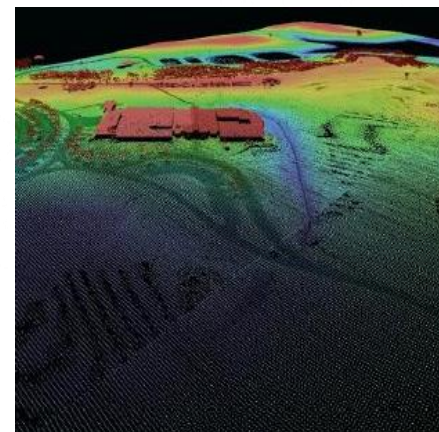
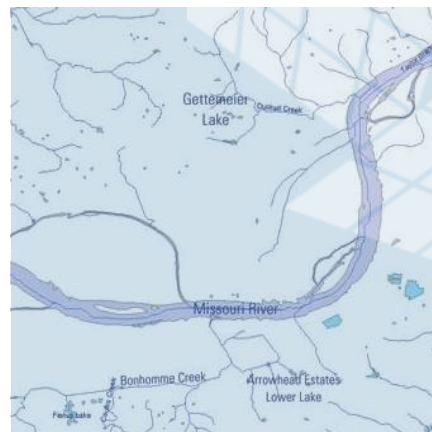
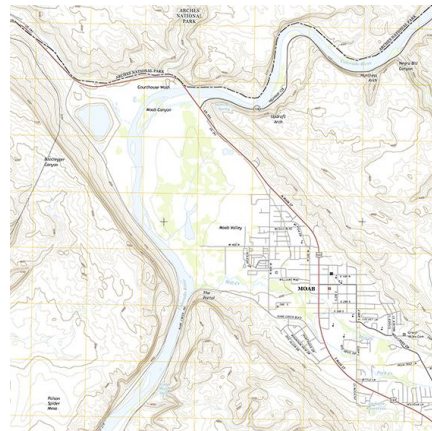




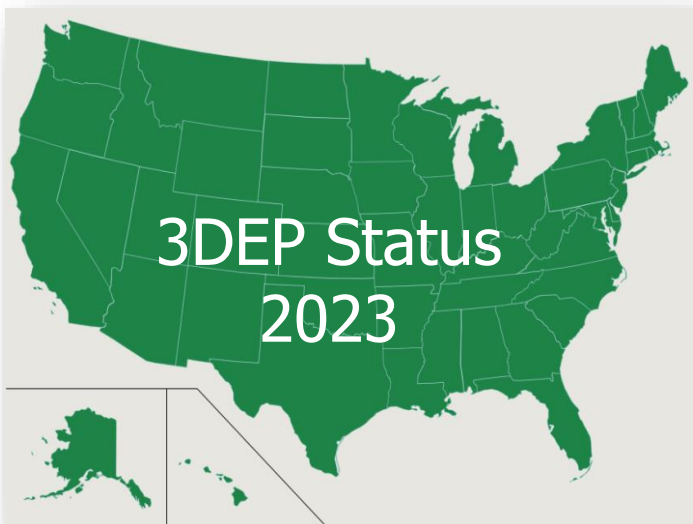
# 3DEP Update and Collaborative Partnerships



Vicki Lukas  
September 5, 2018

# + 3D Elevation Program (3DEP) Goals

- Complete acquisition of nationwide lidar (IfSAR in AK) in 8 years
- Address Federal, state and other mission-critical requirements
- Realize ROI 5:1 and potential to generate \$13 billion/year
- Leverage the capability and capacity of private mapping firms
- Achieve a 25% cost efficiency gain
- Completely refresh national data holdings



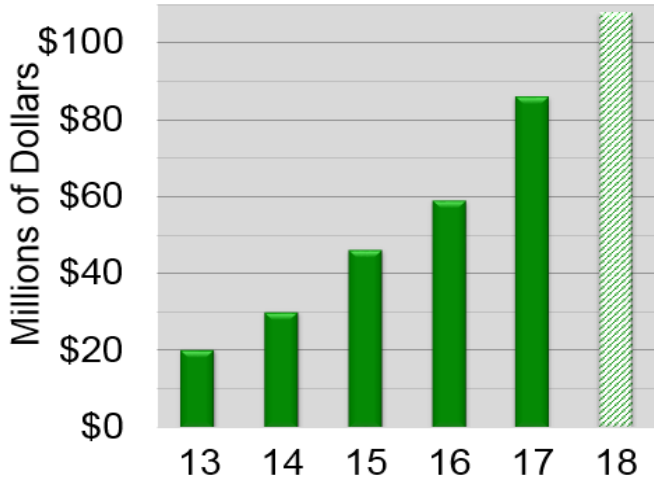
Rank	Business Use	Annual Benefits	
		Conservative	Potential
1	Flood Risk Management	\$295M	\$502M
2	Infrastructure and Construction Management	\$206M	\$942M
3	Natural Resources Conservation	\$159M	\$335M
4	Agriculture and Precision Farming	\$122M	\$2,011M
5	Water Supply and Quality	\$85M	\$156M
6	Wildfire Management, Planning and Response	\$76M	\$159M
7	Geologic Resource Assessment and Hazard Mitigation	\$52M	\$1,067M
8	Forest Resources Management	\$44M	\$62M
9	River and Stream Resource Management	\$38M	\$87M
10	Aviation Navigation and Safety	\$35M	\$56M
:			
20	Land Navigation and Safety	\$0.2M	\$7,125M
<b>Total for all Business Uses (1 – 27)</b>		<b>\$1.2B</b>	<b>\$13B</b>



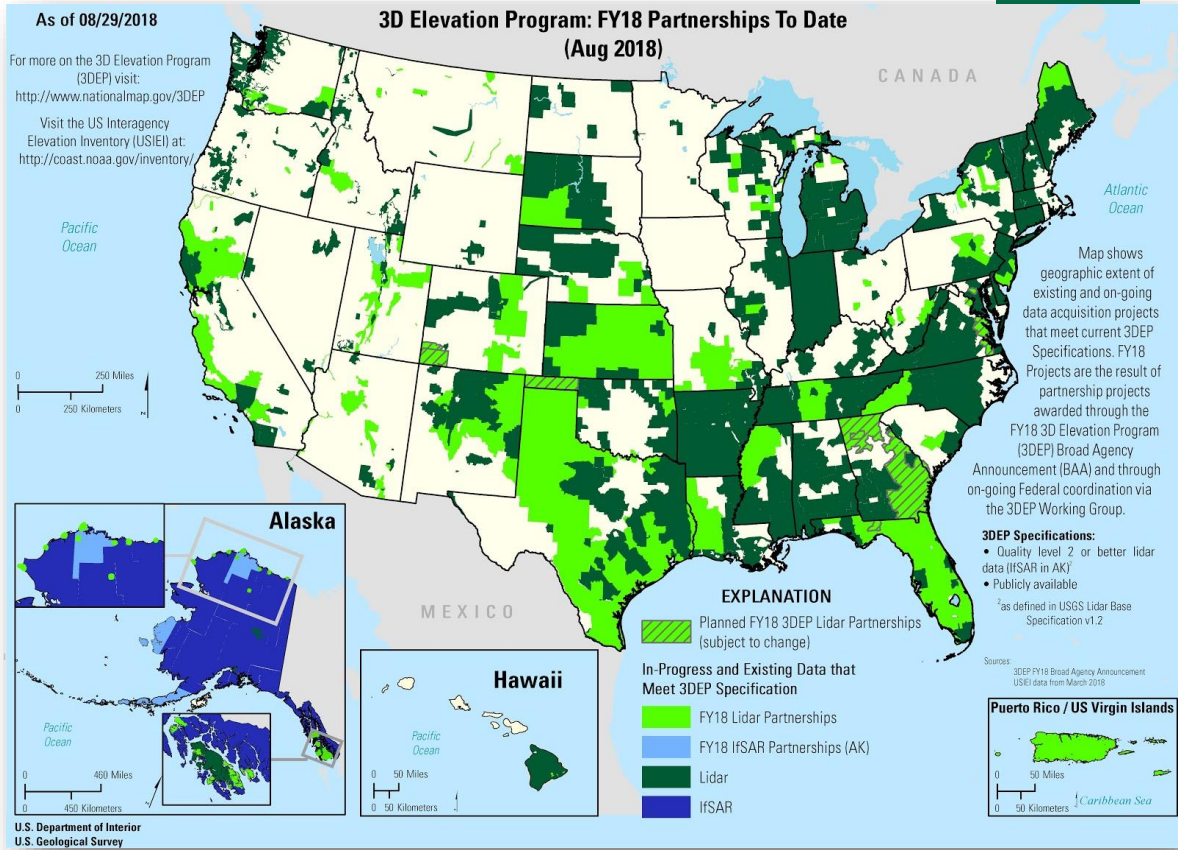
# 3D Elevation Program (3DEP)

Data are available or in progress for 48% of the Nation

\*includes lidar and AK IfSAR

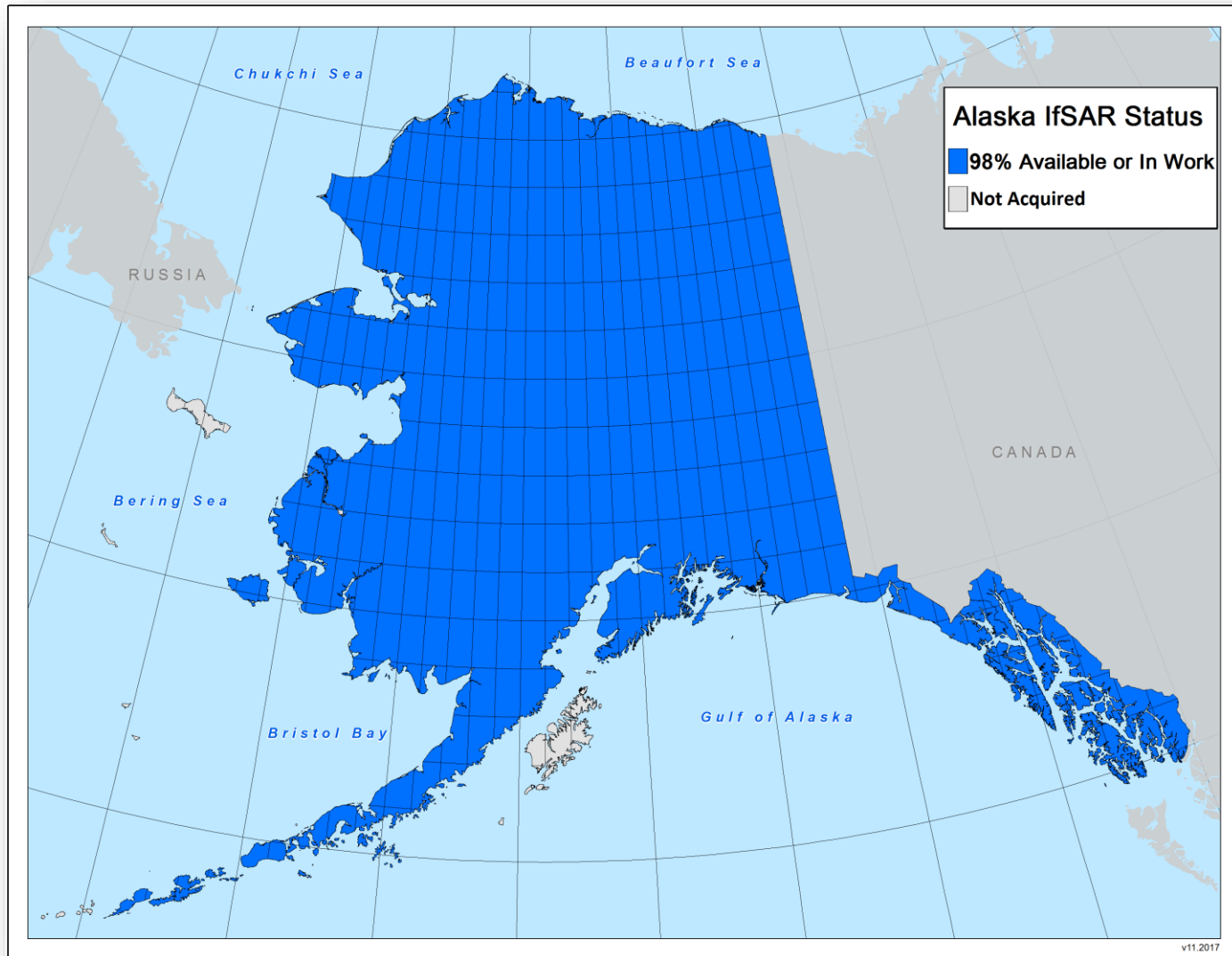


Data acquisition investments by all partners, by fiscal year - FY18 in progress



# + Alaska IfSAR Status August 2018

98% of the State available or in progress

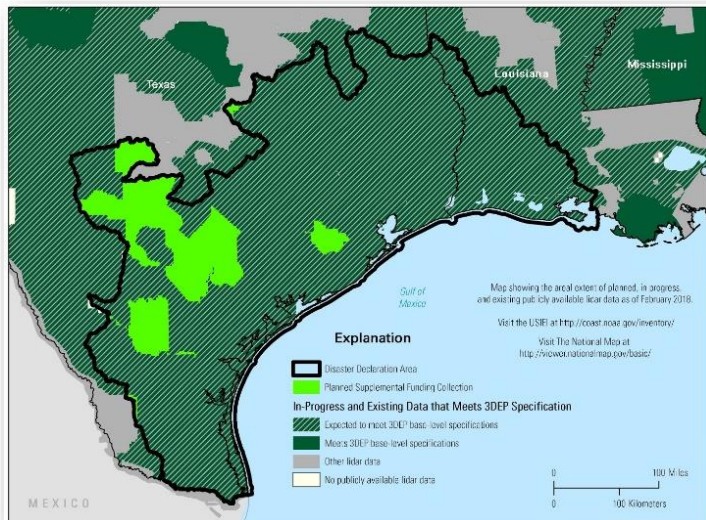




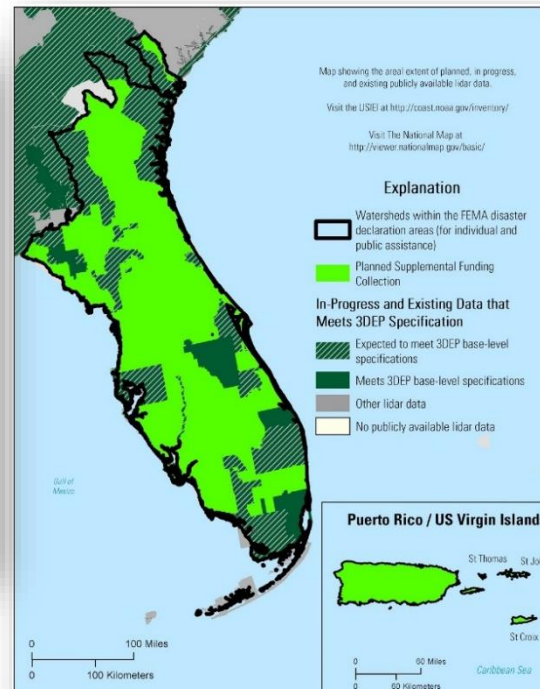
# Supplemental Funding

## 3DEP Acquisition

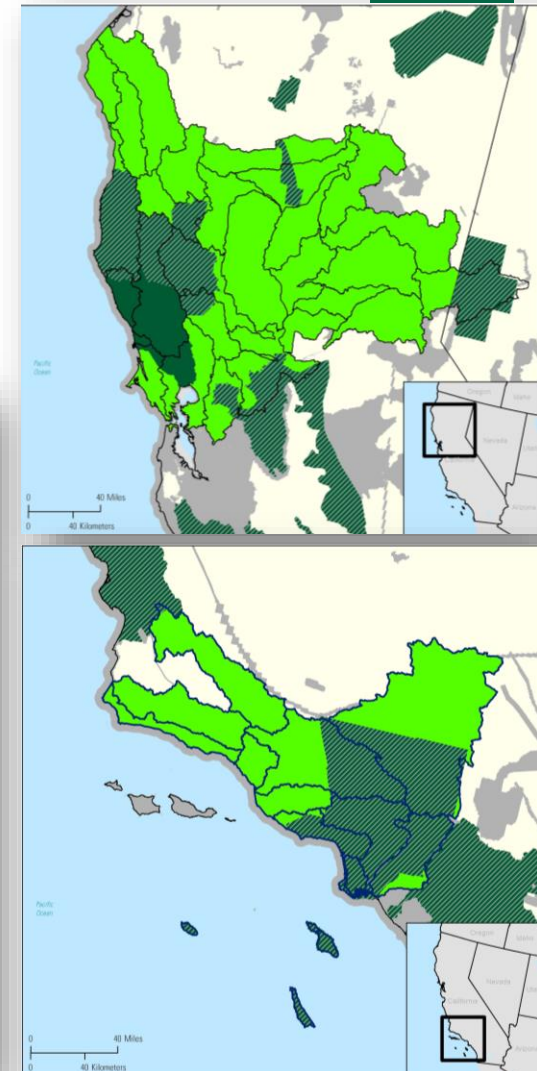
- \$20.3M supplemental funding to for lidar acquisition following last year's hurricanes and wildfires
- The 3DEP Working Group and Broad Agency Announcement (BAA) process resulted in a total of **\$28.8M in partnerships** and \$3.4M NGP funding to complete coverage of the impact and adjacent areas



Hurricane Harvey



Hurricanes Irma and Maria



California Wildfires

+

# FY19 President's Budget

(dollar amounts in thousands)	2017 Actual	2018 CR	2019 Request	Change
National Geospatial Program	67,354	66,897	50,878	-16,019

House mark: \$1.5M increase to 3DEP

Senate mark: \$1.76M increase to 3DEP



# Critical Minerals Mapping Initiative (aka 3DEEP)

- On February 16, 2018, the Secretary published a draft list of 35 minerals, deemed critical under the Executive Order
- The USGS is building on the success of 3DEP, the National Cooperative Geological Mapping Program (NCGMP), and the Mineral Resources Program (MRP) to create an integrated plan to improve the Nation's understanding of domestic subsurface critical mineral resources, and to publish resulting data
- Plan is being designed to:
  - Undertake aeromagnetic and radiometric geophysical mapping of CONUS and Alaska with data collection by the private sector
  - Expand the existing National Cooperative Geologic Mapping Program (NCGMP) that provides accurate geologic maps and 3D models
  - Accelerate 3DEP topographic mapping program with data collection by the private sector
  - Identify both Federal (BLM, USFS, etc.) and non-Federal (State and private) lands with high resource potential
  - Focus the first phase on 3 high priority expected to have high mineral potential: Alaska, Midcontinent, Western U.S.
- FY19 President's Budget: \$10.598 M/year

# + 3DEP Data Acquisition Partnerships

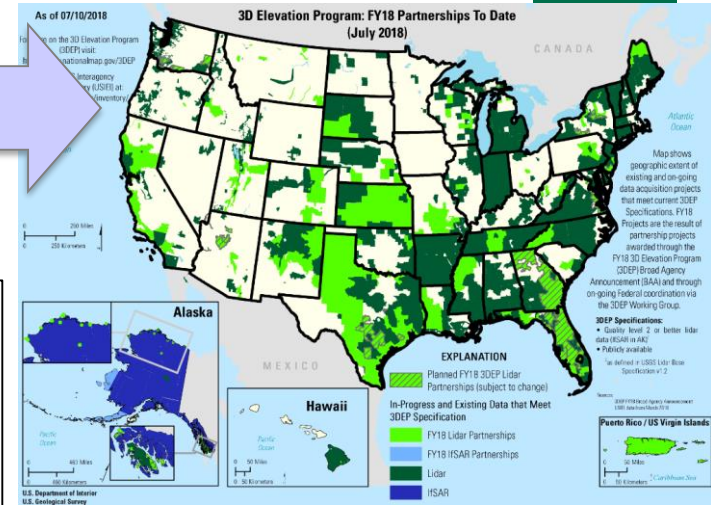
3DEP is built on partnerships

Federal Partners = 3DEP Working Group

Federal Interagency Agreements (IA)

Broad Agency Announcement (BAA)

- Fair and equitable process for non-Feds to partner with Federal Agencies
- Publicly announced
- Competitive, clear criteria
- Can include Federal Agencies
- Partners can propose to use USGS contract (GPSC) or their own contract



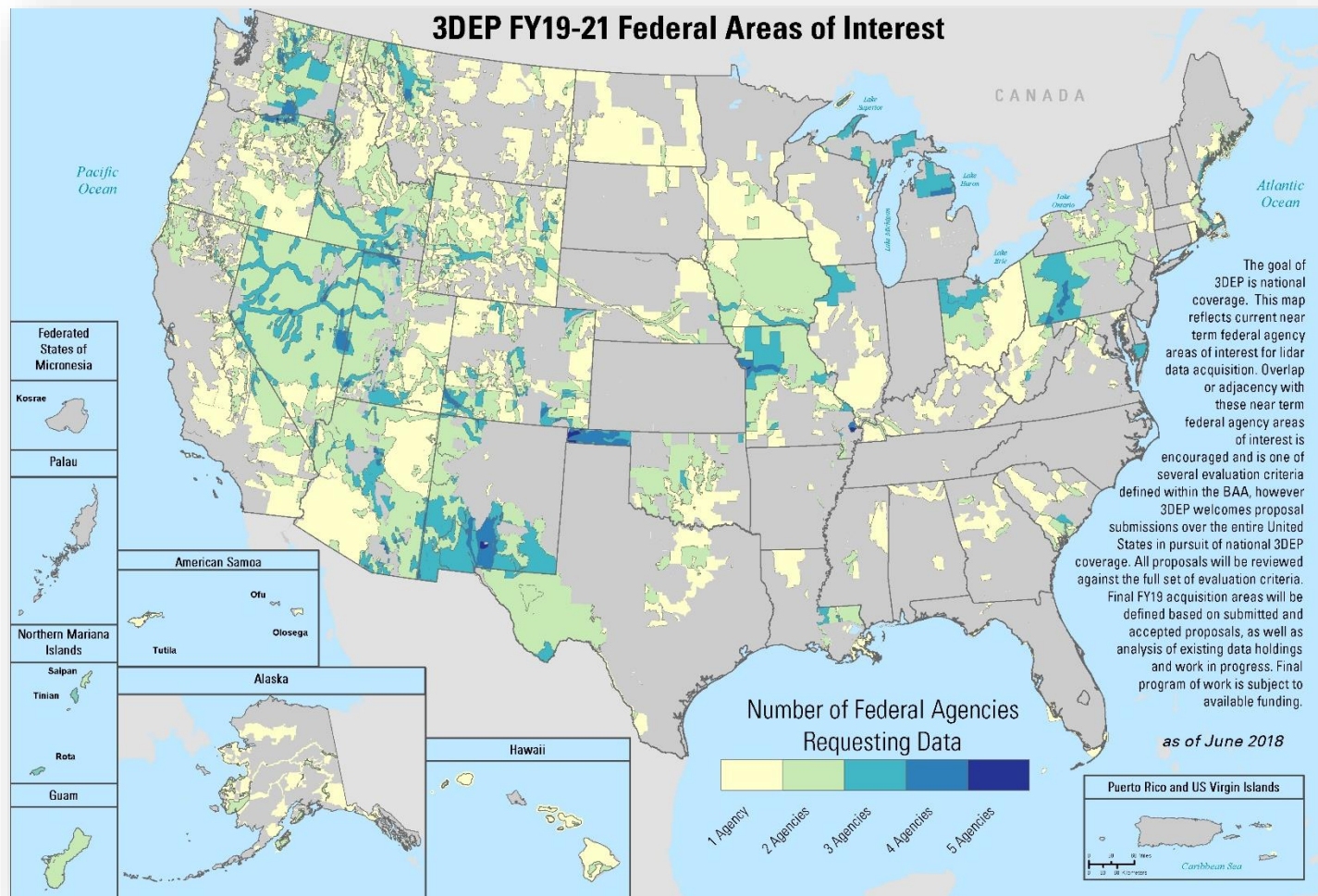
Together determine acquisition plan for the year

- FY19 BAA scheduled for release early September, 2018
- FY19 BAA Instructional Webinar August 22 - presentation with notes available
- FY19 BAA Proposals due Nov. 9, 2018 (subject to change)
- Awards issued Nov. 2018 – March 2019 based on the availability of funding



# + 3DEP Data Acquisition Partnerships

## Working toward Federal Multi-Year Plan

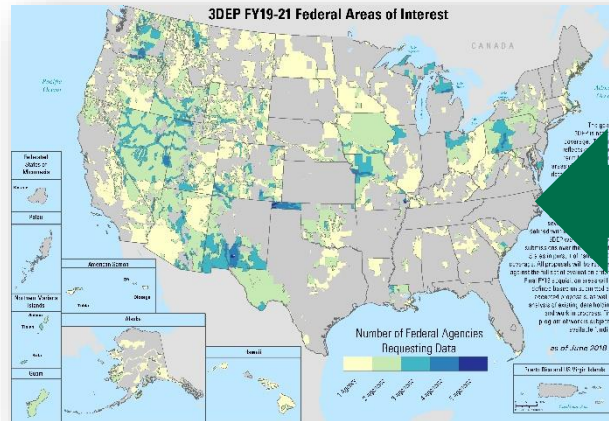


# + 3DEP Data Acquisition Partnerships

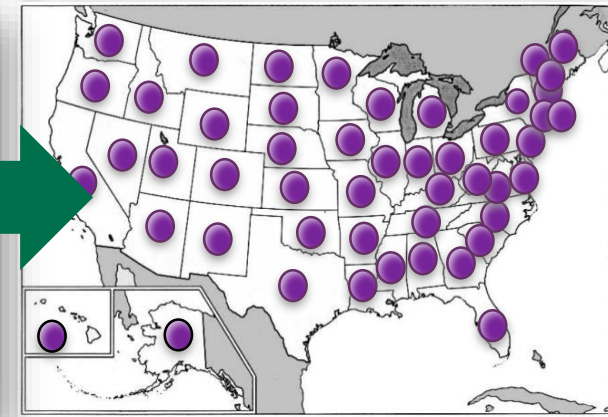
## NSGIC project to develop State 3DEP plans

- Advancing towards a unified, national multi-year plan
  - Facilitate greater investments and leveraging through longer planning lead times
  - Allows for improved reporting and justification of investments
  - Presents a plan for nationwide coverage
- 3DEP State Plans coordinated among all stakeholders are a key ingredient to multi-year planning – NSGIC project will develop
  - A guide, plan template and best practices
  - Pilots to test and refine materials

Federal Multi-Year Plan



3DEP Multi-Year State Plans



# + 3DEP Data Acquisition – The Solution

## The Challenge

**Re-marks** State Mini Puzzles Create One Giant Map!

**50** State Mini Puzzles!

**850**

Made in the USA

Each mini puzzle features a fun shaped piece!

actual size  
unibune shapes!

Map of the **USA**

# State-based 3DEP Data Acquisition Plans

## Development of *State Guide to Lidar Acquisition Planning*

### Plan Components

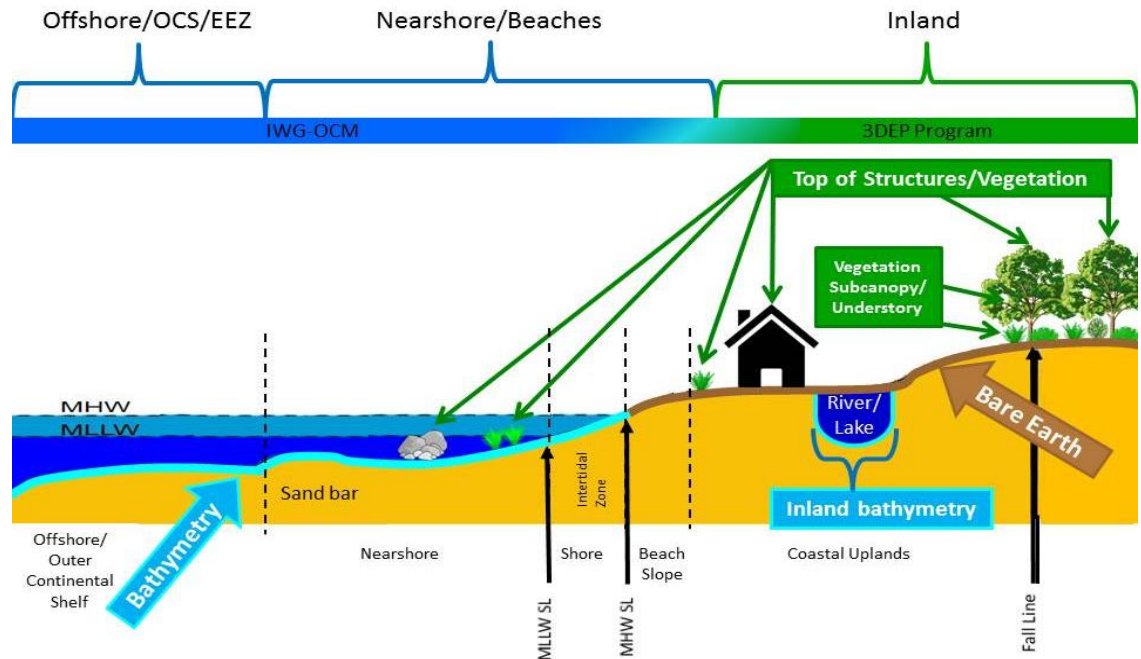
- Goals and Objectives
- Status of Lidar Collection and Holdings
- Value and Benefit of Lidar to the State
- Statewide Lidar Management and Organization
- Existing and Proposed Lidar Application Issues
- Adherence to Technical Standards
- Lidar Products to Be Acquired and Generated
- Resource Requirements
- Implementation Schedule
- Budget Planning and Projections



# + 3DEP Future Acquisition Partnerships

## 3D Nation Elevation Requirements and Benefits Study

- Understand inland, nearshore and offshore bathymetric data requirements and benefits
- Understand how requirements and benefits dovetail in the nearshore coastal zone
- Plan for the next round of 3DEP after completion of nationwide coverage
- Gather technology-agnostic user information to be able to assess new technologies against requirements and identify the tradeoffs between different approaches
- Improve our understanding of needs to guide development of the next generation of 3DEP products and services



# + 3DEP Partnerships

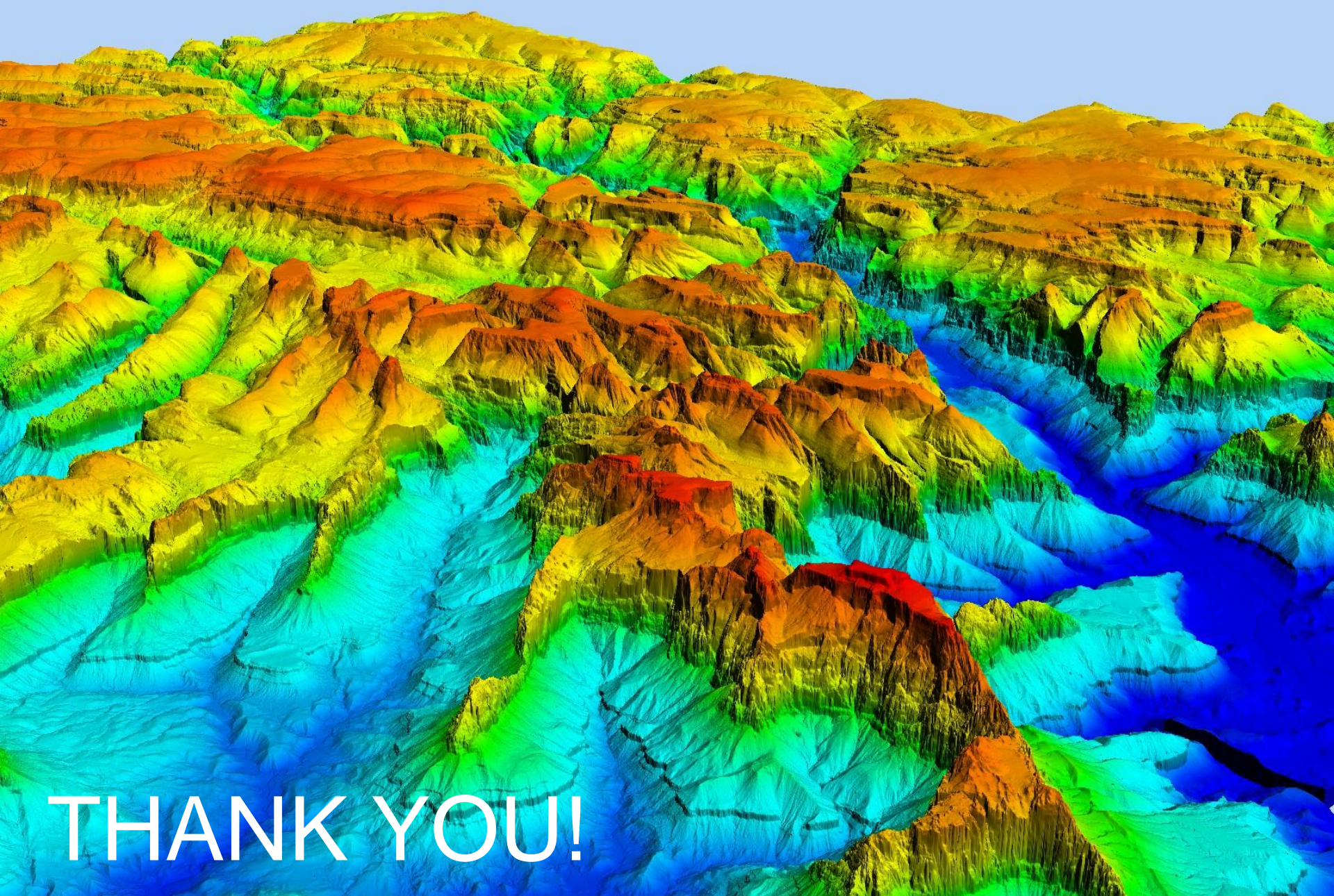
## Taking stock

- 3DEP depends on partnerships - managed by USGS on behalf of a broad partner community that includes Federal, state, and local agencies, as well as the private sector and non-profit groups
- Since the beginning of FY15
  - Over 200 partners – including 16 Federal agencies and state and local governments from 44 states and territories – have contributed funding for 3DEP data acquisition across the Nation
  - Partner investments totaling \$299.6M supported acquisition of 1.5 million square miles of lidar and IfSAR (Alaska) data
- Looking at FY18
  - The total investment by USGS and partners in 3DEP data acquisition, including the hurricane and wildfire supplemental funding, is projected to be over \$100M (preliminary - subject to change)
  - USGS has worked with partners to augment supplemental funding to complete coverage of the impact and adjacent areas, resulting in a total of \$28.8M in partnerships
- The total coverage of 3DEP data available or in progress is approaching 50% of the Nation
- Areas lacking coverage include significant areas of Federal and other lands in the West

# + 3DEP Partnerships

## Federal Best Practices

Best Practice	Purpose
<ul style="list-style-type: none"> <li>• Sign 3DEP governance memorandum of understanding (when available)</li> <li>• Assign agency representatives to 3DEP Executive Forum and Working Group</li> </ul>	Formalize commitment
<ul style="list-style-type: none"> <li>• Acquire data through the 3DEP data acquisition process and participate in the 3DEP Multiyear Planning process</li> <li>• Implement an agency policy to work within the Unified Federal 3DEP plan for data acquisition and sharing</li> </ul>	Institute practices that result in consistency and avoid one-offs
<ul style="list-style-type: none"> <li>• Coordinate internally to link regional/field offices into 3DEP and data acquisition process</li> </ul>	Address internal coordination challenges
<ul style="list-style-type: none"> <li>• Provide input and support to improve the acquisition process</li> <li>• Participate in assessments and adoption of new technologies to advance national 3DEP goals</li> </ul>	Ensure that practices meet partner needs
<ul style="list-style-type: none"> <li>• Share 3DEP-quality datasets acquired outside of the 3DEP process, ensure that data meet the 3DEP specification and are contributed for ingestion into national holdings</li> <li>• Encourage or require that Federal grant monies used for elevation data acquisition result in the data being collected to 3DEP standards and contributed to the national holdings</li> </ul>	Ensure that Federal data investments contribute to the national goal – avoid one-offs
<ul style="list-style-type: none"> <li>• Participate in 3DEP Budget Initiatives and establish a 3DEP budget line item</li> <li>• Report 3DEP investments to Budget Cross Cut (participating 9 agencies)</li> <li>• Promote 3DEP to agency constituents to participate in or support the national 3DEP effort</li> </ul>	Jointly support and communicate the mutual goal



THANK YOU!



**The National Map**  
Your Source for Topographic Information

Zion National Park, UT  
3D Elevation Program (3DEP)