Department of Veterans Affairs

VA Spatial Data Strategy

In Accordance With

VA Enterprise Data Strategy

September 2022

VA Spatial Data Strategy IAW VA Enterprise Data Strategy

Executive Summary

Spatial data (often referred to as Geospatial data), technologies, and services have become critical components of our Nation's digital infrastructure, enabling the integration of disparate information from many sources to drive economic growth and support decision making across broad sectors of the economy. Within the Department of Veterans Affairs, spatial data and analytics is rapidly being adopted and used by a growing number of organizations and offices at every level within the VA to improve access and outcomes for Veterans.

This document outlines the Department of Veterans Affairs Spatial Data Strategy that is directly aligned under the Department of Veterans Affairs Data Strategy's goals, objectives, and desired outcomes. Development of the VA Spatial Data Strategy also incorporated key strategic elements from National Spatial Data Infrastructure's (NSDI) Strategic Plan 2020 - 2024.

The basis for the VA Spatial Data Strategy is to meet the requirement outlined in Section 759(a)(1) of the Geospatial Data Act (GDA) that requires each Covered Agency[1] to "prepare, maintain, publish, and implement a strategy for advancing geographic information and related geospatial data and activities appropriate to the mission of the Covered Agency, in support of the strategic plan for the NSDI prepared under section 755(c)."

Additionally, Section 756(b)(3)(C) dictates that lead Covered Agencies shall "establish goals that support the strategic plan for the NSDI prepared under section 755(c)" and that Covered Agencies shall report progress in preparing and implementing the Covered Agency geospatial strategies as part of the agency's annual report to the Federal Geographic Data Committee (FGDC). [www.fgdc.gov]

This VA Spatial Data Strategy outlines the strategic spatial data goals, objectives, and desired outcomes to be in full compliance with the Geospatial Data Act of 2018 by end of Fiscal Year (FY) 2023.

There are five VA Spatial Data Goals:

VA Spatial Goal 1: Enhance Spatial Data Stewardship

VA Spatial Goal 2: Integrate Spatial Data Analytics and Technology

VA Spatial Goal 3: Define GIS Architecture

VA Spatial Goal 4: Foster A Federated Spatial Workforce

VA Spatial Goal 5: Establish Spatial Governance

The aim of these VA Spatial Data Strategy goals is to enhance the use of spatial data and analytics within the VA to ultimately help improve access and outcomes for the Veteran population.

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1. Overview and Background

1.1 Outline of the VA Spatial Data Strategy

This document is in accordance with guidance issued from the Federal Geographic Data Committee (FGDC) for the development of Covered Agency geospatial strategies. The Department of Veterans Affairs is regarded as a Covered Agency which is required to have a geospatial strategy in accordance with Sections 756 and 759 of the Geospatial Data Act of 2018 (GDA).

1.2 Overview of Key Requirements and Drivers

1.2.1 GDA 2018, Section 759.

The GDA under "Covered Agency Responsibilities" establishes the pertinent reporting requirements its Inspector General and/or the senior ethics official of said Covered Agency where there is no Inspector General must follow.

It is further mandated that the Covered Agency is to submit to Congress an audit not less than once every two years of the collection, production, acquisition, maintenance, distribution, use, and preservation of geospatial data by the Covered Agency.

Also required is the collection, maintenance, and preservation of geospatial data in a format that is readily accessible to other Federal agencies as well as non-Federal users.

They must promote the integration of geospatial data from all sources and ensure that data products and other records created in geospatial data and activities are included on agency record schedules approved by the National Archives and Records Administration.

Resources must be allocated to fulfill the responsibilities of effective geospatial data collection, production, and stewardship in support of Covered Agency activities or that which is necessary to support the activities of the Committee.

Covered Agencies must also use the geospatial data standards, including but not limited to providing metadata for geospatial data and/or other appropriate documentation standards through the GeoPlatform.

They must coordinate and work together with other Federal agencies, agencies of State, tribal, and local governments, higher education institutions, and even in the private sector to cost-effectively collect, integrate, maintain, disseminate, and preserve geospatial data and build upon existing non-Federal geospatial data to the extent possible.

All Covered Agencies are expected to use geospatial information to make Federal geospatial information and services more useful to the public by enhancing operations, supporting decision making; and enhancing reporting to the public and to Congress.

It is also imperative that each Covered Agency protect personal privacy and maintain confidentiality in accordance with Federal policy and law; and participate in determining, when

applicable, whether declassified data can contribute to and become a part of the National Spatial Data Infrastructure.

Another requirement which falls under stewardship, maintenance and preservation of the data is the obligation of the Covered Agency to search all sources, including the GeoPlatform, to determine if existing Federal, State, local, or private geospatial data meets the needs of said Covered Agency before expending funds for geospatial data collection and to the maximum extent practicable, ensure that any person receiving Federal funds for geospatial data collection provides high-quality data.

The final requirement addressed in the GDA is the appointment of a contact to coordinate with the lead Covered Agencies for collection, acquisition, maintenance, and dissemination of the National Geospatial Data Asset data themes used by the Covered Agency.[1]

1.2.2 OMB Circular A-16.

This circular mandates that all agencies that collect, use, or disseminate geographic information and/or carry out related spatial data activities will prepare, maintain, publish and implement a strategy in support of the NSDI for the advancement of geographic information and related to spatial data activities appropriate to their mission. Achievements relative to Covered Agency strategies must be reported annually to OMB with spatial data assets included.[2,3]

2. Primary Strategic Planning References

The primary references used to develop the VA Spatial Data Strategy include the NSDI Strategic Plan 2020-2024, the VA Strategic Plan 2018-2024, and the VA Enterprise Data Strategy, Feb 2021.

2.1 National Spatial Data Infrastructure (NSDI) Strategic Plan 2020-2024

2.1.1. As required in Sections 753 and 755 of the GDA, the FGDC developed a new strategic plan for the NSDI. The plan, which covers the years 2021-2024, was developed by an interagency team based on inputs from FGDC agencies, the National Geospatial Advisory Committee (NGAC), and partners from national geospatial organizations. The plan includes goals and objectives for the sustainable development and advancement of the NSDI. The NSDI strategic plan was adopted by the FGDC Steering Committee in November 2020. Additional information, including the strategic plan, is available on the FGDC website at: www.fgdc.gov/nsdi-plan.

2.1.2. NSDI Vision: Empowering a geo-enabled Nation and world for place-based decision making

[1] Geospatial Data Act Online Version — Federal Geographic Data Committee (fgdc.gov) Section 759 Covered Agency Responsibilities.
[2] Circular-016.pdf (whitehouse.gov) p 8, Section 8 Agency Responsibilities and Reporting Requirements
[3] See OMB Circular A-11, Sec 300

2.1.3 NSDI Mission Statement: The NSDI provides a national network of geospatial resources that seamlessly integrates location-based information to serve the needs of the Nation and wider global interests.

2.1.4 NSDI Guiding Principals

Promote the utilization of geospatial resources to improve insight and decision making.

Ensure that geospatial data are current, accurate, open, standards-based, findable, accessible, interoperable, and reusable.

Build trust by safeguarding privacy, confidentiality, and intellectual property and by ensuring ethical practices.

Foster an open, inclusive, and collaborative culture across sectors.

Encourage innovation and an environment of learning and accountability.

Leverage resources, expertise, and investments through partnerships.

Lead, support, and advance spatial data infrastructure globally.

Safeguard national security and critical infrastructure.

2.1.5 NSDI Goals

NSDI Goal 1—Implement the National Geospatial Policy and Governance Framework as Defined by the Geospatial Data Act and Related Statutes and Policies

NSDI Goal 2—Advance the Maturity of, Accelerate the Acquisition of, and Expand the Sources of National Geospatial Data Assets (NGDA) To Ensure That They Are Findable, Accessible, Interoperable, and Reusable

NSDI Goal 3—Ensure Open Standards-Based Interoperability to Enable Geospatial Shared Services

NSDI Goal 4—Enable and Promote Collaborative Governance and Partnerships to Meet National Needs, Priorities, and Circumstances

2.2 VA Strategic Plan 2022-2028

2.2.1 VA Mission Statement: To fulfill President Lincoln's promise, “To care for him who shall have borne the battle and for his widow, and his orphan.”

2.2.2 This spatial data strategy supports the Department of Veterans Affairs 2022 -2028 Strategic Plan Goal 4, which states “VA ensures governance, systems, data and management best practices improve experiences, satisfaction, accountability and security.”

2.2.3 Although this strategy supports many of the objectives under Goal 4, it directly supports Objective 4.2, which states “(Data is a Strategic Asset) VA will securely manage data as a strategic asset to improve VA’s understanding of customers and partners, drive evidence-based decision-making and deliver more effective and efficient solutions.”

2.3 VA Enterprise Data Strategy 2021

2.3.1 Vision: Strengthening the VA as a learning organization

2.3.2 Goal 1: Stewardship - Provide quality and trusted authoritative data, metadata, and metrics to the enterprise, administered and governed by the Data Governance Council, in order to accelerate the use, quality and interoperability of VA data assets.

Goal 1 Targeted Outcome – Authoritative, high quality, and accessible data that provides trusted insights into critical problems, and that, in turn, drives better informed, data-driven decisions across the Department, from Veteran services and operations to enterprise investment planning and continuous modernization.

2.3.3 Goal 2: Analytics - Empower the enterprise with integrated scalable analytics for evidence-based decision-making and policymaking.

Goal 2 Targeted Outcome - Data driven methods and analytical approaches are used to develop justification and support decision making to enhance VA services and benefit provisioning, inform policy making, facilitate program evaluation, and promote positive results for Veterans, their families, and other stakeholders.

2.3.4 Goal 3: Technology - Create a secure infrastructure for business data architecture, data management, information sharing, and data analytics.

Goal 3 Targeted Outcome – Composable enterprise information (business and data) architecture and data infrastructure that enables information access, manipulation, and re-combination in order to create new insights and perspectives on operational effectiveness and anticipates future business opportunities.

2.3.5 Goal 4: People - Foster a federated and distributed data-centric workforce.

Goal 4 Targeted Outcome - VA cultivates a data-savvy 21st century workforce that ethically and effectively uses and protects data to maximize delivery of world-class Veteran services.

2.3.6 Goal 5: Governance - Strengthen collaborative, federated, and accountable governance towards leveraging data and analytics to drive decision-making

Goal 5 Targeted Outcome - Established oversight and guidelines lead to strong partnerships, data integration, data protection, and data analytics that produce relevant, timely, and interactive products for effective use.

3. Spatial Data Strategy Planning Approach

In August 2020, the VA chartered the Geospatial Subgroup to Data Governance Council's Data Analytics Workgroup. The overarching goals of the Geospatial subgroup were to develop a VA spatial strategy to define, enable and optimize geographic information system (GIS) architecture to meet the geospatial analytics needs of the VA now and in the future, to promote open access to high quality geospatial data, information, and interpretive products, and to improve interoperability and sharing capabilities of Federal information systems and data. This was done by first defining key spatial data terminologies for planning purposes within the VA. Next, the Geospatial subgroup conducted a thorough crosswalk of all key policies and strategies related to spatial data. This resulted in VA Spatial Data strategic goals, objectives, desired outcomes, and key milestones that form the foundation for the VA Spatial Data Strategy as a sub-component of the VA Data Strategy.

3.1 Defining Key Spatial Data Terminologies and Definitions

- *Geospatial Infrastructure:* The technological, organizational and financial structures required to maintain the geospatial capabilities needed for the department's mission essential functions.

- *Geospatial Information Systems (GIS):* An architecture of hardware, software, and data for collecting, storing, analyzing and disseminating spatial information.

- *Geocoding*: The process of taking input text, such as an address or the name of a place and returning a latitude/longitude location on the Earth's surface for that place.

- *Geospatial Data:* Data (of any kind) that has a geographic attribute(s) (address, ZIP, FIPS, Latitude/Longitude) allowing the datapoint to be geocoded or located in a map.

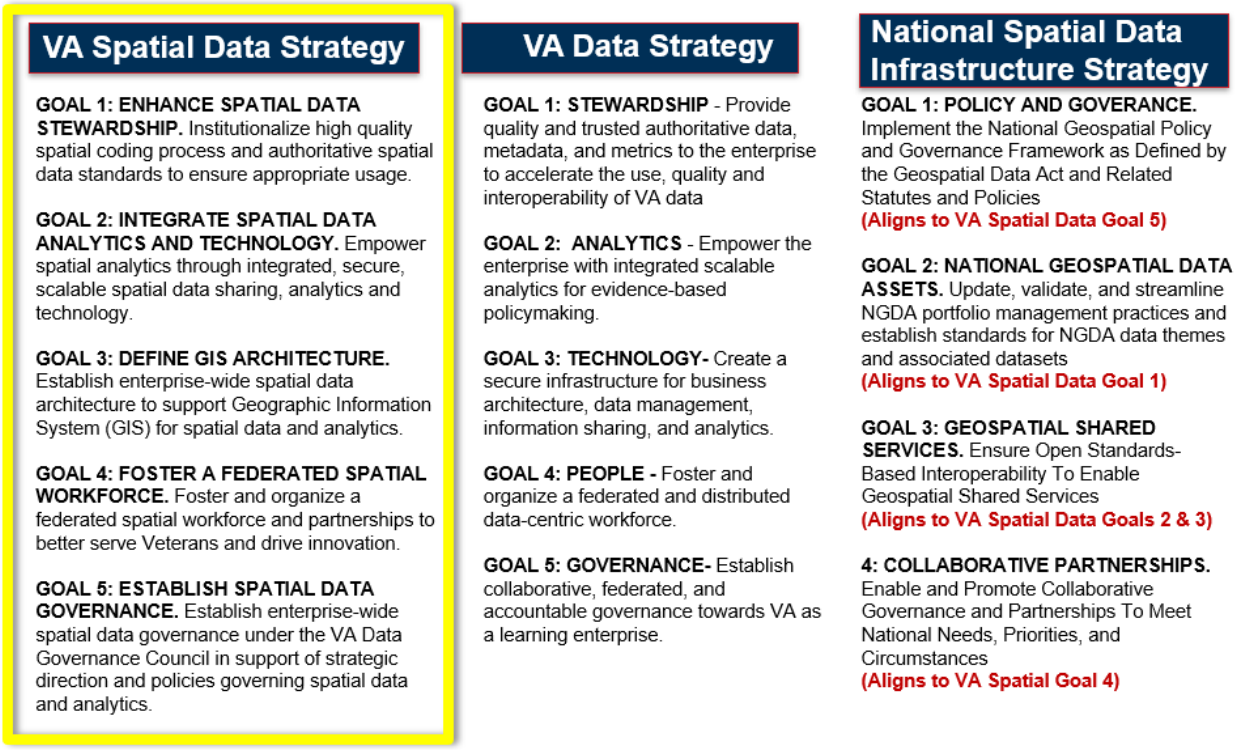
- *GIS Models:* Whenever operations of the GIS attempt to emulate spatial and temporal processes in the real world.

- *GIS Architecture:* A strategic blueprint that is developed, implemented, maintained, and used to explain and guide how geospatial technology and management elements work together to efficiently accomplish the mission.

3.2 Strategic Planning Crosswalks

The Geospatial subgroup cross-walked the goals, objectives, and desired outcomes of the NDSI Strategic Plan 2020-2024 with the VA Data Strategy and the Covered Agency responsibilities of the Geospatial Data Act of 2018 to develop the VA Spatial Data goals, objectives, and desired outcomes that incorporate all critical elements found in the three references.

The below graphic shows how the VA Spatial Data strategy goals align to the VA Data Strategy and ultimately to the National Spatial Infrastructure Strategy 2020-2024.

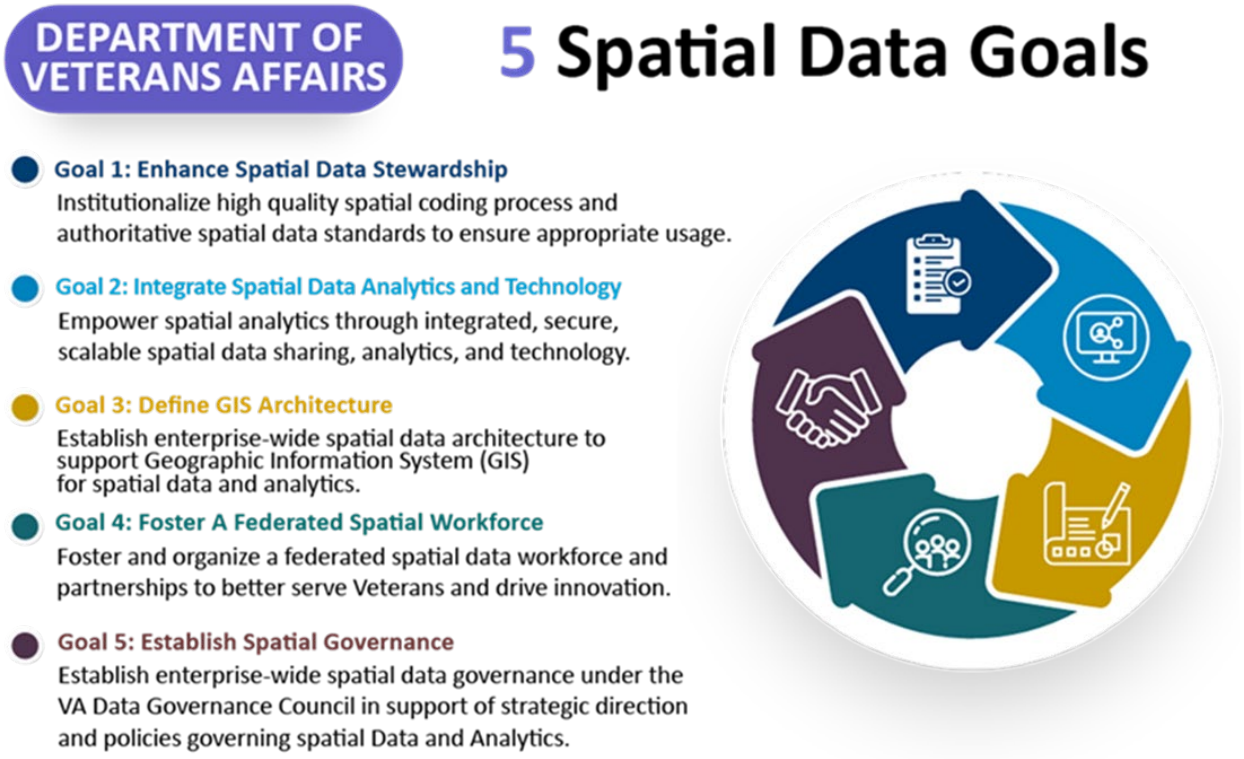


4. VA Spatial Strategy 2021-2024: Goals, Objectives, and Desired Outcomes

The VA will advance geospatial information systems and related spatial data and activities appropriate to the VA mission by first establishing the following VA Spatial Data goals, objectives, desired outcomes, and key milestones which will cover the same 3-year time period (2021-2025) as the NSDI strategic plan.

VA Spatial Data Strategy IAW VA Enterprise Data Strategy

The VA Spatial Data objectives incorporate all thirteen Covered Agency responsibilities outlined in the Geospatial Data Act of 2018 to ensure full compliance by the end of Fiscal Year 2023.



4.1 VA Spatial Data Goal 1: Enhance Spatial Data Stewardship

Goal: Institutionalize high quality spatial coding process and authoritative spatial data standards to ensure appropriate usage

Desired Outcome: VA Spatial Data policies and procedures are consistent with key statutes, policies, and management best practices to promote a coordinated and integrated approach to using data to deliver on missions, serve the public, and steward resources while safeguarding integrity, privacy, confidentiality, preservation, and national security. FY 2023 Quarter 4.

Objectives:

1.1 Establish a full-time Geospatial Data Steward responsible for:

- Implementation and oversight of Authoritative Spatial Data Sources.
- Development and implementation of consistent lifecycle management practices.

- Decommissioning of redundant systems.
- Overseeing the compliance of software licensing terms.

1.2 Collect, maintain, and disseminate spatial data and record schedules internal to the VA.

1.3 Utilize spatial standards.

1.4 Protect personal privacy and controlled unclassified information.

1.5 Ensure high-quality spatial data.

1.6 Disseminate appropriate spatial data publicly as liable under the GDA of 2018.

4.2 VA Spatial Data Goal 2: Integrate Spatial Data Analytics and Technology

Goal: Empower spatial analytics through integrated, secure, scalable spatial data sharing, analytics, and technology.

Desired Outcome: Increase the value and use of enterprise spatial data and services by including spatial data in the data discovery, design, and deployment of decision support systems that target intervention strategies and enhance VA services and benefits for Veterans and their families by FY 2023 Quarter 4.

Objectives:
2.1 Foster a culture of experimentation and innovation through data-driven methods and spatial analytics.

2.2 Support decision-making to enhance VA services and benefits for Veterans and their families.

2.3 Make federal spatial analytics more useful for VA's decision making.

2.4 Identify and test innovative information sources and technologies to improve national geospatial shared services capabilities.

4.3 VA Spatial Data Goal 3: Define GIS Architecture

Goal: Establish enterprise-wide spatial data architecture to support Geographic Information System (GIS) for spatial data and analytics.

Desired Outcome: A defined, integrated VA GIS Architecture that supports a spatial ecosystem through interoperability, data sharing, and collaboration on health, economic, environmental, and social topics that affect the well-being of Veterans by FY 2023 Quarter 2.

Objectives:

3.1 Deliver a strategic plan that includes a defined enterprise GIS architecture that will cover governance, strategy, business planning and management, content management, analytics, systems and tools, data and information, networks and infrastructure, and security regarding spatial data.

3.2 Allocate resources for spatial data.

3.3 Determine spatial needs before expending funds.

3.4 Align spatial metadata and services.

3.5 Improve the discovery, use, and interoperability of Geospatial Information Systems.

4.4 VA Spatial Goal 4: Foster A Federated Spatial Workforce

Goal: Foster and organize a federated spatial data workforce and partnerships to better serve Veterans and drive innovation.

Desired Outcome: Improved VA spatial workforce recruitment and retention supported by a spatial training and development curriculum that enhances problem-solving skills to deliver world-class service to Veterans by FY 2023 Quarter 4.

Objectives:

4.1 Promote collaborative spatial data integration through improved communication, awareness, and knowledge exchange about the benefits and uses of spatial data, analytic approaches and the NSDI Strategic Plan.

4.2 Improve spatial workforce recruitment and retention.

4.3 Establish enterprise spatial data training and development curriculum that adapts to emerging user requirements, organizational challenges, and technological advances.

4.4 Coordinate geospatial data with other agencies.

4.5 VA Spatial Goal 5: Establish Spatial Governance

Goal: Establish enterprise-wide spatial data governance under the VA Data Governance Council in support of strategic direction and policies governing spatial Data and Analytics.

Desired Outcome: : An updated governance process is developed and implemented to meet statutory and policy requirements to promote effective interagency, intergovernmental, and cross-sector collaboration, engagement, and accountability by FY2023 Quarter 4.

Objectives

5.1 Align and coordinate geospatial data strategy policies with the VA Data Governance Council, the Geospatial Data Act, the Federal Data Strategy, the Evidence Act, and the Office of Management and Budget Circular A-16.

5.2 Develop and implement clear and consistent VA spatial policies and procedures consistent with key spatial statutes, policies, and management best practices.

5.3 Develop Geospatial Data Strategy guidance for agencies to implement GDA requirements.

5.4 Promote transparency for effective enterprise and interagency collaboration, engagement and accountability.

5. VA Spatial Data Strategy Implementation

Under Section 759(a) of the GDA, the VA is required to "prepare, maintain, publish, ***and implement***" a strategy for advancing geographic information and related geospatial data and activities Appropriate to its mission.

Following the publication of this spatial data strategy, the VA will develop implementation plan that describe how the strategy will be implemented and monitored. The implementation plan will include key elements including:

- Goals and objectives
- Timelines
- Responsible parties
- Performance metrics
- Resources to achieve goals and objectives

6. Road Map: Actions and Key Milestones

Below is a summary of the key milestones for accomplishing the VA Geospatial goals and objectives:

FY 2023 Quarter 2: A defined, integrated VA GIS Architecture that supports a spatial ecosystem through interoperability, data sharing, and collaboration on health, economic, environmental, and social topics that affect the well-being of Veterans

FY 2023 Quarter 4: Implement geospatial data stewardship across VA that institutionalizes high quality spatial coding process and authoritative spatial data standards.

FY 2023 Quarter 4: Improved VA spatial workforce recruitment and retention supported by a spatial training and development curriculum that enhances problem-solving skills to deliver world-class service to Veterans by FY 2023

FY 2023 Quarter 4: Increase the value and use of enterprise spatial data and services to support decision making to enhance VA services and benefits for Veterans and their families.

FY 2023 Quarter 4: Establish spatial policies that foster a coordinated and integrated approach to using spatial data to better deliver on missions, serve Veterans, and steward resources.

7. Conclusion

With the increased use of spatial data and geospatial analytics, especially during the pandemic, there was a significant increase in geospatial analysis and mapping nationally among both government and commercial healthcare organizations. This was also the case within the VA, however, although the VA's data management, information sharing, and analytics infrastructure has successfully matured in many respects, VA spatial data and analytics to a certain degree remains fragmented and misaligned. The benefits of spatial data and geospatial analytics can only be realized within the VA with formal and executable VA Spatial Data Strategy that is a sub-component and fully aligned to the VA Enterprise Data Strategy published in February 2021.

This VA Spatial Data Strategy document has set forth a clear set of goals, objectives, and desired outcomes that will be used by VA organizations and offices to develop supporting strategies, initiatives, and key performance indicators that will measure success and identify future opportunities to improve access and outcomes for the Veteran.

In summary, there are five VA Spatial Data strategic goals:

Goal 1: Enhance Spatial Data Stewardship
Goal 2: Integrate Spatial Data Analytics and Technology
Goal 3: Define GIS Architecture
Goal 4: Foster A Federated Spatial Workforce
Goal 5: Establish Spatial Governance

These spatial data goals and supporting objectives are aligned to the VA Enterprise Data Strategy and were develop by also incorporating the Covered Agency responsibilities of the

Geospatial Data Act of 2018 and the goals, objectives and targeted outcomes outlined in the NSDI Strategic Plan 2020-2024.

This spatial data strategy is only effective if it has a strong implementation approach focused on achieving clearly defined outcomes. The goals, objectives, and desired outcomes in this document are designed to mobilize the VA's geospatial community of practice to work together and further strengthen enterprise integration as a managed federation for the spatial data and analytics mission to better serve and improve the health and well-being of Veterans.