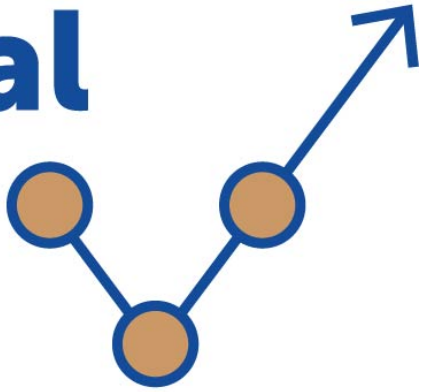
NSGIC 2021

Geospatial Maturity ASSESSMENT



NSGIC
National States Geographic Information Council

© NSGIC December 2021 V1.1

INTRODUCTION

About NSGIC

The National States Geographic Information Council (NSGIC) exists to advance effective national coordination of geospatial information by supporting state-led cooperation. Founded in 1991 by state Geographic Information Officers and statewide geographic information systems coordinators, NSGIC serves as a national forum to develop future-oriented geospatial leadership and advance sound policies and practices for geospatial activities.

NSGIC promotes the coordinated, impactful, and cost-efficient application of GIS and other location-based information and analytics to best serve the nation, with emphasis on the power of initiatives and public policy that connect across local, state, tribal, federal, academic, and private sector partners.

In 1953, the US Office of Management and Budget issued Circular A-16, establishing the National Spatial Data Infrastructure (NSDI) with guidance for federal agencies that create, maintain, or use spatial data. Despite significant efforts in the decades since, including the 2018 passage of the landmark Geospatial Data Act (GDA) codifying the principles of A-16, a strong NSDI has yet to be achieved. In fact, the Coalition of Geospatial Organizations (COGO) - of which NSGIC is a founding member - assigned the NSDI a grade of B- for its framework layers in 2018, inching up a notch from the grade of C determined in the 2016 inaugural report card.

As an organization, NSGIC exists to advance effective national coordination of geospatial information by supporting state-level coordination. NSGIC's membership has historically been comprised of state Geographic Information Officers (GIOs) or equivalents. For 30 years, NSGIC has surveyed its member states to gauge the status of geospatial datasets and coordination efforts. In 2009, NSGIC launched the Geospatial Maturity Assessment (GMA) as a national effort to document each state's current practice of geospatial development practice and use, while also illuminating a path forward for completing state spatial data infrastructures on the way to a robust NSDI.

NSGIC's GMA has been conducted every other year and - until 2019 - produced only results available online by state with little analysis. The 2019 assessment was much more ambitious, as an entirely new process was developed to produce 9-grade report cards for individual state spatial data infrastructures and state geospatial coordination inspired by the COGO NSDI report card effort. The report and supplemental dashboard set a new bar for analyzing where we are by state and nationally. These products have been referenced innumerable times to illuminate to stakeholders about the current state of GIS in state governments. The 2019 effort has proven to be an invaluable resource as we plot the next steps for improving the NSDI.

This year, the planning team is very pleased to report a significant increase in our response rate, with 47 states and the District of Columbia submitting their GMA survey. While we look to get 100% participation for future assessments, the bump is notable and speaks to our members' commitment to addressing the role states play in supporting and building the NSDI. NSGIC members are dedicated to contributing to the conversation and collaboration behind achieving a strong NSDI. The federal government can only be successful if and when all states reach full maturity and can maximize contributions. Through the Geospatial Maturity Assessment, NSGIC strives to paint an accurate national picture for the Federal Geographic Data Committee of where we are as states, with an invitation to meet us where we are and work together accordingly.

The framework layers assessed in the GMA are nearly evenly split between those in which the federal government plays the lead role and those led by state government. This report card effort demonstrates that many states have figured out key factors to the successful organization and coordination necessary to create and maintain geospatial data programs. The NSDI, however, will only be as strong as its weakest link. Many states still struggle to gain adequate support and funding to maintain their data and be able to contribute to the NSDI.

This is a fundamental example of where national coordination can be augmented by state-led coordination. NSGIC is uniquely qualified to coordinate with state government personnel who can adequately respond to questions regarding their state's geospatial maturity as it relates to the framework layers. This reporting update continues to support the implementation of the 2018 GDA, so the federal government can adequately and effectively dedicate resources to realize the NSDI, envisioned for decades.

In the pages that follow, the process followed by the project team to develop the working groups on each theme will be explained, as well as how the working groups collaborated to determine the elements defining solid data programs and a rating system to objectively arrive at grades. An overarching summary for each theme is provided. Individual state results include grades for each theme and an overall grade point average. A conclusion summarizes and outlines the next steps as this trove of information becomes available and usable as GDA implementation continues.

Collaboration, transparency, and increased efficiency in government are hallmarks of mature state GIS programs. NSGIC advocates for wider adoption of such state coordination, which in turn will further the nation's geospatial exchange.

NSGIC Board of Directors

Jenna Leveille (AZ), President
Frank Winters (NY), Past President
Jonathan Duran (AR), President-Elect
Megan Compton (IN), Director
Leslie Jones (AK), Director
Ken Nelson (KS), Director
Richard Wade (TX), Director
John Watermolen (NE), Director
Mark Yacucci (IL), Director
Greg Bunce (UT), Secretary
Mark Holmes (MI), Treasurer

Molly Schar, Executive Director

TABLE OF CONTENTS

Introduction 1
Methodology 4
Next Generation 9-1-1 6
Elections 10
Grading Scheme 14
State Summaries 15
Geospatial Coordination 16
State-Led Themes
- Addresses 19
- Cadastre 22
- Elevation 26
- Orthoimagery/Leaf-Off 29
- Transportation 33

Federal-Led Themes
- Geodetic Control 38
- Governmental Units 42
- Hydrography 45
- Orthoimagery/Leaf-On 49

Conclusion 52
State Report Cards 56

METHODOLOGY

NSGIC has been conducting Geospatial Maturity Assessments of the states for many years. This marks the second time we used GMA information to grade the states. The work was done in four stages:

1. Meetings with GMA team and theme leads to review 2019 questions and discuss changes to questionnaire and grading system
2. Member outreach and education
3. Survey distribution and grading
4. Report writing and review

Meetings with GMA team and theme leads to review 2019 questions and discuss changes (February - March)

The GMA team convened meetings with each theme lead group to review the questions and grading schemes from 2019 in light of the feedback received from our members on the outcomes of the initial approach. Discussions were had on if changes were warranted or not. Each group was in charge of finalizing the 2021 questions and grading metrics; in most cases changes were minimal to nonexistent. In alphabetical order of data theme, the theme lead groups were:

Addresses: Frank Winters (NY) and Ken Nelson (KS)
Cadastre/Parcels: Neil MacGaffey (MA) and Will Craig (MN)
Coordination: Will Craig (MN) and Karen Rogers (WY)
Elevation: Dennis Peterson (TN) and Mark Yacucci (IL)
Elections: Jamie Chesser (NSGIC) and Bert Granberg (NSGIC Geo-Enabled Elections project Steering Group Co-Chair)
Geodetic Control: Erin Fashoway (MT) and Kent Anness (KY)
Governmental Units: Mary Fulton (PA) and Sara Cassidy (US Census)
Hydrography: Mark Holmes (MI) and Jim Steil (MS)
Next Generation 9-1-1: Michael Fashoway (MT) and NSGIC NG9-1-1 Steering Group
Orthoimagery: Tim Johnson (NC) and Tony Spicci (MO)
Transportation: Chris Diller (WI) and Dan Ross (MN)

The teams continued to utilize the two basic grading schemes from 2019, total points and percent coverage. In the total points approach, individual factors like data coverage and quality control were assigned points based on the level of excellence. Those points were then summed to a total. Grades were assigned based on that total. *Coordination, Transportation, Geodetic Control,* and *Hydrography* were graded using that approach.

The other grading system was based on percent coverage by a particular data theme. An initial grade was assigned to each state based on that percentage. Adjustments up or down were made based on other factors of the state program. The percent coverage approach was used for *Addresses, Cadastre/Parcels, Elevation, Orthoimagery (both leaf-off and leaf-on),* and *Governmental Units.*

Data on two additional themes, Next Generation 9-1-1 and elections, were collected for informational purposes only. As these are not NSDI layers, we did not feel they should be graded at this time.

Member Outreach and Education

(April-May)

The GMA team felt our response rate and quality of responses would improve if we engaged in outreach and education before the circulation of the survey. Toward that end, we created individual pdfs with the questions and grading metrics for each theme and provided them to our state representatives a few weeks before the survey went out. We also hosted webinars to explain the few changes in grading and changes in the survey instrument. Finally, we hosted 'Office Hours' where NSGIC staff was available to answer questions or address issues NSGIC state representatives were having once they were diving into the live survey.

Survey Distribution, Collection, and Grading

(May-August)

Surveys were distributed to the states in May, hoping to get responses before summer vacations began to intrude in schedules and focus. Follow-up efforts brought the final response to 47 states and the District of Columbia.

Survey123 was used as the data collection tool. Survey123 was chosen so that the data could be easily integrated into an ArcGIS Dashboard or Story Map.

Grading was performed in a spreadsheet with formulas that were written according to the methodology developed by the theme leads.

Preliminary grades were made available to the states in late August. The GMA team asked states to review their own grades to verify their responses were captured correctly and that they agreed with how their score was tabulated. Very few comments were received.

Report Writing and Review

(September-November)

The leads were requested to write a summary paragraph on their theme. It would provide an overview of how well the states were doing, but also identify any notable issues. It would provide recommendations for future work by the states to improve their performance on this theme. The GMA team wrote and compiled the rest of the report.

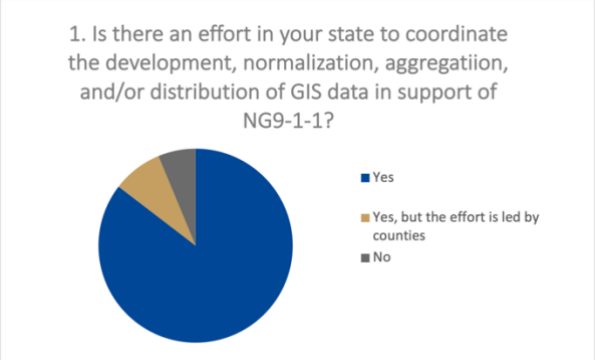
NEXT GENERATION 9-1-1

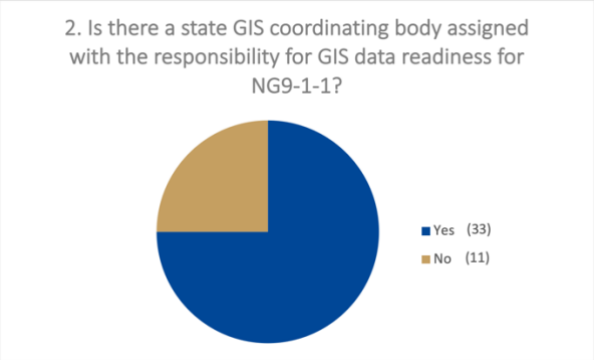
The 2021 NSGIC Geospatial Maturity Assessment (GMA) is the second GMA to include questions on Next Generation 9-1-1 (NG9-1-1). Similar to the 2019 GMA, NG9-1-1 is an ungraded theme to help states gauge their relative progress preparing GIS data for NG9-1-1. While most of the questions this year are similar to those in 2019, some questions and/or answers were modified for clarity.

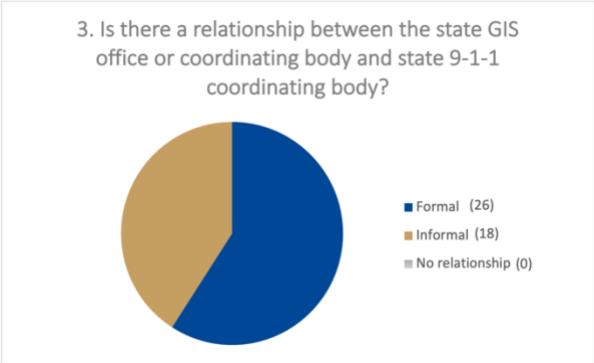
NSGIC member states are increasingly involved in supporting GIS for NG9-1-1 in their states. Five states responded that 9-1-1 calls are being spatially routed to the PSAP over an ESInet using Next Generation Core Services (NGCS) and the Emergency Call Routing Function (ECRF) at the state level. Seventeen states responded that calls are being spatially routed, but not statewide (regionally or only some PSAPs). The primary goal of coordinating GIS readiness for NG9-1-1 is to be able to implement geospatial call routing.

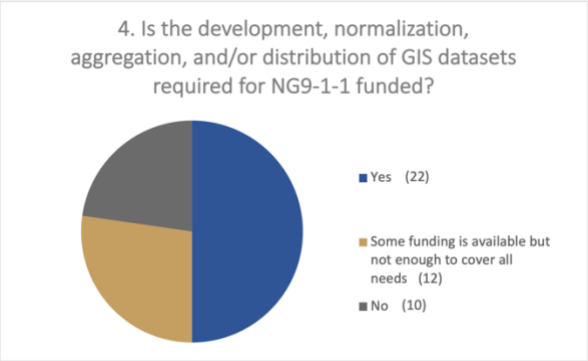
With 48 respondents for the 2021 GMA survey, 26 indicated the state GIS coordinating body is included in the state 9-1-1 coordinating body; this is up from just 10 states in 2019. Thirty-three states reported there is a state GIS coordinating body assigned with the responsibility for NG9-1-1 GIS data readiness. Twenty-four states reported inter-state NG9-1-1 GIS coordination, an increase from just 13 in 2019. Overall, while state support and coordination for NG9-1-1 GIS is increasing, adequate funding remains an issue. Ten of the 48 respondents indicated that no funding is available, and 12 respondents indicated some funding is available but not enough to cover all their needs.

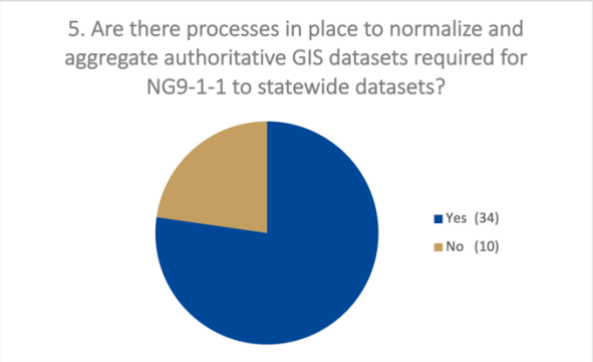
On a technical level, 34 states have processes in place to normalize and aggregate authoritative GIS datasets required for NG9-1-1 to statewide datasets, up from 24 in 2019. The number of states following data standards for required NG9-1-1 GIS datasets also increased. Forty-one states follow a standard for road centerlines, (up from 28 in 2019), and 40 states follow a standard for site/structure address points, (up from 26 in 2019). Regarding the standards that are being followed, the NENA standard is the most common, followed by a hybrid standard.

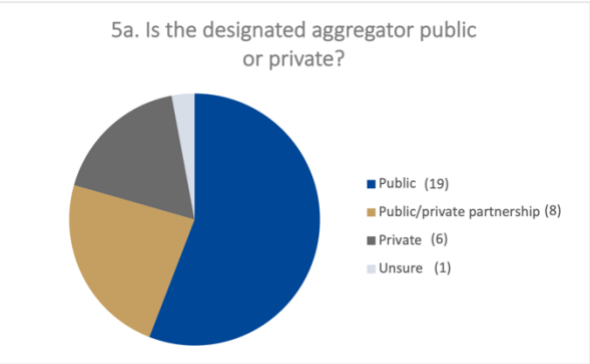


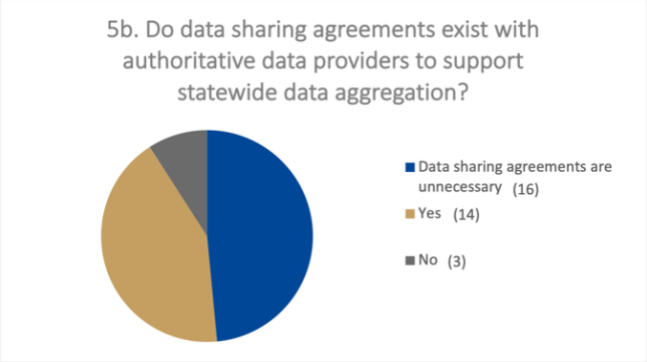


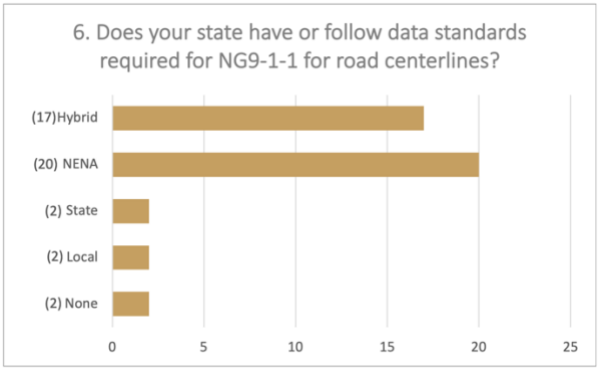

3. Is there a relationship between the state GIS office or coordinating body and state 9-1-1 coordinating body?
Formal (26)
Informal (18)
No relationship (0)

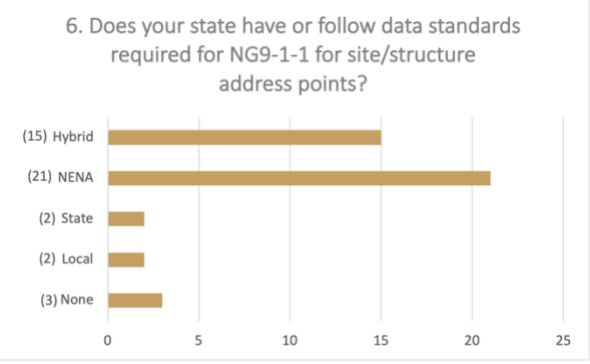

4. Is the development, normalization, aggregation, and/or distribution of GIS datasets required for NG9-1-1 funded?
Yes (22)
Some funding is available but not enough to cover all needs (12)
No (10)

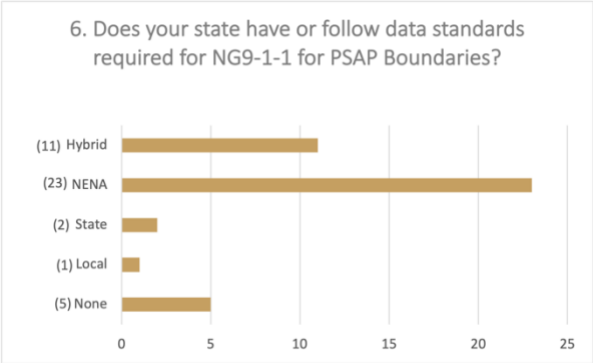

5. Are there processes in place to normalize and aggregate authoritative GIS datasets required for NG9-1-1 to statewide datasets?
Yes (34)
No (10)

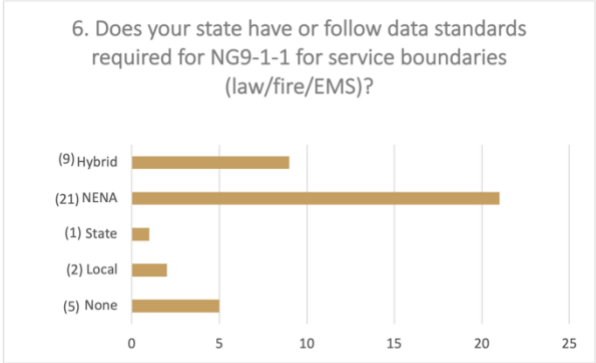

5a. Is the designated aggregator public or private?
Public (19)
Public/private partnership (8)
Private (6)
Unsure (1)

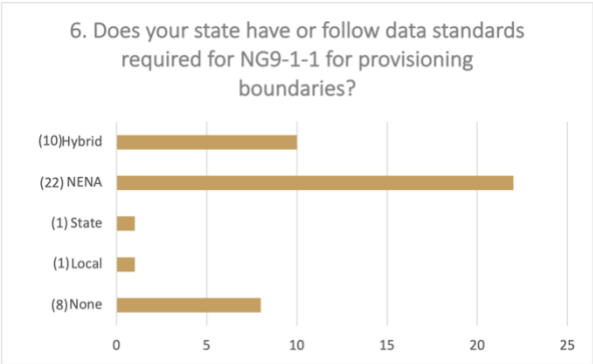

5b. Do data sharing agreements exist with authoritative data providers to support statewide data aggregation?
Data sharing agreements are unnecessary (16)
Yes (14)
No (3)

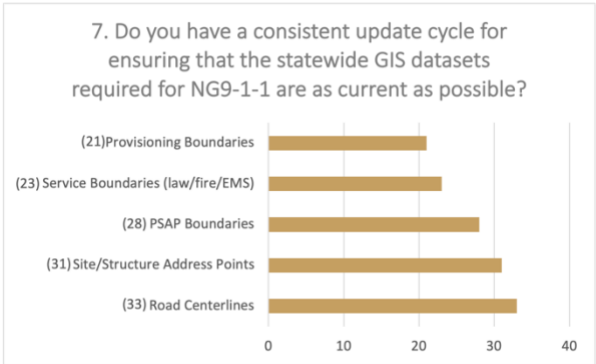

6. Does your state have or follow data standards required for NG9-1-1 for road centerlines?
(17)Hybrid
(20) NENA
(2) State
(2) Local
(2) None
0
5
10
15
20
25

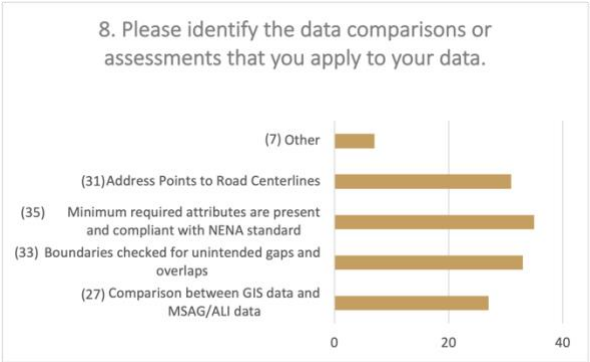

6. Does your state have or follow data standards required for NG9-1-1 for site/structure address points?
(15) Hybrid
(21) NENA
(2) State
(2) Local
(3) None
0
5
10
15
20
25

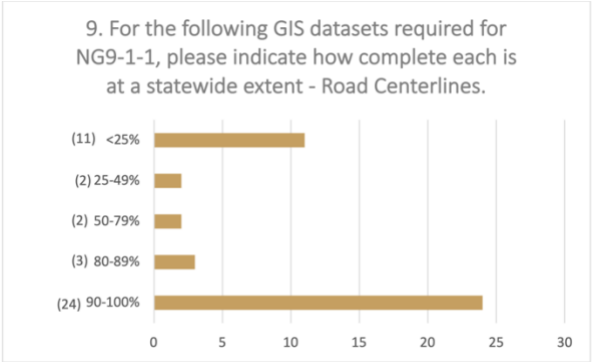

6. Does your state have or follow data standards required for NG9-1-1 for PSAP Boundaries?
(11) Hybrid
(23) NENA
(2) State
(1) Local
(5) None
0
5
10
15
20
25

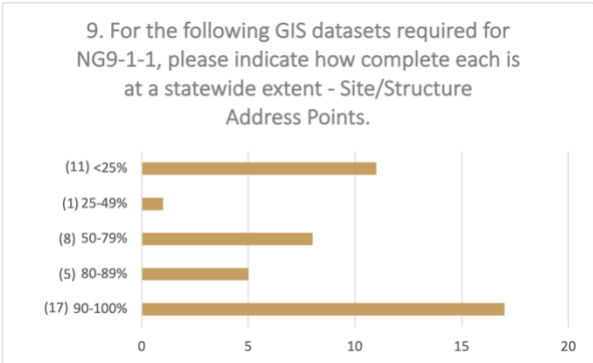

6. Does your state have or follow data standards required for NG9-1-1 for service boundaries (law/fire/EMS)?
(9) Hybrid
(21) NENA
(1) State
(2) Local
(5) None
0
5
10
15
20
25

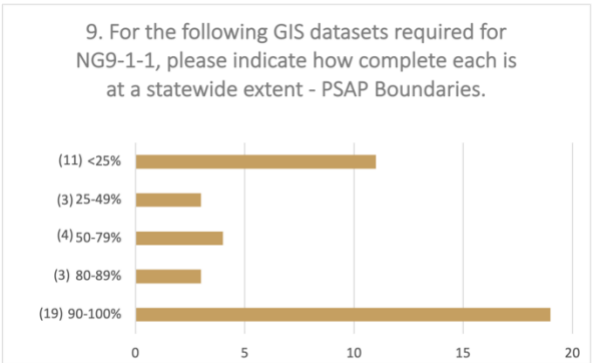

6. Does your state have or follow data standards required for NG9-1-1 for provisioning boundaries?
(10)Hybrid
(22) NENA
(1) State
(1) Local
(8) None
0
5
10
15
20
25

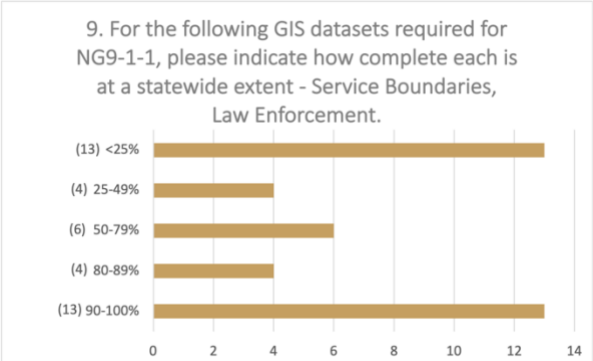

7. Do you have a consistent update cycle for ensuring that the statewide GIS datasets required for NG9-1-1 are as current as possible?
(21)Provisioning Boundaries
(23) Service Boundaries (law/fire/EMS)
(28) PSAP Boundaries
(31) Site/Structure Address Points
(33) Road Centerlines
0
10
20
30
40

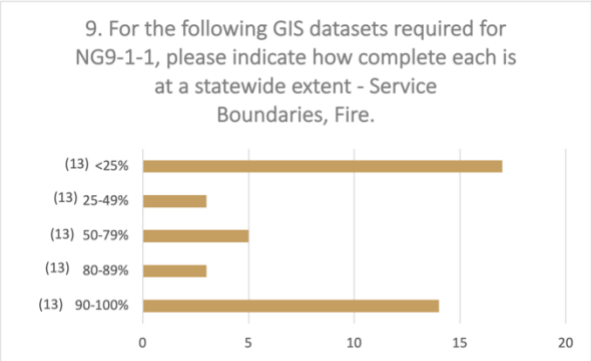

8. Please identify the data comparisons or assessments that you apply to your data.
(7) Other
(31) Address Points to Road Centerlines
(35) Minimum required attributes are present and compliant with NENA standard
(33) Boundaries checked for unintended gaps and overlaps
(27) Comparison between GIS data and MSAG/ALI data
0
20
40

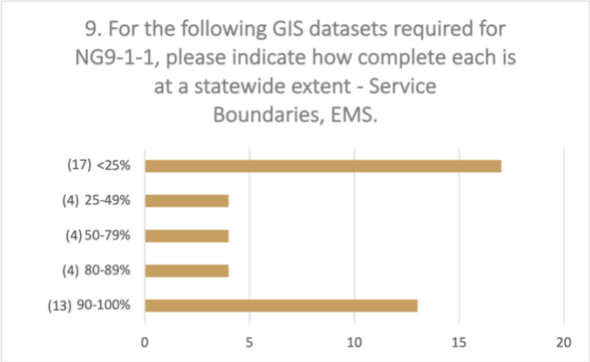

9. For the following GIS datasets required for NG9-1-1, please indicate how complete each is at a statewide extent - Road Centerlines.
(11) <25%
(2) 25-49%
(2) 50-79%
(3) 80-89%
(24) 90-100%
0
5
10
15
20
25
30

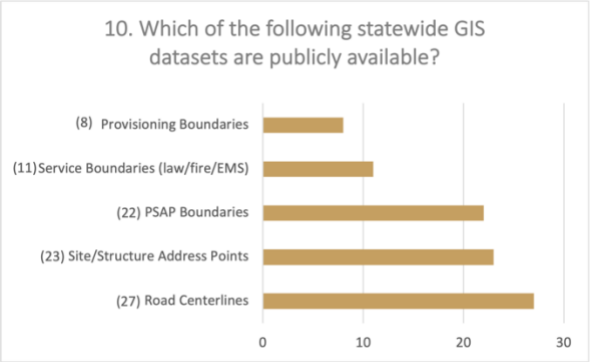

9. For the following GIS datasets required for NG9-1-1, please indicate how complete each is at a statewide extent - Site/Structure Address Points.
(11) <25%
(1) 25-49%
(8) 50-79%
(5) 80-89%
(17) 90-100%
0
5
10
15
20

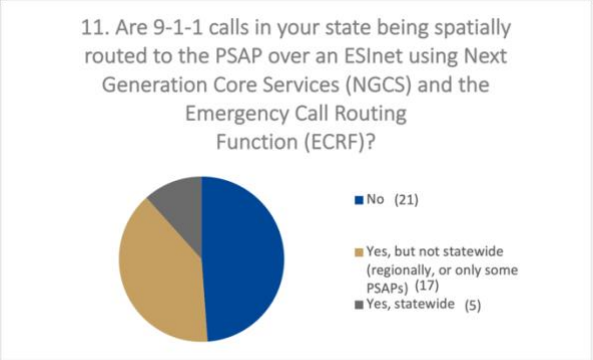

9. For the following GIS datasets required for NG9-1-1, please indicate how complete each is at a statewide extent - PSAP Boundaries.
(11) <25%
(3) 25-49%
(4) 50-79%
(3) 80-89%
(19) 90-100%
0
5
10
15
20

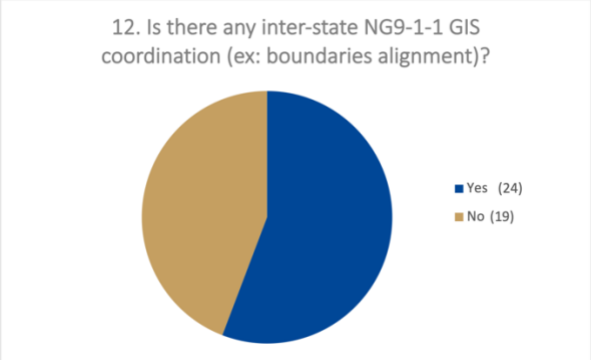

9. For the following GIS datasets required for NG9-1-1, please indicate how complete each is at a statewide extent - Service Boundaries, Law Enforcement.
(13) <25%
(4) 25-49%
(6) 50-79%
(4) 80-89%
(13) 90-100%
0
2
4
6
8
10
12
14


9. For the following GIS datasets required for NG9-1-1, please indicate how complete each is at a statewide extent - Service Boundaries, Fire.
(13) <25%
(13) 25-49%
(13) 50-79%
(13) 80-89%
(13) 90-100%
0
5
10
15
20


9. For the following GIS datasets required for NG9-1-1, please indicate how complete each is at a statewide extent - Service Boundaries, EMS.
(17) <25%
(4) 25-49%
(4) 50-79%
(4) 80-89%
(13) 90-100%
0
5
10
15
20


10. Which of the following statewide GIS datasets are publicly available?
(8) Provisioning Boundaries
(11) Service Boundaries (law/fire/EMS)
(22) PSAP Boundaries
(23) Site/Structure Address Points
(27) Road Centerlines
0
10
20
30


11. Are 9-1-1 calls in your state being spatially routed to the PSAP over an ESInet using Next Generation Core Services (NGCS) and the Emergency Call Routing Function (ECRF)?
No (21)
Yes, but not statewide (regionally, or only some PSAPs) (17)
Yes, statewide (5)


12. Is there any inter-state NG9-1-1 GIS coordination (ex: boundaries alignment)?
Yes (24)
No (19)

ELECTIONS

The 2021 NSGIC Geospatial Maturity Assessment (GMA) marks the second time the states have answered questions regarding relationships with elections directors and divisions in their state, as well as availability, maintenance, and use of election data, tools, and processes.

With the onset of geo-enabled elections and the determined importance of the relationship between the state geographic information officer (GIO, or equivalent role) and the election director, NSGIC developed these questions to continue to monitor the progression of states to incorporate GIS into their election data management systems.

Data continue to indicate that states are in their youth when it comes to nurturing and developing relationships with their state election director, as well as advising or assisting in the creation, maintenance, and use of GIS data and tools for election management.

With 48 states responding to the GMA, currently, 21% of states have a formal relationship with the state's election director. The use of the word formal here indicates whether the relationship is defined in statute, administrative rule, a formal agreement for services, or a standing coordination meeting. You will recall in the 2019 GMA, the question was simpler, do you have a relationship and a direct line of communication to the state's election director, for which 17 states answered yes. The data continues to show us that most states are not connecting and working with the election division and the relationship is not formalized.

In *Raising Election Accuracy and Efficiency with GIS*, the Geo-Enabled Elections project has identified one of its best practices as the need for a voting unit GIS layer. It is encouraging to see that nearly half of the states who responded to the GMA have access to an accurate, current statewide voting precinct boundary layer. Of this 48%, zero states indicate the boundaries are static. This is a significant improvement from 2019. Nearly 15% report the precinct boundaries are updated as changes are made, nearly 17% report the boundaries are updated and archived as changes are made, 8% share the boundaries are updated as changes are made and are used to spatially re-assign voters to the updated precincts, and 6% report the boundaries are updated and archived as changes are made and are used to spatially re-assign voters to the updated precincts. The geo-enabled elections best practices specifically mention the importance of regular boundary management, as well as point in polygon analysis to ensure voters are casting their votes in the right contests.

Implementing a geocoding strategy also finds itself among the list of best practices for geo-enabling elections. Nearly half of the states use and maintain a state or commercial geocoding web service to locate voter addresses and voters. This is great news for those states who are hoping to move in the direction of GIS integration in elections. Of this nearly half of states, 8% report that the geographic coordinates for addresses tend to be static once found, 13% share the geographic coordinates for addresses are routinely analyzed and updated selectively as needed, and finally, nearly 21% of states indicate that geographic coordinates for addresses are periodically updated to reflect the location found using the most current geocoding reference data (roads and address GIS layers).

Another one of the geo-enabled elections best practices is to have identified data validation processes in place, including performing regular spatial audits of your GIS election data. When states were asked if they have an audit process for precinct assignments within the election database, 38% percent reported yes and 63% indicated no. This is an improvement of four states from 2019 to 2021.

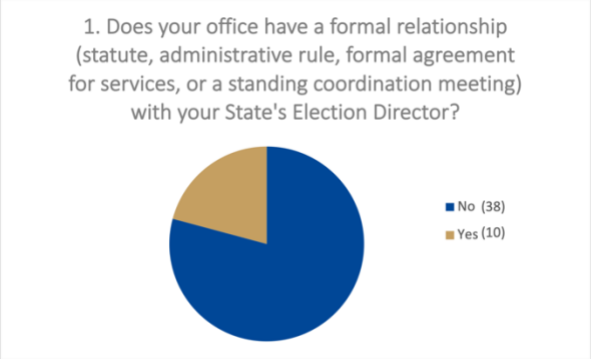
Finally, when we asked the 38% percent of states who reported they do have an audit process if they have staff, data, or other geospatial resources involved in this process, a mere five states answered yes. Two-thirds of the states skipped this question due to their answer to question number four.

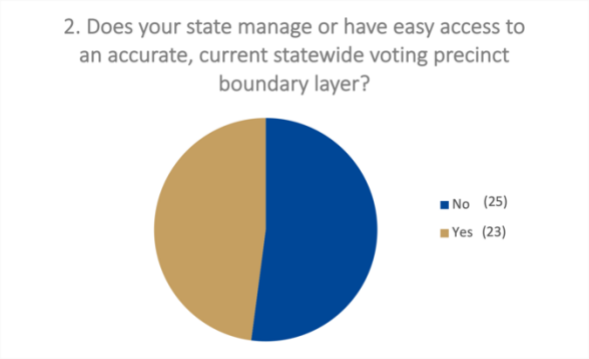
From 2019 - 2021, one of the focal areas for the Geo-Enabled Elections project was advocating for GIS integration into elections, particularly in state statute. To assess the climate of GIS integration in elections in state statute, we asked states if they had any statutes in place that would regulate address, district, precinct, and civic boundary data creation and maintenance. Here are the results:

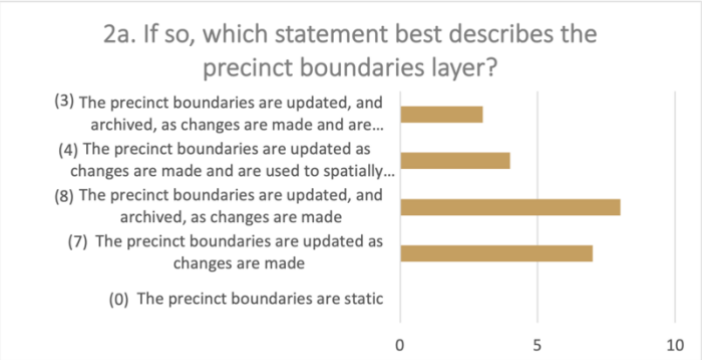
- 33% of states have statute that regulates address data creation and maintenance
- 56% of states have statute that regulates district data creation and maintenance
- 58% of states have statute that regulates precinct data creation and maintenance
- 54% of states have statute that regulates civic boundary data creation and maintenance

With redistricting happening now in states, the final question we asked was will the new precinct boundaries be added to your state's clearinghouse after the 2021 redistricting process. Nearly 65% of states reported the data would be added to the state clearinghouse with the estimated upload of the data for these states happening after December 31, 2021.

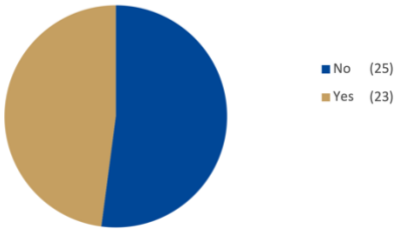
In summary, states continue to be in their infancy in election relationships and GIS integration in election data management. Assessing where states are in 2021 continues to provide the GIS and elections community with a solid understanding for determining future improvements in this area among the states.



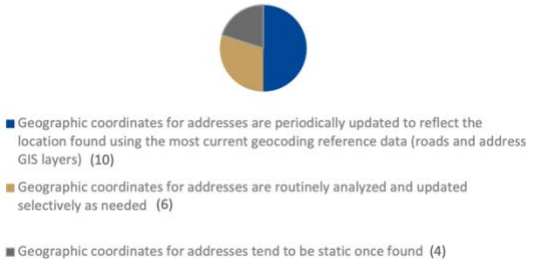




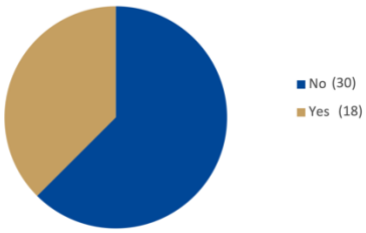
3. Does your state use and maintain a state or commercial geocoding web service to locate voter addresses and voters?



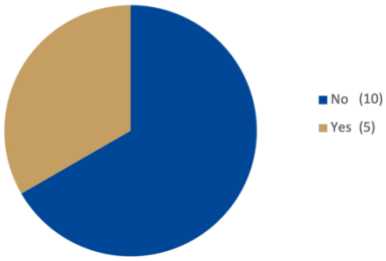
3a. If so, which statement best describes how the geocoding web services are used?



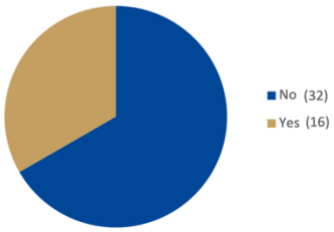
4. Does your state have an audit process for precinct assignments within its election database?



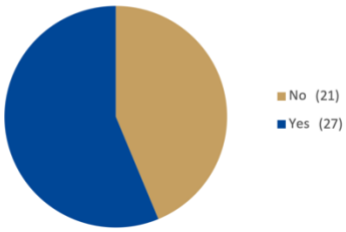
4a. If so, is your staff, data, and, and other geospatial resources involved?



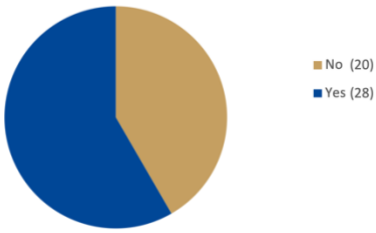
5. Does your state have any statutes in place that regulate the following: address data creation and maintenance?



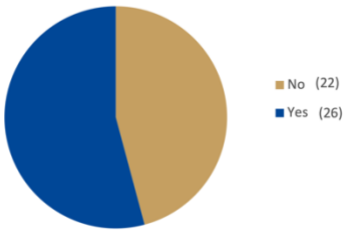
5. Does your state have any statutes in place that regulate the following: district data creation and maintenance?

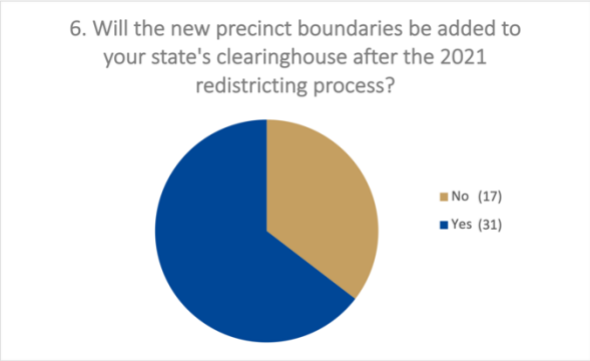


5. Does your state have any statutes in place that regulate the following: precinct data creation and maintenance?



5. Does your state have any statutes in place that regulate the following: civic boundary data creation and maintenance?




6. Will the new precinct boundaries be added to your state's clearinghouse after the 2021 redistricting process?
No (17)
Yes (31)

GRADING SCHEME

The Coalition of Geospatial Organizations (COGO) has used the traditional A-F system to grade federal agency efforts to develop the National Spatial Data Infrastructure (NSDI). Starting in 2019, NSGIC began grading state efforts to develop the NSDI. NSGIC developed a questionnaire that was sent to every state, plus the District of Columbia. The responses were pulled together to grade each state (including DC) on each of ten different themes – the eight COGO themes, plus a grade for state-level coordination activities and separate grades for leaf-on and leaf-off orthoimagery.

Questionnaires and grading schemes were developed by NSGIC volunteers, each an expert in the theme they addressed. The 2019 grading schemes were kept to the extent possible to allow comparisons over time, but many small changes were made to improve the accuracy in 2021. Grading details, including any changes from 2019, are documented in the writeups for each theme in this report.

Grades were based on answers to survey questions. Data theme grades were mostly based on percent coverage across the state. Other key factors were used to adjust that grade: update frequency, data quality (standardization), and accessibility. Other factors that came into play were things like having a business plan, regular funding, a designated steward, and a formal relationship with local government. The grade for coordination was focused on the existence of a geographic information officer (GIO) and the powers and resources available to coordinate GIS activities statewide.

Two different grading schemes were used.

- **Total Points** (TP). Points were given for each relevant factor. The total points earned yielded a specified grade.
- **Percent Coverage plus steps** (PC)**.** An initial grade was given based on the statewide percent coverage of this theme. Grades were adjusted up or down steps from there. For example, an initial grade of B, could be adjusted down one step to B- or two steps to a C+. Two versions of approach were used:
    - PC-1. Point-based step adjustments. Points were assigned to relevant factors. Total points across factors are used to adjust the initial grade up-or-down a specified number of steps.
    - PC-2. Direct step adjustments. Similar to PC-1, but the relevant factors yield step changes directly.

Data themes tied to federal programs were graded based on state contributions to that federal program. In general, the base state grade was a C, but that could go up depending on state efforts.

The overall grade for each state was determined by averaging its grades across coordination and all nine data themes.

STATE SUMMARIES

STATE	OVERALL GRADE	STATE	OVERALL GRADE
Alabama	B	Montana	B
Alaska	B-	Nebraska	B
Arizona	B-	Nevada	C
Arkansas	B+	New Jersey	B+
California	B-	New Mexico	B
Connecticut	B	New York	A-
Delaware	B	North Carolina	A-
District of Columbia	A-	North Dakota	B
Florida	B+	Ohio	B
Georgia	D+	Oklahoma	B
Idaho	B-	Oregon	A-
Illinois	C	Pennsylvania	B+
Indiana	A	Rhode Island	B
Iowa	B+	South Carolina	B
Kansas	A-	South Dakota	B
Kentucky	B+	Tennessee	A-
Louisiana	C+	Texas	B+
Maine	B	Utah	B
Maryland	B+	Vermont	B+
Massachusetts	A-	Virginia	B-
Michigan	B+	Washington	B+
Minnesota	A-	West Virginia	B
Mississippi	B	Wisconsin	B-
Missouri	C+	Wyoming	C+

METRICS:

A – Superior	C – Average	F – Failure
B – Above average	D – Below average	N/A – Not Applicable

NSGIC
National States Geographic Information Council

© NSGIC December 2021 V1.1

COORDINATION

State-level coordination efforts are well advanced, at least within the 48 states (including the District of Columbia) that responded to the NSGIC GMA survey. All but two of those states have a state Geographic Information Officer (GIO) and most of those GIOs are authorized by statute or executive order (57%). They have a wide range of abilities, with nearly all being able to coordinate activities across levels of government, as well as within state government (93%). GIO or not, all but one state has a data clearinghouse (98%). On the downside, less than half of the state GIO activities are supported by the state's general funds (48%) and one-third of the state GIOs are struggling to operate without a full-time professional staff. The 2021 grading scheme was identical to that used in 2019.

Final Grades		State GIO		How GIO Authorized		GIO Abilities	
A	21	Formal	40	Statute	19	Policy	30
B	16	Recognized	6	Exec Order	7	Budget	38
C	8	No	2	Other	8	Technology	43
D	3			None	12	Standards	34
						Coordination	42

GIO Base Funding		GIO Resources	
General Fund	22	Accept Soft Money	39
No General Fund	24	Staff	31

All 48 States

Clearinghouse		Strategic Plan		Coordinating Council		All Stakeholders	
Yes	47	< 5 yrs old	20	Official	28	Yes	36
No	1	5-10 yrs	9	Unofficial	16	No	7
		> 10 yrs	14	None	4		
		None	5				

Coordination Grading Scheme

Will Craig (MN) and Karen Rogers (WY)

This grading system is based on total points (TP).

Overall Grade (based on the sum of all points below)

Grade	Points
A	19-23
B	15-18
C	7-14
D	1-6
F	No points

Point Assignments based on program characteristics addressed in the questionnaire

A. Geographic Information Officer (max score 7)

A1. Is there a state GIO? (choose one)
+4 official GIO or equivalent
+3 coordinator
+2 generally recognized
+0 no

A3. Powers/abilities (sum of all)
+0.5 influence over state/federal policies
+0.5 input to budget/financial matters
+0.5 control over technology at state enterprise level
+0.5 control over statewide GIS data standards
+0.5 coordinate activities across levels of govt and within state govt
+0.5 significant other

B. Support for Coordination (max score 8)

B1. Authorization (choose one)
+2 Statute
+1 Executive order
+1 Regulation
+1 Multi-agency MOU
+1 Significant other
+0 None

B2. Regular funding (choose one)
+2 General funds
+1 Agency services
+1 License fees
+1 Grants
+1 Any other regular source
+0 No regular source

B3. Accept soft money
+2 Yes
+0 No

B4. Professional staff
+2 Yes
+0 No

C. Implementation (max score 8)

C1. Clearinghouse
+3 Yes
+0 No

C2. Strategic Plan
+2 Yes, less than 5 years old
+1 Yes, 5-10 years old
+0.5 Yes, more than 10 years old
+0 No

C3. Active Coordinating Council
+2 Yes, official
+1 Yes, unofficial

C4. Involve Relevant Stakeholders
+1 Yes
+0 No

ADDRESSES (State-Led Theme)

Of the 48 GMA responses, 30 scored above average (greater than a C grade) in the evaluation of their address data. Additionally, the number of programs receiving an A- or better increased from 32% in 2019 to 50% in 2021.

Count of Final Scores	
A	13
A-	11
B+	6
B	0
B-	1
C+	2
C	0
C-	1
D+	2
D	1
D-	0
F	11

Nearly 63% of the responses indicated they published address points to the NENA GIS Data Model (Site/Structure Address Points) or a state-level standard that can be rolled up to the NENA standard. Furthermore, over 30% of the programs indicated that data updates are incorporated monthly or more frequently.

In 2021, 71% of responding states reported that their address points were being used for 9-1-1 compared to 34% in 2019. Further, in 2021 44% of states reported address data being made available for download, via API, publicly, and to the National Address Database compared to 29% in 2019. While there's still more work to do, it is important to note that significant progress has been made since the 2019 GMA.

Each state was assigned a starting score based on the completeness of coverage of address points. Scores were then adjusted up or down based on their answers on update frequency, adherence to standards, and factors related to the long-term sustainability of the program.

Item	Count
Data used for 9-1-1	34
Data used for geocoder	29
Data which is downloadable	21
Data exposed with an API	21
Data contributed to the National Address Database (NAD)	21
Data available publicly	19
Data available to other government units	15
Designated steward/aggregator	36
Regular state-level funding for addresses	20
Business plan for addresses	11

Addresses Grading Scheme

Ken Nelson (KS) and Frank Winters (NY)

This grading system is based on perfect coverage and is point-based (PC-1).

Initial Grade Based on completeness (Q2)

B+	90-100% Complete
B	80-89% Complete
C	50-79% Complete
D	<49% Complete (minimum score for any state with a program)
F	No program

Adjustments to Grade Based on total points, the following step adjustments are awarded (or deducted) based on reported responses in 4 categories. A maximum of 12 points can be gained, 8 points lost. Adjustment to the preliminary grade are as follows.

Steps	Points
+2	8 points or more
+1	3-7 points
0	-2 to +2 points
-1	-3 to -5 points
-2	-6 points or more

Point Assignments based on program characteristics addressed in the questionnaire

Q1. Does the state have a program?
If yes, score will be no lower than a D

Q3. Update Frequency

+3	Daily
+2	Weekly
+1	Monthly
+0.5	Quarterly
+0	2x per year
-1	Annually
-4	Every 2-3 years
-5	Every >3 years

Q4. Quality/Usability

+2	Published to the NENA GIS Data Model (Site/Structure Address Points) or state-level standard that can be rolled up to that standard and is verified via QA
+1	Published to NENA or state-level standard, but no QA
+1	Published to a standard and is verified via QA
+0	Published to a standard (no verification)
-1	Published, best effort at standardization
-2	Published as received

Q5. Availability This question asked how widely available the address point database is.

+1	every three items checked
-1	if fewer than three items checked

Q6. Support

+1	Used to support 9-1-1 activities
+1	Used as reference data for a geocoder web service

Q7. Other Characteristics (points awarded for each characteristic)

+1	Steward. Designated aggregator or steward
+2	Funding. Regular state-level funding
+1	Business plan. Business plan exists
+0.5	Local government. Formal connection to local government
+0.5	Attributes. Traditional attributes are included

CADASTRE (State-Led Theme)

Half the states received an A for the work with georeferenced parcels. Parcel data is the work of local government and across the country, they have made wonderful progress in digitizing their parcels. As a result, the vast majority (85%) of the states have GIS-parcels in 80-100% of their counties. Three-quarters (73%) of the states have programs for collecting that parcel data from their local governments. For the 35 states with parcel data aggregation programs, all but four make a good effort to standardize that data. On the downside, only 22 of those states make their data freely available to others. Nine states keep the data for internal use only, while another four require a fee or a formal request. A majority of the state programs collect parcel attribute data, have a designated steward, and have formal relationships with local government, but less than half have regular state funding or a business plan. The 13 states without programs are dominated by counties that do not make their parcel data freely available. The 2021 grading scheme was identical to that used in 2019 with one exception; states that restrict access to internal users were docked one full grade.

Final Grades		Coverage		State Program	
A	24	90-100%	38	Yes	35
A-	0	80-89%	3	No	13
B+	0	50-79%	5		
B	7				
B-	4				
C+	3				
C	1				
C-	2				
D+	2				
D-	2				
F	1				

For those 35 states with a state program

County Participation		Publication Standard		Access		Program Details	
90-100%	27	Standard, QA/QC	16	API	19	Steward	29
80-89%	5	Standardized	8	Download	2	Funding	17
50-79%	2	Best effort	7	Viewable	1	Bus Plan	15
25-49%	1	As received	4	Request	3	Local Govt	23
<25%	0			Fee	1	Attributes	31
				Internal only	9		

For 13 states without a state program

Percent counties with free data	
90-100%	5
80-89%	0
50-79%	4
25-49%	2
<25%	3

Cadastre Grading Scheme

Will Craig (MN) and Neil MacGaffey (MA)

For states with a state-level program, the primary grading system is based on percent coverage and is point based, PC-1. For states without such a program, the primary grade is lower and based on the percent of counties making their data freely available (see below)

This portion of the questionnaire was in three parts: A-for all states, B-for state level programs, and C-for states without a program. Annotations about question numbers are tied to those sections.

STATE-LEVEL PROGRAM

Preliminary Grade (Based on percent of counties having digital parcel mapping – A1)

A	90-100% Complete
B	70-89% Complete
C	40-69% Complete
D	26-39% Complete
F	<25%

Adjustments to Grade The following points are awarded (or deducted) based on reported responses in 4 categories (B1 through B4, below). A maximum of 12 pts can be gained, 14 pts lost. The initial grade is adjusted up or down based on the point scoring as shown in the table below. Then, additionally, after a grade is adjusted based on points, drop one full grade if B3 (Accessibility) is "internal use only."

Steps	Points
+2	8 points or more
+1	3-7 points
0	-2 to +2 points
-1	-3 to -5 points
-2	-6 to -9 points
-3	-10 points or more

Point Assignments based on program characteristics addressed in the questionnaire

B1. County Participation

+1 90-100%
+0 80-89%
-1 50-79%
-2 25-49%
-4 <25%

B2. Quality/Usability

+2 if published to a verified standard using QA
+1 if published to standard, no verification
+0 if best effort to standardize
-2 if published as received

B3. Accessibility

+4 if Open, free, viewable, downloadable, with API
+2 if Open, free, viewable, downloadable
+0 if Open, free, viewable
-4 if Open, full file for fee
-4 if formal request
-8 if internal use only

B4. Other Characteristics (points awarded for each characteristic)

+1 Steward. Designated aggregator or steward
+2 Funding. Regular state-level funding
+1 Business plan. Business plan exists
+0.5 Local government. Formal connection to local government
+0.5 Attributes. Traditional attributes are included

NO STATE PROGRAM (All scores lower)

A1. Percent of Counties with GIS parcel Maps	C1. Percent of Counties Making their Data Freely Available or at a Nominal Cost				
	90-100%	**80-89%**	**50-79%**	**25-49%**	**<25%**
90-100%	B	B-	C+	C	D
80-89%		B-	C	C-	D
50-79%			C-	D+	D-
25-49%				D	D-
<25%					F

ELEVATION (State-Led Theme)

The grading scheme for the elevation theme in the 2021 Geospatial Maturity Assessment report remained consistent with the 2019 Geospatial Maturity Assessment report, with no changes. Two additional ungraded questions were asked to quantify the uses of elevation data in the states.

Over 90% of the states who responded to the GMA scored above average (greater than a C grade) in evaluating their elevation data. Seventy-three percent of responding states have 90-100% coverage, with over half (69%) reporting QL 2. All states with LiDAR reported having at least QL 3 or better. Most states (90%) report the data are available for download, with 60% having an API. One additional state makes the data available through a formal request process. Over two-thirds (73%) report a steward for the data.

Final Grades		**Coverage**	
A+	0	90-100%	35
A	6	80-89%	3
A-	21	70-79%	3
B+	8	60-69%	3
B	4	50-59%	0
B-	3	40-49%	1
C+	0	30-39%	1
C	1	20-29%	0
C-	2	<20%	2
D+	1		
D	0		
D-	0		
F	2		

Quality Level (QL)		**Update Frequency**		**Access**	
QL1	0	<8 years	13	API	30
QL2	33	8-12 years	13	Download	14
QL3	11	12 or more	1	Viewable	0
QL4	2	ND	21	Formal	1
None	2	Steward	35	Internal Use	1
		Funding	10	None	2
		Business Plan	17		
		Local Govt	13		

Elevation Grading Scheme

Dennis Pedersen (TN) and Mark Yacucci (IL)

This grading scheme is based on percent coverage (Q1).

B+	90-100% Complete
B-	70-89% Complete
C	50-69% Complete
D+	20-49% Complete
F	<20% Complete

Adjustments to Grade The following adjustments are awarded (or deducted) based on reported responses in four categories. A maximum of 11 points can be gained, 8 points lost. Adjustment to the preliminary grade are as follows based on the summed score.

Steps	Points
3	9.5 points
2	8-9 points
1	3-7 points
0	-2 to +2 points
-1	-3 to -5 points
-2	-6 points or more

Point Assignment based on program characteristics addressed in the questionnaire

Q2. Update Frequency

+1 Updated 8 years or sooner statewide
+0 Updated every 8-12 years
-1 Updated more than 12 years
-2 Update cycle is not defined

Q3. Standard for state-collected data

+1 Published to a standard (verified via QA)
+0 Published to a standard (no verification)
-1 Published, best effort at standardization
-2 Published as received

Q4. Quality/Usability

+1 Quality Level 2 (QL2) or better as defined by USGS
+0 QL3 or better (Alaska QL 4) as defined by USGS
-1 QL4 or better as defined by USGS - Except Alaska

Q5. Some higher quality

+1 Yes
+0 No

Q6. Accessibility

+2 Open, free, viewable, downloadable, with API
+1 Open, free, viewable, downloadable
-1 Open, free, viewable
-2 Formal request
-3 Not available or no request process
-3 Accessible for a fee or internal request only

Q7. Other Characteristics (points awarded for each Yes answer)

+1 Steward. Designated aggregator or steward
+2 Funding. Regular state-level funding
+1 Business plan. Business plan exists
+0.5 Local government. Formal connection to local government
+0.5 Attributes, Traditional attributes are included

ORTHOIMAGERY LEAF-OFF (State-Led Theme)

Orthoimagery includes both leaf-on and leaf-off products, and both are important to users of geospatial data in the states. The leaf-on product serves interests such as agriculture and forestry, while leaf-off serves tax assessors and the emergency response community, among others. Statewide coverage is important, and the frequency of updates is critical, particularly for areas that are growing and/or changing.

The orthoimagery layer was scored separately for leaf-on and leaf-off products. Scoring was primarily based on the following individual criteria: (1) frequency of update, (2) resolution, (3) completeness or coverage, and (4) accessibility. The National Agriculture Imagery Program (NAIP) is the foundation used to score the leaf-on product. Since NAIP is a federal program, it is not something that the states need to fund regularly unless a state wishes to buy up to a 6-inch product or add a fourth band of imagery to the delivered product.

GMA Results – Leaf-Off Imagery

In 2021, 47 states plus the District of Columbia completed the leaf-off and leaf-on portions of the survey compared to 39 states in 2019 (the District of Columbia did not complete the earlier survey). Colorado, Hawaii, and New Hampshire did not submit a response in 2021.

Of the 48 responses, well over 60% (29 responses) have statewide coverage. Of the remaining states, 27% have some coverage, and another 13% (six states) have no coverage. Of the six states with no coverage, four are Western States that typically focus on leaf-on coverage due to the high percentage of coniferous forest, and the remaining two states have no leaf-off imagery program at all.

Of the 42 states with leaf-off imagery programs, about two-thirds update the imagery frequently (within a five-year period), with just 1/3 taking six or more years to update the coverage. Almost 80% of the states buy up higher resolutions (one foot to two inches), and most states make the imagery available to users via download. Most states have identified data stewards, but few have dedicated funding. The same applies to a business plan (few) and local participation (many).

Final grades for leaf-off suggest that about 60% of the states score a B or better, and that result is higher if you drop the Western States and states without programs. This suggests that many states are successfully implementing a leaf-off orthoimagery program.

Compared to 2019, there has been an improvement in participation and the data quality in the leaf-off imagery program. Seven more states responded in 2021. Indiana moved from N/A in 2019 to a letter grade of B in 2021. In addition, the following states plus the District of Columbia completed the survey for leaf-on in 2021 that did not complete it in 2019: Alaska, California, Connecticut, Maine, Maryland, Rhode Island, South Carolina, and South Dakota.

Update Cycle		Coverage	
Annual	2	90-100%	29
2-3 years	15	80-89%	3
4-5 years	12	50-79%	4
6-8 years	4	25-49%	1
>8 years	3	<25%	5
None	12	None	6

Grade	Ortho Leaf-Off	Ortho Leaf-On
A+	0	0
A	14	3
A-	6	5
B+	5	1
B	1	21
B-	2	2
C+	0	7
C	2	7
C-	1	0
D+	2	0
D	4	1
D-	2	0
F	3	1
N/A	6	0
Total	48	48

Orthoimagery Leaf-Off Grading Scheme

Tim Johnson (NC) & Tony Spicci (MO)

Orthoimagery – Leaf-Off Grading Scheme

This grading scheme is a variation on the percent coverage approach. It combines percent complete with the update cycle into the starting grade. Since leaf-off coverage is less relevant in desert, rocky, and conifer landscapes, sparsely settled Western States were given the option to opt out of being graded, with the justification being if the program holds no value to the state, it shouldn't be graded down for not supporting it. From those different starting points, the approach is step-based (PC-2).

INITIAL GRADE based on completeness (Q1) and update cycle (Q2)

Most states

	90-100% Complete		80-89% Complete		50-79% Complete		Less than 50% Complete	
Grade	**Complete Q1**	**Update Cycle**	**Complete**	**Update Cycle**	**Complete**	**Update Cycle**	**Complete**	**Update Cycle**
A	90-100	1-3 yrs						
B	90-100	4-8 yrs	80-89	1-5 yrs				
C	90-100	>8 yrs	80-89	5-8 yrs	50-79	1-8 yrs		
D	90-100	No update	80-89	>8 yrs	50-79	>8 yrs	<50	<8 years
F					50-79	No update	<50	No update

ADJUSTMENTS TO GRADE (one step is a partial grade, e.g., B to B+)

Steps	
+1	**High Resolution (Q3)**
+1	**More than R-G-B (Q5)**
	Accessibility (Q4)
+0	Findable and downloadable
-1	Available as a service to multiple or all entities (service available in app, data repository, only viewable)
-3	Limited availability (including state and local governments)
-4	Limited availability to only state agencies
-6	Restricted availability only to the funding agency
+0.25	**Other Characteristics (Q6)** Add 0.25 for each Characteristic*

Other Characteristics (*) include Steward, Funding, Business Plan, Local Government, and Accessible as a Service

TRANSPORTATION (State-Led Theme)

This year's transportation theme included an adjustment to the grading for the percent of a state that is complete. This is the first question in the transportation theme. It was agreed that the top grade be reserved for those states that achieve 100%. The next three grades were adjusted slightly. In 2019, they were 76% to 99%, 51% to 75%, 26% to 50%, and <25%. The feedback indicated that 76% to 99% may be too large of a range and the incentive too flat throughout the entire grading. It was agreed that the goal should be to create a bit steeper achievement at the top. Below is what we agreed upon.

100%
86% to 99%
70% to 85%
51% to 69%
<50%

Forty-three of 48 states scored B or higher in the overall evaluation of their transportation data. That is a 15% increase from 2019. Two states do not have a transportation dataset nor a program to support the data. This remains the same from 2019.

Twenty-eight states identified they have 100% statewide coverage, an increase of seven from 2019. Nearly 75% (up from 61% in 2019) of the states who responded update their transportation data quarterly or more frequently. Almost 91% of states (up from 73% in 2019) adhere to a state or national standard, with 61% of states (up from 50% in 2019) have data that is edge-matched along boundaries.

Thirty-eight states identified they make their data available either through a web service or as downloadable information. Only one state identified their state has data available for internal use only. Most states (39 of 48) identify their state has a formal steward and sustainable funding, but only about 26 of 48 report they are working with their local partners.

Final Grades		**Coverage**	
A	29	100%	28
A-	0	86-99%	13
B+	0	51-85%	2
B	14	26-50%	1
B-	0	<25% (or just getting started)	2
C+	0	Do not have	2
C	2		
C-	0		
D+	0		
D-	0		
F	3		

Data Quality		Access		Program Details	
Std.& Edgematched	28	API	31	Steward	44
Approved standard	14	Download	7	Funding	39
Other standard	3	Viewable	1	Bus Plan	25
No standard	1	Request	5	Local Govt	26
N/A	0	Not available	1	Attributes	41
		Fee or Internal only	1	Real-time	17
				None	0

Update Frequency	
Weekly, nightly, or near real-time	21
Monthly	9
Quarterly	6
Annually	7
Every 2 years	0
Not defined	3

Transportation Grading Scheme

Chris Diller (WI) & Dan Ross (MN)

This grading scheme is based on Total Points (TP).

States have a goal of having a statewide road centerline database, complete with address ranges. The final grade for each state is based on their answer to five questions, each with a point value.

Grade	Total Points
A	21-25
B	17-20
C	13-16
D	9-12
F	<9

Point Assignment based on program characteristics addressed in the questionnaire

Q1. How complete is your database?

Points	Completeness
5	100%
4	86-99%
3	51-85%
2	26-50%
1	≤25%
0	None

Q2. How frequent are updates?

Points	Frequency
5	Weekly+
4	Monthly
3	Quarterly
2	Annual
1	2 years
0	Not defined

Q3. Quality of the state-level data?

Points	Standard Effort
5	Std.& edge-matched
4	Approved standard
3	
2	Other standard
1	No standard
0	N/A

Q4. Accessibility

Points	Access
5	F&D with API
4	Free & Downloadable
3	Free & Viewable
1	Formal Request
0	Not available
-1	Fee or internal use

Q5. Other characteristics One point for each of the following. Maximum of 5.

1	Steward. Designated aggregator or steward
1	Funding. Regular state-level funding
1	Business plan. Business plan exists
1	Local government. Formal connection to local government
1	Attributes. Traditional attributes are included
1	Real-time condition data is available

GEODETIC CONTROL (Federal-Led Theme)

Overview: This section of the GMA focuses on efforts made by states to augment the National Spatial Reference System (NSRS) maintained by the National Geodetic Survey (NGS). Those efforts could include a variety of activities from adding new control points, to supporting Continuously Operating Reference Station (CORS), to supporting Real-Time Networks (RTN). New questions regarding NSRS Modernization efforts were added for 2021. Final grades and points associated with state activities and program support are shown below.

State Program: A total of 41 respondents reported that they have a State Geodetic Control Program and seven reported they had no program at all.

Public Land Survey Points: A total of 33 respondents indicated that they are a PLSS state and 15 indicated that their state is not a PLSS state. Most PLSS states are situated west of the Mississippi River.

Summary: Progress was shown in three of the four categories under state activities. Now, more states nominate new control points to the NSRS, and there is an increased number of states supporting statewide CORS and RTN networks. Oddly, fewer respondents indicated that they were planning for NSRS Modernization in 2022.

Improvements were also seen in the geodetic control program support categories. Now, more states have a designated steward and dedicated funding resources than in 2019. Two more states have business plans and 20 indicated that an established business process is followed for geodetic control operations. Collaboration is improving, as more states noted having established relationships with state, tribal, local governments, and the surveying community.

It is difficult to compare the final grades from 2019 with those from 2021 due to a restructuring of the survey questions, the grading scheme, and the increased number of respondents. With that in mind, there were 35 states with a B- or greater grade this year, whereas, in 2019, 36 states achieved that milestone. As with any GMA theme, all states have room for improvement and these survey results can be valuable during the strategic planning process.

Final Grades		State Activities		Program Support	
A+	0	Nominate Points	26	Steward	36
A	2	Support CORS	33	Funding	27
A-	7	Support RTN	35	Bus Process	20
B+	7	Plan for 2022	22	Bus Plan	12
B	8			Locals	21
B-	11			State Survey	33
C+	2				
C	3				
C-	0				
D+	3				
D	0				
D-	0				
F	2				

Geodetic Control Grading Scheme

Kent Anness (KY) and Erin Fashoway (MT)

This grading system is based on total points (TP).

Good geodetic control is provided by the National Spatial Reference System (NSRS) of the National Geodetic Survey. To excel in this theme additional work and coordination is needed. The 2021 GMA Survey lists 16 activities a state can undertake to complement the NGS effort. Grades are based on the number of those supported activities.

Grade	Points
A+	15-16
A	13-14
A-	11-12
B+	9-10
B	7-8
B-	5-6
C+	4
C	3
C-	2
D	1
F	0

Point Assignments Points based on a total number of state activities (Q3), characteristics (Q4) supported, and NSRS modernization efforts (Q5).

Q3. State Activities

+1 Submit new control points to NSRS
+1 Support a statewide CORS network (possibly through private partners)
+1 Support a statewide RTN network (possibly through private partners)
+1 Program for performing GPS on Benchmarks
+1* Works with counties to tie their survey corners to NSRS
**Bonus/Informational only*

Q4. Details of State Effort

+1 Steward: There is a designated state steward
+1 Funding: There is regular funding for the state program
+1 Business plan: The state has a current geodetic control business plan that is less than three years old
+1 Business process: The state has a geodetic control data business process
+1 Relationship: There is an established working relationship between the state and tribal – local governments
+1 Relationship: There is an established working relationship between the state and the professional surveying community

Q5. NSRS Modernization Efforts

+1 Legislation is in progress
+1 Legislation passed (may need future updates)
+1 Legislation passed (future proof)
+1 Administrative regulations have been updated
+1 Updated administrative regulations are future proof

Q2. How frequent are updates?

Points	Frequency
5	Weekly+
4	Monthly
3	Quarterly
2	Annual
1	2 years
0	Not defined

Q3. Quality of the state-level data?

Points	Standard Effort
5	Std.& edge-matched
4	Approved standard
3	
2	Other standard
1	No standard
0	N/A

Q4. Accessibility

Points	Access
5	F&D with API
4	Free & Downloadable
3	Free & Viewable
1	Formal Request
0	Not available
-1	Fee or internal use

Q5. Other characteristics One point for each of the following. Maximum of 5

1	Steward. Designated aggregator or steward
1	Funding. Regular state-level funding
1	Business plan. Business plan exists
1	Local government. Formal connection to local government
1	Attributes. Traditional attributes are included
1	Real-time condition data is available

GOVERNMENTAL UNITS (Federal-Led Theme)

The majority (87.5%) of the states who responded to the Geospatial Maturity Assessment (GMA) scored above average (greater than a C grade) in the overall evaluation of their governmental units. Seventy-five percent of states report having reliable governmental unit boundary data, with the same amount having identified an authoritative source for the data.

Just a little greater than two-thirds of responding states (68.75%) report publishing governmental unit boundary data to a standard, and nearly the same number (70%) report updating the data as changes occur.

A bright spot in the assessment of governmental unit boundary data shows that greater than 90% (91.6%) of responding states make their data publicly available. Nearly 73% of states have an identified steward for the data, with about 56% reporting a formal connection to local government.

In comparison to the 2019 GMA, the governmental units theme has seen an overall increase in grading by the participating states.

Final Grades	
A+	0
A	34
A-	4
B+	0
B	2
B-	2
C+	0
C	1
C-	2
D+	1
D	1
D-	1
F	0

Authoritative Source	
Yes	36
No	12

Reliable Boundaries	
100	16
76-99	20
51-75	5
26-50	4
<25	3

Steward	
Steward	35
Funding	22
Bus. Plan	10
Local Gov't	27
Attributes	26
Topology	22
None	9

Update Frequency	
Yes	34
No	14

Publicly Available	
100	16
76-99	20
51-75	5
26-50	4
<25	3

How Published	
FGDC Standard	13
Other Standard	20
No Standard	14
Unknown	1

Governmental Units Grading Scheme

Sara Cassidy (US Census Bureau) and Mary Fulton (PA)

This grading system is based on percent coverage and is step-based (PC-2).

States with a small, incorporated percentage of their land areas start with a B grade. All initial grades were then step-adjusted up or down. No state with an existing program received a grade lower than a D. This effort focused on the Census Bureau annual efforts to update their BAS (Boundary Annexation Survey) and BVS (Boundary Validation System).

INITIAL GRADE

States with >75% of land area unincorporated (Q1)
B is initial grade

Other States (Q3)

A	State has authority and 90-100% reported
B	State has authority and 80-89% reported OR local with >80%
C	Locals with 51-79%
D	Locals with <50%
F	Locals with <25%

ADJUSTMENTS TO GRADE (number of steps per factor, where 1 step is a partial grade; e.g. B to B+.)

Steps	
	Update Frequency (Q4)
+2	Updated as changes occur
+0	Infrequent because of annual reporting expectation for the Census
	Data Standard (Q5)
+2	FGCD/Census standard
+1	Different standard
-1	No standard
	Accessibility (Q6)

+2	Downloadable with API
+1	Downloadable
-1	Available for a fee or special request
-2	Internal use only
	Other Characteristics* (Q7)
+3	All 6 characteristics
+1	4-5 characteristics
-1	none

Other characteristics (*) include Steward, Funding, Business Plan, Local Government connection, Attributes, and Topology checking.

HYDROGRAPHY (Federal-Led Theme)

Over the years, hydrography has been seen primarily as a federally led data theme, but recently there has been more involvement by states in actively planning improvements to hydrography, especially with the availability of LiDAR for the generation of elevation derived hydrography. This was all considered when putting together this year's Geospatial Maturity Assessment (GMA) grading scheme for hydrography.

This year's hydrography grading scheme was designed to evaluate if the current National Hydrography Dataset (NHD) is meeting the needs of a state, and if not, measures a state's progress towards a hydrography dataset above and beyond the NHD provided by the federal government.

The 2021 GMA hydrography survey uses a baseline C grade for states that are using NHD as-is and meets their current functional hydrography requirements. There are additional questions in the survey to qualify work being done to improve this data and achieve a higher grade.

In the 2021 grading scheme, 46% of the states received an A grade, 30% a B, and 24% a C. Every state that received an A grade had an active maintenance program in place. The majority of the states that received a B grade were either actively starting hydrography improvements or in the planning stages. The 2021 grading scheme focused on active progress towards improving statewide coverage including key indicators like regular data maintenance and percentage of geographic areas with improved data. Additional points were awarded for coordination with USGS on NHD, accessibility to hydrography data through open data, and having a data steward actively engaged with USGS and stakeholders within the state.

Hydrography data is freely available from 85% of the states, the majority are working with USGS for NHD, and two-thirds of the states have data stewards for hydrography that are actively engaged with USGS.

Within the additional non-graded survey questions, lack of available funding to states for hydrography theme data remains a key issue.

As elevation derived hydrography continues to evolve, future baseline grading for this theme may need to be restructured to include more refined criteria associated with new guidelines that are being published.

Final Grades	
A+	6
A	8
A-	6
B+	5
B	3
B-	6
C+	5
C	5
C-	1
D+	0
D	0
D-	0
F	0

Improved Dataset USGS Coord.	
Yes	37
No	4

Maintenance	
No maintenance	22
Annually	17
Every 2-3 years	5
26-50	2
Every 4-5 years	2

Requirements Hydro	
Yes	32
No	14

Characteristics	
Funding	12
Bus. Plan	9
Local Gov't	7
Attributes	36
None	9

Data Steward	
Yes	31
No	8
No USGS	6

Publicly Available	
API	27
Downloadable	10
Viewable	1
Fee	0
Formal Request	2
Internal use only	1
N/A	4

Dataset Completion	
Have not begun	15
<50%	20
>50%	9
100%	7

Program Status	
Active	24
Plan Phase	11
No Program	11

Hydrography Grading Scheme

Mark Holmes (MI) & Jim Steil (MS)

This grading system is based on total points (TP).

The National Hydrography Dataset (NHD), supported by USGS, provides good basic data for the nation. That program received a B- grade from COGO. NSGIC focuses on what states are doing to complement that effort within their borders.

Because of a strong NHD, all states start with a baseline grade of C. Scores can rise or fall depending on relevant activities. The final grade for each state is based on points accrued across seven areas.

Grade	Points
A+	7
A	6
A-	5
B+	4
B	3
B-	2
C+	1
C	0
C-	-1
D+	-2

Point Assignments based on program characteristics addressed in the questionnaire. The detailed components of the point allotment total points are listed below. If a question is not listed below, it is not graded.

Q1. Is the NHD meeting your state's requirements for hydrography?

+0 'Yes' answer guarantees a grade of "C". "No" answer can gain or lose points towards final grade.

Q2. Hydrography Program Status

+1 Active
+0.5 Planning/Developing
+0 Inactive/No program

Q3. Hydrography Dataset Completeness

+2	100%
+1.5	50%+
+1	<50%
-0.5	Inactive/no program

Q4. Hydrography Dataset Maintenance

+1	Annually
+0.5	Every 2-3 years
+0	Every 4-5 years
-0.5	Not updated

Q5. USGS Guidelines/NHD Compatibility

+1	Yes
+0	No

Q6. Database Accessibility

+1	Open, free, viewable, downloadable with API
+1	Open, free, downloadable
+1	Open, free, viewable
+0.5	Open, full file for a fee
-0.5	In person or formal request only
-1	Internal use only

Q7. Data Steward

+1	Yes, with USGS and stakeholders
+0.5	Designated steward not actively engaged
+0	No designated steward

ORTHOIMAGERY LEAF-ON (Federal-Led Theme)

Orthoimagery includes both leaf-on and leaf-off products, and both are important to users of geospatial data in the states. The leaf-on product serves interests such as agriculture and forestry, while leaf-off serves tax assessors and the emergency response community, among others. Statewide coverage is important, and the frequency of updates is critical, particularly for areas that are growing and/or changing.

The orthoimagery layer was scored separately for leaf-on and leaf-off products. Scoring was primarily based on the following individual criteria: (1) frequency of update, (2) resolution, (3) completeness or coverage, and (4) accessibility. The National Agriculture Imagery Program (NAIP) is the foundation used to score the leaf-on product. Since NAIP is a federal program, it is not something that the states need to fund regularly unless a state wishes to buy up to a 6-inch product or add a fourth band of imagery to the delivered product.

GMA Results – Leaf-on Imagery

Of the 48 responses, almost all have statewide leaf-on coverage provided thru NAIP. Of the remaining states, one had 80-89% coverage, and one had less than 80% coverage.

Ten states participated in the buy-up program NAIP offers, with five of those states considered ‘western.’ Most states enjoy a two to three-year update, which correlates to the NAIP update cycle. Only seven states have updates after three years or more, while three states receive annual updates.

Almost all states make this public domain data available to their users via download; however, one state does license the data.

Most states have identified data stewards and the states with dedicated funding are those with the buy-up programs. The number of states with business plans and local buy up is very low, but that isn’t surprising given that NAIP is a federal program.

Arizona (D+), New Mexico (D-), and Wyoming (B+) moved from N/A in 2019 to a letter grade in 2021. Iowa moved from a letter grade of A to N/A, going from 2019 to 2021. These states were N/A in both years: Idaho, Nevada, Oregon, and Washington.

Final grades for leaf-on reveal that only nine states received an A grade, much lower than leaf-off. However, about 50% score in the B range. The grading suggests that if a state does minimal work, they will get a statewide leaf-on product via NAIP and a B for a grade. States that participate in the program via buy-ups received the A grades. Additionally, a condition that restricts access to the data or doesn’t have a regular buy-up schedule received a lower grade.

Update Cycle		Coverage	
Annual	3	90-100%	46
2-3 years	37	80-89%	1
>3 years	7	<80%	1
None	1		

Grade	Ortho Leaf-Off	Ortho Leaf-On
A+	0	0
A	14	3
A-	6	5
B+	5	1
B	1	21
B-	2	2
C+	0	7
C	2	7
C-	1	0
D+	2	0
D	4	1
D-	2	0
F	3	1
N/A	6	0
Total	48	48

Orthoimagery Leaf-On Grading Scheme

Tim Johnson (NC) & Tony Spicci (MO)

This grading system is based on percent coverage and is step-based (PC-2).

The NAIP program provides most states with leaf-on imagery every two to three years. That gives the typical state a good grade. Efforts below and above that baseline are based on state initiatives.

INITIAL GRADE based on completeness (Question 1)

B	90-100%
C	80-89%
D	50-79%
F	<50%

ADJUSTMENTS TO GRADE (one step is a partial grade, e.g., B to B+)

Steps	
	Update Frequency (Q2)
+2	Annual
-1	>3 years
	Buy Ups (Q3)
+1	any
	Accessibility (Q4)
-3	Accessible with restrictions
-4	Licensed, not available to outside entities
-5	Not accessible
	Other Characteristics (Q5)*
+2	Two or more of the four
-2	None of the four

Other characteristics (*) include steward exists, funding at the state level, business plan exists, and local government has formal connections

CONCLUSION

Conducted biennially by the National States Geographic Information Council (NSGIC), the Geospatial Maturity Assessment (GMA) provides a summary of geospatial initiatives, capabilities, and issues within and across state governments.

Working Groups

Addresses
Frank Winters (NY)
Ken Nelson (KS)

Cadastre/Parcels
Neil MacGaffey (MA)
Will Craig (MN)

Coordination
Will Craig (MN)
Karen Rogers (WY)

Elevation
Dennis Pedersen (TN)
Mark Yacucci (IL)

Geodetic Control
Erin Fashoway (MT)
Kent Anness (KY)

Governmental Units
Mary Fulton (PA)
Sara Cassidy (US Census)
Karen Rogers (WY)

Hydrography
Mark Holmes (MI)
Jim Steil (MS)

Orthoimagery
Tim Johnson (NC)
Tony Spicci (MO)

Transportation
Chris Diller (WI)
Dan Ross (MN)

NG9-1-1
Michael Fashoway (MT)
NG9-1-1 Steering Group

Elections
Jamie Chesser (NSGIC)
Bert Granberg (Geo-Enabled Elections project Steering Group Co-Chair)

This year's data provide us with the first opportunity to compare grades through time. By far, the majority of states showed no change in their overall cumulative grade point average (N=19). A slim majority of states raised their grades (N=11) over those whose grades fell (N=9). Nine states did not have grades to compare to 2019. Only one state improved an entire grade: Iowa improved from a C+ to a B+. Georgia went the other way, being the only state to go down an entire grade from a C+ to a D+. Other changes in either direction were more modest.

By theme, changes up and down were mixed, and no trends are present across either state- or federal-led themes. Coordination grades were largely the same, with 13 states inching up and 11 states going down, while another 14 didn't change. Two themes (addresses and transportation) showed significant gains by states likely driven by the increased focus on Next Generation 9-1-1. NSGIC's advocacy efforts to bolster participation in the National Address Database (NAD) likely also contributed to the improvements seen in address data. Cadastre grades dropped precipitously, with 21 states doing worse and 9 improving with their parcel data. The grading metrics for the federal-led themes changed the most, and those grades showed the most change compared to 2019. Governmental units and hydrography showed significant improvement, with the change up and down 26-4 and 24-4, respectively. Geodetic control grades were markedly down, with 21 states earning worse grades and only 9 showing improvement. One common concern with that theme is the lack of broad preparation for the National Spatial Reference System (NSRS) Modernization of 2022.

While the GMA team instituted improvements to the survey instrument to streamline our workflow, we recognize that it and our process are still not perfect. We will continue to gather internal and external feedback to learn and support improvement. We are committed to keeping the questions and grading metrics as consistent as possible to allow for easier comparisons over time. That said, the geospatial ecosystem and technologies are ever-changing, so we should be open to warranted changes in what is considered 'mature.'

Improvements to a few themes have been actualized nationally due to increased partnerships between the federal and state governments. The National Address Database (NAD) program continues to grow, with participation by states and local governments increasing along with its acknowledged benefit to the private sector. NSGIC members have been advocating to improve the sustainability of this critical program. A primary argument for it is the benefit of such locally sourced data for wayfinding companies so that they are using more accurate data for their navigation

services. The advocacy efforts are paying off, with Google being the first such wayfinding company to ingest the NAD in its current version, improving their address data and associated navigation services. This is likely the first of many such steps to prove its value. Elevation and hydrography have improved and will continue to do so thanks to cooperative agreements between USGS and NSGIC designed to improve collaboration between state and federal partners on these interconnected data layers.

Key to Improving Grades

A lot of discussion is occurring among federal lead agencies and the Federal Geographic Data Committee (FGDC) around GDA implementation. A central recommendation from NSGIC is that more needs to be done by the federal government to encourage states to institute Geographic Information Officer (GIO) positions and fund associated GIS program offices to support state spatial data infrastructure (SSDI) development and maintenance. Data programs will advance when they have one point of central coordination, made effective with stable funding and staff. NSGIC strongly advocates for all states to support GIO positions so better data can be coordinated with federal agencies and local, county, and tribal governments. Now more than ever, these relationships are critical in building and maintaining better, authoritative data that are increasingly important to solving the challenging issues of today.

Importance of NSDI and SSDI

GIS professionals often state that geospatial data have more value when frequently used, and political and social changes over the last two years have really changed that landscape. Between the increased dialog on social and environmental justice, equity, diversity, and inclusion and the Biden administration's focus on climate change and resilience, the geospatial data that is the foundation of SSDIs is more important than ever to inform analysis and decision making to allocate resources to solve these issues. While states are part of the National Spatial Data Infrastructure (NSDI), the ultimate NSDI can only be the network of functional SSDIs. Partnership and collaboration are integral to making the SSDIs work together at a national level to inform federal decision-making.

The 2021 GMA has built upon the high bar set in 2019 for taking an independent look at states' geospatial maturity. NSGIC members are dedicated to contributing to the conversation and collaboration behind achieving a strong NSDI. The federal government can only be successful if and when the states reach full maturity and can contribute all they can. We strive to paint an accurate national picture for the FGDC of where we are as states so they can meet us where we are and work together accordingly. Only when we work together collaboratively will we be able to produce the nationwide population of data that is the NSDI.

Project Team

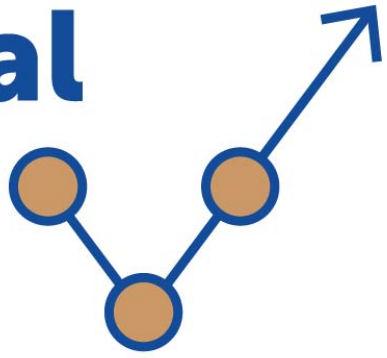
Karen Rogers (WY)
Will Craig (MN)
Jamie Chesser (NSGIC)
Emily Ruetz (NSGIC)
Amy Holmes (NSGIC)
Ashley Sievert (NSGIC)

2023 Geospatial Maturity Assessment

Even before the publication of the current GMA, planning for the next is underway. Preliminary feedback on the report card features and expanded analysis has been positive. The survey, process, and final product will continue to evolve and improve. NSGIC invites further input from the GIS community by contacting NSGIC Director of Programs Jamie Chesser at jamie.chesser@nsgic.org.

NSGIC 2021

Geospatial Maturity ASSESSMENT



STATE REPORT CARDS

NSGIC
National States Geographic Information Council

© NSGIC December 2021 V1.1

REPORT CARD INTRODUCTION

The Coalition of Geospatial Organizations (COGO) has used the traditional A-F system to grade the national spatial data infrastructure (NSDI) development effort, naming the federal agencies responsible for eight data layers in the NSDI. With the GMA, NSGIC turns to its own members and measures their contributions to the NSDI.

NSGIC developed a questionnaire that was sent to each of its member states. Forty-eight states responded. Their responses were then graded. The questionnaire, individual state responses, and the grades given each are available as separate resources. The responses were pulled together to grade each state on each of ten different themes – the eight COGO themes, plus a grade for state-level coordination activities and separate grades for leaf-on and leaf-off orthoimagery.

Both questionnaires and grading schemes were developed by NSGIC volunteers, each an expert in the theme they addressed.

In the pages that follow, participating states' report cards can be found. Please reference the full report for more information on methodology, grading schemes, and national trends.

GEOSPATIAL MATURITY ASSESSMENT 2021

Alabama Report Card

Overall Grade: B

COORDINATION	GRADE: A

STATE-LED THEMES	GRADE
Address	C+
Cadastre	D
Elevation	A-
Orthoimagery Leaf-Off	A
Transportation	B

FEDERAL-LED THEMES	GRADE
Geodetic Control	B
Government Units	A-
Hydrography	C+
Orthoimagery Leaf-On	B

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

Alaska Report Card

Overall Grade: B-

COORDINATION	GRADE: C

STATE-LED THEMES	GRADE
Address	F
Cadastre	C-
Elevation	B+
Orthoimagery Leaf-Off	N/A
Transportation	B

FEDERAL-LED THEMES	GRADE
Geodetic Control	B
Government Units	A
Hydrography	A
Orthoimagery Leaf-On	C

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

ALASKA
GMA RESPONSE

We appreciate the opportunity to participate in the Geospatial Maturity Assessment. The assessment is of great value in that it gives an overview of the extensive geospatial efforts taking place across the nation. As always, Alaska is unique and the NSGIC GMA grades necessitate some explanation of key differences between state-led and federal-led themes as compared to other states in the nation.

Statewide Imagery, Elevation, and Hydrography are supported by U.S. Geological Survey (USGS) through the Alaska Mapping Initiative and Alaska Mapping Executive Committee (AMEC) coordination. AMEC coordinates with federal agencies and the State of Alaska in support of modernizing critical map layers.

Alaska's first statewide elevation product, airborne IfSAR (Interferometric Synthetic Aperture Radar), began in 2012 and was completed in 2020. The $68M project was successfully completed through coordination between DOI agencies and the State of Alaska (AMEC).

Through the Alaska Mapping Initiative and AMEC coordination, USGS is supporting the update of terrestrial hydrography data (surface water, such as lakes and rivers). Over the next 9 years, hydrographic features and watershed boundaries will be derived from the Alaska IfSAR elevation data using Elevation-derived Hydrography (EDH) methodology.

Statewide imagery is supported through AMEC coordination with the Civil Applications Committee and is an orthomosaic of satellite based optical imagery. We strive for summer snow-free scenes, so the leaf-on and leaf-off imagery surveyed in the GMA is not applicable to Alaska. Furthermore, Alaska does not have a National Agriculture Imagery Program (NAIP).

Other themes are accurately represented and show the challenges Alaska has ahead due to its sheer size and enormous efforts required to mature these themes.

Leslie Jones
GIO, State of Alaska

GEOSPATIAL MATURITY ASSESSMENT 2021

Arizona Report Card

Overall Grade: B-

COORDINATION	GRADE: A

STATE-LED THEMES	GRADE
Address	A-
Cadastre	F
Elevation	C-
Orthoimagery Leaf-Off	D+
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	B-
Government Units	A
Hydrography	B
Orthoimagery Leaf-On	B

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

ARIZONA GMA RESPONSE

Arizona appreciates the opportunity to participate in the NSGIC Geospatial Maturity Assessment (GMA). The value of this bi-annual assessment is great. It provides a broad perspective of geospatial maturity across the nation. The GMA shows where Arizona is in comparison with other states which states may provide opportunities for Arizona to seek improvement. The annual report card approach also allows Arizona's stakeholders to quickly understand the status of our state's complex geospatial development and collaboration over time.

The GMA also provides insight into at least one theme in which Arizona appears to be unique. The National Agriculture Imagery Program (NAIP) provides Arizona with statewide imagery on average every two years. In many states, this imagery is considered Leaf-on, and as stated in the GMA documentation, is primarily used for forestry and agriculture purposes. Leaf-off orthoimagery in those same states is typically utilized for tax assessment and emergency response. In Arizona, due to its climate and landscape, NAIP imagery meets the state level needs of most stakeholders very well. Regionally, there are cooperative programs which provide orthoimagery for the years the NAIP is not flown, or in local areas where higher resolution imagery is required. From a statewide perspective, there is little interest to invest in additional orthoimagery programs. Therefore, scarce resources are allocated to other higher geospatial priorities. We believe the low grade Arizona receives for the Orthoimagery Leaf-off theme is due to Arizona's unique set of circumstances.

While we may disagree with our statewide orthoimagery grade, we believe the grades Arizona received for the other themes reflect an accurate representation of both the successes and challenges Arizona faces in our overall geospatial maturity.

Jenna Leveille
Deputy State Cartographer,
AZ State Land Depart.

GEOSPATIAL MATURITY ASSESSMENT 2021

Arkansas Report Card

Overall Grade: B+

COORDINATION	GRADE: A

STATE-LED THEMES	GRADE
Address	A-
Cadastre	A
Elevation	B+
Orthoimagery Leaf-Off	A-
Transportation	B

FEDERAL-LED THEMES	GRADE
Geodetic Control	C
Government Units	A
Hydrography	A+
Orthoimagery Leaf-On	C+

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

California Report Card

Overall Grade: B-

COORDINATION	GRADE: B

STATE-LED THEMES	GRADE
Address	F
Cadastre	C+
Elevation	B+
Orthoimagery Leaf-Off	D+
Transportation	F

FEDERAL-LED THEMES	GRADE
Geodetic Control	A-
Government Units	A
Hydrography	A+
Orthoimagery Leaf-On	A-

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

GEOSPATIAL MATURITY ASSESSMENT 2021

Connecticut Report Card

Overall Grade: B

COORDINATION	GRADE: D

STATE-LED THEMES	GRADE
Address	A
Cadastre	A
Elevation	A-
Orthoimagery Leaf-Off	A
Tran sportation	B

FEDERAL-LED THEMES	GRADE
Geodetic Control	C
Government Units	C-
Hydrography	C+
Orthoimagery Leaf-On	B

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

Delaware Report Card

Overall Grade: B

COORDINATION	GRADE: D

STATE-LED THEMES	GRADE
Address	A-
Cadastre	A
Elevation	A-
Orthoimagery Leaf-Off	A-
Transportation	B

FEDERAL-LED THEMES	GRADE
Geodetic Control	C-
Government Units	A
Hydrography	B-
Orthoimagery Leaf-On	B

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

District of Columbia Report Card

Overall Grade: A-

COORDINATION	GRADE: A

STATE-LED THEMES	GRADE
Address	A
Cadastre	A
Elevation	A
Orthoimagery Leaf-Off	A
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	F
Government Units	A
Hydrography	A+
Orthoimagery Leaf-On	A-

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

DISTRICT OF COLUMBIA GMA RESPONSE

The DC Office of the Chief Technology Officer would like to thank NSGIC for the recognition of our geospatial data infrastructure with a grade of A-, ranking among several top tier States, validating the hard work and expectations of Mayor Muriel Bowser and our dedicate GIS team.
We are confident that the low mark for Geodetic Control would have been much higher if we had accurately reported the existence of and regular funding for DC's geodetic control program including the annual aerial imagery or LiDAR project, our refined geodetic control data business process, and the strong working relationship between DC Government and the professional surveying community.
We look forward to including this and more in our answers in the next GMA.

Matt Crossett
GIS Project Manager, OCTO

GEOSPATIAL MATURITY ASSESSMENT 2021

Florida Report Card

Overall Grade: B+

COORDINATION	GRADE: B

STATE-LED THEMES	GRADE
Address	F
Cadastre	A
Elevation	A-
Orthoimagery Leaf-Off	A
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	A-
Government Units	A
Hydrography	A+
Orthoimagery Leaf-On	D

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

Georgia Report Card

Overall Grade: D+

COORDINATION	GRADE: C

STATE-LED THEMES	GRADE
Address	F
Cadastre	B
Elevation	F
Orthoimagery Leaf-Off	F
Transportation	F

FEDERAL-LED THEMES	GRADE
Geodetic Control	F
Government Units	B
Hydrography	C
Orthoimagery Leaf-On	C

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

GEOSPATIAL MATURITY ASSESSMENT 2021

Idaho Report Card

Overall Grade: B-

COORDINATION	GRADE: B

STATE-LED THEMES	GRADE
Address	F
Cadastre	B
Elevation	B
Orthoimagery Leaf-Off	N/A
Transportation	B

FEDERAL-LED THEMES	GRADE
Geodetic Control	B-
Government Units	B
Hydrography	B
Orthoimagery Leaf-On	A-

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

IDAHO
GMA RESPONSE

Idaho thanks NSGIC for the efforts in gathering and compiling the Geospatial Maturity Assessment data. It provides a bi-annual opportunity for Idaho GIS stakeholders to do internal assessments and progress checks, and for the GIO to assess the progress of SDI work being accomplished by stakeholders and GIS professionals in state and local agencies/organizations. Idaho's grades have improved since the 2019 GMA which is indicative of the work of several individuals/teams/agencies and the GIS TWGs who are responsible for framework themes.

Idaho's grades are on par with expectations and current efforts. The grades help identify where additional efforts are needed, and they will be used as a benchmark for Idaho's ongoing work to address its full SDI development. Idaho lacks sustainable funding to enable and support state-led coordination through the Idaho Geospatial Office. Even though the grade for coordination is good, it does not adequately represent the near-heroic efforts of the volunteer work being done by Idaho's GIS professionals and stakeholders, nor the significant frustrations of these same groups for the work they could be accomplishing with adequate staffing and funding. Sustainable funding and other funding opportunities are an area of concern across all GIS domains in Idaho and are receiving significant focus in the next GIS strategic plan.

In 2021, Idaho was contacted by the USDOT to participate in the National Address Database (NAD). Subsequently we have started reaching out to data stewards in local governments to begin the process of finding and collecting authoritative address data to build an Idaho address database with the intent to submit Idaho addresses to the NAD and to support other crucial state initiatives like NG9-1-1 and broadband accessibility mapping. This will significantly improve the current low grade for addresses.

Michael Woodford
Chief Data officer/GIO, State of Idaho

GEOSPATIAL MATURITY ASSESSMENT 2021

Illinois Report Card

Overall Grade: C

COORDINATION	GRADE: C

STATE-LED THEMES	GRADE
Address	F
Cadastre	C+
Elevation	A
Orthoimagery Leaf-Off	D
Transportation	F

FEDERAL-LED THEMES	GRADE
Geodetic Control	B+
Government Units	B-
Hydrography	C+
Orthoimagery Leaf-On	B

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

Indiana Report Card

Overall Grade: A

COORDINATION	GRADE: A

STATE-LED THEMES	GRADE
Address	A-
Cadastre	A
Elevation	A-
Orthoimagery Leaf-Off	A-
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	A
Government Units	A
Hydrography	A+
Orthoimagery Leaf-On	B

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

GEOSPATIAL MATURITY ASSESSMENT 2021

Iowa Report Card

Overall Grade: B+

COORDINATION	GRADE: C

STATE-LED THEMES	GRADE
Address	B+
Cadastre	B-
Elevation	A-
Orthoimagery Leaf-Off	N/A
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	B
Government Units	A
Hydrography	A-
Orthoimagery Leaf-On	B

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

IOWA
GMA RESPONSE

The above NSGIC GMA Report Card for the State of Iowa presents an overview of the state of geospatial data and activities in the state. This is a tool for GIS professionals and decision makers in the state to look at the overall progress of geospatial efforts in the State of Iowa.

Iowa has made significant progress since the last GMA in 2019. Since 2019, the Department of Homeland Security and Emergency Management has acquired nearly 100% of address points in the state through the NG911 program and contributed data to the national address database (NAD). Thanks to Federal partners (NRCS, FEMA, USGS), statewide USGS QL-2 lidar has been collected and is currently in QA/QC. The State of Iowa recently signed a Consolidated BAS (CBAS) MOA with the U.S. Census Boundary and Annexation Survey (BAS) to submit annexation and other boundary changes.

We are still struggling in coordination efforts. The State of Iowa has a full-time geospatial coordinator funded partially through state technology grant funds and service agreements with agencies. The coordinator lacks the positional authority to influence policy at the state level. Coordination efforts are focused within state agencies and local government where there is opportunity. Iowa also lacks a formal coordinating council.

Patrick Wilke-Brown
GIS Coordinator,
Office of the CIO

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

Kansas Report Card

Overall Grade: A-

COORDINATION	GRADE: A

STATE-LED THEMES	GRADE
Address	A
Cadastre	A
Elevation	A-
Orthoimagery Leaf-Off	A
Transportation	B

FEDERAL-LED THEMES	GRADE
Geodetic Control	B-
Government Units	A
Hydrography	A-
Orthoimagery Leaf-On	B

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

KANSAS GMA RESPONSE

The Kansas GIS program appreciates the opportunity to participate in the GMA. This important endeavor provides valuable insight and information that we can share with fellow GIS professionals and decision-makers across the state. The results of the 2021 GMA are reasonable and accurate; however, it is important to note some key items that have allowed us to make progress with regard to specific data themes.

Statewide address points, road centerlines, and high-resolution leaf-off orthoimagery would not be possible without the Kansas 911 Coordination Council (Council) and coordination with local jurisdictions. Prior to the Council's Next Generation 911 (NG911) program, we struggled with different approaches, funding, and outreach models regarding these data themes. The Kansas NG911 program provided the funding, focus, and urgency that ultimately led to the development and maintenance of the statewide data resources. Without the NG911 program, we'd likely still be spinning our wheels.

Additionally, we are fortunate to have completed two rounds of statewide LiDAR acquisition. However, this would not have been possible without the funding support of our federal partners, primarily the Natural Resources Conservation Service (NRCS) and the United States Geological Survey (USGS). The overwhelming majority of LiDAR acquisition in Kansas has been funded with federal dollars.

During the coming year we intend to enhance our level of coordination and support regarding hydrography and governmental units.

Ken Nelson
GIS Section Manager, Kansas Geological Survey

GEOSPATIAL MATURITY ASSESSMENT 2021

Kentucky Report Card

Overall Grade: B+

COORDINATION	GRADE: A

STATE-LED THEMES	GRADE
Address	B+
Cadastre	B-
Elevation	A-
Orthoimagery Leaf-Off	A
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	B+
Government Units	A
Hydrography	C+
Orthoimagery Leaf-On	B

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

KENTUCKY
GMA RESPONSE

The Commonwealth is pleased with the GMA scoring for 2021. It is felt that the grades truly reflect the status of our governance and coordination efforts, as well as each of the "themed" layers being evaluated. The utilized scoring methodology is straightforward, and the final results are very useful.

Average scores for specific themes highlight the fact that there is progress to be made here in Kentucky. These results will help us to re-evaluate the focus of our efforts and the allocation of resources going forward. We've known for a long time that there was work to be done as it relates to parcel data, hydrography, addresses, and leaf-off imagery. The 2021 scores reflect that progress was made, but there is still more to be accomplished.

As most in the NSGIC community already know, there is great value in seeing how we measure up against other states. Sharing these national-level results with our leadership, and the Geographic Information Advisory Council, helps to underscore our level of success, but also reaffirms the fact that we must dedicate more resources to specific themes. Having these grades in-hand is crucial when approaching state-level stakeholders regarding next steps and during our overall strategic planning process.

From my chair, seeing which states excel in a certain category lets me know who to contact for guidance and direction. It is my aim to learn from other individuals and their successful programs. There is great value in being able to pick up the phone and reach out to a counterpart that can point me in the right direction. In fact, that is one of the most valuable aspects of being a NSGIC member.

Once again, we truly appreciate the effort involved in compiling the assessment and sharing the results with the NSGIC community. Many thanks!

Kent Anness
GIS Operations Manager

GEOSPATIAL MATURITY ASSESSMENT 2021

Louisiana Report Card

Overall Grade: C+

COORDINATION	GRADE: C

STATE-LED THEMES	GRADE
Address	F
Cadastre	D-
Elevation	B+
Orthoimagery Leaf-Off	F
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	B
Government Units	A
Hydrography	A-
Orthoimagery Leaf-On	C

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

GEOSPATIAL MATURITY ASSESSMENT 2021

Maine Report Card

Overall Grade: B

COORDINATION	GRADE: B

STATE-LED THEMES	GRADE
Address	A
Cadastre	D
Elevation	A
Orthoimagery Leaf-Off	B-
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	B-
Government Units	A
Hydrography	A
Orthoimagery Leaf-On	C

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

GEOSPATIAL MATURITY ASSESSMENT 2021

Maryland Report Card

Overall Grade: B+

COORDINATION	GRADE: A

STATE-LED THEMES	GRADE
Address	A-
Cadastre	A
Elevation	B+
Orthoimagery Leaf-Off	A
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	D+
Government Units	A-
Hydrography	A-
Orthoimagery Leaf-On	B

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

Massachusetts Report Card

Overall Grade: A-

COORDINATION	GRADE: B

STATE-LED THEMES	GRADE
Address	A
Cadastre	A
Elevation	A-
Orthoimagery Leaf-Off	A
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	B+
Government Units	A
Hydrography	A-
Orthoimagery Leaf-On	C

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

Michigan Report Card

Overall Grade: B+

COORDINATION	GRADE: A

STATE-LED THEMES	GRADE
Address	C+
Cadastre	B-
Elevation	A-
Orthoimagery Leaf-Off	B
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	A-
Government Units	A
Hydrography	B+
Orthoimagery Leaf-On	C+

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

MICHIGAN GMA RESPONSE

The 2021 Geospatial Maturity Assessment (GMA) reflects Michigan's continued focus on key Spatial Data Infrastructure themes. Michigan has established data programs for transportation and government unit boundaries and is just beginning a multi-year statewide elevation derived hydrography project that will improve the accuracy and establish a long-term data maintenance program for that data theme. Michigan's score on address and cadastre reflects the current lack of a complete statewide dataset that is openly available today, however there is continued progress of state and local partnerships to share this data for inter-governmental purposes.

The 2021 GMA score of B for orthoimagery leaf-off does not completely reflect the well-established Michigan Statewide Authoritative Imagery and LiDAR (MiSAIL) program that has provided statewide coordination around statewide aerial imagery (leaf-off) and LiDAR elevation data acquisition since 2010. This program has provided high-resolution leaf-off aerial imagery to all state agencies and local partners that join into the program and provides a key foundation imagery layer for GIS programs around the state. Leaf-on imagery has not been a high priority for Michigan as leaf-off imagery is the primary requirement. Michigan uses the United State Department of Agriculture's National Aerial Imagery Program (NAIP) imagery for any leaf-on needs.

Michigan now has complete statewide QL2 level LiDAR data, and this has become a valuable data resource for many programs. The elevation-derived hydrography project starting up in Michigan will also leverage this data.

Michigan's coordination score reflects a lot of the coordination activities that are present across the state. Coordination for many of Michigan's GIS programs such as the Michigan Geographic Framework and the MiSAIL program are managed through the Center for Shared Solution (CSS) in the state's Department of Technology, Management and Budget. CSS coordinates GIS activities across the state in partnership with the two GIS associations, the Michigan Communities Association of Mapping Professional (MiCAMP) and the Improving Michigan's Access to Geographic Information Networks (IMAGIN) organization. Coordination and collaboration across state government agencies, local government partners, and federal partners have led to the success of the completed statewide QL2 LiDAR data, the launch of a new hydrography improvement program, continued progress on Next Generation 911 GIS Readiness, and many other programs.

Mark Holmes
Geospatial Services Manager

GEOSPATIAL MATURITY ASSESSMENT 2021

Minnesota Report Card

Overall Grade: A-

COORDINATION	GRADE: A

STATE-LED THEMES	GRADE
Address	A
Cadastre	B
Elevation	A-
Orthoimagery Leaf-Off	C-
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	A-
Government Units	A
Hydrography	A+
Orthoimagery Leaf-On	A

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

GEOSPATIAL MATURITY ASSESSMENT 2021

Mississippi Report Card

Overall Grade: B

COORDINATION	GRADE: B

STATE-LED THEMES	GRADE
Address	D+
Cadastre	D-
Elevation	A-
Orthoimagery Leaf-Off	B+
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	B-
Government Units	A
Hydrography	A
Orthoimagery Leaf-On	B

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

GEOSPATIAL MATURITY ASSESSMENT 2021

Missouri Report Card

Overall Grade: C+

COORDINATION	GRADE: B

STATE-LED THEMES	GRADE
Address	F
Cadastre	D+
Elevation	B-
Orthoimagery Leaf-Off	B+
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	B+
Government Units	C-
Hydrography	B-
Orthoimagery Leaf-On	C+

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

Montana Report Card

Overall Grade: B

COORDINATION	GRADE: A

STATE-LED THEMES	GRADE
Address	A-
Cadastre	A
Elevation	C-
Orthoimagery Leaf-Off	F
Transportation	C

FEDERAL-LED THEMES	GRADE
Geodetic Control	B-
Government Units	A
Hydrography	A
Orthoimagery Leaf-On	B

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

Nebraska Report Card

Overall Grade: B

COORDINATION	GRADE: A

STATE-LED THEMES	GRADE
Address	B-
Cadastre	C
Elevation	A-
Orthoimagery Leaf-Off	D
Transportation	B

FEDERAL-LED THEMES	GRADE
Geodetic Control	B-
Government Units	A
Hydrography	B+
Orthoimagery Leaf-On	A-

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

NEBRASKA
GMA RESPONSE

Nebraska is satisfied with the grade it received in the 2021 Geospatial Maturity Assessment (GMA). Nebraska's consolidated Enterprise Platform continues to be effective within state government and continues to be utilized by an increasing number of state agencies. The partnership between state agencies and Esri and other vendors continues to strengthen. Recently, Nebraska entered into an Enterprise Agreement to help with GIS growth within the state.

Nebraska is still lacking the funding for LiDAR and imagery collection. The state is very appreciative of the federal agencies in the state who continue to fund and manage these projects. Within the next two years, Nebraska will have complete LiDAR coverage at a QL2 level.

The Nebraska State Surveyor's office has been educating GIS professionals and surveyors about the new geodetic datums that are part of the NGS 2022 initiative.

John Watermolen
State GIS Coordinator

GEOSPATIAL MATURITY ASSESSMENT 2021

Nevada Report Card

Overall Grade: C

COORDINATION	GRADE: D

STATE-LED THEMES	GRADE
Address	F
Cadastre	B-
Elevation	D+
Orthoimagery Leaf-Off	N/A
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	B-
Government Units	A-
Hydrography	C
Orthoimagery Leaf-On	C

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

New Jersey Report Card

Overall Grade: B+

COORDINATION	GRADE: A

STATE-LED THEMES	GRADE
Address	D+
Cadastre	A
Elevation	A-
Orthoimagery Leaf-Off	A
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	B
Government Units	A
Hydrography	A
Orthoimagery Leaf-On	C+

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

NEW JERSEY GMA RESPONSE

We applaud NSGIC's continuing efforts to provide benchmark information measuring each state's progress in building state spatial data infrastructures, and we are glad to be able to participate.

The scoring for the address theme in this iteration of the GMA is primarily based on participation in maintenance of the state-level address data by local address authorities, which in New Jersey's case are the 565 municipal governments. There are relatively few municipalities in New Jersey that have robust GIS programs, so very few of them have created address point data. Those that we are aware of have been incorporated into our program, but the low percentage that are able to contribute leads to our low grade on this theme in this year's GMA. Because of the lack of capability at the municipal level to do the initial data creation, we have chosen to pursue a strategy of first creating a base data set of address points from statewide data sources, and once that is mostly complete, encouraging local participation in its upkeep. This has been identified as a crucial step in our preparations for Next-Generation 9-1-1 and continues to be a high priority for the state's GIS program. Our address point data is now over 80% complete and we are focusing on quality improvements and subaddress completion. Although local participation is low, the data itself is in good shape. Under the scoring rubric used in the prior GMA survey, we believe it would fall in the B+ range.

Regarding leaf-on orthoimagery, like many eastern states, we do not pursue that data because it does not meet the needs of our mapping programs and New Jersey does not do crop reporting based on imagery. For imagery, we focus our resources on leaf-off products.

Andy Rowan
GIO, Office of Information Technology

GEOSPATIAL MATURITY ASSESSMENT 2021

New Mexico Report Card

Overall Grade: B

COORDINATION	GRADE: B

STATE-LED THEMES	GRADE
Address	A
Cadastre	A
Elevation	A-
Orthoimagery Leaf-Off	D-
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	D+
Government Units	A
Hydrography	B+
Orthoimagery Leaf-On	B

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

New York Report Card

Overall Grade: A-

COORDINATION	GRADE: B

STATE-LED THEMES	GRADE
Address	A
Cadastre	A
Elevation	A
Orthoimagery Leaf-Off	A
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	B-
Government Units	A
Hydrography	B+
Orthoimagery Leaf-On	B-

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

NEW YORK
GMA RESPONSE

New York's grades in the Geospatial Maturity Assessment generally reflect the investment in and the maturity of the state's framework data programs, many of which have been in existence for nearly two decades. These grades are a tribute to the incredibly dedicated team at the NYS GIS Program Office.

The New York scores reflect the relative priority the GIS Program Office puts on each theme. These priorities are set using feedback from the entire GIS stakeholder community represented by the New York State Geospatial Advisory Council. For example, leaf-off orthoimagery is prioritized higher than leaf-on by the Council.

Publicly available GIS data and web services are key to scaling the impact of the investments New York makes in these framework data. This year, the web services authored by the GIS Program Office will answer over 800,000,000 requests.

Frank Winters
GIO, State of New York

GEOSPATIAL MATURITY ASSESSMENT 2021

North Carolina Report Card

Overall Grade: A-

COORDINATION	GRADE: A

STATE-LED THEMES	GRADE
Address	A
Cadastre	A
Elevation	A-
Orthoimagery Leaf-Off	A
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	A-
Government Units	A
Hydrography	C
Orthoimagery Leaf-On	B

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

NORTH CAROLINA GMA RESPONSE

North Carolina appreciates the opportunity to respond to the Geospatial Maturity Assessment (GMA). It provides a mechanism to determine progress, compare our state to others, and help direct future geospatial activities at a statewide level.

The Geographic Information Coordinating Council (GICC) and its broad representation of public and private sector stakeholders drives progress on all statewide geospatial activities. Coordination has been the key to progress for all the GMA themes including leaf-off orthoimagery, cadastre, elevation, and geodetic control.

Since the 2019 GMA, North Carolina invested in improving the address and governmental units themes particularly, each taking a different path. The Next Generation 911 project, funded and led by the NC 911 Board, drove the effort for a statewide, sustainable address theme. There are many diverse beneficiaries of this work in keeping with the NSGIC philosophy of "build once, use many times". Governmental units was identified two years ago for additional work to achieve the desired statewide, authoritative dataset. The data will be assembled from local government sources to a statewide level, minimizing the reporting burden and leading to a dataset that can be shared with the federal government.

There is a coordinated planning effort among the stakeholders to define and implement a statewide, local (high) resolution, elevation derived hydrography dataset. However, North Carolina still has additional work to achieve that goal. The next steps are identifying local government requirements, evaluating adoption of the NHD/3DHP, designating a steward, and proceeding toward full implementation.

Tim Johnson
Director, Center for Geographic Information and Analysis

GEOSPATIAL MATURITY ASSESSMENT 2021

North Dakota Report Card

Overall Grade: B

COORDINATION	GRADE: B

STATE-LED THEMES	GRADE
Address	B+
Cadastre	A
Elevation	B-
Orthoimagery Leaf-Off	D
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	C
Government Units	D+
Hydrography	A-
Orthoimagery Leaf-On	A

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

NORTH DAKOTA GMA RESPONSE

The North Dakota GMA Report Card provides a reasonable but subjective assessment of the listed themes. Relative to the previous year, our overall grade has somewhat dropped, largely due to the Orthoimagery Leaf-Off item. However, North Dakota is still a “NAIP imagery state” just like in 2019. We will look at this theme and our answers more closely for the next GMA.

Our grade for Governmental Units may have been higher if we would have accurately selected a higher percentage of incorporated areas having reliable boundaries. Again, we will look at this theme and our answers more closely for the next GMA.

The North Dakota State Parcel Program is credited with the increase in our Cadastre grade.

Bob Nutsch
GIS Coordinator, State of North Dakota

GEOSPATIAL MATURITY ASSESSMENT 2021

Ohio Report Card

Overall Grade: B

COORDINATION	GRADE: A

STATE-LED THEMES	GRADE
Address	B+
Cadastre	D+
Elevation	A-
Orthoimagery Leaf-Off	B+
Transportation	B

FEDERAL-LED THEMES	GRADE
Geodetic Control	B-
Government Units	A
Hydrography	C-
Orthoimagery Leaf-On	A-

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

Oklahoma Report Card

Overall Grade: B

COORDINATION	GRADE: B

STATE-LED THEMES	GRADE
Address	C-
Cadastre	B
Elevation	B+
Orthoimagery Leaf-Off	C
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	C-
Government Units	A
Hydrography	A
Orthoimagery Leaf-On	B

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

Oregon Report Card

Overall Grade: A-

COORDINATION	GRADE: A

STATE-LED THEMES	GRADE
Address	B+
Cadastre	B
Elevation	A-
Orthoimagery Leaf-Off	N/A
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	A
Government Units	A
Hydrography	A
Orthoimagery Leaf-On	A

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

OREGON
GMA RESPONSE

The Oregon Geospatial Enterprise Office is pleased to participate in the NSGIC Geospatial Maturity Assessment. This assessment is an important element in the development and maintenance of the National Spatial Data Infrastructure. Oregon has been actively and deliberately engaged in creating our portion of the NSDI for the past two decades. We haven't made as much progress as we would have liked, but we have been fairly successful in some key aspects.

With regard to address points, we have made progress in the past two years with designation of a statewide Address Points Framework Steward at the Department of Human Services. The steward has made connections with many individual authoritative address point data providers in local governments, setting up work flows to have them submit address changes and assignments to the steward.

With regard to Orthoimagery Leaf-On, we have been fortunate to have significant federal funding from NRCS and BLM for one-foot, four-band statewide imagery. Many state and local government agencies also chipped in for that project. We hope to continue that approach, but the Oregon Geographic Information Council and the State Chief Information Officer are jointly supporting a budget proposal in the next legislative session to provide significant imagery funding on an ongoing basis, as well as two full time Framework Coordinator positions to augment and coordinate our state SDI efforts.

Cy Smith
DAS/CIO, Geospatial Enterprise Office

GEOSPATIAL MATURITY ASSESSMENT 2021

Pennsylvania Report Card

Overall Grade: B+

COORDINATION	GRADE: B

STATE-LED THEMES	GRADE
Address	D
Cadastre	B
Elevation	A-
Orthoimagery Leaf-Off	A
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	B
Government Units	A
Hydrography	B+
Orthoimagery Leaf-On	B

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

PENNSYLVANIA GMA RESPONSE

Pennsylvania welcomes the opportunity to participate in NSGIC's bi-annual Geospatial Maturity Assessment, an exercise in self-assessment that assists us in defining our goals and opportunities in the geospatial environment. Pennsylvania views this as an opportunity to engage the appropriate entities to improve not only our grades on specific themes, but also to improve on the data that can be made available to our customers.

Like a school kid coming home with their report card, the Commonwealth was happy to see that we have shown an overall improvement since the last assessment was completed. The grading of the previous assessment clearly identified areas for improvement, and we are happy to see that we did indeed improve in a number of areas. We are especially proud to have eliminated any failing grades, while still seeing opportunities where we can make further progress. Our main area of focus for improvement continues to be on the state-led address theme and our contribution to the National Address Database (NAD). We are looking forward to the development of address points for use within the NG911 environment and the ability to utilize the work done for that effort to improve our NAD contribution. Since our NG911 project has significantly progressed in the past 1-plus years, it is likely that we'll be a NAD contributor in the near future.

We appreciate the grading effort and find it beneficial for us to be able to compare our progress as it ranks against other states. Additionally, it assists us in identifying areas for improvement that we can utilize as we plan our future geospatial activities and helps us to keep on track to maintain the excellent work that has already been accomplished.

Mary Fulton
Chief, Geospatial Services

GEOSPATIAL MATURITY ASSESSMENT 2021

Rhode Island Report Card

Overall Grade: B

COORDINATION	GRADE: C

STATE-LED THEMES	GRADE
Address	B+
Cadastre	B
Elevation	B+
Orthoimagery Leaf-Off	A-
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	C+
Government Units	A
Hydrography	C+
Orthoimagery Leaf-On	B

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

South Carolina Report Card

Overall Grade: B

COORDINATION	GRADE: A

STATE-LED THEMES	GRADE
Address	A-
Cadastre	C+
Elevation	A-
Orthoimagery Leaf-Off	A
Transportation	C

FEDERAL-LED THEMES	GRADE
Geodetic Control	A-
Government Units	A-
Hydrography	Incomplete - C
Orthoimagery Leaf-On	F

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

South Dakota Report Card

Overall Grade: B

COORDINATION	GRADE: B

STATE-LED THEMES	GRADE
Address	A-
Cadastre	C-
Elevation	B+
Orthoimagery Leaf-Off	C
Transportation	B

FEDERAL-LED THEMES	GRADE
Geodetic Control	B
Government Units	A
Hydrography	A
Orthoimagery Leaf-On	B

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

Tennessee Report Card

Overall Grade: A-

COORDINATION	GRADE: B

STATE-LED THEMES	GRADE
Address	A
Cadastre	A
Elevation	A
Orthoimagery Leaf-Off	B+
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	B+
Government Units	A
Hydrography	B-
Orthoimagery Leaf-On	B

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

TENNESSEE GMA RESPONSE

The State of Tennessee appreciates the opportunity to participate in the NSGIC led 2021 Geospatial Maturity Assessment. Overall, the grades we received accurately reflect the progress and current status of our GIS coordination efforts and statewide framework GIS data set development.

The high marks we received reflect the hard work and dedication that several people at many levels of government have poured into these efforts for many years. Starting with the Tennessee Base Mapping Program, from 2000-2007, many of the framework datasets were initially developed and are now being maintained at both the local and state level.

Future work needs to focus on enhancing the Hydrography dataset through the USGS 3DHP, as well as enhancing public access to these datasets through various mechanisms sponsored by the State GIS Coordination Office in Finance and Administration, Strategic Technology Solutions.

Future efforts of the Geospatial Maturity Assessment should include some measure of how these GIS framework datasets are being leveraged or applied by State agencies, local government, and the public to improve the well being of our citizens, improving efficiencies in government, protecting our environment, and expanding our economic development. Simply creating and maintaining GIS data to support the NSDI is not enough, we now have to maximize its potential use in all of these areas and beyond.

Dennis Pederson
Director, GIS Services

GEOSPATIAL MATURITY ASSESSMENT 2021

Texas Report Card

Overall Grade: B+

COORDINATION	GRADE: A

STATE-LED THEMES	GRADE
Address	A-
Cadastre	A
Elevation	A
Orthoimagery Leaf-Off	B-
Transportation	B

FEDERAL-LED THEMES	GRADE
Geodetic Control	B
Government Units	B-
Hydrography	B-
Orthoimagery Leaf-On	B

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

GEOSPATIAL MATURITY ASSESSMENT 2021

Utah Report Card

Overall Grade: B

COORDINATION	GRADE: A

STATE-LED THEMES	GRADE
Address	A
Cadastre	A
Elevation	B
Orthoimagery Leaf-Off	D-
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	A-
Government Units	A
Hydrography	C
Orthoimagery Leaf-On	C

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

Vermont Report Card

Overall Grade: B+

COORDINATION	GRADE: A

STATE-LED THEMES	GRADE
Address	A
Cadastre	A
Elevation	A-
Orthoimagery Leaf-Off	A
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	B+
Government Units	C
Hydrography	B -
Orthoimagery Leaf-On	B

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

Virginia Report Card

Overall Grade: B-

COORDINATION	GRADE: A

STATE-LED THEMES	GRADE
Address	A-
Cadastre	A
Elevation	F
Orthoimagery Leaf-Off	A-
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	D+
Government Units	D
Hydrography	C
Orthoimagery Leaf-On	C+

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

Washington Report Card

Overall Grade: B+

COORDINATION	GRADE: B

STATE-LED THEMES	GRADE
Address	A-
Cadastre	A
Elevation	B-
Orthoimagery Leaf-Off	N/A
Transportation	B

FEDERAL-LED THEMES	GRADE
Geodetic Control	C+
Government Units	A
Hydrography	A
Orthoimagery Leaf-On	B+

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

West Virginia Report Card

Overall Grade: B

COORDINATION	GRADE: B

STATE-LED THEMES	GRADE
Address	A
Cadastre	A
Elevation	B
Orthoimagery Leaf-Off	D
Transportation	B

FEDERAL-LED THEMES	GRADE
Geodetic Control	B-
Government Units	A
Hydrography	Incomplete (C)
Orthoimagery Leaf-On	B-

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

Wisconsin Report Card

Overall Grade: B-

COORDINATION	GRADE: C

STATE-LED THEMES	GRADE
Address	F
Cadastre	A
Elevation	B
Orthoimagery Leaf-Off	A-
Transportation	B

FEDERAL-LED THEMES	GRADE
Geodetic Control	B+
Government Units	A
Hydrography	B-
Orthoimagery Leaf-On	C+

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

GEOSPATIAL MATURITY ASSESSMENT 2021

Wyoming Report Card

Overall Grade: C+

COORDINATION	GRADE: C

STATE-LED THEMES	GRADE
Address	F
Cadastre	A
Elevation	C
Orthoimagery Leaf-Off	B+
Transportation	A

FEDERAL-LED THEMES	GRADE
Geodetic Control	B
Government Units	D-
Hydrography	B
Orthoimagery Leaf-On	C+

METRICS:

A - Superior
B - Above average
C - Average
D - Below average
F - Failure
N/A - Not Applicable

The National States Geographic Information Council Geospatial Maturity Assessment provides NSGIC members and other partners with a summary of geospatial initiatives, capabilities, and issues within and across state governments. The NSGIC GMA now produce report cards for each state on central data themes and coordination topics. The assessment is performed every two years.

NSGIC

WYOMING
GMA RESPONSE

It is gratifying to see Wyoming's grade improve from C- to C+. This slight bump is attributable to efforts both by the state and the federal government. The most significant effort on Wyoming's part is the reinstatement of the GIO-equivalent role, that being the current Enterprise GIS and Data Visualization Coordinator position. The other major contribution by our state government is the funding of our first-ever leaf-off imagery program. This effort was spearheaded by our Department of Revenue to allow for desktop property assessments by county assessors. While access to the data is limited, it is an acknowledgment to the value such technology can bring to modernize that workflow and to state agencies in general. The significant improvement in our Elevation grade is only due to FEMA underwriting the collection of statewide LiDAR data to support floodplain mapping.

This year's grades certainly point to opportunities for improvement. Momentum is growing for a statewide address database program. Governmental units is another theme where increased state-level coordination would go a long way and benefit multiple stakeholders. Other efforts that would improve not only our grades but also the state geospatial ecosystem include working with the federal government more closely on leaf-on imagery through the NAIP program, bolstering our hydrography program through the creation of an NHD steward, support for state hosting of LiDAR data, and further improvements to our governance and financial support for a GIS program office.

Karen Rogers
*GISP. Enterprise GIS & Data Visualization Coordinator, State of **Wyoming***