Miller Wenhold Capitol Strategies, LLC
GOVERNMENT AFFAIRS AND GRASSROOTS ADVOCACY

Testimony of John "JB" Byrd
President, Miller/Wenhold Capitol Strategies
on
H.R. 5522
Federal Land Asset Inventory Reform (FLAIR) Act
and
H.R. 3681
Sinkhole Mapping Act
before the
Committee on Natural Resources
Subcommittee on Energy and Mineral Resources
U.S. House of Representatives
July 19, 2022

Mr. Chairman, members of the subcommittee, my name is John "JB" Byrd, and I am President of Miller/Wenhold Capitol Strategies based in Fairfax City, Virginia. I also serve as Government Affairs Representative to the National Society of Professional Surveyors (NSPS – www.nsps.us.com), the national professional society of individual licensed surveyors, and handle government relations for the U.S. Geospatial Executives Organization (U.S. GEO - www.usgeo.net), an informal coalition of leading geospatial firm executives. It is an honor to appear before the subcommittee.

H.R. 5522 – FLAIR Act

In order to be a good steward of our public lands, the Federal Government must first know precisely what land it owns. Unfortunately, the Federal government's ability to manage its public lands and indeed all its real property assets is terribly hampered by the lack of a current, accurate land inventory.

Both NSPS and U.S. GEO strongly support H.R. 5522, the Federal Land Asset Inventory Reform (FLAIR) Act, introduced by Representative Kind of Wisconsin and Ranking Member Westerman of Arkansas.

Earlier versions of the bill were unanimously approved by the House Committee on Natural Resources in 2017 (H.R. 2199) and in 2014 (H.R. 916).

The Government Accountability Office (GAO) has placed 'Managing Federal Real Property' in its High-Risk Series since 2003. GAO reports highlight the lack of a current, accurate inventory of Federal Real Property. On the other hand, the Federal government funds a variety of single-purpose databases. Technology, specifically geographic information systems (GIS), allows stewardship decisions based on one uniform, interoperable database.

Since 1980, the National Academy of Sciences (NAS) has been calling for the development of a multipurpose "cadastre", or land registry. In 2007, the NAS renewed this effort and specifically recommended the FLAIR Act.

The FLAIR Act authorizes the Department of the Interior to develop and manage such a multipurpose, uniform Federal GIS database to track and account for all Federal Real Property. The Secretary of the Interior is authorized to conduct an "inventory of inventories" to identify all inventory databases, whether efficient or inefficient. The efficient databases will be merged into a single multipurpose cadastre while the inefficient databases are repealed, thus preventing waste and duplication to continue.

This Federal effort helps state and local agencies verify their ongoing efforts to identify what each level of government owns. This will also enable government at all levels to find missing property through a "gap analysis."

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.

The current version of the Federal Government's nationwide inventory is found in the General Services Administration's (GSA) Federal Real Property Profile (FRPP). For nearly 20 years, the 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).

This finding has continued to be recognized by GAO as recently as February 2021, when it reported "federal agencies continue to face long-standing challenges in managing real property, including: …collecting reliable real property data for decision-making...". As to data reliability, GAO found: "The rating for demonstrated progress has regressed from partially met to not met since our 2019 High-Risk Report…we continue to find serious data errors that undermine the reliability of the FRPP… GSA should continue working with federal agencies to improve the reliability of its real property data" (GAO-21-119SP).

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 (GAO-15-290).

The Bush Administration took a significant step toward properly managing its real property holdings. Executive Order 13327, on Federal Real Property Asset Management, was issued on February 4, 2004. It called on agencies to "identify and categorize all real property owned, leased, or otherwise managed by the agency." Additionally, it instructs that "In order to ensure that Federally owned lands, other than the real property covered by this order, are managed in the most effective and economic manner, the Departments of Agriculture and the Interior shall take such steps as are appropriate to improve their management of public lands and National Forest System lands and shall develop appropriate legislative proposals necessary to facilitate that result." To my knowledge, these departments have never fulfilled that responsibility.

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 (NGAC) 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. In its 1980 report, the Academy said, "Current technology is adequate in most cases for the surveying, mapping, data collecting, filing, and dissemination of information. Improved surveying and mapping instruments and techniques will probably reduce the cost of some of the mapping required. Advancements in computer applications, communication networks, and copying processes offer promise of more-efficient use of the multipurpose cadastre. The major obstacles in the development of a multipurpose cadaster are the organizational and institutional requirements."

The American taxpayer can also be the biggest beneficiary of a cadastre. Many units of local government -- cities, counties -- have used such land information systems, or even single purpose digital parcel or tax mapping programs, to inventory real estate more accurately and efficiently 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.

The bill will save money in many ways. It will reduce the many duplicative inventories the Department of the Interior currently operates and maintains. It will help identify lands the Department of the Interior currently owns that it no longer needs to own. And revenue from resource activity and cost savings in other programs will be realized by having more efficient and accessible land information. See, for example, Office of Surface Mining Reclamation and Enforcement's Oversight of the Abandoned Mine Lands Program, Report No. 2016-EAU-007, March 2017.

The Office of Inspector General, Department of the Interior, issued Report No.: C-IN-MOA-0001-2009 July 2010. Its audit "found that the Bureau of Land Management's Cadastral Survey program was missing the opportunity to identify and perform surveys on high-risk lands where the Department or Indian tribes could collect significant potential revenues. Proper survey and management of high-risk lands with antiquated surveys has the potential to generate hundreds of millions of dollars in revenue from lands with valuable resources."

It reported, "The Department has outdated and unreliable survey information on more than 1 million boundary miles. This encompasses almost 90 percent of the 385 million acres of federal and Indian lands that DOI is responsible for in the western United States (excluding Alaska). Proper survey and management of high-risk lands with antiquated surveys has the potential to generate hundreds of millions of dollars in revenue from lands with valuable surface and subsurface resources. 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 2005, then-Interior Secretary Gale Norton testified 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."*

While subsequent administrations have worked to improve this data management, the government's land records are still in need of considerable improvement. A Financial and Business Management System (FBMS) has been implemented to consolidate and modernize many business management processes related to financial management, budget execution, acquisition, grants and cooperative agreements, real and personal property management, fleet management, aviation, travel, enterprise information management and reporting, the real property and land records systems are still inefficient, redundant, and inaccessible in stove-piped activities in individual agencies.

As this subcommittee heard from GAO in a field hearing, "Federal Land Management: Availability and Potential Reliability of Selected Data Elements at Five Agencies" May 3, 2012 in Colorado Springs, CO (GAO-12-691T) a review of five agencies - Bureau of Land Management (BLM), Fish and Wildlife Service (FWS), National Park Service (NPS), and Bureau of Reclamation (BoR) in the Department of the Interior (Interior), and the Forest Service, in the Department of Agriculture found:

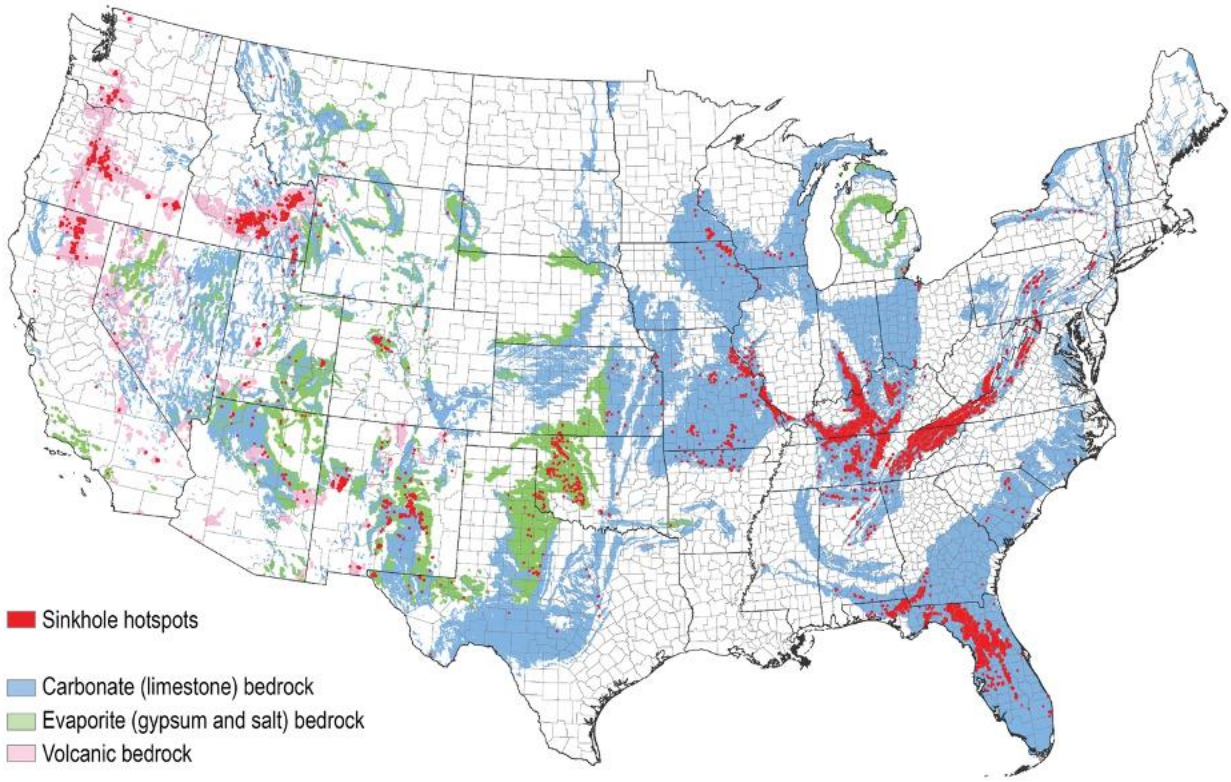
> *"we, the departments' Offices of Inspectors General, and others have raised concerns about the accuracy and completeness of the data used to manage federal land and resources and revenues collected from activities on federal land. As these prior reports have concluded, without accurate and complete data, managers cannot make fully informed decisions and effectively manage and evaluate agency activities."*
>
> *"GAO assessed the potential reliability of the data elements that the five agencies collected and determined that less than half of the data elements stored in a primary agency data system were potentially reliable."*
>
> *"data, such as acres of surface and subsurface land, acres managed within each state, and potential quantity of coal reserves on leased land that the agency manages, were kept in BLM state offices in other formats, such as electronic spreadsheets or hard copy."*
>
> *"while we recognize that managing the vast federal estate is a daunting task, this task becomes even more challenging when federal land managers do not have access to complete, accurate, and comprehensive land inventory data."*

Proper surveys, mapping and an inventory of Department of the Interior lands would improve land management, avoid wasteful duplication and redundancy, generate hundreds of millions of dollars in new revenue, and further the goal of "map it once, use it many times."

Once again, thank you for your leadership and both NSPS and US GEO stand ready to work the Congress to enact H.R. 5522. We respectfully urge this legislation's prompt and favorable consideration.

H.R. 3681 – Sinkhole Mapping Act

H.R. 3681, the Sinkhole Mapping Act, introduced by Representatives Soto and Bilirakis of Florida, directs the United States Geological Survey (USGS) to establish a program to study the short-term and long-term mechanisms that cause sinkholes, including extreme storm events, prolonged droughts causing shifts in water management practices, aquifer depletion, and other major changes in water use; and develop maps depicting the zones that are at greater risk of forming sinkholes. The USGS must establish a public website that displays such maps and other relevant information critical for use by community planners and emergency managers.



(Image above per USGS, May 2020; https://www.usgs.gov/media/images/karst-map-conterminous-united-states-2020)

A sinkhole is a depression in the ground that has no natural external surface drainage. This means that when it rains, all of the water stays inside the sinkhole and typically drains into the subsurface.

Sinkholes are most common in what geologists call, "karst terrain." These are regions where the types of rock below the land surface can naturally be dissolved by groundwater circulating through them. Soluble rocks include salt beds and domes, gypsum, limestone, and other carbonate rock. Florida, for instance, is an area largely underlain by limestone and is highly susceptible to sinkholes.

When water from rainfall moves down through the soil, these types of rock begin to dissolve. This creates underground spaces and caverns.

Sinkholes are dramatic because the land usually stays intact for a period of time until the underground spaces just get too big. If there is not enough support for the land above the spaces, then a sudden collapse of the land surface can occur.

Airborne LiDAR (light detection and ranging) offers enormous potential for mapping sinkholes. LiDAR technology can identify surface clues to underlying karst formations and pinpoint underground karst activity.

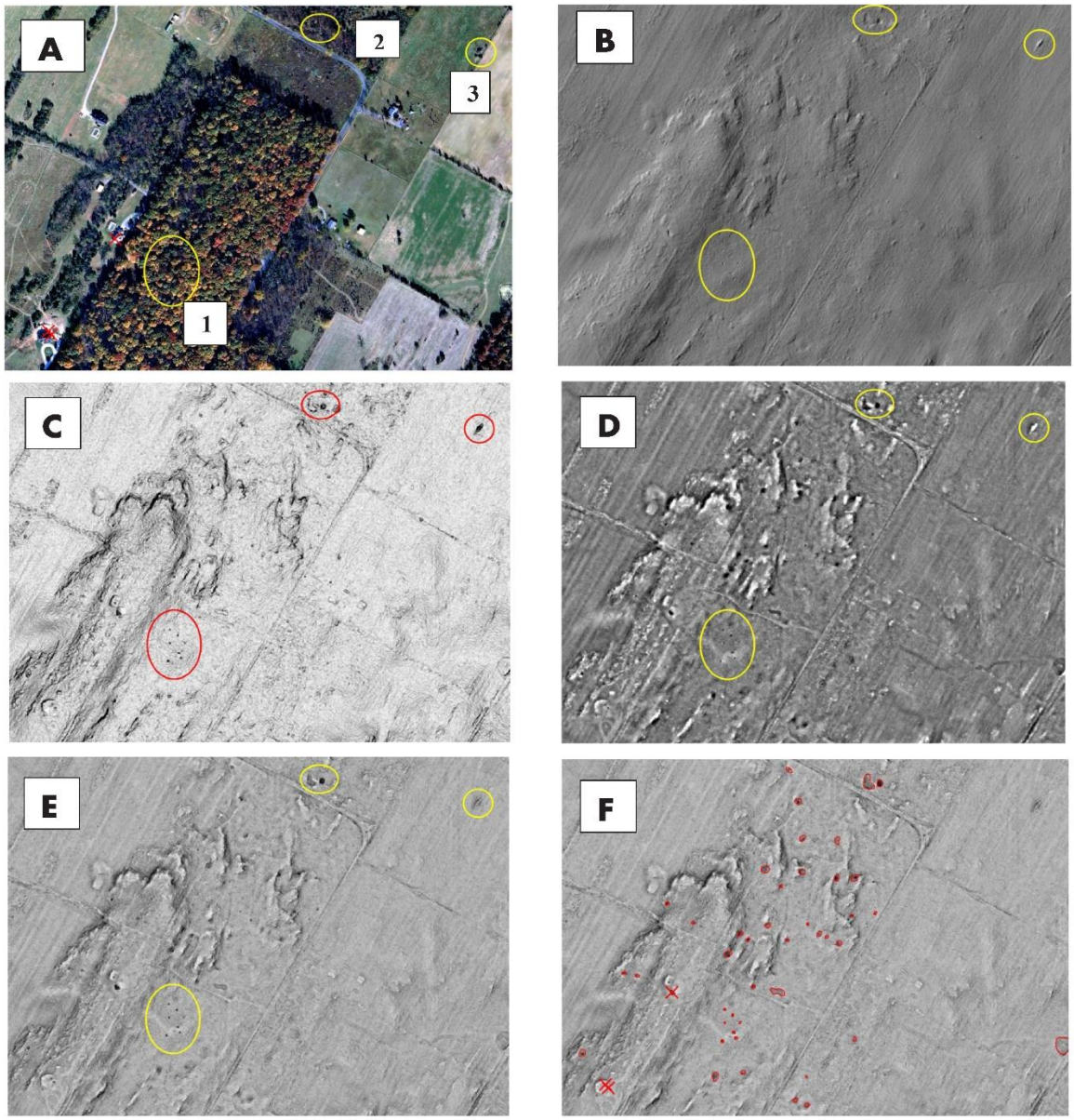


Figure 2. *Comparative views of an area with multiple closed depressions in the Boyce quadrangle. In the lower left of each image is a cluster of manmade percolation pits (1); in the upper center are two sinkholes, one deeper than the other (2); in the upper right is a bedrock ridge surrounded by trees along a fence line (3). (A) Aerial image. (B) Hillshade of LiDAR DEM. (C) Slopeshade of LiDAR DEM. (D) TPI raster of LiDAR DEM (note: dark areas are depressions and light areas are ridges). (E) TPI draped over the slopeshade. (F) TPI draped over slopeshade, with manually delineated closed depressions. A red X indicates a false depression where building edges caused errors in the LiDAR elevation model.*

AN EVALUATION OF AUTOMATED GIS TOOLS FOR DELINEATING KARST SINKHOLES AND CLOSED DEPRESSIONS FROM 1-METER LIDAR-DERIVED DIGITAL ELEVATION DATA

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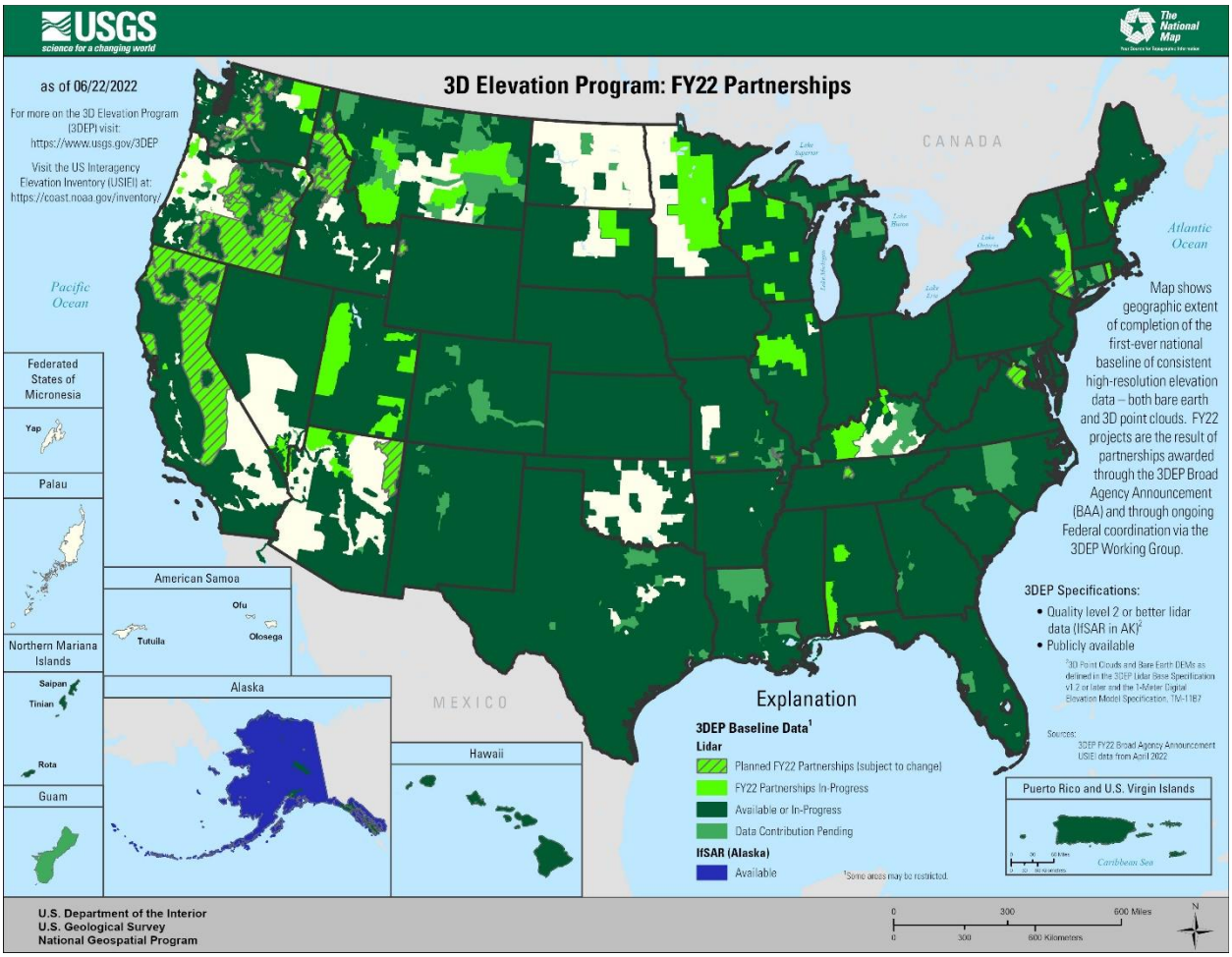
(LiDAR images and caption of Clarke County, Virginia above per USGS, 2013; https://digitalcommons.usf.edu/cgi/viewcontent.cgi?article=1156&context=sinkhole_2013)

Such an activity as authorized in H.R. 3681 can fully leverage an existing LiDAR data collection program already managed by USGS, commonly known as the 3D Elevation Program (3DEP), as codified by the National Landslide Preparedness Act (P.L. 116-323).

I also help manage the 3DEP Coalition comprised of representatives of a broad cross section of stakeholders, including nearly 60 organizations from surveying, mapping and geospatial; real estate; home building; flood management; emergency response; environmental; science; mining; insurance; telecom; agriculture; and infrastructure. The 3DEP Coalition enthusiastically supports 3DEP.



(Image above per USGS, June 2022; https://www.usgs.gov/3d-elevation-program)

3DEP is satisfying 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, primarily through elevation data collected with LiDAR. Among the applications that benefit from 3DEP data are flood risk management; infrastructure; landslides & other hazards; water resources; aviation safety; telecom; homeland security; emergency response; precision agriculture; energy; pipeline safety; and other areas.

Indeed, USGS has identified more than 600 applications that would benefit from such enhanced elevation data. 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.

3DEP stands out as a best practices model for coordination, inter-agency and inter-governmental cooperation, and a strong definition of government and private sector roles and responsibilities in a public-private partnership.

3DEP has been acquiring three-dimensional information across the United States using LiDAR technology- an airborne laser-based remote sensing technology that collects billions of LiDAR returns while flying- and making results available to the public.

The Broad Agency Announcement (BAA) is a public process to develop partnerships for the collection of LiDAR and derived elevation data for 3DEP. USGS elevation data is available for download through The National Map and GeoPlatform. 3DEP represents the USGS's latest iteration of national elevation coverage.

The 3DEP BAA provides an opportunity for continued collaboration across the nation so that all governments, the private sector, and citizens may have access to and derive the benefits of 3D elevation data.

The USGS has been strategically focused on providing new mechanisms to access 3DEP data beyond simple downloads. With 3DEP's adoption of cloud storage and computing, users now have the option to work with massive LiDAR point cloud datasets without having to download them to local machines.

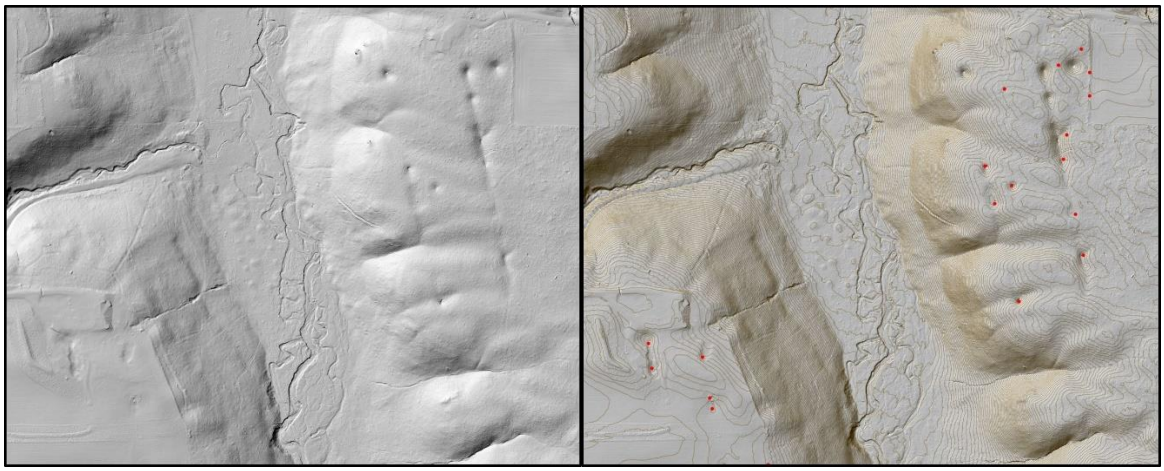
The democratization of elevation data is a tremendous achievement by the community of partners leading this effort and promises to revolutionize approaches to applications from flood forecasting and geologic assessments to precision agriculture and infrastructure development.

Optimally, USGS views 3DEP to be funded at $146 million annually. USGS is on pace to achieve 100% national coverage by the end of FY2026. On April 27, 2022, thirty-one bipartisan members of the House sent a letter to their colleagues on the House Appropriations Committee requesting "robust funding" for USGS 3DEP in FY2023. Among those cosigning this letter were committee members Raul Grijalva (D-AZ), Jim Costa (D-CA), Diana DeGette (D-CO), Jesus "Chuy" Garcia (D-IL), Darren Soto (D-FL), Melanie Stansbury (D-NM), and Doug Lamborn (R-CO).

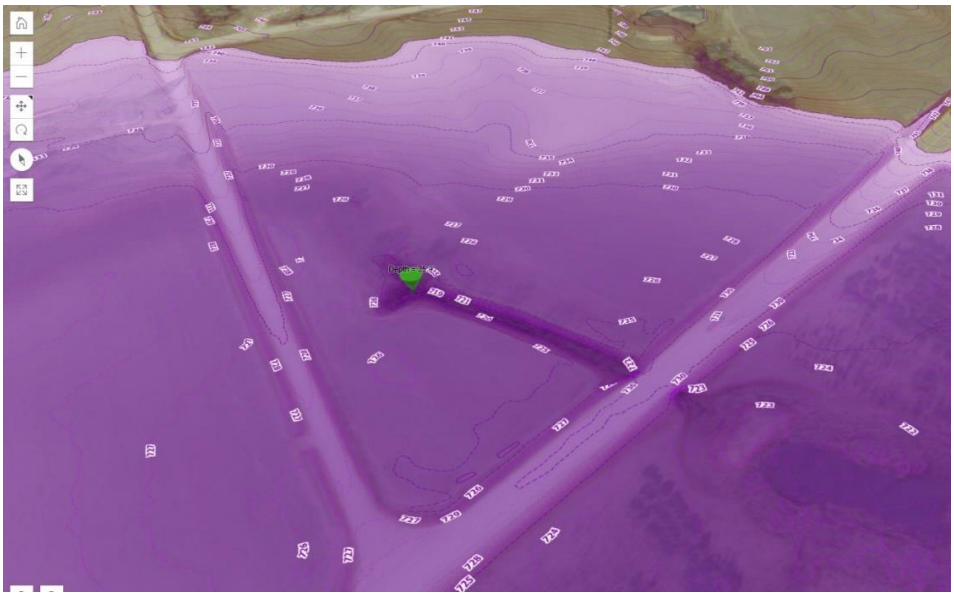
Fortunately, the recent activity in the House Interior Appropriations Subcommittee provided the following report language, (H. Rept. 117-400) accompanying H.R. 8262, as part of FY2023 funding efforts for USGS connecting the dots between LiDAR data collection for USGS 3DEP and the importance to sinkhole mapping within the National Geospatial Program:

[Pages 46-47]

$43,905,000 for 3D Elevation Program (3DEP) *comprised of $1,250,000 for Tribal lands and $7,000,000 for Federal lands in Western States as much of the remaining areas to be mapped to complete the national map represent states with sparse population density, high federal land ownership, and/or other mitigating factors. The Committee encourages USGS to consider acquiring Quality Level 2 or Quality Level 1 elevation data from private sector mapping firms for western states such as Nevada… The Committee supports the continued collaboration with partners to leverage the resources provided for 3DEP to achieve the goal of national coverage by 2026…* ***The Committee understands State and Federal agencies can use high accuracy LiDAR from the 3DEP program to identify the location, size, and shape of sinkholes quickly and remotely, and encourages the Survey to consider the short-term and long-term mechanisms that cause sinkholes, including extreme storm events, prolonged droughts causing shifts in water management practices, aquifer depletion, and other major changes in water use, and to develop maps depicting the zones that are at a greater risk of forming sinkholes.***



(3DEP LiDAR images above of Goodhue County, Minnesota per Ayres Associates, July 2022)



(3DEP LiDAR image above of Calumet County, Wisconsin per Ayres Associates, July 2022)

We look forward to working with the bill sponsors and the Committee to make sure that this new sinkhole mapping program within USGS authorized by H.R. 3681 fully leverages and coordinates LiDAR data collection via USGS 3DEP for sinkhole mapping.

Conclusion

Thank you for the opportunity to share our views and we look forward to working with the subcommittee to continue the work to build on past success and further improve the Interior Department's surveying, mapping and geospatial activities including reforms to the way the Department of the Interior inventories its assets, and improving sinkhole mapping through the collection, management, and dissemination of enhanced elevation data through the USGS 3DEP.