

# Advancing the Fifty States Initiative



FINAL VERSION

# Measuring Progress of the Fifty States Initiative Report

September 2009

## Contract Information

---

This document was produced under contract to the Federal Geographic Data Committee (FGDC):

**Contract Number:** 08HQCN0024

Prime Contractor:



Subcontractors:



# Table of Contents

<b>1</b>	<b>Abstract</b> .....	<b>4</b>
<b>2</b>	<b>Executive Summary</b> .....	<b>5</b>
2.1	Overview .....	5
2.2	Purpose .....	5
2.3	Scope.....	5
2.4	Results.....	5
<b>3</b>	<b>Background</b> .....	<b>9</b>
3.1	Fifty States CAP Grant Category.....	9
3.2	Purpose .....	9
3.3	NSGIC State Summaries Survey and Nine Criteria .....	9
3.4	Analytical Context.....	10
<b>4</b>	<b>Coordination Approaches</b> .....	<b>11</b>
4.1	Coordination Measurement Approaches.....	11
4.1.3	Two Levels of Coordination Measurement.....	11
<b>5</b>	<b>Assessment of Nine Criteria</b> .....	<b>12</b>
5.1	Nine Criteria Approach & Methods.....	12
5.2	Nine Criteria Measurement.....	13
5.3	Nine Criteria Results.....	15
<b>6</b>	<b>Assessment of the “Five Questions”</b> .....	<b>17</b>
6.1	Five Questions Approach & Methods.....	17
6.2	Five Questions Measurement.....	18
6.3	Five Questions Results.....	18
<b>7</b>	<b>Federal Employee Survey</b> .....	<b>20</b>
7.1	Federal Employee Survey Approach & Methods .....	20
7.2	Federal Employee Survey Measurement.....	21
7.3	Survey Responses .....	22
7.4	Federal Employee Survey Results .....	27
<b>8</b>	<b>Assessment of State Case Studies</b> .....	<b>28</b>
8.1	Case Study Approach & Methods .....	28
8.2	The Case Studies .....	28
8.3	Case Study Results .....	38
<b>9</b>	<b>Analytical Challenges</b> .....	<b>39</b>
9.1	Analytical Challenges & Limits of Quantitative Analysis for Geospatial Coordination .....	39
<b>10</b>	<b>Conclusions and Recommendations</b> .....	<b>41</b>
	<b>Appendix A: NSGIC State Summaries Survey</b> .....	<b>43</b>
	<b>Appendix B: Federal Employee Survey</b> .....	<b>55</b>
B. 1	Background Information .....	55
B. 2	Selected federal agency state and/or regional staff survey questions .....	56
	<b>Appendix C: Open-ended Responses to Federal Employee Survey from Question 9</b> .....	<b>58</b>

## List of Tables and Figures

Table 5-1. Nine Criteria Scorecard.....	13
Table 5-2. Nine Criteria – 2006 State Means .....	14
Table 5-3. Nine Criteria – 2007 State Means .....	14
Table 5-4. Nine Criteria – 2008 State Means .....	14
Table 5-5. Nine Criteria - Green Means (Recipients and Non-Recipients of Fifty States CAP grants) .....	15
Table 5-6. Nine Criteria - Red Means (Recipients and Non-Recipients of Fifty States CAP grants) .....	16
Table 6-1. Five Questions - State Means (Recipients and Non-Recipients of Fifty States CAP grants).....	18
Figure 7-1. Fifty States Strategic and Business Plan Templates .....	22
Figure 7-2. Contribution to the NSDI.....	23
Figure 7-3. Active Participation in Strategic and/or Business Planning.....	23
Figure 7-4. Need of Fifty States Initiative Grants .....	24
Figure 7-5. Improved Geospatial Coordination with Grants .....	24
Figure 7-6. Effective Statewide Coordination .....	25
Figure 7-7. Fifty States Initiative Grants Enable Geospatial Coordination.....	25
Figure 7-8. Contribution Improvement.....	26

# 1 Abstract

---

The Federal Geographic Data Committee (FGDC) administers the Cooperative Assistance Program (CAP) to advance the National Spatial Data Infrastructure (NSDI). To provide insight into how the Fifty States CAP grant category has improved intrastate and interstate coordination on geospatial matters, and thereby impacted the growth of the National Spatial Data Infrastructure (NSDI), this report analyzes quantitatively and qualitatively how these grants benefited state government geospatial activities. Four analyses applied in this report are: 1) analyses of the nine criteria for successful geospatial coordination from the National States Geographic Information Council (NSGIC) Survey, 2) analyses of five questions from the NSGIC Survey selected by the analysis team based on those question being indicators of the level of success in coordination, 3) survey responses from federal employees concerning the effectiveness of Fifty States Initiative grants in improving state geospatial coordination, and 4) a qualitative assessment of changes in the effectiveness of state coordination efforts based on five case studies of states that have received grants. The Federal Employee Survey and qualitative assessment provided strong evidence that grants have been effective and useful for states.

Reliable quantitative analysis is currently problematic due to the limitations of existing information resources and data that were created for different purposes. Significant measurement challenges also exist due to the relative “newness” of the grants (three years), and the expectation that there will be a lag time between receiving funding and when one might reasonably expect to be able to detect the external results of that funding.

The report offers conclusions and recommendations for the future of this grant program and how to effectively measure and monitor progress in the future.

## **2 Executive Summary**

---

### **2.1 Overview**

Since the National Research Council coined the phrase National Spatial Data Infrastructure (NSDI) in 1993, there has been a great deal of thought and considerable effort made to advance what is still an incompletely defined concept. The Fifty States Initiative aims to encourage the creation of NSDI by pursuing the notion that the NSDI can best be achieved through active intergovernmental cooperation and coordination built on a sound strategic and business planning process.

### **2.2 Purpose**

The purpose of this document is to provide insight into how the Fifty States CAP grant category may have enhanced geospatial coordination and thereby indirectly advanced the development of the NSDI through the enhancement of state government geospatial capacities. Coordination may produce benefits, both internally within a state and externally with a state's neighbors or federal government partners.

### **2.3 Scope**

The scope of this analysis is a multi-faceted examination of the limited data available from several sources. It provides both quantitative and meaningful qualitative information that are individually and collectively suggestive of the success of the Fifty States Initiative in improving geospatial coordination.

### **2.4 Results**

There are strong indications that the Fifty States CAP grants have improved state geospatial coordination and, by extension, state contributions to the NSDI. These indications are particularly evident in the results of a survey of Federal stakeholders in the Fifty States Initiative, as well as case studies of active states who were grant recipients. At the same time, there are significant data limitations that presently make it difficult to confidently analyze quantitative information on state geospatial progress. Going forward, measures to ensure that specific data on grant outcomes is captured by grant recipients in a consistent manner would be helpful for measuring overall progress on geospatial coordination and the effectiveness of the program.

The important findings that this study provides concerning the effectiveness of the Fifty States CAP grants are as follows:

- State case studies show that the Fifty States CAP grants have been a critical catalyst for planning, goal setting, and achievement. For the states investigated in detail, the

grants have stimulated greater involvement, investment, and progress. The level of political commitments and institutional changes that have occurred as a result of CAP grant funded planning efforts indicate that the gains are both substantial and sustainable

- The Fifty States CAP grant program is considered successful by the surveyed USGS Geospatial liaisons, Census Regional Geographers, and State Geodetic Advisors – federal employees having direct contact with the grant recipients and the Fifty States Initiative. Responses to a survey indicate strong agreement with statements concerning the usefulness of the Strategic Plan and Business Plan Templates (now known as Guidelines) and with the positive contribution of the grant assistance program. These perceptions are an important indicator of the visibility and favorable impression that these CAP grant funded efforts have achieved.
- Data on measures of state coordination collected for the period 2006-08 indicates that most states have established a baseline level of coordination, but that funding remains a primary concern.

In addition, from the review of state experiences and survey data include, other noteworthy findings include:

- State progress on coordination proceeds in an incremental fashion, and takes time. Many states have been working on coordination for a decade or more. Change at the scale of state government, especially where it also involves the engagement of local government and private sector partners, is a multi-year process.
- Repeated planning efforts that either revisit prior plans or start fresh are required on a regular basis in order to maintain momentum, political support, and the attention and engagement of stakeholders.
- Leadership is a critical factor in advancing the coordination agenda, including a recognized advocate for GIS (i.e. State GIS Coordinator or GIO) who has political support and institutional support, and a clear mandate for statewide coordination.
- States often experience lags and setbacks associated with lack of funding, slow pace of organizational change, the time required for passage of enabling legislation, and dependence on a high degree of cooperation and effort (oftentimes voluntary) for the implementation of programs.
- State historical experiences and means of progressing toward greater coordination vary widely, and there is no single path toward the goals of the Statewide Spatial Data Infrastructure (SSDI) and NSDI. In other words, states are starting from different levels of coordination and proceeding in distinct ways. Some of the drivers for these differences are variations in: state political processes, levels of monetary and staff resources, sense of urgency, ability of stakeholders to articulate the need for geospatial data and data coordination, and organizational mandates and interrelationships.

- Survey data on measures of coordination indicate a stable baseline of coordination achievement for the three year period, 2006-08; thus, the data collected to date are not a sensitive indicator of “progress” or change over time
- The three year period covered by current survey data (2006-08) is not long enough to capture changes that are occurring at the state level as a result of the Fifty States CAP grant program given the anticipated and known lags between planning and planning impact.

The following points are the important overarching conclusions from this study:

- The Fifty States CAP grant program has made a positive difference at the state level in specific notable ways as shown by case histories, particularly in critical areas of institutional change and staffing, political support, additional funding, increased visibility and engagement of stakeholders, and in planning and initiation of specific programs.
- The Fifty States CAP grant program is highly visible and well-received by states, and participation now includes most of the 50 states and territories; many of the grant funded plans have been completed and are “bearing fruit.”
- GIS planning and coordination have gained “new” visibility within states and GIS stakeholders (including federal partners, state agencies, local government) are increasingly aware of lessons learned and “new” initiatives occurring in other sister states
- The Fifty States planning process (based on the Strategic and Business Plan Guidelines) has proven itself useful for guiding the grant recipients in planning efforts and enhancing the quality and specificity of strategic and business plans; it has proven itself to be a flexible framework that is useful to states with widely different circumstances
- Complacency with respect to coordination planning, funding, or implementation is not an option. Stresses on state budgets, the urgency of other state business and concerns, and the poorly understood importance and value of GIS and geospatial data in state political and legislative circles defines the challenge that remains for the future of state coordination in support of SSDI and NSDI.

Based on the findings and conclusions of this review of state experiences and survey data, we make the following key recommendations:

- Continued success and consolidation of the gains made over the past four Fifty States Cap grant cycles requires continued investment in the planning and coordination process, including: (1) ongoing review of progress and of the causes of setbacks and delays; (2) periodically revising and updating the Strategic and Business Plan Guidelines; (3) cataloging and fostering exchange of information, lessons learned, best practices and success stories among states; and (4) most importantly, continued funding to stimulate the refreshment and advancement of prior plans or to establish new ones.

- More investigation is required to establish how current generalized survey approaches or alternatives can effectively “measure” in aggregate the ways that states are progressing toward coordination. The current set of collected data on the nine coordination criteria, for example, do not show sufficient variation across states nor through time to support conclusions about the impact of the Fifty States CAP grants or other types of intervention on interstate variability or change over time.
- Because the grant funded plans are tailored to each state, we recommend incorporating a progress reporting mechanism that allows the states to report on progress with respect to their individual plans in the years following the grant – e.g., to report the tangible accomplishments tied to their state-specific strategic and programmatic goals or business plans toward advancing NSDI. This would provide a finer-grained picture of the progress being made, with information on where and what kinds of setbacks are being encountered. This would help to establish “cause and effect” relationships between planning efforts and outcomes; and, it would provide program administrators an individual state-level and an aggregate national-level picture of the direct impact of the Fifty States CAP grant program.
- Continued refinement of the definition of the NSDI to the level where specificity allows more direct and definitive measurement of its degree of achievement, and implications for state level coordination. This would assist and allow for strengthening of the Fifty States CAP grant program, enabling strategic and business planning to be brought into closer alignment with known and measurable success criteria.

## **3 Background**

---

### **3.1 Fifty States CAP Grant Category**

The Cooperative Agreement Program (CAP) administered by FGDC provides federal funding opportunities in support of NSDI, including a grant category for states in support of the Fifty States Initiative. This category of grants (i.e. Fifty States CAP grants) purposefully seeks to assist states to develop strategic and business plans to improve geospatial coordination in support of their own statewide spatial data infrastructures (SSDI) and the NSDI. As the 2009 CAP guidance describes, state projects for this category are designed to help develop and implement “statewide strategic and business plans that will facilitate the coordination of programs, policies, technologies, and resources that enable the coordination, collection, documentation, discovery, distribution, exchange and maintenance of geospatial information in support of the NSDI and the objectives of the Fifty States Initiative Action Plan.” Fundamentally, the Fifty States Initiative recognizes the need to build the NSDI with the essential involvement of State and local government partners.

Fifty States CAP grants have been awarded annually since 2006. The FGDC has awarded eight to twelve cooperative agreements of up to \$50,000 each year, with the recipients matching 50% of the award with funding or in-kind services.

### **3.2 Purpose**

This Statewide Coordination “Measuring Progress” Report assesses the Fifty States CAP grant program and its impacts on furthering state geospatial coordination and, by extension, the NSDI. The report briefly summarizes approaches that have been used in the past to promote a more robust NSDI and examines criteria currently used by states to measure statewide coordination of geospatial data. Information on geospatial developments at the state level is currently gathered by the National States Geographic Information Council (NSGIC) and these data were examined to assess the impacts of the Fifty States CAP grants on statewide coordination. In order to get a more complete picture of the impacts of CAP funding, this report also examines responses to a Federal Employee Survey, and qualitative opinions from state liaisons on the efficacy of the CAP program. These findings are presented and suggested conclusions and recommendations for the future of the CAP program are included.

### **3.3 NSGIC State Summaries Survey and Nine Criteria**

The National States Geographic Information Council (NSGIC) State Summaries Survey is an annual and systematic tool that is currently used to document state geospatial management progress and contributions made to the NSDI. The survey (found in Appendix A: NSGIC State Summaries Survey) is annually administered to all states and select territories. It seeks to meas-

ure the establishment of certain capabilities and actions, such as clearinghouse nodes and data sharing agreements, by each state. Many of these capabilities and actions have clear implications for the success of coordination efforts.

In May 2004, NSGIC developed a list of nine critical success factors and criteria needed for effective statewide geographic information coordination programs. NSGIC intends that these criteria for coordination of geospatial information will guide the states and federal agencies to emphasize partnership building, which inherently involves coordination. Elements of this survey provide two important components for analysis: 1) the nine criteria, and 2) five selected questions whose answers are unambiguous and suggestive of progress in geospatial coordination (hereafter known as “the five questions”).

### **3.4 Analytical Context**

The empirical results of the NSGIC Survey serve as a starting point for analysis included in this Measuring Progress Report. The nine criteria and five questions attempt to provide a quantitative benchmark for future analyses. These components of the NSGIC Survey do not in and of themselves establish the efficacy of the Fifty States CAP grant program, yet they do offer time-series and time-sensitive data to help assess state progress over a three year period.

## 4 Coordination Approaches

---

### 4.1 Coordination Measurement Approaches

#### 4.1.1 NSGIC State Summaries Survey

NSGIC conducts an annual survey of the states to evaluate their efforts to improve statewide coordination councils/authorities in furtherance of the NSDI. Status against the evaluation criteria are tracked within the NSGIC State Summaries Survey that is administered yearly to each state, select territories and Washington, DC (hereafter referred to collectively as “states”). For the purposes of this Measuring Progress Report, only two portions of the NSGIC Survey were used in an attempt to assess state coordination and contributions to the NSDI. These are: 1) the “nine criteria” and 2) the “five questions” elements of the survey. All data comes from the NSGIC website and represents a 3-year analysis period (2006 – 2008) for each state.

#### 4.1.2 Non-NSGIC Sources of Information

To assess the coordination efforts of states and the efficacy of the Fifty States CAP grants, this report uses the following two additional sources of information: 1) responses to a survey from USGS State Liaisons, National Geodetic Survey State Geodetic Advisors, and Bureau of the Census Regional Geographers, and 2) a qualitative assessment consisting of four case studies from states that received grants. This information is independent of the NSGIC Survey.

#### 4.1.3 Two Levels of Coordination Measurement

The analysis of these four separate and distinct measurements is intended to shed light on two important questions:

- 1) Has there been progress in the degree of geospatial interaction and coordination across and between state and local agencies *within* the state as well as the degree of interaction and coordination *between* the state and federal government agencies that are geospatially active in a state?
- 2) What are the outcomes of that coordination in terms of contributions to the NSDI?

The NSGIC State Summaries Survey (including the analysis of the nine criteria and five questions) provide *quantitative* information based on data gleaned from the survey. The federal employee survey and the case study analysis of selected states provide *qualitative* information based on the opinion of people who interact with the states.

## 5 Assessment of Nine Criteria

---

### 5.1 Nine Criteria Approach & Methods

The nine criteria are relevant to the analysis due to their ability to present state responses to prompts that are indicative of improved statewide coordination. Through the establishment of coordinator positions, authority figures, formal relationships with information officers, formal relationships with the Federal government, internal methodology for disseminating information, and the accessibility to funding, states can demonstrate their ability to achieve goals that are highly associated with improved coordination.

The nine criteria focus on the:

- Establishment of certain positions within the state to facilitate coordination,
- Existence of a statewide coordination office and formal relationships with NSDI, and
- Existence of Federal funding and communication.

The nine criteria are as follows:

1. A full-time, paid coordinator position is designated and has the authority to implement the state's business and strategic plans.
2. A clearly defined authority exists for statewide coordination of geospatial information technologies and data production.
3. The statewide coordination office has a formal relationship with the state's Chief Information Officer (or similar office).
4. A champion (politician or executive decision-maker) is aware and involved in the process of coordination.
5. Responsibilities for developing the National Spatial Data Infrastructure and a State Clearinghouse are assigned.
6. The ability exists to work and coordinate with local governments, academia, and the private sector.
7. Sustainable funding sources exist to meet projected needs.
8. Coordinators have the authority to enter into contracts and become capable of receiving and expending funds.
9. The Federal government works through the statewide coordinating authority.

For each of these criteria, the states responded with a numerical rating of 1 through 5, with 5 representing best performance against criteria. These ratings corresponded to different levels of

agreement or implementation, levels that are thoroughly defined in Figure 5-1. The nine criteria element of the survey is provided every year and this allowed the project team to attempt to track progress in spatial coordination over the 3 years from 2006 to 2008.

A scorecard approach used in the analysis of these responses determines improvement and change with respect to coordination within the states. Each response corresponds to a color-coded scorecard rating that aligns with a numerical response. This numerical scale and corresponding color-code ratings are described below.

<b>Nine Criteria: Level of Agreement/Implementation</b>	<b>Numerical Rating</b>	<b>Scorecard Rating</b>
We previously had this function and lost it over the past year	1	RED
No plans at this time for implementing this criteria	2	RED
We currently are planning to implement this within the next 12 to 18 months	3	YELLOW
Progress has been made and we reasonably expect this to be fully implemented within the next 12 months	4	YELLOW
Implemented at this time	5	GREEN

**Table 5-1. Nine Criteria Scorecard**

The project team performed an analysis on the answers from each state for the years 2006 through 2008. The analysis documented and then matched answers with corresponding color-code ratings. From here, the team performed an extensive examination to determine whether state progress had been made over the three year period. States receiving Fifty States CAP grants were compared to states not receiving these CAP grants to determine if the grants correlated to states advancing from one color-code to another (e.g., red to yellow, or yellow to green).

## 5.2 Nine Criteria Measurement

Using the scorecard approach described above, the team performed an analysis on how states improved on their ratings for the nine criteria over 3 years. States were segregated as CAP States and Non-CAP states (vis-à-vis receipt of Fifty States CAP grants) in order to compare their coordination progress.

Once states were segregated, their response to each of the nine criteria was assigned a “red”, “yellow”, or “green” color-code based on the ratings described above in Nine Criteria Approach & Methods. These ratings were then summarized to determine the total number of each “red”, “yellow”, or “green” rating for each state. For example, Connecticut responded with a “5” to 22 of the possible 27 Criteria prompts (i.e., 9 criteria answers over 3 years), a “3” or “4” to 4 Criteria prompts, and a “1” or “2” to 1 Criteria prompt. Therefore, the total number of green ratings that Connecticut received for the analysis was 22, the number of yellow ratings was 4, and the number of red ratings was 1.

The means for green, yellow, and red ratings were then calculated for all CAP states and again for Non-CAP states. For example, in 2006, all CAP states combined responded with a “5” on the 9 criteria questions 4.61 times, responded with a “3” or “4” to the criteria 3.0 times, and responded with a “1” or “2” to a criteria 1.39 times). These averages were used as the basis for the analysis (described below) performed to determine if Fifty States CAP grants may be related to more successful or positive responses. The means were compared to determine if a significant difference existed and if means really represented separate populations.

For comparative purposes, 2006 responses will serve as the baseline values from which progress in 2007 and 2008 is measured. Means for states receiving Fifty States CAP grants and states not receiving such grants in the years 2006 to 2008 are shown below:

2006	CAP (Fifty States)	Non-CAP (Fifty States)
Green	4.61	5.22
Yellow	3.00	2.58
Red	1.39	1.19

Table 5-2. Nine Criteria – 2006 State Means

2007	CAP (Fifty States)	Non-CAP (Fifty States)
Green	4.83	5.89
Yellow	3.17	2.44
Red	1.00	0.67

Table 5-3. Nine Criteria – 2007 State Means

2008	CAP (Fifty States)	Non-CAP (Fifty States)
Green	4.78	5.89
Yellow	3.26	2.39
Red	0.96	0.69

Table 5-4. Nine Criteria – 2008 State Means

For this analysis of the nine criteria, the team used the Analysis of Variance (ANOVA) test to determine if the means were significantly different or not. This analysis provided a numerical value that allows a conclusion to be drawn at a set degree of confidence as to whether states receiving grants did perform at a significantly higher level than states not receiving grants according to their responses on the nine criteria section of the NSGIC Survey.

### 5.3 Nine Criteria Results

For the Nine Criteria ANOVA test, the means for states receiving grants and states not receiving grants were compared in each year (2006 – 2008) using a 95% confidence level ( $\alpha = 0.05$ ). This analysis yielded an f-value = .0000121 and a critical value = 4.4939. Since the f-value is below the critical value, it is concluded that state survey data submitted for the Nine Criteria is not statistically different at the 95% confidence level. Based on this data, there is no statistically significant difference in the results reported from states receiving grants and states not receiving grants in the year the state received a grant.

The ratios of green statuses between Fifty States CAP grant recipients and states not receiving such grants were also compared to determine if grant recipients might be out-performing or under-performing in comparison to states not receiving grants. When the means of the two groups are compared, and the mean of the Fifty States CAP grant recipients is divided by the mean from the non-recipients, this ratio can inform the reader if the CAP grant recipients are performing at a higher level if the ratio is greater than 1. If it is less than 1, those states receiving grants are underperforming.

From this particular perspective, Fifty States CAP grant recipients are underperforming as compared to the non-recipients. In the overall ratio, grant recipients were seen to be 83.9% as effective as non-recipients. Therefore, non-recipients reported a 16.1% higher green rating on the 9 questions in the NSGIC State Survey. This may also mean that the Fifty States CAP grant recipients are tougher critics of their own results, since the survey data is self-reported.

As illustrated in Table 5-5 below, states receiving Fifty States grants did improve in average green ratings from 2006 to 2007, but declined slightly from 2007 to 2008. Non-recipient states instead improved noticeably from 2006 to 2007, and then remained constant in their performance from 2007 to 2008.

Green Means	2006	2007	2008
Cap Grants (Fifty States)	4.60	4.83	4.78
Non-CAP (Fifty States)	5.22	5.88	5.88

**Table 5-5. Nine Criteria - Green Means (Recipients and Non-Recipients of Fifty States CAP grants)**

In addition to having a lower green rating as compared to non-recipients, Fifty States CAP grant states also received more red ratings in their reported responses. As illustrated in Table 5-6 below, although the number of red ratings for CAP states did decrease from 2006 to 2008, it did

not decrease at the same rate as those of states not receiving grants. Fifty States CAP grant states received a red rating 29.1% more of the time compared to states not receiving such grants.

<b>Red Means</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>
<b>CAP Grants (Fifty States)</b>	1.39	1.00	0.95
<b>Non-CAP (Fifty States)</b>	1.19	0.67	0.69

**Table 5-6. Nine Criteria - Red Means (Recipients and Non-Recipients of Fifty States CAP grants)**

## 6 Assessment of the “Five Questions”

---

### 6.1 Five Questions Approach & Methods

Like the nine criteria, the five questions are found in the NSGIC State Survey. These five questions were selected by the team from all the NSGIC Survey questions as being the most definitive indicators of geospatial coordination and associated contribution to the NSDI. These questions focus on the existence of **Clearinghouse Node** capabilities, the existence of **data stewards** for the state, and the **adoption of standards and data sharing agreements**. This set of questions provides insight into the impact on state coordination because more positive responses to these questions are assumed to be highly correlated to improved state geospatial coordination. Therefore, these questions offer states the opportunity to display their accomplishment of specific goals and achievements that link directly to improved coordination.

The Five Questions are as follows:

1. **Background #19: Please provide the URL link for your state GIS Clearinghouse Node.** This question was selected because if the state has no geospatial clearinghouse its ability to coordinate, to share data efficiently and effectively is severely impaired.
2. **Background #20: Is your Clearinghouse Node set up to be harvested by the Geospatial One-Stop (GOS) portal?** The question was selected because it demonstrates a state’s decision to actively contribute to national level efforts to build the NSDI. Coordination is presumed to increase if data is harvestable by the GOS portal.
3. **Background #21: Please provide a URL link to a list of GIS data stewards for your state.** This question was selected because it reflects an institutional commitment on the part of a state to actively curate its geospatial data holdings on an ongoing basis, thereby preserving and enhancing its utility. If data is being actively managed, the prospects for coordination with respect to that data are much improved.
4. **Scorecard #11: Does your GIS Council officially endorse the use of appropriate OGC, FGDC, ANSI, or ISO standards as appropriate?** This question was selected because the use of and adherence to common data standards is essential to any meaningful data-sharing, and data sharing is one of the primary purposes of coordination.
5. **Scorecard #13: Does your state actively develop and promote the use of data sharing agreements?** This question was selected because formal, institutionalized data-sharing is a crucial concept in geospatial coordination.

For the five questions, states could only answer in the affirmative or negative for each question. Affirmative answers consist of any response given that could satisfy the question by verifying the existence of a URL link for Background #19 and #21, or an answer in the affirmative for Background #20, Scorecard #11 or #13.

As with the nine criteria, the team performed analysis on each state’s responses for years 2006 to 2008. To calculate results, the analysis used a binary system to categorize the given responses. Affirmative answers received a numerical score of “1” and negative answers received a score of “0” for more applicable quantitative analysis. The analysis then compared states receiving Fifty States CAP grants to states not receiving these CAP grants to determine if receiving these grants correlated with a higher frequency of positive answers to the five questions.

## 6.2 Five Questions Measurement

Measurement for the five questions section of the NSGIC Survey also involved an ANOVA analysis of yearly data. To determine if states receiving grants were significantly different from states not receiving grants in their reported results, the means from each group were compared by year. Means were calculated for each state within each group for each year.

Using the binary system described in Five Questions Approach & Methods, each response was given a numerical rating of “1” if the response was affirmative (i.e. the state was able to provide a URL link for a GIS Clearinghouse Node in Background Question #9). If the state was unable to provide an affirmative response (i.e. no URL link existed or a negative response was given) then the response was graded as “0.” From the 5 responses given per year per state, the mean was established. As illustrated below in Table 6-1, the means were then averaged by year per group (states receiving grants and states not receiving grants).

State Means	2006	2007	2008
CAP Grants (Fifty States)	0.530	0.600	0.608
Non-CAP (Fifty States)	0.614	0.592	0.607

Table 6-1. Five Questions - State Means (Recipients and Non-Recipients of Fifty States CAP grants)

## 6.3 Five Questions Results

The Five Questions ANOVA analysis yielded a finding that reported results were not statistically different between states receiving grants and states not receiving grants. The determined f-value ( $f = 0.961$ ) was below the critical value ( $f\text{-critical} = 7.708$ ). These results were determined using an ANOVA single factor analysis with a 95% confidence level ( $\alpha = 0.05$ ). The analysis grouped the states by grant recipient and year. It can be concluded that there was no significant difference between the states receiving CAP grants and states receiving no CAP grant funding because the f-value was less than the f-critical value. Based on that analysis using a very stringent 95% confidence interval, we cannot conclude that Fifty States Initiative CAP funding produced improvement for states as measured by the 5 selected questions from the annual NSGIC survey.

Overall Fifty States CAP grant states reported, on average, a 4.2% lower rating on the Five Questions as compared to the states not receiving such grants. In 2006, Fifty States CAP grant states received a 13.7% lower rating on the Five Questions than states not receiving such grants. In 2007 and 2008, scores reported were indistinguishable as both states reporting approximately the same average. From these results, we infer that both CAP grant recipients and non-recipients improved as indicated by their answers to these five questions at the same rate with insignificant variation.

## 7 Federal Employee Survey

---

### 7.1 Federal Employee Survey Approach & Methods

The federal employee survey data was collected in June, 2009. The Federal Employee Survey was forwarded to 134 USGS Geospatial Liaisons, Census Regional Geographers, and State Geodetic Advisors to participate in the survey. The survey respondents included 31 USGS Geospatial Liaisons, 3 Census Regional Geographers, and 17 State Geodetic Advisors. There were 12 responses in the “other” category and these individuals either: a) represented a different position; or b) in some cases, a further clarification of someone who had *also* classified themselves as a liaison, regional geographer or geodetic advisor. This group was selected to participate in the survey based upon their insight into state coordination success based on their direct contact with the CAP program and the Fifty States Initiative; as well as their close interaction with the state geospatial points of contact. Respondents were not required to answer every question, but sixty-one individuals took the complete survey and provided their name for a response rate of 45.5%.

The federal employee survey, found in Appendix B: Federal Employee Survey, provides a systematic reflection of federal agency staff opinions on the efficacy of the Fifty States CAP grants program and its effects on state coordination. Questions for the survey were formulated by the project team. The online survey tool Survey Monkey was used to administer the survey which was “open” from June 11, 2009 to July 1, 2009<sup>1</sup>. Respondents completed the survey online and the compiled results serve as the basis for the analysis.

The team recorded and analyzed results to interpret how well the Fifty States Initiative and its grants influenced improved state coordination and contribution to the NSDI according to the perspectives of federal employees who directly work with states.

---

<sup>1</sup> It should be noted that there was a technical difficulty that arose with the use of the survey tool. Because of a malfunction in the collection tool, some respondents created duplicate responses to the survey. The project team identified these duplicative responses and they were deleted from the answer database prior to conducting the analysis.

## 7.2 Federal Employee Survey Measurement

### 7.2.1 Background Questions

The following background questions detail where respondents were currently employed and their current involvement with state geospatial coordination issues.

### 7.2.2 Agency

Analysis of the Federal Employee Survey provides insight into how individuals interacting with states perceive the efficiency and importance of the grant program. The majority of respondents, 51.6%, worked within the USGS, 12.9% worked for the US Census Bureau, and 27.4% represented the National Geodetic Survey (8.1% of respondents did not report their agency affiliation).

### 7.2.3 Current Position

Of these respondents, 49.2% were Geospatial Liaisons, 4.8% were Regional Geographers, and 27% serve as State Geodetic Advisors. Nineteen percent of respondents chose none of these three options and reported their position as “other.” It is of note that one respondent reported being both a State Geodetic Advisor as well as serving in multiple roles that fell into the “other” category. Respondents reported serving in these roles for a range of 4 months to 26 years. Each state had at least 1 representative that responded to the survey.

### 7.2.4 States receiving Fifty States Initiative grants

In assessing how many respondents interact with states receiving grants, the majority of respondents to this question (58.1 %) reported that they interact with states that have received a Fifty States CAP grant for statewide strategic and business planning. Approximately ten percent (9.7%) reported that their states had not received a grant and approximately a third of respondents (32.3%) were *unsure* if their states had received the grant funding.

### 7.2.5 Percentage of time spent working with states

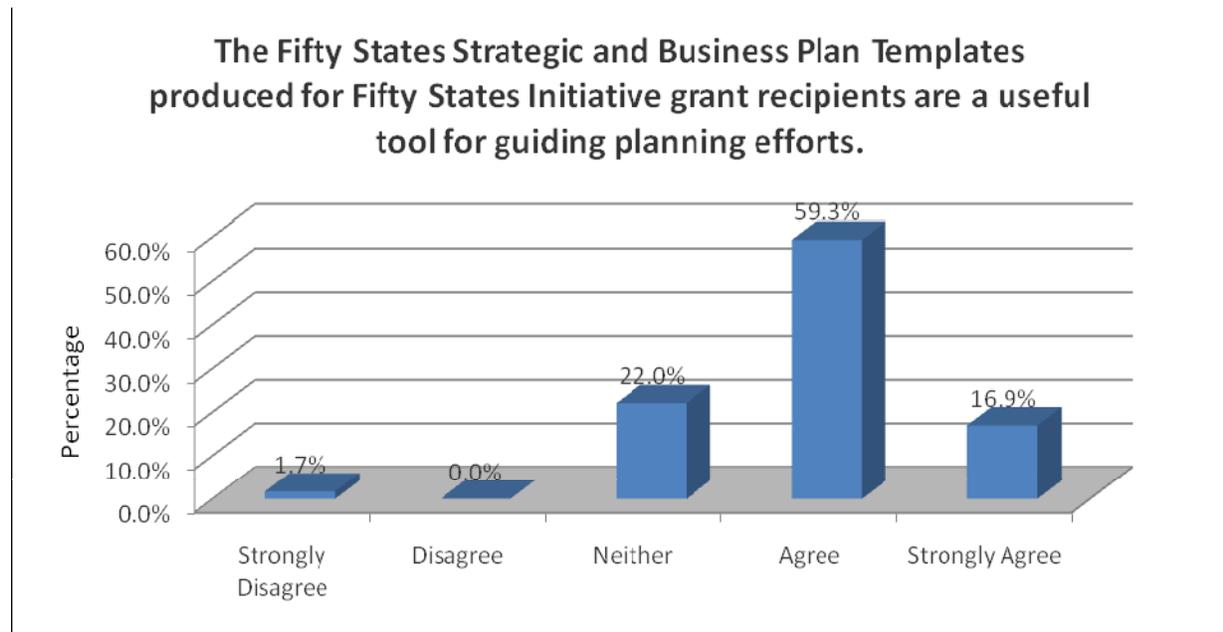
Respondents to this question reported a range of replies when assessing how much of their time is spent “interacting with state Geospatial programs.” Responses roughly followed a normal distribution with 9.7% spending less than 10% of their time, 17.7% of respondents spending between 10%-25% of their time, 21% of respondents spending between 25% - 50% of their time, 35.5% spending between 50% - 75% of their time, and the remaining 16.1% of respondents spending over 75% of their time interacting with state geospatial programs. From these results

it is noticeable that the majority of the survey sample population spends the majority of their time interacting with state geospatial programs.

### 7.3 Survey Responses

The following graphics describe respondents' answers to survey questions and statements. The questions and statements from the survey are listed in the title of each bar graph.

#### 7.3.1 Fifty States Strategic and Business Plan Templates (a.k.a. Guidelines)



**Figure 7-1. Fifty States Strategic and Business Plan Templates**

### 7.3.2 Contribution to the NSDI

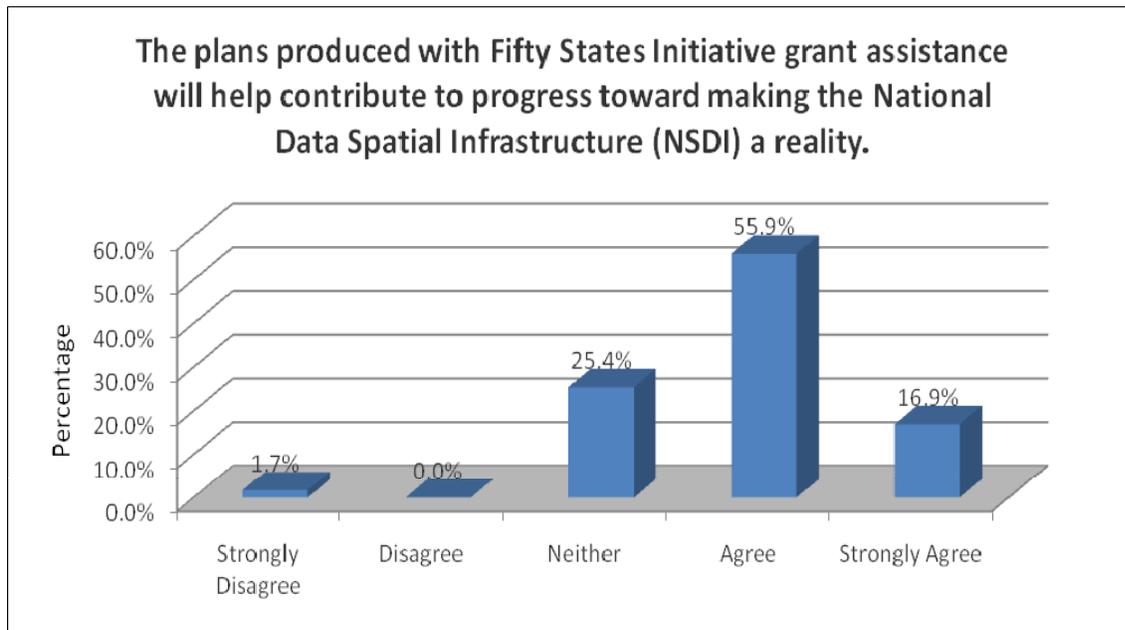


Figure 7-2. Contribution to the NSDI

### 7.3.3 Active Participation in Strategic and/or Business Planning

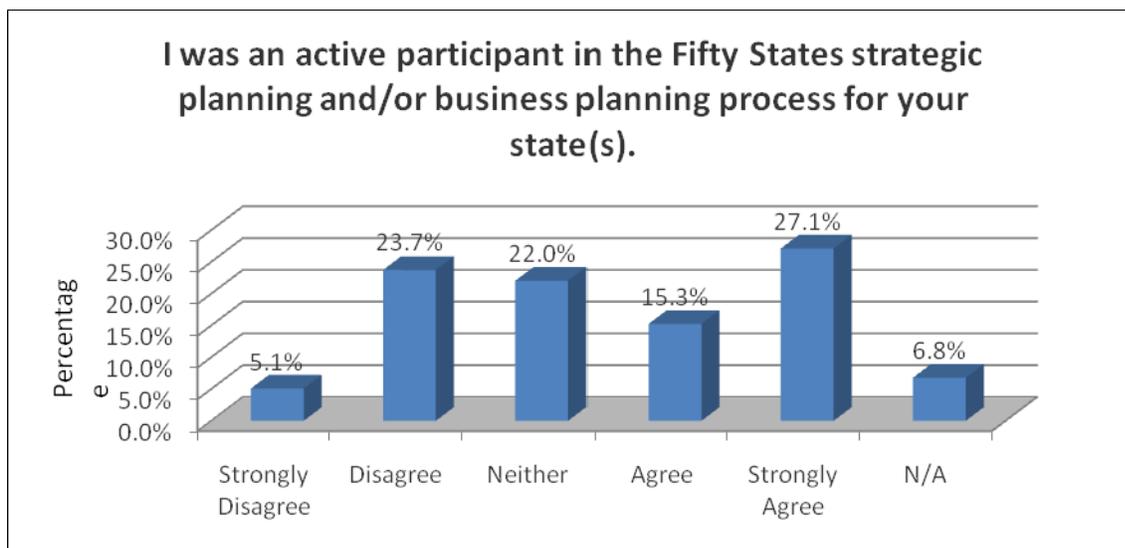


Figure 7-3. Active Participation in Strategic and/or Business Planning

### 7.3.4 Need for Fifty States Initiative Grants

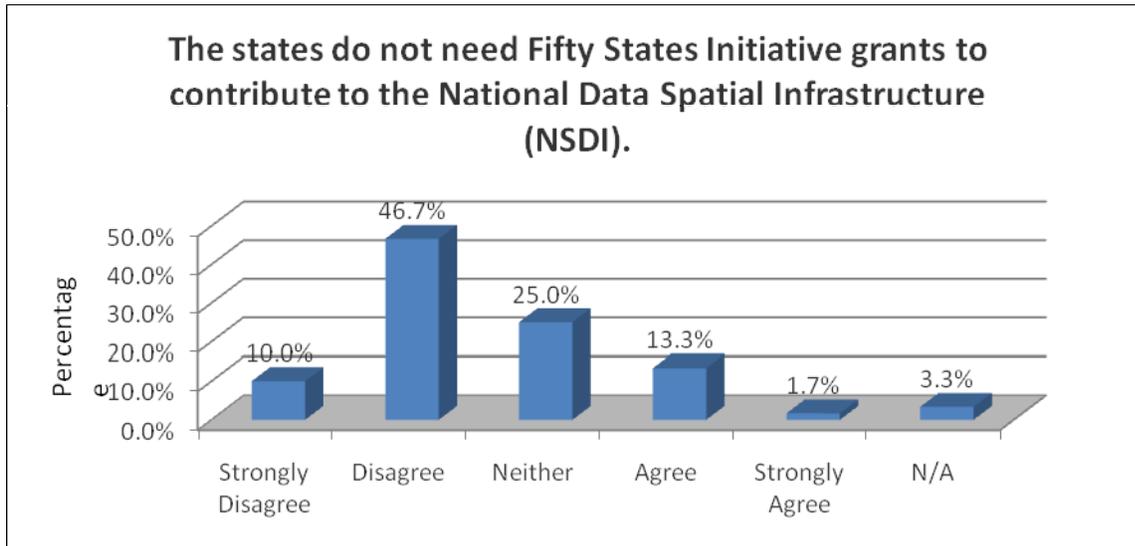


Figure 7-4. Need of Fifty States Initiative Grants

### 7.3.5 Improved Geospatial Coordination with Grants

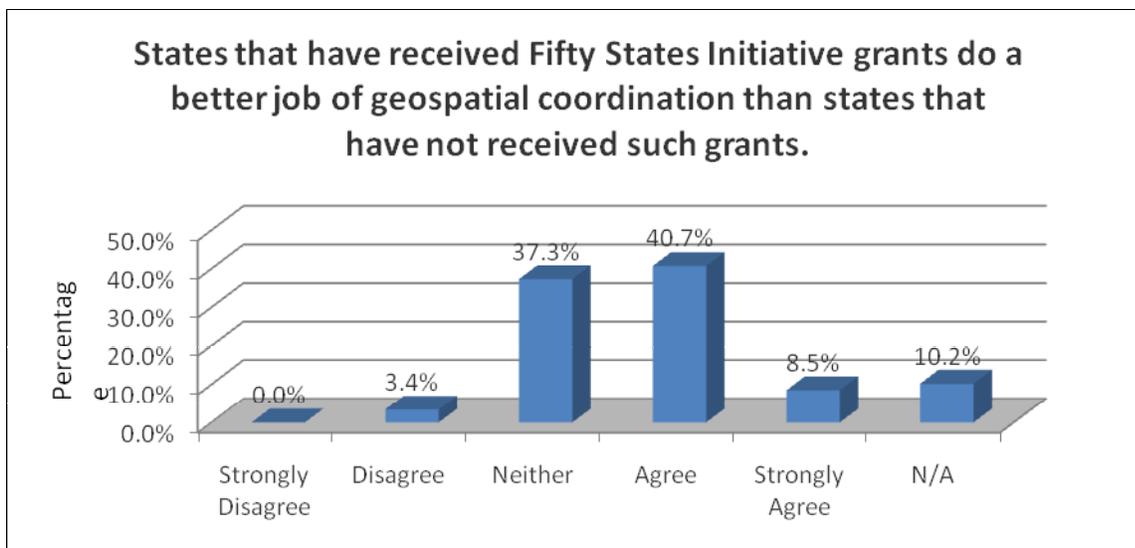


Figure 7-5. Improved Geospatial Coordination with Grants

### 7.3.6 Effective Statewide Coordination

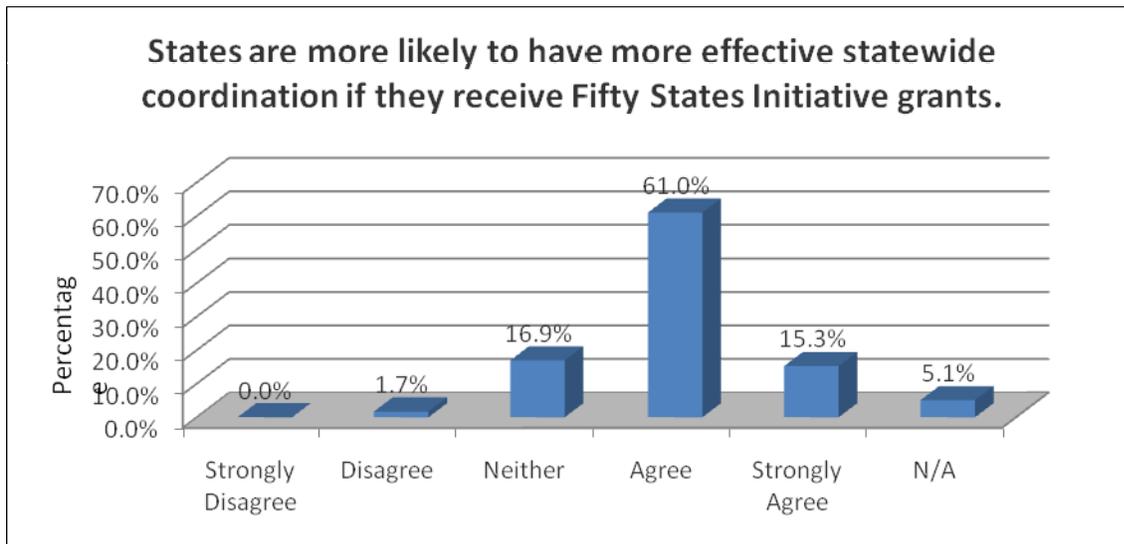


Figure 7-6. Effective Statewide Coordination

### 7.3.7 Fifty States Initiative Grants Enable Geospatial Coordination

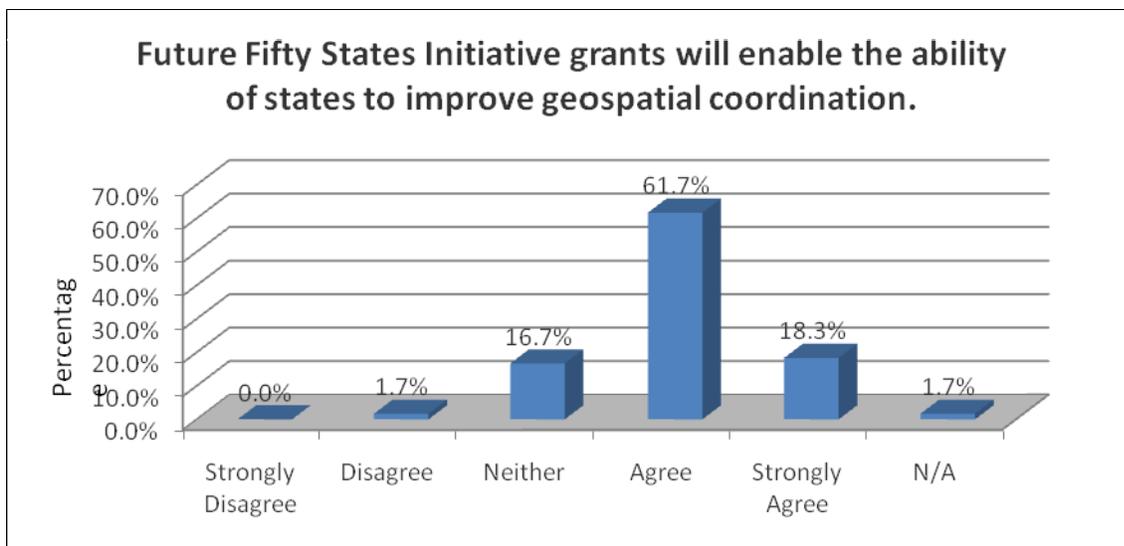


Figure 7-7. Fifty States Initiative Grants Enable Geospatial Coordination

### 7.3.8 Contribution Improvement

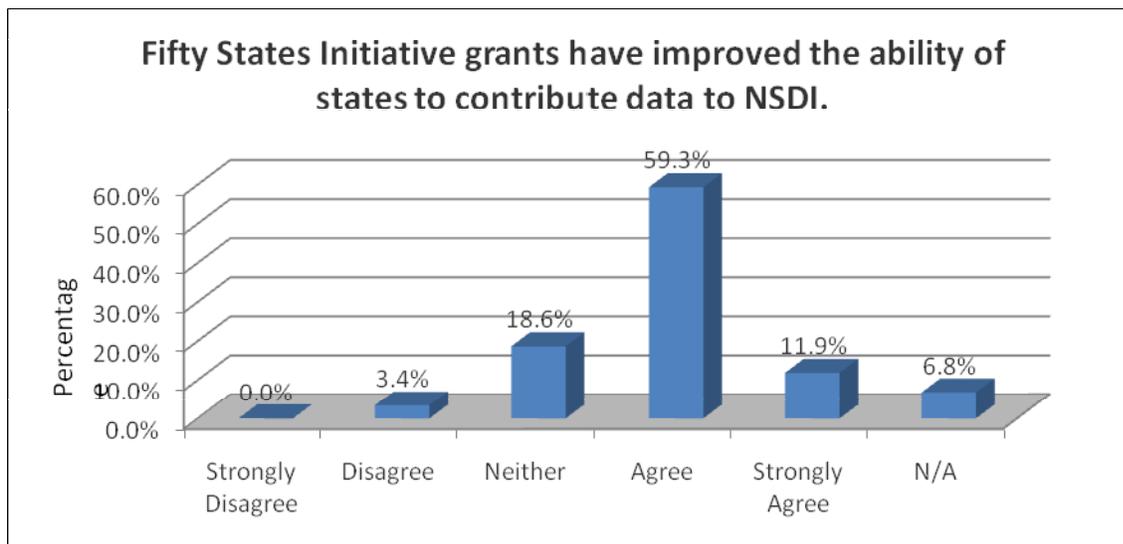


Figure 7-8. Contribution Improvement

### 7.3.9 Actions or Developments that Improve State Coordination

The last survey question asked respondents to provide a single action or development that they thought would most improve federal-state coordination on geospatial matters. Answers varied by individual. Dominant themes presented included:

- Improvement of federal-state communication to facilitate collaboration and contribution
- Establishment of regular meetings with Federal partners
- Creation of a more unified Federal voice to the states to create consistency
- Creation of a standardized approach in establishing coordination criteria and processes
- Provision of more, or incentive federal funding and grants to the states that are easier to work with (e.g. their personnel/policies are more collaborative and/or their data are more accessible)
- Clarification of differences between the NSDI and State Spatial Data Infrastructures (SSDI)

Other themes reported by the respondents did emerge from the survey yet these six themes were the most frequently mentioned. The full list of responses to this question can be viewed in Appendix C: Open-ended Responses to Federal Employee Survey from Question 9.

## 7.4 Federal Employee Survey Results

The Federal Employee Survey aimed to seek “expert opinion” how useful and effective the Fifty States CAP grants were from the perspectives of USGS State Liaisons, NGS Geodetic Advisors, and Census Regional Geographers. This population was considered “expert” due to their extensive interactions with state geospatial programs. The data suggest that the 50 States Program is effective at improving state geospatial coordination, and by extensions, advancing the NSDI. Overall, respondents reported a high level of support for these grants designed to assist state geospatial coordination. On questions concerning how effective the grants have been for state geospatial coordination, respondents reported a high level of effectiveness. Questions 2 and 4-8 show that respondents view the grants as having real value in increasing the ability of the states to make the NSDI a reality and make improvements in effective geospatial coordination. A very small portion of individuals answered negatively to these questions.

Another component of the Fifty States Initiative scored by respondents was the effectiveness of Strategic and Business Plan Templates (a.k.a. Guidelines). In response to a statement addressing how useful the Templates were for guiding planning efforts, 76% respondents largely agreed that these templates were essential and effective. It can be concluded that these templates provided by FGDC for grant recipients are a vital part for the planning efforts of individuals involved in geospatial coordination.

The survey responses also demonstrated that individuals dealing with geospatial coordination issues varied in their level of participation in the Fifty States strategic planning and business planning processes for their respective states. Approximately twenty-nine percent responded that they were not involved in the process, whereas approximately 42% reported an active level of participation. The remaining 29% of respondents indicated that the statement was “not applicable” to their work or neither agreed nor disagreed with the statement.

The survey also allowed respondents to provide open-ended responses on how federal-state coordination on geospatial matters could be improved. Dominant themes are presented above in the Section 7.3.9. Out of these themes, respondents demonstrated a desire to improve communication between states and federal agencies as well as increasing the availability and access to federal funding.

## **8 Assessment of State Case Studies**

---

### **8.1 Case Study Approach & Methods**

After recognizing the limitations with the quantitative analyses based on the NSGIC Survey, the analysis team determined that it would be useful to present a companion qualitative assessment that directly described the impacts of the Fifty States CAP grant program in individual states. For this portion of the analysis, four (4) states were selected from the 2006 and 2007 pool of CAP recipients and a narrative case study was prepared that describes how a state benefited from a Fifty States CAP grant and what coordination improvements followed the grant. States used for this portion of the analysis (Minnesota, Connecticut, West Virginia and California) shared only one thing in common: they received a Fifty States CAP grant in either the year 2006 or 2007. This allowed the assessment to capture any gradually emerging coordination benefits from the federal funding.

The project team worked with state representative to assemble these case studies which described how the Fifty States CAP funds were used and what outcomes followed the completion of the CAP projects.

### **8.2 The Case Studies**

The following case studies present the qualitative and subjective findings on how Fifty States CAP grants have impacted individual states and geospatial coordination within those states.

#### **8.2.1 Minnesota**

In June of 2009 Minnesota celebrated the creation of the new Minnesota Office of Geospatial Information (MnGeo) and the Commissioner of Administration announced the appointment of the state's first Geospatial Information Officer. This event culminated a focused and sustained planning effort begun in 2004. The state's receipt of a 2006 Fifty States CAP grant is considered instrumental in achieving this milestone.

Although Minnesota was an early pioneer in state GIS efforts, by the early 2000s there was a feeling that the state's leadership was waning. The Land Management Information Center (LMIC), the state's leading statewide GIS coordination organization, was hampered by inadequate funds and the lack of an explicit mission to carry out statewide coordination. In spite of rapidly growing GIS utilization across the state, almost all of LMIC's coordination efforts were pursued on an informal basis.

Recognizing this, in 2004 the state developed a strategic plan aimed at improving geospatial coordination and pursuing the development of a Minnesota Spatial Data Infrastructure (MSDI). This plan, titled *Foundations for Coordinated GIS*, was adopted by the Governor's Council on Geographic Information (GCGI) in June 2004. The plan recommended formally authorizing a state executive branch agency to coordinate GIS as a strategically essential element. Despite the strong case made by the plan, the Governor proposed budget reductions for LMIC in 2005 and 2007 and little was done to implement its recommendations.

The 2006 CAP grant offered a much needed opportunity for LMIC to pursue the agenda set forth in the *Foundations* plan. A statement in Minnesota's final report to the FGDC states that "the grant provided critical funding needed to supplement long-term efforts devoted to achieving the goals of the 2004 plan and developing a second-generation strategic plan that focused on *organizational* and *operational* issues."

Activities pursued by Minnesota and supported by the Fifty States CAP grant funding included:

- Hiring a part-time staff person dedicated to working on issues of statewide coordination and MSDI development
- Conducting a GIS stakeholder planning retreat to gain consensus on a new "vision statement" and priorities for coordination
- Development of a closer relationship with the state CIO, the leader of a newly re-formed Office of Enterprise Technology

The project was completed by November, 2007 and was considered a strong success that helped to elevate the visibility of GIS and the need for progress to key government executives. The final report to the FGDC observed that "work will continue towards establishing a formally recognized State GIS coordinating entity with its roles, responsibilities, relationships, resources, authorities and governance defined, understood, and supported by the community."

An immediate result of the 2006 – 2007 Fifty States CAP supported planning efforts was Governor Pawlenty identifying GIS as a "Drive to Excellence" initiative. Drive to Excellence was a gubernatorial led government effectiveness effort that aimed to create efficiency through the pursuit of state government-wide enterprise initiatives. Being identified as a "Drive" project meant that geospatial coordination and enterprise development had both priority and visibility at the highest levels of government. To pursue the Drive GIS project the state identified over \$150,000 of funding – contributed from multiple state agencies - to pursue detailed planning and to continue the part-time staff that was focused on geospatial coordination. Indeed, the state stepped in and was able to build on the key seed funding that the FGDC had provided.

During 2008 the state hired a consultant to pursue a formal and detailed planning study titled *A Program for Transformed GIS in the State of Minnesota: Program Design & Implementation Plan*. This

plan built on the earlier *Foundations* strategic plan and the CAP supported report. The *Transformation* study focused on the development of a business case for geospatial coordination and the development of an operational plan for implementation. The *Transformation* report identified specific roles and responsibilities for a geospatial coordination office and staff and was coordinated with the Governor's Council on Geographic Information's (GCGI) parallel effort to develop a governance model for overseeing the new office. This project was a strong success and the three commissioners who participated in the process spearheaded efforts to see the plan's recommendations carried out.

As a result of this senior executive support and hard staff work, during the spring of 2009 many of the *Transformation* study's recommendations were embodied in new legislation that dissolved the Land Management Information Center (LMIC) and replaced it with the new Minnesota Geospatial Information Office, MnGeo. The legislation also provided a clear and specific mission to carry out statewide geospatial coordination. This legislation was passed into law in May, 2009. Although the *Transformation* study recommended significant new funding, no new operational resources were provided to the new office beyond LMIC's previous funding. However, during the same legislative session, \$5.6M was authorized for the Minnesota Department of Natural Resources to pursue statewide elevation data through Light Detection and Ranging (LiDAR) collection, with 2.5 percent set aside for MnGeo's coordination function.

Minnesota now embarks on a new chapter in its long history in GIS deployment. The Fifty States CAP grant played an important role in the state's efforts to advance its internal coordination and to build its statewide SDI. MnGeo, with a stakeholder-oriented governance structure and an explicit mandate to foster coordination, make Minnesota a stronger partner that is better able to coordinate with federal agencies and more prepared to fully build-out and maintain framework data sets. Three years later, it is clear that FGDC's investment in Minnesota has paid dividends.

## 8.2.2 Connecticut

Prior to the year 2006 the State of Connecticut's state-level GIS efforts were led by a small group of state agencies and the champions within these groups that were responsible for their respective GIS activities. State, regional and local geospatial activities were not coordinated by any official state agency or council, and there was often competition for resources, or duplication of effort because of a lack of communication or knowledge of what was going on in the state. There was no official State office of GIS, no department designated to coordinate statewide efforts, and there was no official coordinating council within the state. Users communicated on a project-by-project basis and coordinated their efforts through the necessity of trying to pool funds for the common good.

The GIS Council was formed in January 2006 with the appointment of members from municipalities, state agencies, and higher education and in February of 2006, a website, [www.ct.gov/gis](http://www.ct.gov/gis), was established and the Council held its first meeting. The Council adopted

bylaws on March 22, 2006. Four working groups were formed to spread out the workload and each work group began working on the major issues that were initially identified. These working groups are:

- Data and Inventory Assessment
- Education and Training
- Legal and Security
- Finance

In March 2006, the GIS Council received a \$50,000 Fifty States CAP grant to fund the development of Strategic and Business Plans for the GIS Council. To ensure interaction and collaboration from regional and local municipal organizations on strategic and business planning, GIS Council representatives met with representatives of the state's 15 Regional Planning Organizations (RPO's), and the Connecticut Conference of Municipalities, starting in July 2006. These efforts resulted in the formation of a new GIS user group representing the state's fifteen RPOs and opened up a formal avenue of communication and collaboration on GIS issues.

From July of 2006 through July of 2007 five regional stakeholder sessions were held and over 48 meetings were held by the various active Working Groups of the GIS Council showing the significant commitment by Connecticut's GIS practitioners to improving coordination and planning. In September of 2007 the Strategic and Business Plans developed as part of this process were formally approved by the GIS Council and contained the following strategic goals:

- Organize GIS efforts across state and local government agencies.
- Develop a core set of data layers that are kept up-to-date and made broadly accessible in a state-managed data repository.
- Communicate and educate potential users and decision makers about the benefits and capabilities achieved by GIS investments.

Programmatic goals were also established that included the following:

- Improve coordination and organize GIS efforts across all levels of government (federal, state, regional, and local).
- Develop a core set of framework data layers that can be shared across state agencies and with local government.
- Communicate the benefits of and educate decision makers on the use of geospatial technology to increase adoption and provide sustainable funding.

As a result of these plans much has changed in the State with respect to coordination of geospatial activities:

**Improved Communication:** Since the planning process started in 2006, thirty-one Geospatial Council meetings have been held at which federal, state, regional, and local governments as well as academic institutions and the private sector actively participated.

**Data Improvements:** The data holding for the State have been divided into fourteen geospatial categories to provide a structured framework for the assessment of thousands of potential geospatial datasets that exist that can be used to create statewide layers. Twelve of these data layers have been identified as high priority for the state and a subcommittee has been established for each.

**Development of Cooperative Data Sharing Agreements:** Cooperative data sharing agreements with three bordering states are being finalized to enable each State to acquire needed GIS data in the event of an emergency.

**Improvements to Education and Outreach:**

- Developed Outreach and Educational Materials
- Organized GIS Day at State Capitol
- Initiated Quarterly Newsletter, *"Connecticut Geo-Focus"*

**Staffing:** In concert with the recommendations of the plans the State designated an IT Manager to manage, review, coordinate and approve geospatial related projects conducted by State agencies, and also hired the first full-time GIS Analyst within the Department of Information Technology to support the Council's initiatives.

**Funding and Projects:** In the three years since the plans were adopted the State GIS community was able to continue as well as initiate several projects which were funded in whole or partially through several federal grant programs that resulted from efforts identified in the Strategic and Business Plans.

- Geospatial Emergency Management System - DEMHS GIS Project, created an Emergency Response and Planning tool for use by state, regional and local government entities.
- Oblique Imagery Project – Through cooperative funding the State purchase oblique photographic imagery for the central third of Connecticut's land area.
- Road Network Environment – Developed a pilot to test long term road data framework creation. This is now under full statewide development.
- Regional Performance Incentive Grants
- The State of Connecticut provided over 8 million dollars in competitive grants for projects where improved efficiency could be gained by providing services or performing functions on a regional basis. Over 2.5 million dollars of these grant funds went to geo-

spatial projects including regional imagery and cadastral data development, regional shared services, and regional web application development projects.

In summary the State of Connecticut has had significant success with improving its geospatial coordination in the areas of education and outreach, data inventory, assessment, and development, staffing, and funding since receiving its Fifty States CAP grant and completing its strategic and business plans. Much work is left to be done to achieve the vision and goals laid on in these plans, but the plans themselves have had a significant effect on improving the situation in the State.

### **8.2.3 West Virginia**

In support of the Future Directions Fifty States Initiative, the State of West Virginia received 2006 funding from the Federal Geographic Data Committee's Fifty States CAP grant program to organize a new statewide coordinating structure and for developing strategic and business plans.

The most visible direct outcome of the 2006 CAP grant is the formation of the West Virginia Association of Geospatial Professionals (WVAGP). WVAGP presents itself as a growing nonprofit organization for geospatial professionals involved in digital cartography, geographic information systems (GIS), Global Positioning Systems (GPS), land information systems, remote sensing, and other related geospatial technologies. Members of WVAGP include representatives from local, state and federal agencies, educational and research institutions, the private sector, and other professional organizations. The Charter Meeting was held in March 2007 where by-laws were approved, officers elected, and new member enrollment opened. In August 2007, WVAGP was designated a 501(c)(3) nonprofit by the IRS.

Formation of WVAGP was driven by what were identified as deficiencies in an August 2006 GIS Coordination Report. In 1992 the State developed a GIS Strategic Plan, and in 1993 recommendations in the plan were used by the Governor's Office to issue an Executive Order to establish West Virginia's statewide GIS program. The program was later funded in 1995 through provisions of House Bill 2222, that created the Mineral Lands Mapping Program, and subsequently through other state and federal sources. The Executive Order established a GIS Coordinator, State Data Clearinghouse, and three coordinating bodies: a Policy Council consisting of cabinet secretaries to implement the State's GIS plan; a Steering Committee comprised mostly of geospatial leaders from state government and academia; and a GIS Users Group to serve as the vehicle for education, training, and information exchange among GIS users. Of these three coordinating entities, the Steering Committee has been the primary mechanism for advancing statewide spatial data infrastructure in West Virginia during the past decade. Political and technological changes over the previous decade have rendered many aspects of the 1993 Executive Order obsolete. In 2005, the statewide GIS community, after experiencing 10 years of rapid

growth in the number of GIS professionals and services employed, collectively recognized that a new GIS coordination program was needed to more adequately serve the State.

Receipt of the 2006 CAP grant positively impacted West Virginia geospatial coordination progress in two ways. First, the grant deadline caused the geospatial community to take action on planning and coordination tasks that would not otherwise have happened. Secondly the new WVAGP association would not have formed without the financial assistance to pay for expenses such as meetings, parliamentary fees for drafting bylaws, legal fees to attain nonprofit status, and website development.

There was healthy discussion on how to apply for and utilize the 2006 CAP grant funds. Ultimately West Virginia chose to form WVAGP so that coordination could be dramatically enhanced. The secondary benefit is that the association is now in place to seek future funding and have a solid team to focus on re-authoring a now outdated 1993 GIS Strategic Plan.

Before the 2006 CAP grant, West Virginia statewide coordination had been hampered with too frequent changeover in formal state GIS Coordinators and significant gaps when no coordinator was in place. With that resolved as a result of the 2006 CAP grant, broader statewide coordination can be entertained. A 2008 survey indicated that 88% of the respondents indicated that government agencies starting, or wanting to start a GIS program do not have access to the knowledge or resources required to successfully implement one. The new GIS Coordinator is coordinating within the state to assist counties who in the past released GIS-related RFPs without sufficient GIS knowledge. Within the state, the GIS Coordinator is also working with the Tax Department and the Statewide Address and Mapping Board to prepare for Broadband Mapping stimulus funds. *“Without the formal coordinating body our state coordination stalls.”*

Currently, and historically, coordination with adjacent states has not been a priority. The focus was first to coordinate within the state. Informal adjacent state coordination is facilitated by the twice annual NSGIC Conference. No immediate plans are in place to change this informal coordination approach.

State geospatial coordination with the federal government over the last three years has had mixed results. The state works closely with its new USGS Liaison and this relationship has yielded positive results. FEMA and USDA coordination has improved, and USFS and State Park interaction has stayed consistent. Federal coordination with the USGS at the local level was identified to have dropped significantly. This was attributed to the loss of technical staff at the local USGS technical center offices due, perhaps to consolidation of the Mapping Centers. This has negatively impacted the state and their ability to enhance the National Hydrography Dataset and other core and supplemental framework data sets. Federal coordination is also hampered by the fact that West Virginia is not consistently classified by federal agencies. In some cases the state is designated as being in the Northeast and in some cases as being in the South.

This was identified as a barrier to maintaining consistent coordination with a constant set of regional states.

In practical terms, West Virginia believes that most effective indicators of geospatial coordination progress are milestone projects. These are projects that have set outcomes, hard delivery dates, and when coordinating with Federal agencies, progress and deliverables are mandated.

The 2006 Fifty States CAP grant award to West Virginia was instrumental in forming the WV Association of Geospatial Professionals (WVAGP). On 3 February 2009, the WVAGP board adopted a resolution in support of legislation recognizing WVAGP. Overall, three years later, statewide and federal coordination has improved.

#### **8.2.4 California**

Prior to the FGDC 2007 Fifty States CAP grant award, and continuing today, there are two statewide geospatial entities that meet on a regular basis: 1) the California GIS Council, and 2) California Geographic Information Association. There are also sixteen Regional Collaboratives across this expansive state, and these are at various stages of maturity and local/regional coordination activity.

The California GIS Council (<http://gis.ca.gov/council>) formed in 2003 is comprised of representatives from local, tribal, state and federal government agencies and the private sector, and was formed to collaborate on the planning, implementation and maintenance of a California GIS infrastructure. The Council meets twice yearly.

California Geographic Information Association (CGIA) (<http://www.cgia.org>) is a non-profit, statewide association formed in 1994 to facilitate coordination, collaboration, and advocacy for California's Geographic Information System (GIS) community. CGIA promotes the creation and maintenance of the best practices in the governance and application of geographic information within the State of California. The CGIA Board meets quarterly.

Both entities share some common meeting participants, thereby facilitating knowledge transfer; and, they collaborate on geospatial-related initiatives. This collaboration was essential as the CGIA, as a non-profit, was able to apply for, and administer, the Fifty States CAP grant funds. Five recent collaboration projects, two of which were funded from CAP resources, are considered significant events since 2006.

##### **1. California Geospatial Framework Draft Data Plan (Published September 2006)**

The CGIA partnered with the US Geological Survey, the California Resources Agency and the California GIS Council (with 2005 CAP grant funding from the Federal Geographic Data Committee) to develop a Draft Geospatial Framework Data Plan for California. The seven core framework data sets and eleven California supplemental framework data sets were identified

and prioritized in the document (the plan can be found at: <http://www.cgia.org/geospatial-draftplan.htm>)

## **2. California Strategic Plan Phase 1 (Published September 2006)**

The California GIS Council convened a volunteer (un-funded) strategic planning work group in April, 2006, to develop a strategic plan for the comprehensive development of a spatial data infrastructure in California, making liberal use of the Fifty States Initiative strategic plan templates. This group developed a draft plan which was presented to the California GIS Council in September, 2006.

## **3. Formation of the California Office of the Chief Information Officer (January 2007)**

The California GIS Council has one seat on the Council for the State Chief Information Office. The State CIO became an official office of the Governor of the State of California in January, 2007. The State CIO has developed a State Information Technology Strategic Plan which calls for a formal geospatial coordination effort.

## **4. California Strategic Plan Phase 2: Regional Participation (Published May 2008)**

California received an FGDC 2007 Fifty States CAP grant to fund a series of workshops for regional geospatial collaboratives. The workshops provided critical input from California's sixteen Regional Collaboratives on the strategic goals, priorities, and implementation elements of the draft Strategic Plan, and develop reiterative mechanisms for their continued participation. The project furthers California's Spatial Data Infrastructure (CA-SDI) Strategic Plan, facilitating the coordination of programs, policies, technologies, and resources enabling the coordination, collection, documentation, discovery, distribution, exchange, and maintenance of geospatial information in California. The Phase 2 Plan made five Governance, eight Data, five Finance, and seven Marketing recommendations. (The plan can be found at: <http://www.cgia.org/strategic-gisplanning.htm>)

## **5. California Imagery Business Plan and Best Practices Project; A Review of Regional Multi-Jurisdictional Collaborations (Published April 2008)**

CGIA partnered with the US Geological Survey, the California Resources Agency, and the California GIS Council to identify best practice options for cooperatively acquiring and procuring digital imagery, as guidance for regional and other multi-participant digital imagery projects that may be conducted within California. (The plan can be found at: <http://www.cgia.org/imagery-project.htm>)

Without FGDC CAP grant funding, along with USGS funding, the initiatives noted above may never have occurred, and certainly would never have happened in the last three years.

In 2008, the **Office of the Geographic Information Officer** was created under the Office of the Chief Information Officer. This event achieved an objective that had been envisioned for many years by the California geospatial community and marked an important and substantive result

from the planning efforts described above. Plans are in place to build up and expand the Office of the GIO with two deputies: one for operations and one for planning. Operations will be further divided into two parts: (1) services (web applications, library/catalog, imagery, grants & procurement) and (2) data (divided by layer categories such as environmental, parcels, and transportation).

The vision for the Office is built around two of the major documents produced by the California GIS council, and described above (i.e. the California GIS Council Strategic Plan and the GIS Council Framework Data Plan). The Strategic Plan is built around the vision statement: "California and its citizens' values and are empowered by geographic resources." This vision statement is supported by four major roles: policy role (data sharing, technical) operational role (central services, e.g. geocoding), consolidation roles (Governor's Reorganization Plan), and an enterprise role (services for the collective).

In the last three years geospatial coordination within the state has increased dramatically, particularly through the establishment of the GIO. The GIO has begun collaborative efforts along the following data paths; 1) Imagery, 2) Transportation, 3) Landmarks, 4) address geocoding and 5) parcels. In addition, there has been significant increased coordination in the Homeland Security business areas and involving the California Emergency Management Agency (CalEMA). Now, regular working group meetings for emergency response happen with key players discussing homeland security GIS needs.

The priority for California has been to improve State coordination and expand Federal coordination. California has not focused on coordination with adjacent states. However, through the appointment of the GIO and the increased activity around the Western Governors Association (WGA) GIS Working Group, some increased interstate coordination has taken place. In particular, California helped the effort for the WGA reauthorization of its Geospatial Policy Statement.

Functionally in California, federal government coordination has also improved in the last three years. The largest improvement has come with the addition of a USGS Liaison position for the state. California now has one position each in northern California and southern California. The addition of these positions greatly increases the amount of partnership opportunities, in particular for local imagery collection to the state.

Federal CAP funding has been an important contributor to GIS planning in California. Now that the state has a GIO whose job it is to functionally coordinate geospatial activity in the state, there is likely to be continued coordination progress. The state anticipates that specific measures will likely be developed around the GIO work plan and the GIO/CIO strategic plan.

### 8.3 Case Study Results

Concrete information from these case studies overwhelmingly suggests that the States that received Fifty States CAP grants show that their geospatial programs have realized many benefits directly associated with the receipt of the grants. Each state case study demonstrates positive outcomes resulting from Fifty States CAP grant funding. Perhaps most importantly, Fifty States CAP grants assisted in the formation of several State Strategic and Business Plans which influenced organizational change and improved geospatial coordination.

Fifty States CAP grants directly influenced the establishment of geospatial coordination offices and the hiring of employees responsible for geospatial coordination. In Minnesota, the MnGeo office was created as following the grant funding and the completion of their planning effort. Connecticut also established a GIS Council for the state in 2006 on the heels of their CAP grant award. In West Virginia, the CAP grant was directly responsible for the formation of the WVAGP that currently plays a leading role in establishing a geospatial coordination structure. And in California, CAP supported planning was instrumental in making the case for the successful establishment of the Office of the Geospatial Information Officer.

Fifty States CAP grants are consistently linked to positive geospatial advancements by states. In Minnesota, these grants were a key link in a chain that has resulted in the formal creation of the state's first state Geospatial Information Officer, the further development of relationships with the state CIO, and the successful achievement of the "Drive to Excellence" GIS Initiative. Connecticut has seen such advancements as the creation of a geospatial website, establishment of data sharing agreements, and the formulation of regional stakeholder sessions to publicize geospatial coordination. West Virginia is currently realizing the benefits of a geospatial coordination structure and is seeing less internal turnover with formal state GIS coordinators as a result of grant funding. California's new GIO is now in a position to actively engage with regional collaboratives, the federal government and neighboring states.

Overall, this qualitative review strongly indicates that states are achieving results and making significant progress with the help of Fifty States CAP grants.

## 9 Analytical Challenges

---

### 9.1 Analytical Challenges & Limits of Quantitative Analysis for Geospatial Coordination

There currently exist significant and inherent challenges in accurately measuring state geospatial coordination progress. Some of these are definitional in nature, others are a function of the lack of available data, and still others are a function of how and when the limited available data were generated. The team completed the analyses on the quantitative data that *were available* and determined that these data were generally inadequate to provide statistically significant results. The project team did identify a measurement methodology that should be useful and relevant in future years if, and when better data are available to support the analysis. These current data streams (i.e. the state survey) were *not* purposefully designed to yield performance measurement information. This means that based on the available data the team was, at best, in a position to only draw informed inferences rather than to confidently calculate results based on data and data collection systems that were specifically designed for the purpose of performance management. It is thus no surprise that the quantitative analyses yielded results that were *not* statistically significant.

#### 9.1.1 NSDI Definition Inadequacies

The abstract nature of the NSDI presents a challenge in measuring its progress. There is no universally accepted clear definition for the NSDI; although the federal government has a high level working definition in Executive Order 12906. Ideally, there would be a broadly accepted federal logic model for the NSDI, replete with clearly articulated goals, end and intermediate outcomes, and associated performance metrics, all of which would have gone through a public involvement and commenting process. Since none of this exists, it becomes challenging to link the activities of one small grant program to a broader performance management construct that has never been fully articulated. Therefore, establishing the “right” metrics that can be integrated with other NSDI activities remains a problem for federal agencies, states, and for this analysis.

#### 9.1.2 Data variability in the NSGIC State Summaries Survey

Because participation in the NSGIC State Summaries Survey is voluntary, and states self-report and self-evaluate, data validation and verification is a significant concern. While the survey questions have been validated across the states, there is no way to avoid states interpreting the questions differently, and there remains the possibility that a state’s bias might be reflected in the survey. For example, some states may have reasons to portray themselves as advanced and well coordinated. Other states may have reasons to portray a deficiency that justifies a need for

budgetary investment to address the deficiency. As a result, any comparative analysis of states that have received funds compared to those that have not may be problematic when it relies on the NSGIC State Summaries Survey data alone. Currently, the NSGIC State Summaries Survey does not afford the opportunity for states to delineate which state initiatives are the results of CAP funding.

### **9.1.3 Absence of timely data**

The NSGIC State Summaries Survey provides a wealth of data. However, it must be noted that although states were encouraged to revisit this survey and respond yearly, some states do not routinely update their surveys, and some did not respond to the data call at all. This absence of current information means the available data may not reflect actual progress. Each year, the survey is “closed” and the previous year’s information is used to “populate” the new survey. This reduces the amount of work required for the person participating in the survey to help improve the participation rate. Therefore, some states did not submit updated information for some, or all of the years in the analysis.

### **9.1.4 Conclusion**

In conclusion, the statistical analyses that were completed cannot be viewed as definitive or reflective of state progress or achievements in geospatial coordination. Rather, they are indicative of gaps in a performance measurement regime and data to support performance measurement. As such, the analyses presented in Sections 5 and 6 are *examples of potential* approaches that may be valid with better underlying data. As reflected in the recommendations below in Section 10, these data and performance measurement challenges imply a great need for improved communication about required performance measures and consistent year-to-year data collection to support statistical analysis in future Fifty States CAP grants.

The assessments presented in Sections 7 and 8 strongly suggest that the 50 States program is improving state geospatial coordination in meaningful ways. A properly designed performance measurement and data collection system should be able to document that progress in a statistically significant manner.

## 10 Conclusions and Recommendations

---

There are strong indications that the CAP grants in support of the Fifty States Initiative (i.e. Fifty States CAP grants) have meaningfully improved state geospatial coordination and state contributions to the NSDI. In particular, two analyses based on 1) the Federal employee survey, and 2) four state case studies taken from early recipients of Fifty States CAP grants provide strong quantitative and qualitative evidence that the grants are having a strong positive impact on state geospatial coordination and by extension, the state's ability to contribute to the NSDI.

However, significant data limitations currently prevent an effective statistical analysis of quantitative information on state geospatial activity and progress. Therefore, the quantitative analyses undertaken in this study were inconclusive on the proposition that Fifty States CAP Grants have directly improved state government geospatial coordination.

The following points are the important overarching conclusions from this study:

- The Fifty States CAP grant program has made a positive difference at the state level in specific notable ways as shown by case histories, particularly in critical areas of institutional change and staffing, political support, additional funding, increased visibility and engagement of stakeholders, and in planning and initiation of specific programs.
- The Fifty States CAP grant program is highly visible and well-received by states, and participation now includes most of the 50 states and territories; many of the grant funded plans have been completed and are "bearing fruit."
- GIS planning and coordination have gained "new" visibility within states and GIS stakeholders (including federal partners, state agencies, local government) are increasingly aware of lessons learned and "new" initiatives occurring in other sister states
- The Fifty States planning process (based on the Strategic and Business Plan Guidelines) has proven itself useful for guiding the grant recipients in planning efforts and enhancing the quality and specificity of strategic and business plans; it has proven itself to be a flexible framework that is useful to states with widely different circumstances
- Complacency with respect to coordination planning, funding, or implementation is not an option. Stresses on state budgets, the urgency of other state business and concerns, and the poorly understood importance and value of GIS and geospatial data in state political and legislative circles defines the challenge that remains for the future of state coordination in support of SSDI and NSDI.

Based on the findings and conclusions of this review of state experiences and survey data, we make the following key recommendations:

- Continued success and consolidation of the gains made over the past four Fifty States Cap grant cycles requires continued investment in the planning and coordination process, including:
  - (1) ongoing review of progress and of the causes of setbacks and delays;
  - (2) periodically revising and updating the Strategic and Business Plan Guidelines;
  - (3) cataloging and fostering exchange of information, lessons learned, best practices and success stories among states; and
  - (4) most importantly, continued funding to stimulate the refreshment and advancement of prior plans or to establish new ones.
- More investigation is required to establish how current generalized survey approaches or alternatives can effectively “measure” in aggregate the ways that states are progressing toward coordination. The current set of collected data on the nine coordination criteria, for example, do not show sufficient variation across states nor through time to support conclusions about the impact of the Fifty States CAP grants or other types of intervention.
- Because the grant funded plans are tailored to each state, we recommend incorporating a progress reporting mechanism that allows the states to report on progress with respect to their individual plans in the years following the grant – e.g., to report the tangible accomplishments tied to their state-specific strategic and programmatic goals or business plans toward advancing NSDI. This would provide a finer-grained picture of the progress being made, with information on where and what kinds of setbacks are being encountered. This would help to establish “cause and effect” relationships between planning efforts and outcomes; and, it would provide program administrators an individual state-level and an aggregate national-level picture of the direct impact of the Fifty States CAP grant program.
- Continued refinement of the definition of the NSDI to the level where specificity allows more direct and definitive measurement of its degree of achievement, and implications for state level coordination. This would assist and allow for strengthening of the Fifty States CAP grant program, enabling strategic and business planning to be brought into closer alignment with known and measurable success criteria.

## **Appendix A: NSGIC State Summaries Survey**

The National States Geographic Information Council (NSGIC) Survey was given to states, Washington DC and select territories to determine state geospatial coordination. The following survey questions were used from years 2007 to 2009.

### **2007 – 2009 NSGIC State Summaries Questions and Answers**

(Missing numbers are a technical issue with the survey software. No questions are missing)

#### **BACKGROUND INFORMATION**

1. Please choose the primary contact
  
3. Please select the answer that most closely describes your role in statewide GIS coordination.
  - Officially Recognized Statewide GIS Coordinator
  - Officially Recognized State Government Only GIS Coordinator
  - Generally Recognized Volunteer Statewide GIS Coordinator
  - Generally Recognized Volunteer State Government Only GIS Coordinator
  - Volunteer Working on Statewide Issues
  - Volunteer Working on State Government Only Issues
  - Other (please specify below)
  
4. What is your job title?
  - State Geographic Information Officer
  - State Geographic Information Systems Coordinator
  - State Geographic Information Systems Director
  - Division Director
  - Other (please specify)
  
5. Enter the name of your agency/organization.
  
6. Please select the answer that best describes the affiliation of your office/agency in state government.
  - Governor's Office
  - Non-Profit Organization
  - University or other Academic Organization
  - Other Department of State Government
  - Emergency Management/Homeland Security Agency
  - State Geological Survey

## Measuring Progress of the Fifty States Initiative Report

- Department of Planning
- Department of Transportation
- Department of Natural Resources or Environmental Protection
- Department of Health or Human Services
- Department of Commerce or Economic Development
- Department of Agriculture
- Budget or Fiscal Oversight Agency
- State CIO's Office
- Information Technology Agency
- Other (please specify in the space below)

11. Describe your state's top three geospatial accomplishments during the past year. (200 character limit per line)

12. Describe your state's top three geospatial goals for the coming year. (200 character limit per line)

13. Describe the three most significant geospatial challenges for your state. (200 character limit per line)

14. Describe any significant cooperative efforts with federal, state or local partners. (200 character limit per line)

15. Describe any significant data development activities, innovative applications, cost saving measures, contracts, etc. that are on-going or that you have begun over the past year. (200 character limit per line)

16. Please provide the URL link for the mission statement of your state GIS Council.

- Don't Have a Mission Statement
- Hard Copy Only
- Digital File Available by E-mail
- URL:

17. Please provide the URL link for your state GIS Coordination Office.

- No State GIS Coordination Office
- No Web Page - Use E-mail Address Provided
- URL:

18. Please provide the URL link for your state GIS Coordination Council Web Page.

- No Coordination Council
- Council Does Not Have a Web Page
- URL:

\*19. Please provide the URL link for your state GIS Clearinghouse Node.

- No Clearinghouse Node
- We Are Working on a Clearinghouse Node - Not Yet Available
- URL:

\*20. Is your Clearinghouse Node set up to be harvested by the GOS Portal?

- Yes
- Not Sure
- No
- Not Applicable
- Other (please specify)

\*21. Please provide the URL link to a list of GIS data stewards for your state.

- No List Available
- Hard Copy Only
- Digital File Available by E-mail
- URL:

22. Please provide the URL link to your state GIS Personnel Classifications.

- No Specific GIS Classifications
- Hard Copy Only
- Digital File Available by E-Mail
- URL:

23. Please provide the URL link for your state GIS data distribution policies.

- No State Data Distribution Policy
- Hard Copy Only
- Digital File Available by E-mail
- URL:

24. Please provide the URL link for your state GIS Data Standards.

- No Data Standards
- Hard Copy Only
- Digital File Available by E-mail
- URL:

**\*\*SCORECARD for the Fifty States Initiative**

1. Which of the following NSGIC Coordination Criteria are in effect in your state?

- A. A full-time, paid coordinator position is designated and has the authority to implement the state's business and strategic plans.
- B. A clearly defined authority exists for statewide coordination of geospatial information technologies and data production.
- C. The statewide coordination office has a formal relationship with the state's Chief Information Officer (or similar office).
- D. A champion (politician or executive decision-maker) is aware and involved in the process of coordination.
- E. Responsibilities for developing the National Spatial Data Infrastructure and a State Clearinghouse are assigned.
- F. The ability exists to work and coordinate with local governments, academia, and the private sector.
- G. Sustainable funding sources exist to meet projected needs.
- H. Coordinators have the authority to enter into contracts and become capable of receiving and expending funds.
- I. The Federal government works through the statewide coordinating authority.

**RATING SCALE:**

1 = We previously had this function and lost it over the past year

2 = No plans at this time for implementing this criteria

3 = We currently are planning to implement this within the next 12 to 18 months

4 = Progress has been made and we reasonably expect this to be fully implemented within the next 12 months

5 = Implemented at this time

2. Please identify the stakeholder groups that participate on your GIS Coordination Council and their level of participation.

	<b>Actively Participates on our Council</b>	<b>Has an official "seat" or voting privileges on our Council</b>	<b>Invited to participate in general meetings of our Council</b>
Cities and Towns			
Statewide City Organization			
Counties and Parishes			
Statewide County Organization			
Regional Government Organizations			
State Agencies			
Tribal Governments			
Federal Agencies			
Utilities			
Academic (Colleges and Universities)			
Education (K-12)			
Private Sector (GIS Industry Vendors and Users)			
General Business Community			
Surveying Community			
Non-Profit Organizations			
General Public			
Local URISA Chapter			
Local ASPRS Chapter			

3. Please provide the URL link to your current Statewide Strategic Plan for GIS.

- No Strategic Plan Available
- Under Development - Not Available at this Time
- Hard Copy Only
- Digital File Available by E-mail
- URL:

4. Please provide the URL link to your current Statewide Business Plan for GIS.

- No Business Plan Available
- Under Development - Not Available at this Time
- Hard Copy Only
- Digital File Available by E-mail
- URL:

5. Please provide the URL link to your current Statewide Marketing Plan for GIS.

- No Marketing Plan Available
- Under Development - Not Available at this Time
- Hard Copy Only
- Digital File Available by E-mail
- URL:
- Total text responses

6. Please provide the URL link to the Law or Executive Order that established your GIS Coordination Office and/or Council.

- Not Applicable - No Executive Order or Law Available
- Hard Copy Only
- Digital File Available by E-mail
- URL:

7. Please provide a URL link to your state's law(s) related to privacy issues as they affect data and information technology.

- Not Applicable - No Law in Effect
- Hard Copy Only
- Digital File Available by E-mail
- URL:

8. Please provide a URL link to your state's law(s) related to data security issues.

- Not Applicable - No Law in Effect
- Hard Copy Only
- Digital File Available by E-mail
- URL:

9. Does your GIS Coordination Council have adequate funding to support its operation? (This refers only to the activities of the Council and not to your Coordination Office or projects like data development.)

- Fully Funded
- Partially Funded
- Not Funded
- Not Applicable
- Other (please specify)

10. What fund sources does your Coordination Council use to support its operations? (Check all that apply)

- Not Applicable
- State Bonds
- State General Funds
- State Special Funds
- State Capital Budget Funds
- Agency Contributions As Required
- Membership Fees
- Federal Funds Appropriated in State Budget
- Federal Grants
- Other (please specify)

\*11. Does your GIS Council officially endorse the use of appropriate OGC, FGDC, ANSI or ISO standards as appropriate?

- Yes
- No
- Not Applicable
- Other (please specify)

12. Does your state make its own GIS Inventory tool available to users?

- Yes - All Users
- Yes - Government Users Only
- No, but we actively support use of the Ramona System
- No
- Other (please specify)

\*13. Does your state actively develop and promote the use of data sharing agreements?

- Yes for Homeland Security applications only
- Yes, but only for limited operational needs
- Yes for all applications
- None needed because everyone participates in the public domain
- No
- Other (please specify)

14. Does your GIS Council or State Coordination Office actively participate in The National Map?

- Yes
- No
- Other (please specify)

## HOT TOPICS

1. Does your state have a shared Orthoimagery Program that involves local and state agencies?

- Yes
- No, but we plan to start one in the next 12 months
- No
- Other (please specify)

2. Have you completed a Return on Investment (ROI) Study or Cost Benefit Analysis (CBA) to justify a shared Orthoimagery Program?

- Yes
- No
- Other (please specify)

3. Please provide a URL link so we can obtain a copy of your ROI or CBA study.

- Not Applicable
- Hard Copy Only
- Digital File Available by E-mail
- URL:

4. Does your state have a shared Road Centerline file project that involves local and state agencies?

- Yes
- No, but we plan to start one in the next 12 months
- No
- Other (please specify)

5. Have you completed a Return on Investment (ROI) Study or Cost Benefit Analysis (CBA) to justify a shared Road Centerline File program?

- Yes
- No
- Other (please specify)

6. Please provide a URL link so we can obtain a copy of your ROI or CBA study.

- Not Applicable
- Hard Copy Only
- Digital File Available by E-mail
- URL:

7. Does your state have a statewide (or multi-jurisdictional) address database? (pick one)

- No
- Yes

8. Is this database based on individual addresses or address ranges? (pick one)

- Individual addresses
- Address ranges
- Both

9. Have you completed a Return on Investment (ROI) or Cost Benefit Analysis (CBA) to justify this Address program? (pick one)

- Yes
- No
- Not Applicable

10. If applicable, please provide a URL link so we can obtain a copy of your ROI or CBA study. (fill-in if applicable)

## **ROLE OF STATE GIS COORDINATORS**

1. Please choose the mechanism that created your position.

- Legislation
- Governor's Executive Order
- Action of Coordination Council
- Agency Administrative Decision
- Other (please specify)

2. Please provide the URL link for the document(s) that created your position (Legislation, Executive Order or Other Action).

- No Statutory Authority, Executive Order, or Other Action
- Hard Copy Only
- Digital File Available by E-mail
- URL:

3. Which choice most closely matches the title of your boss?

- State Chief Information Officer
- State Department/Agency Director
- State Department/Agency Division Director
- Other (please specify)

4. What choice best describes how closely you are aligned with the State CIO?

- The CIO is My Boss
- Very Close
- Not Very Close, But Getting Closer
- Not Very Close
- My State Does Not Have a CIO

5. Please select the number of staff that you supervise.

- Less than 3
- 3 to 5
- 6 to 10
- 11 to 15
- More than 15

6. Does your GIS Coordination Office have adequate funding to support its operation? (This refers only to the activities of your office and not to the Coordination Council, or projects like data development.)

- Fully Funded
- Partially Funded
- Not Funded
- Not Applicable
- Other (please specify)

7. What fund sources does your Coordination Office use to support its operations? (Check all that apply)

- Not Applicable
- State Bonds
- State General Funds
- State Special Funds
- State Capital Budget Funds
- Agency Contributions As Required
- Membership Fees
- Federal Funds Appropriated in State Budget
- Federal Grants
- Other (please specify)

8. When an administration change occurs following a statewide election is your position?

- Likely to be Affected
- Not Likely to be Affected

9. Please rank the importance of these characteristics/skills to the effective performance of your job.

	<b>Not Important</b>	<b>Not Very Important</b>	<b>Important</b>	<b>Very Important</b>	<b>Critical</b>
GIS Evangelist/Cheerleader					
GIS Architect					
Political Savvy					

Measuring Progress of the Fifty States Initiative Report

Technological Savvy					
General management Skills					
Procurement/Contracting Skills					
People Skills					
Understanding the Business Needs of Your Customers					

\*Element used in Five Questions

\*\*Element used in Nine Criteria

## **Appendix B: Federal Employee Survey**

---

### **B. 1 Background Information**

1. Please provide your name (Please note names are only available to the project team and will not be made available as part of the published results; the project team may follow-up with you):
2. Please provide your email:
3. Please provide your office location (state):
4. Please choose your Agency:
  - USGS
  - Census
  - National Geodetic Survey
  - Other
5. What is your current position:
  - Geospatial Liaison
  - Regional Geographer
  - State Geodetic Advisor
  - Other
6. How long have you been in your current position (in years)?
7. With which states do you work?
8. What percent of your time do you spend interacting with state Geospatial programs?
9. Have any of your states received an FGDC Fifty States Initiative grant for statewide strategic and business planning?

## B. 2 Selected federal agency state and/or regional staff survey questions

1. The Fifty States Strategic and Business Plan Templates (guidelines at <http://www.fgdc.gov/policyandplanning/revbsp>) produced for Fifty States Initiative grant recipients are a useful tool for guiding planning efforts.

-----  -----  -----  -----

Strongly Disagree      Disagree      Neither      Agree      Strongly Agree

2. The plans produced with Fifty States Initiative grant assistance will help contribute to progress toward making the National Data Spatial Infrastructure (NSDI) a reality.

-----  -----  -----  -----

Strongly Disagree      Disagree      Neither      Agree      Strongly Agree

3. I was an active participant in the Fifty States strategic planning and/or business planning process for your state(s).

-----  -----  -----  -----

Strongly Disagree      Disagree      Neither      Agree      Strongly Agree

4. The states do not need Fifty States Initiative grants to contribute to the National Data Spatial Infrastructure (NSDI).

-----  -----  -----  -----

Strongly Disagree      Disagree      Neither      Agree      Strongly Agree

5. States that have received Fifty States Initiative grants do a better job of geospatial coordination than states that have not received such grants.

-----  -----  -----  -----

Strongly Disagree      Disagree      Neither      Agree      Strongly Agree

6. States are more likely to have more effective statewide coordination if they receive Fifty States Initiative grants.

-----  -----  -----  -----

Strongly Disagree      Disagree      Neither      Agree      Strongly Agree

7. Future Fifty States Initiative grants will enable the ability of states to improve geospatial coordination.

-----  -----  -----  -----

Strongly Disagree      Disagree      Neither      Agree      Strongly Agree

8. Fifty States Initiative grants have improved the ability of states to contribute data to NSDI.

-----  -----  -----  -----

Strongly Disagree      Disagree      Neither      Agree      Strongly Agree

9. What single action or development would most improve federal-state coordination on geospatial matters?

## Appendix C: Open-ended Responses to Federal Employee Survey from Question 9

*The following responses were given to the final question on the Federal Employee Survey. (Responses are shown here in their original state at submission.)*

**Question 9:** What single action or development would most improve federal-state coordination on geospatial matters?

1. Regular (semi-annual??) meetings between Federal partners to ensure the effectiveness of this effort and to target specific areas of technical deficiencies that require more immediate attention (e.g. encouraging height modernization efforts in a state with a poor geoid model)
2. Improve federal inter-agency communication and collaboration.
3. The Federal Government needs to recognize and accept the diversity of State organization. We should not assume, for example, that geospatial coordination is part of -- or should be part of -- an enterprise IT organization at the State level. It might be something else entirely, something more appropriate to a particular State's history and character, and we need to be flexible about working with differences.
4. A more unified Federal voice to the states would help. It is difficult to get state agency cooperation on some geospatial projects because another Federal agency is giving the state a different set of geospatial priorities that USGS. It is also frustrating to hear of competing and/or redundant geospatial projects by another federal agency AFTER the project is completed rather than in the planning stage where coordination is possible.
5. Cooperative funding towards the State-level SDI contingent upon the presence of official in-state coordination.
6. I doubt there is a "single action" to improve coordination because "Federal" responsibility assumes cooperation and agreement among Departments and agencies (DOI, USDA, DOD, etc.) and the NSDI assumes a "State coordinator" has cooperation and agreement among ALL State agencies (DOT, DNR, Ag, etc.) - in addition to diverse Local (county and municipal) and Regional (i.e. Metro) organizations.
7. Develop methods, procedures, and publications to clearly define and articulate the benefits of sharing base framework geospatial data in the public domain for all levels of government with specific and real life examples. For example, what are the benefits of the NAIP imagery to the casual GIS user county employee or the general public in a typical county? Are they aware of the huge federal and state investment in this imagery that is freely available to them?
8. Money
9. Consistency In Federal Role in NSDI
10. NGP stays in GIO and GIO goes in Geography. Our State partners are very confused

as to why we would remove the NGP from the GIO. It does nothing to enhance our credibility.
11. Proactive participation by Federal and State agencies.
12. Federal government needs to build partnership programs and establish leadership for national framework themes. The states cannot build the NSDI is no federal agency takes the lead in providing leadership and guidance for these themes.
13. National standards that are adhered to by most federal agencies that state and locals could use as the model for their own standard.
14. More regional interaction would assist us to access and participate in this program. I am not that knowledgeable and therefore am not much help.
15. A Federal Mandate
16. Having a state Geodetic Advisor funded by this program.
17. A presentation to political leaders (perhaps at a Governor's conference) about the NSDI, Geospatial Liaisons, etc and the benefits to be gained for their state.
18. For USGS to have staffing in place to support geospatial activities
19. Sustainable funding. Not just from a Federal stand point, but also from the State in order for them to maintain acquisition on a regular cycle.
20. Continued Federal and State support of the National States Geographic Information Council. Expanded Federal participation with the NSGIC organization. USGS and Census are doing a good job, but several other Federal agencies need to initiate/expand their involvement with this group.
21. Strong leadership on the federal side to develop standards in support of Circular A-16.
22. -coordinated federal funding for NSDI framework development and enhancement  in case you don't like that one!!  -funding to seed implementation of business plans related to NSDI framework
23. Including participants from all levels of government, from the very beginning, when changes, particularly big changes, are coming to an established program, such as The National Map, where all of the levels of government are able to actively participate in developing the plans for change so that all stakeholders can be on board from the beginning.
24. Sustainable, institutionalized funding streams, either from state or federal entities, to counties and cities, to educate, develop and promote standards, increase accuracy, engage stewardships, develop processes for data to be moved into state and federal databases, all of the components necessary to building NSDI need to be supported by a realistic and sustained funding stream.
25. Keep improving the lines of communication.
26. Institute policies whereby a certain percentage of funds (75-80%) spent for certain geospatial data development, maintenance, distribution, and related matters, etc. by either federal or state organizations required matching funds/cost shares, and certain

agencies check off that they were notified but were unable to participate in the coordinated effort.
27. Increased federal funding incentives.
28. Long term funding for state data stewardship for national framework geodata layers.
29. Consistency on the availability of funding so states can better rely on potential funds as they plan future activities.
30. An overarching legal decision mandating that all data developed by public funding be placed in the public domain.
31. 1) A better description of the NSGIC term for State Spatial Data Infrastructure is needed (SSDI). The 7 framework data themes of the NSDI are clearly defined. My perception of an SSDI would be the extension of these 7 Framework Themes to also include the remaining themes identified by the ISO 19115 Topic Categories, for which there are a total of 19 data themes.  2) I would like to see some specific language on the emphasis of data becoming ‘Public Domain’ as one of goals of the NSDI 50-States Strategic Plan and Business Plan initiative. There’s been some confusion with regards to several key data layers here in South Carolina, and whether the license constraints of these layers actually qualify as NSDI. The licensing in question allows the data to be shared freely among State, County and local government but intentionally restricts the data from becoming shareable with federal government and without any cost recovery being sought. The state data layers in question are Orthoimagery, E911 Street Centerlines, Address Points, and Parcels. My reason for bringing this up is that our state coordinator has done a good job of bringing together a State Plan, but I have to question the absence of a federal component from his plan. More specifically, the pilot projects identified are focused on the above data layers in question.
32. A single state-level contact for all geospatial data (looking across all states, not just those in our region).
33. Federally fund the NGS State Geodetic Advisor program or a State GIS Coordinator
34. local involvement
35. Most states want "external/Federal" funding for federal-state coordination since few have adequate State appropriations to support that effort for the NSDI.
36. The Missouri Land Survey Program has been developing a statewide GRS on a county by county basis. More money could and would enhance our ability to do more surveys. However, we are not grant writers. We do not have the staff to go out looking for these grants and we do not have the expertise (or the time) to write a proper proposal. A single action would be an email asking if we would be interested and a simple form asking us to outline how we would propose spending the money.
37. WebEx conference calls so many can participate without traveling.
38. A standard agreement document for state and federal agencies to collaborate and partner toward geospatial programs. Also, a funding mechanism or process for the

transfer and deployment of money between state and federal agencies.
39. A better understanding of the National Spatial Reference system and its importance with the fifty states initiative.
40. Realization that all states are not identical and that tailored considerations of state-centric circumstances need to be engineered into statewide coordination efforts; Alaska is a good example in that 75% of the jurisdictional spatial extents are federal, not state.