

**TOWARD A NATIONAL GEOSPATIAL STRATEGY**  
**Recommendations from the National Geospatial Advisory Committee**  
**December 2012**

**INTRODUCTION**

This paper addresses the role of geospatial information technology in supporting cost-effective government and stimulating economic growth through job creation. The benefits of a coordinated approach – a National Geospatial Strategy coupled with a robust set of geospatial information services – are highlighted through examples that have been identified and described by the National Geospatial Advisory Committee (NGAC).

**WHAT IS GEOSPATIAL INFORMATION TECHNOLOGY AND WHY IS IT IMPORTANT?**

The United States is the world leader in geospatial technology and research, an industry that represents a multi-billion dollar component of the U.S. economy. This high-growth, high technology industry acquires, manages, analyzes, integrates, maps, distributes, and uses geospatial information and knowledge to fuel major sectors of the U.S. economy. The [Congressional Research Service estimated](#) in 2012 that as much as 80% of government information has a geospatial component. Geospatial technologies and services play a critical role in utilizing this information to work smarter, manage logistics, and support informed decisions throughout the economy. Over the past four decades, the creation of state-of-the-art solutions by private companies, enlightened investments by the Federal Government, and innovative applications in all sectors have enabled U.S. leadership in this vibrant and growing business. The current explosion in web and mobile-based location services will provide continuing opportunities to utilize geographic information and knowledge to support effective policies and decisions. NGAC believes that it is critical that the Federal Government exert strong leadership in this arena. The following examples highlight how geospatial services affect the well-being of American citizens and businesses every day:

**Stimulating Economic Growth through Geospatial Technology**

Geospatial technology can be used to stimulate economic growth. In a highly competitive global economy, the United States currently occupies the leading position in the geospatial sector. U.S.-based geospatial companies, which generate technical, high-paying jobs in the United States, help drive the American economy by providing goods and services that are sold worldwide. A [recent study by the Center for Strategic and International Studies](#) estimated that geospatial-related companies generate \$30 billion annually. The geospatial sector has grown steadily, with the commercial side growing at an accelerated rate. The [U.S. Department of Labor has predicted](#) that the geospatial industry will be one of the technology areas that will create the most jobs in the coming decade. Yet, this industry faces a serious shortage of qualified and skilled workers to meet the demands of this fast growing field, potentially providing an opportunity for trained American workers.

**Using Geospatial Information to Control Costs and Save Taxpayer Dollars**

Geospatial information technology can be used to control the costs incurred by government agencies. Map visualization and analysis can play an important role in responding to natural disasters, enabling more effective decision making, and providing better services to the public. These capabilities can also assist managers in identifying redundancies and opportunities for consolidation. Utilizing an enterprise, multi-agency approach for the creation and collection of data can result in cost and resource savings while greatly increasing the value of returns. These savings can be realized through shared purchasing, economies of scale, and economies of scope. The development and implementation of shared geospatial technology infrastructure for use by all government partners offers great promise as a model for cost-effective, efficient government.

## **Applying Geospatial Tools to Ensure Public Safety and Decision-Support**

Geospatial information technology is a key decision-support tool that supports public safety, including critical infrastructure protection, first responder situational awareness, and homeland security activities. Advances in geospatial technologies are being applied to develop effective solutions to critical problems such as natural disaster preparedness and recovery, floodplain management, and wildfire management. Additionally, these technologies are being used to analyze and improve the delivery of health care services and to support analysis of environmental correlations to diseases, location, and population demographics. One striking example of the utility of this technology is its use as a tool to analyze the spatial footprint of the mortgage crisis and to develop policies and monitor the effects on our economy.

## **RECOMMENDATIONS FOR CONSIDERATION**

The NGAC offers the following recommendations for development of a National Geospatial Strategy and the effective utilization of geospatial technology. These recommendations are based upon the work and the recommendations of the NGAC since its inception in 2008. To raise awareness, commitment, and action, these recommendations should be coupled with a nationwide education and promotion program.

### **1. Develop and Implement a National Geospatial Policy**

Americans embrace a wide range of location-based technologies that make our lives easier and keep the world in a context that can be better understood. Services like Google Maps and Bing Maps are universally known. This includes everything from the Defense Advanced Research Projects Agency (DARPA) work on computer networking that led to the Internet, to access to the GPS network and development of Census' digital road network data (see "[NGAC Changing Geospatial Landscape Paper](#)"). While government has played an important role, the geospatial industry is rapidly evolving. We need updated national policies to coordinate and promote efficient development of the [National Spatial Data Infrastructure](#) (NSDI).

To further advance the NSDI, we recommend that the administration develop and promote a National Geospatial Policy. Our nation faces important opportunities and challenges with expectations that geospatial resources will support evidence-based decision making at all levels. This will require coordination of Federal geospatial activities to ensure effective intergovernmental and inter-sector partnerships. A National Geospatial Policy will describe common goals, define roles and responsibilities, and outline a national geospatial strategy to achieve the economic and policy objectives of the nation.

A National Geospatial Policy will provide an organized approach to build upon technological advancements to further the development of the NSDI by:

- helping coordinate spending and information sharing among federal agencies as well as in partnership with state and local government to minimize costs and avoid creating duplicate or inconsistent geospatial data;
- enabling the tracking of geospatial investments to better understand and manage our economic health and help prevent another mortgage-based crisis;
- ensuring current, accurate and detailed information is available to government agencies, academia, and the public to anticipate and adapt to environmental change. The Landsat satellite program is an example of the cost-effectiveness of data sharing, generating more than \$1.7 billion in benefits annually through shared data collection;
- ensuring that the U.S. geospatial business is competitive and leads the way in the global geospatial marketplace;

- leveraging opportunities in the high-growth geospatial sector by including a strategy for geospatial workforce development, consistent with the President’s STEM Initiative, to ensure a pipeline of qualified American workers.

## **2. Fully Implement the Geospatial Platform and Geospatial Portfolio Management**

The [Geospatial Platform](#) is a technology and policy infrastructure that is currently under development at the direction of the Office of Management and Budget (OMB). The NGAC reviewed and provided extensive input on the development of the Geospatial Platform initiative and the portfolio management approach embodied in the [Supplemental Guidance to OMB Circular A-16](#). These interrelated initiatives will provide a common framework for sharing data, providing shared services and infrastructure, promoting wise investment decisions, and reducing duplication of effort. The Geospatial Platform, in particular, will provide a means for more effective collaboration between the Federal government and partners in State, local, and Tribal governments. The Federal government should expedite the implementation of these initiatives.

## **3. Implement Coordinated Multi-Agency, Intergovernmental Geospatial Data Initiatives**

The Federal government should work with other levels of government and the private sector to develop comprehensive national-scale geospatial data initiatives that will provide economies of scale and result in high quality, consistent data that will enable more effective decision making. The NGAC provided feedback and comment on a number of these opportunities, and the framework for many of these data initiatives have been developed. Examples include the following:

- [3-D Elevation Program](#)
- [Transportation for the Nation](#)
- [Landsat Program](#)
- [National Land Parcel Data](#)
- [National Address Data](#)
- [Imagery for the Nation](#)
- [National Height Modernization System](#)

## **CONCLUSION**

We believe geospatial technology, information, and services can help address some of the major priorities of our nation. The recommendations presented in this paper, including developing a Nation Geospatial Policy, fully implementing the Geospatial Platform and portfolio management, and encouraging coordinated intergovernmental data initiatives, will lead toward a robust and forward-looking strategy to accelerate the development of the geospatial infrastructure for the Nation. The NGAC looks forward to working with the Federal geospatial community to further advance our shared goals.

## **ABOUT THE NGAC**

The National Geospatial Advisory Committee is a 28 member Federal Advisory Committee established to provide advice and recommendations related to management of Federal and national geospatial programs, the development of the NSDI, and the implementation of OMB Circular A-16 and Executive Order 12906. The NGAC reviews and comments upon geospatial policy and management issues and provides a forum to convey views representative of non-federal stakeholders in the geospatial community. The NGAC is sponsored by the Department of the Interior and reports to the Chair of the Federal Geographic Data Committee. Additional information about the committee, including membership, research reports, and best practice documents, is available at: [www.fgdc.gov/ngac](http://www.fgdc.gov/ngac).