NATIONAL GEOSPATIAL ADVISORY COMMITTEE MEETING
June 11 – 12, 2013
Minutes

The National Geospatial Advisory Committee (NGAC) held a public meeting from 8:30 a.m. to 5:15 p.m. on June 11, 2013 and from 8:30 a.m. to 4:00 p.m. on June 12, 2013. The meeting was held at the South Interior Department Auditorium in Washington, DC. In accordance with the requirements of the Federal Advisory Committee Act, the meeting was open to the public.

NGAC Members present:
Robert Austin, Chair
Jerry Johnston, Vice Chair
Talbot Brooks
Richard Clark
Keith Clarke
Steve Coast
Jack Dangermond
David DiSera
Matthew Gentile
Frank Harjo
Michael Jones
Jack Maguire
Anne Hale Miglarese
Roger Mitchell
Michele Motsko
Matthew O'Connell
Mark Reichardt
Douglas Richardson
Anthony Spicci
Gary Thompson
Molly Vogt
David Wyatt

NGAC Members not present:
Joanne Gabrynowicz
Bert Granberg
E. Donald McKay
Carolyn Merry
Timothy Nyerges
Patrick Olson

Anne Castle, Chair of the Federal Geographic Data Committee, Ivan DeLoatch, Executive Director of the Federal Geographic Data Committee and Designated Federal Officer (DFO) for the NGAC, and John Mahoney, Alternate DFO, were also in attendance.

Other Attendees:
David Behler (Department of Interior), Scott Bernard (Office of Management and Budget), Jim Bjostad (National Geospatial-Intelligence Agency), Wendy Blake-Coleman (Environmental Protection Agency), Nancy Blyler (U.S. Army Corps of Engineers), Kaile Bower (Census Bureau), Nancy Brelos (Intergraph Government Solutions), Bill Burgess (National States Geographic Information Council), John Byrd (Management Association for Private Photogrammetric Surveyors), Kaitlin Chell (Lewis-Burke Associates, LLC), Michael Conschafter (Exelis, Inc.), Dan Cotter (Department of Homeland Security), Pat Cummens (Esri), Erin Engle (Library of Congress), Adrian Gardner (National Aeronautics and Space Administration), Christina Geller (Department of Interior), Tricia Gibbons (LEAD Alliance), Jonathan Goodell (University of Wisconsin-Madison), Jon Heinsius (Intermap Technologies, Inc.), Raquel Hunt (Department of Transportation), Joe Klimavicz (Department of Commerce), Roxanne Lamb (Federal Geographic Data Committee), Tony LaVoi (National Oceanic and Atmospheric Administration), Butch Lazorchak (Library of Congress), Steve Lewis (Department of Transportation), Lynda Liptrap (Census Bureau), Stephen Lowe (U.S. Department of Agriculture), Arista Maher (Federal Geographic Data Committee), Dominic Menegus (Department of Transportation), Gary Moll (Systems Ecological/Global Ecosystem Center), Tim Newman (U.S. Geological Survey), Charles Mondello (Pictometry), Tom Roff (Federal Highway Administration), Ken Shaffer (Federal Geographic Data Committee), Harvey Simon (Environmental Protection Agency), Cory Springer (Ball Aerospace & Technologies Corporation), Tim Trainor (Census Bureau), Gita Urban-Mathieux (Federal Geographic Data Committee), Dick Vraga (U.S. Geological Survey), Autumn Wallin (General Services Administration), David Wegner (House Subcommittee on Water Resources and Environment), Amy Wing (U.S. Fish and Wildlife Service).

TUESDAY, JUNE 11:

Call to Order and Welcome
Dr. Robert Austin (NGAC Chair) called the public meeting to order at 8:30 a.m. and welcomed the NGAC members and audience to the meeting. Dr. Austin provided an overview of the purpose, objectives, and logistics of the meeting.

Review and Adoption of April 2013 Meeting Minutes
Dr. Austin reviewed the draft minutes of the April 3, 2013 NGAC meeting and called for approval.

> **DECISION: The NGAC adopted the minutes of the April 3, 2013 meeting.**

Perspectives from the Chair
Dr. Austin provided brief remarks on the role of the NGAC and his objectives for the group.

Opening Discussion
The NGAC members engaged in a dialogue focusing on geospatial success stories and opportunities. A graphical representation of the history of the NSDI was reviewed. Members were asked to identify where in the timeline they "entered the scene" of the geospatial community. In small groups, NGAC members engaged in a brainstorming activity regarding factors of success for the geospatial community. Key points made during the discussion included the following:

- Accessibility of real-time, interactive GPS, and real-time differential correction; Esri, Google Maps, etc. contributing to pervasive, standardized use of geospatial data on the web; LiDAR, smart phones and location-based technologies; crowd-sourced data and changing approaches to data development.

- Real-time global data collection through Google Maps via smartphones.
- Fast-growing ecosystem of users.
- The expansion of GIS to the private sector, as well as the broad use of the technology by the general public (instead of specialized users).
- The availability of geospatially-enabled products (TIGER files, U.S. Topographic Map); the growth of collaborative "geospatial-think" (e.g., open street maps).
- Geotagging as a way of having maps "talk back" to us.
- Judging success based on outcomes (number of lives saved, species preserved, etc.).
- Next steps should be the integration of geospatial into broader fields of research (climate change, public health, etc.).
- Mobile mapping services and number of applications; data standards/frameworks that allow for reuse of information; number of datasets available from a variety of sources; private industry engagement in GIS; geospatial demand; open source systems driving down the cost of GIS.

Leadership Dialogue

Anne Castle, FGDC Chair, provided an update on the recent activities of the FGDC and perspectives on Department of the Interior (DOI) and Administration priorities. Ms. Castle welcomed the new members to the committee. She noted that the new membership brings valuable expertise in geospatial technologies, and that the FGDC has relied on the NGAC for input and insight to produce better products and solutions.

Ms. Castle also introduced Scott Bernard, the new Vice Chair of the FGDC. Mr. Bernard is the Chief Enterprise Architect at OMB. Geospatial technology is one component of his portfolio at OMB. Ms. Castle also noted that Sally Jewell has recently been confirmed as the new Secretary of the Interior. Ms. Castle said that Secretary Jewell is focused on the value of geospatial information in support of decision-making at DOI, and that she requested a meeting on mapping capabilities during her first week on the job. Ms. Castle noted that Secretary Jewell is focused on landscape conservation and renewable energy development, and her support and engagement can be of great benefit to the geospatial community.

Ms. Castle discussed the budget outlook, including the formulation of the FY 2015 budget, which includes an emphasis on crosscutting geospatial activities. She noted that the FY 2014 budget is concerning. Allocations to House appropriations subcommittees are very low, and the 2014 budget is likely to pose significant challenges.

Ms. Castle also discussed the recommendations FGDC received from the U.S. Government Accountability Office (GAO). She noted that the FGDC community is actively engaged in addressing the recommendations in the report, including efforts to develop a new NSDI strategic plan, develop an implementation plan for the OMB Circular A-16 Supplemental Guidance, and continue the implementation of the Geospatial Platform. She noted that the NSDI Strategic Plan would be discussed in detail over the next two days. She thanked Dan Cotter and Ivan DeLoatch, who have led the effort to develop the new plan. The NGAC, FGDC Steering Committee, Coordination Group, and Executive Committee have all been instrumental in developing the plan as well. She said the document is a very good start; it is practical, cohesive, well-organized, makes sense to laymen, and includes substantive goals and objectives. She said she is looking forward to hearing the NGAC's thoughts on the plan. Another workshop on the NSDI Strategic Plan, the NSDI Leaders Forum, will take place June 19, 2013. This will allow for further feedback from members from the geospatial community (the first sessions were held in March). The draft strategic plan will be released for public comment in July/August 2013.

Ms. Castle noted that the Geospatial Platform has made great strides, and the next version is scheduled to go live in July. One important enhancement is the marketplace function, which will allow agencies to describe intended geospatial acquisitions and look for opportunities to coordinate, consolidate, and save money.

Ms. Castle said that efforts to implement A-16 portfolio management continue. Adrian Gardner (NASA) is championing this effort, with substantial assistance from the FGDC staff. Ms. Castle noted that the OMB Deputy Director recently sent a memorandum to the President's Management Council (PMC) requesting attention to A-16/portfolio management development, as well as designation of theme leads and agency SAOGIs. She noted that this high-level engagement will be very helpful.

Ms. Castle also gave a brief update on Landsat. In late May, Landsat 8 operations were officially turned over to USGS from NASA at that EROS Data Center in South Dakota. Landsat 8 has checked out beautifully: the launch was flawless, and the operational check-out has gone well. The Department is excited about the high quality Landsat data coming in from Landsat 8.

Ms. Castle noted that the FGDC will be initiating another round of NGAC nominations in the near future. NGAC members were asked to inform interested parties and encourage them to submit nominations for appointment.

Scott Bernard, FGDC Vice Chair, provided brief comments. He thanked the NGAC for their work. Regarding the draft NSDI Strategic Plan, he suggested including the objective of ensuring that an appropriate balance is struck between information sharing and safeguarding.

FGDC Executive Committee Round Table Discussion
Members of the FGDC Executive Committee (ExCom) provided an update on activities of the ExCom and engaged in a dialogue with the NGAC members. The ExCom members participating in the panel discussion were Anne Castle (DOI), Jerry Johnston (DOI), Adrian Gardner (NASA), Stephen Lowe (USDA), Dan Cotter (DHS), Joe Klimavicz (NOAA), Ivan DeLoatch (FGDC), Scott Bernard (OMB), and Harvey Simon (EPA). Jerry Johnston introduced the session and reviewed the role of the ExCom in FGDC activities. Other members of the ExCom discussed their agencies' roles on the ExCom and in geospatial activities within their organizations.

Topics discussed during the round table session included:
- Security issues
- Best practices for information sharing
- Maturity models for geospatial information sharing
- Emergency response data
- Budget challenges
- Partnerships to promote state and local geospatial data acquisition

NSDI Strategic Plan
Dan Cotter of DHS provided an update on the FGDC's initiative to develop an updated strategic plan for the National Spatial Data Infrastructure (NSDI). Mr. Cotter summarized the activities of the project team, provided an overview of the project timeline, and described the outreach efforts to gather input from partners and stakeholders in the geospatial community in the design of the plan. Mr. Cotter noted

that a second NSDI Leaders Forum would be held on June 19 to get further input on the document from key geospatial organizations.

Bob Austin reported on the NGAC's role in providing input in the development of the NSDI plan. The NGAC was asked to provide input regarding a shared vision for the NSDI, to define roles and responsibilities of the Federal government and partners, and to identify key external factors affecting the continued development of the NSDI. The NGAC created a subcommittee, chaired by Dr. Austin and Keith Clarke, and also established three workgroups to address the study questions. The work groups developed draft papers that were integrated into a single report that was distributed to the NGAC prior to the meeting. The Vision work group developed input on providing and validating perspectives on a shared vision for the NSDI. The Roles and Responsibilities work group developed input on the role of the Federal government, as well as the interaction between the Federal and non-Federal sectors. The External Factors work group developed input to help define key external factors and trends in the geospatial community that have an impact on the continued development of the NSDI. Next steps include approval of the draft NGAC paper and the NGAC's continued engagement and input into the development of the NSDI plan.

John Mahoney gave a brief overview of the initial draft of the NSDI plan. He noted that the input from the NGAC subcommittee and workgroups was instrumental in helping to shape the plan. Stakeholders in the FGDC community, as well as external partners, have also been very helpful in developing the vision and direction identified in the first draft of the plan. Mr. Mahoney provided an outline of the draft plan, highlighting specific areas needing additional input. The implementation of the strategic plan will be a collaborative effort by the FGDC community, and each strategic goal will have a designated Federal champion assigned to it. Champions will report to the FGDC Executive Committee, which will be monitoring the implementation of the NSDI plan. Each goal or objective will have a project plan, including performance measures and resources required.

Following the introductory presentations, the NGAC members broke into smaller groups to discuss the draft NGAC paper and the draft strategic plan. Concepts and suggestions identified during the breakout sessions included the following:
- Overall tone of the document is good; it provides a neutral perspective.
- Change is too incremental; need longer-term vision and goals.
- Consider incorporating the concept of never being lost – "geo-enlightenment" and "geo-enrichment."
- Suggestions on possible refinement of the vision statement.
- FGDC goals should be narrowed down to a small list of key priorities; FGDC can't do everything.
- Federal agencies should continue creating geospatial content data and work to eliminate redundancy and harmonize data models so that they result in multi-purpose data sets.
- Federal government should focus on leadership role. Take opportunity to rethink responsibilities for Federal sector.

External factors were also discussed by the group, including:
- Data, security, multi-level security.
- Privacy issues related to geolocation.
- Social media.
- Location and time as core attributes of data.

Lightning Session 1
NGAC members and guests were provided an opportunity to make brief announcements about activities of interest to the Committee.

Gary Thompson – North Carolina Flood Mapping Information Systems
Gary Thompson gave a presentation on converting flood risk models into a digital data environment. North Carolina was devastated by a hurricane in 1999. In response to the Governor's call for better prediction of flooding, the State then developed a floodplain mapping program. The current system is FMIS; the problem with this is that the regulatory maps were paper-only. They are evolving to digital maps as regulatory maps: the Flood Risk Info System (FRIS). They have partnered with other States on mapping data, and have, thus far, migrated approximately half of the old data to new system and are currently working on the other half.

Tim Trainor – National Address Database
Tim Trainor of the U.S. Census Bureau provided an update on the potential development of a National Address Database (NAD). In 2012, the NGAC developed a paper assessing the need for a National Address Database. Mr. Trainor indicated that the Census Bureau is committed to pursuing the development of a NAD. Census is exploring the concept of establishing a database populated by other levels of government that would "feed" the Census Master Address File. The preference is that NAD would be focused on a government-to-government relationship, including address/location data. Census is considering this as a reimbursable program, so data users would potentially have a use fee for specific data. Census leadership is coordinating with the Department of Commerce in the development of this proposal. Mr. Trainor indicated that the initiative is on a fast track and moving forward with the requirements gathering process. He asked that that other agencies interested in engaging in this initiative contact him.

Stephen Lowe – Indian Country Land Title Mapping
Stephen Lowe of the U.S. Department of Agriculture discussed a USDA initiative involving land title mapping in Indian Country.   Mr. Lowe discussed the attributes of the land title problem, the scope of potential mapping solutions, and the outlines of potential mapping models and business models. He also discussed possible solution design approaches, noting that solutions work best when they Tribal governments and communities make their own decisions about what development approaches to take. Mr. Lowe indicated that he will keep the FGDC and the NGAC apprised of the status of this initiative as it is developed.

Day 1 Wrap-Up/Planning for Day 2
The Chair made announcements regarding logistics and the next day's meeting.

Adjournment for Day 1
The Chair adjourned the meeting at 5:15 p.m.

WEDNESDAY, JUNE 12:

Welcome, Summary of Day 1, Overview of Agenda
Bob Austin provided a summary of the previous day's events, as well as an overview of the agenda for Day 2.

NSDI Strategic Plan
The NGAC continued its discussion of the NSDI Strategic Plan was given. A summary of the goals section of the plan was provided by Jerry Johnston, Ivan DeLoatch, and Dan Cotter.

Dr. Johnston reviewed the first goal in the NSDI Strategic Plan: *Development of National Shared Services Capabilities*. The development of geospatial interoperability reference architecture is one objective under this goal, especially data sharing across both classified and unclassified environments. The implementation of the Geospatial Platform is another component of this goal, including initiating service level agreements and other management issues.

Mr. DeLoatch reviewed the second goal: *Ensure Accountability and Effective Management of Federal Geospatial Resources*. Part of this goal is the objective to advance the portfolio management process for National Geospatial Data Assets (NGDA). Currently, performance measures to track progress are in development, but one of the challenges to this is developing appropriate baseline information. The Geospatial Platform can be used as a mechanism for managing these data sets and preventing duplication. Reinstitution of the marketplace function can assist in this process. In terms of implementation, it is critical to think about effective performance measures.

Mr. Cotter reviewed the third goal of the Strategic Plan: *Convene Leadership of the National Geospatial Community*. Components of this goal include developing and coordinating national and international standards applicable to the geospatial community, developing shared approaches to critical National issues between the Federal and non-Federal geospatial communities, and raising awareness of the NSDI and its impact on critical National issues.

The NGAC members broke out into small groups to discuss each of these goals. Feedback and comments from the three breakout groups included the following:

Goal 1 - Development of National Shared Services Capabilities
- *Objective 1.1* – Reference Architecture: what problem are we trying to solve? There is already communication between the classified and unclassified community. How do we clarify language to develop scope in relation to the Geospatial Platform? The architectural structure for data sharing was discussed.
- *Objective 1.2* – How do standards need to change to take full advantage of the cloud and web? Standards have evolved, but metadata standards need to be improved.
- *Objective 1.3* – Focus on the inherent value of cloud computing as an efficiency; need more discussion about shared geospatial computing infrastructure (elasticity, scalability). Use the Geospatial Platform as a way for partners to safely experiment and archive a living best practices environment. This will facilitate a better connectivity to the academic and geospatial research communities.
- *Objective 1.4* – Procurement and acquisition vehicles: inventory for available and planned acquisition vehicles needs to become a living marketplace that is both interoperable and accessible. Need to use those requirements to access the private sector marketplace.

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Goal 2 – Ensure Accountability and Effective Management of Federal Geospatial Resources
- Information gathering should be at the Federal, State, and local level. The private sector should be included as well.
- Consider an economic model that provides an incentive to organizations to share their information.
- Use the Platform as a "staging" mechanism for NGDA.
- Complexities from mismatch of state/Federal budget cycles.
- Using the Smart Buy process can be advantageous.
- Need to develop effective performance measures.

Goal 3 – *Convene Leadership of the National Geospatial Community*
- How do we get the message out?
- There are a lot of constraints on the Federal side for communications. Other channels should be used (e.g., NSGIC).
- Outreach to groups that aren't "traditionally geospatial" needs to be a focus; how do we engage these groups?

Following the reports from the breakout groups, NGAC members and the other meeting attendees engaged in an open discussion about the Strategic Plan. Highlights include the following:

- There are institutional barriers to groups that want to cooperate – we need to think about addressing these barriers.
- Human geography characteristics, including relationships to lifestyle/behaviors, are missing from the Strategic Plan.
- Privacy issues should be addressed in the Strategic Plan.
- The Strategic Plan says what we ought to do, but it leaves out the consequences of not doing them.
- Should make the overall report more quantifiable.
- Do we think of the NSDI as a collection of things, or a concept? Seems like more of a concept, which makes specificity difficult. We need to have a fundamental discussion on how we characterize the NSDI.
- We need to describe utility in terms of process or something more tangible.
- NSDI interoperability – "you'll know when you're there." Hard to know how to proceed, but the goal will be clear when we reach it.
- Expectations of success have changed. The levels at which we encounter technology have changed, making it hard to quantify.
- Need to identify key projects that we can accomplish. Consider a wide variety of areas in which to conduct trial projects.
- Resources required to achieve the goals should be addressed in the plan.

Following the discussion of the draft paper, the NGAC agreed on the following actions and decisions:

DECISION: The NGAC adopted the draft NGAC Strategic Plan Subcommittee paper in concept. The subcommittee will make final changes to the paper based on the discussion at the June NGAC meeting.

ACTION: FGDC staff will summarize the comments and discussion from the NGAC on the draft NSDI Plan and distribute to the NGAC.

ACTION: The NGAC strategic plan subcommittee will work with the FGDC core team to provide additional feedback on the following components of the draft NSDI plan: 1) Strategic Goals & Objectives, and 2) Implementation section.

ACTION: The FGDC will address the feedback from the NGAC, as well as feedback from the FGDC community, in the next version of the NSDI Plan (Version 2).

Public Comment Period

An opportunity for comment was afforded to members of the public who signed up in advance to do so. There were no requests for public comment during this meeting.

Lightning Session 2

NGAC members and guests were provided another opportunity to make brief announcements about activities of interest to the Committee.

Gene Trobia/Tom Roff – Transportation for the Nation

Gene Trobia and Tom Roff (DOT) provided an update on the Transportation for the Nation initiative. The Moving Ahead for Progress in the 21st Century (MAP-21) Act was signed into law in July 2012. The law funds surface transportation programs at over $105 billion for FY 2013 and 2014. It includes funding of $4.8 billion for a Highway Safety Improvement Program (HSIP). HSIP requires developing a basemap of all roads onto which safety attributes can be attached. HSIP funds can be used by State DOTs to develop the basemap. DOT has to provide data on all-public road networks. The Federal Highway Administration (FHWA) is establishing a working group to develop use cases for the ARNOLD network. The project location tool is going to be one of the more persuasive applications of the ARNOLD network. External users are being engaged for their input.

Talbot Brooks – GIS and Emergency Response

Talbot Brooks gave a presentation on GIS and emergency response activities. He noted that more accurate and consistent addressing data could assist emergency response personnel in getting to their destinations in a timelier manner. Mr. Brooks described several use cases where better data would have resulted in more effective responses. Time and lives could be saved by more accurate data sharing with States and localities. There is a need for better data integration across platforms. The U.S. National Grid can be leveraged as a starting point to address numerous issues, including symbology, data sources, best practices, and standards development.

Geospatial Platform Update

Jerry Johnston provided an overview of recent activities related to the Geospatial Platform. He noted that the Platform is designed to be a point of access for sharing data and tools, building content, and experimenting with new tools in a "low-risk" environment. The search and catalog capabilities are still core functions of the Geospatial Platform. As more tools become available, the Platform team hopes to see more maps developed from tools available across the web. The Platform is exposing content through communities of interest and practice. The OMB Circular A-16 data themes will each have a theme community on the Platform, which will be managed by the theme lead agency. The theme leads

will be given a template to use in the management of the theme community, but the content included in that community will be developed at their discretion.

The new common *catalog.data.gov* search engine has been available since May 2013. The website is Drupal-based. The hosting service that is currently being used is the "Common Good" shared resource that is under development via GeoCloud. The Platform team is developing reimbursable cloud hosting services and plans to make these available by next fiscal year.

Dr. Johnston provided a demonstration of the updated GeoPlatform.gov website. Following the demonstration, Tony Spicci commented that the NGAC has assigned the Geospatial Platform subcommittee to look at data-as-a-service (DaaS) and the use of public-private partnerships. He said there need to be links to all Federal geospatial resources on the Geospatial Platform. Additionally, the community marketplace will be an important component of the Platform. This feature can benefit both web services and planned acquisitions because it can help States coordinate with each other. The Geospatial Platform can be a place for users to see what is happening across the community and continue to build communities of knowledge.

> **ACTION:** NGAC members are encouraged to review and test the prototype Geospatial Platform 2.0 site and provide additional feedback to the Geospatial Platform subcommittee co-chairs (Matt/Tony) by June 28.

Landsat Advisory Group
Roger Mitchell and Tim Newman (USGS) provided an update on the NGAC Landsat Advisory Group's (LAG) recent activities. Mr. Newman provided an overview of recent activities of the Landsat program. He noted that the Landsat Data Continuity Mission (Landsat 8) launched in February 2013 from Vandenberg Air Force Base in California. So far, it has been a smooth mission. Over 20,000 scenes were collected prior to the mission being transferred to USGS. Since the transfer, roughly 50,000 additional scenes have been collected. Mr. Newman indicated that USGS and partners have been very pleased with the performance of the system. He also noted that USGS and NASA have been working together over the last few months to determine the next steps for the Landsat program in response to the Administration's request for a long-term plan.

Roger Mitchell reviewed the 2013 tasks for the LAG. The Landsat study questions address the following topics: product improvement, cloud computing, industry benefits, foreign partnerships, new applications, and the upcoming National Research Council (NRC) report on Landsat. The NRC report on a sustained land imaging program should be released very soon. USGS has asked the LAG to provide feedback after reviewing the NRC report. Mr. Mitchell indicated that the LAG will report back to the NGAC as it develops its responses to the study questions.

> **ACTION:** The NGAC Landsat Advisory Group will develop draft papers addressing the Landsat study questions and provide an update at the September NGAC meeting.

Lightning Session 3

> Doug Richardson - Geospatial Frontiers in Health
> Doug Richardson presented on "Geospatial Frontiers in Health," the American Association of Geographers' (AAG) initiative for an NIH-wide GIS infrastructure. The efforts to integrate GIS at NIH are not nearly as pervasive as they are in other sectors. The gold standard in health

research has been the longitudinal study, which examines change over time. Spatial patterns are important in understanding these changes. AAG was funded to do an NIH-wide geospatial information workshop. The report is published and available on the AAG website. AAG was awarded a grant to look at geospatial frontiers in health and social environments for the National Cancer Institute (NCI), National Institute on Drug Abuse (NIDA), and other entities within NIH. Areas being explored include gene-environment interactions. Almost every institute at NIH has genetic research components. GIS can provide a counterpart to highly sophisticated genetic information at NIH, including providing information on environmental and epigenetic factors. Another area in exposure research includes exposure assessment with GPS/GIS data (using GIS technology to determine how disease spreads environmentally). In the past, most exposure research has used very gross GIS (e.g., zip codes, counties, etc.) which allows for a great amount of variability.

Confidentiality is a significant theme in all research in the intersection between geospatial and public health. AAG is working to address challenges for geospatial data-intensive research communities. As research that uses large amounts of geo-referenced data spreads across many scientific domains, privacy is a concern. AAG is collaborating with the University of Michigan on confidentiality characteristics of large geo-referenced datasets. Visualization is one possibly confidential characteristic, as a map is recognizable in ways that aggregated data is not. There have been several new approaches to reduction of disclosure risks through geolocationally-identifiable data. One promising new approach is the geospatial virtual data enclave. It is a way for researchers to develop and implement procedures for accessing and sharing geo-referenced data in ways that offer adequate protection of geo-privacy and confidentiality, and it provides guidance on and procedures for re-distributing, reusing and publishing geo-referenced data.

NGAC Discussion/Decisions
To conclude the meeting, the NGAC members discussed follow-up activities and agreed on several action items:

Transportation Data
The NGAC engaged in a follow-up discussion regarding transportation data and approved the following resolution:

> **DECISION:** The NGAC approved the following resolution:
>
> "The NGAC wishes to acknowledge the good work of USDOT in the Transportation for the Nation and MAP21 efforts to partner with Federal, State, local, and Tribal governments to create a single road and highway map for the Nation. We strongly recommend that this effort include the collection and integration of street address data with the Highway Performance Monitoring System linear referencing framework. This will dramatically reduce data compilation and management redundancy and enhance public safety."

NGAC A-16 Subcommittee

> **ACTION:** The FGDC A-16 implementation team will meet with the NGAC A-16 subcommittee to brief them on the development of the A-16 implementation plan.

NGAC Nominations

ACTION: The FGDC will issue a call for nominations for the next round of NGAC appointments in summer 2013. NGAC members are encouraged to communicate this opportunity within their professional organizations and networks.

NGAC Action Plan

Bob Austin led a discussion about future study topics for the NGAC. The NGAC agreed to establish three work groups to develop proposed study questions for consideration by the NGAC and the FGDC. The NGAC agreed on the following action:

ACTION: NGAC members will develop proposed study questions for the following topics:

1. Geolocation Privacy
2. Education/Geospatial Workforce Development
3. Addressing

The proposed study questions will be reviewed and refined by the FGDC community and will be discussed in further detail at the September NGAC meeting.

Meeting Summary/Wrap-Up

The results and actions from the meeting were briefly summarized. The next NGAC meeting is planned for September 4-5 at the National Conservation Training Center in Shepherdstown, WV.

Meeting Adjournment

The Chair adjourned the meeting at 4:00 p.m.

Certification

I hereby certify that, to the best of my knowledge, the foregoing minutes are accurate and complete.

Dr. Robert Austin, Chair, National Geospatial Advisory Committee

Mr. Ivan DeLoatch, Designated Federal Officer, National Geospatial Advisory Committee

These minutes will be formally considered by the Committee at its next meeting, and any corrections or notations will be incorporated in the minutes of that meeting.

Note – These minutes were approved by the NGAC on September 4, 2013

The following is a list of the presentations and handouts from the meeting. These meeting materials are posted along with the minutes at: http://www.fgdc.gov/ngac/meetings/june-2013/index_html

NSDI Strategic Plan
- NSDI Strategic Plan - Update
- NSDI Strategic Plan - Overview of Draft Plan
- Initial Draft NSDI Strategic Plan (Version 1, 6/5/2013)
- NGAC Paper: Toward A New Strategic Vision for the NSDI

Geospatial Platform
- Geospatial Platform Update

Landsat
- Landsat Program Update
- Landsat Advisory Group Presentation

Lightning Sessions
- NC Flood Mapping Information Systems - Thompson
- USDA Indian Country Land Title Mapping Initiative - Lowe
- Transportation Update - Trobia/Lewis
- Addressing - US National Grid Update - Brooks
- Geospatial Frontiers of Health - Richardson

Transportation
- NGAC Transportation Resolution