. Programmatic champions, including executive management, support the work and showcase the community's efforts, even with consistent and rotating leadership in the branches of government. Impressively, all executive branch agencies utilize GIS in their business processes, and there is a large and active user base that advocates for coordination and data sharing and participates in the statutorily created Geographic Information Advisory Council.

Vermont | *John Adams, Director of Vermont Center of Geographic Information*
Our program's most significant push on the path to success came in 1988 when a major land-use planning bill was passed, creating the program in the statute, tying it to municipal and regional planning, and creating a sustainable program funding source. Our statutes are dated, but they have held up well. Although the program has moved around a bit, it has settled in the central IT agency, employing six core staff, with other staff embedded in specific agencies. The program has dedicated funding streams, including the general fund, centralized IT, and varying amounts from different grants and agencies depending on the year. Our program has connected with various groups over the years who champion our work and see value in what we do, including executive management and commissioners, legislators, local officials, and private sector folks. Our approach is to solve a problem for them and tell them interesting stories in a way that they can repeat them. Maps are fascinating, and we have a lot of maps at our disposal.

Arkansas | *Shelby Johnson, Geographic Information Officer*
Avoiding duplicative efforts was the primary driver of statewide geospatial coordination in Arkansas. Early leaders understood the tremendous benefit and knew that a small state with scarce resources could not afford to duplicate efforts. Key to our success is that since 2007, the program has been funded by the State General Revenue. The GIS Office is a Division of the Department of Transformation and Shared Services. It is led by a GIO and a Deputy Director and is staffed by six GIS analysts that support ongoing programs. Several statutes regulate our program, and our program garners support from key and emerging political figures such as governors, state house, and senate leaders. Being known for delivering the goods and problem-solving means when something big happens, they think of GIS, bring us in, and remember us for the future.

Ohio | *David Blackstone, Spatial Data Infrastructure Manager, Ohio Geographically Referenced Information Program*
Better decisions using geospatial technology and concepts was the primary business driver for a geospatial program in Ohio. Regulated by statute, the Ohio Geographically Referenced Information Program is housed within the state Information Technology Office and employs four full-time staff. The program is funded through the Ohio General Revenue Fund and chargeback. We are championed by our GIS agency managers who provide much support to the program and some executive management, acknowledging this support could be better. We have achieved success with our program, in part because of our relationship with our state GIS council.

Indiana | *Megan Compton, Geographic Information Officer*
The primary driver for developing the Indiana Geographic Information Office, housed within our Office of Technology (under the executive branch of government), was coordination and collaboration. The state needed centralized data coordination and collaboration, and a need for an established GIS fund for geospatial projects and activities to advance statewide GIS project implementation and knowledge. Although this fund was created, it has never been funded by the state legislature. Another driver for geospatial coordination in Indiana was the establishment of the state council. The Indiana Office of Technology funds the majority of our costs. In many cases, we have overcome the lack of funding by leaning on our state's GIS council, the broader GIS community, and organizations that understand the need for open and updated data for support of efforts that require expertise and coordination. For larger state-centric projects, we receive support from a small number of state agency partners, those that are the most impacted by the work, and ask for their support, based on the project plan and outlines for success. We are regulated by statute and championed by our State CIO, council members and leadership, our GIO, leaders in GIS and across state agencies, universities and private institutions. Our champions do include executive management, but we could certainly have more to garner greater legislative and governor-level support. The challenges are far from over; staying connected and aware of advancing technologies is vital.

Oregon | *Cy Smith, Geospatial Program Coordinator*
Historically, natural resource management drove the support of a geospatial program in Oregon. However, when the Geospatial Enterprise Office (GEO) was initiated in 2000, state agency CIO's recognized the program could be simultaneously successful on two levels - supporting large agency GIS programs with a shared data repository and providing support for small agencies that needed GIS. Currently housed in the Office of the State CIO, who reports to the governor, GEO has four sustainably funded FTEs, although we have had between three and 10 staff over the last 20 years, depending on project work and grant funding at any one time. Our program is funded through an assessment, developed more than 20 years ago by a small group of Oregon Geographic Information Council members and their GIS staff, that hits every state agency's budget. We are authorized by statute, and while the champions have changed over time, the state CIO has been a strong champion, along with county assessors, state agency directors, and natural resource and public safety agencies. Executive support exists, as the governor appoints Council positions. In 2006, a return-on-investment study identifying significant waste regarding geospatial data duplication was also crucial in developing executive support. And one final tipping point for the success of our program was the legislation that mandated geospatial Framework data sharing between all public bodies free of charge through a secure portal, in turn leading to improved statewide coordination.

- Advocate for statutes that will provide program creation, funding sustainability and stability, and support coordination with local governments
- Find the funding
  - Through statute and legislation
  - Fee-for-service
  - Chargeback
  - Grants
  - Defined Assessment on State Agencies (the Oregon model)
- Identify and win strong champions and executive management support
  - For statute law changes, the governor and state legislature
  - State CIO
  - State agency GIS leaders
  - State GIS council members
- Create a strong governance structure
  - Collaborative
  - Statutorily defined
- Build strong and lasting relationships
  - Be visible and listen to your community and understand their continuously evolving needs and priorities
  - Work with local governments
  - Develop and implement an outreach plan
  - Promote collaboration
  - Focus on relationships with those that are motivated and get the big picture
  - Hire the very best staff and ensure they all share the same vision of outstanding service to stakeholders
- Keep mission in mind and do good work
  - Identify other areas with potential payoff
  - Celebrate successes and document value
  - Do the work and have fun

# CHALLENGES & SOLUTIONS

These honor roll states noted several significant challenges in building statewide geospatial coordination:

- Building relationships
    - The time it takes to build an effective collaborative community
    - Developing and implementing an effective outreach plan
    - Time required to maintain and foster relationships with champions and key leaders
    - Balancing the role of state leadership with the council and GIO
- Government restructuring
    - The cyclical change in leadership
- The process to obtain statutory authorization

Lessons learned by honor roll states in building statewide geospatial coordination include:

- Listen to the community even more and be proactive in adapting to continuously evolving needs and priorities
- Look at return-on-investment and usage statistics sooner
- Work harder in legislative cycles to garner sustainable funding for framework data development and maintenance
- More active engagement with agency CIOs
- Obtain statutory authorization much earlier
    - Collaboratively developing legislation takes time (an estimated 16 months, according to one state)

# ABOUT NSGIC

NSGIC advances state-led geospatial coordination for the nation. Founded in 1991 by state Geographic Information Officers and statewide GIS coordinators, NSGIC serves as a national forum to develop future-oriented geospatial leadership and advance sound policies and practices for geospatial activities. Learn more at www.NSGIC.org. NSGIC invites further input from the GIS community by contact with NSGIC Director of Programs Jamie Chesser at jamie.chesser@nsgic.org.