# NSGIC
## National States Geographic Information Council

# *Best Practices for*
# *State Geospatial Maturity*

## ADDRESSES

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

An address point defines a location including the XY coordinates. A primary use of address points is to support 9-1-1 response, but they can also be used as reference data for address geocoding and to support thematic mapping of data associated with those points. Addresses are typically assigned by local government, so significant coordination is required to create a state-level database.

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.

Among others, the 2019 Geospatial Maturity Assessment graded states on the framework data theme of addresses. To receive the highest grades, states:

- Have a program for developing or maintaining an authoritative statewide address database
- Update addresses frequently (daily, weekly, or monthly rather than quarterly or annually)
- Publish to the NENA GIS Data Model (site/structure address points) or a state-level standard that can be rolled up to that standard and is verified by QA
- Use address points widely:
  o Support 9-1-1 activities
  o Reference data for geocoder web service
  o Available for download
  o Available via API
  o Proactively contributed to the National Address Database (NAD)
  o Available publicly
  o Available for government use
- Have a designated aggregator or steward
- Secure regular state-level funding
- Have a business plan
- Have a formal connection to local government
- Contain attributes associated with address points, like:
  o Address including sub-units
  o Land use (like home or park)
  o Nature of point (such as parcel centroid, front door of structure, driveway access point, etc.)

NSGIC reached out to states in the top tier of addresses and asked what made them successful. The states that made the "honor roll" are:

*Minnesota | Dan Ross, Chief Geospatial Information Officer*
Led by the Minnesota Department of Public Safety and set in statute, the address program experiences no challenges with funding due to its being covered by 9-1-1 funding. The state finds local government involvement and relationships are key to the success of the address program, noting as well that local governments are able to access some federal grant dollars to build out address data. The private sector provides GIS support for addresses in some Minnesota counties.

*Utah | Matt Peters, Director of the Utah Automated Geographic Reference Center (AGRC)*
The address program is housed at the Automated Geographic Reference Center - the state's enterprise GIS office. Funding is a combination of general office funding and 9-1-1 restricted funds. The program is mandated by statute.

*New Mexico | Gar Clarke, Geospatial Information Officer*
Three staff members in the state's Department of Finance and Administration work on the addresses program. Uniquely, the program is funded through statute with a surcharge on pay-as-you-go phones. Local government involvement is key to the success of the program, with the E9-1-1 Act requirement for 80 geospatial data providers to submit data to the state in support of public safety.

NSGIC has been actively supporting the development of a National Address Database from its earliest days. Formal efforts have been underway since 2015, when the US Department of Transportation convened an extensive group of stakeholders and then launched a pilot project with Arizona, Arkansas, and Boone County, Missouri. As of summer 2020, 23 states have provided their address data to the NAD, with five states providing partial data, and 3 states in the queue.

Co-chairing the NAD Strategies Subgroup of the FGDC Addresses Subcommittee, NSGIC is collaborating with the federal government in their efforts to implement a sustainable NAD program that is built on rolling up data from the local level, to state, to national.

*Massachusetts | Neil MacGaffey, Director MassGIS*
The address program is developed and maintained by the state's GIS coordination office, MassGIS. Unlike some other honor roll states, only minor funding comes from the state 9-1-1 office. The program depends on the cooperation of 351 local governments. The private sector also plays a role in Massachusetts, with a consultant-developed field app and companies meeting the needs for imagery and parcel mapping that provide initial address point locations.

*Kansas | Ken Nelson, Geographic Information Office and GIS Section Manager at Kansas Geological Survey*
The Kansas 911 Coordinating Council (Council) manages the statewide NG9-1-1 GIS data maintenance program, including address points. Local jurisdictions are required to designate a GIS data steward and data maintainer to ensure timely updates adhere to established policies and standards. While the Council funded the initial statewide data enhancement, local governments are responsible for supporting ongoing maintenance. Local governments can utilize 9-1-1 fees for this purpose, and approximately 70% of all jurisdictions contract with a private company for data maintenance. Kansas NG9-1-1 GIS standards and governance policies are set forth in statute.

*Vermont | John Adams, Director of the Vermont Center for Geographic Information*
The state's address program is housed within the Vermont Enhanced 9-1-1 Board, an independent organization. The state is able to access funding from the Vermont Universal Service Fund. Each municipality is required to designate an E9-1-1 liaison. These coordinators are critical to the success of the address program, which is mandated by statute.

*New York | Frank Winters, Geographic Information Officer*
Managed by the GIS program office, the address program is part of the New York State Office of Information Technology's public safety portfolio. State funds provide for the program.

## *BEST PRACTICES*

- Connect the importance of public safety and saving lives to a successful address program.

- Find the funding. Some ideas go beyond general funds:
  - 9-1-1 funding
  - Surcharge on pay-as-you-go phones
  - State universal service fund
  - Data development council

- Establish strong relationships with local governments.
  - Authoritative address data is local, as addresses are provided to the local 9-1-1 authority as soon as a building permit is issued to facilitate emergency responses to accidents on construction sites.
  - Look for opportunities to help local governments access federal 9-1-1 funding to develop data.

- Explore private sector partnerships to support efforts in:
    - Imagery and parcel mapping
    - Addresses and other GIS data maintenance
    - Building and maintaining solutions and platforms

- Identify strong champions. Earn support with good products, as well as sharing solutions and ideas. Some champions might be:
    - PSAP leaders
    - State 9-1-1 agency/board
    - IT agency leadership
    - GIO and/or CDO
    - Governor's/Lieutenant Governor's office
    - Tax commission leadership
    - GIS data providers
    - Elected officials
    - GIS council
    - State executive leadership/staff
    - GIS clearinghouse manager
    - Leadership of first responder agencies
    - Leaders of other agencies, like tax and finance, health, environment, and conservation.

- Advocate for statutes that will provide funding stability and support coordination with local governments.

## CHALLENGES & SOLUTIONS

These honor roll states noted two major challenges in building a strong address data set:
- Technology: in addition to potentially being expensive, building, acquiring, and developing technology, software, data models, and workflows can prove challenging.
- Building strong networks with local municipal support and coordinating with local governments.

Lessons learned by honor roll states in the process of building their address data include:
- Tie the program to mission-critical systems and tell the story of how data makes the difference
- Engage with local government early and often

- Work out a strong feedback loop with the stewards of the data
- Make the entire dataset public domain from the beginning
- Hire an outreach coordinator early on
- Include PSAPs and GIS data providers by creating an advisory structure that fosters solid communication
- Make sure you have a talented and dedicated staff
- Be flexible and provide options so users can choose the way it works best for them

## *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.