

**Preface**

The U.S. Geological Survey (USGS) is the Nation’s largest water, earth, and biological science and civilian mapping agency. While the USGS National Geospatial Program and its predecessors have conducted the mapping mission for more than 125 years, the products and services offered, and the means by which they were developed, changed many times.

Once again the Program is in the midst of change. Users’ expectations have changed, driven by new understandings of societal and mission needs, new technologies, and other factors. Changing attitudes about the roles of Federal agencies, decisions about governmentwide funding levels, and other issues also influence the way the Program achieves its mission.

This plan lays out the strategy the Program will follow for the period 2012-2017 to meet the challenges of this changing environment. It features the following directions:

- Increase focus on identifying and meeting user needs, and anticipating new needs, with special attention on the priority communities of use for water resource and flood risk management, geologic mapping, natural (geologic) hazards, and natural resource conservation.
- Ensure that the Program’s products and services meet users’ needs, and guide the Program’s investment in data, products, and services based on an understanding of how they are employed.
- Organize the Program’s operations to maintain the quality of the geospatial data efficiently, and balance the specification of requirements with the resources available to meet those requirements.
- Focus partnership activities to acquire geospatial data required to meet users’ needs on a timely and dependable basis, and encourage practices that make it easier for the Program to work with partners and suppliers.

In executing this strategy, the Program will continue to demonstrate the core competencies of the USGS: to provide impartial and credible data, integrate the data into long-term, national databases, and disseminate the information to users through modern products and services. By devoting new attention to satisfying the needs of users, it will provide its contribution to multidisciplinary work, and ensure that the information it provides meets users’ needs.

For my colleagues in the Program, remember that the strategy sets a direction; it is not a prescription. Work through issues and engage your colleagues using business processes developed through the enterprise architecture. With your help and best professional judgment, I am confident that the Program will continue to meet the Nation’s needs for geospatial information.

*Mark L. DeMulder*  
 Director  
 National Geospatial Program  
 November, 2011

**Contents**

Preface ..... i

Contents ..... i

Vision..... 1

Mission ..... 1

Authorities..... 1

Geographic Area of Responsibility ..... 1

Value Provided by the Program ..... 1

Thematic Responsibilities and Levels of Investment..... 1

Information Provided by the Program ..... 2

Strategic actions ..... 5

Action 1: Satisfy the needs of users for geospatial information. .... 5

Action 2: Provide geospatial products and services that users incorporate into their decision making and operational activities. .... 5

Action 3: Organize and maintain geospatial data to ensure that the data support the specifications for the products and services, and that life-cycle costs are minimized. .... 6

Action 4: Acquire geospatial data by working with organizations whose activities align with the requirements of the Program. .... 6

Implementation and Schedule ..... 7

Relationship to Other Departmental, Bureau, and Governmentwide Plans ..... 7

Department of the Interior Strategic Plan ..... 7

U.S. Geological Survey Science Strategy Plans..... 7

Governmentwide and Departmental Plans ..... 7

References..... 7

Trademark Information ..... 8

Definitions of Selected Terms ..... 8

Appendix A: Core Competencies of the U.S. Geological Survey. 9

Appendix B: Strengths-Weaknesses-Opportunities-Threats Analysis..... 11

Appendix C: Transitions anticipated by implementing the plan. .... 13



## ***Vision***

The National Geospatial Program:

1. Satisfies the needs of users for geospatial information.
2. Provides geospatial products and services that users incorporate into their decision making and operational activities.
3. Organizes and maintains geospatial data to ensure that the data supports the specifications for products and services, and that life-cycle costs are minimized.
4. Acquires geospatial data by working with organizations whose activities align with the requirements of the Program.

## ***Mission***

For the government and the people of the United States, the National Geospatial Program:

- Organizes, maintains, publishes, and disseminates the geospatial baseline of the Nation's topography, natural landscape, and built environment through *The National Map*, a set of basic geospatial information provided as a variety of products and services.
- Fosters a general understanding of broad geographic patterns, trends, and conditions through The National Atlas of the United States of America®.

The Program also increases the efficiency of the Nation's geospatial community by improving communications about geospatial data, products, services, projects, needs, standards, and best practices as it executes its mission activities.

## ***Authorities***

The U.S. Geological Survey is the Nation's largest water, earth, and biological science and civilian mapping agency.

The Organic Act of March 3, 1879 (20 Stat. 394; 43 U.S.C. 31), established the U.S. Geological Survey and provided for "the classification of the public lands and examination of the geological structure, mineral resources, and products of the national domain." Topographic mapping soon became integral to accomplishing this responsibility. Congress recognized topographic mapping as an essential part of the work authorized by the Organic Act and made provisions for topographic mapping in the Act of October 2, 1888 (25 Stat. 505, 526; 43 U.S.C. 42). Subsequent congressional actions clarified and expanded these responsibilities.

The National Atlas of the United States of America® is the successor to the Program's activities to provide small-scale base maps, thematic maps, geospatial data, and the National Atlas in book format. Congress most recently made financial provisions for The National Atlas of the United States® in fiscal year 1997.

## ***Geographic Area of Responsibility***

The Program provides information about the United States, including the States, the District of Columbia, U.S. commonwealths and territories, and nations in Compacts of Free Association with the United States.

The Program may provide information about neighboring foreign areas where the international boundary interrupts a geospatial feature or theme of data and thereby limit its usefulness to users. In such cases, the Program integrates data received from neighboring countries into its data holdings, products, and services. The Program also may integrate data, such as bathymetry, for offshore areas where the shoreline interrupts a geospatial feature or theme of data and thereby limits its usefulness to users. In such cases, the Program receives data from Federal agencies and others, and integrates the data into its data holdings, products, and services.

## ***Value Provided by the Program***

The Program provides national coverage of current, seamless, accurate, complete, and consistent geospatial information (see Figure 1). For example, the Program meets needs for consistent information:

- For every place in the Nation.
- That spans jurisdictional boundaries.
- That provides a consistent spatial framework for sampling observations across the Nation.

## ***Thematic Responsibilities and Levels of Investment***

Through Office of Management and Budget Circular A-16, the Federal Government assigns leadership responsibilities for themes of geospatial data among Federal agencies. Based in part on this assignment, and the likely need for Federal investment and resulting benefits, the Program anticipates the following levels of investment:

### ***High investment***

**Elevation:** Focus updates on places where data quality is insufficient. Improve the quality and resolution of the data using modern sources of data and leverage USGS resources with those of other organizations. Pursue an initiative to acquire, process, and disseminate enhanced elevation data.

**Hydrography and watershed boundaries:** Focus updates on places where data quality is insufficient. Work with stewards to leverage USGS resources to maintain the data. Enhance the data to support users' modeling and other business needs. Improve tools that users employ to use the data.

### ***Moderate investment***

**Geographic names:** Fulfill the statutory requirements to support the Board on Geographic Names (Public Law 80-242).

### ***Maintenance investment***

**Imagery, transportation, boundaries, and selected structures:** For reference purposes, maintain current coverage by obtaining the data from other organizations and suppliers with a minimum investment of Program resources.

Distribute land cover data developed by the USGS Climate and Land-Use Change mission area.

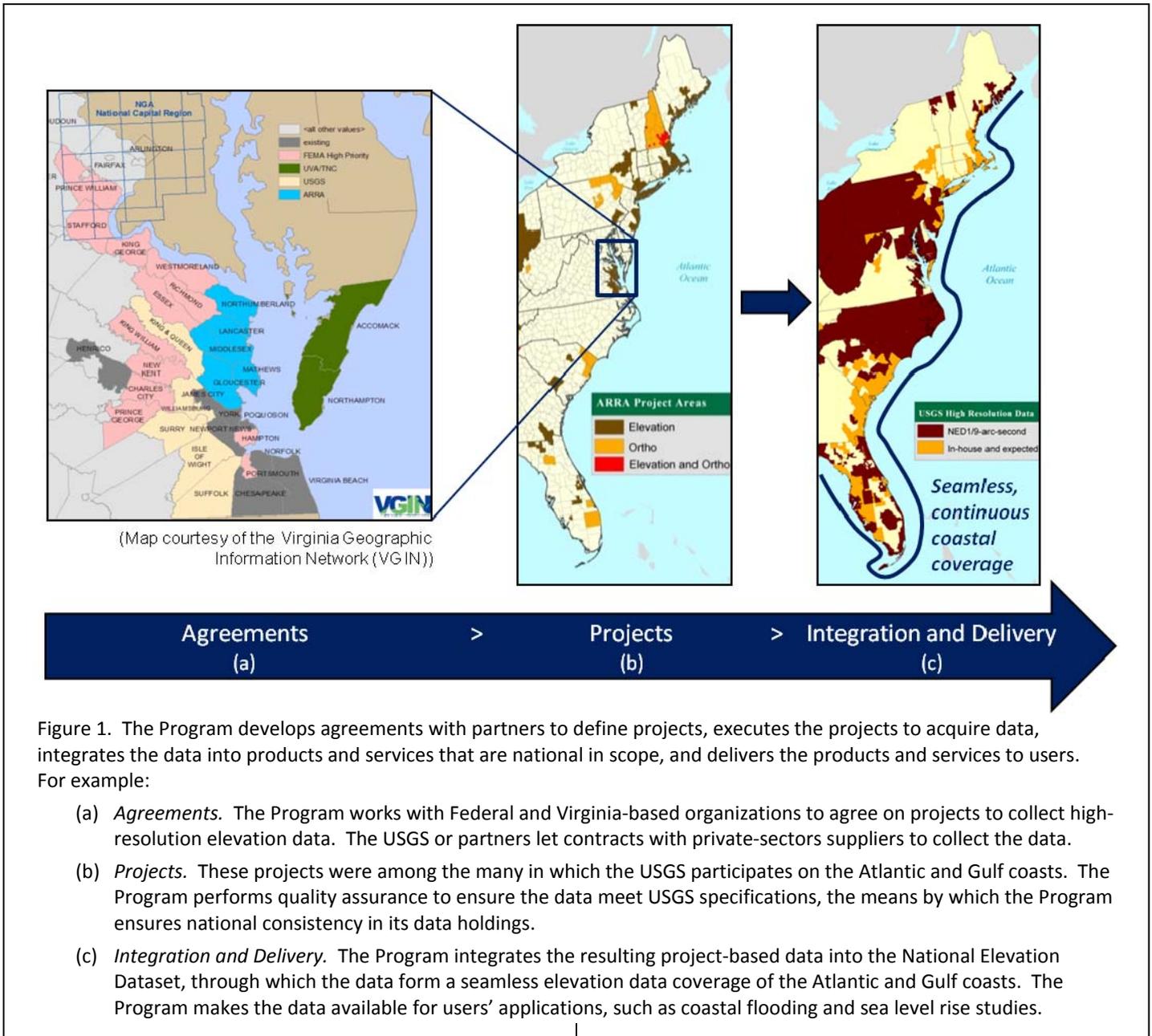


Figure 1. The Program develops agreements with partners to define projects, executes the projects to acquire data, integrates the data into products and services that are national in scope, and delivers the products and services to users. For example:

- (a) *Agreements.* The Program works with Federal and Virginia-based organizations to agree on projects to collect high-resolution elevation data. The USGS or partners let contracts with private-sectors suppliers to collect the data.
- (b) *Projects.* These projects were among the many in which the USGS participates on the Atlantic and Gulf coasts. The Program performs quality assurance to ensure the data meet USGS specifications, the means by which the Program ensures national consistency in its data holdings.
- (c) *Integration and Delivery.* The Program integrates the resulting project-based data into the National Elevation Dataset, through which the data form a seamless elevation data coverage of the Atlantic and Gulf coasts. The Program makes the data available for users’ applications, such as coastal flooding and sea level rise studies.

At a minimum, the Program seeks to capture changes for data in *The National Map* within three years of their occurrence (five years for elevation). These thresholds are based on user information described in *The National Map Customer Requirements, Findings from Interviews and Surveys* (Sugarbaker, Coray, and Poore 2009).

The Program anticipates maintaining the small-scale geospatial base data in the National Atlas on a five-year cycle.

**Information Provided by the Program**

The geospatial data provided by the Program contains locations and descriptive information about the Earth, including:

- Measurements of terrestrial elevation.
- Orthorectified imagery.
- Interpretations of geospatial features for the themes of hydrography, transportation, structures, boundaries, and

land cover, especially the delineation, classification, and basic description of features.

- Proper names of features.
- Depending on the business needs of users, additional information that supports geocoding and modeling.
- Metadata.

Through the National Atlas, the Program also provides information about the population, economy, infrastructure, natural resources, environment, government, and history of the Nation, organized for display on national and regional maps. The Program receives these data from Federal agencies and others, and integrates the data into its data holdings, products, and services.

The Program provides this information as geospatial products and services, such as:

- Web-based downloads of geospatial data.

- Web services, including:
  - Data services through web feature, coverage, and gazetteer services.
  - Visualization services through web map and terrain services, and other web-based map displays.
  - Analytical services, such as a geocoding service.
  - Routing services, such as finding a path through a hydrographic network.
  - Model services.
- Online maps compiled from the Program's data holdings, such as the US Topo electronic topographic map and thematic maps from the National Atlas formatted for printing.
- Online articles and maps for subjects included in the National Atlas.
- Support activities, such as:
  - A geospatial software client to view and customize maps.
  - Map publication service to generate and publish maps.
  - Ordering and delivery systems.

The Program may provide special products and services for specific users. One example is custom access to Program products and services that support persons responding to disasters.

As part of its mission activities, the Program creates other items that the geospatial community finds of value. Examples include research to anticipate future requirements and investigate new technical approaches; relationships, goodwill, approaches, and lessons learned from working with partners and users that assist broader geospatial coordination activities; standards for data definition, quality measurements, and technical methods; product and service design specifications; and methods to manage and implement production workflows, quality assessment techniques, and operational approaches. The Program shares this information as a contribution to increasing the efficiency of the Nation's geospatial community.



**Strategic actions**

The National Geospatial Program:

1. Satisfies the needs of users for geospatial information.
2. Provides geospatial products and services that users incorporate into their decision making and operational activities.
3. Organizes and maintains geospatial data to ensure that the data supports the specifications for products and services, and that life-cycle costs are minimized.
4. Acquires geospatial data by working with organizations whose activities align with the requirements of the Program.

**Action 1: Satisfy the needs of users for geospatial information.**

- Identify users’ needs by interacting with users through communities of use.
    - Identify high-priority uses and communities of use. The Program identified (National Geospatial Program 2011) the following high-priority communities for its *National Map* activities:
      - Water resource and flood risk management.
      - Geologic mapping.
      - Natural (geologic) hazards.
      - Natural resource conservation.
- Work is underway to identify high-priority communities of use for the National Atlas.
- Work with these communities to identify and anticipate the needs of users, and the value of satisfying these needs to the user (see example in Figure 2).
  - Consolidate and set priorities among the needs based on the value provided to users.

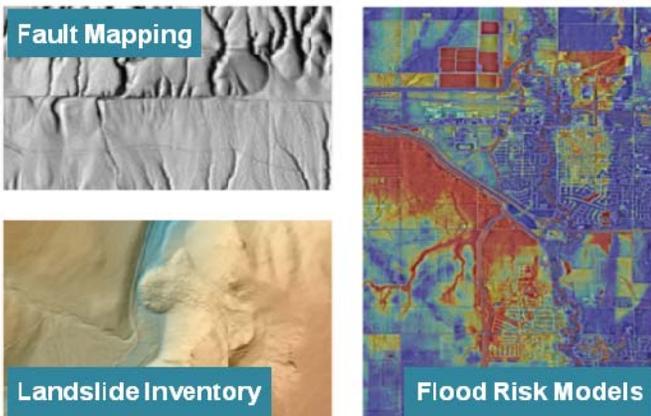


Figure 2. The Program is leading a multiagency effort to inventory needs for and benefits of enhanced elevation data among Federal, State and other organizations. The figure illustrates some business applications of the data. The Program will use the information to define efficient ways to meet the needs identified.

- Define the requirements for the Program’s products and services based on these needs.
- Measure user satisfaction with the Program’s products and services, and resolve issues that may arise.
- Assess the extent to which products and services meet prioritized user needs.
- Inform and educate users about the Program’s products and services, and how they respond to needs of users.
  - Communicate and demonstrate the value of the Program’s products and services to users, especially those in priority communities of use.
  - Train users in the use of the Program’s products and services.
  - Inform users about the planned evolution of products and services.
  - Develop and manage relationships with users for the mutual benefit of the users and the Program.
- Respond to needs identified by Congress and the executive branch.
  - Ensure that the Program’s activities are within the scope of authorities and appropriations provided by Congress, and the strategic direction of the Department of the Interior and USGS.

*What’s new?*

- Incorporate users’ needs into decisions about Program investment and directions.
- Focus on high-priority communities of use.
- Balance attention to users with that paid to partners.

**Action 2: Provide geospatial products and services that users incorporate into their decision making and operational activities.**

- Provide geospatial products and services that are verified to be valued by priority users and communities of use.
  - Develop products and services that enable users to spatially reference, integrate, and visualize their business data (see Figure 3). Employ users’ feedback and information about industry trends in this work.
  - Specify products and services that can be (1) readily incorporated by users into their normal business practices and (2) provided at minimum cost over the life cycle of the product or service.
  - Measure the delivery and use of products and services to verify that they comply with their specifications and are being consumed by priority communities of use.
- Support the incorporation of products and services into users’ business practices, especially by priority users and communities of use.
  - Through interactions with the communities of use, develop processes to understand and document how the Program’s products and services are used in decision making.

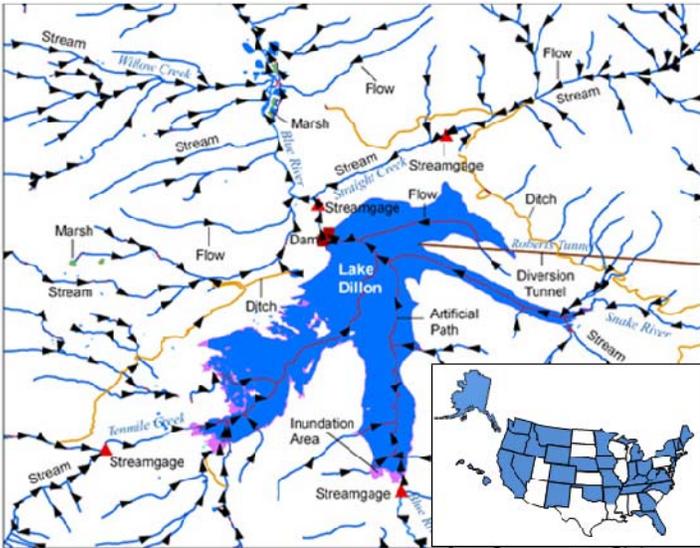


Figure 3. The National Hydrography Dataset, the surface water component of *The National Map*, supports the analysis of water systems. The States shown in the inset use the Hydrography Event Management Tool with the National Hydrography Dataset to link (or “geocode”) their water quality, quantity, habitat, and other business information to locations on the stream network.

- Formalize agreements with priority users for the delivery of products and services, and the level of service to be provided, by the Program. Monitor and report to the user the Program’s compliance with the agreements.
- Monitor the use of the Program’s products and services. Include the resulting information as an expression of need by users.
- Enable third parties to create products and services based on the Program’s offerings, especially for uses beyond the base offerings of the Program.
  - Develop channels for use and redistribution of the Program’s products and services by third parties.
  - Work with these parties to understand how the Program’s products and services meet their users’ needs. Include this information in analyses of users’ needs.
  - Ensure that the USGS is credited as a source in the products and services of third parties.

*What’s new?*

- Improve service and product provision based on needs of users.
- Monitor the usage of the products and services to verify that the improvements are valued by users.
- Move beyond product and service provision to develop an understanding of how the services and products are used in making decisions and operations, and improve products and services based on this understanding.

**Action 3: Organize and maintain geospatial data to ensure that the data support the specifications for products and services, and that life-cycle costs are minimized.**

- Balance the specification of the content and performance criteria of the products and services (and the underlying geospatial data) between the needs of users and resources available to meet those needs.
  - Specify the requirements for product and service content and performance criteria by balancing the needs of users and the cost of meeting the requirements.
  - Develop financial models for the content and performance criteria that include the cost of data acquisition and subsequent maintenance of the data.
  - Identify levels of product and service content and performance to scale to different levels of resource availability.
- Implement operations so that they can be scaled to available resources.
  - Manage and monitor the performance of operations to understand the capacity of the Program.
  - Ensure the Program has adequate subject matter expertise in its workforce to provide continuity in Program activities.
  - Use contracts and other approaches to permit the expansion of Program activities beyond a base level of operation.
- Ensure that the geospatial data support the planned performance criteria for products and services.
  - Monitor the quality of the data to ensure that they meet specifications. (For example, implement an inspection program to detect the need for updates.)
  - Report deficiencies in the data, and make needed improvements.

*What’s new?*

- Manage the balance between requirements for products and services, and resources available to satisfy these requirements.
- Scale operations to available resources.
- Monitor data quality and correct deficiencies before making enhancements.

**Action 4: Acquire geospatial data by working with organizations whose activities align with the requirements of the Program.**

- Acquire data that meets the requirements and schedule of the Program.
  - Target the acquisition of data that meet the content and performance criteria of the Program’s products and services.

- Plan geospatial data acquisitions to coincide with the schedule and requirements for product and service development and maintenance.
- Work with partners and suppliers to identify and implement means of reducing the costs of integrating and maintaining data.
- Evaluate non-traditional approaches to acquire data that meet the performance specifications of products and services as economical opportunities arise.
- Be a good collaborator when working with partners and suppliers to acquire data.
  - Minimize the level of effort and improve business processes required for partners and suppliers to work with the Program.
  - Increase the efficiency of working with partners and suppliers through the use of common approaches and tools, and other means.
  - Organize data acquisition projects that minimize costs to participants.
  - Clearly communicate and follow through on expectations of all parties to an agreement.

*What's new?*

- Focus data acquisition activities (partnerships and contracts) on fulfilling users' needs for data, services, and products.
- Encourage practices that make it easier for the Program, and partners and suppliers, to work together.
- Take advantage of broader opportunities in the geospatial community and to be open to a wider set of partners and suppliers.

**Implementation and Schedule**

The Program is using the Federal Enterprise Architecture approach to define the highest priority activities needed to accomplish this plan, and to schedule these activities. The first cycle of these activities and schedules is anticipated to be completed in early calendar year 2012, with implementation activities scheduled through 2014.

The Program's product and service plans provide more detailed plans for the development of product and service offerings.

**Relationship to Other Departmental, Bureau, and Governmentwide Plans**

**Department of the Interior Strategic Plan**

The Program's contribution to accomplishing the Department's strategic plan (U.S. Department of the Interior 2011) is recorded under goal 4, "Develop a comprehensive science framework for understanding the Earth" of mission area 4, "Provide a scientific foundation for decision making." The Program plan implements strategy 3, "Advance the earth science application of geospatial information" by accomplishing the performance measure "Percent of the area of 48 States and DC [District of Columbia] published as high-resolution base geospatial databases and

topographic map images that depict current geospatial information." (U.S. Department of the Interior 2011, p. 35).

**U.S. Geological Survey Science Strategy Plans**

In 2007, the USGS published new strategic science directions it will address during the period 2007-2017 (U.S. Geological Survey 2007). The bureau is developing ten-year plans to implement this vision (U.S. Geological Survey 2011).

While these plans still are draft, it appears that the Program's activities will align well with these strategies. The priority communities of use listed above align with several of the USGS mission areas. The draft plan for the Core Science Systems mission area (Bristol and others 2011), of which the Program is a component, describes geologic and topographic mapping as a basic foundation for all studies of earth systems, and identifies the need for high-resolution elevation data, spatial data that facilitates the integration of scientific knowledge, and data delivery approaches that allow users integrate geospatial data into their business activities.

**Governmentwide and Departmental Plans**

As instructed by the Office of Management and Budget, the Program will carry out leadership responsibilities for governmentwide coordination of geospatial data themes and other activities.

The Program looks forward to taking advantage of operational governmentwide and departmentwide initiatives that will reduce costs. It will leverage and participate in these operational enterprise activities to help the Program service its users and work with partners and suppliers more efficiently and effectively.

The Program will continue to be a robust participant in the National Spatial Data Infrastructure by contributing its data, products, and services for use by the community; employing standards-based approaches; providing metadata for its data; participating in data discovery methods; working with partners for data acquisition to leverage resources and avoid duplication; sharing the results of its research, standards, and other technical work with the community; and encouraging and participating in coordination activities.

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### ***Trademark Information***

The National Atlas of the United States of America® and The National Atlas of the United States® are registered trademarks of the U.S. Department of the Interior.

### ***Definitions of Selected Terms***

community of use – a group of users with characteristics that cause them to demand similar products or services.

geocoding – the process that transforms a description of a feature location, such as a place name, address, or other geographic code, into a normalized description of the location, which includes coordinates. Of particular interest for *The National Map* is the ability to geocode observations of the conditions of surface water using reach codes encoded in the National Hydrography Dataset.

orthorectified image – an image of the Earth from which displacements caused by terrain relief and sensor tilt have been removed. The result combines the image characteristics of a photograph with the geometric qualities of a map.

**Appendix A: Core Competencies of the U.S. Geological Survey**

Core competencies are the key skills, characteristics, and assets that an organization develops and maintains to excel in its business activities. They are the essential qualities that, when used to achieve the vision and mission of an organization, differentiate its capabilities with those of other organizations.

The core competencies of the USGS are impartiality, credibility, and scientific excellence; relationships and partnerships; multidisciplinary workforce with national presence; long-term national data bases; and long-term, broad-scale, multidisciplinary interpretive studies (U.S. Geological Survey 1996). A description of these competencies is provided below.

*Impartiality, credibility, and scientific excellence:* “The responsibility for providing credible, impartial scientific information to those charged with making public policy is central to the mission of the USGS. As the Nation’s earth scientist, the USGS has the responsibility to provide impartial data and the most informed interpretations that advanced earth science has to offer. The reputation of the USGS is the result of the collective and individual actions of its employees.” (U.S. Geological Survey 1996, p. 13)

*Relationships and partnerships:* “The USGS must cherish and nurture its relationships and partnerships by giving timely and responsive results to customers, and by reaching out to partners, with collegial respect. Public and private entities must form alliances to leverage resources, in order to help understand and solve societal problems that commonly have regional and sometimes global impacts. As budgetary pressures increase, the USGS will gather larger quantities of earth science data and information through and from partners.” (U.S. Geological Survey 1996, P. 18)

*Multidisciplinary workforce with national presence:* “The USGS must bring diverse talents to earth science challenges of the future. The required disciplines will vary according to society’s needs, but the USGS must retain its capability to apply scientific understanding anywhere in the Nation.” (U.S. Geological Survey 1996, p. 22)

*Long-term national data bases:* “The USGS must be the national leader in organizing and managing earth science data and information and making both available in useful forms. Although the USGS will continue to collect some of the data, it is more important that the USGS assume leadership in seeing that long-term measurements and descriptions of the Earth are properly documented, archived, and distributed to the public. The USGS must guide the quality of long-term, national data bases to ensure that their contents are reliable and accurate.”

“The USGS must ensure that its data are well managed. Good management includes finding new uses for data and ensuring that the data can be integrated and interpreted to support new understanding of earth processes.” (U.S. Geological Survey 1996, p. 26)

*Long-term, broad-scale, multidisciplinary interpretive studies:* “The USGS must excel in understanding the scientific principles of earth processes. The USGS is in a unique position to apply a nationally distributed, multidisciplinary workforce to long-term, broad-scale, multidisciplinary studies. ... While the USGS as an organization will continue to conduct some scientific studies of short duration, limited scale, or narrow disciplinary scope, there will be increasing emphasis on earth science work that is much broader in scope and perhaps beyond the capabilities of other organizations.” (U.S. Geological Survey 1996, p. 30).



**Appendix B: Strengths-Weaknesses-Opportunities-Threats Analysis**

A Strengths-Weaknesses-Opportunities-Threats (SWOT) analysis helps an organization identify internal advantages and disadvantages (strengths and weaknesses respectively) and external advantages and disadvantages (opportunities and threats respectively) to achieve an objective. It is used to guide strategy, plan, and prioritize needs.

The diagram below is a modification of the analysis conducted as part of the Program’s enterprise architecture activity (National Geospatial Program 2010). Business drivers, the draft strategic plan, and documentation of stakeholder needs were used to develop the diagram.

	Strengths	Weaknesses
Internal Factors	<p>Tradition and reputation.</p> <p>National position – national reach:</p> <ul style="list-style-type: none"> <li>• Partnership network.</li> <li>• Relationship to the geospatial community.</li> <li>• Positioned to work with other Federal agencies.</li> <li>• Positioned to work across geographies and fill gaps.</li> <li>• Manage and create a lot of the Nation’s geospatial data.</li> </ul> <p>National responsibilities:</p> <ul style="list-style-type: none"> <li>• Broad legislated authority.</li> <li>• Assigned key leadership responsibilities in Circular A-16.</li> </ul> <p>Content and skills:</p> <ul style="list-style-type: none"> <li>• Access to geographic and cartographic technical expertise.</li> <li>• Management of historical data assets.</li> <li>• National level of data delivery.</li> <li>• Extensible data set that provide high-value information.</li> <li>• Experienced in large-scale data acquisition.</li> <li>• Flexible funding tools.</li> <li>• Practiced stewardship model.</li> <li>• Maturing product and service approach.</li> </ul> <p>Resources:</p> <ul style="list-style-type: none"> <li>• Steady supply of appropriated resources, budget, and capacity.</li> </ul>	<p>Tradition and reputation.</p> <p>Customer relations and market:</p> <ul style="list-style-type: none"> <li>• Not been able to document value to other organizations.</li> <li>• Inadequate customer understanding and management.</li> <li>• Limited external communications reach.</li> <li>• Inconsistent communications message.</li> </ul> <p>Program management:</p> <ul style="list-style-type: none"> <li>• Difficulty in reporting accomplishments and understanding resource usage.</li> <li>• Failure to deliver on promises to partners and cooperators.</li> <li>• Difficulty in keeping up with industry advances.</li> <li>• Internal communications inadequate.</li> <li>• Limited management and decision making processes.</li> <li>• Weak prioritization methods, which lead to budget allocation challenges.</li> <li>• The maturing product and service approach is not fully understood.</li> </ul> <p>Technical management and skills:</p> <ul style="list-style-type: none"> <li>• Difficulty in recruiting and retaining technical expertise in applied geospatial research, engineering, project management, and information technology skills.</li> <li>• Lack of strategy and plan in technical management, system engineering, technology modernization, and applied research and development.</li> </ul> <p>Resources:</p> <ul style="list-style-type: none"> <li>• Program’s approach to working with the partnership network does not yield a timely and dependable supply of data.</li> <li>• Steady-to-declining levels of appropriated funding.</li> </ul>

	Opportunities	Threats
External Factors	<p>Market maturity:</p> <ul style="list-style-type: none"> <li>• Strong demand for geospatial information product and service delivery in the marketplace.</li> <li>• Customers and partners willing to consider collaboration through service level agreements, memoranda of understanding, and other arrangements.</li> <li>• Research and development underway in long-term data maintenance with national holders of information.</li> <li>• Web 2.0 and interoperability standards are maturing.</li> <li>• Increasing maturity of consumers of geospatial information.</li> <li>• Customer interest in developing the extensibility of national geospatial data assets.</li> </ul> <p>Market position:</p> <ul style="list-style-type: none"> <li>• Rebranding opportunity with clearly-defined product and service and data strategy.</li> <li>• Strategic distribution through channel development and redistribution agreements.</li> <li>• Roles available for provider of geospatial services and data integration, hosting, broker, and platform provider to the Government. Niche markets also available.</li> <li>• Continued growth of users and applications from new technology, such as mobile computing and crowd sourcing.</li> </ul> <p>Resources:</p> <ul style="list-style-type: none"> <li>• Advocacy for increased funding possible from users who perceive the value of the Program’s products and services to their needs, and potential cooperators who seek to share resources.</li> </ul>	<p>Market maturity:</p> <ul style="list-style-type: none"> <li>• Unwillingness of potential key partners to enter into performance-based service level agreements.</li> </ul> <p>Market position:</p> <ul style="list-style-type: none"> <li>• Ability to keep up with technology.</li> <li>• Competition from commercial service delivery of geospatial information.</li> <li>• Commoditization of the value of framework data.</li> <li>• Government contribution not unique in some data themes.</li> <li>• Market takes framework data for granted – market not sensitive to qualities provided by the government.</li> </ul> <p>Content:</p> <ul style="list-style-type: none"> <li>• The Program depends on the leadership of others for some themes in Circular A-16. Those efforts sometimes do not yield a dependable supply of data, leaving the Program to meet needs for data by itself or in an ad hoc manner.</li> <li>• Circular A-16 lacks the clarity required to successfully address national data management issues.</li> </ul> <p>Resources:</p> <ul style="list-style-type: none"> <li>• Budget cycle has a lengthy duration. The cycle is most flexible at the beginning, and lacks flexibility throughout its duration.</li> <li>• The likelihood of declining resources available to partners restricts their ability to work with the Program.</li> <li>• Federal ethics and acquisition rules limit or delay Program participation in opportunities to coordinate and leverage data acquisition opportunities.</li> </ul>

**Appendix C: Transitions anticipated by implementing the plan.**

Topic	Then	Now	Future
<b>Program priorities</b>	Develop underpinnings of the National Spatial Data Infrastructure.	Concentrate on development of eight themes of national data coverage.	Focus efforts to develop data coverage and provide products and services on needs of high-priority users.
<b>Satisfy users</b>	Provide web portal to allow users to discover and apply the Program's and other organizations' data.	Begin to provide tools to help users apply Program data.	Identify priority users' needs by working with communities of use. Follow up with users to ensure that the products and services meet their needs. Maintain awareness of how third parties employ the Program's offering to satisfy users.
<b>Data acquisition</b>	Organize and participate on data collection projects with partners. Target efforts on available partnerships. Acquire data through partners and contracts with the private sector. Encourage organizations to publish data on the portal.	Organize and participate on data collection projects with partners. Target effort on available partnerships. Acquire data through data partners, stewards, contracts, and data purchases.	Organize and participate on data collection projects with partners. Target efforts to meet priority users' needs. Acquire data through partners, stewards, contracts, data purchases, and other economical arrangements. Improve and simplify tools and methods through which partners and contractors interchange data with the Program.
<b>Products and services from <i>The National Map</i></b>	Publish national data bases through data download and web map services. Maintain multiple web sites and viewers for accessing data for viewing and download. Provide data for third parties to incorporate Program's products and services into their offerings.	Publish national data bases through data download and web map services. Consolidate web sites and viewers for accessing data for viewing and download. Publish US Topo electronic topographic maps for the 48 conterminous States. Provide data for third parties to incorporate Program's products and services into their offerings.	Employ priority users' needs in the design of products and services. Publish national data bases through data download and web map, feature, coverage, gazetteer, and analytical services. Increase data content and tools for selected data sets to respond to needs of high-priority users. Publish US Topo electronic topographic maps for the 50 States. Increase awareness of how third parties incorporate the Program's products and services into their offerings.

Topic	Then	Now	Future
<b>Products and services from The National Atlas</b>	Provide map viewer, data for download, web map service, and printed maps from 1:2,000,000-scale base data. Provide thematic maps and articles for subjects included in The National Atlas. Target improvements based on feedback from the user community.	Use new 1:1,000,000-scale base data as the basis for an updated web map service and data download. Continue to provide thematic maps and articles for subjects included in The National Atlas. Produce a new online “set of 100” topographic maps to educate map readers to interpret terrain features on maps and aerial photographs.	Provide maps, web services, and other products and services based on findings from customer research.
<b>Operations</b>	Pursue competitive sourcing to organize and staff technical operations.	Implement re-engineering plan to organize and staff a technical operations center.	Streamline operational roles, responsibilities, and data flows, and improve the availability of project tracking information.

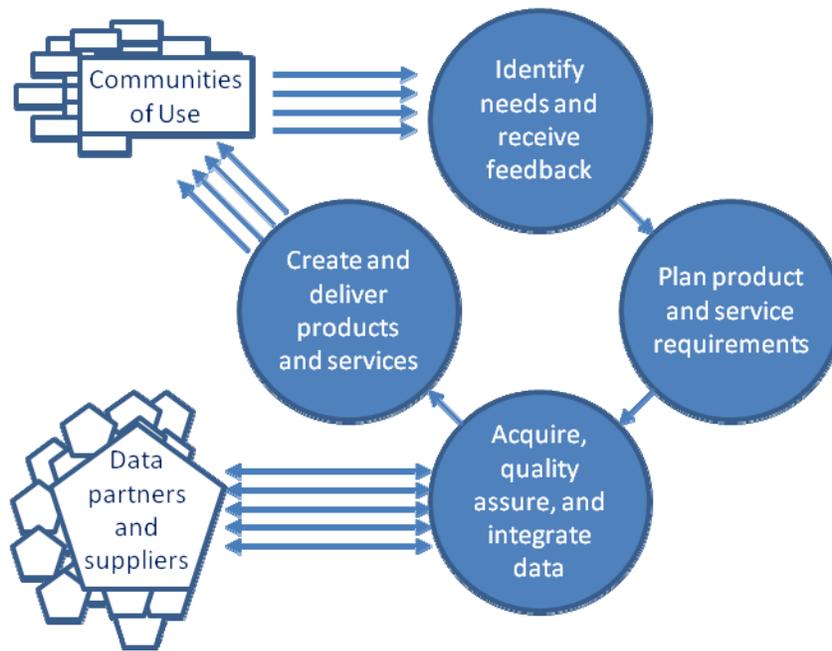


Figure 4. The National Geospatial Program will work through priority communities of use to identify user needs that inform plans for products and services. These plans are the basis for operational activities to acquire, quality assure, and integrate data into national databases. The program acquires data by working with partners and suppliers. The updated national databases provide the basis for creating and delivering products and services to users.