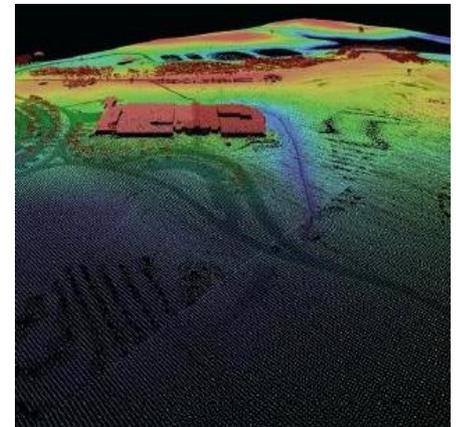
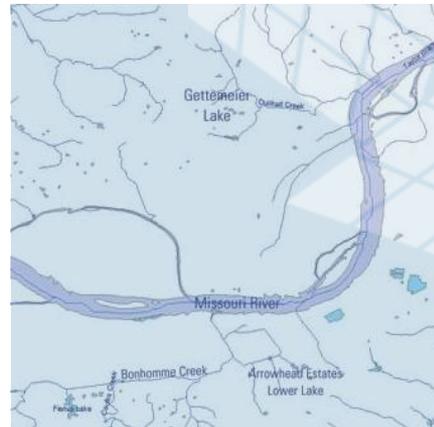
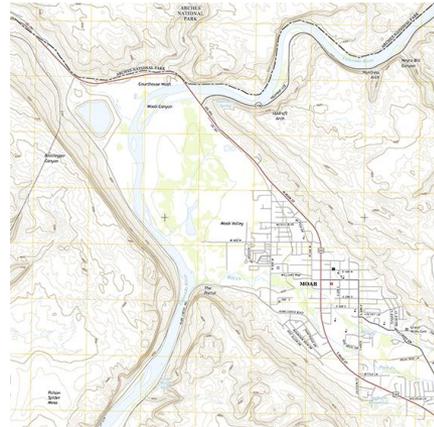




3D Elevation Program (3DEP)

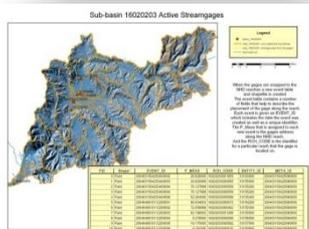
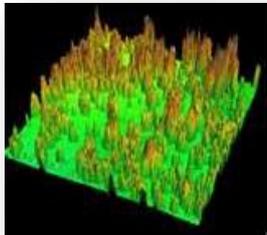


Vicki Lukas
Chief, NGP Topographic Data Services
February 13, 2015



+ The National Map

Geospatial products and services support key priorities



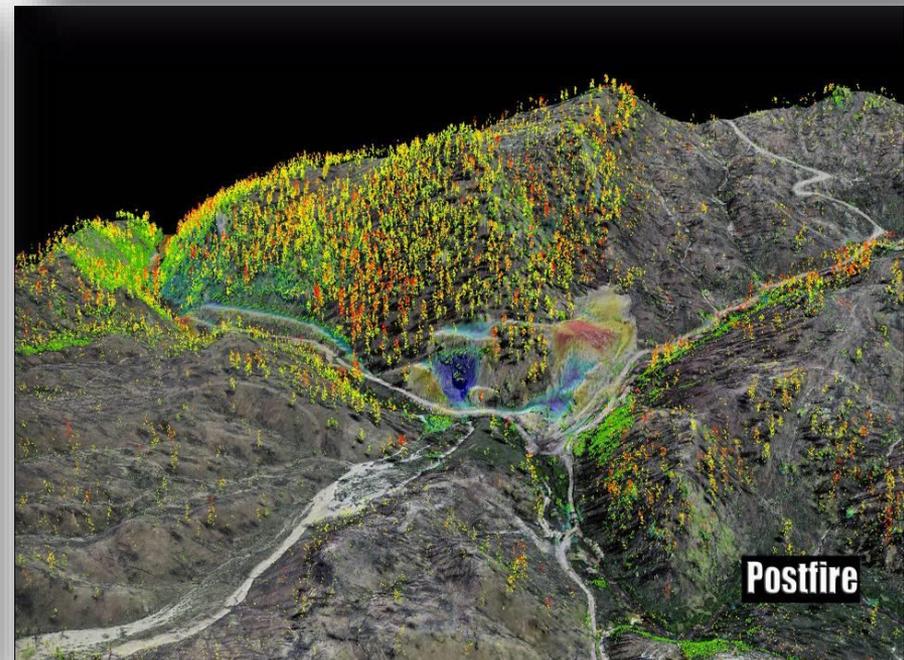
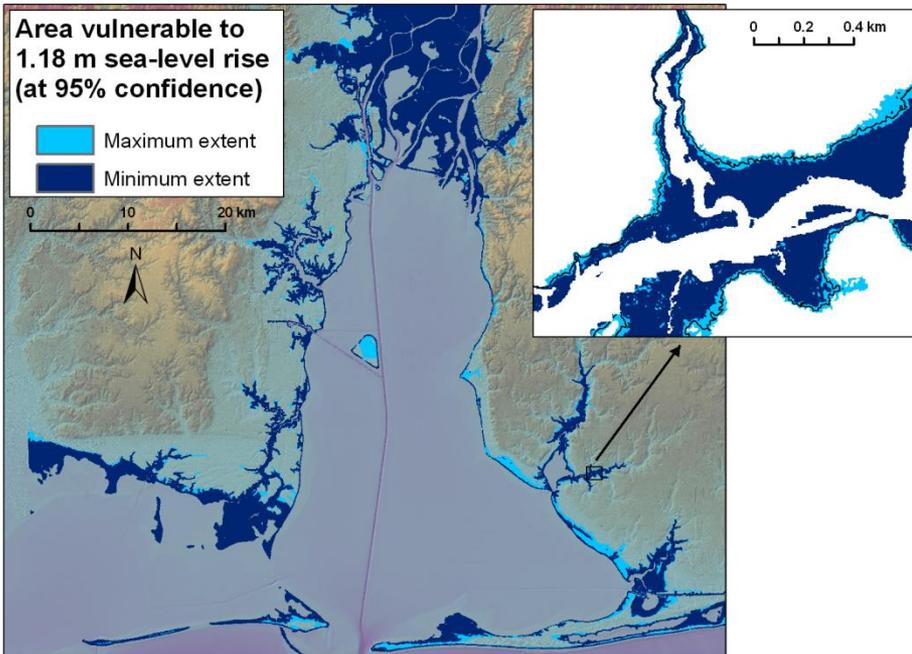
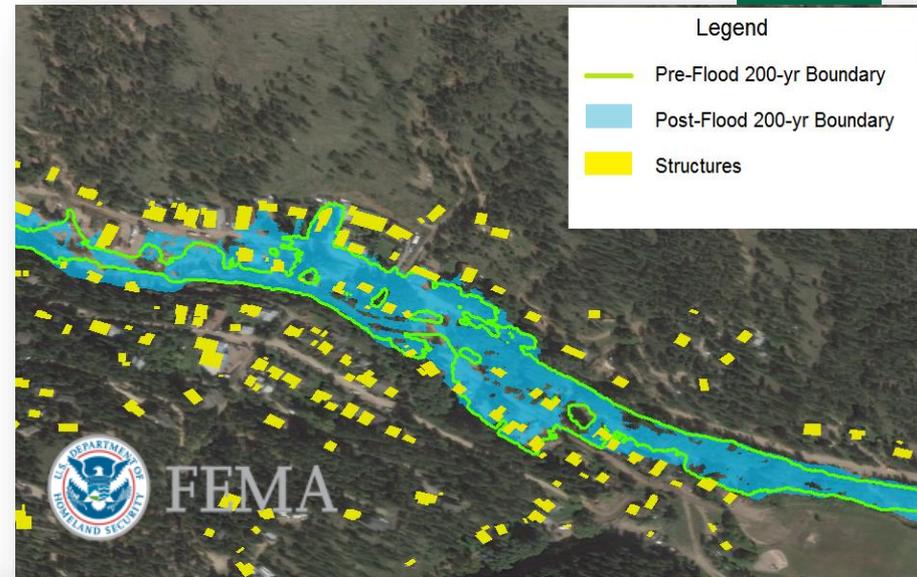
Area of National Leadership	Program Emphasis	DOI/Administration Priorities Supported
A-16 Lead for Terrestrial Elevation	3D Elevation Program (3DEP)	<ul style="list-style-type: none"> • Climate Action Plan • Building a Landscape-Level Understanding
A-16 Co-Lead for Inland Waters	National Hydrography Dataset and Open Water Data Initiative	<ul style="list-style-type: none"> • Ensuring Healthy Watersheds and Sustainable, Secure Water Supplies • Powering Our Future and Responsible Use of Our Resources
National Coverage of Topographic Maps	U.S. Topo and Alaska Mapping	<ul style="list-style-type: none"> • Enhancing America's Great Outdoors • Open Water Data Initiative



+ Climate Resilience

Cross-Cutting Priority

- Subsidence
- Flood Risk Mapping
- Wildfire Preparedness and Response

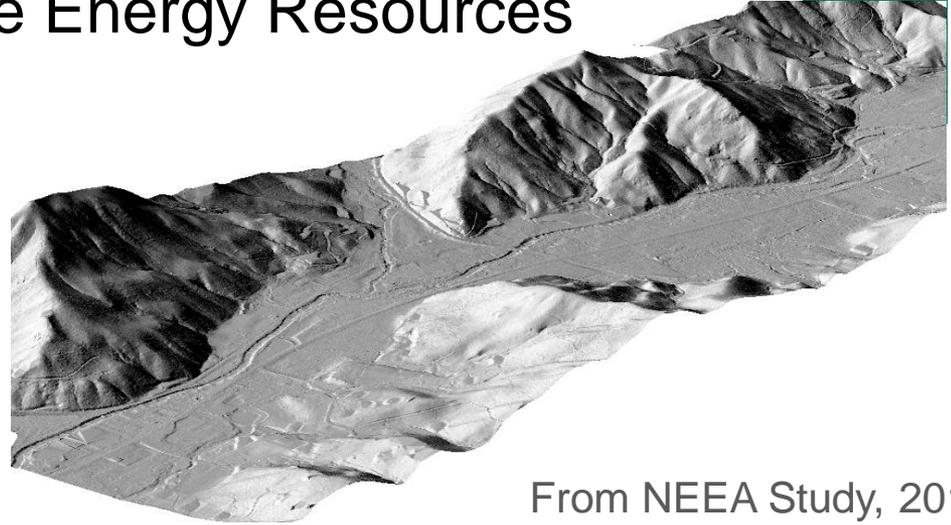


+ Powering Our Future

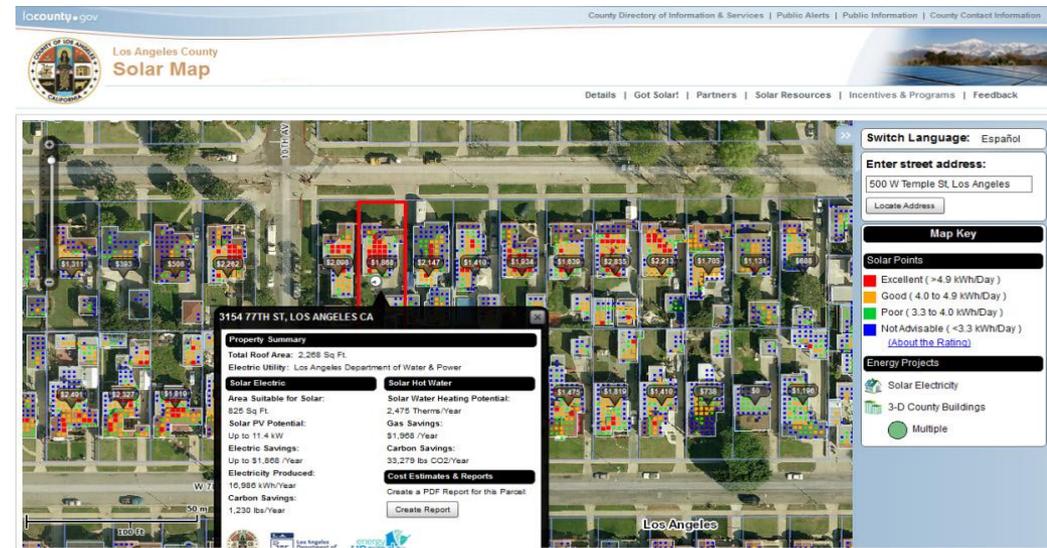
Conventional and Alternative Energy Resources

Lidar are essential for:

- Calculating wind potential
- Planning, construction and operation of hydro power
- Routing transmission lines and pipelines, construction planning, encroachment control, and asset inventories
- Determining solar potential - lidar provides roof pitch/aspect, etc.

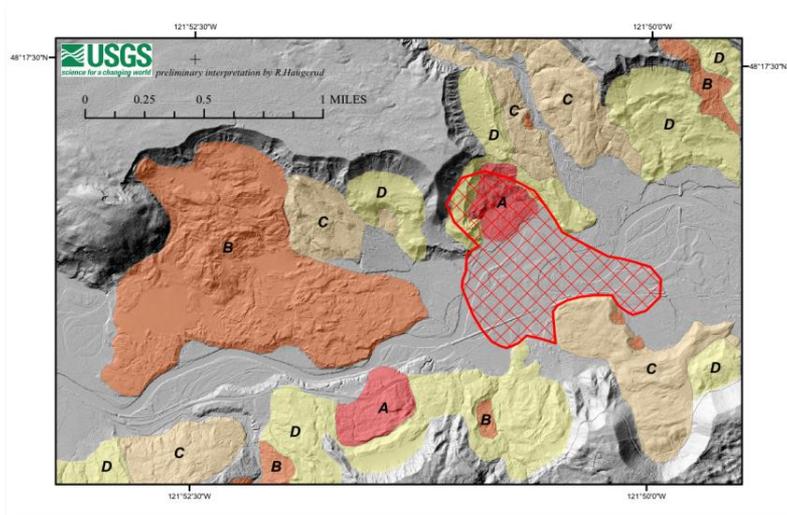


From NEEA Study, 2011

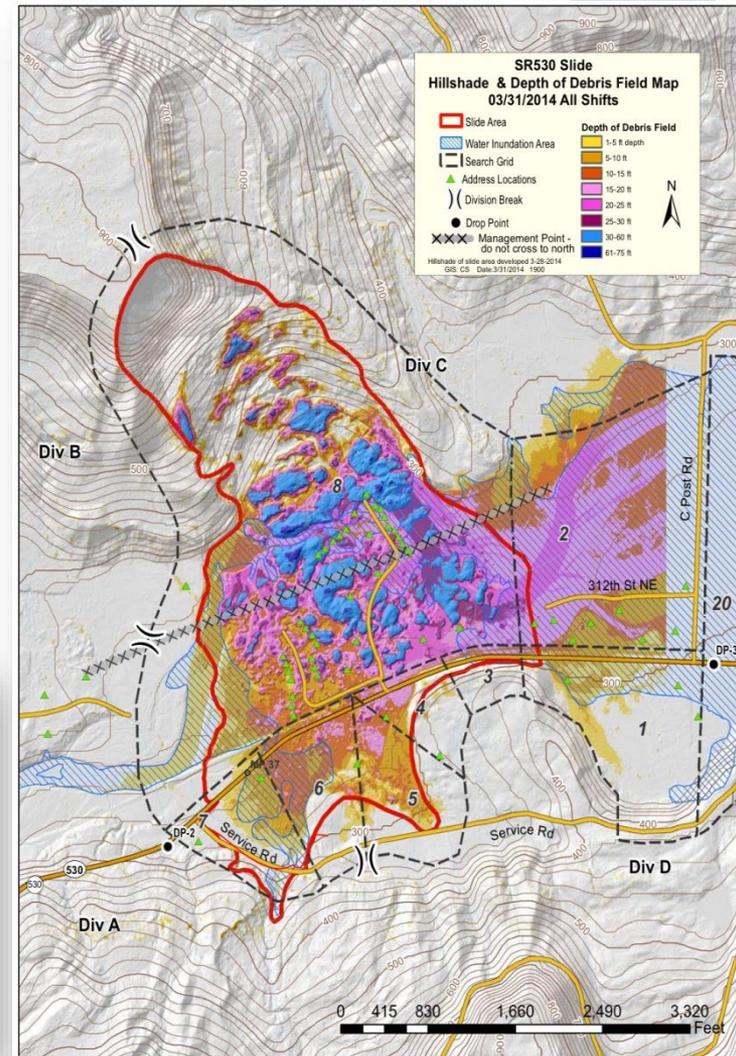
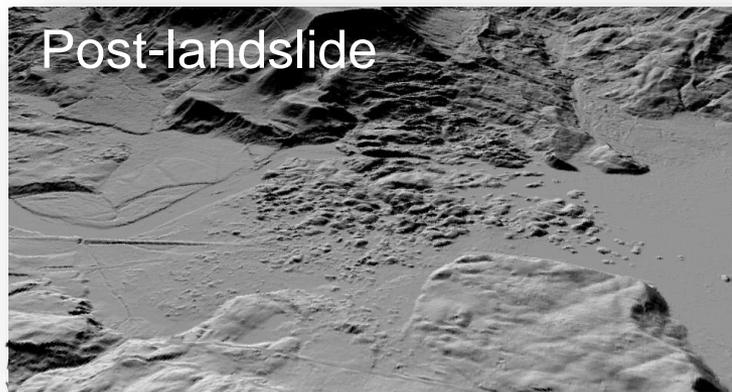


+ Building a Landscape-Level Understanding of our Resources

Oso, WA Landslide March 22, 2014



Lidar reveals historic and potential slides

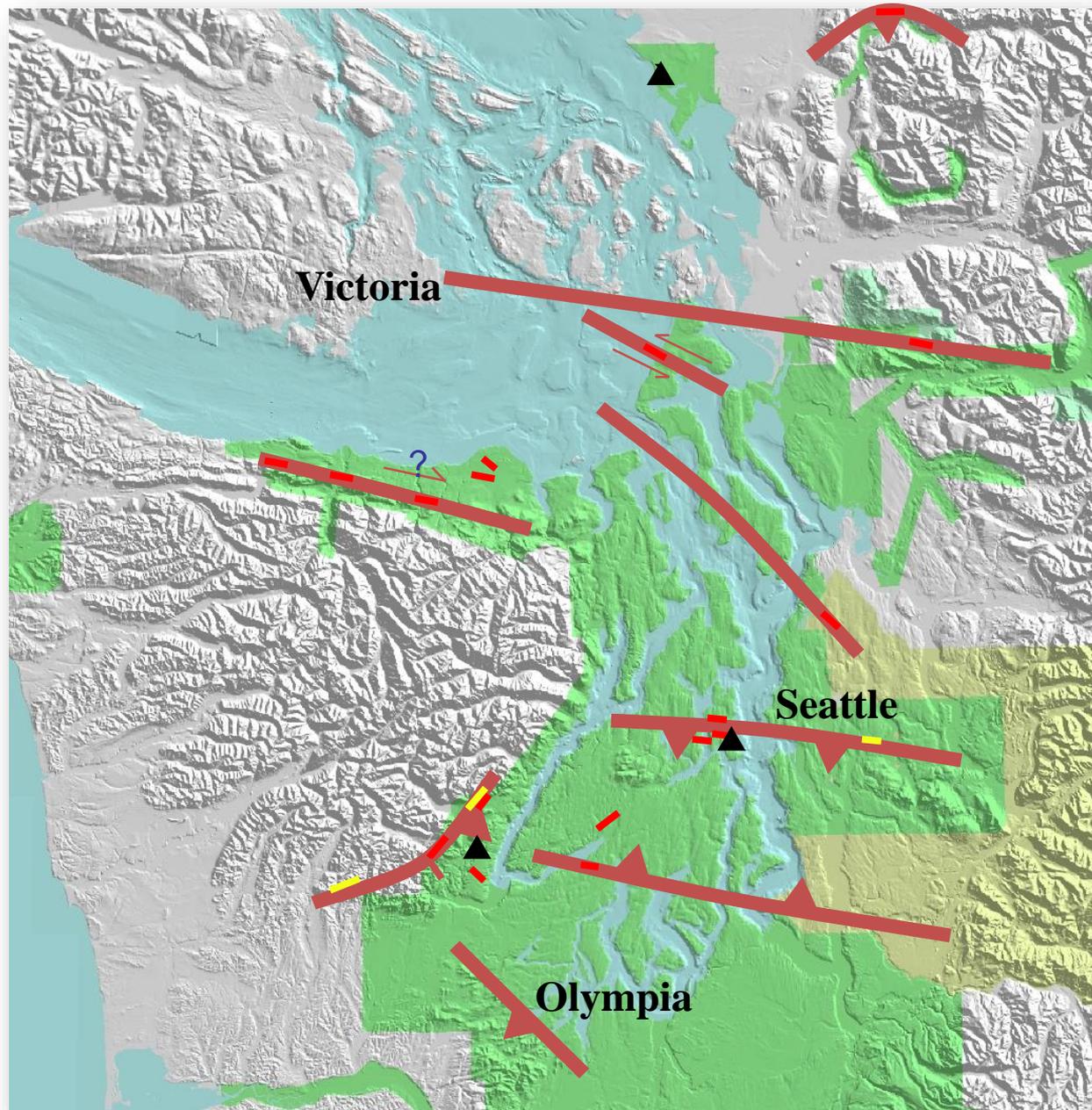


+

Hazards

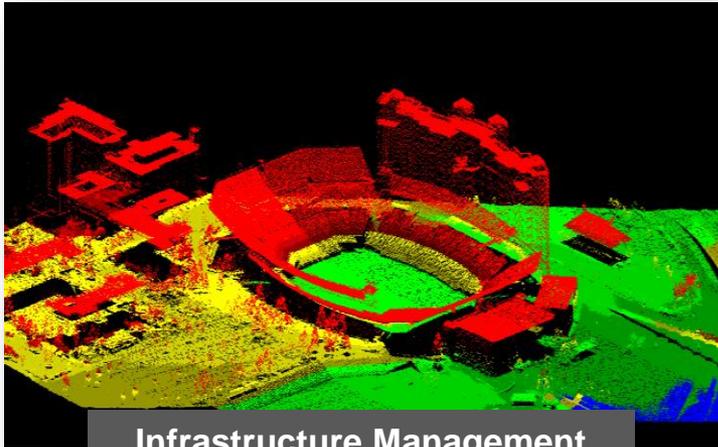
Detecting Faults

-  Scarp found with lidar
-  Scarp found other means
-  Geomorphic evidence of shoreline uplift

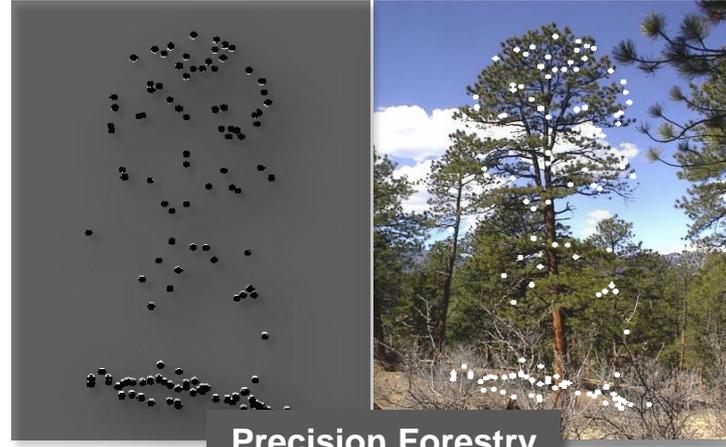


+ Advanced Applications

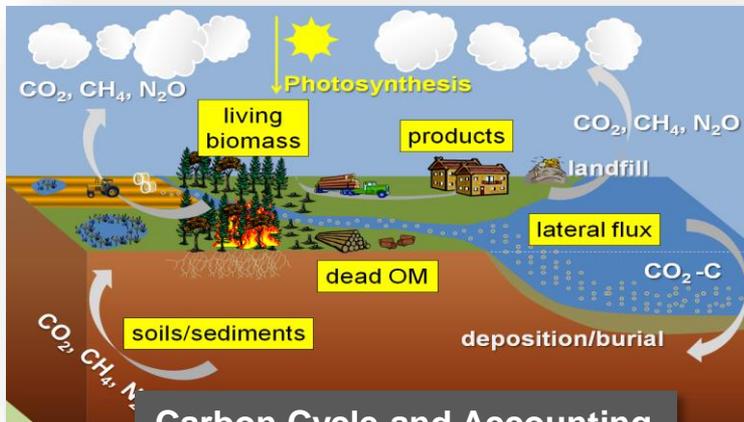
Using 3DEP and Derived Data



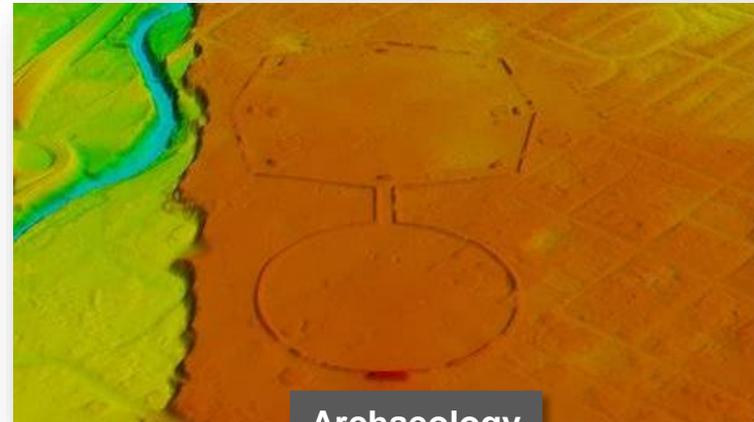
Infrastructure Management



Precision Forestry



Carbon Cycle and Accounting



Archaeology

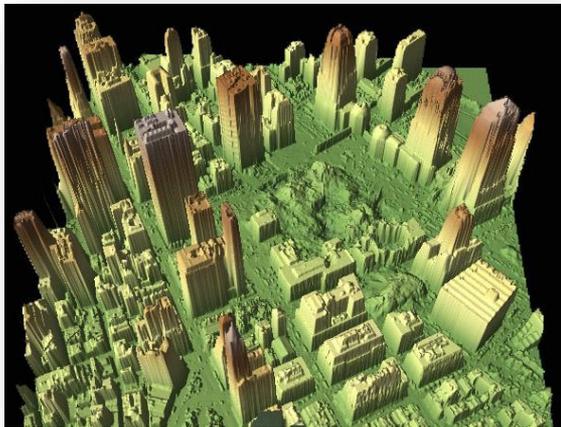
+ 3D Elevation Program (3DEP)

Applies ground-breaking lidar technology to acquire and distribute 3D data

Addresses a broad range of critical applications of national significance



- 3D data include surface elevations and natural and constructed features
- 3DEP increases the quality level of lidar being acquired to enable more accurate understanding, modeling, and prediction
- Goal to acquire national coverage in 8 years



+ What is the 3D Elevation Program?

3DEP is a call for community action to...

- Address the mission-critical requirements of 34 Federal agencies, 50 states, and a sampling of local governments, tribes, private and not-for profit organizations documented in the National Enhanced Elevation Assessment
- Increase the overall investment in 3D data from about \$45 M to \$146 M annually to return more than \$690 million annually in new benefits (ROI 5:1)
- Leverage collaboration among Federal, states, local and tribal partners to systematically complete national 3D data coverage in 8 years
- Leverage the capability of private industry mapping firms, create jobs
- Achieve a 25% cost efficiency gain by collecting data in larger projects
- Completely refresh national elevation data holdings with new lidar and ifsar elevation data products and services



Natural Resource
Conservation



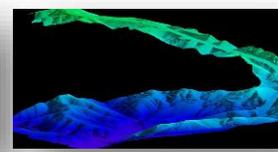
Infrastructure
Management



Flood Risk Mitigation



Precision Farming



Land Navigation
and Safety

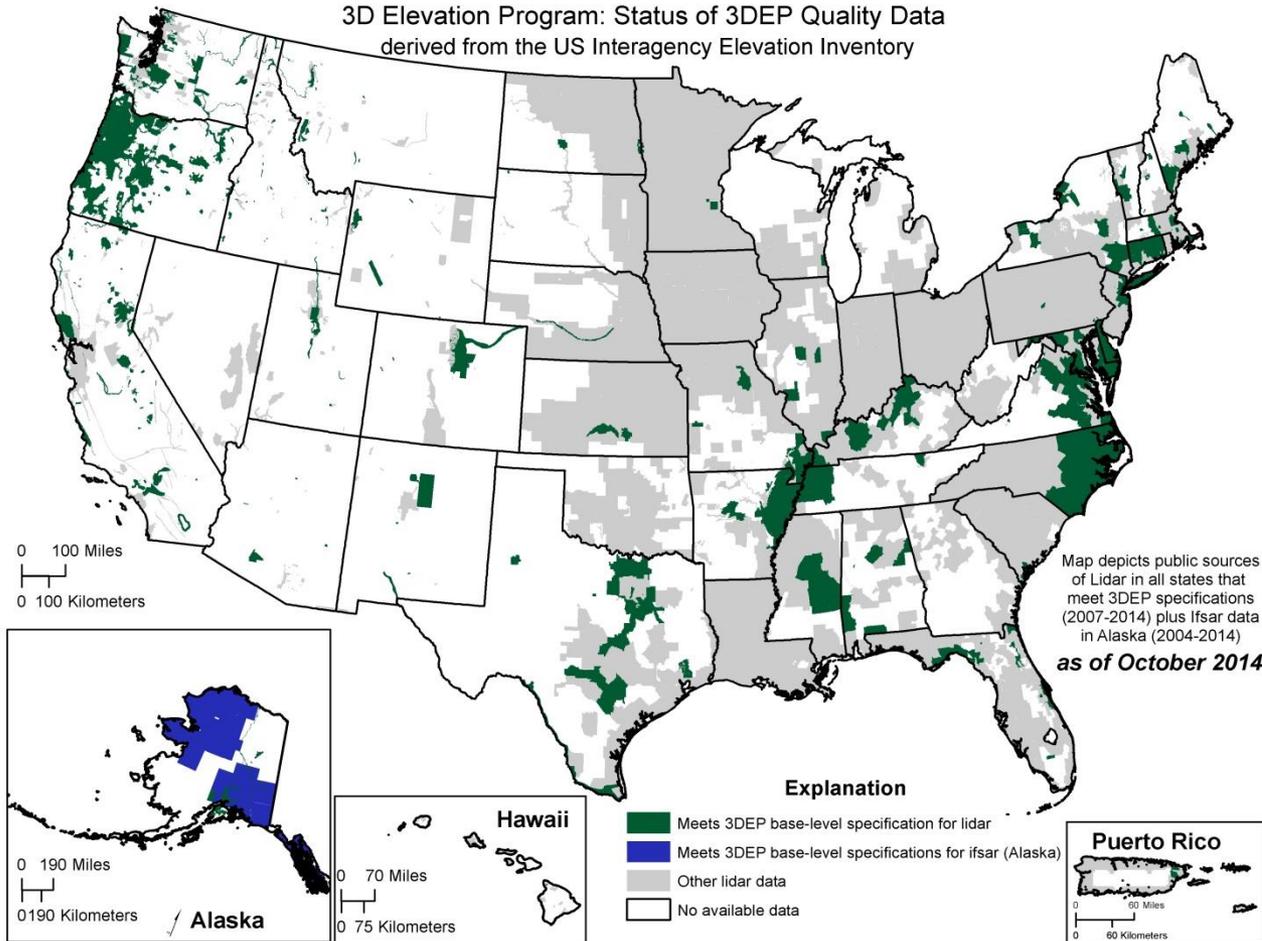


Geologic Resources and
Hazards Mitigation

+ U.S. Interagency Elevation Inventory

2014 Status Map of Publicly Available Lidar and Ifsar

3D Elevation Program: Status of 3DEP Quality Data
derived from the US Interagency Elevation Inventory



- Only 6.8% of the lower 49 states meets the 3DEP quality goal (QL2 or better) lidar coverage
- About half the State of Alaska needs ifsar data to complete the 3DEP goal for coverage

+ 3DEP 2012-2015

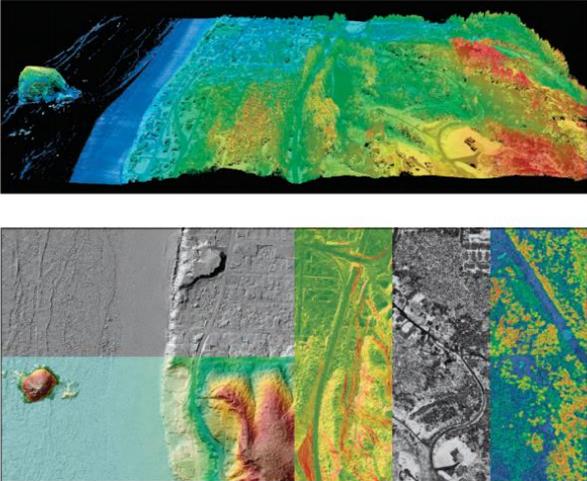
READY for a national, 8-year program

Developed 3DEP infrastructure

- Documented comprehensive requirements and benefits in the National Enhanced Elevation Assessment (NEEA)
- Designed 3DEP based on NEEA and to maximize return on investment
- Developed the NEEA inventory into the annual U.S. Interagency Elevation Inventory in partnership with NOAA and others
- Published plan for action based on extensive stakeholder input
- Issued the first Broad Agency Announcement in 2014, with funding partnerships with FEMA and NRCS

USGS
science for a changing world

The 3D Elevation Program Initiative—A Call for Action



Circular 1399

U.S. Department of the Interior
U.S. Geological Survey

United States Interagency Elevation Inventory
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION | U.S. GEOLOGICAL SURVEY | FEDERAL EMERGENCY MANAGEMENT AGENCY

USGS
science for a changing world

FEMA

Select State:

Select County:

Data Type

- Topographic Lidar
- Topobathy Shoreline Lidar
- IF SAR Data
- Bathymetric Lidar
- NOAA Hydrographic Surveys

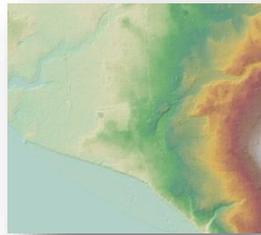
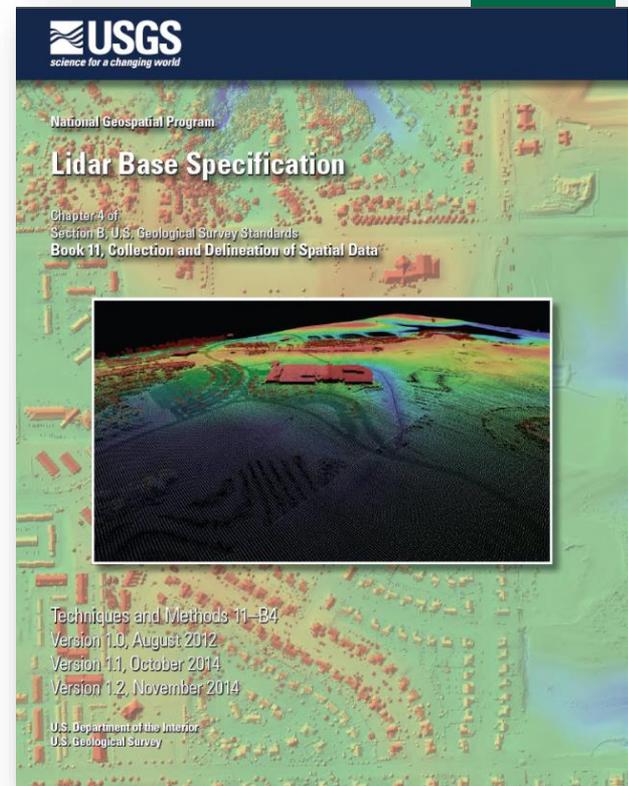


+ 3DEP 2012-2015

READY for a national, 8-year program

Developed 3DEP infrastructure

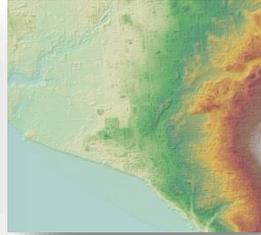
- Consolidated and modernized IT systems, ready to initiate first phase of cloud implementation
- GPSC3 to be in place in FY15 to address increased data volume
- Revised the base lidar specification to include 3DEP quality levels
- New products and services being made available in 2015 from *The National Map*



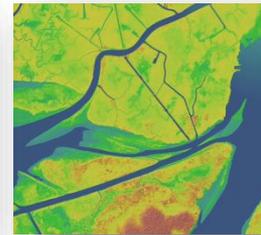
5 meter Alaska DEMs



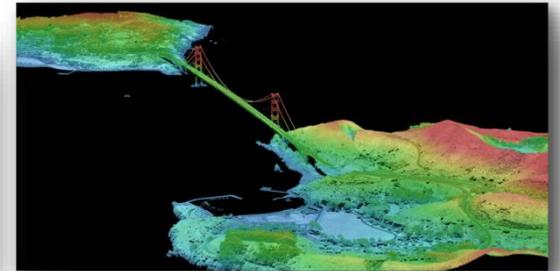
Alaska Ifsar ORIs



Alaska Ifsar DSMs



1 meter DEMs



Lidar Point Cloud



+ 3DEP 2012-2015

READY for a national, 8-year program

Leadership, Coordination, and Outreach

- Formed the 3DEP Executive Forum
 - Emerging Lidar Technology Federal Roundtable
- Working to align NDEP to coordinate at the operational level
- Collaborating with NOAA on A-16 co-leadership and joint messaging
- Executive outreach to key Federal agencies



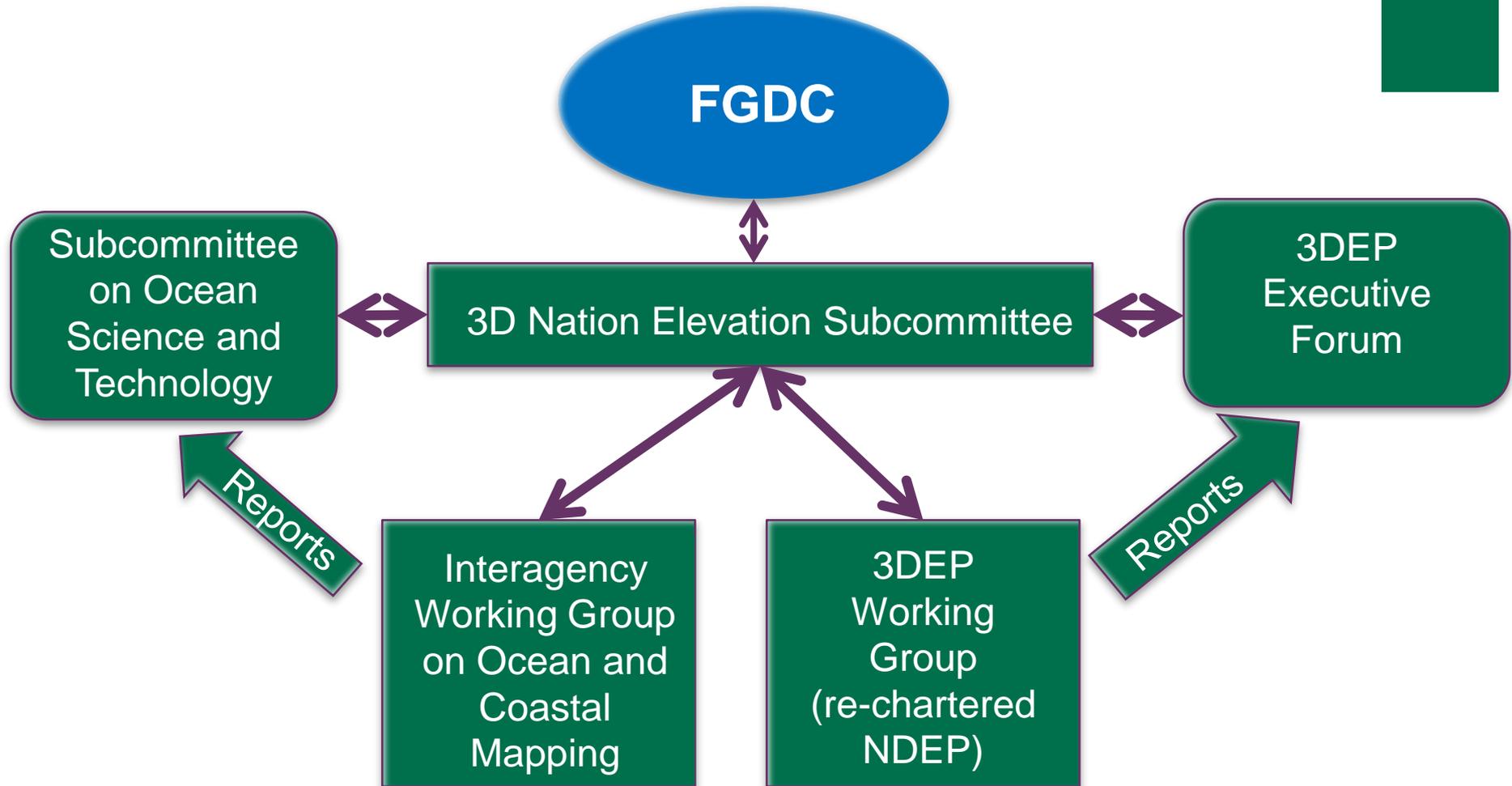
USGS Director Kimball briefing on 3DEP at the White House Conference Center

+ 3DEP Executive Forum

Governance and Executive Outreach

- **Purpose** - to facilitate executive dialog and collaboration on strategies to implement and sustain 3DEP for the benefit of all its stakeholders
- **Leadership** – USGS Associate Director for Core Science Systems, Chair
- **Objectives**
 - Monitor status, plans and coordination actions for 3DEP implementation
 - Strategize on significant developments regarding elevation or related geospatial activities, for example, legislation, GAO studies, supplemental funding, etc.
 - Share insights and develop strategies to communicate with industry and other stakeholder groups that could play a role in 3DEP funding
 - Provide executive direction and input to NDEP as the operational coordinating body
- **Membership**
 - FEMA
 - NASA
 - NGA
 - NOAA
 - NPS
 - NRCS
 - USACE
 - USFWS
 - USFS
 - BLM
 - DHS
 - DISDI
 - EPA
 - Others

+ Proposed Governance Structure

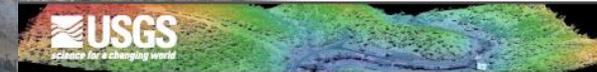
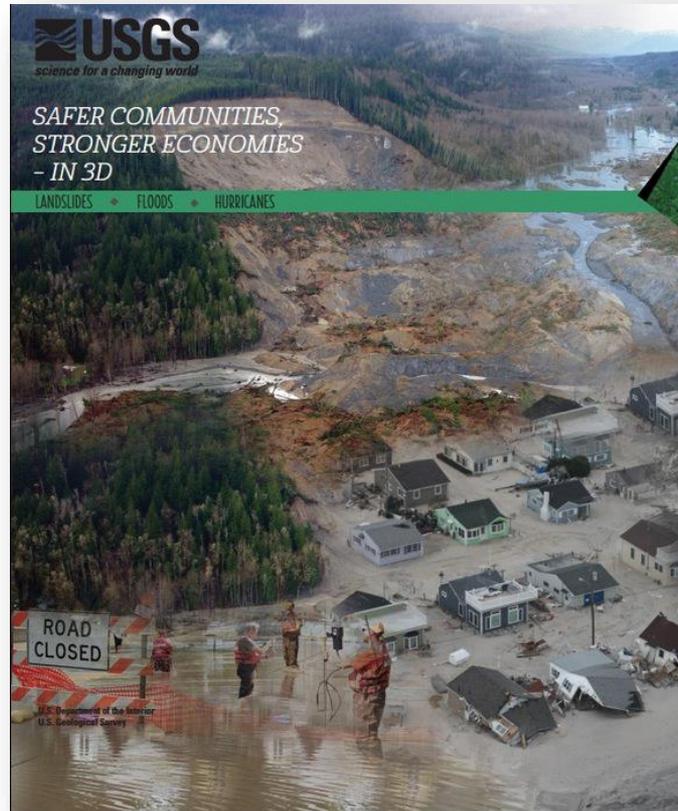


+ 3DEP 2012-2015

READY for a national, 8-year program

Leadership, Coordination, and Outreach

- Successful Congressional briefings
- State factsheets (43 available online)



The 3D Elevation Program—Summary for Ohio

Introduction

Elevation data are essential to a broad range of applications, including forest resources management, wildlife and habitat management, national security, recreation, and many others. For the State of Ohio, elevation data are critical for agriculture and precision farming, natural resources conservation, flood risk management, infrastructure and construction management, water supply and quality, and other business uses. Today, high-density light detection and ranging (Lidar) data are the primary sources for deriving elevation models and other datasets. Federal, State, Tribal, and local agencies work in partnership to (1) replace data that are older and of lower quality and (2) provide coverage where publicly accessible data do not exist. A joint goal of State and Federal partners is to acquire consistent, statewide coverage to support existing and emerging applications enabled by lidar data.

The National Enhanced Elevation Assessment (NEEA, Dewberry, 2011) evaluated multiple elevation data acquisition options to determine the optimal data quality and data replacement cycle relative to cost to meet the identified requirements of the user community. The evaluation demonstrated that lidar acquisition at quality level 2 (table 1) for the conterminous United States and quality level 5 (interferometric synthetic aperture radar (InSAR) data (table 1) for Alaska with a 6- to 10-year acquisition cycle provided the highest benefit/cost ratios. The 3D Elevation Program (3DEP) initiative (Snyder, 2012a,b) selected an 8-year acquisition cycle for the respective quality levels. 3DEP, managed by the U.S. Geological Survey (USGS), the Office of Management and Budget Circular A-16 lead agency for national elevation data, responds to the growing need for high-quality topographic data and a wide range of other 3D representations of the Nation's natural and constructed features.



Figure 1. Map of Ohio showing the extent of existing and planned publicly available lidar data. Information source is the United States Interagency Elevation Inventory, October 2014 (<http://ceat.nasa.gov/Inventory/index-3D.html>). The inventory is updated annually. No lidar data that meet 3DEP requirements for quality level 2 or better are publicly available in Ohio. See table 1 for quality level information.

3D Elevation Program Benefits for Ohio

The top 10 Ohio business uses for 3D elevation data, which are based on the estimated annual conservative benefits of the 3DEP initiative, are shown in table 2. The NEEA survey respondents in the State of Ohio estimated that the national 3DEP initiative would result in at least \$8.2 million in new benefits annually to the State. The cost for each program in Ohio is approximately \$13.8 million, resulting in a payback period of 1.7 years and a benefit/cost ratio of 4.4 to 1 over an 8-year period. Because secondary estimates were not provided for all reported benefits, the total benefits of the 3DEP in Ohio are likely much higher. On the basis of the NEEA survey results, all levels of government and many organizations in Ohio could benefit from access to statewide high-resolution elevation data.

For Ohio, approximately 88 percent of the identified business use requirements will be met in agriculture and precision farming, natural resources conservation, and flood risk management, as shown in table 3. The status of publicly available lidar data in Ohio is

3D Elevation Program

3DEP is a national program managed by the USGS to acquire high-resolution elevation data. The initiative is backed by a comprehensive assessment of requirements (Dewberry, 2011) and is in the early stages of implementation. 3DEP will improve data accuracy and provide more current data than is available in the National Elevation Dataset (NED). The goal of this high-priority cooperative program is to be operational by January 2015, and to have complete coverage of the United States by the end of 2022, depending on funding and partnerships. 3DEP can conservatively provide new benefits of \$1.2 billion/year and has the potential to generate \$13 billion/year in new benefits through improved government services, reductions in crop and homeowners losses resulting from floods, more efficient routing of vehicles, and a host of other government, corporate, and citizen activities (Dewberry, 2011). A shared, common elevation dataset would foster cooperation and improve decision-making among all levels of government and other stakeholders.

Benefits of a Funded National Program

- **Economy of scale**—Acquisition of data covering larger areas reduces costs by 25 percent.
- **A systematic plan**—Acquisition of data at a higher quality level reduces the cost of “buying up” to the highest levels needed by State and local governments.
- **Higher quality data and national coverage**—Ensure consistency for applications that span State and watershed boundaries and meet more needs, which results in increased benefits to citizens.
- **Increase in Federal agency contributions**—Reduce State and local partner contributions.
- **Acquisition assistance**—Provided through readily available contracts and published acquisition specifications.

3DEP in Ohio by the Numbers

Expected annual benefits	\$8.20 million
Estimated total cost	\$13.78 million
Payback	1.7 years
Quality level 1 buy-up estimate	\$8.77 million

U.S. Department of the Interior
U.S. Geological Survey

+3DEP 2012-2015

READY for a national, 8-year program

Reports, Recommendations, and Announcements

“Establish and maintain a national program to standardize the regular collection of nationwide, high-resolution, three-dimensional data for surface modeling and volumetric analysis for multiple requirements (e.g., airborne light detection and ranging or LIDAR).” *p. 18*



Peter Colohan, OSTP, briefing on the significance of lidar in the National Plan

NATIONAL PLAN FOR CIVIL EARTH OBSERVATIONS

PRODUCT OF THE
National Science and Technology Council
Executive Office of the President



July 2014

+ 3DEP 2012-2015

READY for a national, 8-year program

Reports, Recommendations, and Announcements

- **NAPA Report Recommendation 15:** “The Office of Management and Budget should use the 3DEP implementation plan for nationwide elevation data collection to guide the development of the President’s annual budget request”
- 3DEP under discussion in the **Technical Advisory Mapping Committee (TMAC)**

A Report by a Panel of the
NATIONAL ACADEMY OF PUBLIC ADMINISTRATION
for the U.S. Congress and the Federal Emergency Management Agency



**FEMA Flood Mapping:
Enhancing Coordination to Maximize Performance**





November 2013
National Academy of
Public Administration

+3DEP 2012-2015

READY for a national, 8-year program

19

Reports, Recommendations, and Announcements



Home • **FACT SHEET: Taking Action to Support State, Local, and Tribal Leaders as They Prepare Communities for the Impacts of Climate Change**

Search WhiteHouse.gov Search

The White House
Office of the Press Secretary



For Immediate Release

July 16, 2014

FACT SHEET: Taking Action to Support State, Local, and Tribal Leaders as They Prepare Communities for the Impacts of Climate Change

Providing Federal resources to support climate preparedness:

- Developing advanced mapping data and tools. The Department of the Interior's U.S. Geological Survey and other Federal agencies today launched a \$13.1 million **3-D Elevation Program partnership** designed to bring Federal agencies, academia, corporate entities, states, tribes, and communities together to develop advanced 3-dimensional mapping data of the United States. These data and related tools will be used in the areas of flood risk management, water resource planning, mitigation of coastal erosion and storm surge impacts, and identification of landslide hazards as an essential component of supporting action on climate resilience. More information is available at <http://nationalmap.gov/3DEP/>.



or, "Choose the Easier Wrong" is your guide to 100 Pennsylvania

+

3DEP 2012-2015

READY for a national, 8-year program

Reports, Recommendations, and Announcements



+ 3DEP 2012-2015

READY for a national, 8-year program

Endorsements

Letters of endorsement and congressional support:

- American Society for Photogrammetry and Remote Sensing (ASPRS)
- Association of American State Geologists (AASG)
- Association of State Floodplain Managers (ASFPM)
- Coalition of Geospatial Organizations (COGO)
- Management Association for Private Photogrammetric Surveyors (MAPPS)
- National Geospatial Advisory Committee (NGAC)
- National Society of Professional Surveyors (NSPS)
- National States Geographic Information Council (NSGIC)

+ 3DEP 2012-2015

READY for a national, 8-year program

USGS Data Acquisition Budget

	FY14 Lidar + AK IFSAR		FY15 Lidar + AK IFSAR		FY 16 Lidar + AK IFSAR
	President's Budget	Enacted	President's Budget	Enacted	President's Budget
Increase to elevation	\$10M	\$764k	\$6M	\$5.2M	\$4.5M
Total NGP acquisition funding	\$15M	\$6.2M	\$12.2M	\$9.7 est.**	TBD
Total acquisition	NA	\$24.4M*	NA	TBD	TBD

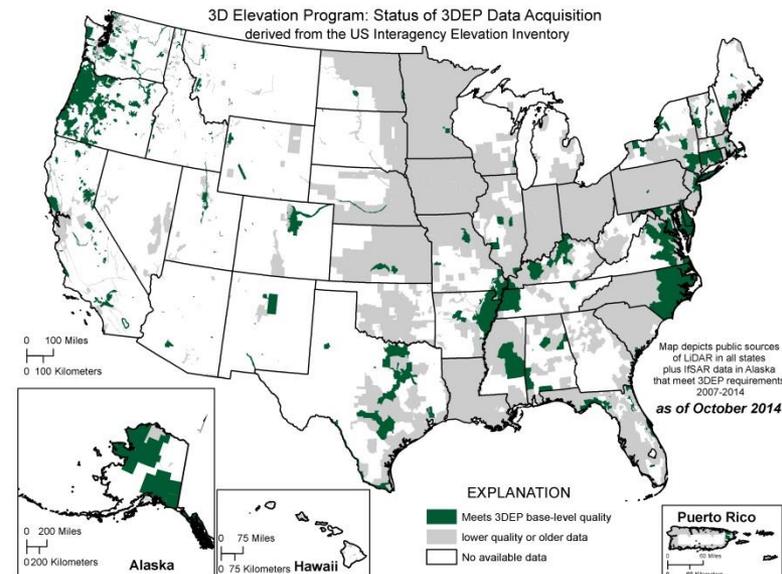
* Funding leveraged via partnerships: approx. 1:6 for lidar, 1:1.8 for AK IFSAR in FY14; additional \$4.5M Sandy Supplemental funding in FY14 not included

** Increase to 3DEP is redirected NGP funding, NGP overall budget is approximately \$2M reduced from FY14

+ 3DEP 2015-2018

Call for ACTION!

- We are ready to increase throughput to reach a steady-state operational status
- Today, an annual average of around \$45M is invested in lidar and ifsar data, and our FY14 inventory shows that only 6.8% of the lower 49 States has lidar data that meet 3DEP quality levels
- An approximate total of \$146M among 3DEP stakeholders is needed annually to implement the national, 8-year program
 - Would result in a nearly 5:1 ROI, save lives, and improve our environment through informed decisions
 - Presents a unique opportunity for collaboration between all levels of government, to leverage the services and expertise of private sector mapping firms that acquire the data, and to create jobs
- **The 2015-2018 “3DEP Call for Action” is to build the investment needed to establish a steady state program for a nationwide elevation program**



+ 3DEP 2015-2018

Call for ACTION!

- To move from the opportunistic, patchwork approach that is enforced by current funding levels, investments must increase among USGS, Federal and other partners
- To reach a viable, fully systematic 8-year program, recommend USGS provide half of the costshare
- To move away from the opportunistic approach, recommend USGS provide **a minimum of 1/3 of the cost share** – numbers below are rough estimates subject to refinement and do NOT include AK lfsar
- Need feedback and input

PRELIMINARY - Numbers to be refined

	USGS Annual 33% Share	Other Feds Annual 33% Total Share	State/Local/Other Annual 33% Total Share	Annual Total
QL2 - 2026 12 years	\$25M -\$6.5M est. base = \$18.5M GAP	\$25M	\$25M	\$76M
QL2 - 2022 8 years	\$38M -\$6.5M est. base = \$31.5M GAP	\$38M	\$38M	\$113M



Broad Agency Announcement (BAA)

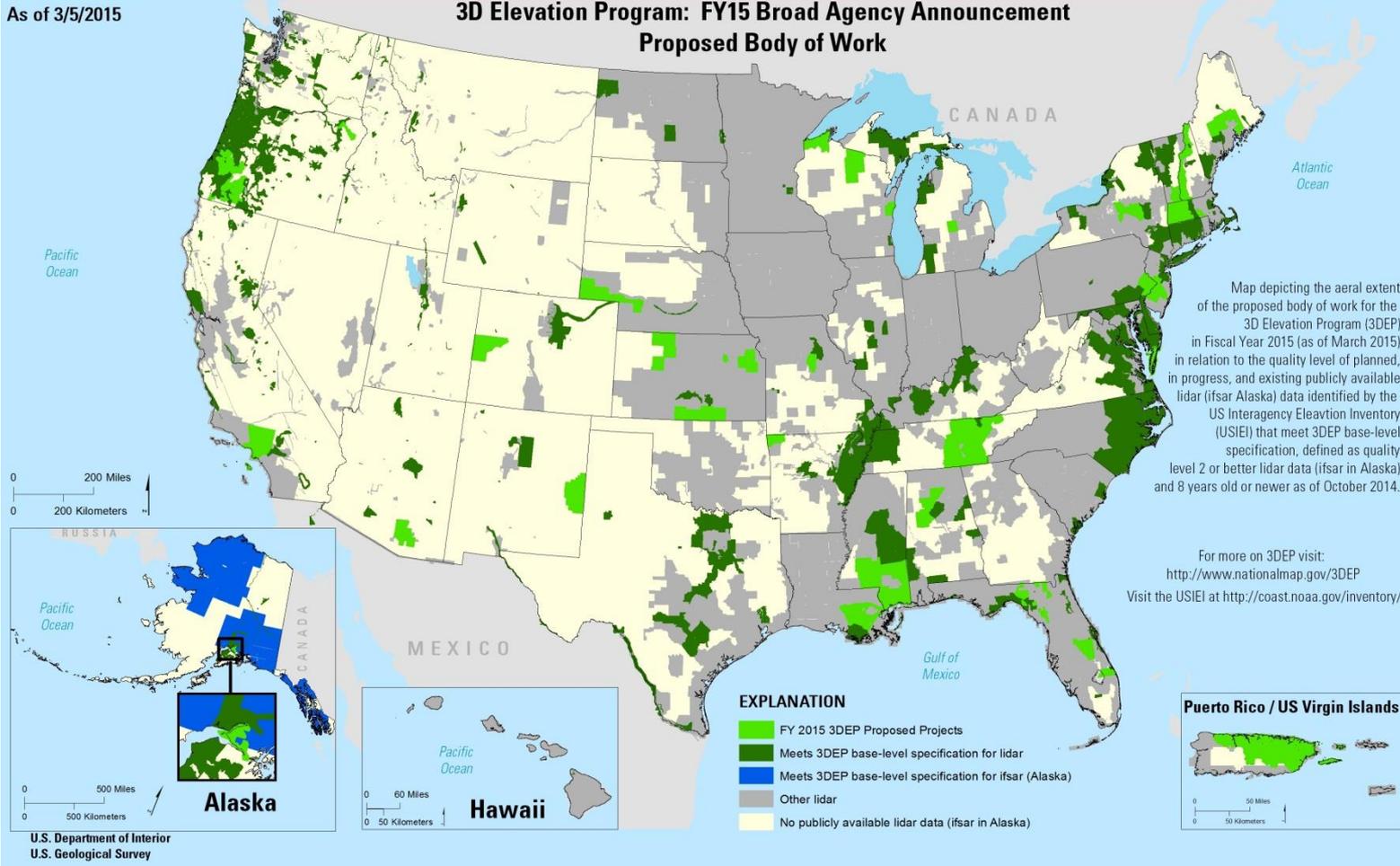
Background

- As follow-up to the President's announcement, the USGS issued a BAA via FedBizOps that provides information on how to partner with the USGS and other Federal agencies to acquire 3D elevation data
- Designed to provide increased visibility and opportunity to the broadest stakeholder community possible - Federal agencies, state and local governments, tribes, academic institutions and the private sector are eligible to submit proposals
- Establish a standard, fair and equitable competitive process that can easily be expanded to account for future growth in the 3D Elevation Program
- To ensure data quality and efficient development of standard products and services, the USGS prefers that partners use the GPSC when possible and practical; proposals may use GPSC or partner contracts; in both cases 3DEP makes use of the commercial sector to do the acquisition
- A means to recognize, aggregate and inspire collaborative funding partnerships in support of multi-agency lidar data acquisition requirements



As of 3/5/2015

3D Elevation Program: FY15 Broad Agency Announcement Proposed Body of Work

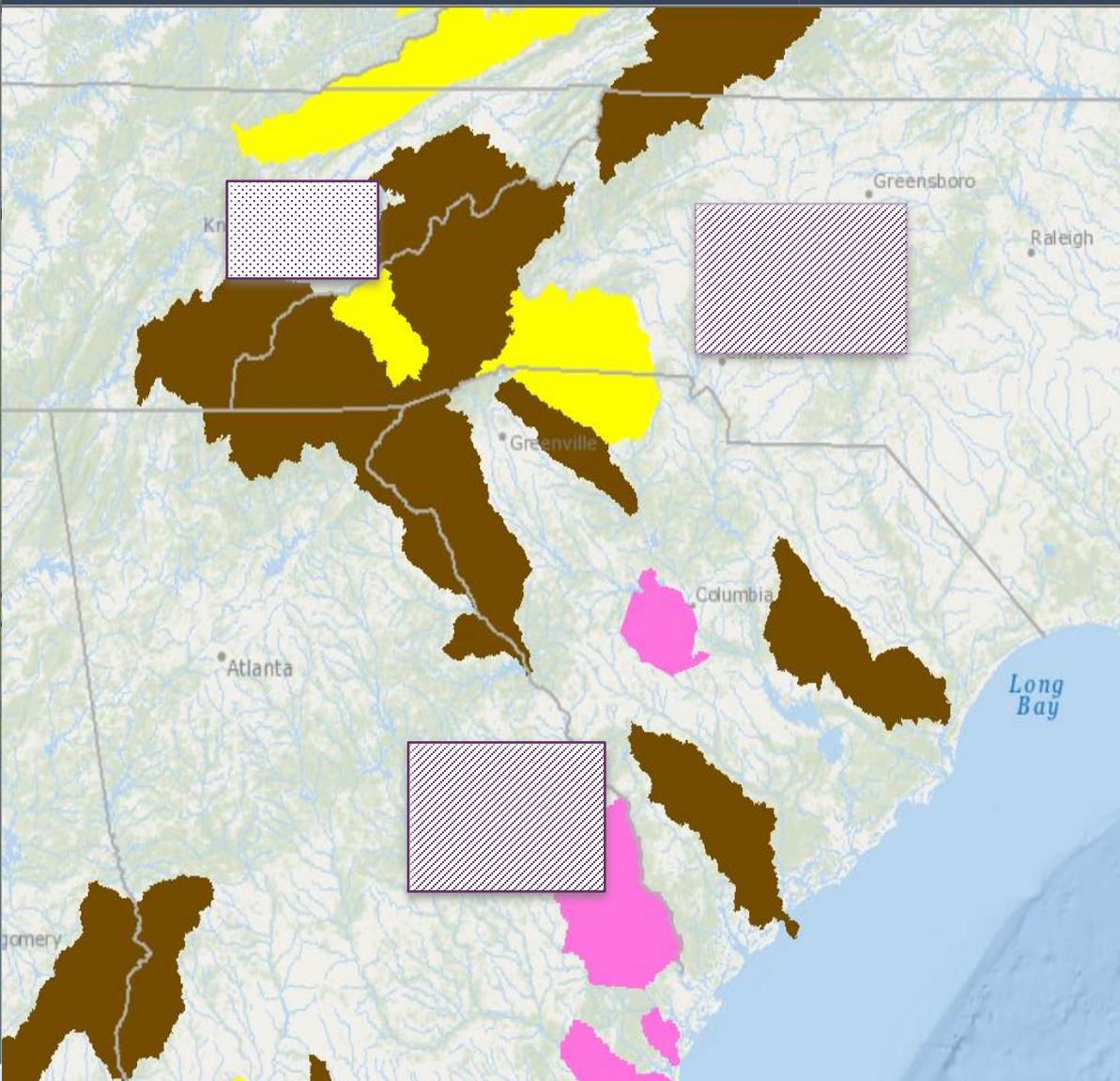


- 72 pre-proposals submitted, requested funds over \$50M, 29 were funded
- Total estimated committed = \$9.8M, with a total estimated value of \$26.5M (estimates will be refined)
- The \$9.8M is comprised of USGS, FEMA and NRCS funds
- The average cost share is 36% (offerors are covering an average of 64%)
- Total square miles is estimated at 94,114, with average project size of 3,245 sq mi
- Additional selections may follow with remaining funding as project estimates are refined and FY15 funding is clarified

+ Broad Agency Announcement (BAA)

Lessons

- Competitive grant structure resulted in changes to the liaison role in developing partnerships and forming projects
 - Contracting structure requires that all information be publicly accessible for liaisons to facilitate coordination between stakeholders
- FedBizOpps is publicly available but not user friendly – need to augment our approach to making the process transparent
- Other Federal agencies benefit from the process
 - FEMA and NRCS have some needs met through the BAA and are holding back funding to meet specific requirements outside of the BAA
 - Need more Federal participation, including more robust requirements gathering
- Need a pathway for other stakeholders to make requirements known



Data Layers

[My Plans](#)

[Participate](#)

[Data Layers](#)

[Basemap](#)

[Legend & Ordering](#)

Proposed Lidar Projects

> Federal 3DEP Priority Areas – Data Layers Group

- NRCS Lidar Priorities
- BLM Lidar Priorities
- USGS Lidar Priorities
- NOAA Lidar Priorities
- FEMA Lidar Priorities
- USACE Lidar Priorities
- NGA Lidar Priorities
- NASA Lidar Priorities
- USFWS Lidar Priorities
- Other Federal Lidar Priorities
- Consolidated
 - High Priority
 - Priority

> Potential 3DEP projects [State, Local, Other]

> Current Year State Priorities

- Connecticut
- Massachusetts
- New York
- New Jersey

[Planned and Ongoing Lidar Projects](#)

[Planned and Proposed Bathymetric Mapping Projects](#)

[Other data / project types](#)

[National Coastal Mapping Strategy 8 year plan](#)

+ Next 3DEP BAA Cycle

Proposed steps and timeline

- Make Federal requirements publicly accessible – May 1
- Make the requirements tool (adapted from SeaSketch) publicly available for non-Federal stakeholders to input their requirements – May 1
- May – June - USGS Liaisons and Stakeholders coordinate public meetings to discuss potential partnerships
 - Meetings will be in-person with remote participation available
 - Participation by regional/field/state Federal offices will greatly enhance the effectiveness
 - Details on who would organize these meetings, how many there would be, etc. are under development
- Open the next BAA July 2015, awards in early FY16

+ Next 3DEP BAA Cycle

Make BAA More Accessible and Transparent

- Geospatial Platform as “Homebase” for Data Acquisition via the Elevation Community
- BAA process and timelines
- Publish requirements, allow ongoing updates
- Access to US Interagency Elevation Inventory
- Data Acquisition as a Service

The screenshot displays the GEOPLATFORM.gov website, specifically the NGDA Elevation Theme Community page. The browser address bar shows the URL <http://www.geoplatform.gov>. The website header includes the GEOPLATFORM.gov logo, the Federal Geographic Data Committee (fgdc) logo, and a search bar. The navigation menu includes links for Overview, Data, Maps, Communities/Agencies, Resources, Marketplace, and Dashboards. The main content area is titled "NGDA Elevation Theme Community" and features several sections:

- ELEVATION THEME**: A section with a dark background containing text about theme lead agencies (National Oceanic and Atmospheric Administration (NOAA), United States Geological Survey (USGS)) and theme leads (Ashley Chappell (NOAA), Diane Eldridge (USGS)).
- Requirements Portal**: A map interface showing a coastal area with various data layers and a legend. The legend includes items like "Name Protected Area Boundaries - NERRS, NMS, NHP, State", "Federal Priority Needs Requirements", "State Priority Needs Requirements", "Wade", "Underway FY15 Preliminary FY15 Plans for Discussion", "NOAA Digital Imagery Area Photo 2014 (DAGPDS)", "NOAA DSD (Digital Shoreline Data) Development Area", "BOEM 2014 Hawaii Interest Area", "Topo/Bathy Data Link", and "Acoustic/Bathymetry Survey".
- Inventory**: A map of the United States with a data type selection panel on the left. The panel includes options for "Topographic Lidar", "Topobathy Shoreline Lidar", "ISAR Data", "Bathymetric Lidar", and "NOAA Hydrographic Surveys".
- Data Acquisition as a Service**: A sidebar with contact information, including the email geoplatform@fgdc.gov and a note to "register or login in order to access this community".
- BAA Info**: A map of a coastal area with a red box highlighting the text "BAA Info".

The bottom of the page shows the "3DEP Committee" and "Standards, Part 5" sections.

+ Emerging Lidar Technology

Emerging 3D Technologies Working Group (E3D-WG)

E3D-WG will be established under the re-chartered NDEP as an unclassified forum for building collaboration between Federal Civilian and Defense agencies to explore the utility of emerging 3D technologies for future use in 3DEP

Draft Objectives

- Provide an unclassified forum for Defense and Civilian communities to learn from each other others' activities
- Assist Federal Civilian agencies in obtaining and testing data.
- Define and agree to a process and/or maturity level scale that will help determine when the data are useable in 3DEP
- Publish a report documenting the E3D-WG analysis of and additional steps required to incorporate appropriate emerging technologies into 3DEP
- **Collaborate and coordinate with industry groups such as ASPRS and MAPPS to leverage their capabilities, networks and goals for advancing lidar technology**

+ 3DEP Stakeholder Meeting

April 15, 1-5 at *The National Surveying, Mapping and Geospatial Conference*

- Purpose - to provide a status report to our primary Stakeholders and discuss strategies, challenges and opportunities to fully implement 3DEP in collaboration
- Stakeholders
 - 3DEP Executive Forum
 - American Society for Photogrammetry and Remote Sensing (ASPRS)
 - Association of American State Geologists (AASG)
 - Association of State Floodplain Managers (ASFPM)
 - Coalition of Geospatial Organizations (COGO)
 - Management Association for Private Photogrammetric Surveyors (MAPPS)
 - National Geospatial Advisory Committee (NGAC)
 - National Society of Professional Surveyors (NSPS)
 - National States Geographic Information Council (NSGIC)

+ Budget Cross Cut

3DEP Executive Forum

- OMB is required to submit a budget cross cut to Congress annually for flood risk determination data and digital elevation data, as required under Biggert-Waters legislation
- Proposed near-term approach to improve data
 - Develop consistent language about 3DEP as a joint mechanism for aligning federal, state and local investments in elevation data and coordinating across agencies
 - Add a row for agencies to investment via 3DEP: maintains baseline but highlights that elevation spending is coordinated across the Federal agencies and the 3DEP is helping to build a coordinated national approach
- Longer-term approach – further refine reporting approach, take into account FGDC work to define investments

+ NGAC Study Questions

Summary

■ NAPA Report Recommendation

Recommendation 15: The Office of Management and Budget should use the 3DEP implementation plan for nationwide elevation data collection to guide the development of the President's annual budget request.

Though there is conceptual support for 3DEP among several Federal agencies, coordination across budgets remains a challenge to unifying data acquisition investments into a single, collaboratively funded program. What advice and/or recommendations does the NGAC have for advancing the NAPA recommendation?

■ 3DEP Data Acquisition Coordination

Given the new approach, what advice and/or recommendations does NGAC have for improving coordination and communication on 3DEP partnerships among community stakeholders?

■ Emerging Lidar Technology

What advice and/or recommendations does NGAC have for further enhancing the coordination and outreach, and for commercializing these technologies?

+ Thank you!

