

NSDI Leaders Forum
Tuesday, July 26, 2016, 10:00am - 4:00pm
U.S. Department of the Interior, Washington, DC

Purpose

The Federal Geographic Data Committee (FGDC) hosted a National Spatial Data Infrastructure (NSDI) Leaders Forum meeting on July 26, 2016 in Washington, DC. The purpose of the meeting was to gather input from leaders of key geospatial organizations on the development of the next strategic plan for the NSDI.

Attendees

Geospatial Organizations - Attendees

Richard Butgereit, National Information Sharing Consortium
John Byrd, National Society of Professional Surveyors
Neal Carpenter, International Association of Assessing Officers
Michael Hauck, American Society for Photogrammetry and Remote Sensing
John Palatiello, Management Association for Private Photogrammetric Surveyors
Mark Reichardt, Open Geospatial Consortium
Matt Rice, Cartography and Geographic Information Society
Doug Richardson, American Association of Geographers
Tony Simental, National States Geographic Information Council
Cy Smith, Coalition of Geospatial Organizations
Rebecca Somers, Urban and Regional Information Systems Association
Curt Sumner, National Society of Professional Surveyors
Matt Thomas, Geospatial Information and Technology Association
David Tulloch, University Consortium for Geographic Information Science
Ronald Worth, International Association of Assessing Officers

Federal Attendees

David Alexander, DHS
Wendy Blake-Coleman, EPA
Adrian Gardner, FEMA
Tony LaVoi, NOAA
Steve Lewis, Department of Transportation
Lynda Liptrap, Census Bureau
Tim Trainor, Census Bureau
Gita Urban-Mathieux, USGS
Nate Workman, FEMA

FGDC Staff

Ivan DeLoatch, Executive Director
Ken Shaffer, Deputy Executive Director
John Mahoney
Lucia Foulkes
Tricia Gibbons, Facilitator, FGDC Support
Tom Myers, FGDC Support

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Start-up, Context Setting & Introductions

Ivan DeLoatch, Executive Director, FGDC

We appreciate you taking the time out of your schedules to participate in the NSDI Leaders Forum. We want to take full advantage of your time. We hosted a series of forums in 2013 when we were developing the 2014-2016 NSDI Strategic Plan. The forums were helpful – we are hoping to have a similar outcome this cycle. We hope that you will embrace the process and take key ideas back to your respective organizations as we work to advance the NSDI.

Tricia Gibbons, meeting facilitator, provided an overview of the meeting and led a round of introductions. As an introductory exercise, participants were asked for one word that describes the NSDI. Responses included: Collaboration, Important, Aggregation, Evolving, Evolving, Interoperability, People, Goals, Potential, Asset, Marine, Fascinating, Savings, Rolled-Up, Essential, Future, Access, Partnership, Open, Foundational, Geodetic-control, User, Coordination, and Vital.

Purpose & Objectives

Purpose of the Overall Initiative: Develop a strategic plan framework to improve the coordination and management of the Nation's geospatial assets and guide the further development of the National Spatial Data Infrastructure (NSDI).

Outcome of the Initiative: A concise strategic plan framework with shared goals to guide the geospatial community of practice in the further development of the NSDI.

Objectives of the Meeting:

- Share approach and process for developing the strategic plan framework
- Encourage support and involvement of association constituents
- Solicit perspectives and build common understandings of the desired future state, challenges and opportunities for reaching it.
- Share ideas for roles and responsibilities of the different sectors involved in geospatial activities.
- Identify agreements, actions, and next steps

Ivan DeLoatch, Executive Director, FGDC:

The strategic planning process provides a good opportunity to work with the new administration to advance the NSDI. Regardless of who is in office, the NSDI and the work we are doing in the geospatial community has clear value. The first step is to develop a draft strategic plan framework, which is targeted to be completed by December 2016.

Throughout 2017, we will continue to refine the ideas that went into the framework into an updated NSDI Strategic Plan. We plan to utilize a shared approach and process in developing the Strategic Plan. The 2014-2016 Strategic Plan focused on federal government responsibilities, while recognizing that the work was depended on stakeholder participation and buy-in. We want to broaden the audience and build new partnerships for the new plan.

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We see today's meeting as the beginning of an ongoing process. We are hoping to have another NSDI Leaders Forum meeting in the October timeframe. Today, we are looking for the group to help identify initial priority areas and shape the framework development process.

David Alexander, Geospatial Information Officer, DHS:

FGDC has worked since 1992 to construct the community foundation to establish the NSDI as a national framework for sharing place-based information. Recent initiatives include:

- **A-16 Supplemental Guidance** extended the concept of geospatial data to National Geospatial Data Assets (NGDAs)
- **Geospatial Platform** established shared environment for data and services
- **2014-16 NSDI Strategic Plan** established goals and metrics for development of NSDI

The 2014-2016 NSDI Strategic Plan was developed through a collaborative process. FGDC hosted NSDI Federal Workshops; NSDI Leaders Forums; and solicited input on vision, roles and responsibilities, and desired future state of the NSDI from the National Geospatial Advisory Committee (NGAC). The 2014-2016 Strategic Plan had three high-level goals:

1. Develop capabilities for national shared services
2. Ensure accountability and effective development and management of federal geospatial resources
3. Convene leadership of the national geospatial community

Overview of the NSDI Strategic Framework Initiative

The purpose of this session was to provide a brief overview of the process and approach of the initiative, including:

- *Approach and Process*
- *Perspectives from the Federal Community & the NGAC*

John Mahoney, FGDC:

We have an opportunity to identify common goals and objectives that we as a community can carry forward, working with the new administration. We are looking at this as a two-step process. By the end of this calendar year, we plan to develop a draft framework. In 2017, we want to work with the new administration to refine the ideas in the framework into an updated NSDI Strategic Plan. In addition, the NGAC has set up a set of workgroups and subcommittees that are providing input into this process:

- NSDI Evaluation Work Group
- NGDA Evaluation Work Group
- Emerging Technologies Subcommittee
- Policy Framework Subcommittee

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Questions & Discussion

Where is security addressed in the framework, specifically regarding geodetic infrastructure?

- The topic of security is aligned under multiple NGAC working groups. It's a cross-cutting concern. Doug Richardson and Matt Gentile, NGAC members, may be able to provide additional information.
- We should take a holistic threat view in this process to establish minimum criteria for security.
- It's not only security – it's also privacy. From a FEMA perspective, the Administrator is concerned about reliance on GPS and other technologies. As a result, FEMA is emphasizing use of the National Grid. Threat analysis is important when looking at reliance from an access/control perspective.

Federal vs. National Approach & the Value of the NSDI

The purpose of this session was to solicit ideas on the value of the NSDI and the approach of the initiative, including:

- *In what way might we pursue a national approach?*
- *The world would be a better place if...what is the value of the NSDI?*
- *Agreements and Perspectives*

Question: From your perspective, what distinguishes between a federal and national strategy?

- There is so much change going on in the marketplace with the commercial sector. There is a need to resolve licensing and other issues with federal, state, and local datasets.
- State and local governments need to be partners in this process. In order for this effort to be successful, 1) there needs to be a collaborative structure that allows all levels to participate in decision making and 2) all parties need to understand the value proposition. At all levels, people need to be able to grasp the value and advocate to their constituents.
- The elephant in the room is the governance. There is a NSDI, and a NSDI Strategic Plan, developed and implemented by a federal entity. There is not always a seat at the table for local, commercial, academic, and non-profit entities. Additionally, FGDC does not seem to have the resources to produce outcomes.
- When we talk about State and local entities, we need to include Tribal governments.
- Would like to see the NSDI Cooperative Agreements Program grants re-instated.
- In 2005, FGDC convened the Future Directions Initiative. One items that came out of group was a governance structure/governance initiative. We decided that it would require congressional action to make it happen, but there is precedent.

Question: What is difference between collaboration and cooperation?

- Cooperation is more active.
- Collaboration is talking about working together; cooperation is actually doing it.
- It's evident that collaboration and cooperation may mean different things to different people. This is worth keeping in mind.

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Question: From your perspective, what distinguishes between a federal and national strategy?

- The commercial market is moving fast. This group should be prototyping active collaboration and cooperation. There are companies out there that are willing to help build a true national marketplace.
- There still needs to be some level of authority to lead the effort. If it's not congressional authority, we need to find something else that we can peg it to.
- We do have areas where we collaborate well. We aren't doing a good job communicating our successes. The National Boundaries dataset was a national effort. Funding came from universities, states, and others. We leveraged federal requirements/resources to push the effort forward.

Value Distribution – Redefining Roles and Responsibilities

The purpose of this session was to solicit input on roles and responsibilities of the geospatial community sectors, including:

- *Partnerships in Building the NSDI*
- *What do we give? What do we get?*

Breakout Session 1: Value Distribution Exercise

Participants were asked to work in table groups to identify what each sector provides for the NSDI and what each sector gets. The following is a summary of report outs from each of the five (5) table groups. Please refer to Appendix 1 on pages 12 – 14 for further details.

Academia/Non-Profit

- Table 1: An important function of the academic community is the ability to critique without the constraints that those in the for-profit or public sector may have. The academic community PROVIDES innovation, people, training, best practices, and proofs-of-concept. The academic community GETS funding and standing (a seat at the table). Non-profits GET information, encouragement, and offer perspective for their members. Academia and non-profits both leverage the NSDI in some capacity.
- Table 4: Academia PROVIDES training for the future workforce and advocacy. Research results can be applied to practical issues. Academia and non-profits create credibility that allows them to expand impact in the community. Academics and non-profits PROVIDE advocacy.
- Table 3: Academia and non-profits provide new perspectives and approaches. Academics are a big contributor of data.
- Table 5: Academia and non-profits are very different. With non-profits, we seem to be talking about professional associations, but there are other types of non-profits with different incentives.
- Table 2: Academics and non-profits PROVIDE research and professional development.

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Citizens

- Table 4: Citizens should be a unique category. If you look at activities like OpenStreetMap (OSM), they tend to be self-organizing. With VGI, there are indicators associated with use, purpose, and accuracy.

Private Sector

- Table 5: The private sector PROVIDES investment, access to data, ROI on their investments that they can re-invest in data and technology.
- Table 4: The private sector PROVIDES capacity, R&D, expertise, business opportunities, and market access. The private sector PROVIDES innovation and advocacy. The private sector GETS access to data, opportunities, ROI.
- The private sector PROVIDES international flavor, fosters a competing ecosystem that fills gaps within the NSDI.
- The private sector PROVIDES increased flexibility and a speed of adopting new technologies that isn't possible within the government.
- The private sector PROVIDES value added products and services.
- The private sector is the most efficient mechanism for data dissemination.
- The private sector PROVIDES jobs and fills gaps, which allows government, at all levels, to focus on other responsibilities.
- The private sector PROVIDES physical infrastructure, such as satellites and sensors.

Local/County Government

- There are commonalities across all levels of government (requirements, expertise, data, tech/application, resources, and standards). Different levels of government have different roles, but these themes persist.

Question: Are there any distinctions between levels of government?

- Mandates and national policies are unique to the federal government.
- Are the policies coming from the state consistent with those at the federal level? The mandates need to be in alignment. State government functions that are unique: licensing for experts in the field, in kind data partnerships. There is a lot of money spent at state/local levels on data that could be rolled-up. We need to be more focused and intentional about data collection and aggregation.
- State/local is where rubber hits the road. Quality issues are very apparent at this level.
- Authoritative data, in most cases, is coming from local sources.
- In terms of accuracy, there seems to be a desire to move to hyper-accurate information sources. Figuring out how to coordinate with state/local entities to update data is critical.
- Accuracy and data quality issues may be coming down as requirements from federal level. Standardized data guidance needs to be established, which comes with resource requirements.
- The standard-creating agencies are primarily federal and state governments.

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- Surveying as a term in state law is different than what most in the room may think of. It's a broad term. Licensing requirements are for professionals that are entitled by state law to practice. Every state has minimum technical standards. Trying to harmonize/homogenize is a challenge.
- Do we have the tools, techniques, and procedures to acknowledge and document licensing requirements and nuances? We need to be sure we are enforcing standards that are already in place so that we know what we are dealing with for a given dataset.
- There is a productive commercial sector and a vibrant GIS community that gathers data using science. They have QA/QC processes and other structures built around data collection. There is a great deal of technology in private and public sector that we don't want to hobble with licensing requirements. We don't want to impede rapid and creative growth of the industry.
- Our economy is underpinned by rapid innovation and the ability to make money on that innovation. If we are to increase mandates/licensure requirements, it runs counter to an economy where smart people can innovate. If we adopt too soon, we risk adopting the wrong thing. We need to preserve this environment of innovation.
- Ignoring laws is perilous. If there is a need to change a law, it needs to be changed.

Federal Government

- The federal government is an aggregator/source of business needs.
- The federal government PROVIDES incentives. As an example, the federal government is funding the creation of a new datum in 2017. The mandate for the datum is an incentive. The creation of the datum will have positive (and some negative) ripple effects.
- What information needs to be gathered by surveyors? By GIS professionals?
- The federal governments GETS data, products, services, solutions, efficiencies, standardization, user feedback, revenue (via taxes). No one group is going to be doing everything. Who has the lead, where are the strengths, who has the obvious responsibilities? It may be worth spending time identifying national strengths, affinities, and leadership roles. If we look at data collection as an example: Academics come up with technologies, industry comes up with the technologies, federal government provides funding, and state governments provide data.
- The ideal NSDI is one of choices. How do we determine fitness for use?
- We've realized over time that the best data is at the local level. What can be done to bring the governance models together on a state by state basis so that national efforts can be coordinated effectively?
- In order for that to happen, we need to have a national governance structure that everyone feels that they can participate in. Articulating the value proposition: if we had a national parcel dataset, we'd be able to see what's happening around mortgages, predict and respond to crisis.
- How do we facilitate data collection/coordination at a local level? Is it a national database? It's not enough to demonstrate value. There needs to be commitment – especially financial commitment – to establish buy in and ensure that efforts maintain.
- Local governments are burdened with requests for data. By having a single method by which they provide data up and out, it would relieve the burden.
- Emergencies don't stop at state/local boundaries.

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Question: Do we have an NSDI now?

- Even though we've spoken about NSDI all afternoon, we haven't defined what it is going to be. If we don't define it, how can we critique it?
- An SDI encompasses a seamless ability to qualify data for use, a seamless ability to access resources to use the data, and seamless data repositories to identify and access the best information. The NSDI exists. The NSDI makes it possible to open information, release it across national boundaries, and foster collaboration. The NSDI, at many levels, connects with other SDIs.
- The reality is that geospatial is a complex ecosystem. The NSDI is a core part of the ecosystem. It builds and strengthens other entities and people working in the field. The innovations that are happening in the U.S. are happening around the world. You can't restrain it – it's going to go. The amount of real-time spatial-temporal data is explosive. Accuracy, precision, and definition will continue to increase. We owe a lot to the NSDI because it gives us a nice core at the center of the ecosystem.
- We do need some better structures around the NSDI, as a core component, in order for it to support the rapid innovation and growth. We don't need structures that stagnate progress, but we do need consistently.

Question: Is the NSDI a concept or is it something more meaningful? What part does data play?

- If you are going to apply policy to the data, you need to be able to access the data, but you also need to be able to apply provenance. Was it crowdsourced? Where did it come from?
- Ken Shaffer, Deputy Executive Director, FGDC: We have federal governance with the FGDC. Does there also need to be a national governance for the NSDI?
- Is it the government's role to "govern" or just try to "manage" an increasingly complex ecosystem? Is it governable?

A New Vision for the Future – What will it look like?

The purpose of this session was to solicit perspectives and build common understandings of the desired future state, including:

- *Describing the Desired Future State*
- *Common Understandings*

Discussion:

- Provide government, businesses, and citizens with a way to visualize and explore data to derive information and knowledge.
- Create a network of resources and services for the seamless integration of location-based information into broader information assets to serve the needs of governments, the business community, and citizens.
- Serve as an enabling resource for discovery, access, integration, and application of location information for a growing body of users.
- Leverage shared and open standards-based services and focus on the applied information for improved decision making.

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- Promote place based business intelligence and smart, shared applications.
- Include a core set of information layers that interface with other non-spatial data being generated.
- Use real-time data feeds, and sensor webs for improved monitoring, control, situational awareness, and decision making.
- Facilitate access to and use of multi-temporal information linked to place.
- Integrate and use advanced technologies and their associated standards and best practices.
- Facilitate use of community-driven open standards with multiple implementations.
- The goals need to be consistent across mission areas.
- If we look at the COGO Report Card, a large focus was data. One aspect of the NSDI Strategic Plan needs to address the deficiencies identified by COGO and communicate to the community where we are with data.
 - The COGO Report Card was able to identify deficiencies, but did not present a clear future state or path forward.
- Metrics need to be a fundamental component of a future NSDI Strategic Plan.
- A lot of what we have done in federal space is inventorying what we have. One aspect of Portfolio Management, when we talk about national layers, is identifying the role of the layer. Levels of fidelity requirements vary by user community. Given this, how do we define and measure data goals?
- The concept of quasi-public corporation entities is interesting. We need to raise the NSDI governance to a level where private sector participants feel that they have a seat at the table.
- We want to see more state contributions to the NSDI. It's a challenge for state governments to contribute. There are good examples of past initiatives (National Broadband Map, National Hydrography Dataset, 3DEP) and ongoing initiatives (Parcels and National Address Database) that we can learn from.
- As an industry, we realize collaboration brings it all together. The work completed to date, given the complexities of the landscape, is admirable.
- GIS is integral to E911. Stakeholders are beginning to understand that.
- Geospatial Platform is a massive project that stands to be beneficial for many people. We have a range of things that would be good to do (e.g. National Address Database), but we cannot do it all at once. We need to realize that the FGDC doesn't have a large budget and be realistic about resources. We need to look at changing priorities and prioritize the efforts that are underway based on need. What would be the effect of increasing the FGDC budget?
- How can the NSDI support science? How can it provide data that sparks new research? There is a lot the academic community can do with the NSDI if it is built on scientific principles.
- Does the FGDC staff have the power in the federal government to do what they need to do to achieve the goals of NSDI?
 - Ivan DeLoatch, FGDC: The core work of the FGDC is done by agency representatives. This question has two parts. Do we have adequate representation on committees to get the work done? Do we have the resources required to support those representatives in getting the work done.

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Developing a Shared Direction and Priorities

The purpose of this session was to identify potential priorities and opportunities for the geospatial community to pursue.

Exercise: If you were now in charge of the building the NSDI, what bold step would you take to get us there? What would be your top priorities or goals? On what do the members of the group agree/disagree?

Breakout Session 2: Priorities and Next Steps.

Listed below is a summary of the reports outs from each table group. For more detail, refer to the chart in Appendix 2 on page 15.

- Table 1: Establish a presidential “blue ribbon commission” to define what path forward for NSDI would be. The commission should be comprised of people that are recognized and respected.
- Table 2: Demonstrate ROI to partners and stakeholders.
- Table 4: Establish scalable exemplars that demonstrate value.
- Table 5: Coordinate federal grant guidance (e.g. DDC, Broadband grants).
- Table 2: Design and implement strategic communication targeting stakeholders.
- Table 1: Creating a quasi-governmental structure to provide governance.
- Table 4: Establish a quasi-governmental body, establish dialogue, and build an organization around if it takes hold.
- Participant: There are existing models of state and local dataset contributions (e.g. 3DEP, EPA Exchange). We need to look at them and see what works best as best practices. Establish use cases and examples.

Wrap-up: Agreements, Actions, and Next Steps

The purpose of this session was to identify agreements, actions, and next steps that the community can pursue, including:

- *Identify agreements*
- *Action Planning*
- *Next Steps*

Ivan DeLoatch and John Mahoney summarized the results and outcomes from the meeting and discussed next steps. Key points included the following:

We appreciate the ideas and enthusiasm. We want to take input, share it with NGAC members and others, and further develop the concepts. Some of the components we’ve discussed – roles and responsibilities, desired future state, priorities and opportunities – we will post on the website, share with other committees, and ask for feedback.

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A key step is to make the case for the new administration that this is important. There are opportunities to make improvements in terms of governance, management, and resources. The transition planning process is a related opportunity to make that case. We need your help to build a persuasive argument.

We are encouraged by the enthusiasm. We will compile meeting materials and reach out to those who have offered to assist. The NSDI Leaders Forum is one step in the process. We will keep you in the loop as we continue to have these conversations and build the framework. We want to make sure that we give the process due diligence, that we have buy-in, and we demonstrate the value in what we do. We want to focus on ideas that will make a difference and generate the most attention. The participants in this forum are our thought leaders. The ideas captured today will be very helpful in developing future NSDI guidance and products.

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Appendix 1: Value Distribution Exercise

PROVIDES	GETS
Federal Government	
[National] Leadership Authority Data Data Model Distribution [via WMS/WFS] Education Expertise Funding Geodetic control Outreach Policy, Guidelines, & Mandates Requirements Resources Standards Vision	[Good] Data Access Apps Efficiencies Goodwill Improved Public Service Products Public Trust Revenue ROI Services Standardization [User] Feedback

Tribal Government	
PROVIDES	GETS
Assistance [with addressing/naming] Data [integration and aggregation] Expertise Perspective Requirements Standards	[“Over border”] Access Ability & Data [beyond funding/means] Apps Assistance [from federal government] Data Efficiencies Funding [inc. grants] Products Revenue Services Solutions Standardization User Feedback

State Government	
PROVIDES	GETS
Champions/Leadership [GIOs] Data Data integration and aggregation Expertise Funding Infrastructure Licensing Policies, Guidelines, & Mandates QA/QC Requirements ROI Standards	[“Over border”] Access Apps Assistance [from other levels of government] Efficiencies Funding Products Revenue Services Solutions Standardization User Feedback

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Local/County Government	
PROVIDES	GETS
[Authoritative] Data Accountability Authority [for data sources] Continuity & Maintenance Expertise Licensing Requirements Standards	["Over border"] Access Apps Assistance Data Efficiencies Feedback Funding Products Revenue Services Solutions Standardization User Feedback

Private Sector	
PROVIDES	GETS
[Value added to] Data [Value added to] Products Advocacy Applications Capabilities Capacity Expertise Innovation Investment Requirements ROI Technology	Access to [often free] data [Business] opportunities Income [inc. fees from services] Market access ROI

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Academia & Non-Profits	
PROVIDES	GETS
<p><u>Both</u> Advocacy Best Practices Community Inputs Critique International linkages Outreach Technology Training</p> <p><u>Academia</u> Education Research Workforce</p> <p><u>Non-Profits</u> Advocacy Coordination Credentials/Certification Communication</p>	<p><u>Both</u> [Big] Data Framework Funding Innovation Perspective Requirements Standing Tenure</p> <p><u>Academia</u> Funding Recognition Standards</p> <p><u>Non-Profits</u> Cutting-edge Recognition</p>

Individual (Proposed)	
PROVIDES	GETS
Accuracy/Quality Assessment Crowdsourced Data Self-organization Volunteered Geographic Information (VGI)	Personal satisfaction Information

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Appendix 2: Priorities & Next Steps Exercise

Control		Influence	
Idea	Who	Idea	Who
Establish a quasi-public body with equal representation of private and public interests.	Follow-up: Mark Reichardt Steve Lewis Matt Thomas	Presidential E.O. to establish governance <ul style="list-style-type: none"> • Make the case (governance, management, organization, data) 	Follow-up: Cy Smith John Mahoney
		Establish Presidential Blue Ribbon Commission to define an NSDI path forward	
Demonstrate ROI		Make an investment	
Build off of 3DEP ROI approach for plan for each of the framework data layers			
Identify models for state and local contributions to national datasets <ul style="list-style-type: none"> • Federate data management – ex. EPA Exchange 		Coordinate Federal Grant Guidance	
“Rush” to prototype – flaws are OK! Tangible and representative, this can be adjusted over time			
Establish scalable exemplars in each sector and expand as appropriate	Most volunteered (need template)		
Strategic Communications targeting stakeholders (right people, right time, right mode, right message)	Cy Smith to send COGO template		