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H.R. 1604, MAP IT ONCE, USE IT MANY TIMES ACT AND H.R. 916, FEDERAL LAND ASSET INVENTORY REFORM ACT OF 2013

LEGISLATIVE HEARING

BEFORE THE

SUBCOMMITTEE ON ENERGY AND MINERAL RESOURCES

OF THE

COMMITTEE ON NATURAL RESOURCES
U.S. HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRTEENTH CONGRESS

FIRST SESSION

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LEGISLATIVE HEARING ON H.R. 1604, TO ESTABLISH THE NATIONAL GEOSPATIAL TECHNOLOGY ADMINISTRATION WITHIN THE UNITED STATES GEOLOGICAL SURVEY TO ENHANCE THE USE OF GEOSPATIAL DATA, PRODUCTS, TECHNOLOGY, AND SERVICES, TO INCREASE THE ECONOMY AND EFFICIENCY OF FEDERAL GEOSPATIAL ACTIVITIES, AND FOR OTHER PURPOSES, MAP IT ONCE, USE IT MANY TIMES ACT; AND H.R. 916, TO IMPROVE FEDERAL LAND MANAGEMENT, RESOURCE CONSERVATION, ENVIRONMENTAL PROTECTION, AND USE OF FEDERAL REAL PROPERTY, BY REQUIRING THE SECRETARY OF THE INTERIOR TO DEVELOP A MULTIPURPOSE CADASTRE OF FEDERAL REAL PROPERTY AND IDENTIFYING INACCURATE, DUPLICATE, AND OUT-OF-DATE FEDERAL LAND INVENTORIES, AND FOR OTHER PURPOSES, FEDERAL LAND ASSET INVENTORY REFORM ACT OF 2013

Thursday, December 5, 2013
U.S. House of Representatives
Subcommittee on Energy and Mineral Resources
Committee on Natural Resources
Washington, DC

The subcommittee met, pursuant to call, at 9:35 a.m., in room 1324, Longworth House Office Building, Hon. Doug Lamborn [Chairman of the subcommittee] presiding.

Present: Representatives Lamborn, Fleming, Thompson, Lummis, Duncan, Holt, Horsford, Lowenthal, and Garcia.

Mr. LAMBORN. The committee will comet to order. The Subcommittee on Energy and Mineral Resources is meeting today to hear testimony at a legislative hearing on H.R. 1604, introduced by myself, the Map It Once, Use It Many Times Act, and H.R. 916, introduced by Representative Kind, the Federal Land Asset Inventory Reform Act of 2013.

Under committee rule 4(f), opening statements are limited to the Chairman and Ranking Member of the subcommittee; however, I

ask unanimous consent that members be permitted to submit opening statements to the hearing record if submitted to the clerk by close of business today. Hearing no objection.

Mr. HOLT. No objection.

Mr. LAMBORN. So ordered.

I now recognize myself for 5 minutes.

STATEMENT OF THE HON. DOUG LAMBORN, A REPRESENTATIVE IN CONGRESS FOR THE STATE OF COLORADO

Mr. LAMBORN. I would like to thank our witnesses for being here today. Today we are holding a legislative hearing on two bills aimed at reducing Federal bureaucracies and streamlining Government inefficiencies in Federal land management. These bills will also coordinate what are currently duplicative missions of multiple Federal agencies to create a more efficient government and save taxpayer dollars by ensuring that they are not being spent on duplicative efforts.

As technology advances, local, State, and Federal Governments are increasingly turning to geospatial information for a variety of purposes. Multiple Federal agencies, such as the Department of Transportation, Department of Agriculture, and Department of Defense, all use geospatial mapping for their own purposes. The challenge comes when these governments and government agencies are using taxpayer dollars for duplicative efforts in surveying and mapping. Rather than sharing information or coordinating efforts, these agencies often map the same areas on multiple occasions, replicating the efforts of the other agencies and using taxpayer dollars to repeatedly map the same area.

On other occasions, these agencies acquire equipment, such as planes, ships, or computers, rather than contracting with private sector companies that specialize in conducting state-of-the-art geospatial surveys. In fact, my home State of Colorado is home to many very capable geospatial and mapping companies who are anxious to work with the Federal Government to meet our geospatial surveying needs.

For decades, Government reports have highlighted the problems facing the Federal Government's geospatial programs. Recognizing these challenges, Government officials have attempted to coordinate these efforts by the various Federal agencies. However, a November 2012 GAO report concluded that while policies and procedures for coordinating investments in geospatial data have been established, agencies have not effectively implemented them.

Today we will hear testimony on two bills. The first, my legislation, H.R. 1604, the Map It Once, Use It Many Times Act, establishes a National Geospatial Technology Administration that will oversee and coordinate all geospatial functions that are currently undertaken by multiple Federal agencies. The administration would also promulgate standards for ensuring the geospatial data collected will be used efficiently and effectively by all Federal agencies.

We will also hear testimony on H.R. 916, the Federal Land Asset Inventory Reform Act of 2013, or FLAIR Act. This bipartisan legislation will improve Federal land management, resource conservation, and environmental protection by requiring the Secretary of

the Interior to develop a comprehensive register of Federal property to identify inaccurate, duplicative, and out-of-date Federal land inventories.

These two bills will reduce duplicative Federal efforts, ensure effective and efficient management of taxpayer dollars, and streamline Federal geospatial mapping programs to ensure we will have a state-of-the-art inventory of all Federal lands that can be used across multiple Federal agencies for their varying needs.

[The prepared statement of Mr. Lamborn follows:]

PREPARED STATEMENT OF THE HONORABLE DOUG LAMBORN, CHAIRMAN, SUBCOMMITTEE ON ENERGY AND MINERAL RESOURCES

I'd like to thank our witnesses for being with us today. Today we are holding a legislative hearing on two bills aimed at reducing Federal bureaucracies and streamlining Government inefficiencies in Federal land management. These bills will also coordinate what are currently duplicative missions of multiple Federal agencies to create a more efficient Government and save taxpayer dollars by ensuring they are not being spent on duplicative efforts.

As technology advances, local, State and the Federal Government are increasingly turning to geospatial information for a variety of purposes. Multiple Federal agencies, such as the Department of Transportation, Department of Agriculture, and Department of Defense, all use geospatial mapping for their own purposes. The challenge comes when these governments and Government agencies are using taxpayer dollars for duplicative efforts in surveying and mapping. Rather than sharing information or coordinating efforts, these agencies often map the same areas on several occasions—duplicating the efforts of the other agencies and using taxpayer dollars to repeatedly map the same area.

On other occasions, these agencies acquire equipment, such as planes, ships or computer equipment, rather than contracting with private sector companies that specialize in conducting state-of-the-art geospatial surveys.

In fact, my home State of Colorado is home to many outstanding geospatial and mapping companies who are anxious to work with the Federal Government to meet our geospatial surveying needs.

For decades, Government reports have highlighted the problems facing the Federal Government's geospatial programs. Recognizing these challenges, Government officials have attempted to coordinate these efforts by the various Federal agencies. However, a November 2012 GAO report concluded that while policies and procedures for coordinating investments in geospatial data have been established, agencies have not effectively implemented them.

Today we will hear testimony on two bills. The first, my legislation, H.R. 1604, the "Map it Once, Use it Many Times Act," establishes a National Geospatial Technology Administration that will oversee and coordinate all geospatial functions that are currently undertaken by multiple Federal agencies.

The administration will also promulgate standards for ensuring the geospatial data collected will be used efficiently and effectively by all Federal agencies.

We will also hear testimony on H.R. 916, the "Federal Land Asset Inventory Reform Act of 2013." This bipartisan legislation will improve Federal land management, resource conservation and environmental protection by requiring the Secretary of the Interior to develop a comprehensive register of Federal property to identify inaccurate, duplicative, and out of date Federal land inventories.

These two bills will reduce duplicative Federal efforts, ensure effective and efficient management of taxpayer dollars, and streamline Federal geospatial mapping programs to ensure we will have a state-of-the-art inventory of all Federal lands that can be used across multiple Federal agencies for their varying needs.

Mr. LAMBORN. I now recognize the Ranking Member for his opening statement.

STATEMENT OF THE HON. RUSH HOLT, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NEW JERSEY

Mr. HOLT. Thank you, Mr. Chairman. Thanks for holding this hearing. I appreciate the witnesses for coming.

Well, when it comes to knowing what school your kids attend or buying or selling land or getting directions on your smart phone to the nearest gas station, accurate and easily accessible geospatial data really are essential nowadays. And the Government Accountability Office has pointed out repeatedly and multiple administrations have acknowledged that the Federal Government could and should be doing a better job in how it collects and handles geospatial data. The lack of effective coordination, according to the GAO, among the Federal agencies is causing them to spend millions of dollars that could be saved if they were better coordinated.

One of the bills here today, our Chair's Map It Once, Use It Many Times Act, is a good attempt to tackle this complex and longstanding issue. I commend the Chair for the thoughtful attention he has paid to this problem, and I look forward to the testimony on this subject.

I do share some of the administration's concerns with the legislation as it is currently written. I am not convinced that a new agency within the Department of the Interior is necessary to address the Government's lack of coordination of data and handling of the data, and I do support the role of the private geospatial industry in this country. Yet, I question whether in this legislation there is an overdependence on the private sector, which might raise some conflict of interest issues. So I hope we will explore that.

The other bill on today's agenda, the Federal Land Assessment Inventory Reform Act, the FLAIR Act, introduced by Mr. Kind and Mr. Bishop, is a response to the simple fact that the Federal Government simply doesn't know how much land it owns. I would like to ask unanimous consent to introduce into the record a letter from Representative Kind of Wisconsin, one of the cosponsors of this legislation.

Mr. LAMBORN. If there is no objection, so ordered.

[The letter submitted for the record by Mr. Kind follows:]

LETTER SUBMITTED FOR THE RECORD BY THE HONORABLE RON KIND, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF WISCONSIN

U.S. HOUSE OF REPRESENTATIVES,
WASHINGTON, DC 20515,
DECEMBER 5, 2013.

The Honorable DOUG LAMBORN,
U.S. House of Representatives,
Committee on Natural Resources,
Subcommittee on Energy and Mineral Resources,
Washington, DC 20515.

The Honorable RUSH HOLT,
U.S. House of Representatives,
Committee on Natural Resources,
Subcommittee on Energy and Mineral Resources,
Washington, DC 20515.

DEAR CHAIRMAN LAMBORN AND RANKING MEMBER HOLT,

I extend my gratitude to you for holding a hearing on H.R. 916, the Federal Land Asset Inventory Reform [FLAIR] Act. This bill will not only reduce wasteful spending, but it will also allow for greater protection of our natural environment and resources.

Over the past six Congresses, the Government Accountability Office [GAO] has repeatedly designated "Managing Federal Real Property" as one of the high-risk areas within the Federal Government most prone to waste, fraud, and abuse. One of the reasons cited by GAO is the fact that the Government does not have a current, accu-

rate inventory of the land it owns. The General Services Administration [GSA] collects data from at least 30 Federal agencies; however, it system has been criticized by the GAO for being "unreliable and of limited usefulness" and "not current or reliable." On the other hand, the government inefficiently maintains a plethora of land inventories that are inaccurate, out-of-date, single purposed, and non-interoperable. The inefficient and wasteful nature of the Government's current approach of doing business was demonstrated by then-Interior Secretary Gale Norton's 2005 testimony before the House Interior Appropriations Subcommittee:

> "The Department currently uses 26 different financial management systems and over 100 different property systems. Employees must enter procurement transactions multiple times in different systems so that the data are captured in real property inventories, financial systems, and acquisition systems. This fractured approach is both costly and burdensome to manage."

This inefficiency should not be the case when a single, uniform, reliable, regularly maintained data base is currently available through state-of-the-art geographic information systems [GIS] technology.

On February 28, 2013, I introduced the FLAIR Act with Congressman Rob Bishop. This bill creates a single, Federal multipurpose cadastre (a uniform Federal computer data base), in accordance with standards recommended by the National Academy of Sciences. The bill also calls for an "inventory of inventories," so that duplication can be identified and eliminated. The FLAIR Act will provide all agencies owning Federal real property an improved accounting of their land assets. Such an inventory will assist in improved Federal land management, resource conservation, environmental protection and utilization of real property, as well as identify property the Federal Government no longer needs to own.

I urge you to support this common sense, good governance bill, and I thank you for holding this hearing.

Sincerely,

RON KIND,
Member of Congress.

Mr. HOLT. Thank you.

It might seem incomprehensible to taxpayers that the Federal Government doesn't know how much land it owns, but it becomes more understandable when you think about how the West was settled with railroad land grants and the Homestead Act and the Mining Act of 1872, and lots of bits and pieces of other legislation that resulted in enormous transfers of Federal land to private ownership.

However, this is now the 21st century, and despite the enormity of the task, we should be able to compile an accurate inventory of Federal land. The administration has some concerns on this legislation also, mostly having to do with cost, which is estimated to be as high as $68 billion.

Now, this high cost comes, I believe, largely from the requirement in the legislation that each parcel of land have attached to it a current value. And of course, we want to know the value of the land that the Federal Government owns, but maybe there will be more cost-effective ways to accomplish what we are trying to do here.

I want to thank the witnesses for being here, particularly Dr. Parrish from Penn State, who we have invited to come and who is representing the Association of American State Geologists. I have asked Dr. Parrish to provide us not only his thoughts on this specific legislation, but also to discuss the USGS initiative called the 3D Elevation Program, or 3DEP, which is an example of a widely supported and we think, I think, critically important mapping initiative that is getting under way.

So I thank the Chair for setting up what proposes to be an interesting hearing. Thank you.

Mr. LAMBORN. Well, I appreciate the Ranking Member's thoughtful and kind remarks.

[The prepared statement of Mr. Holt follows:]

PREPARED STATEMENT OF THE HONORABLE RUSH HOLT, RANKING MEMBER, SUBCOMMITTEE ON ENERGY AND MINERAL RESOURCES

Thank you very much, Mr. Chairman, and thank you for holding this hearing that will call more attention to the continuing issues the Federal Government has with collecting and managing geospatial data, and also allow us to discuss some proposed solutions.

Although most people are probably unfamiliar with the term "geospatial data," the issue of how Federal, State, and local governments manage that data is critically important to the lives of every American. When it comes to what school your kids go to, buying or selling a plot of land, or getting directions on your smartphone to the nearest gas station, accurate and easily accessible geospatial data is absolutely essential.

Unfortunately, as the Government Accountability Office [GAO] has pointed out repeatedly over the past decade, and multiple administrations have acknowledged, the Federal Government could be doing a better job in how it collects and handles geospatial data. In particular, GAO is concerned that the lack of effective coordination between Federal agencies is causing them to spend millions of dollars in potentially duplicative data collection.

One of the bills we are here today to discuss, the Chairman's "Map It Once, Use It Many Times Act," is an attempt to tackle this complex and long-standing issue, and I commend him for the thoughtful attention he has paid to this problem.

However, I share some of the administration's concerns with the legislation as it is currently written. I'm not convinced that a new agency within the Department of the Interior is necessary to address the Federal Government's problems with geospatial data, and while I strongly support the growth of the private geospatial industry in this country, I worry that there is an over-dependence on the private sector written into the legislation, raising some potential conflict-of-interest issues.

The other bill on today's agenda, the "Federal Land Asset Inventory Reform Act of 2013," or the FLAIR Act, introduced by Mr. Kind and Mr. Bishop, is a response to the simple fact that the Federal Government simply does not know how much land it owns. It seems almost incomprehensible, until you look at the history of how the West was settled, with the railroad land grants, the Homestead Act, the Mining Law of 1872, and other legislation resulting in enormous transfers of Federal land to private ownership. But this is the 21st century, and despite the difficulty of the task, I believe we should be able to have an accurate inventory of Federal land.

I understand the administration has some concerns about the cost of the legislation, which they have estimated to be as high as $68 billion largely due to the provisions in the bill that require determining value estimates for each parcel of Federal land. I am certainly interested in hearing more about those cost estimates, and whether there are ways to accomplish the goals of the bill in a more cost-effective manner.

Finally, I would like to thank all the witnesses for being here, particularly Dr. Jay Parrish from Penn State, who is here at the request of the minority, and is representing the Association of American State Geologists. I've asked Dr. Parrish to not only provide us his thoughts on the legislation, but also on a USGS initiative called the 3D Elevation Program, or 3–DEP, which is an example of a strongly supported and critically important mapping initiative just getting underway.

Thank you again, Mr. Chairman, and I look forward to hearing today's testimony.

Mr. LAMBORN. We will now launch into the hearing. I will point out that later this morning we will have votes that are called and we will have to leave here. There is a good chance we will be done with both panels and the questions for both panels by that time, but we will see how that goes.

Like all of our witnesses, your written testimony will appear in full in the hearing record, so I would ask that you keep your oral statement to 5 minutes, as outlined in our invitation letter to you

and under committee rule 4(a). The microphone is not automatic, so you need to turn it on when you are ready to begin.

I also want to explain how our timing lights work. You may already be familiar, but when you begin to speak, the clerk will start the timer and a green light will appear. After 4 minutes, a yellow light appears, and at that time you should begin to conclude your statement. At 5 minutes, the red light will come on. You may complete your statement at that time, and I would ask that you not go further than that.

Mr. Gallagher, thank you for being here. And let me introduce our two witnesses first. We have Kevin Gallagher, Associate Director for Core Science Systems, the United States Geological Survey, accompanied by Karen Mouritsen, Deputy Assistant Director for Minerals and Realty Management of the Bureau of Land Management. And we have David Powner, Director of Information Technology Management Issues for the Government Accountability Office.

Thank you for being here. And, Mr. Gallagher, you may begin.

STATEMENT OF KEVIN T. GALLAGHER, ASSOCIATE DIRECTOR FOR CORE SCIENCE SYSTEMS, UNITED STATES GEOLOGICAL SURVEY [USGS]

ACCOMPANIED BY KAREN MOURITSEN, DEPUTY ASSISTANT DIRECTOR FOR MINERALS AND REALTY MANAGEMENT, BUREAU OF LAND MANAGEMENT [BLM]

Mr. GALLAGHER. Well, thank you, Chairman Lamborn, for inviting the Department of the Interior to provide its views on H.R. 1604, the Map It Once, Use It Many Times Act, and H.R. 916, the Federal Land Asset Inventory Reform Act.

I will summarize BLM's perspectives on H.R. 916, but first I would like to discuss H.R. 1604. The stated objectives of the bill are to reduce duplication of geospatial data and to take full advantage of the expertise of the private sector. The Department of the Interior is actively pursuing these goals. The administration opposes, however, H.R. 1604 because it would unnecessarily replicate existing government activities that are already enabling efficient use of taxpayer dollars.

For over two decades, the Federal Geographic Data Committee has worked to reduce duplication and increase the interoperability of geospatial data. The new agency proposed in this bill would replace the existing objectives and efforts of the FGDC. H.R. 1604 states that its intention is to reduce duplication. Yet what is sometimes perceived as duplication can in fact be data collected over the same geographic area but for different end user needs.

For example, the Department of Agriculture requires aerial imagery that is collected during the growing season. Other applications, such as mapping streams, requires data that is collected in the winter when the leaves have fallen. This is to say that the management of geospatial data should focus on users' needs. OMB Circular A–16 provides for such an approach. Under this policy, the FGDC develops effective standards and infrastructure for sharing geospatial data and fosters cooperation among Federal and non-Federal partners.

There are various examples that demonstrate Federal collaboration and cooperation, but I would like to highlight three at the Department of the Interior. The geospatial products and services contract administered by the USGS uses professional geospatial firms to acquire geospatial data. The contract is designed for use by multiple agencies and State governments to collect data once and use it many times. We are using this contract as we speak to collect data and quality assure that data over Colorado in response to the devastating floods in September, as well as in the State of New Jersey in response to Sandy.

The Alaskan Mapping Initiative, established in 2011, is updating topographic maps for the State. The effort includes multiple Federal and State agencies and is overseen by a joint Federal-State committee. This initiative will provide data and finished maps that are expected to spur economic development and promote public safety in the State.

Third, the 3D Elevation Program is an initiative to acquire high resolution lidar over the Nation and is funded at $9 million in the President's 2014 budget. The seeds of 3DEP were sown in 2010 when five agencies partnered together to commission a study of the needs for and the benefits of a nationwide lidar program. It inventoried all publicly available funded lidar and found less than 9 percent of it was duplicated.

As you know, there have been impressive advances in lidar technology in recent years, and 3DEP has been designed to meet a wide variety of these needs, including civil engineering, energy and minerals production, agriculture, intelligent vehicle navigation, just to name a few. As for the recommendations made by GAO to DOI in their 2013 report, three of nine have been completed and the remaining six are expected to be completed by March 2014.

Moving on to H.R. 916, the Department has serious concerns with the bill, which would provide little new critical information about the lands the Federal Government manages and would be prohibitively expensive to implement. H.R. 916 requires the Secretary of the Interior to undertake a multipurpose cadastre of all Federal real property, including an inventory with information about the use, value, assets, and infrastructure of each parcel. This bill further requires the Secretary to determine which priorities can be better managed through ownership by a non-Federal entity.

The costs of the comprehensive inventory of Federal lands envisioned by H.R. 916 would be prohibitive. The Department of the Interior believes that the reduction of funds away from accomplishing important projects and jobs that they create in the areas of energy development, resource protection, recreation, and conservation is not the best use of taxpayers' dollars.

[The Department of the Interior's Statement for the Record on H.R. 916 follows:]

PREPARE STATEMENT OF THE U.S. DEPARTMENT OF THE INTERIOR

H.R. 916—FEDERAL LAND ASSET INVENTORY REFORM ACT OF 2013

Thank you for inviting the Department of the Interior to provide this statement for the record on H.R. 916, the Federal Land Asset Inventory Reform Act of 2013. The Department has serious concerns with H.R. 916, which would provide little new critical information about the lands the Federal Government manages and would be prohibitively expensive to implement.

BACKGROUND

According to the Congressional Research Service, the Federal Government manages 635 to 640 million acres of the nearly 2.3 billion acres that constitute the United States. The largest land managers for the Federal Government are the Departments of the Interior, Agriculture, Defense, and Energy. Within the Department of the Interior, the Bureau of Land Management administers approximately 245 million acres; the National Park Service manages approximately 80 million acres; the Fish and Wildlife Service manages approximately 150 million acres as part of the Refuge System; and the Bureau of Reclamation manages approximately 6.5 million acres associated with Bureau of Reclamation projects. The U.S. Forest Service, in the Department of Agriculture, manages approximately 193 million acres. Approximately 27.9 million acres in the United States are managed by the Department of Defense. Additionally, hundreds of thousands of buildings and structures are managed by a multitude of Federal agencies.

H.R. 916

H.R. 916 requires the Secretary of the Interior to undertake a multipurpose cadastre of all Federal real property, defined as real estate "consisting of land, buildings, crops, forests, or other resources." The bill defines cadastre as an inventory of the real property of the Federal Government including information about the "use, value, assets and infrastructure of each parcel." The bill further requires the Secretary to determine which properties "can be better managed through ownership by a non-Federal entity."

The cost of this type of a detailed inventory of Federal real property called for in H.R. 916 would be prohibitive. A very rough estimate suggests that the cost could run in the many billions of dollars.

Some of the requirements in H.R. 916 are duplicative of other work and reports done by Federal agencies. One example is a comprehensive review of the Federal Government's oil and gas resources which was required by the Energy Policy Conservation Act of 2000 (EPCA), Public Law 106–469. The final phase of the multiagency EPCA report was completed in 2008.

H.R. 916 also requires that as part of the cadastre, a review be done to determine which lands could be better managed by a non-Federal entity. For the BLM, for instance, this would be a costly process that would duplicate work already being done by individual BLM field offices.

Many of the decisions about how best to manage the public lands entrusted to the BLM's management are made through 157 individual Resource Management Plans (RMPs) which are developed with full public participation at the local level. These RMPs provide the foundation for every on-the-ground action taken or authorized by the BLM, and include an inventory and assessment of a broad range of resource values and public land uses. Among the many decisions made through the RMP process is the identification of lands that are potentially available for disposal. Extensive public involvement in this process is critical. H.R. 916 appears to substitute the judgment of officials in Washington, DC. for decisions made on the ground by local field managers, through an open and inclusive public process. The Department has serious concerns with H.R. 916 because of the likely costly and duplicative process of identifying lands for disposal established by this bill.

The Department of the Interior is aware of and appreciates the concerns expressed by some Members of Congress about the accuracy of data on lands owned by the Federal Government and specifically in the Department of the Interior. It is worth noting that the Federal Government is making important strides in improving the accuracy, efficiency and level of data available on the Federal real property portfolio. The Federal Real Property Council [FRPC] works across agencies to determine opportunities to spread real property best practices, achieve short and long-term cost savings, and realign real property inventories to agency mission and service delivery.

Beginning in 2010, the BLM initiated a mineral and land records verification and validation program which is focused on delivering accurate land inventory data, while improving transparency and accountability. This system, once completed, will allow for more efficient and effective management of mineral and land records. Until it is completed, the public can access an updated national surface management data set through the BLM's GeoCommunicator Web site.

CONCLUSION

The cost of the comprehensive inventory of Federal lands envisioned by H.R. 916 would be prohibitive. The Department of the Interior believes that the redirection

of funds away from accomplishing important projects and the jobs they create in areas of energy development, resource protection, recreation, and conservation is not the best use of taxpayer dollars.

Mr. GALLAGHER. Chairman, again, I thank you for this opportunity. I will be pleased to respond to any questions that you may have about H.R. 1604.

Mr. LAMBORN. Thank you.

[The prepared statement of Mr. Gallagher follows:]

PREPARED STATEMENT OF KEVIN T. GALLAGHER, ASSOCIATE DIRECTOR FOR CORE SCIENCE SYSTEMS, U.S. GEOLOGICAL SURVEY, DEPARTMENT OF THE INTERIOR

H.R. 1604—MAP IT ONCE, USE IT MANY TIMES ACT

Thank you for inviting the Department of the Interior to provide its views on H.R. 1604, the Map It Once, Use It Many Times Act. The stated objectives of H.R 1604 are to reduce duplication of federally managed geospatial data and to take full advantage of the expertise of the private sector. The Department is actively pursuing these goals. The administration opposes H.R. 1604 because it is inconsistent with and duplicates existing authorized activities and programs, includes definitions of geospatial information and activities that are overly broad, and is not adequately designed to achieve the stated goals of the bill.

The Department of the Interior [DOI] plays a leading role in the Federal collection, maintenance, and management of geospatial data. These activities are coordinated by the Federal Geospatial Data Committee [FGDC], which has its Secretariat housed at the USGS. The FGDC is co-chaired by leadership from DOI and the E-Government Office at the White House Office of Management and Budget and includes the participation of 31 agencies. The policy framework that guides these activities is found in OMB Circular A–16. For over two decades, the FGDC has worked to reduce duplication and increase the interoperability of federally sourced geospatial data. The FGDC has established common geospatial data standards across the Federal Government, so that data collected by one agency can be used by another. The FGDC has also determined authoritative sources for a set of data themes, ensuring that one agency does not produce data already being produced by another. The new agency proposed in H.R. 1604, the National Geospatial Technology Administration [NGTA], would replace the existing objectives and efforts of the FGDC (FGDC's advisory board, the NGAC, would be replaced by the newly established National Geospatial Policy Commission under title II). This, however, conflicts with the recommendations made by the Government Accountability Office [GAO] currently being implemented by the FGDC (discussed below).

H.R. 1604 would substantially alter the activities of the Federal Government related to the collection and management of geospatial data, which include the location, boundaries, and ownership of land in the United States. Title I would establish a new bureau in the Department: the NGTA. This provision would transfer to the Administrator of the NGTA all geospatial functions vested by law within DOI, the National Oceanic and Atmospheric Administration in the Department of Commerce, and the Department of Agriculture with respect to National Forest System lands. This new bureau would be directed to establish a comprehensive data base that would include a large variety of geospatial data from both public and commercial sources. Title II would establish the National Geospatial Policy Commission [NGPC], a body of Federal and non-Federal stakeholders tasked with developing a plan for the management of the new geospatial data base and identifying activities performed by Federal agencies that should be converted to performance by private geospatial firms. It is important to note that the National Geospatial Advisory Commission is already in existence and is quite active in advising the Federal agencies on geospatial activities. Title III and title IV concern the use of private contractors for the production of geospatial data and repeat direction that already exists in current Federal acquisition law. Title V would authorize a Federal geospatial research and development plan.

The nature of place-based information, or geospatial data, has evolved significantly in just the last few years. Information that was once available only in printed form is now available on almost every mobile communications device on the market, and while the data were once produced by a cadre of experts such as cartographers, photogrammetrists, and GIS specialists, today, some categories of geospatial data, such as building or street locations, are often produced by everyday users through

crowd sourcing and Web-based applications. These changes are a byproduct of revolutionary advances in information technology, which are affecting nearly every aspect of our lives. In particular, when precise Global Positioning System data were made available for civilian use in 2000, the general availability of geospatial data and applications increased exponentially.

Modern mapping applications developed in the private sector often rely on geospatial data from Federal sources. For example, much of the imagery available on Web-based mapping applications, such as Google Maps and Esri's ArcGIS, is procured through the Department of Agriculture's National Agriculture Imagery Program. This imagery is used for agricultural monitoring by the USDA Farm Service Agency, but it is also made available to the public free of charge, allowing private firms to design value-added applications using the imagery. The same is true for other forms of geospatial data, such as boundaries for ZIP codes or National Parks, center lines for streams and rivers, or land cover datasets. Finished maps produced by private firms are often made using data from Government sources as the base.

H.R. 1604 states that its intention is to reduce duplication—yet what is sometimes perceived as duplication can, in fact, be data collected over the same geographic area but having different attributes to respond to significantly different end user needs and specifications. For example, the Department of Agriculture requires aerial imagery that is collected during the growing season, when there are leaves on the trees; other applications, such as the detailed mapping of hydrography, requires aerial imagery that is collected in the winter, when the leaves have fallen and do not obscure the view of stream networks.

We support a user-focused approach to the production and management of federally sourced geospatial data. OMB Circular A–16 is aimed at promoting the coordinated use, sharing, and dissemination of geospatial data nationwide and follows such an approach. Currently, under this policy framework, the National Geospatial Advisory Committee [NGAC] advises the FGDC on effective standards-setting, the management of Federal and national geospatial data, the development of a uniform infrastructure for all geospatial data, and cooperation among Federal and non-Federal holders of geospatial data and users of geospatial data.

In 2011, the Government Accountability Office [GAO] conducted a review of the extent to which the Federal Government has established and effectively implemented policies and procedures for coordinating its geospatial investments and avoiding duplication. GAO recommended a number of improvements to the implementation of Circular A–16. Of the nine recommendations made by GAO to the FGDC and DOI, three have been completed. The remaining six are expected to be completed by 2014. (This is in addition to 11 recommendations made by GAO in 2004, all of which have been completed.)

Another example of the user-focused approach is the Geospatial Products and Services Contracts, administered by the USGS. These contracts, which are already used by Federal, State, tribal, and local agencies, help agencies leverage their resources to collect geospatial data that meet multiple needs. There are also existing laws that further support collaboration on geospatial information, such as the Ocean and Coastal Mapping Integration Act (OCMIA, 33 U.S.C. 3501). OCMIA establishes a program for developing a coordinated and comprehensive Federal ocean and coastal mapping plan that includes cooperative mapping efforts, collaborative technology development, standards and protocols, and archiving of the data for public use. Last, a very current example of user-focused procedures is the Alaska Mapping Initiative. Established in 2011, the initiative is developing updated topographic maps for Alaska. It includes multiple Federal and State of Alaska agencies and is overseen by a joint Federal-State committee. The initiative will provide data and finished maps that are expected to spur economic development and promote public safety.

Under these and other authorities, Federal agencies have coordinated many of their geospatial acquisitions. One example is elevation data collected by advanced sensor types such as Light Detection and Ranging (lidar) sensors. In 2010, five Federal agencies concluded a comprehensive study of the needs for and benefits of a nationwide lidar program. A component of the study was to complete an exhaustive inventory of all lidar data collected for the United States to date. The study concluded that less than 9 percent of the data was duplicated and virtually all data were justified by operational necessity. Recognizing these realities, the President's Fiscal Year 2014 Budget includes $9 million for a 3D Elevation Program (3DEP), which will take advantage of the impressive technological advances of lidar to meet communities' needs nationwide. 3DEP has been specifically designed to leverage funding from multiple Federal agencies as well as State and local governments.

With respect to the specifics of H.R. 1604, the bill states that the Administrator of the NGTA, a Presidential appointee confirmed by the Senate, would report directly to the Secretary. The bill, however, also states that the NGTA would be cre-

ated within the USGS, which is a non-regulatory science agency. Because the NGTA would include a number of regulatory functions, its establishment as a part of the USGS could conflict with its existing mission and potentially compromise the unbiased nature of USGS science. For this reason, we recommend clarifying the language. Further, H.R. 1604 directs the Administrator to represent the views and interests of private geospatial firms to the Federal Government if the policies or activities of a Federal agency affect private geospatial firms (sec. 402(d)(2)), raising issues of ethics and conflict of interest.

Section 103 outlines a variety of data types that would be collected in the National Geospatial Data base, which include boundaries and ownership information on Federal, tribal trust, and non-Federal lands. Some of these are problematic. For example, underground infrastructure is often privately owned, potentially implicating the interests of private property owners, or it may be sensitive for security reasons. Also, the terms "as-built drawings" and "service connection cards" are unclear. Furthermore, there are Department of Defense and Intelligence agency concerns that go beyond the nature of this statement.

Sec. 108 requires the head of every Federal agency—specifically including the Census Bureau—to provide to the Administrator all geospatial or address data held by the agency. Potential transfer of this data to private geospatial firms under this bill raises significant concerns about privacy and confidentiality, and the unauthorized disclosure of statistical information made confidential by title 13 of the United States Code, among other issues.

We believe title III is unnecessary. The President's 2010 National Space Policy directs the Government to "pursue potential opportunities for transferring routine, operational space functions to the commercial space sector." We believe the language of this title would restrict the Government's ability to select the acquisition approach that best meets end users' needs. Title IV could lead to conflicts of interest for the NGTA and the NGPC.

In conclusion, the Administration opposes H.R. 1604 because it would unnecessarily duplicate existing Government activities and structures that already enable efficient use of taxpayer dollars for the collection and maintenance of geospatial data. I will be pleased to respond to any questions you may have.

QUESTIONS SUBMITTED FOR THE RECORD TO KEVIN T. GALLAGHER

QUESTIONS SUBMITTED FOR THE RECORD BY THE HONORABLE DOUG LAMBORN

H.R. 1604—MAP IT ONCE USE IT MANY TIMES ACT AND H.R. 916—FEDERAL LAND ASSET INVENTORY REFORM ACT OF 2013

Question. Do we know how much the Federal Government spends on geospatial activities each year? How much is spent in-house and how much by contract? What is the total U.S. geospatial market and what percentage does the Federal Government represent?

Answer. Geospatial data and tools are becoming ubiquitous in the consumer marketplace, in academia, in industry and in government. A 2012 published report from the Boston Consulting Group estimated that geospatial services (electronic maps and satellite imagery describing our physical and human environment) and the geospatial services industry (businesses, consumers, and government and non-government organizations) generated about $73 billion in revenues in 2011 and involves about 500,000 high-wage jobs (about equal to the airline industry). The report estimates that geospatial services deliver efficiency gains in the rest of the U.S. economy valued at many times the size of the sector itself, creating a lasting source of competitive advantage for the U.S. Such services are used on a daily basis by about 5.3 million U.S. workers (over 4 percent of the U.S. workforce). U.S. consumers put a direct value on geospatial services at $37 billion annually.

The Federal Government's use of geospatial data and tools has created, and continues to create, extraordinary gains in efficiency and in some cases has revolutionized the way that Federal programs are delivered, dramatically improving services to citizens. As the use of geospatial data and tools continues to permeate the many aspects of Federal programs, it is increasingly more difficult to separate geospatial investments from investments in programs, tools, data, or technology more broadly. Currently, there is no formal definition of "geospatial activities" and no comprehensive report or mechanism that totals how much the Federal Government (Defense and non-Defense agencies) spends annually on "geospatial activities." Additionally, there is no data representing the Federal share of the total U.S. geospatial market. Efforts are underway however, to establish reporting processes that focuses on Fed-

eral investments in national geospatial data sets, a critical component of the Nation's infrastructure.

The Federal Geographic Data Committee [FGDC] member agencies are developing the A–16 Portfolio Management Implementation Plan (Plan), established by the Office of Management and Budget [OMB] in 1990 and re-chartered in the 2002 revision of Circular A–16 *"Coordination of Geographic Information and Related Spatial Data Activities"*. The FGDC is a 32 member interagency committee composed of representatives from the Executive Office of the President, and Cabinet level and independent Federal agencies. The FGDC promotes coordinated development, use, sharing and dissemination of geospatial data on a national basis. FGDC activities are administered through the FGDC Secretariat, hosted in the U.S. Geological Survey.

The Plan outlines an approach for instituting a portfolio management process that supports efficient and effective sharing of geospatial assets across the Federal enterprise, its partners, and stakeholders. Focused initially on national geospatial data sets, recognized as capital assets, a 3-year phased approached will be implemented to identify, document, and evaluate, existing federally created or managed geospatial data. This effort will also develop processes for reporting existing levels of Federal geospatial data investment, gaps in the existing data holdings, and projections of additional levels of investment needed to ensure the Nation has the data required to address national, regional, and local issues and priorities.

With regard to the question: **How much is spent in-house and how much by contract?**

The USGS is committed to leveraging the expertise of the private sector for the acquisition of geospatial services and data. As documented in the National Enhanced Elevation Assessment [NEEA], there is a National need for high resolution elevation data [LiDAR and IfSAR], estimated at $150 million per year, with an estimated return on investment of up to $13 billion annually. The USGS 3D Elevation Program [3DEP] has been designed to utilize the private sector to fulfill that need. In 2013, the USGS demonstrated success in combining the resources of Federal and State agencies to award approximately $25 million in contracts to the private sector for the acquisition of high resolution elevation data (described in more detail below). We estimate that an additional $25 million in high resolution elevation data is acquired annually by public institutions without USGS participation, leaving a remaining gap of approximately $100 million to fulfill the vision for 3DEP. We have no data as to what extent of the estimated $25 million collected without USGS participation is acquired in-house vs. contracted.

The USGS administers a set of Indefinite Delivery Indefinite Quantity [IDIQ] contracts awarded through a competitive, qualifications-based selection process, which provides a mechanism to obtain geospatial data and services throughout the United States. The contracts are flexible and can be used by other Federal, State, and local agencies. The Geospatial Product and Service Contracts [GPSC] are a suite of contracts, broad in scope, that can accommodate activities related to standard, nonstandard, graphic, and digital cartographic products. Services provided may include: photogrammetric mapping and aerotriangulation, orthophotography, thematic mapping (for example, land characterization), digital imagery applications, IfSAR and LiDAR, geographic information systems development, surveying and control acquisition including ground-based and airborne GPS, and much more.

Over 2010–2013, the USGS awarded over $20 million per year through the GPSC contracts. Much of this funding came from other Federal, State, and local agencies to support projects of mutual interest. Other Federal agencies engaging in projects which make use of these and other contracts include other Department of the Interior [DOI] agencies such as the National Park Service and the Office of Surface Mining as well as Federal agencies from outside the DOI, including the National Geospatial Intelligence Agency [NGA], the U.S. Forest Service, the Natural Resources Conservation Service, and the Federal Emergency Management Agency. Spending by these other agencies is likely to be substantially less than that for the USGS and the NGA since their requirements are typically limited in their geographic extent and do not require the same level of information to perform their land management missions.

Question. Sec. 201 of the Federal Land Policy and Management Act [FLPMA], (43 U.S.C.1711) says, "The Secretary shall prepare and maintain on a continuing basis an inventory of all public lands and their resource and other values (including, but not limited to, outdoor recreation and scenic values), giving priority to areas of critical environmental concern. This inventory shall be kept current so as to reflect changes in conditions and to identify new and emerging resource and other values." Is that inventory on-line or posted somewhere for public review?

Answer. The Bureau of Land Management [BLM] maintains and updates the inventory of the public lands managed by the BLM through its land use planning

process. Maintenance of or updates to inventories do not, of themselves, change the management or use of public lands. Such information can only change the management and use of public lands through the land use planning process to revise or amend land use plans pursuant to 43 U.S.C. 1712. Currently, the BLM has 157 individual Resource Management Plans [RMPs], i.e., land use plans, which are developed with opportunities for full public participation at local, State and national levels. These RMPs provide general management goals and objectives, land allocations for resource uses and management prescriptions to control the resources and resources uses applicable to all activities authorized by the BLM. The RMP is based on an inventory and assessment of a broad range of resource values and public land uses. Approved RMPs are available on-line through the BLM Web site. Additionally, those RMPs currently being revised are available on-line through the BLM Web site as Draft and Proposed RMPs.

Question. Does the Interior Department or anyone in the executive branch know how many different land inventories are currently maintained?

Answer. In respect to the Federal Land Policy and Management Act [FLPMA], (43 U.S.C. 1711) the following text is included: "(e) The term 'public land' means any land and interest in land owned by the United States within the several States administered by the Secretary of the Interior through the Bureau of Land Management, without regard to how the United States acquired ownership, except—(1) lands located on the Outer Continental Shelf; and (2) lands held for the benefit of Indians, Aleuts, and Eskimos." The BLM maintains and updates the inventory of public lands managed by the BLM per the FLPMA.

While other Federal agencies have data about the public lands they manage, such as the Forest Service or the DOD, and many States have data on the public lands over which they have jurisdiction, the DOI is not aware of a formal definition of what constitutes a land inventory (beyond the FLPMA requirements for BLM lands). As such, the DOI does not know how many other land inventories may exist outside the Department, nor is it aware of another source of that information.

Question. According to the National Academy of Sciences study on a national parcel system, "the cost of completing parcel data for the Nation is estimated to be about $300 million." If the cost for the entire nation is $300 million, how does the Interior Department estimate H.R. 916 will cost "many billions of dollars"?

Answer. The National Academy of Sciences cost estimate is based on parcel data substantially narrower in scope than the FLAIR Act requirements. Its parcel model costs include a very basic set of attributes that support only the discovery and navigation of parcels which is substantially different than the details stipulated in the FLAIR Act. The FLAIR Act would direct the Federal Government to collect extensive data for both the surface and subsurface estate concerning the "use, value, assets and restrictions associated with each parcel." This would require an inventory of all valid existing rights, resources, and restrictions associated with each parcel as well as appraisals and inventories. The BLM's initial estimate of costs as provided to the Committee in 2012 was based on the information required in the FLAIR Act; the estimate is potentially in excess of $50 billion. The estimate is summarized as follows:

Total acres owned by Federal Government: 635–640 million acres

Total Federal acres divided into 40-acre parcels: 15.8–16 million parcels

Federal Parcel Task	Approximate Costs	
Automate parcel maps	$6/parcel	$95 million
Collect Linkages for critical information	$3/parcel	$47 million
Collect resource and use information	$1/acre	$635 million
Determine estimate of value	$2,500/parcel	$39 billion
Determine mineral resource potential	$1/acre	$635 million
Cultural/archaeological resource inventory	$12–$45/acre	$7–$28 billion
TOTAL	**$47 billion–$68 billion**	

Mr. LAMBORN. Mr. Powner, you may begin.

STATEMENT OF DAVID A. POWNER, DIRECTOR, INFORMATION TECHNOLOGY MANAGEMENT ISSUES, GOVERNMENT ACCOUNTABILITY OFFICE [GAO]

Mr. POWNER. Chairman Lamborn, Ranking Member Holt, and members of the subcommittee, we appreciate the opportunity to testify on the need to better coordinate billions of dollars on geospatial information. Geospatial data is used to manage real property, public lands, climate and weather, and disease outbreaks, to name a few, and it supports important national functions like national security and disaster response.

Mr. Chairman, despite Presidential and OMB policies that have been in place for nearly 25 years, geospatial investments across the Federal Government are poorly coordinated, resulting in the acquisition of duplicative geospatial data. GAO issued a report last year on this and highlighted this in our annual duplication series this past year. This morning I would like to highlight the key issues and recommendations to address this mismanagement, starting with OMB.

OMB has budget reporting mechanisms tied to spending that do not provide complete and accurate information to identify duplicative geospatial investments, and its effort to create a geospatial line of business in 2006 to address this situation was ineffective. OMB cannot tell us how much our government spends on geospatial investments. OMB told us that this is not a priority area and that they are tracking duplication in other areas of IT.

That is true, as we reported just last month on OMB's efforts to identify over 200 opportunities to reduce IT duplication across the Federal Government that could save us up to $8 billion. However, our government spends billions of dollars on geospatial investments, and this should be an OMB priority.

Turning to the Federal Geographic Data Committee, which was created in 1990 within the Department of the Interior to promote the coordinated use, sharing, and dissemination of geospatial data, it is governed by an interagency steering committee, and about 30 agencies are currently members. This coordination body's responsibilities have been reinforced and strengthened over the years through executive orders and OMB policies.

Despite this, limited leadership, coordination, and progress have resulted. This committee has established some standards and has created a clearinghouse to identify existing and planned geospatial investments; however, this committee's clearinghouse does not identify all existing and planned investments, and it has not fully set up a portfolio or theme approach to manage geospatial information, as directed by OMB policy.

Mr. Chairman, a clearinghouse to know exactly what the government has planned and this portfolio approach is exactly what is needed to coordinate to avoid additional duplication. In fact, there are currently 17 proposed themes that include land use, climate and weather, and transportation. However, this portfolio approach to managing geospatial data is far from being implemented effectively.

In addition to the lack of leadership from OMB and the committee, the agencies we looked at in our review were not effectively coordinating or managing activities within their respective agen-

cies, nor were they effectively managing data themes. For example, one requirement is to adopt procedures to search the clearinghouse before expending funds on geospatial data. Such procedures did not exist.

To address this situation, OMB, the committee, and agencies need to take a number of steps to better coordinate geospatial data. OMB needs to strengthen its oversight by providing an accurate picture of what the Federal Government spends on geospatial investments and use its budgetary levers to identify and stop duplicative investments in this area. The committee needs to ensure that the geospatial clearinghouse has all existing and planned geospatial investments and that these investments are managed in a portfolio or theme-based fashion. And the Federal Government agencies need to stop managing in stovepipes. This means making data available in the clearinghouse, participating in theme-based management of geospatial data, and accurately reporting investments and their associated costs to OMB.

Recently, some steps have been taken to address our recommendations. For example, in September the committee issued guidance directing departments to identify planned investments using the clearinghouse.

In summary, Mr. Chairman, legislation to better manage the billions of dollars our Nation spends on geospatial investments should consider the major leadership and management gaps our work has highlighted and the numerous recommendations we have made. This concludes my statement. I will be pleased to respond to questions.

Mr. LAMBORN. All right. Thank you for your testimony.

[The prepared statement of Mr. Powner follows:]

PREPARED STATEMENT OF DAVID A. POWNER, DIRECTOR, INFORMATION TECHNOLOGY MANAGEMENT ISSUES, U.S. GOVERNMENT ACCOUNTABILITY OFFICE [GAO]

GEOSPATIAL INFORMATION—OMB AND AGENCIES CAN REDUCE DUPLICATION BY MAKING COORDINATION A PRIORITY

GAO Highlights

Highlights of GAO–14–226T, a testimony before the Subcommittee on Energy and Mineral Resources, Committee on Natural Resources, House of Representatives

Why GAO Did This Study

The Federal Government collects, maintains, and uses geospatial information—information linked to specific geographic locations—to support many functions, including national security and disaster response. In 2012, the Department of the Interior estimated that the Federal Government was investing billions of dollars on geospatial data annually, and that duplication was common.

In November 2012, GAO reported on efforts to reduce duplicative investments in geospatial data, focusing on OMB, FGDC, and three agencies: the Departments of Commerce, Interior, and Transportation.

This statement summarizes the results of that November 2012 report on progress and challenges in coordinating geospatial information and includes updates on the implementation of recommendations made in that report.

What GAO Recommends

GAO is making no new recommendations in this statement. In November 2012, GAO recommended that to improve coordination and reduce duplication, FGDC develop a national strategy for coordinating geospatial investments; Federal agencies follow Federal guidance for managing geospatial investments; and OMB develop a mechanism to identify and report on geospatial investments. Since that time, FGDC and several agencies have taken some steps to implement the recommendations. However, additional actions are still needed.

What GAO Found

The President and the Office of Management and Budget [OMB] have established policies and procedures for coordinating investments in geospatial data, however, in November 2012, GAO reported that governmentwide committees and Federal departments and agencies had not effectively implemented them. The committee that was established to promote the coordination of geospatial data nationwide—the Federal Geographic Data Committee [FGDC]—had developed and endorsed key standards and had established a clearinghouse of metadata. GAO found that the clearinghouse was not being used by agencies to identify planned geospatial investments to promote coordination and reduce duplication. In addition, the committee had not yet planned or implemented an approach to manage geospatial data as related groups of investments to allow agencies to more effectively plan geospatial data collection efforts and minimize duplicative investments, and its strategic plan was missing key elements.

Other shortfalls have impaired progress in coordinating geospatial data. Specifically, none of the three Federal departments in GAO's review had fully implemented important activities such as preparing and implementing a strategy for advancing geospatial activities within their respective departments (see table). Moreover, the agencies in GAO's review responsible for governmentwide management of specific geospatial data had implemented some but not all key activities for coordinating the national coverage of specific geospatial data.

Status of Federal Departments' Implementation of Geospatial Activities, as of November 2012

Activity	Commerce	Interior	Transportation
Designate a senior official	Partially met.	Fully met.	Partially met.
Prepare and implement a strategy	Not met.	Not met.	Not met.
Develop a policy for metadata	Partially met.	Not met.	Not met.
Make metadata available on clearinghouse	Fully met.	Fully met.	Fully met.
Adopt procedures for accessing clearinghouse	Not met.	Not met.	Not met.

Source: GAO analysis of agency documentation.

While OMB has oversight responsibilities for geospatial data, GAO reported in November 2012 that according to OMB staff, the agency did not have complete and reliable information to identify potentially duplicative geospatial investments. GAO also reported that FGDC, Federal departments and agencies, and OMB had not yet fully implemented policies and procedures for coordinating geospatial investments because these efforts had not been a priority. As a result, efforts to acquire data were uncoordinated and the Federal Government acquired duplicative geospatial data. For example, a National Geospatial Advisory Committee representative stated that a commercial provider leases the same proprietary parcel data to six Federal agencies. GAO concluded that unless the key entities determined that coordinating geospatial investments was a priority, the Federal Government would continue to acquire duplicative geospatial information and waste taxpayer dollars.

Chairman Lamborn, Ranking Member Holt, and members of the subcommittee:

I am pleased to be here today to discuss the importance of coordinating Federal investments in geospatial information—information linked to specific geographic locations—in order to avoid duplication. The Federal Government collects, maintains, and uses geospatial information to support many functions, including national security and disaster response. In 2012, the Department of the Interior estimated that the Federal Government was investing billions of dollars on geospatial data annually, and that duplication was common.

In November 2012, we reported that while the President and the Office of Management and Budget [OMB] had established policies and procedures for coordinating investments in geospatial data, governmentwide committees and selected Federal departments and agencies had not effectively implemented them.[1] In that report, we made multiple recommendations to OMB and Federal agencies to improve coordination and reduce duplication among geospatial data investments. My testimony today will summarize the results of that report. Specifically, I will cover (1) progress and

[1] GAO, *Geospatial Information: OMB and Agencies Need to Make Coordination a Priority to Reduce Duplication,* GAO–13–94 (Washington, DC: November 26, 2012).

challenges in coordinating geospatial data, and (2) the current status of agencies implementation of GAO's recommendations.

The work on which my statement is based was conducted from November 2011 to November 2012 and was focused on governmentwide activities to implement the National Spatial Data Infrastructure [NSDI]—an infrastructure to facilitate the efficient collection, sharing, and dissemination of geospatial data among all levels of government, and public and private sectors—as well as efforts of the Federal Geographic Data Committee [FGDC]—the Federal committee established to promote the coordinated use, sharing, and dissemination of geospatial data nationwide. Additionally, the report focused on activities within three selected departments: Department of Commerce (Commerce), Department of the Interior (Interior), and Department of Transportation (Transportation); and within three selected agencies responsible for managing data themes:[2] the National Oceanic and Atmospheric Administration, the U.S. Geological Survey, and the Bureau of Transportation Statistics. Further details on the scope and methodology for the previously issued report are available within that published product. In addition, we analyzed documentation from the agencies on the status of their efforts to address our recommendations. All work on which this testimony is based was performed in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

BACKGROUND

For many years, the Federal Government has taken steps to coordinate geospatial activities both within and outside the Federal Government. In 1953, the Bureau of the Budget[3] first issued Circular A–16, encouraging expeditious surveying and mapping activities across all levels of government and avoidance of duplicative efforts. In 1990, OMB revised Circular A–16 to, among other things, establish the Federal Geospatial Data Committee [FGDC] within Interior to promote the coordinated use, sharing, and dissemination of geospatial data nationwide. Building on that guidance, in 1994 the President issued Executive Order 12906 for the purpose of addressing wasteful duplication and incompatibility of geospatial information, and assigned FGDC the responsibility to coordinate the development of NSDI.[4] In 2002, OMB again revised Circular A–16 to further describe the components of NSDI; clearly define agency responsibilities for acquiring, maintaining, distributing, using, and preserving geospatial data; and to reaffirm FGDC's role as the interagency coordinating body for NSDI-related activities.[5] The circular established the following five components of NSDI and described how these components were to be implemented.

- **Data Themes.** Data themes are topics of national significance, such as cadastre, which includes rights and interests in real property and surveys and land use/land cover, which includes land surface features and use. OMB Circular A–16 currently identifies 34 data themes and identifies the "lead" agency or agencies for each theme. Each data theme is to be comprised of one or more electronic data records, known as a dataset. Of the 34 themes, 9 are identified as a "framework" theme[6]—that is, a theme identified in Circular A–16 as being critical for any geospatial application.
- **Standards.** Geospatial standards provide common and repeatable rules or guidelines for the development, documentation, and exchange of geospatial datasets.
- **Metadata.** Metadata are information about datasets, such as content, source, accuracy, method of collection, and point-of-contact. Metadata are used to facilitate the search of and access to datasets within a data library or clearinghouse, and enable potential users to determine the data's applicability for their use.

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[2] Data themes are comprised of one or more sets of geospatial data that have national significance, as established by Federal guidance, such as hydrography (i.e., surface water features, such as lakes, ponds, streams, and rivers).

[3] The Bureau of the Budget became OMB in 1970.

[4] Executive Order No. 12906, *Coordinating Geographic Data Acquisition and Access: The National Spatial Data Infrastructure,* 59 Fed. Reg. 17,671 (Washington, DC: Apr. 11, 1994).

[5] OMB, Circular No. A–16, *Coordination of Geographic Information and Related Spatial Data Activities,* (Washington, DC: Aug. 19, 2002).

[6] According to FGDC officials, there are seven framework themes, with two of the themes having two parts.

- **National Spatial Data Clearinghouse.** The clearinghouse is intended to be a centralized geospatial metadata repository that contains geospatial metadata records from Federal agencies, State and local governments, and academic and private sector organizations that can be searched to determine whether needed geospatial data exist and can be shared. Federal agencies are required to identify their existing and planned geospatial investments in the clearinghouse, and search the clearinghouse for cost-saving opportunities before acquiring geospatial data. In 2003, FGDC created the Geospatial One-Stop to provide "one-stop" access to geospatial metadata from a centralized data base and search function. In October 2011, the Geospatial One-Stop was retired, and FGDC initiated a pilot project, known as the Geospatial Platform, which was envisioned to provide shared and trusted geospatial data, services, and applications for use by government agencies, their partners, and the public.[7] According to Interior officials, Interior is the managing partner of the Geospatial Platform. As of August 2012, there were approximately 835,000 geospatial metadata records in the central repository, of which about 373,000 were from Federal sources.
- **Partnerships.** Partnerships are efforts aimed at involving all stakeholders (e.g., Federal, tribal, State, local government, and academic institutions) in the development of NSDI.

In November 2010, OMB issued supplemental guidance specifically regarding how agencies are to manage data themes.[8] This supplemental guidance expands upon and clarifies some of the language and responsibilities contained in OMB Circular A–16 in order to facilitate the adoption and implementation of a geospatial asset management capability.

To fulfill its responsibilities, FGDC is governed by a steering committee—an interagency decisionmaking body that provides leadership and policy direction in support of the development of NSDI. The Secretary of the Interior chairs the committee; the Vice-Chair is the Chief Architect of the Office of E-Government and Information Technology of OMB.[9] All departments or agencies responsible for geospatial data themes, or that have activities in geographic information or geospatial data collection or use, are required to be members of FGDC. Thirty-two agencies[10] are members of the Steering Committee and are to be represented by their senior agency officials for geospatial information.[11] These senior agency officials are responsible for overseeing, coordinating, and facilitating their respective agency's implementation of geospatial requirements, policies, and activities. FGDC is supported by the Office of the Secretariat, which consists of about 10 people located in U.S. Geological Survey [USGS] who do the day-to-day work of supporting, managing, and coordinating the activities of FGDC.

In addition, in December 2007, the Secretary of the Interior created the National Geospatial Advisory Committee[12] to provide the department and FGDC with advice and recommendations related to the management of Federal and national geospatial programs, development of NSDI, and the implementation of related Federal guidance. Members of the committee include approximately 30 officials from Federal, State, local, and tribal governments, the private sector, and academia.

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[7] *http://www.geoplatform.gov.*

[8] OMB, M–1–03, *Issuance of OMB Circular A-16 Supplemental Guidance,* Nov. 10, 2010.

[9] The chair and vice-chair may select designees to serve on their behalf. The Secretary of the Interior has delegated the committee chair responsibility to the Assistant Secretary for Water and Science.

[10] The 32 agency members of the Steering Committee are: Interior, OMB, U.S. Department of Agriculture, Commerce, Department of Defense, U.S. Army Corps of Engineers (non-voting member), Department of Education, Department of Energy, Department of Health and Human Services, Department of Homeland Security, Department of Housing and Urban Development, Department of Justice, Department of Labor, Department of State, Transportation, Department of the Treasury, Department of Veterans Affairs, Environmental Protection Agency, Federal Communications Commission (non-voting member), General Services Administration, Library of Congress, National Aeronautics and Space Administration, National Archives and Records Administration, National Capital Planning Commission (non-voting member), National Science Foundation, U.S. Nuclear Regulatory Commission, Office of Personnel Management, Small Business Administration, Smithsonian Institution, Social Security Administration, Tennessee Valley Authority, and U.S. Agency for International Development.

[11] OMB, M–06–07, *Designation of a Senior Agency Official for Geospatial Information,* Mar. 3, 2006, calls for select agencies to appoint to the Steering Committee policy-level officials—a chief information officer or a senior official at the assistant secretary level.

[12] The Secretary created the committee as a Federal advisory committee under the Federal Advisory Committee Act.

OMB's Roles and Responsibilities for Overseeing IT Investments

OMB has specific oversight responsibilities for Federal information technology [IT] systems and acquisition activities—including geographic information systems—to help ensure their efficient and effective use. Two key laws that outline these responsibilities are the Clinger-Cohen Act of 1996[13] and the E-Government Act of 2002.[14]

- The Clinger-Cohen Act of 1996 requires, among other things, OMB to establish processes to analyze, track, and evaluate the risks and results of major capital investments in information systems made by Federal agencies and report to Congress on the net program performance benefits achieved as a result of these investments.
- The E-Government Act of 2002 establishes an e-government initiative that encourages the use of web-based Internet applications to enhance the access to and delivery of government information and services to citizens, to business partners, to employees, and among all levels of government. The act also requires OMB to report annually to Congress on the status of e-government initiatives. In these reports, OMB is to describe the administration's use of e-government principles to improve government performance and the delivery of information and services to the public.

OMB subsequently began initiatives to fulfill the requirements established by these laws:

- In February 2002, OMB established the Federal Enterprise Architecture, which is intended to facilitate governmentwide improvement through cross-agency analysis and identification of duplicative investments, gaps, and opportunities for collaboration, interoperability, and integration within and across agency programs. The Federal Enterprise Architecture is composed of five "reference models" describing the Federal Government's (1) business (or mission) processes and functions, independent of the agencies that perform them; (2) performance goals and outcome measures; (3) means of service delivery; (4) information and data definitions; and (5) technology standards.
- In March 2004, OMB established multiple "lines of business" to consolidate redundant IT investments and business processes across the Federal Government. Later, in March 2006, OMB established the Geospatial Line of Business. Each line of business is led by an individual agency and supported by other relevant agencies. Interior is the managing partner for the Geospatial Line of Business and the FGDC Secretariat provides project management support. OMB reports to Congress each year on the costs and benefits of these initiatives.

Geospatial Investments Were Included in GAO's Duplication Series

Over the past few years, we have issued a series of reports that have identified Federal programs and functional areas where unnecessary duplication, overlap, or fragmentation exists;[15] the actions needed to address such conditions; and the potential financial and other benefits of doing so.[16] In particular, we identified opportunities to reduce duplication and the cost of government operations in several critical IT areas. In our most recent duplication report, we reported that better coordination among Federal agencies that collect, maintain, and use geospatial information could help reduce duplication of geospatial investments and provide the opportunity for potential savings of millions of dollars. The duplication report reiterated the need for action among several Federal agencies, FGDC, and OMB.

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[13] 40 U.S.C. § 11101 et seq.

[14] Pub. L. No. 107–347 (Dec. 17, 2002).

[15] Fragmentation refers to those circumstances in which more than one Federal agency (or more than one organization within an agency) is involved in the same broad area of national need and opportunities exist to improve service delivery. Overlap occurs when multiple agencies or program have similar goals, engage in similar activities or strategies to achieve them, or target similar beneficiaries. Duplication occurs when two or more agencies or program are engaged in the same activities or provide the same services to the same beneficiaries.

[16] GAO, *2013 Annual Report: Actions Needed to Reduce Fragmentation, Overlap and Duplication, and Achieve Other Financial Benefits,* GAO–13–279SP (Washington, DC: Apr. 9, 2013); *2012 Annual Report: Opportunities to Reduce Duplication, Overlap and Fragmentation, Achieve Savings, and Enhance Revenue,* GAO–12–342SP (Washington, DC: Feb. 28, 2012); and *Opportunities to Reduce Potential Duplication in Government Programs, Save Tax Dollars, and Enhance Revenue,* GAO–11–318SP (Washington, DC: Mar. 1, 2011).

FGDC Had Not Made Fully Implementing Key Activities for Coordinating Geospatial Data a Priority

While the FGDC had made progress in some areas to improve coordination in geospatial activities, our November 2012 report identified a number of areas in which little progress had been made. For example, FGDC had developed a metadata standard that included descriptive information about a dataset—such as the framework theme to which it relates, the timeframe of when the data was collected, and who to contact for more information that facilitates the sharing of geospatial data.[17] FGDC had also established a clearinghouse that allowed users to determine whether the geospatial data (including planned data) they are seeking exist. As noted previously, the clearinghouse consists of a centralized repository that contains geospatial metadata [18] records from Federal agencies, State and local governments, academic and private-sector organizations; and multiple web-based portals from which the metadata can be searched.

However, despite this progress, we found that FGDC had not fully implemented key aspects of activities needed for coordinating investments in geospatial data. First, although the clearinghouse was reported to have been modified in May 2012 to allow agencies to identify their planned investments, as of September 2012, there were no Federal agencies using this function because FGDC had not yet completed and shared guidance with agencies on how to do so.

Second, FGDC had not fully planned for or implemented a portfolio management approach per OMB guidance.[19] Specifically, we found that FGDC had evaluated the 34 data themes identified in OMB Circular A–16 to determine whether any changes were needed; in August 2011, the Steering Committee proposed consolidating the 34 data themes into 17 themes; FGDC Secretariat officials subsequently stated that FGDC agencies were proposing to eliminate one more theme for a total of 16.[20] We reported that officials further stated that, as of August 2012, lead agencies had been identified for each of the 16 themes. However, at the time, the data themes, lead agencies, and datasets had neither been finalized nor approved, and FGDC had yet to provide guidance to agencies about how to implement the portfolio management approach. While Secretariat officials stated that they had developed a draft implementation plan in November 2011, when we issued our November 2012 report, the plan had not been finalized or approved, and FGDC Secretariat officials were unable, on behalf of FGDC agencies, to provide a timeframe for doing so.

Third, FGDC's strategic plan was missing key components and had not been kept up-to-date. Specifically, we found that FGDC's current plan had been issued in 2004 and included OMB-required components such as (1) a vision statement, (2) three outcome-oriented goals and 13 objectives to be accomplished between 2005 and 2008, and (3) a high-level description of how all but 1 of the 13 objectives were to be achieved. However, the plan did not include components such as needed resources, performance measures for 9 of the 13 objectives, or external factors that could affect the achievement of the plan's goals and objectives. Further, the plan did not reflect significant initiatives that the FGDC Steering Committee had engaged in—such as the Geospatial Platform—and the timeframes for the goals were outdated.

As we reported in November 2012, according to FGDC officials, they had not yet fully implemented policies and procedures for coordinating geospatial investments because these efforts had not been made a priority. Instead, FGDC officials had been primarily focused on the development of the Geospatial Platform. As a result, we determined in 2012 that efforts to acquire data were uncoordinated and the Federal Government acquired duplicative geospatial data. For example, a National Geospatial Advisory Committee representative told us that, at that time, a commercial provider was leasing the same proprietary parcel data to six Federal agencies; the Department of Housing and Urban Development, the Department of Homeland Security, the Federal Bureau of Investigation, the Small Business Administration, the Federal Deposit Insurance Corporation, and the Federal Reserve. We concluded

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[17] FGDC, *FGDC–STD–001–1998: Content Standard for Digital Geospatial Metadata* (Washington, DC: 1998).

[18] As previously noted, metadata are information about datasets, such as content, source, accuracy, method of collection, and point of contact.

[19] OMB, M–11–03, *Issuance of OMB Circular A–16 Supplemental Guidance,* (Washington, DC: Nov. 10, 2010).

[20] One of the 16 themes is Land Use/Land Cover, which refers to natural and man-made surface features and how the land is used. Examples of Land Cover are grass, asphalt, trees, bare ground, and water. Examples of Land Use are urban, agricultural, and forest areas. A complete list of the 16 data themes are found in appendix I.

that unless FGDC decides that coordinating geospatial investments was a priority, this situation would likely continue.

Departments Had Not Fully Implemented Important Activities for Coordinating and Managing Geospatial Data

Our November 2012 report also showed that none of the three Federal departments in our review—the Departments of Commerce, the Interior, and Transportation—had fully implemented activities needed for effectively coordinating and managing geospatial activities within their respective departments. According to OMB guidance and the executive order,[21] Federal departments and agencies that handle geospatial data are to:

- Designate a senior agency official for geospatial information that has departmentwide responsibility, accountability, and authority for geospatial information issues;
- Prepare, maintain, publish, and implement a strategy for advancing geographic information and related geospatial data activities appropriate to their mission, and in support of NSDI strategy;
- Develop a policy that requires them to make their geospatial metadata available on the clearinghouse;
- Make all metadata associated with geospatial data available on the clearinghouse, and use the metadata standard; and
- Adopt internal procedures to ensure that they access the NSDI clearinghouse before they expend funds to collect or produce new geospatial data to determine (1) whether the information has already been collected by others, or (2) whether cooperative efforts to obtain the data are possible.

However, while all three of the departments had made their metadata available on the clearinghouse, none of the three Federal departments in our review had fully implemented all of the other important activities (see table 1).

Table 1—Status of Federal Departments' Implementation of Geospatial Activities, as of November 2012

Activity	Commerce	Interior	Transportation
Designate a senior official with departmentwide responsibility	Partially met.	Fully met.	Partially met.
Prepare and implement a strategy	Not met.	Not met.	Not met.
Develop a policy for metadata	Partially met.	Not met.	Not met.
Make metadata available on clearinghouse	Fully met.	Fully met.	Fully met.
Adopt procedures for accessing the clearinghouse	Not met.	Not met.	Not met.

Source: GAO analysis of department documentation.
Key

Fully met—the department provided evidence that addressed the criteria.
Partially met—the department provided evidence that addressed about half or a large portion of the criteria.
Not met—the department did not provide evidence that addressed the criteria or provided evidence that minimally addressed the criteria.

Department officials stated that the lack of progress in these activities was due, in part, to a lack in designating priorities. This lack of priority had contributed to the acquisition of duplicative geospatial data. For example, three separate Federal agencies were independently acquiring road centerline data.[22] We concluded in November 2012 that unless the Federal departments decided that completing activities to better coordinate geospatial investments was a priority, this situation would likely continue.

THEME-LEAD AGENCIES HAD NOT FULLY IMPLEMENTED IMPORTANT ACTIVITIES FOR COORDINATING AND MANAGING GEOSPATIAL DATA

The three theme-lead agencies in our review—the National Oceanic and Atmospheric Administration [NOAA], USGS, and the Bureau of Transportation Statistics [BTS] had implemented some but not all of the geospatial activities necessary to en-

[21] OMB, M–06–07, *Designation of a Senior Agency Official for Geospatial Information,* (Washington, DC: Mar. 3, 2006); OMB, Circular No. A–16, *Coordination of Geographic Information and Related Spatial Data Activities,* (Washington, DC: Aug. 19, 2002); and Executive Order No. 12906, *Coordinating Geographic Data Acquisition and Access: The National Spatial Data Infrastructure,* 59 Fed. Reg. 17,671 (Washington, DC: Apr. 11, 1994).

[22] Road centerlines are vector line data that represent the geographic center of road rights-of-way on transportation networks.

sure the national coverage and stewardship of specific geospatial data themes in our review.[23] According to OMB,[24] theme-lead agencies are to:

- Designate a point of contact who is responsible for the development, maintenance, coordination, and dissemination of data using the clearinghouse;
- Prepare goals relating to the theme that support the NSDI strategy, and as needed, collect and analyze information from user needs and include those needs in the theme-related goals;
  Develop and implement a plan for the nationwide population of the data theme that includes (1) the development of partnership programs with states, tribes, academia, the private sector, other Federal agencies, and localities that meet the needs of users; (2) human and financial resource needs; (3) standards, metadata, and the clearinghouse needs; and (4) a timetable for the development for the theme; and
- Create a plan to develop and implement theme standards.

However, we found that while all three of the theme-lead agencies had made some progress, none of them had implemented all of these important activities (see table 2).

Table 2—Status of Theme-lead Agencies' Implementation of Geospatial Activities, as of November 2012

Activity	NOAA	USGS	BTS
Designate a theme point of contact	Fully met.	Fully met.	Fully met.
Prepare goals and analyze user needs	Fully met	Partially met.	Partially met.
Develop a plan for theme population	Fully met.	Partially met.	Partially met.
Develop a standards plan	Not met.	Not met.	Not met.

Source: GAO analysis of agency documentation.
Key

Fully met—the agency provided evidence that addressed the criteria.
Partially me—the agency provided evidence that addressed about half or a large portion of the criteria.
Not met—the agency did not provide evidence that addressed the criteria or provided evidence that minimally addressed the criteria.

Theme-lead agency officials attributed the lack of progress in implementing these activities to competing priorities, among other things. As a result, efforts to acquire data were uncoordinated and the Federal Government acquired duplicative geospatial data. For example, according to a National Geospatial Advisory Committee official, several Federal agencies collected, purchased, or leased address information in a noncoordinated fashion. We concluded in November 2012 that unless the Federal agencies were to decide that completing activities to coordinate geospatial investments was a priority, the potential for duplication would continue to exist.

OMB Did Not Have Complete and Reliable Information to Identify Duplicative Geospatial Investments

OMB has oversight responsibilities for Federal IT systems and acquisition activities—including geographic information systems—to help ensure their efficient and effective use. According to OMB Office of E-Government staff members, OMB relies primarily on the annual budget process to identify potentially duplicative geospatial investments. Specifically, OMB requires Federal departments and agencies to pro-

[23] The three data themes in our review were (1) geodetic control [NOAA], which is data used to establish the precise location of other types of geospatial data; (2) hydrography [USGS], which includes data on surface water features such as lakes, ponds, streams, rivers, canals, oceans, and coastlines, and (3) transportation [BTS], which includes both physical and nonphysical components representing all modes of travel that allow the movement of goods and people between locations.

[24] OMB, Circular No. A–16, *Coordination of Geographic Information and Related Spatial Data Activities,* (Washington, DC: Aug. 19, 2002).

vide information related to their IT investments (called exhibit 53s[25]) and capital asset plans and business cases (called exhibit 300s[26]).

However, as we reported in November 2012, OMB's Office of E-Government staff members acknowledged that these two sources may not in all cases provide the necessary information to allow OMB to identify potentially duplicative investments or accurately quantify the amount of Federal dollars spent on geospatial datasets for three primary reasons.

First, according to these staff members some Federal agencies may not classify investments in geospatial data as "information technology" (such as satellites), meaning that they would not be captured in exhibit 53s. OMB staff members stated that agencies are to determine what qualifies as an IT investment and stated that there are variations in the way that agencies interpret the definition of IT.

Second, agencies do not always appropriately classify geospatial investments as "geospatial services" using the Federal Enterprise Architecture codes. Our analysis of the fiscal year 2013 exhibit 53s for the three departments that we reviewed showed that only 5 of their 24 key datasets—1 of NOAA's 6 geodetic control datasets and 4 of USGS's 7 hydrography datasets—were included in the departments' exhibit 53s. Further, only one of these investments was identified with the geospatial services code, as required by OMB's fiscal year 2013 budget formulation guidance.

Third, given that the geospatial data may be only one component of an IT investment or capital asset, even if it were included in the agencies' exhibit 53s or 300s, we determined that OMB would have difficulties in identifying the geospatial component, and the associated dollars, without having a detailed discussion with individuals responsible for each investment.

OMB staff members stated that, as a result, they did not have a complete picture of how much money is being spent on geospatial investments across the Federal Government because, as noted, what was being reported may not have captured all geospatial spending, and the data had not been reliable. We also reported in November 2012 that according to OMB, although eliminating duplication in geospatial investments was important, OMB's recent efforts had focused on other commodity IT areas with higher spending and cyber security ramifications. As a result, OMB had not yet established a way to collect complete and reliable information about geospatial investments because this had not been a priority. We concluded that, unless OMB decides that coordinating geospatial investments is designated as a priority, duplicative investments would likely continue.

IMPLEMENTING GAO RECOMMENDATIONS CAN REDUCE DUPLICATION AND PROVIDE COST SAVINGS

Our November 2012 report made numerous recommendations aimed at improving coordination and reducing duplication of geospatial data. Interior and Commerce generally agreed with our recommendations; Transportation neither agreed nor disagreed.

First, we recommended that the Secretary of the Interior, as FGDC Chair, direct the FGDC Steering Committee to:

- Establish a timeframe for completing a plan to facilitate the implementation of OMB's November 2010 management guidance, and develop and implement the plan within the established timeframe;
- Develop and implement guidance for identifying planned geospatial investments in the Geospatial Platform, and establish a timeframe for doing so; and
- Establish a timeframe for creating and updating a strategic plan to improve coordination and reduce duplication, and create and implement the plan within the established timeframe. The plan, at a minimum, should include (1) a vision statement for the NSDI; (2) outcome-oriented goals and objectives that address all aspects of the NSDI; (3) a description of how the goals and objectives are to be achieved, including a description of the resources needed to achieve the goals and objectives and how FGDC is to work with other agencies to achieve

[25] The purpose of the exhibit 53 is to identify all IT investments—both major and nonmajor—and their associated costs within a Federal organization. Information included in agency exhibit 53s is designed, in part, to help OMB better understand agencies' spending on IT investments. OMB guidance for the fiscal years 2013 and 2014 budget formulation instructs agencies to identify their geospatial investments in the exhibit 53 using Federal Enterprise Architecture codes for specific functions (e.g., geospatial services, financial management, and acquisition management).

[26] The purpose of the exhibit 300 is to provide a business case for each major IT investment and to allow OMB to monitor IT investments once they are funded. Agencies are required to provide information on each major investment's cost, schedule, and performance.

them; (4) performance measures for achieving the stated goals; and (5) external factors that could affect the achievement of the goals and objectives.

In addition, we recommended that the Secretaries of Commerce, the Interior, and Transportation implement the relevant executive order requirements and OMB guidance that apply to their departments and agencies:

- Designate a senior agency official with departmentwide accountability, authority, and responsibility for geospatial information issues;
- Prepare, maintain, publish, and implement a strategy for advancing geographic information and related geospatial data activities appropriate to its mission;
- Develop a policy that requires the department to make its geospatial metadata available on the clearinghouse;
- Develop and implement internal procedures to ensure that the department accesses the NSDI clearinghouse before it expends funds to collect or produce new geospatial data to determine (1) whether the information has already been collected by others and (2) whether cooperative efforts to obtain the data are possible;
- Prepare goals relating to all datasets within the relevant theme that support the NSDI;
- Develop and implement a plan for the nationwide population of the relevant theme that addresses all datasets within the theme and that includes (1) the development of partnership programs with States, tribes, academia, the private sector, other Federal agencies, and localities that meet the needs of users; (2) human and financial resource needs; (3) standards, metadata, and the clearinghouse needs; and (4) a timetable for the development for the theme; and
- Create and implement a plan to develop and implement relevant theme standards.

Further, we recommended that the Director of OMB develop a mechanism, or modify existing mechanisms, to identify and report annually on all geospatial-related investments, including dollars invested and the nature of the investment.

In the year since our report was issued, FGDC, OMB, and selected agencies have made some progress in addressing recommendations. For example, in September 2013, FGDC issued guidance directing all FGDC departments to identify planned geospatial investments using the Geospatial Platform. In May 2013, OMB issued guidance to agencies on how to document information on the nature of investments, such as using common standards, specifications, and formats developed by the geospatial community, which would allow others to determine the fitness of the data for their needs. However, because the implementation of this new guidance is still dependent on the use of exhibit 53s and 300s for reporting past, present, and future costs, it is unclear the extent to which Federal agencies, OMB, or others will effectively be able to identify how much Federal funding is being spent on geospatial systems and data.

In addition, the Federal departments we reviewed have taken some steps to implement our recommendations. For example, the Departments of Commerce, the Interior, and Transportation have all begun preparing, maintaining, publishing, and implementing strategies for advancing geographic information and related geospatial data activities appropriate to their missions.

In addition, the three agencies with theme-lead responsibilities that we reviewed have begun implementing our recommendations. For example, NOAA, USGS, and BTS have all taken some steps to create a plan to develop and implement relevant theme standards. However, until a comprehensive national strategy is put in place and Federal departments and agencies establish and implement the policies, procedures, and plans to coordinate their geospatial activities as we recommended, the vision of the NSDI to improve the coordination and use of geospatial information will likely not be fully realized and duplicative investments will likely continue. Further, until OMB establishes a way to obtain reliable information about Federal geospatial investments as we recommended, OMB will not be able to readily identify potentially duplicative geospatial investments.

In summary, it was slightly over a year ago that we reported that the key players in ensuring coordination on geospatial data investments—FGDC, Federal departments and agencies, and OMB—had not fully implemented policies and procedures for coordinating geospatial investments because these efforts were not made a priority. As a result, efforts to acquire data were uncoordinated and the Federal Government was acquiring duplicative geospatial data. At that time, we noted that unless OMB, FGDC, and Federal departments and agencies decide that coordinating geospatial investments is a priority, this situation would likely continue.

Now, a year later, there has been some progress in improving policies and procedures for coordinating the geospatial investments. However, much remains to be

done to implement and enforce the policies and to achieve cost savings to the Federal Government. Until FGDC, Federal departments and agencies, and OMB decide that investments in geospatial information are a priority, these investments will remain uncoordinated, and the Federal Government will continue to acquire duplicative geospatial information and waste taxpayer dollars.

Chairman Lamborn, Ranking Member Holt, and members of the subcommittee, this completes my prepared statement. I would be pleased to respond to any questions that you may have at this time.

GAO CONTACT AND STAFF ACKNOWLEDGMENTS

If you or your staffs have any questions about this testimony, please contact me at (202) 512–9286 or at *pownerd@gao.gov*. Individuals who made key contributions to this testimony are Colleen Phillips (assistant director), Kaelin Kuhn, Nancy Glover, Jamelyn Payan, and Jessica Waselkow.

Appendix I—Proposed Data Themes, as of November 2012

Proposed Theme	Description
Biota	Pertain to, or describe, the dynamic processes, interactions, distributions, and relationships between and among organisms and their environments.
Cadastre	Past, current, and future rights and interests in real property including the spatial information necessary to describe geographic extents. Rights and interests are benefits or enjoyment in real property that can be conveyed, transferred, or otherwise allocated to another for economic remuneration. Rights and interests are recorded in land record documents. The spatial information necessary to describe geographic extents includes surveys and legal description frameworks such as the Public Land Survey System, as well as parcel-by-parcel surveys and descriptions. Does not include Federal government or military facilities.
Climate and Weather	Meteorological conditions, including temperature, precipitation, and wind, that characteristically prevail in a particular region over a long period of time. Weather is the state of the atmosphere at a given time and place, with respect to variables such as temperature, moisture, wind velocity, and barometric pressure.
Cultural Resources	Features and characteristics of a collection of places of significance in history, architecture, engineering, or society. Includes national monuments and icons.
Elevation	The measured vertical position of the earth surface and other landscape or bathymetric features relative to a reference datum typically related to sea level. These points normally describe bare earth positions but may also describe the top surface of buildings and other objects, vegetation structure, or submerged objects. Elevation data can be stored as a three-dimensional array or as a continuous surface such as a raster, triangulated irregular network, or contours. Elevation data may also be represented in other derivative forms such as slope, aspect, ridge and drainage lines, and shaded relief.
Geodetic Control	Collection of control points that provide a common reference system for establishing coordinates for geographic data.
Geology	Geographically referenced data pertaining to the origin, history, composition, structure, features, and processes of the solid Earth, both onshore and offshore. Includes geologic, geophysical, and geochemical maps, stratigraphy, paleontology, geochronology, mineral and energy resources, and natural hazards such as earthquakes, volcanic eruptions, coastal erosion, and landslides. Does not include soils.
Governmental Units	Political, governmental, and administrative (management) type boundaries that are used to manage people and resources. Includes geopolitical boundaries (county, parish, state, city, etc), tribal boundaries, Federal land boundaries and Federal regions, international boundaries, governmental administrative units such as congressional districts, international lines of separation, limits, zones, enclaves/exclaves and special areas between States and dependencies as well as all jurisdictional offshore limits within U.S. sovereignty. Boundaries associated with natural resources, demography, and cultural entities are excluded and can be found in the appropriate subject themes.

Appendix I—Proposed Data Themes, as of November 2012—Continued

Proposed Theme	Description
Imagery	Georeferenced images of the Earth's surface, which have been collected via aerial photography or satellite data. Orthoimagery is prepared through a geometric correction process known as orthorectification to remove image displacements due to relief and sensor characteristics, allowing their use as base maps for digital mapping and analyses in a geographic information system. Specific imagery data sets created through image interpretation and classification, such as a land cover image, can be found under themes specific to the subject matter.
Land Use/Land Cover	Refers collectively to natural and man-made surface features that cover the land (Land Cover) and to the primary ways in which land cover is used by humans (Land Use). Examples of Land Cover may be grass, asphalt, trees, bare ground, water, etc. Examples of Land Use may be urban, agricultural, ranges, and forest areas.
Real Property	The spatial representation (location) of real property entities, typically consisting of one or more of the following: unimproved land, a building, a structure, site improvements and the underlying land. Complex real property entities (aka ''facilities'') are used for a broad spectrum of functions or missions. This theme focuses on spatial representation of real property assets only and does not seek to describe special purpose functions of real property such as those found in the Cultural Resources, Transportation, or Utilities themes.
Soils	Depicts the geography and attributes of the many kinds of soils found in the landscape at both large and small map scales. A living dynamic resource providing a natural medium for plant growth and habitat for living organisms, soil recycles nutrients and wastes, stores carbon, and purifies water supplies. Soil has distinct layers (called ''horizons'') that, in contrast to underlying geologic material, are altered by the interactions of climate, landscape features, and living organisms over time.
Transportation	Means and aids for conveying persons and/or goods. The transportation system includes both physical and non-physical components related to all modes of travel that allow the movement of goods and people between locations.
Utilities	Means, aids, and usage of facilities for producing, conveying, distributing, processing or disposing of public and private commodities including power, energy, communications, natural gas, and water. Includes subthemes for Energy and Communications.
Water—Inland	Interior hydrologic features and characteristics, including classification, measurements, location, and extent. Includes aquifers, watersheds, wetlands, navigation, water quality, water quantity, and groundwater information.
Water—Oceans and Coasts.	Features and characteristics of salt water bodies (i.e. tides, tidal waves, coastal information, reefs) and features and characteristics that represent the intersection of the land with the water surface (i.e. shorelines), the lines from which the territorial sea and other maritime zones are measured (i.e. baseline maritime) and lands covered by water at any stage of the tide (i.e. outer continental shelf), as distinguished from tidelands, which are attached to the mainland or an island and cover and uncover with the tide.

Source: GAO analysis of OMB and FGDC documentation

Questions Submitted for the Record to David A. Powner

Questions Submitted for the Record by The Honorable Doug Lamborn

H.R. 1604—MAP IT ONCE, USE IT MANY TIMES ACT AND H.R. 916—FEDERAL LAND ASSET INVENTORY REFORM ACT OF 2013

Question. Is there an opportunity for agencies to consolidate, or jointly use, contracts with the private sector for geospatial services? If so, by more strategically using contracts, can duplication among agencies be avoided?

Answer. There is an opportunity for agencies to consolidate contracts with the private sector for geospatial services. By doing so, potentially duplicative investments by agencies could be avoided. We have previously reported that the private sector plays an important role in support of government geographic information system activities because it captures and maintains a wealth of geospatial data and develops

geographic information system software.[1] Private companies provide services such as aerial photography, digital topographic mapping, digital orthophotography, and digital elevation modeling to produce geospatial data sets that are designed to meet the needs of government organizations.

In addition, in November 2012, we reported about key issues related to geospatial information systems and data.[2] Specifically, we reported on the need to coordinate geospatial information among Federal agencies and private sector organizations in order to reduce unnecessary duplication. Although the President and the Office of Management and Budget [OMB] had established policies and procedures for coordinating investments in geospatial data, govermentwide committees and Federal agencies had not effectively implemented them. For example, although the Federal Geographic Data Committee [FGDC] had developed a clearinghouse for geospatial metadata (a centralized geospatial repository that contains information on geospatial data that can be searched to determine whether needed geospatial data exist and can be shared), Federal agencies were not effectively using it to identify planned investments. We concluded that without the ability to identify planned geospatial data acquisitions, agencies were likely missing opportunities to reuse or cooperatively acquire geospatial data, thus resulting in the acquisition of potentially duplicative geospatial data and needless expenditure of limited resources.

We also reported on examples of duplication, including three agencies that were independently acquiring road data. This situation was reported to have contributed to millions of wasted taxpayers' dollars. The three programs include:

- Census Bureau's Topologically Integrated Geographic Encoding and Referencing (TIGER) system, which uses data procured from local sources for census enumeration and demographic applications;
- The U.S. Geological Survey's National Map Web site, which uses licensed data from a commercial provider to create viewable maps on the National Map; and
- The Department of Defense's Homeland Security Infrastructure Program, which uses licensed commercial data procured by the National Geospatial-Intelligence Agency for emergency management.

We made recommendations aimed at improving coordination and reducing duplication, to include FGDC developing a national strategy and implementing guidance for identifying planned geospatial investments in the clearinghouse. As we testified to this subcommittee in December 2013, the agencies have taken steps to implement our recommendations, but more work remains to reduce duplicative geospatial investments.[3]

Question. Does GAO have any information on how many different land inventories the Federal Government currently maintains, how much it costs, and whether having one current, accurate interoperable inventory would cost less than how business is done today?

Answer. We do not have information to answer this question because, as we reported in November 2012, OMB has not established a reliable mechanism for obtaining information about Federal investments in geospatial data, and thus it does not have the information needed to identify potentially duplicative investments or accurately quantify the amount of Federal dollars spent on geospatial data.[4] Moreover, in recent reports, the Congressional Research Service found that a coordinated approach to federally managed parcel data did not exist and that the best method for obtaining an accurate tally of Federal lands was to contact each land management agency directly.

Our November 2012 report also describes the early stages of a governmentwide effort that, if properly implemented, could ultimately produce information that would answer this question. Specifically, we reported on the FGDC's efforts to implement a portfolio management approach for managing geospatial data—that is, a framework that would allow agencies to manage related geospatial data themes,[5]

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[1] GAO, *Geospatial Information: Better Coordination needed to Identify and Reduce Duplicative Investments,* GAO–04–703 (Washington, DC: June 23, 2004).

[2] GAO, *Geospatial Information: OMB and Agencies Need to Make Coordination a Priority to Reduce Duplication,* GAO–13–94 (Washington, DC: Nov. 26, 2012).

[3] GAO, *Geospatial Information: OMB and Agencies Can Reduce Duplication by Making Coordination a Priority,* GAO–14–226T (Washington, DC: Dec. 5, 2013).

[4] GAO–13–94.

[5] Data themes are topics of national significance, such as cadastral (i.e., describe the geographic extent of past, current, and future right, title, and interest in real property, and the framework to support the description of that geographic extent) and Federal Land Ownership Status (i.e., includes the establishment and maintenance of a system for the storage and dissemination of information describing all title, estate, or interest of the Federal Government in a parcel of real and mineral property). OMB Circular A–16 currently identifies 34 data themes

such as cadastral data, and their associated key data sets[6] as related groups of investments to allow agencies to more effectively plan geospatial data collection efforts and minimize duplicative investments. Specifically, the FGDC proposed consolidating the 34 data themes identified in OMB Circular A–16 into 16 themes—including consolidating 4 land management themes into 1 theme called Cadastre. However, the data themes, and associated key datasets and lead agencies had not been finalized, and the FGDC had not provided guidance to agencies about how to implement the portfolio management approach. We concluded that until FGDC had provided implementation guidance, and the themes, lead agencies, and associated datasets are identified and approved, the agencies cannot effectively begin to implement a coordinated geospatial asset management capability. Such capability was, according to OMB guidance, expected to provide a mechanism for agencies to plan more effectively in advance of data collection efforts to identify partnership opportunities, and to minimize duplicative investments. We recommended that the FGDC develop and implement a plan to facilitate the implementation of the portfolio management approach for managing geospatial data. According to FGDC officials in October 2013, the plan is to be finalized and released for implementation by Federal agencies no later than the second quarter of fiscal year 2014. We believe that implementation of this recommendation should allow Federal agencies to identify key land inventories and their associated costs, and evaluate opportunities to consolidate their investments.

Mr. LAMBORN. Thank you both for being here. We will now begin with questions, and I will now recognize myself for 5 minutes.

Mr. Gallagher, I want to thank you for being here to testify. In your testimony, you highlight that we don't need to pass the Map It Once Act because, according to you, the Department has everything they need and everything is covered. Now, this perplexes me because we have GAO testifying, as you just heard, once more before this committee, as it has done many times, about the waste and duplication that we have when it comes to geospatial services.

So my question to you is, since the administration says everything is covered and there is no need for change, who at the Department is responsible for what appears to be waste taking place so that the next time GAO has a report saying we have duplication and waste we can have that person come before us? And I am going to ask you to name who is responsible here so that we can bring that person before the committee. How would you answer that?

Mr. GALLAGHER. Let me start by saying the Department shares your goal, Mr. Chairman, of reducing duplication and fulfilling the vision of a national spatial data infrastructure with investments for these critically important national data sets.

In answer to your question on first blush it looks like a consolidation of activities would create efficiency and reduce cost. When you look more closely at the way agencies acquire and use geospatial data, what you find is that they are acquiring data to support their mission, and that is different than what you would find in an organization that was designed to be a mapping agency, such as the USGS. And so I want to talk a little bit about those differences.

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and identifies the "lead" agency or agencies for each theme. Each data theme is to be comprised of one or more electronic data records, known as datasets. Of the 34 themes, 9 are identified as "framework" themes—that is, themes identified in Circular A–16 as critical for many geospatial applications.

[6] According to OMB, a key geospatial dataset is (1) used by multiple agencies or with agency partners such as State, tribal, and local governments; (2) applied to achieve Presidential priorities as expressed by OMB; (3) needed to meet shared mission goals of multiple Federal agencies; or (4) expressly required by statutory mandate.

In an agency like that you are likely to find that there is not completeness of coverage across the Nation for the data. In fact, that it is acquired around the areas that they need. In addition, it may be acquired unique to their mission needs and not necessarily to the needs of other agencies.

Mr. LAMBORN. OK.

Mr. GALLAGHER. And so it would actually require a significant investment to achieve the goal of that national data infrastructure.

Mr. LAMBORN. So you are saying that there are some differences in the missions, but isn't there a lot of overlap in the missions?

Mr. GALLAGHER. There are themes that have been identified in OMB Circular A–16 that have been recommended by the leaders in the geospatial community. In fact, the National Geospatial Advisory Committee is a committee made up of industry, academia, State and local governments who have advised——

Mr. LAMBORN. OK. And thank you for that, but let me get back to my opening question.

Mr. GALLAGHER. Sure.

Mr. LAMBORN. Who should we bring forward next time? And I am going to give you some names: Mr. Castle, the Assistant Secretary for Science; Ms. Schneider, the Assistant Secretary for Lands and Management; Mr. Beaudreau, the Assistant Secretary for Policy and Budget; or Mr. Connor, the Deputy Secretary for the Department. Who should come forward to be more specific and maybe take some accountability for waste and duplication?

Mr. GALLAGHER. So Ms. Anne Castle, who you named as our Assistant Secretary for Water and Science, and she is the Chair of the Federal Geographic Data Committee, she cochairs that with OMB, it is important to understand the structure of the FGDC. There is a lot of leadership in the Department of the Interior, but the members of the FGDC represent each agency, and so, therefore, there is not a single point of accountability for every single data theme that you find. So if you are looking for duplication in a particular data theme, you would most likely want to call the data theme owner that represented that agency.

Mr. LAMBORN. OK. I am a little concerned when you say that there is not accountability. Would it be Ms. Castle that we should talk to about the waste issues that Mr. Powner has highlighted? I just want a name of who is the best person to bring here the next time so we can really dig into the particular waste and duplication.

Mr. GALLAGHER. As I commented, I don't think there is a single individual. There is a lot of accountability. If I led you to believe that there is not accountability, there is. If you look at the USGS, we have excellent examples of very strong theme management and the development of national geospatial data sets in partnership with other agencies that don't have duplication.

Mr. LAMBORN. OK. I think we have gone far enough on this. Thank you.

One last question, Mr. Powner, and then we will go to the Ranking Member.

You said in 2012 the Department of the Interior estimated that the Federal Government was investing billions of dollars on geospatial data annually and that duplication was common. Do you

know that specific number of dollars? I mean, you quoted them as saying billions of dollars.

Mr. POWNER. No, that is why we were vague, because if you go to OMB and you ask OMB how much we spend on geospatial data, the way they collect that data, they can't give you a solid number. We know it is in the billions, Mr. Chairman, and we think it is important, though, that OMB use their mechanisms to help in the management of this because it helps with the coordination because they have the budget authority. But we have actually seen in other areas where OMB can actually leverage their expertise and root out duplication if it gets identified appropriately and you flag those things that are duplicative and not fund them going forward. That is very important.

Mr. LAMBORN. OK. Thank you very much. When it is billions of dollars and we can't be more specific than that, that really concerns me.

OK. I would like to recognize the Ranking Member.

Mr. HOLT. Thank you, Mr. Chairman.

I have a number of questions, so if I could ask the witnesses to be very succinct in their responses, I would appreciate it.

Mr. Powner, the GAO has put the Federal real property on a high risk list. Real property could be buildings, could be lands. How do you mean it? How does GAO look at that?

Mr. POWNER. Well, I think when we put that on our list, and starting in 2003 it included lands and buildings. There is a heavy focus, though, on buildings. In fact, I think there was some recent press even today about a $3.8 billion figure where you could save that. That is primarily associated with the buildings, though, reducing excess buildings and those types of things.

Mr. HOLT. Mr. Gallagher, could you describe the interaction between the USGS and the private sector? Is it a positive relationship with the geospatial contractors, with the end users?

Mr. GALLAGHER. I would describe it as a very positive relationship. It is a good government story. We have a lean Federal workforce with expertise in cartography and mapping, but we leverage the private industry, the capacity and expertise that they have to acquire geospatial data and to put that data into the public domain. That is a very important aspect of it because then it is there for the use by private industry, by universities, by the public to underpin the economy and to improve public safety.

Mr. HOLT. Thanks. Mr. Powner, in the bill, section 402(d) makes the administrator of this new geospatial administration responsible for representing the views and interests of private firms to government agencies. Is there any precedent for this? Can you think of examples where a government agency is supposed to represent the interests of private firms to other government agencies?

Mr. POWNER. I am not real familiar with that section of the bill, but based on what you are describing I am not aware of many. One thing that does come to mind, I did a lot of work at one time associated with FAA in the air traffic control system. I think there was a similar arrangement at one time, and that ends up becoming very controversial if FAA is supporting the airline industry and that type of thing. So that potentially can be controversial in terms of is that an appropriate role for government.

Mr. HOLT. In my earlier remarks, I talked about potential conflicts of interest, and I had that and such things as that in mind.

Mr. Powner, your GAO reports and your testimony focus on the implementation of the Federal geospatial structure. What about the structure itself? Do you think the existing structure could be made to work? Do we need a new structure or what would be gained with a new structure?

Mr. POWNER. The existing structure could work. Obviously, the coordinating body would have to really step up from a leadership point of view. And again, I would highlight the need for OMB to be part of that process to help with cross-agency coordination. I think that is very important.

I think one of the positives with the current structure is the theme-based approach when you manage in portfolios, because geospatial data can be quite different depending on what the users are using it for. Climate and weather over at NOAA is much different than some other geospatial data. So the theme-based approached with the 17 themes does seem to make sense.

Mr. HOLT. And in your testimony you said the OMB is not doing any coordinating, or very little coordinating, at this point.

Mr. POWNER. No. OMB told us this is not a priority for them. At one time it was. In 2006, there was a geospatial line of business. And those lines of business, not that OMB has been successful in eliminating duplication, there have been some areas where they have been. H.R. systems across the Federal Government is one example where a line of business helped reduce duplication. So at one time it was a priority for them, in 2006, but it is clear that it no longer is.

Mr. HOLT. In the Intelligence Community there is an entire agency that has the name "geospatial" in it. Now, I realize there is a different mission, there is, I think, some overlap of technology and application. Has GAO looked at that? Has that been part of the review as GAO has looked for ways to organize and implement geospatial data?

Mr. POWNER. Ranking Member Holt, we have not looked in any detail at NGA activities in any detail.

Mr. HOLT. OK. Thank you.

Mr. LAMBORN. OK. I would now like to recognize my colleague from the great State of Wyoming, Representative Lummis.

Mrs. LUMMIS. Thank you, Mr. Chairman.

Welcome, gentlemen.

I am going to default to my own frame of reference on this. I was a Director of State Lands and Investments in my State of Wyoming. We were doing an inventory of State land. We only had 3.6 million acres of surface estate and about 4.2 million acres of subsurface estate or mineral estate. And doing those inventories was expensive and time-consuming, and so I get it. I get it that we are not talking about something that is inexpensive.

But we were advantaged by the fact that if we leveraged the resources of the State and the University of Wyoming, that has a great geospatial mapping effort, and various private sector groups that were willing, in some cases, to share data with us, it did assist us in expediting both the inventory and the digitization at a reasonable cost.

So first question for Mr. Gallagher. How can we address something that Mr. Powner said that really resonated with me, and that is the silo effect, where people get very proprietary, even government employees get very proprietary and myopic about the information that they gather? And how can we better share that information and go to States, go to universities, go to other databases to assist with leveraging the already gathered resources?

Mr. GALLAGHER. So it is a great question. Thank you. The good news on this front is that the evolution of data standards, many of them led by the FGDC, have created an opportunity for the sharing of data. Today, you can get access to another person's or another agency's data and see it in an application, you can view it on a mobile platform, you can use it in a GIS system.

The elimination of the silos, I think, comes through the clear identification of themes, of layers for geospatial data information, authoritative owners of that, and I wholeheartedly agree with you that leveraging the private sector to acquire the data, working in partnership with universities and others who are professionals, creates a relationship in which all the resources can be pulled together to do that.

Mrs. LUMMIS. What if we did this State by State? Let's look, just for example, at H.R. 916. The prime cosponsors are Mr. Kind, who is from Wisconsin, and Mr. Bishop from Utah. What if we just started with their two States, Wisconsin and Utah, and said let's do these first, then we can have appropriators appropriate just to do those two States, and then we pick another two and another two until it is done? Would that be easier to absorb and swallow, both financially and in terms of the scope of the mission?

Mr. GALLAGHER. Yes, I think it would. Actually, the USGS has a long history of working at the State level to do just that, both in geologic mapping where we have gone State by State in partnership with the Association of State Geologists and in our topographic mapping program where now we produce additional topographic series on a 3-year cycle going across the Nation. And so I think there is a great opportunity to leverage our resources with States.

Mrs. LUMMIS. Thanks, and I am going to cut you off just because——

Mr. GALLAGHER. Great.

Mrs. LUMMIS [continuing]. I have other questions and only 5 minutes.

Mr. GALLAGHER. Fine. Thank you.

Mrs. LUMMIS. But I do appreciate your input on that.

Mr. Powner, what do you think? What is going through your mind as I ask these questions and have this dialog with Mr. Gallagher?

Mr. POWNER. Well, I like your idea of going small and building it. Another way to do it, you could do it by State. You could also take a couple of those themes and really look at those themes in great detail and have a couple good wins. We have 17 themes. You take a couple of those themes and really show it can work, not only coordinating across the Federal Government, but with States and localities.

Mrs. LUMMIS. Yes.

Mr. POWNER. And then you can get some wins and then focus and say, wow, look what we are doing here, we are leveraging State data, States are leveraging Federal data, that type of thing. So I think that small growing it approach is the way to go, and you can do it with States or themes.

Mrs. LUMMIS. Off the top of your head, which do you think would work better, thematic or State by State?

Mr. POWNER. I am not certain. I like the idea of doing both. There is no reason why you can't do them both simultaneously.

Mrs. LUMMIS. I see.

Mr. POWNER. Try an experiment with both and grow it.

Mrs. LUMMIS. Thank you.

Thank you, Mr. Chairman. I yield back.

Mr. LAMBORN. OK.

Representative Lowenthal.

Mr. LOWENTHAL. Thank you, Mr. Chair. I find the hearing fascinating, but I am going to pass. I am just here to learn.

Mr. LAMBORN. OK. Thank you.

Representative Fleming.

Mr. FLEMING. Thank you, Mr. Chairman.

And thank you, panel, for being here. I commend Chairman Lamborn for introducing this legislation to consolidate Federal mapping programs and streamline their administration. I think there is a lot of work to be done in Federal Government in consolidating.

If you think about it, we are like a very large company that the revenue and the expenses are not synching up and companies across America are consolidating and lowering their cost structure in order to be more efficient. We need to be doing this more in every area, and that is part of the reason why I am preparing to reintroduce the REDUCE Act, which will create a BRAC-style commission to consolidate all Federal programs. But absent the REDUCE Act being signed into law, H.R. 1604 is exactly the kind of solution I think we should be pursuing in every committee to reform our runaway Federal bureaucracy.

And my first question is to Mr. Powner. Given the size of our debt and the need to put limits on the growth of government, would you support not just transferring mapping authority to the new National Geospatial Technology Administration, but deauthorizing specific funding within other agencies mentioned in the bill?

Mr. POWNER. I would need to know what the effect would be on those agencies' mission, ability to deliver their mission specifically. I think that is important. I think you want to cut. Believe me, there is a lot to cut. And I am an IT guy, and when you look at the $80 billion we spend annually on IT, the administration just came up that $8 billion of that is duplicative and wasteful. That is 10 percent. And they are admitting to that, so you know it is probably higher. But I think I would be cautious just to understand what the effects would be on mission performance at those agencies.

Mr. FLEMING. Could you give us a list of these programs and how much was spent on them last year? Obviously you can't do that at

this moment, but is that something that you can supply to this committee?

Mr. POWNER. On the IT duplication?

Mr. FLEMING. Yes.

Mr. POWNER. Absolutely. There are 204, and the range is between $5.9 and $7.8 billion. We issued a report last month, and we can go agency by agency and list all 204 for you.

Mr. FLEMING. Right.

Mr. POWNER. Do that for the record.

Mr. FLEMING. OK. Great. We would appreciate that.

And this is a question to both of our witnesses. Given that different agencies and users have different needs, how will the National Geospatial Technology Administration determine what needs are primary in the creation and maintenance of maps and data?

Mr. GALLAGHER. I think that is a significant challenge of the proposed bill. As I mentioned, most agencies acquire data for their own needs, and they are not set up at the moment to acquire it for the broad needs of the Nation, either in completeness of coverage or requirements. And so as I stated, I think it would require an investment to do that. I think it would be a challenge to have it occur.

Mr. FLEMING. OK. Another question that just kind of occurs to me now. We are learning through our current experience with the President's healthcare law that the private sector can do things so much more efficiently and lower cost than can government and with much better results. How much of this sort of work are we asking professionals in the private sector to really do and how much are we doing in-house?

Mr. GALLAGHER. At USGS, I can speak for USGS, we have a very lean Federal workforce with a competency in cartography and mapping, and we are using the private sector exclusively to acquire all this data. They have the capacity and they have the instrumentation and they have, quite frankly, the expertise to do that. So, I think it is an effective partnership, and I think it is a model of how it can work in all agencies.

Mr. FLEMING. OK. Is there any mechanism for a State or local government to cost share or prioritize the data for needs?

Mr. GALLAGHER. Absolutely. The answer is, yes, we have a geospatial products and services contract that has been designed so that States can share in the cost, and in fact, we are using that vehicle across the Nation now. It is a major part of our mapping of Alaska, which is the State-by-State concept, where we have a joint Federal-State committee mapping Alaska using that vehicle. And so that is a great point, and yes, it is very capable.

Mr. FLEMING. Right.

Mr. Powner, in the few moments I have left, do you have anything to add?

Mr. POWNER. Nothing more. Thank you.

Mr. FLEMING. OK. Great.

With that, I yield back.

Mr. LAMBORN. Thank you.

Representative Thompson.

Mr. THOMPSON. Thank you, Chairman. Thanks for hosting this hearing. I very much appreciate what the subcommittee is doing here.

Gentlemen, thank you for your expertise, your leadership, bringing your input here.

Mr. Gallagher. I just want to kind of dovetail a bit with my good friend from Louisiana. And thank you for what USGS does. I appreciate it, I benefit from that information. Your representatives have been in my office. We need good data to make good decisions. We sometimes wing it around here and shoot from the hip. We don't always do good, sound policy based on good, sound data.

You kind of reflected on the current state of USGS that today, about how much you work with different entities, whether they be academic universities and States, those types of things. I am interested in seeing what the trajectory is for that. I mean, how far have you come in the past 10 years with that partnership and what do you see in the future? Because it seems like as technology has developed, industry interest has developed it seems like today there is a lesser role for the Federal Government based on the development of these other entities, and what do you see for the future? Is that the trajectory we are going to stay on?

Mr. GALLAGHER. Great. Thank you.

Well, first of all, the last decade has been a revolution for USGS where we have gone from cartography where everything was manual and surveying in the field to a digital environment, and we have done that with a partnership with, as I mentioned, the private sector and agencies.

Now, your question of where this is going, a lot of times I will get the question, well, look at all the data that is available from Google, why do we need a separate mapping organization. And maybe I will just touch on three points. The breadth of the geospatial data is very broad, and the data that is available today on the Internet is rather narrow. It might be imagery or it might be data to support navigation.

And so I think there is a very important role going forward for the Federal Government to acquire this geospatial data, to do it efficiently in partnership with the private sector, and to put that into the public domain. That is a very important aspect because data that you will find out on the Internet that has been collected nonpublicly is, therefore, proprietary and a license is usually associated with it to use it.

The role of the Federal Government in acquiring important data should be looked at as infrastructure for the Nation, put into the public domain to underpin and support economic development and public safety.

Mr. THOMPSON. Thank you. You had mentioned that three of the nine GAO recommendations to the FGDC have been completed. What are the other recommendations and what is the holdup?

Mr. GALLAGHER. So there is no holdup. We are actively engaged in those. The recommendations are rather complex, so what I would like to do is provide a statement for the record on the status of those——

Mr. THOMPSON. That would be wonderful

Mr. GALLAGHER [continuing]. If that is all right with you.

Mr. THOMPSON. Yes. A written response would be very helpful.

Mr. GALLAGHER. OK.

Mr. THOMPSON. Mr. Powner, it is my understanding that we don't even know which agencies are involved with geospatial activities and what kinds of data they are collecting for them. I am kind of surmising from some of the testimony submitted with the second panel. What are your thoughts on this?

Mr. POWNER. Well, we have approximately 30 agencies that participate in the FGDC, so we know who the players are, we know who the themes are. The problem is, is we don't really have a good handle on exactly what we have within those agencies and departments, and then exactly what is in the acquisition process to acquire. And that is not a good thing. That is why the clearinghouse is so important. We need a comprehensive picture of what we have and then we also need a comprehensive picture of what we are planning to acquire so that we don't duplicate further going forward.

Mr. THOMPSON. I would concur. And the gentlelady from Wyoming was whispering to me. We agree. The clearinghouse concept is always, no matter what we are talking about, it is good to know what we have. We have to have that good place to launch from.

And then just finally, some have told us, including testimony in the second panel, that effective coordination has not occurred on geospatial mapping, which is why legislation such as H.R. 1604 is needed. What is USGS doing to help improve such coordination?

Director.

Mr. GALLAGHER. So, there are ample examples within the USGS. Our national hydrography data set is a data set of surface water for the Nation. We are working with the States in partnership to steward that. In fact, the States maintain the data and we bring it together through a consistent framework to serve it out to the Nation. That is one example.

Our 3D Elevation Program is another one where we have stood up an interagency executive forum. We are the OMB A–16 themed lead for terrestrial elevation, so we are taking that leadership role and we are developing the standards and working with the other agencies to share in investment of that program. I think you will hear more about that from other witnesses today. Those are two examples.

Mr. THOMPSON. Thank you both very much.

Mr. Chairman, I am out of time.

Mr. LAMBORN. Representative Garcia.

Mr. GARCIA. Just had a quick question. Either one of you, Kevin or David, can answer. It is my understanding that the U.S. Government is intending to spend about $146 million in funding stream for 3DEP per year. How much of that do you already have? And given that level, when do you anticipate south Florida gets mapped?

Mr. GALLAGHER. Thank you very much for that question.

The 3D Elevation Program is proposed for funding in the fiscal year 2014 budget of $9 million from the President's budget. So certainly that will help, if we get it, to make our way down to Florida.

Currently in the USGS there is about $6 million that is dedicated annually to the acquisition of lidar. Having said that, we are

very effective at working with our agency partners to have them match our investment. And so in 2013 we acquired a total of about $25 million of high resolution elevation data across the Nation.

One last comment. We are very sensitive to your State being one of the lower elevation States. It is actually more important there to understand your elevation data for flood inundation and for a host of other reasons. And so our——

Mr. GARCIA. Elevation is inches, not feet there.

Mr. GALLAGHER. Right. And so our plan is to originally focus along the coastlines so that, particularly on the east coast where there is hurricane alley, to procure the data there.

One last thought is we did conduct a very comprehensive inventory of publicly available lidar with the NEEA study that was conducted. I would be happy to provide for you information about the available lidar in your State. We are also producing fact sheets of that State by State, and I would be happy to share that with you or get input from you on how that should look.

Mr. GARCIA. Great. Thank you.

Mr. GALLAGHER. Yes.

Mr. LAMBORN. Do you yield back?

Mr. GARCIA. Yes, I yield back the balance of my time.

Mr. LAMBORN. OK. Thank you.

To take advantage of your expertise and knowledge, I want to have a second but abbreviated round because time is ticking. So we are going to have a 2-minute round for whoever has a question, and I will start out. So we are going to keep the clerk on her toes.

Mr. Powner, duplication, as you have highlighted in your report, is when two or more agencies do the same thing. But there can also be duplication when government does the same thing as the private sector. In your study, did you interview any entities in the private sector? Is there any concern on the part of GAO that government might be duplicating the private sector in geospatial activities? And do you have any comments or recommendations regarding the use of the private sector?

Mr. POWNER. We didn't look at that in detail in terms of duplication with the private sector. Although, Mr. Chairman, I will say it is important to leverage the private sector to the extent possible. And in many of these cases the private sector is under contract. There is a key question, I think, with some of these, who owns the data and who owns the infrastructure? When you start looking at government putting satellites up, should we be doing that, should we be relying on the commercial sector? Right now it is a mix. And it is important to leverage the private sector in many of these areas.

Mr. LAMBORN. OK. Thank you.

And last, Mr. Gallagher, I want to ask you a question. I am curious about the statement for the record that the Department submitted. In order to explain to the committee how much land the Federal Government owns, it cites the Congressional Research Service. Does the executive branch of the Government not have its own data base on how much land is owned?

Mr. GALLAGHER. If I may, I would like to ask Karen Mouritsen to answer that question.

Mr. LAMBORN. Yes, please come forward. Just state your name for the record, and I would be happy to have you answer the question to the best of your ability.

Ms. MOURITSEN. I am Karen Mouritsen from the Bureau of Land Management.

Mr. LAMBORN. Thank you.

Ms. MOURITSEN. At the Bureau of Land Management we track the land we manage and own, but we do not track the lands of the other agencies, like the Park Service or the Forest Service.

Mr. LAMBORN. But the Department, as an entire Department, apparently, at least for the purposes of this statement, relied on the Congressional Research Service. I am just curious, aren't there Department-held databases?

Ms. MOURITSEN. Not that I am aware of as one Department data base. I can ask the Park Service or the other agencies for that data. The GSA may have that data in a data base.

Mr. LAMBORN. OK.

Ms. MOURITSEN. But the BLM itself does not have that data.

Mr. LAMBORN. OK. All right. Thank you very much.

Representative Holt.

Mr. HOLT. Because we have votes approaching on the Floor and I am eager to hear from the next panel, I will pass. Thank you.

Mr. LAMBORN. Representative Lummis.

Mrs. LUMMIS. Thanks, Mr. Chairman.

Mr. Powner, could you expound a little bit on this clearinghouse concept? That sparked my attention when you mentioned it before. Is this something that you saw a need for as you did your evaluation of the silo effect of data collection and redundancy in the Federal Government?

Mr. POWNER. Well, if you look at the current structure that has been set up, there is a clearinghouse that has been established, and now they refer to it as the geospatial platform. So the idea is right. The problem to date is we don't have all agencies populating that appropriately. There is even some State information in there.

Mrs. LUMMIS. I think you mentioned 30 agencies that are involved in that?

Mr. POWNER. There are 30 agencies associated with the FGDC. If you look right now, it is real heavy, Interior populates a lot of information. I would say Ag and the Department of Transportation are light in populating that. And then the other thing is you need to look at it does not identify the planned investments. So was one of our recommendations. And since then there has been attention placed on that, that we really need to identify the planned investments.

But again, it is a simple concept, but it is difficult to get folks to play in that clearinghouse sandbox. And that is where sometimes, you could have the FGDC doing it, but sometimes OMB with the little things they can do through their budgetary mechanisms, sometimes that really helps getting agencies to comply with that.

Mrs. LUMMIS. In the grand scheme of things at OMB, where they are trying to find waste and duplication, and hopefully economize, where does this fit? Where does an $8 billion estimate about waste and duplication fall in the waterfall of waste and duplication in the Federal Government?

Mr. POWNER. As you well know, we have issued three reports now at GAO over the last 3 years on waste and duplication. IT is one of many areas. Clearly, the $8 billion within OMB's office that houses the Federal CIO, that is a top priority. Now, that is commodity IT, so that is like infrastructure and administrative systems. It is not these geospatial investments. So that is what we need to do. We need to expand that concept into some of the more mission critical areas where we know there is duplication.

Mrs. LUMMIS. Thank you, Mr. Chairman. I yield back.

Mr. LAMBORN. Representative Garcia.

Mr. GARCIA. I am good, Mr. Chairman.

Mr. LAMBORN. OK.

Representative Fleming.

Representative Thompson.

Excuse me. Representative Horsford.

Mr. HORSFORD. Thank you, Mr. Chairman.

Thank you to the panel for being here. I understand today we are looking at just two bills, and our subcommittee Chairman, Mr. Lamborn, has the "Map It Once, Use It Many Times Act," and my subcommittee Chairman from the Public Lands subcommittee, Mr. Bishop, has a bipartisan bill with Representative Kind, the "Federal Land Asset Inventory Reform Act." I want to ask the panel first about Chairman Lamborn's bill.

The Department of the Interior submitted a statement for the record in opposition to the bill. The administration's position on the bill is that it would compromise the USGS' reputation as an unbiased source of scientific information. Is that correct?

Mr. GALLAGHER. That is correct. That is the statement for the record.

Mr. HORSFORD. Can you explain at little more of it to me, sir?

Mr. GALLAGHER. Yes, I certainly can. The USGS, as the Nation's premier science agency, must maintain independence and an unbiased view of our research. The integrity of this is so important to our work and our reputation that we have developed fundamental science practices within the USGS to ensure an unbiased nature of our research. We are concerned that if we are put into a role of advocacy in any regard, whether it is regulation or in this case advocating for the private industry, it could put us in a potential conflict of interest or an ethical dilemma with regard to our independence.

Mr. HORSFORD. OK. I also want to ask a quick question about Mr. Bishop's bipartisan FLAIR Act, H.R. 916. As I understand, it seems like it is based on a pretty simple concept: The Federal Government should have a more accurate understanding of all the property that we own. One of the concerns I do have, however, is the estimated cost, which could be as high as $68 billion. Are there ways that we could meet Mr. Bishop's goal without the high price tag of the proposal?

Ms. MOURITSEN. Thank you. We do collect information, as we do our land use planning process, on many of the items listed in this bill. And we do that every 10 to 20 years as we look at amending or developing new land use plans. And as necessary we collect information during that time for actions on the ground. And so we

think that doing this through our locally driven planning process is the way to go to collect this information.

Mr. HORSFORD. Can I just clarify, Madam Chair?

Mrs. LUMMIS [presiding]. Yes.

Mr. HORSFORD. So what is missing, then, from what Mr. Bishop is trying to achieve from what you say you do now every 10 years?

Ms. MOURITSEN. This bill is mandating that we collect all of this information, including some information we don't collect now through our planning process, and we do it all at once, and do it not during the individual land use planning processes, but focus all our resources on collecting it all at once.

Mr. HORSFORD. Can you provide the committee with what you would need to collect that you don't currently collect?

Ms. MOURITSEN. Yes. We have got a breakdown of the different tasks that we would need to do to implement the bill, which we can get to you.

Mr. HORSFORD. Thank you.

Thank you, Madam Chair.

Mrs. LUMMIS. I thank the committee, and I thank the panel. Members of the committee may have additional questions for the record, and I will ask you to respond to those in writing.

And with our gratitude to this panel, you are excused.

I would now like to invite forward our second panel. We have Mr. Jeff Lower, President, the Management Association for Private Photogrammetric Surveyors. We have Mr. Curtis W. Sumner, Executive Director of the National Society of Professional Surveyors. Mr. Jeff Lovin, Chairman of the Coalition of Geospatial Organizations. And Mr. Jay Parrish, former State Geologist, Pennsylvania Geological Survey, and Chair of the Mapping Committee of the Association of American State Geologists.

Thank you, gentlemen, for your testimony today.

Mr. Lower, you may begin. As you know, we have 5 minutes. At 4 minutes and 30 seconds, you will see a yellow light. So we will ask you to wrap it up. Thank you.

STATEMENT OF JEFF LOWER, PRESIDENT, THE MANAGEMENT ASSOCIATION FOR PRIVATE PHOTOGRAMMETRIC SURVEYORS [MAPPS]

Mr. LOWER. Thank you, Chairman, members of the subcommittee. Thank you for the opportunity to express our views.

MAPPS is a national association of private sector geospatial firms. I would like to commend the Chairman for holding this hearing and introducing H.R. 1604. There is a critical need to reorganize Federal geospatial activities, including governance, strategic investment and data, structure, and understanding the proper roles and responsibilities of various stakeholders, including the government and the private sector. Let me cite a few examples of why H.R. 1604 is necessary.

Mr. Fleming had commented on the healthcare law. In reference to that, there are 814 provisions in the healthcare law that require references to location, geographic or place-based information. However, there is no geospatial management office, GMO, or Geospatial Information Officer, GIO, within the Department of Health and Human Services. One can only wonder if the lack of strategic ap-

proach to geospatial data is one of the contributing factors with the problems in the implementation of the healthcare law.

Our Nation's failure to develop a national parcel system cost us hundreds of billions of dollars in the mortgage crisis. Such an early warning system would have provided the ability to track anomalies in the housing market, such as an increase in defaults and foreclosures. Chairman and Mr. Holt, Mr. Fleming, Mr. Garcia, you and your constituents have personally experienced the need for better, more coordinated response to natural disasters, wildfires and floods in Colorado, Hurricane Sandy in New Jersey, multiple hurricanes in Florida, as well as Louisiana. H.R. 1604 will provide a new, more up-to-date authorization for the USGS rather than relying on a law that was passed by Congress in 1879. It will consolidate civil Federal mapping activities into a new National Geospatial Technology Administration that will focus on leadership, coordination, and providing the basic geospatial data the government needs under a new inclusive governance structure.

The bill also provides for an accounting of all Federal geospatial activities. This provision is particularly necessary as the Federal Government still cannot accurately track its geospatial expenditures.

H.R. 1604 includes elements of H.R. 916, the FLAIR Act. Both proposals call for current accurate inventory of land owned by the Federal Government. Not only does the Federal Government lack a current, accurate, and reliable inventory of its land assets, but tax dollars are wasted through duplication and inefficiency through a proliferation of stovepiped noninteroperable inventories. An accurate inventory is an important feature of good land management. Proper conservation, recreation, multiple use activities are dependent on accurate information about the government's land ownership.

I would like to close with a bright note. MAPPS does work closely with Mr. Gallagher of the USGS on the first panel. He is a dedicated public servant and a good, trusted partner. MAPPS strongly encourages and supports the 3DEP program. This is a model for how there should be cooperation among Federal agencies. It is an excellent example of Federal leadership, and it recognizes the respective roles and responsibilities at all levels between the government and the private sector.

And then, finally, in support of H.R. 1604, and in reference to Mr. Holt's question earlier about the NGA, the National Geospatial-Intelligence Agency, NIMA before that, and the DMA before that, NGA was created as a consolidation of defense intelligence agencies and programs, just as H.R. 1604 proposes for civil government agencies.

Thank you. That is my statement.

Mrs. LUMMIS. Thank you, Mr. Lower, for your expeditious summary of your testimony. We appreciate that.

[The prepared statement of Mr. Lower follows:]

PREPARED STATEMENT OF JEFF LOWER, PRESIDENT, THE MANAGEMENT ASSOCIATION FOR PRIVATE PHOTOGRAMMETRIC SURVEYORS [MAPPS]

Mr. Chairman, members of the subcommittee, thank you for the opportunity to present our views on H.R. 916 and H.R. 1604. MAPPS (*www.mapps.org*) is a national association of private sector geospatial firms. Our 160+ member firms span

the entire spectrum of the geospatial community, including satellite and airborne remote sensing, surveying, photogrammetry, aerial photography, LIDAR, hydrography, bathymetry, charting, aerial and satellite image processing, GPS, and GIS data collection and conversion services and companies that provide hardware, software, products and services to the geospatial profession in the United States and other firms from around the world. A significant number of our member firms are prime contractors or subcontractors to USGS and other Federal agencies, and to the State and local governments that receive Federal grant monies.

I'd like to commend you, Mr. Chairman, for holding this hearing and for introducing H.R. 1604. There is a critical need to reorganize Federal geospatial activities, including governance, strategic investment in data, structure, and in understanding the proper roles and responsibilities of various stakeholders, including government and the private sector.

H.R. 1604, the Map It Once, Use It Many Times Act, is an effort to re-establish the USGS to its position as the pre-eminent civil Federal mapping agency. It focuses a new USGS, through its National Geospatial Technology Administration on leadership, coordination, and providing the basic geospatial data needed for smaller more efficient government and lower costs. The bill also updates USGS authorizations for data activities, such as the framework layers of the National Spatial Data Infrastructure [NSDI]. It would accomplish this through greater utilization of the private sector, and strengthening Federal agency performance of inherently governmental activities.

Why are a new focus and a new governance structure necessary? Let me cite just a few examples.

There are 814 references to location or geographic data that require place-based information in the health care reform law. Notwithstanding all of these disparate needs for geospatial data, Congress failed to create a Geospatial Management Office [GMO] or Geospatial Information Officer [GIO] within he Department of Health and Human Services [HHS] to coordinate the collection, management, utilization, and sharing of the required geospatial data activities. Moreover, the legislation lacked a provision establishing a Health Care GIS at the Department level. Congress established such a position in the Department of Homeland Security after it was created and a GMO–GIO has been administratively implemented in the Department of the Interior, Agriculture, EPA, FCC and other agencies. The National Geospatial Advisory Committee [NGAC] recommended a Geographic Information Officer [GIO] in each Cabinet department. MAPPS wrote Secretary Sebelius about the need for such an office after Congress failed to do so in the legislation in 2010. One can only wonder if the lack of a strategic approach to place-based, location and geospatial data is one of the factors in the problems with implementation of the health care law and the lack of functionality of the e-commerce Web site.

Regardless of which side of the climate change debate one is on, all parties should be able to agree on one fundamental point: that government decisions should be based on the best data available. But what data is the government currently relying on? There is a need for geospatial data to measure, monitor, verify and validate the phenomena that may be caused by global climate change. There is fundamental data the U.S. Government and the American people need in order to determine if climate change is indeed having the effect some claim, and the catastrophe some are predicting. A national elevation data set utilizing LIDAR technology to quantify change in vegetative canopy structure and coincident field measurements of aboveground biomass, a network of geodetic bench marks, coastal tide and sea level gauging and shoreline delineation maps for measurement and observation of long- and short-term sea level change, and a series of historic and current land use and land cover classification data are all needed to accurately determine and quantify the effects of climate change, but do not exist.

Hundreds of billions of dollars in taxpayer money was expended due to the mortgage crisis that is still having lingering adverse affects on our economy. If the Federal Government had a national parcel system, we would have had an early warning system that could have prevented the subprime mortgage crisis. Such a system would have given our nation the ability to track changes in the housing market, such as a slight increase in defaults and foreclosures, early on. We could then have taken small steps to curb the crisis instead of having to take big steps that have now cost taxpayers billions of dollars.

Mr. Chairman and Mr. Holt, you, and your constituents, have personally experienced the need for a better, more coordinated response to natural disasters—wildfires and floods in Colorado and Hurricane Sandy in New Jersey. While processes are improving, the Federal Government, in coordination with State and local government and the private sector, still lacks an adequate response to both natural and anthropogenic disasters. There is still lack of coordination, a lack of clearly de-

lineated roles and responsibilities, gaps in coverage, and the absence of a process for timely funding of the collection of critically needed geospatial data. Many of the recommendations in the National Academy report, "Successful Response Starts with a Map: Improving Geospatial Support for Disaster Management", (2007) still have not been implemented.

The Census Bureau spent nearly $1 billion developing an in-house mapping and addressing system for the 2010 census. The Topologically Integrated Geographic Encoding and Referencing [TIGER] system is a less accurate, less current version of mapping available from the private sector. Consumers have become accustomed to utilizing high quality maps every day on their mobile phones, GPS devices, laptops/desktops/tablets and in auto navigation systems. A study conducted by the Census Bureau itself found private sector maps to be of higher quality than Census maps ("Census Bureau Market Research Project with Nokia"). The private sector, having already made the hundreds of millions of dollars in investment in the creation, updating and maintenance of their maps for their existing customer base, could provide the Census Bureau with the highest quality maps at a fraction of the in-house cost. However, duplication of and competition with the private sector appears to be the norm, as there is little indication that Census will be increasing it contracting with the private sector for the 2020 effort.

The USGS operates primarily under authorization provided by the act of March 3, 1879 (codified in 43 U.S.C. 31 et seq.). It has been decades since Congress last enacted major legislation affecting one of the original and core missions of the USGS—the surveying and mapping of the United States. As a result, surveying and mapping has proliferated among more than 40 Federal agencies, resulting in duplication, a lack of coordination, gaps in coverage and the absence of a strategic approach to providing the basic geographic information needed in the 21st century for scientific research, as well as practical applications that contribute to the economic health, quality of life and safety and security of our Nation. The need for better coordination of Federal surveying and mapping activities has been well documented by previous Congressional hearings, including by this subcommittee, GAO reports, National Academy of Sciences studies, and investigations by the National Academy of Public Administration, OMB and other entities.

USGS should be focused on leadership and coordination among Federal agencies, and non-Federal stakeholders. Its functions should be assisting with applying geospatial data to our Nation's challenges; encouraging economic development, private sector job creation and export promotion; driving a research agenda that is responsive to the private sector's needs; working to assure a geospatial workforce that will meet the demands of the Nation; and contracting with the private sector and partnering with other government entities to build and then maintain the NSDI. We believe this is where USGS's priorities should be and we support building a stronger USGS that once again leads the Federal Government's geographic information activities.

H.R. 1604 would provide a new, more up-to-date authorization for USGS. It would consolidate responsibilities for NSDI leadership in a National Geospatial Technology Administration within USGS; merge duplicate Federal geospatial programs of the Interior Department, Forest Service, and NOAA into the new Administration; encourage the uses of commercial data and private sector service providers; establish a National Geospatial Policy Commission to replace the FGDC in order to provide a priority-setting mechanism that not only includes Federal agencies, but Congress and non-Federal stakeholders as well; provide for acquisition of professional geospatial services on the basis of quality, qualifications and experience of competing firms; establish an advocacy function for the dynamic U.S. private sector geospatial community; and coordinate the tens of millions of dollars the U.S. Government spends each year on geospatial-related research and development along strategic goals that meet the needs of government and the private sector.

H.R. 1604 has other features we think are necessary and forward-looking. The bill calls for an examination of a user fee system to fund geospatial activities. MAPPS is exploring this concept and we believe such a process may reduce the burden on taxpayers generally and provide a more reliable flow of funding to produce geospatial data for those who need and use these data. It also provides long overdue legislative authorization for national imagery and elevation data collection. It also calls for activities to define roles and responsibilities, particularly those of the private sector, and activities to implement these functions, to reduce government competition with and duplication of the private sector. Moreover, it will coordinate the significant research and development investments the Federal Government makes each year in geospatial activities, so that such investments are strategic and used to meet identified goals and requirements. It prevents inmates working in prison

industries from having access to certain sensitive infrastructure or individual citizen data.

Additionally, the bill adds to the NSDI "information on underground infrastructure, including the location, type, size, composition, and use of underground structures including tunnels and pipelines". The need for this data is extraordinary. During my 5 minute testimony, an underground utility line will have been hit five times—once every 60 seconds. The annual cost due to utility damage is in the billions of dollars. And one of the leading causes of these accidents and disruptions is inaccurate records and locating.

The bill also provides for an inventory and accounting of all Federal geospatial activities, identifying unnecessary activities and converting to the private sector those activities that are commercial in nature, while quantifying the cost savings. This provision is particularly necessary as the Federal Government still cannot accurately track its geospatial expenditures.

H.R. 1604 also includes elements of H.R. 916, the Federal Land Asset Inventory Reform [FLAIR] Act. These provisions call for a current, accurate inventory of the land owned by the Federal Government. Not only does the Federal Government lack a current, accurate and reliable inventory of its land assets, but tax dollars are wasted through duplication and inefficiency through a proliferation of stove-piped, non-interoperable inventories. I am convinced that if the Federal Government were to have one, GIS-based land inventory, it could save tens of millions of dollars, or more.

Mr. Chairman, the fact is the Federal Government does not know what it owns, where it owns it, what condition it is in, what its appraised or market value is, what its characteristics are, whether it is still in the public interest for the Government to own it, whether it should be surplused and disposed, or what its designated use should be.

For more than 15 years, the Government Accountability Office [GAO] has found that dozens of Federal agencies control hundreds of thousands of real property assets worldwide, including facilities and land, worth hundreds of billions of dollars. However, the portfolio is not well managed, many assets are no longer consistent with agency mission or needs and are therefore no longer needed, and many assets are in an alarming state of disrepair. In 1995, GAO told Congress "The General Services Administration publishes statistics on the amount of land managed by each Federal agency. However, we found this information was not current or reliable". (GAO–T–RCED–95–117).

As far back as 1980, the National Research Council/National Academy of Sciences said, "There is a critical need for a better land-information system in the United States to improve land-conveyance procedures, furnish a basis for equitable taxation, and provide much-needed information for resource management and environmental planning." (Need for a Multipurpose Cadastre).

Why is a Federal land inventory, as envisioned in the FLAIR Act, necessary?

As I noted earlier, GAO has found that the government lacks a current, accurate, reliable land inventory. That led GAO to put the government's real property asset management activities on its High Risk list. (High Risk Series—An Update, GAO–05–207), a position still held today.

Since the National Academy issued its recommendation in 1980, the technology and capability of land or geographic information systems [GIS] has exploded. The Academy endorsed the FLAIR Act (National Land Parcel Data: A Vision for the Future) and the National Geospatial Advisory Committee has endorsed the recommendations in the Academy's parcels report.

An accurate inventory is an important feature of good land management. Proper conservation, recreation and multiple use activities are dependent on accurate information about the government's land ownership.

The American taxpayer can also be the biggest beneficiary of a "cadastre", also known as a land information system or geographic information system [GIS]. Many units of local government—cities, counties—have used such land information systems, or even single purpose digital parcel or tax mapping programs, to more accurately and efficiently inventory real estate within the jurisdiction. There are numerous examples where local government has used GIS to identify tens of millions of dollars in annual property taxes that were unpaid or under paid. These systems have paid for themselves many times over, many in the first year alone.

It is time the U.S. Government invested in a similar methodology and technology to identify and inventory its land holdings. Such a system can help enhance the management of Federal lands, identify lands that could be put to higher priority use, as well as those that are no longer needed by the government and can be made surplus and sold, thus bringing revenue and savings to the Federal budget.

Once the multipurpose inventory is complete, the government can become a better real property asset manager, and a responsible steward of its land holdings. This will result in more efficient land management, again providing savings. Additionally, areas for multiple-use can be better identified, thus enhancing the American citizens' use of public lands and generate more revenue from leasing, mineral rights, recreation and fees from other activities. Moreover, legislation to facilitate a process by which the Federal Government can more efficiently sell its surplus lands can be enacted. This will not only help State and local government by providing them land they can manage as open space, or these lands can be sold to the private sector for economic development, thus expanding the local tax base and creating jobs. The proceeds of these sales can be used to balance the budget and pay down the debt, be invested in higher priority activities such as roads, schools, parks, environmental protection, resource management and maintenance in our National Parks.

Moreover, as mentioned earlier, when integrated with land records on private property, a national parcel system can be an "early warning system" to monitor and prevent disruptions in the real estate market, like the one we recently experienced with the foreclosure crisis.

Mr. Chairman, geospatial data, products, technology and services enhance and contribute to national priorities in economic development, resource management, environmental protection, infrastructure, construction and maintenance, homeland security and a variety of other national needs and applications. The USGS was once the envy of the word for its leadership in this field. We are heartened by the leadership recently exhibited by USGS with the development of the national elevation or 3DEP program. This program will satisfy the growing demand for consistent, high-quality topographic data and a wide range of other three-dimensional representations of the Nation's natural and constructed features. Among the applications that will benefit from 3DEP data are flood risk management, agriculture, water supply, homeland security, renewable energy, aviation safety, and other areas.

MAPPS believes 3DEP will promote economic growth, facilitate responsible environmental protection and resource development and management, assist with infrastructure improvement, and generally enhance the quality of life of all Americans. The USGS, with involvement from the private sector and other stakeholders, conducted a National Enhanced Elevation Assessment [NEEA], to determine and document the need for national elevation data within government and private markets. The results indicated that enhanced elevation data have the potential to generate $13 billion in annual benefits, at a benefit:cost ratio of 4.7 to 1.

A capable, qualified private sector capacity exists to fulfill the data acquisition requirements of 3DEP. Utilizing the Geospatial Products and Services Contract [GPSC], a suite of multiple-award USGS contracts with the private sector competitively procured via the qualifications based selection process pursuant to 40 U.S.C. 1101 and FAR part 36.6, provides a public-private partnership between USGS and the private sector to accomplish 3DEP via task orders for Light Detection And Ranging [LIDAR] acquisition.

MAPPS strongly supports the USGS intent to utilize these contracts for 3DEP data collection and processing. The equipment infrastructure and service capacity and capability of the private sector, as well as the contract vehicles in USGS, are in place to efficiently implement the 3DEP program. Moreover, Congress provided an innovative mechanism for cooperative activities in elevation data when it enacted section 100220 of Public Law 112–141, which can be utilized to pool funding from Federal, State and local government entities, with participation by USGS.

In conclusion, Mr. Chairman, H.R. 916 and H.R. 1604, are steps to eliminate waste and duplication; use geospatial information to grow the economy; and better coordinate Federal geospatial activities. We respectfully recommend their enactment.

QUESTIONS SUBMITTED FOR THE RECORD TO JEFF LOWER

QUESTIONS SUBMITTED FOR THE RECORD BY THE HONORABLE RUSH HOLT

Question. Mr. Lower, you heard testimony earlier from the USGS that one of their concerns with the FLAIR Act is the excessive cost, the vast majority of which comes from the requirement to determine the value of each parcel of Federal land, and catalogue it for potential disposal. If those provisions were removed from the bill, and it was purely an effort to get an accurate inventory of Federal lands, without regard to value or disposal, would your organizations still support the legislation?

Answer. The FLAIR Act, H.R. 916, has two primary features. First, it calls for an inventory of inventories to determine how many Federal land inventories the

U.S. Government currently operates and maintains, what the cost is, and which are candidates for consolidation, termination or integration into a single, current, accurate inventory. Not only do we not know how much land the Government owns, or where it is, but we don't know how much of it is already valued or appraised. Therefore, we don't know what the cost would be to value and catalogue the current land holdings. Second, the bill calls for a multi-purpose (map it once, use it many times), current, accurate inventory. While a value for each parcel is needed, and virtually every entity in our Nation except the U.S. Government knows the extent and value of its land holdings, if H.R. 916 were enacted without the value of each parcel it would still be supportable and worthwhile legislation as it would accomplish the two goals I just stated, be a benefit to the United States, improve the operations of government, and ultimately save money.

Question. Mr. Lower, do your organizations have a preference for whether the NGTA would be within the USGS, or a separate organization outside the USGS?

Answer. The USGS has long been the primary civil Federal mapping agency. It has in-house expertise and a new business model that engages and utilizes the private sector. MAPPS believes these assets would be beneficial to a new NGTA. Therefore, it would be the preference of MAPPS that the NGTA be within USGS. However, we are open to other structural and organizational frameworks that accomplish the goals of H.R. 1604.

Question. Mr. Lower, could you describe what it is about the existing structure—with the FGDC, the NGAC, and Circular A–16—that you think is not working?

Answer. First, FGDC is made up solely of Federal agencies. No other stakeholders, particularly the private sector, are members. Additionally, the FGDC has a very small staff that is responsible for coordination efforts in more than 40 agencies, thousands of Federal employees, and, by some estimates, billions of dollars in annual Federal expenditures. Aside from that small staff, its activities are largely voluntary and secondary to each agency's mission. It lacks the clout, stature, budget, or authority to effectively manage Federal geospatial activities. The same is true with regard to OMB Circular A–16, in addition to the circular having no enforcement mechanism. Finally, the NGAC is an advisory committee, not a policymaking committee. Very few of the recommendations made by NGAC have been adopted by the Federal Government. The ineffectiveness of FGDC, NGAC and A–16 is what has driven the findings of the GAO reports, as well as the 1998 National Academy of Public Administration [NAPA] report, "Geographic Information for the 21st Century: Building a Strategy for the Nation," (which pre-dated the establishment of the NGAC). H.R. 1604 seeks to bring FGDC, NGAC, and policies such as A–16 and Executive Order 12906, into one effective body that includes all stakeholders and has real decisionmaking authority.

I would be happy to answer any more questions or provide more detail to the answers provided above. MAPPS supports the enactment of H.R. 1604 and H.R. 916 and we appreciate the committee's due diligence in determining the best way forward.

Mrs. LUMMIS. Mr. Sumner, you are recognized.

STATEMENT OF CURTIS W. SUMNER, LS, EXECUTIVE DIRECTOR, NATIONAL SOCIETY OF PROFESSIONAL SURVEYORS [NSPS]

Mr. SUMNER. Thank you for the opportunity to testify today on behalf of the 10,000 members of the National Society of Professional Surveyors. Our surveyors are in public service, in academia, and in private practice.

To put into perspective the need for H.R. 1604 and H.R. 916, I would like to cite a couple of studies. The first cite is, the last major study of Federal surveying and mapping, nearly 40 years ago, found a disturbing proliferation and duplication of activity among many different agencies. Thirty-nine Federal agencies engage in surveying and mapping activities in an uncoordinated, single-purpose manner that has an inability to deal efficiently and responsively with growing and changing requirements. Agency funding is piecemeal and lacks central management, and such sur-

veying and mapping activities are generally marked by agency competition, some overlap, and shortfall in meeting important national needs.

The second cite is, there is a critical need for a better land information system in the United States to improve land conveyance procedures, furnish a basis for equitable taxation, and provide much needed information for resource management and environmental planning. Current technology is adequate in most cases for the surveying, mapping, data collecting, filing, and dissemination of information. The major obstacles in the development of a multipurpose cadastre are the organizational and institutional requirements.

These are not current statements. As a matter of fact, they are quite old. The former is a 1973 OMB report on Federal mapping, charting, geodesy, and surveying, and the latter is from a 1980 report by the National Academy of Sciences. Numerous studies have highlighted the need to reform and redesign how Federal surveying, mapping, and geographic information activities are funded and managed. Geospatial data, products, technology, and services contribute to a variety of national needs and applications, but we are not effectively using these assets.

H.R. 1604 provides for consolidation and stronger organizational partnerships for geospatial coordination. It consolidates geospatial activities, eliminates obsolete programs, and establishes today's priorities. We are pleased that H.R. 1604 adds infrastructure location data to national priorities. There is a critical need for current and accurate location data for pipelines, surface and underground infrastructure, utilities, and railroads. Every minute of every day an underground utility is hit, resulting in costly service disruption, environmental damage, and, worst of all, personal injury or loss of life.

Federal officials, transportation designers, telecom, and utilities and pipeline contractors, as well as local government need accurate location information to manage surface and underground infrastructure. The tragic accident in New York last weekend demonstrates the need for positive train control systems which use highly accurate geospatial data, such as GPS data, lidar, high resolution digital imagery, survey data, and mobile mapping to delineate the location of rails and clearances and to provide a detailed asset inventory to assure safety, train separation or collision avoidance, speed enforcement, and for asset management, including the accurate delineation of rights of way and property boundaries.

H.R. 916 addresses the need for a current accurate inventory of land owned by the Federal Government. The Department of the Interior Inspector General found that the BLM's cadastral program was missing the opportunity to identify and perform surveys on high risk lands where significant potential revenues could be collected from fees or royalties. In another report the IG said the Department can gain revenue of $100 million or more annually by better using location and valuation data to assess rent for rights of way on Federal land.

The Federal Government is losing valuable revenue due to inefficiency in the current system. As the inspector general found in the right-of-way report, most of the recommendations will not require

additional funding. Fully implementing the recommendations, however, should result in increased revenues, thereby offsetting any cost. We believe this also applies to H.R. 1604. We found 40 years and 80 years ago a disturbing proliferation and duplication of surveying and mapping activity among different agencies and lack of utilization of geospatial activities and services to solve pressing national problems.

Today there is an even more critical need for a better land information system. The technology that geospatial professionals bring to the table still provide all the adequate activities for making this happen. H.R. 1604 and H.R. 916 are steps in the right direction. We urge their prompt and favorable consideration by the Congress. Thank you for this opportunity.

Mrs. LUMMIS. Thank you as well, Mr. Sumner, for falling within our 5-minute rule.

[The prepared statement of Mr. Sumner follows:]

PREPARED STATEMENT OF CURTIS W. SUMNER, LS, EXECUTIVE DIRECTOR, NATIONAL SOCIETY OF PROFESSIONAL SURVEYORS [NSPS]

H.R. 916 AND H.R. 1604

The National Society of Professional Surveyors (NSPS) is a national professional society with more than 10,000 members through affiliate organizations in all 50 States. NSPS seeks to advance the sciences and disciplines within the profession, enhance the image of the surveying profession in the eyes of the public, advance the protection of public welfare relative to surveying and mapping issues, and encourage high standards of ethical and professional behavior.

Mr. Chairman, permit me to cite two quotes to put the need for H.R. 1604 and H.R. 916 into perspective.

First—

> "The last major study of Federal surveying and mapping nearly 40 years ago found a disturbing proliferation and duplication of activity among many different agencies. Today, these activities are found among an even greater number, suggesting that over the years the conventional budgetary process alone could not constrain the growth of surveying and mapping outside the core agencies, which apparently were not getting the job done . . ." 39 Federal agencies engage in surveying and mapping activities in an "uncoordinated, noncumulative, single-purpose" manner that has an "inability . . . to deal efficiently and responsively with . . . growing and changing requirements". Agency funding is "piecemeal" and "lacks central management' and such surveying and mapping activities "are generally marked by insularity, agency competition, some overlap, and shortfall in meeting important national needs". The effort to coordinate agencies' activities has been "only partially successful". Agencies have not been "given clear mandates to search for and identify duplication".

And—

> "There is a critical need for a better land information system in the United States to improve land conveyance procedures, furnish a basis for equitable taxation, and provide much-needed information for resource management and environmental planning . . . Problems inherent in our present system may be categorized as accessibility, duplication, aggregation, confidentiality, and institutional structure . . . Current technology is adequate in most cases for the surveying, mapping, data collecting, filing, and dissemination of information . . . The major obstacles in the development of a multipurpose cadastre are the organizational and institutional requirements."

These are not current or recent quotes. The former is from a 1973 OMB Report of the Federal Mapping Task Force on Mapping, Charting, Geodesy and Surveying and the latter is from a 1980 report, Need for a Multipurpose Cadastre, by the National Academy of Sciences.

NSPS, and its predecessor, the American Congress on Surveying and Mapping [ACSM], have been deeply involved in both these studies. In fact, ACSM was instru-

mental in a more recent look at Federal geospatial structure, organization, governance, and management, "Geographic Information for the 21st Century—Building a Strategy for the Nation" by the National Academy of Public Administration [NAPA] in 1998, that called for a reorganization of executive branch agencies in order to improve coordination within the Federal Government and with State and local government, the private sector, and the academic community.

Let me first say that H.R. 1604 includes several important changes from its predecessor in the 112th Congress, H.R. 4233. The composition of the proposed National Geospatial Policy Commission has been revised to provide a broader cross-section of the geospatial stakeholder community. The section on development of standard clauses, contracts and form licenses has been revised to distinguish licensed geospatial data from State-issued licenses to practice.

Mr. Chairman, GAO reports, congressional hearings, and other studies have highlighted the need to reform and redesign how surveying, mapping and geographic information activities are funded and managed at the Federal level to eliminate wasteful duplication, improve governance and coordination, and maximize the use of state-of-the art mapping and geospatial technologies. Geospatial data, products, technology and services benefit national priorities in economic development, resource management, environmental protection, infrastructure, construction and maintenance, homeland security and a variety of other national needs and applications. Executive Order 12906, issued by President Clinton in 1994 and reaffirmed by President Bush in 2003, established seven framework layers of geospatial data for Federal investment—geodetic control, parcels (cadastral), orthoimagery, elevation, hydrography, administrative units, and transportation—all constituting the National Spatial Data Infrastructure [NSDI]. Eighteen years later, numerous new initiatives have been launched to complete some of the framework. These include National Land Parcel Data, Imagery for the Nation, Transportation for the Nation, and others. While these are all worthy programs, their proliferation indicates the *failure* of the NSDI. A strategy must be developed to both fund and complete the NSDI as a comprehensive approach, or to fully implement these individual initiatives.

There are dozens of Federal agencies engaged in geospatial activities. Neither the agencies, nor OMB, have a comprehensive understanding of which agencies are involved in geospatial activities. No one in the Federal Government has a current, accurate accounting of annual geospatial expenditures. It is virtually impossible to determine how many Federal employees are involved in these activities. There is no balance sheet, prepared to accepted cost accounting standards, of the capital investment made in equipment and plant (office space, etc.). There is no accurate data base on the amount of geospatial work performed in-house and by contract. The relationship of each agency with other Federal agencies and with State, local and foreign government agencies needs improvement. There is considerable duplication and redundancy, little sharing of data, and development of standards for "interoperability" of data has been far too slow. The obstacles are not technical; they are political and organizational.

H.R. 1604, the "Map It Once, Use It Many Times [MIO–UIMT] Act" provides for consolidation and stronger organizational partnerships for geospatial coordination. This legislation establishes the National Geospatial Technology Administration within the U.S. Geological Survey to enhance the use of geospatial data, products, technology, and services, to increase the economy and efficiency of Federal geospatial activities. MIO–UIMT also creates a National Geospatial Policy Commission to develop and periodically amend a comprehensive plan to be known as the "National Geospatial Data Plan". H.R. 1604 consolidates geospatial activities, eliminates obsolete programs and establishes today's priorities.

If there is a criticism within NSPS about H.R. 1604, it is that it does not go far enough. While we understand the Labyrinth of committee jurisdictions and the parliamentary process of referrals of legislation, we believe there are programs, such as FEMA flood mapping, that would benefit from consolidation and better coordination.

There is a critical need in the United States for current, accurate location data on pipelines, surface and underground infrastructure, utilities and railroads. The location of these assets, portrayed on surveys and maps, are essential to public health, welfare, and safety, as well as to protect property rights. We are pleased that H.R. 1604 adds such infrastructure location data to the NSDI.

At a hearing on pipeline safety earlier this year, Senate Commerce Committee Chairman Jay Rockefeller (D–WV) said:

> "They crisscross underneath our cities and country sides, yet most of the time we are not even aware they are there. They deliver critical fuel that

> powers our homes, factories, and offices, and also transport the oil and gas that keep our cars, trucks, and planes operating . . . Compared to other forms of transportation, pipelines are a relatively safe, clean and efficient way of transporting the goods they carry. Unfortunately, this is not always the case . . . Lack of records about older pipelines is a real problem and contributed to a catastrophic pipeline explosion in California that killed several people."

More than 183,000 miles of railroad tracks run throughout the United States, adjoining tens of thousands of landowners. Railroad tracks and the monumentation that lie within the railroad right-of-way are paramount in defining the legal location of adjoining property boundaries. When abandoned railroad tracks adjoining landowners are removed, and there is no monumentation showing where the tracks once existed, defining the location of boundary lines for adjacent property owners can be a costly endeavor.

Federal officials, transportation designers, telecom, and utilities and pipeline operators, as well as local government, need accurate location information to manage existing underground infrastructure and plan for future growth and development. Surveys and maps of underground utilities are often inaccurate. In many cases, they don't even exist. The National Transportation Safety Board [NTSB] and other authorities often cite the lack of location data as a factor in pipeline accidents. The inaccuracy of location data, unmarked utilities, and crowding within rights of way are major factors contributing to disruption to underground infrastructure. Digging, drilling or excavating in the vicinity of unknown, unmarked, unmapped, or incorrectly located utilities can be costly in terms of wasted excavation time, service disruption and utility downtime, environmental damage, and—worst of all—personal injury or loss of life.

Moreover, the tragic accident in New York last week demonstrates the need for Positive Train Control [PTC] systems, which utilize highly accurate geospatial data, such as GPS data, LIDAR data, high resolution digital imagery, survey data, and mobile mapping to delineate the location of rails, clearances and a detailed asset inventory, to assure safety, train separation or collision avoidance, speed enforcement, and for asset management.

As recently as January 2013, the Government Accountability Office released a study (GAO–13–168) on pipeline safety urging "better data" with an emphasis on "location", "proximity" and "topography."

Congress should investigate the problem of railroad abandonment, underground infrastructure location, and the need for improved location data to enhance public safety, protect the environment, and grow the economy by strengthening Federal law on accurate location (surveying and mapping) of such pipelines, railroads, and other forms of utility infrastructure. H.R. 1604 is a first step in that process.

As I noted earlier, NSPS and its predecessor have been leading proponents for a national parcel system. H.R. 916 helps address this need by authorizing a current, accurate inventory of land owned by the Federal Government.

The Department of the Interior [DOI] Office of Inspector General [OIG] Final Audit Report, "Department of the Interior's Management of Land Boundaries" (Audit No. C–IN–MOA–0001—2009), July 16, 2009, found "that the BLM's Cadastral Survey program was missing the opportunity to identify and perform surveys on high risk lands where significant potential revenues could be collected by the Department or Indian tribes. . . . This revenue could result from the collection of fees or royalties from identifying (a) unauthorized uses including rights-of-way violations and (b) the improper removal of oil, gas, timber, or other resources from Federal or Indian lands."

In September 2012, the Department of the Interior [DOI] Office of Inspector General [OIG] found in "Management of Rights-of-Way in the U.S. Department of the Interior," (Report No. C–IN–MOA–0013–2010) that "the Department's bureaus have an opportunity to collect as much as $100 million or more annually if they assess market value for rents" for rights-of-way [ROW] on Federal land. This potential revenue is not collected because rents are set below market value, rent discounts are not justified, and unauthorized uses of ROW are not identified and corrected. Although most ROW are valued based upon rent schedules, obtaining true market value requires individual valuations of proposed ROW. Data needed for valuing and prioritizing ROW could include the value and volume of a proposed service or product in addition to its location and land requirements. The latter are surveying and geospatial information data requirements.

In testimony before the House Subcommittee on Energy and Mineral Resources on May 2, 2012, in Colorado Springs, CO, the Government Accountability Office [GAO] "raised concerns about the accuracy and completeness of the data used to

manage Federal land and resources and revenues collected from activities on Federal land. As these prior reports have concluded, without accurate and complete data, managers cannot make fully informed decisions and effectively manage and evaluate agency activities." (GAO–12–691).

All of these reports demonstrate the need for a better land information system in the Department of the Interior. That is what H.R. 1604 will provide. The Federal Government is losing valuable revenue due to the inefficiency of the current system. As the inspector general found in the right-of-way report, "most of the recommendations will not require additional funding. Fully implementing the recommendations, however, should result in increased revenues, thereby offsetting any costs." We believe the same applies to H.R. 1604.

Mr. Chairman, just as we found 40 years ago and 80 years ago, there is a disturbing proliferation and duplication of surveying and mapping activity among many different agencies, and a lack of utilization of geospatial services, data and technology to solve pressing national problems. There is an even more critical need for a better land information system in the United States today. The technology that the geospatial profession brings to the table is more than adequate for the surveying, mapping, data collecting, filing, and dissemination of information that is needed. And the major obstacles we face are organizational and institutional.

H.R. 1604 and H.R. 916 are steps in the right direction. We urge their prompt and favorable consideration by the Congress.

QUESTIONS SUBMITTED FOR THE RECORD TO CURTIS W. SUMNER

QUESTIONS SUBMITTED FOR THE RECORD BY THE HONORABLE RUSH HOLT

H.R. 1604—MAP IT ONCE, USE IT MANY TIMES ACT AND H.R. 916—FEDERAL LAND ASSET INVENTORY REFORM ACT OF 2013

Question. Mr. Sumner, you heard testimony earlier from the USGS that one of their concerns with the FLAIR Act is the excessive cost, the vast majority of which comes from the requirement to determine the value of each parcel of Federal land, and catalogue it for potential disposal. If those provisions were removed from the bill, and it was purely an effort to get an accurate inventory of Federal lands, without regard to value or disposal, would your organizations still support the legislation?

Answer. The premise that a value or appraisal of every parcel the Government owns is needed based on the belief that every such parcel is eligible for surplus and disposal, is a false premise. Additionally, when one considers the cost to the Government and our economy (such as the cost of the 2008 mortgage crisis) of not having a national parcel system, a national parcel system including an appraised value of every parcel would still be a fraction of the cost of the way the Government's business is done today. Nevertheless, NSPS would still support the FLAIR Act if it provided a current, accurate inventory (even without such valuation data) as a step in the right direction, and a contribution toward more efficient and effective government management.

Question. Mr. Sumner, do your organizations have a preference for whether the NGTA would be within the USGS, or a separate organization outside the USGS?

Answer. NSPS does not have a preference as to whether NGTA is housed within or outside USGS. As I mentioned in my oral testimony, consolidation and improved coordination are needed. There are Federal activities, such as the FEMA flood mapping program (as one example) that are not covered by H.R. 1604, but would also benefit from better integration and coordination with other Federal agency mapping, surveying, and geospatial activities.

Mrs. LUMMIS. Mr. Lovin, you are recognized.

STATEMENT OF JEFF LOVIN, CP, PS, CHAIRMAN, COALITION OF GEOSPATIAL ORGANIZATIONS [COGO]

Mr. LOVIN. Thank you for opportunity to speak on behalf of the Coalition of Geospatial Organizations, or COGO. COGO is an umbrella coalition of the leading national nonprofit societies and associations in the geospatial field. COGO is deeply concerned about

the governance and land information issues H.R. 1604 and H.R. 916 seek to address.

In recent years, there has been explosive growth, as we have already heard this morning, in the use of geospatial data in the U.S. economy. The Federal Geographic Data Committee estimates that as much as 90 percent of government information has a geospatial information component.

Unfortunately, neither the executive branch nor Congress has a consolidated or effective structure for oversight and coordination of geospatial activities. It is our estimation that more than 40 Federal agencies are engaged in geospatial activities, and responsibility for oversight and authorization of Federal geospatial activities is spread among more than 30 House and Senate committees and subcommittees.

Oversight, coordination, efficiency, and utilization of geospatial data can enhance the quality of life of the American people. A better management and government structure in the executive branch, and the establishment of a subcommittee in the House and Senate, respectively, with primary jurisdiction over geospatial activities are needed.

COGO has been deeply involved in efforts to create a national parcel system, as envisioned in the landmark 1980 National Academy of Sciences report, "Need for a Multipurpose Cadastre," and its 2007 follow-up report, "National Land Parcel Data: A Vision for the Future." The 2007 report actually endorsed the FLAIR Act. The committee of COGO overseeing this issue has been deeply concerned by the slow pace at which the Federal Government has been implementing the Academy's reports and recommendations and believes the Nation would be well served by more prompt action.

One bright spot, as we have heard, is the progress made on the 3 Dimensional Elevation Program, or 3DEP, led by the U.S. Geological Survey. This is an example of a strategic and coordinated approach to a national geospatial requirement. Using existing authorization and the language in the FEMA flood map reform provisions enacted in the MAP–21 Act, USGS is helping to establish an innovative coordinated funding pool for the collection of elevation data for flood mapping and other purposes. USGS is using its geospatial products and services contract as the vehicle for the collection of lidar and IFSAR data for 3DEP.

The Survey is working with States and other Federal agencies to increase the area in which the data is collected and to reduce duplication. COGO supported the President's fiscal year 2014 budget request for 3DEP, which has been approved by the House Interior Appropriations Subcommittee.

Together, H.R. 1604 and H.R. 916 would provide specific and updated authorization for 3DEP, implement some recommendations of the parcel report, and better coordinate Federal geospatial activities. These are consistent with COGO priorities. And as these bills move through the legislative process, COGO would like to offer specific recommendations for improvement, and we look forward to working with the subcommittee and the bill sponsors in that effort. And with that, I thank you for the opportunity to present our views.

Mrs. LUMMIS. I also thank Mr. Lovin for his expeditious review of his testimony.

[The prepared statement of Mr. Lovin follows:]

PREPARED STATEMENT OF JEFF LOVIN, CP, PS, CHAIRMAN, COALITION OF GEOSPATIAL ORGANIZATIONS [COGO]

H.R. 916 AND H.R. 1604

Mr. Chairman, members of the subcommittee, I am Jeff Lovin, a professional surveyor and certified photogrammetrist with Woolpert, a geospatial firm headquartered in Cincinnati, Ohio. It is my honor to serve this year as Chairman of the Coalition of Geospatial Organizations [COGO], an umbrella coalition of the leading national non-profit societies and associations in the geospatial field. COGO is comprised of the American Society for Photogrammetry and Remote Sensing [ASPRS], Association of American Geographers [AAG], American Society of Civil Engineers [ASCE], Cartography and Geographic Information Society [CAGIS], GIS Certification Institute [GISCI], International Association of Assessing Officers [IAAO], Management Association for Private Photogrammetric Surveyors [MAPPS], National Society for Professional Surveyors [NSPS], National States Geographic Information Council [NSGIC], University Consortium for Geographic Information Science [UCGIS], United States Geospatial Intelligence Foundation [USGIF], and Urban and Regional Information Systems Association [URISA].

COGO is deeply concerned about the governance and land information issues H.R. 1604 and H.R. 916 seek to address. H.R. 1604, the "Map It Once, Use It Many Times Act", introduced by Representative Lamborn, would establish the National Geospatial Technology Administration within the U.S. Geological Survey to enhance the use of geospatial data, products, technology, and services, to increase the economy and efficiency of Federal geospatial activities. H.R. 916, the "Federal Land Asset Inventory Reform Act of 2013", introduced by Representative Kind and Representative Bishop of Utah, would improve Federal land management, resource conservation, environmental protection, and use of Federal real property, by requiring the Secretary of the Interior to develop a multipurpose cadastre of Federal real property and identifying inaccurate, duplicate, and out-of-date Federal land inventories.

In recent years, there has been explosive growth in the use of geospatial data in the U.S. economy. The Federal Geographic Data Committee [FGDC]'s 2006 Annual Report noted that as much as 90 percent of government information has a geospatial information component. The Geospatial Information and Technology Association reported that up to 80 percent of the information managed by business is connected to a specific location. While a 1993 survey by the Office of Management and Budget [OMB] found total annual geospatial expenditures in Federal agencies alone was close to $4 billion, there is no current, accurate accounting of the government's annual investment. A recent study by the Center for Strategic and International Studies estimated that at least $30 billion is generated by geospatial-related companies annually. The geospatial sector has steadily increased by 35 percent a year, with the commercial side growing at an incredible rate of 100 percent annually. The U.S. Department of Labor predicts that the geospatial sector is one of the three technology areas that will create the most jobs in the coming decade.

Despite this extraordinary growth and the near-ubiquitous presence of geospatial data in government and the private sector, the Federal Government, including Congress, does not have a consolidated or effective structure for oversight and coordination of geospatial activities. More than 40 Federal agencies are engaged in geospatial activities and responsibility for oversight and authorization of Federal geospatial activities is spread among more than 30 House and Senate committees and subcommittees.

Geospatial activities have benefited from oversight by Congress and the executive branch on a bipartisan basis. The following are a few highlights:

- Executive Order 12906, "Coordinating Geographic Data Acquisition and Access: The National Spatial Data Infrastructure", was issued by President Clinton on April 11, 1994. This created the National Spatial Data Infrastructure [NSDI] as a strategic investment of the Federal Government and established the Department of the Interior [DOI] as the lead agency in the FGDC.
- A National Academy of Public Administration [NAPA] report, requested by Congress, was released in January 1998. "Geographic Information for the 21st Century Building—A Strategy for the Nation" called for a reorganization of the executive branch agencies in order to improve coordination within the

Federal Government and with State and local government, the private sector, and the academic community.

- Two hearings were held in 2003 and 2004 by the Subcommittee on Technology, Information Policy, Intergovernmental Relations and the Census of the House Committee on Government Reform. These hearings identified the challenges and shortcomings of current Federal geospatial coordination. This subcommittee was later disbanded.
- At the request of the House Subcommittee, the Government Accountability Office investigated Federal geospatial activities and reported "efforts have not been fully successful in reducing redundancies in geospatial investments" and "Federal agencies are still independently acquiring and maintaining potentially duplicative and costly data sets and systems. Until these problems are resolved, duplicative geospatial investments are likely to persist."
- In response to these hearings and the GAO report, the Bush administration established a "Geospatial Line of Business" initiative. However, it has not been able to accurately account for annual Federal geospatial expenditures.
- In 2008, DOI Secretary Dirk Kempthorne established the National Geospatial Advisory Committee [NGAC] to "provide advice and recommendations related to management of Federal and national geospatial programs, the development of the National Spatial Data Infrastructure, and the implementation of Office of Management and Budget Circular A–16 and Executive Order 12906".
- In July of 2009, the House Subcommittee on Energy and Mineral Resources held an oversight hearing entitled "Federal Geospatial Data Management." This subcommittee identified that the Federal Government spends billions of dollars each year to acquire and manage geospatial data, which go into making maps for consumers, State and local officials, and emergency responders, among others. The subcommittee also found that DOI has estimated that up to half of the Federal investment in geospatial data is redundant. The subcommittee examined how the Federal Government manages the geospatial activities of its various agencies, and how information sharing between Federal, State, and local governments, and between the public and private sectors, can be improved.
- Also in July 2009, the Congressional Research Service published a report, "Issues Regarding a National Land Parcel Data base", highlighting the "organizational challenges" and reporting "a coordinated approach to federally managed parcel data did not exist."
- In August 2009 and June 2010, OMB published memos on "place-based" policies, more appropriately referred to as "geospatial". Within these memos, these policies sought to leverage investments by focusing resources in targeted places and drawing on the compounding effect of well-coordinated action. Effective geospatial policies can influence how rural and metropolitan areas develop, how well they function as places to live, work, operate a business, preserve heritage, and more. Such policies can also streamline otherwise redundant and disconnected programs. Between now and 2050, the expected population growth—of nearly 140 million people—will require, among other things, the construction of more than 200 billion square feet of new housing, business space, and retail development and major new investments in all forms of physical infrastructure. The new construction will constitute an estimated two thirds of all development on the ground in 2050.
- In May 2012, the House Subcommittee on Energy and Mineral Resources held an oversight hearing entitled "Federal Geospatial Spending, Duplication and Land Inventory Management". This hearing covered the importance of updating Federal land mapping practices for job creation, additional use of public lands and scientific advancements. The hearing also focused on the Federal Government's mapping and geospatial management programs including Federal data reliability and management. Advances in mapping technology and demands for mapping products have created greater demand in the Federal Government for geospatial services. However, the coordination between agencies often fails to produce the best information or value for various constituencies and stakeholders. Frequently, multiple Federal agencies will request mapping of the same area at the same time, wasting Federal resources, and taxpayer dollars.
- GAO issued a report, "Geospatial Information: OMB and Agencies Need to Make Coordination a Priority to Reduce Duplication", GAO–13–94, on November 26, 2012 and it has further addressed geospatial duplication and lack of coordination in its 2013 Annual Report, "Actions Needed to Reduce Fragmentation, Overlap, and Duplication and Achieve Other Financial Benefits", GAO–13–279SP, April 9, 2013.

This chronology demonstrates how the oversight, coordination, efficiency and utilization of geospatial data can enhance the quality of life of the American people. A better management and governance structure in the executive branch, and the establishment of a subcommittee in the House and Senate, respectively, with primary jurisdiction over geospatial activities, are needed.

COGO has been deeply involved in efforts to create a national parcel system, as envisioned in the landmark 1980 National Academy of Sciences report "Need for a Multipurpose Cadastre" and its 2007 report, "National Land Parcel Data: A Vision for the Future". The 2007 report endorsed the FLAIR Act. A committee of COGO, overseeing this issue, has been deeply concerned by the slow pace at which the Federal Government has been implementing the Academy's reports and recommendations and believes the Nation would be well served by more prompt action.

One bright spot is the progress made on the three dimensional elevation program, or "3DEP", lead by the U.S. Geological Survey [USGS]. This is an example of a strategic and coordinated approach to a national geospatial requirement. Operating under authority of the USGS Organic Act of March 3, 1879 (20 Stat. 394; 43 U.S.C. 31), the act of October 2, 1888 (25 Stat. 505, 526), and the language in the FEMA flood map reform provisions enacted in the MAP–21 Act, section 100220 of Pub. L. 112–141, that calls for USGS to participate in an innovative, coordinated funding pool for the collection of elevation data for flood mapping and other purposes, USGS has launched the 3DEP program. The USGS is using its Geospatial Products and Services Contract [GPSC] as the acquisition vehicle for the collection of LIDAR and IFSAR data for the 3DEP program. USGS is working with States and other Federal agencies to increase the area in which data is collected and to reduce duplication. COGO supported the President's fiscal year 2014 budget request for 3DEP, which has been approved by the House Interior Appropriations Subcommittee. I would point out that GPSC is a contracting program that follows the COGO-endorsed geospatial data acquisition principles, which are also consistent with provisions in H.R. 1604 and H.R. 916.

Enhanced elevation data for the Nation will stimulate economic growth, while improving health and security. Federal leadership will increase the efficiency and effectiveness of the activity as a whole.

In 2012, a study funded by the USGS and its partners identified that important benefits from enhanced elevation data totaling up to an estimated $13 billion annually would accrue to 602 mission-critical activities of 34 Federal agencies; the 50 States; and selected local and tribal government, private, and other organizations.

3DEP will satisfy the extensive demand for consistent, high-quality topographic data and other three-dimensional representations of the Nation's natural and constructed features. COGO is confident that appropriate and desirable Federal leadership through the 3DEP will result in significantly improved protection and management of water resources; better identification, delineation, risk characterization, mitigation and post-event recovery of natural hazard areas; improved management and discovery of energy and mineral resources; more efficient efforts in agriculture, landscape restoration, transportation, and construction; as well as improving insights into our natural heritage.

H.R. 1604 and H.R. 916 would provide specific authorization for 3DEP, implement some recommendations of the parcel report, and better coordinate Federal geospatial activities. These are consistent with COGO priorities. As these bills move through the legislative process, COGO would like to offer specific recommendations for improvement. We look forward to working with the subcommittee and the bill's sponsors in that effort.

Thank you for the opportunity to present our views.

QUESTIONS SUBMITTED FOR THE RECORD TO JEFF LOVIN

QUESTIONS SUBMITTED FOR THE RECORD BY THE HONORABLE RUSH HOLT

H.R. 1604—MAP IT ONCE, USE IT MANY TIMES ACT AND H.R. 916—FEDERAL LAND ASSET INVENTORY REFORM ACT OF 2013

Question. Mr. Lovin, you heard testimony earlier from the USGS that one of their concerns with the FLAIR Act is the excessive cost, the vast majority of which comes from the requirement to determine the value of each parcel of Federal land, and catalogue it for potential disposal. If those provisions were removed from the bill, and it was purely an effort to get an accurate inventory of Federal lands, without regard to value or disposal, would your organizations still support the legislation?

Answer. The Coalition of Geospatial Organizations has not had ample time to develop consensus positions on either H.R. 916 or H.R. 1604. We will forward any position statements we adopt on the bills in the near future to the committee.

Question. Mr. Lovin, do your organizations have a preference for whether the NGTA would be within the USGS, or a separate organization outside the USGS?

Answer. The Coalition of Geospatial Organizations has not had ample time to develop consensus positions on either H.R. 916 or H.R. 1604. We will forward any position statements we adopt on the bills in the near future to the committee.

Mrs. LUMMIS. And now I recognize Mr. Parrish.

STATEMENT OF JAY B. PARRISH, PH.D., P.G., FORMER STATE GEOLOGIST, PENNSYLVANIA GEOLOGICAL SURVEY, CHAIR, MAPPING COMMITTEE, ASSOCIATION OF AMERICAN STATE GEOLOGISTS [AASG]

Dr. PARRISH. Thank you very much. I appreciate this opportunity to testify on behalf of the Association of American State Geologists. I would like to thank Chairman Lamborn and Ranking Member Holt for the invitation to be with you today. I will focus my testimony on the essential role that the U.S. Geological Survey plays in the operation of the Federal Government and industry, in particular with 3DEP.

When John Wesley Powell was Director of the USGS over 125 years ago, he told Congress, and I will rephrase, "Government can do no scientific work of greater value than creating topographic maps of the country." He implemented a plan to map the entire country, producing topographic maps that every one of you, your constituents, and American businesses have used at some time. The traditional topo sheet that we have all used became the basis for economic development in the country.

Everyone has used the original topo sheet. They are iconic. You all are familiar with the look of them. Geologists use them, hydrologists, hunters, developers, land use planners, boy scouts, girl scouts, families on vacation, everybody uses topo sheets.

We endorse 3DEP—3D Elevation Program—as a means of continuing this Powell plan to provide something of value to the people, consistent, current, and openly available geospatial data that is authoritative. The U.S. Geological Survey 3DEP initiative is a plan to systematically acquire high-quality lidar and IFSAR data nationwide over the next 8 years, lidar over the lower 48, Hawaii, and the U.S. territories, and IFSAR over Alaska. It is a well-coordinated plan based on well documented requirements and benefits.

I have here the study, the NEEA study that was referred to earlier, which goes over the requirements. I will leave it to you if you want to read it.

[The National Enhanced Elevation Assessment study referenced by Dr. Parrish follows:]

U.S. DEPARTMENT OF THE INTERIOR, U.S. GEOLOGICAL SURVEY

National Enhanced Elevation Assessment at a Glance

(By Gregory I. Snyder)

INTRODUCTION

Elevation data are essential for hazards mitigation, conservation, infrastructure development, national security, and many other applications. Under the leadership

of the U.S. Geological Survey and the National Digital Elevation Program [NDEP], Federal agencies, State agencies, and others work together to acquire high-quality elevation data for the United States and its territories. New elevation data are acquired using modern technology to replace elevation data that are, on average, more than 30 years old. Through the efforts of the NDEP, a project-by-project data acquisition approach resulted in improved, publicly available data for 28 percent of the conterminous United States and 15 percent of Alaska over the past 15 years. Although the program operates efficiently, the rate of data collection and the typical project specifications are currently insufficient to address the needs of government, the private sector, and other organizations.

The National Enhanced Elevation Assessment (NEEA; Dewberry, 2011) was conducted to (1) document national-level requirements for improved elevation data, (2) estimate the benefits and costs of meeting those requirements, and (3) evaluate multiple national-level program-implementation scenarios. The assessment was sponsored by the NDEP's member agencies. The study participants came from 34 Federal agencies, agencies from all 50 States, selected local government and tribal offices, and private and not-for-profit organizations. A total of 602 mission-critical activities were identified that need significantly more accurate data than are currently available. The results of the assessment indicate that enhanced elevation data have the potential to generate $13 billion in new benefits annually.

REQUIREMENTS FOR ENHANCED ELEVATION DATA

The requirements for elevation data were documented as part of the assessment through surveys and structured interviews. Each requirement was described in terms of the accuracy of the data, the data refresh cycle, and the geographic area of interest. The expected benefits that would result from meeting these requirements were also identified. To facilitate this analysis, the results of the survey and interviews were sorted by 27 predefined business uses. Table 1 summarizes expected benefits for the top 10 of 27 identified business uses, in dollar amounts. The dollar amounts represent cost savings either for the operating agencies or for the customers who use their services and are detailed for each organization in Dewberry (2011). For example, in Alabama, high-quality elevation data could potentially save the State's Department of Economic and Community Affairs $5 million because of the reduced time (and thereby costs) needed to create datasets for analyzing flood risks. The improved data could potentially save the agency's customers $3 million because the data would help reduce the costs and amount of time required to complete certain phases of flood-risk mitigation projects.

Table 1—Annual Aggregated Monetary Benefits for the Top 10 Business Uses Identified in the National Enhanced Elevation Assessment

Rank	Business Use	Annual Benefits	
		Conservative (In millions of dollars)	Potential (In millions of dollars)
1	Flood risk management	$295	$502
2	Infrastructure and construction management	206	942
3	Natural resources conservation	159	335
4	Agriculture and precision farming	122	2,011
5	Water supply and quality	85	156
6	Wildfire management, planning, and response	76	159
7	Geologic resource assessment and hazard mitigation	52	1,067
8	Forest resources management	44	62
9	River and stream resource management	38	87
10	Aviation navigation and safety	35	56

[Benefits were reported as single values or as a range of values in the assessment report (Dewberry, 2011). Only one half of participants were able to assign benefits to their activities, and the conservative benefits include these numbers only. Further, when benefits were reported as a range, only the low end of the range was included in calculating conservative benefits. Potential benefits were based on the high end of benefit ranges and included some estimated and projected benefits as well as the benefits expected from some emerging applications]

For about half of the reported applications, the surveyed organizations were unable to identify specific economic benefits even though most of them expected major benefits from improved elevation data. For example, the Environmental Protection Agency needs high-accuracy, high-resolution topographic data to characterize the landscape for both environmental protection and assessment of ecosystem services but did not quantify the benefits. Narratives describing the benefits of improved elevation data without associated monetary benefits are also included in Dewberry (2011).

ANALYSIS AND NATIONAL ELEVATION PROGRAM SCENARIOS

Benefit-cost analyses were developed and examined for more than 25 program scenarios (Dewberry, 2011), which included various quality levels for the elevation data (table 2) and data-replacement cycles. The estimated costs for each scenario include those for data collection and life-cycle management. Each scenario would implement a national data-collection strategy to achieve cost efficiencies and meet the requirements of multiple organizations.

Table 2—Data Quality Levels Used in the National Enhanced Elevation Assessment.

Quality Level	Horizontal Point Spacing (Meters)	Vertical Accuracy (Centimeters)
1	0.35	9.25
2	0.7	9.25
3	1–2	≤ 18.5
4	5	46–139
5	5	93–185

[≤, less than or equal to]

The final analysis yielded 10 leading scenarios, which are shown in figure 1. The least beneficial scenario is one that provides national data coverage at quality level 3 (see table 2 for more information on quality levels) on a 25-year replacement schedule but realizes only 13 percent of the benefits. In contrast, the national data coverage at quality level 1 on an annual replacement schedule realizes 98 percent of the conservative benefits. The 58-percent mid-range scenario offers a good benefit-to-cost ratio, uniform quality level 2 data, and an 8-year acquisition cycle. All of the scenarios included quality level 5 data coverage in Alaska, which would be collected by using interferometric synthetic aperture radar [ifsar] techniques; in Alaska cloud cover and remoteness preclude consideration of lidar data over much of the State. With the exception of the 98-percent scenario, all of the scenarios resulted in positive benefit-to-cost ratios ranging from 4:1 to 5:1 using the most conservative benefit estimates.

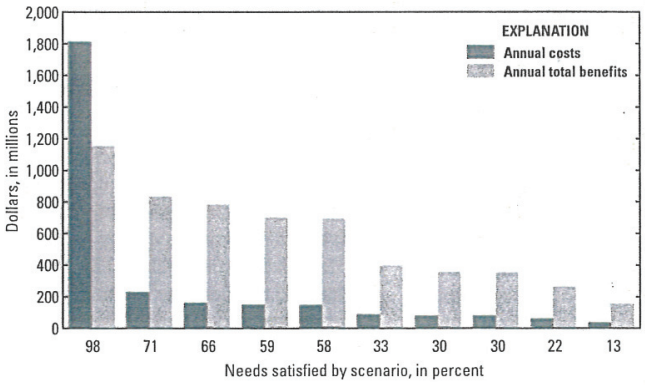


Figure 1. The 10 leading program scenarios resulting from the National Enhanced Elevation Assessment showing annual costs and total benefits.

The NEEA also reviewed current and emerging commercial elevation-data technologies, assessed data life-cycle-management costs for the various scenarios, and produced an inventory of existing elevation data derived from lidar and ifsar datasets. The inventory revealed that about 28 percent of the conterminous United States is covered by quality level 3 lidar data and that about 15 percent of Alaska is covered by ifsar data.

SUMMARY

The current NDEP activity is a partnership between Federal, State, and other agencies. Although the effort is efficient (very little duplication of effort), the program currently meets less than 10 percent of the needs identified in the NEEA. The following are the major findings:

1. Significant benefits could be realized by systematically upgrading the Nation's elevation data. Hundreds of improved business applications would benefit all levels of government and multiple industries.

2. The developed program scenarios demonstrated that favorable benefit-to-cost ratios can be achieved by integrating multiple requirements in large projects.
3. A new information technology infrastructure is needed for a project of this scale.
4. Current elevation technologies, industry capacity, data standards, and related matters are sufficient; there are no capability constraints or technical barriers precluding a national program and no technical reasons to delay its implementation.
5. The majority of applications now require data better than quality level 3.

REFERENCE CITED

Dewberry, 2011, Final Report of the National Enhanced Elevation Assessment: Fairfax, VA., Dewberry, 84 p. plus appendixes (revised 2012), available at *http://www.dewberry.com/Consultants/GeospatialMapping/FinalReport-NationalEnhancedElevationAssessment.*

PARTNERS

The NEEA was conducted under a contract between the U.S. Geological Survey and Dewberry (a consulting firm based in Fairfax, VA.). Additional support for the assessment came from other Federal agencies: the Federal Emergency Management Agency, the National Geospatial-Intelligence Agency, the National Oceanic and Atmospheric Administration, and the Natural Resources Conservation Service.

FOR FURTHER INFORMATION

More information on the NEEA may be found at *http://nationalmap.gov/3DEP/neea.html,* or by contacting the author at gsnyder@usgs.gov or (703) 648–35169.

U.S. DEPARTMENT OF THE INTERIOR, U.S. GEOLOGICAL SURVEY

The 3D Elevation Program—Summary of Program Direction

(By Gregory I. Snyder)

INTRODUCTION

The 3D Elevation Program [3DEP] initiative responds to a growing need for high-quality topographic data and a wide range of other three-dimensional representations of the Nation's natural and constructed features. The National Enhanced Elevation Assessment [NEEA], which was completed in 2011, clearly documented this need within government and industry sectors. The results of the NEEA indicated that enhanced elevation data have the potential to generate $13 billion in new benefits annually. The benefits apply to flood risk management, agriculture, water supply, homeland security, renewable energy, aviation safety, and other areas. The 3DEP initiative was recommended by the National Digital Elevation Program and its 12 Federal member agencies and was endorsed by the National States Geographic Information Council [NSGIC] and the National Geospatial Advisory Committee [NGAC].

GOALS AND BENEFITS

The primary goal of 3DEP is to systematically collect enhanced elevation data in the form of high-quality light detection and ranging [lidar] data over the conterminous United States, Hawaii, and the territories on an 8-year schedule. Interferometric synthetic aperture radar [ifsar] data will be collected over Alaska, where both the cloud cover and the remote location preclude the use of lidar over much of the State. It is expected that private-sector data-acquisition companies will mobilize to respond to these lidar and ifsar data needs and that the products and services will be accessible to all levels of government and the public. 3DEP will provide easy access to these authoritative data and derived products by using a cloud-based infrastructure. 3DEP products and services will be provided nationally at significantly higher resolution and accuracy than are available today.

The enhanced elevation data support flood-risk management, natural resources conservation, infrastructure management, agriculture and precision farming, aviation safety, renewable energy development, and many other identified business applications. The potential benefits to precision agriculture and intelligent vehicle navigation alone are estimated at over $9 billion annually (Dewberry, 2011). It is expected that new, unimagined information services will be created, thus spawning

job growth and transformation in the geospatial community. The following examples demonstrate the value of enhanced elevation data to both Federal and State programs. These examples are among the 602 applications documented in the NEEA report (Dewberry, 2011):

1. The Federal Emergency Management Agency [FEMA] expects that a national enhanced elevation program could reduce the amount of time needed to update its flood maps. These data could provide significant benefits to the communities and citizens that are customers of the National Flood Insurance Program by providing updated information to affected communities and homeowners more quickly. In addition, the national availability of enhanced elevation data (not just for areas where FEMA identifies a need) could lead to innovative tools that build on FEMA's flood-risk data and make them more powerful, effective, and easier to use; for example, users may be able to easily visualize a variety of flood levels in three dimensions.
2. Using lidar data, U.S. Geological Survey [USGS] scientists discovered a surface rupture along the Tacoma fault in the State of Washington. This discovery led to a redesign of the structural elements of a $735-million suspension bridge across the Tacoma Narrows. When lidar data enable the identification of active faults near planned nuclear-waste-treatment facilities or a major suspension bridge, proactive mitigation steps may be taken to avoid potential catastrophes in the future.
3. The U.S. Environmental Protection Agency's [EPA's] environmental impact assessments [EIAs] depend upon accurate elevation data for vulnerability mapping and for estimating the threat of sea-level rise to human populations, infrastructure, the fish and shellfish industries, and the coastal environment. Credible EIAs cannot be performed without accurate lidar data. The EPA estimates that billions of dollars would be saved by States, local communities, and citizens because they may have accurate elevation data on which to base their sea-level-rise mitigation activities.
4. The Centers for Disease Control indicate that lidar data provide significant benefits for occupational safety and health by enabling many tasks to be performed in an office environment that were previously performed in the field under dangerous or unhealthful conditions. For example, conducting land surveys during highway construction results in traffic deaths among surveyors each year. This hazard may be largely eliminated by the use of lidar-based surveys.
5. In the State of Alaska, poor-quality elevation data pose an ongoing threat to aviation safety. Improved elevation data for cockpit navigation and flight simulators may save a significant number of lives each year by reducing the number of accidents that result from the inability to safely fly over obstacles in the air space. The elevation data in Alaska have large demonstrated errors and are not reliable for safe navigation. Poor weather conditions, extremes in terrain, and reliance on air travel underscore Alaska's requirement for improved elevation data for aviation safety.
6. Enhanced elevation data for the State of Illinois would dramatically improve precision farming. A more accurate depiction of variations in local relief helps determine a more accurate rate for applying agricultural chemicals, thereby yielding a significant cost savings and reducing agricultural pollution. Approximately two-thirds of the land area of Illinois is devoted to agricultural uses.

GOVERNANCE

3DEP will be a cooperatively funded national elevation program led by the USGS, which is the Federal Geographic Data Committee's designated lead Federal agency for the collection and management of terrestrial elevation data. A governance model is being developed to solidify 3DEP partner agency roles and data acquisition strategies, program expectations, and constraints. The program will be designed to meet the mission-critical data needs of the 3DEP partners and other communities of use. The Federal agencies poised to realize the highest benefits to their mission from enhanced elevation data include the Natural Resources Conservation Service, the U.S. Army Corps of Engineers, the Defense Installation Spatial Data Infrastructure, the USGS, the National Oceanic and Atmospheric Administration, the Federal Emergency Management Agency, the EPA, the U.S. Forest Service, the Federal Aviation Administration, and the National Geospatial-Intelligence Agency. States and other partners will be able to participate in 3DEP and could fund higher quality data where needed. Efforts to reach out to current and future partners are underway.

The National Research Council (2007) concluded that the Nation's elevation data are inadequate to support FEMA's flood-plain mapping activities and that new national elevation data collection is required. The report proposed the use of lidar as the primary technology for elevation data acquisition and noted that these data would have many beneficial uses beyond FEMA's flood-plain mapping needs.

IMPLEMENTATION

The program is expected to continue to function as an activity that is coordinated by the National Digital Elevation Program. Several key changes are expected as the current elevation program transitions to 3DEP. These changes include an expansion of the partnership base, larger and thus more cost-effective projects, a directed approach for national coverage, improved data quality, and expanded application services.

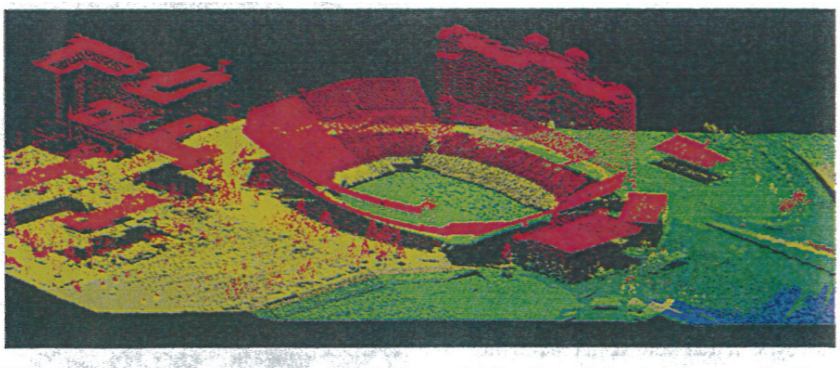
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National Research Council, 2007, Elevation data for floodplain mapping: Washington, DC, The National Academies Press, 168 p. (Also available at *http://books.nap.edu/openbook.php?record_id=11829&page=1.*)

FOR FURTHER INFORMATION

Further information on the 3DEP initiative can be found at *http://nationalmap.gov/3DEP/* or by contacting Mark DeMulder at mdemulder@usgs.gov or (703) 648–5569.



Lidar image of University of Nebraska's Memorial Stadium. Lidar data support facility siting, infrastructure and construction management, and emergency response.

Dr. PARRISH. It is an amazing piece of work. It would require $146 million annually over 8 years, returning over $690 million annually in benefits.

State geological surveys have already made extensive use of high-resolution topography and geologic mapping in the National Cooperative Geologic Mapping Program. In New Jersey, State Geologist Karl Muessig worked with USGS to fly Barnegat Bay for detailed shallow bisymmetry topography before and after Sandy, and they now have a detailed data set that is being used for beach and dune damage assessments and sand redistribution determination. At the Colorado Survey, State Geologist Karen Berry is using lidar for mapping debris fans and debris flows that resulted from the floods in September.

Efficient coordination of geospatial data acquisition in the Federal Government is often diminished by competition among those agencies for scarce resources. In Pennsylvania, we overcame the lack of a powerful coordinating body by creating PAMAP, partially funded by USGS, and it is part of the national map that USGS produced. We were able to provide 67 counties with a consistent, freely available base map across county boundaries. The need for coordination and the amount of duplication diminished dramatically because everyone had a consistent, freely available base map.

By fully funding one basic and essential geospatial program, you could make a tremendous difference. The USGS has a long history of providing that basic, consistent, authoritative, current, essential, and openly available data. Any legislation on geospatial concerns would include support and growth of the 3DEP Initiative. The Association of American State Geologists strongly endorses the President's fiscal year 2014 budget proposal for the U.S. Geological Survey and associated funding for 3DEP. If it could be increased, the job would be done faster. Thank you.

Mrs. LUMMIS. I thank the panel.

[The prepared statement of Dr. Parrish follows:]

PREPARED STATEMENT OF JAY B. PARRISH, PH.D., P.G., FORMER STATE GEOLOGIST, PENNSYLVANIA GEOLOGICAL SURVEY, CHAIR, MAPPING COMMITTEE, ASSOCIATION OF AMERICAN STATE GEOLOGISTS [AASG]

H.R. 1604—MAP IT ONCE, USE IT MANY TINES ACT AND H.R. 916—FEDERAL LAND ASSET INVENTORY REFORM ACT OF 2013

My name is Jay Parrish. I was the State Geologist and Director of the Pennsylvania Geological Survey. As Chair of the Mapping Committee of the Association of American State Geologists [AASG], I am testifying today on behalf of that organization, which represents the geological surveys in the 50 States and Puerto Rico.

Thank you for this opportunity to comment on the importance of H.R. 1604 *Map It Once, Use It Many Tines Act* and H.R. 916 *Federal Land Asset Inventory Reform Act of 2013.* These bills are focused on making geospatial data more useful and readily accessible to governmental and civilian users, something the professional geological community can endorse. I would like to focus my testimony on the essential role that the U.S. Geological Survey [USGS] plays in the operations of the Federal Government, and in particular a new initiative called 3DEP. I appreciate this opportunity to testify on behalf of the Association of American State Geologists.

We regard the USGS role as essential to the operations of the Federal Government, while USGS provides scientific geological information that is needed to optimize the health, wealth, and security of the American people, as well as the health and sustainability of the Nation's natural environment.

Both Federal and State government geological surveys maintain comprehensive information on the expansive and diverse landmass administered by the governments in which we serve, collected from extensive mapping, monitoring, and research activities.

We believe that the President's budget proposal outlines support for what we regard as successful and effective USGS programs that stimulate economic development, that save lives and property from natural disasters, and that protect the environment and public health.

When John Wesley Powell was director of the U.S. Geological Survey over 125 years ago, he told Congress "A Government cannot do any scientific work of more value to the people at large than by causing the construction of proper topographic maps of the country." He implemented a plan to map the entire country, producing the topographic maps that every one of you, your constituents, and American businesses have used at some time in their existence.

We endorse 3DEP as a means of continuing the "Powell Plan" to provide something of intrinsic value to the people: consistent, current and openly available geospatial data.

State Geologists direct State geological surveys and work to ensure that their States are supported by optimal, useful information. From time to time, a tech-

nology matures in a way that offers an opportunity to revolutionize everything that we do on the land—resulting in cost savings and improved benefits for a broad range of activities in our communities and their economies. Today, lidar and associated technologies offer that new opportunity.

The U.S. Geological Survey is developing the 3D Elevation Program [3DEP] initiative to systematically acquire high-quality lidar and ifsar data nationwide over the next 8 years: Light Detection and Ranging [lidar], data in the conterminous U.S. [CONUS], Hawaii, and the U.S. Territories; and Interferometric Synthetic Aperture Radar (ifsar data in Alaska). The National Enhanced Elevation Assessment [NEEA] study identified more than 600 requirements for 3D elevation data to address the mission critical issues of 34 Federal agencies, all 50 States and for a sample of private sector companies, Tribes, and local governments. The initiative calls for funding to be increased to $146 million annually over 8 years, returning more than $690 million annually in new benefits to the private sector directly, and to citizens through improved government program services.

For geologic resource assessment and hazard mitigation, it is estimated that there would be benefits that exceed $51 million per year if this program were implemented. That's just one of many business uses that would benefit from a national lidar program. In my State, Pennsylvania, we have seen the PAMAP lidar data provide a consistent and free base map for geospatial tools across county boundaries to support geologic hazards assessment and mapping; flood risk assessment, response and mitigation; forest resource management, land use management and many other applications.

Many organizations like the Association of American State Geologists agree that uniform national lidar data would facilitate mission-critical applications across government and spur innovations not possible with the patchwork of data we have in most places today.

Some have asked the question about funding and whether or not a program of this scope could be achieved. It is clear that to achieve the goal to acquire data over the entire country in 8 years that investments will need to increase. It is estimated that the data acquisition rates will need to increase by three fold over today's rate in order to meet this timetable. New and improved program efficiencies and advancements in technology will help this along. The 3DEP initiative will achieve a 25 percent efficiency gain by moving toward larger projects where data acquisition costs are inherently lower.

The momentum that 3DEP is experiencing must be accelerated. This initiative is a key component to advancing our Nation's geospatial capabilities. It is a well-coordinated plan based on well documented requirements and benefits, and it aims to meet a majority of real and important needs across the government. Any legislation on geospatial concerns should include the support and growth of the 3DEP initiative.

In summary, the Association of American State Geologists strongly endorses the President's fiscal year 2013 budget proposal for the U.S. Geological Survey, and associated funding for 3DEP. If it could be increased, the job could be done faster. But it must be funded. And Federal, State, and local governments, in their implementation of 3DEP acquisition, must be allowed the flexibility to find the most cost-effective means of collecting geological and topographical data, using available and existing government resources as well as employing the freedom to contract with any qualified organization for maximum savings to the taxpayer.

Efficient coordination of geospatial data acquisition in the Federal Government is sorely diminished by competition among those agencies for scarce resources. By fully funding one basic and essential geospatial program, you could make a tremendous difference in geospatial data assets of our country. The USGS has a long history of providing that basic, consistent, current, essential, and openly available data. 3DEP is a way forward into the future.

In particular, we endorse programs that are operated as partnerships between Federal agencies and State agencies, thus optimizing leveraged funds, as well as encouraging coordination, efficiency, and adoption of nation-wide standards.

In closing, I want to again indicate that we appreciate this opportunity to offer information that we hope will be helpful for the work of the subcommittee.

QUESTIONS SUBMITTED FOR THE RECORD TO JAY B. PARRISH

QUESTIONS SUBMITTED FOR THE RECORD BY THE HONORABLE RUSH HOLT

H.R. 1604—MAP IT ONCE, USE IT MANY TIMES ACT AND H.R. 916—FEDERAL LAND ASSET INVENTORY REFORM ACT OF 2013

Question. Dr. Parrish, does the Association of American State Geologists have any position on the two bills on the agenda today?

Answer. No, AASG does not have a formal stand on either of the two bills.

Question. Dr. Parrish, are there any lessons from Pennsylvania's experience with generating a lidar base map that you think are relevant to the national 3DEP initiative?

Answer. My personal view is that it is extremely important to provide sufficient funding to accomplish the goal in as short a period of time as possible. PAMAP was created to follow a 3 year cycle. 3DEP should not be saddled with small budgets such that it takes decades to map the country. The data should be collected as coincident as possible.

It is important to have a knowledgeable organization oversee data collection. USGS provided technical expertise for PAMAP. USGS has a well-thought out plan in 3DEP.

Competition for funding and interference by State agencies with little understanding of mapping greatly slowed the creation of PAMAP. Adding a layer of bureaucracy on top of the mission of USGS would be counterproductive. Forcing USGS to solicit funds from other agencies can work, as it did with PAMAP, but it required a large expenditure of manpower and resulted in constant uncertainty. USGS should have the funding needed for 3DEP in their budget.

USGS works well with the private sector to acquire the data, and set an example for our work on PAMAP. Private industry provides insights on emerging technology as well as suggestions on optimal data collection. By acquiring large areas of Pennsylvania at a time we achieved cost savings. The same is true of 3DEP.

PAMAP provided a short-term boost to the Pennsylvania economy and created jobs, but, more importantly, in the long-term, the data set resulted in new economic development, new applications, and new ways of doing business that continued to stimulate the economy, and create savings in the existing government and industrial processes. The most obvious example is the Marcellus boom. The largest user of PAMAP data have been exploration companies. The same would be true on a national level with 3DEP.

Mrs. LUMMIS. We will now begin with questions. The Chair recognizes herself for 5 minutes.

Mr. Sumner, you mentioned in your testimony the notion of high risk lands that were identified. What do you mean by high risk lands?

Mr. SUMNER. I don't recall mentioning high risk lands.

Mrs. LUMMIS. You mentioned high risk lands in association with, I thought, properties that we were receiving inadequate moneys in terms of Federal rents or royalties. Am I right?

Mr. SUMNER. Right. I am sorry. I misunderstood.

Mrs. LUMMIS. That is OK.

Mr. SUMNER. What we were talking about there were primarily BLM lands and seeking their full potential and finding out ways to be able to better utilize that land and actually provide revenue to the government. So that is in relationship to the land inventory part of these two bills.

Mrs. LUMMIS. So taking off on that notion of a land inventory that would allow a maximization of the benefits of those lands to the people of this country, the owners of that land, how might a national parcel system benefit that effort?

Mr. Lovin, you were talking about a national parcel system. Take my State, for example, it is half Federal lands, half private lands. The private lands are taxed, because we have a property tax, an

ad valorem tax in Wyoming, and each parcel of private land has a PIN number, a parcel identification number for purposes of valuing them for property tax assessments. Is that something that could or should be utilized with regard to the Federal estate?

Mr. LOVIN. Yes, it should. And again, across boundaries, across States and so forth, having a national parcel data set could provide so much benefit as the government looks to better utilize the land, as Mr. Sumner stated, but also in relation to economic development it could be a huge boon. You see many States where they do not have wherewithal for a statewide parcel initiative. You see businesses locating to where they can readily obtain that sort of information, where they may say, we are looking to build a factory in your State, we need information on a certain type of parcel within certain distance of rail, highway, what have you, different types of infrastructure. And in those States that have that kind of information readily handy, that is where they end up often locating. So it is a huge benefit to having that national parcel data set completed.

Mrs. LUMMIS. Mr. Parrish, you used Pennsylvania as an example? Could you elaborate a little bit? That is clearly a private land State, one of the original 13 colonies. So they are not burdened by the same Federal presence that my State of Wyoming is. Might you explain how something that is working in a State like Pennsylvania, which is a private land State, could be utilized in a public land State, such as my own?

Dr. PARRISH. In terms of parcels?

Mrs. LUMMIS. Yes. Yes, please.

Dr. PARRISH. Well, not to sound a little bit geeky, but where you start doing parcels, you have to have a good base. If you don't have a good base, you really can't do parcels because you end up adjusting lines, which leads to trouble. So you start with a good base. And once you start collecting the parcel data——

Mrs. LUMMIS. So what is the base?

Dr. PARRISH. Oh. In the simplest form, it is an air photo, an orthoimage, and topography, because topography distorts the land surface. So if you really want to know what a parcel looks like, you have to know how much of it is a high slope and how that distorts where the boundary looks, when you look at a map view. So by having the orthophoto and the lidar data or topographic data, you have a good base to put your parcels on. Without that, you are really just making a drawing.

Mrs. LUMMIS. And then what should follow? Once you have a good, solid base, what should come next?

Dr. PARRISH. Well, there are the various themes that we have spoken of that FGDC has pointed out. And usually you start with the most basic transportation hydrology and work your way up to parcels, because parcels are admittedly a man-made layer.

Mrs. LUMMIS. Right.

Dr. PARRISH. So you want as many natural layers down first before you can put the man-made layer on top of that.

Mrs. LUMMIS. And my time has expired. But I would note that might be a way to rightsize the inventory or quantification and coordinate the cost over time. So thank you for your input, gentlemen. I appreciate it.

The Chair now recognizes Mr. Thompson from Pennsylvania.

Mr. THOMPSON. I thank the gentlelady.

For all the panel, in the testimony we just heard from USGS, their main point was that H.R. 1604 would actually increase duplication. To all panelists, do you agree with this? And just very briefly, why or why not?

Mr. Lower, we will start with you.

Mr. LOWER. Thank you. I disagree with that. In reference to the comments from the USGS, I do agree that there are mission-specific objectives from different agencies in terms of temporal type data, flying data, when leaves are on or leaves are off, for mapping data under certain conditions.

However, what we see as duplication also relates to the coordination and the efficiency of mapping between the agencies. And just to reference an example, we have done some work down in the Caribbean and Puerto Rico for one agency. And another agency had similar work on the Virgin Islands, and the two agencies had not coordinated. And the coordination and efficiency between those agencies could have resulted in a more efficient planning and collection of a consolidated area and minimized the resources that are deployed, the costs that are involved with sending people down there, and airplanes and sensors. So that is just one example.

So I do agree that there are mission-specific objectives for each agency. And we support all the uses of geospatial data. We are not saying each agency should not get what they need in terms of geospatial data. We do believe that there needs to be a coordinated effort between agencies.

Mr. THOMPSON. OK. Thank you.

Mr. Sumner.

Mr. SUMNER. I would certainly agree with that statement. And as representative of the professionals who meet the public face to face on the ground every day, dealing with their problems, we see this even beyond the coordination of the mapping itself, but even the coordination for the criteria on which the mapping is created. For example, in one situation, we might have an elevation base, a benchmark, if you will, that defines an elevation on a particular point, and in another situation it has a different elevation.

So we see this as an opportunity for that coordination to occur as well, where we have uniform data on which everybody can depend across the country. And then when we address these issues that affect people, we have the proper information to do that with.

Mr. THOMPSON. Thank you.

Mr. Lovin.

Mr. LOVIN. Yes. I would echo that, I disagree with that statement, that there is tremendous duplication, as I said in my statement. And I will use my home State of Ohio as example, as kind of a microcosm, that the State IT department basically funded a statewide imagery and lidar initiative, much like we are talking here with 3DEP. And what we have seen is it saved tens of millions of dollars to the taxpayers of the State of Ohio from the fact that agency has now issued that to the Ohio Department of Transportation, to the Department of Natural Resources, all these other agencies. And then it trickles down also to the individual counties, and they are able to use that data. And again, I think there could

be huge benefit if the Federal Government undertook a similar initiative as we are talking about with these two pieces of legislation.

Mr. THOMPSON. Thank you.

Dr. Parrish, good to see you again.

Dr. PARRISH. Thank you.

Mr. THOMPSON. Thank you for your service to Pennsylvania. Thanks for your service at our alma mater, Penn State.

Dr. PARRISH. Thank you. Well, as you can guess, I would also agree with this, what has been said. If you make the investment in infrastructure, you avoid duplication. If you have FEMA interested only in stream valleys and collecting lidar there, and ag interested in ag land, and forestry interested in forest land, and each going out and collecting their own data set, there is going to be overlap. But if you have one agency that has the task of being the caretaker of that data layer, with USGS with topography, for instance, you could just collect it once, in one large geographic area, which makes the costs go way down because you don't have small postage stamps, and it becomes a much cheaper and much more usable data set to everybody and avoids duplication.

And if you take the analogy of doing that at the State level with Ohio and Pennsylvania, where we avoided the duplication of counties doing everything over and over again, and look at States with the United States, there is no point in having an individual survey for a very small State surrounded by a bunch of bigger States. You may as well just do a big block at once.

Mr. THOMPSON. Dr. Parrish, is it accurate to say that the Pennsylvania digital base map, PAMAP, has been beneficial because there has been a lack of coordination between USGS, the States, and other interested parties? Has it kind of helped fill that vacuum?

Dr. PARRISH. Well, actually, there has been tremendous coordination with USGS. It has been more of a problem within the State and local government where we haven't been able to come up with bodies, as are found in other States, that have been as effective. I guess I will leave it there. But as you well know, that the data being available made possible a lot of economic development. In particular, the Marcellus boom made tremendous use of the lidar that was acquired.

Mr. THOMPSON. Very good.

Thank you, Madam Chair.

Mrs. LUMMIS. Thank you, Mr. Thompson. Do you have any more questions, Mr. Thompson?

Mr. THOMPSON. Sure.

Mrs. LUMMIS. Well, then, we will do a very brief second round. And, Mr. Thompson, you are recognized for 4 minutes.

Mr. THOMPSON. Maybe we can do it in less. We will see.

Mrs. LUMMIS. OK.

Mr. THOMPSON. Thank you.

Dr. Parrish, come back, just follow up on that. Are you aware of other States developing anything similar to PAMAP.

Dr. PARRISH. Well, yes, as was mentioned, Ohio, right next door, did a similar thing. There are a number of States that have their own system, Iowa, North Carolina. I don't want to leave anybody

out; they will be offended. But there are many States who have done very similar things and have complete statewide coverage.

Mr. THOMPSON. Very good.

Mr. Lower, you stated in your testimony as reported by the GAO that the Federal Government does not have a current, accurate, and reliable inventory of its land assets. Can you elaborate on this and explain why this may be the case?

Mr. LOWER. Yes. In my testimony, there are multiple inventories from different agencies, and an issue consolidating and figuring out how all of those work together. And we have had discussions with the BLM related to that in terms of how do they consolidate all this data? How do they get an inventory to know what they really do have? So, yes. I believe there was in the number of 30 separate inventories they were dealing with.

Mr. THOMPSON. Thank you.

And, Mr. Lovin, you stated that OMB found total annual geospatial expenditures in Federal agencies alone was close to $4 billion, but there is no current accurate accounting of the Government's annual investment. I guess the question I have, any insight on how this can be? Can you elaborate on that?

Mr. LOVIN. Well, I mean, other than the fact that each of these agencies have their missions. And it is clear the stovepipe effect. As a business owner, I work for different Federal agencies. And you really see it where they are focused on their mission and they collect the data for that specific issue. But again, when you have nearly 40 agencies across the Federal Government doing that, it adds up pretty quickly.

Mr. THOMPSON. Yes. Well, being from farm country, we like to call those silos.

All right. Thank you, Madam Chair. I appreciate it. I yield back.

Mrs. LUMMIS. I thank the gentleman.

And in summary, I would like to give you each roughly a minute to see if there is anything you wish you had said. I mean, as you walk out of this room, is there just one thing that you wish you could have imparted during this testimony? And I will give you each an opportunity to answer that question.

Mr. Lower.

Mr. LOWER. All right. Thank you. Just in reference to a comment that was made earlier by the subcommittee, in reference to Federal offices that advocate for the private sector. Just to note the Office of the Chief Counsel for Advocacy, Small Business Administration, is an example of that, as well as the old Urban Mass Transit Administration, now the Federal Transit Administration, had an Office of Private Sector Initiatives. I just wanted to make that comment related to one of the questions that was asked earlier.

Mrs. LUMMIS. I thank the gentleman.

Mr. Sumner, do you have a burning desire to give a last statement?

Mr. SUMNER. Not a burning desire perhaps. But I do think it is important to recognize that once again, as I said earlier, when we deal with the people on the ground and how they are affected by any number of activities, floods, whatever the case may be, it is critically important, we believe, to have good information that can be relied upon. And so many times we find that the information

that is available isn't that good. And I pick on FEMA a little bit because of the nature of the maps that they have created over the years. But we certainly see again this is an opportunity to correct a lot of that and to provide information that really is helpful to the public and helpful to those of us who are trying to assist them.

Mrs. LUMMIS. Thank you.

Mr. Lovin.

Mr. LOVIN. Yes, I guess I would like to point out again that, as I mentioned, that the 3DEP program thus far has been a great model and I think could be a great example moving forward for this consolidation, because USGS has done a good job of reaching across agencies and pooling funding from FEMA and others to get this initiative moving forward. And also, as you have heard, both the Ohio program and the Pennsylvania program, USGS was a key stakeholder bringing funding and cooperation to those efforts.

As you look at such a huge initiative to tackle, you have to start at it piece by piece, step by step. And I think the 3DEP program would be a great way to look at this consolidation effort.

Mrs. LUMMIS. Thank you, Mr. Lovin.

I now recognize Mr. Parrish.

Dr. PARRISH. Thank you. I guess I would reiterate that USGS was designed to be a mapping agency. It is an objective source of scientific information, and it has worked very well in cooperation with States.

The 3DEP program has an unexpected benefit that we haven't discussed at all, and that is when you are trying to get topography, you also get the height of every building and every tree as a throw-away piece of information, but you can keep that and actually know the elevation of every single piece of vegetation in the country and every building in the country. This is a tremendous tool. What can be done with it in the future is just mind-blowing. And we haven't really scratched the surface with what can be done with it, and the technology is changing. It is a very exciting time to think 3DEP might be able to do that for us. Thank you.

Mrs. LUMMIS. I thank the panel. At a time of big data, when that is a buzzword about the possibilities that big data provide in every manner of our lives, this is yet another component. And we appreciate your expertise and thank you very much for your testimony.

The members of the committee may have additional questions for you for the record. And I ask you to respond in writing if you hear from them.

If there is no further business, this committee stands adjourned, with gratitude to our panel.

[Whereupon, at 11:09 a.m., the subcommittee was adjourned.]