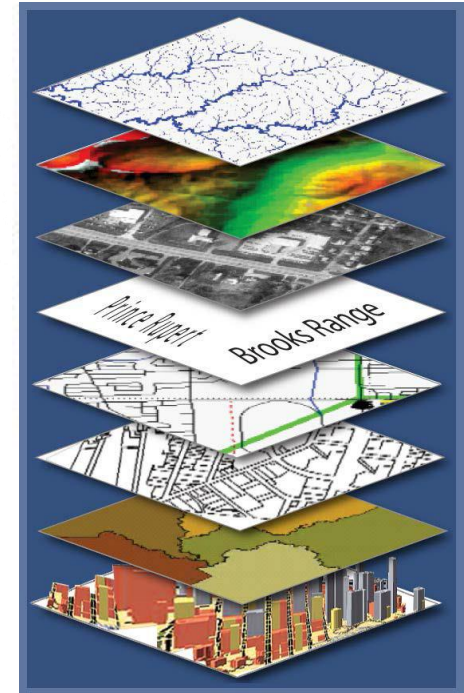
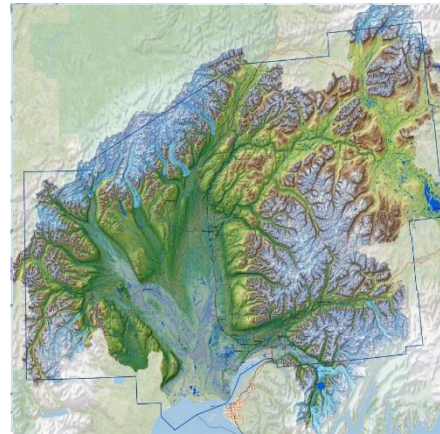
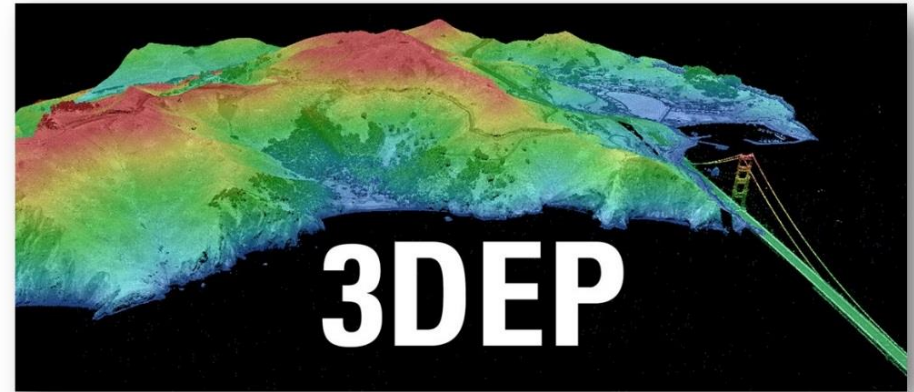




# US Geological Survey Partnerships for Elevation Data



## National Geospatial Program



Brian Wright  
National Map Liaison – Alaska  
February 9, 2018

# + National Map Liaison Roles

- Engage partners to produce consistent and accurate data and services
- Network to create and maintain long-term partnerships
- Leverage funding across organizations cost savings and
- Reduce redundancy
- Assist with the availability of common base data to a broad range of users and applications
- Representation of Alaska Mapping needs via Alaska Mapping Executive Council (AMEC) and Alaska Geospatial Council (AGC)

*Alaska Mapping Initiative - goal is to acquire and enhance foundational digital map layers such as elevation and hydrography used to produce new US Topo maps for Alaska.*

# + 3D Elevation Program

- Proceeds the National Elevation Dataset – NED
- Leverage collaboration among Federal, states, local, and tribal partners to systematically complete national 3D data coverage in 8 years
- 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 (NEEA)**
- *Leverage the capability of private industry mapping firms and create jobs*
- Refresh national elevation data holdings with new lidar and IfSAR (Alaska) elevation data products and services **Alaska Mapping Initiative (AMI)**



Natural Resource Conservation



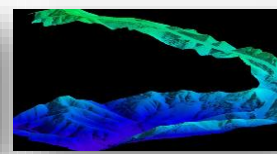
Infrastructure Management



Flood Risk Mitigation



Precision Farming



Land Navigation and Safety



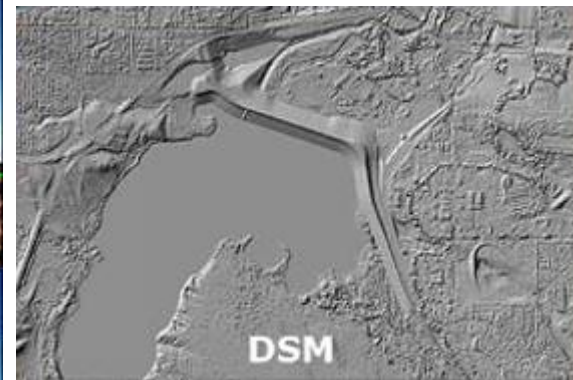
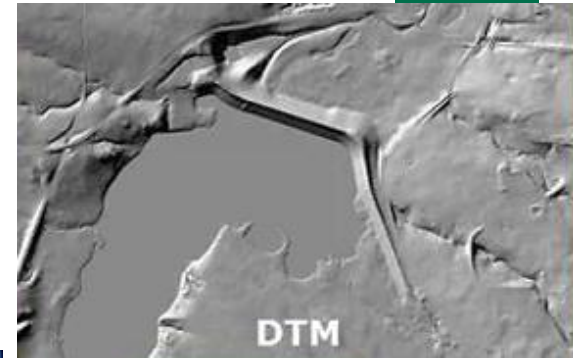
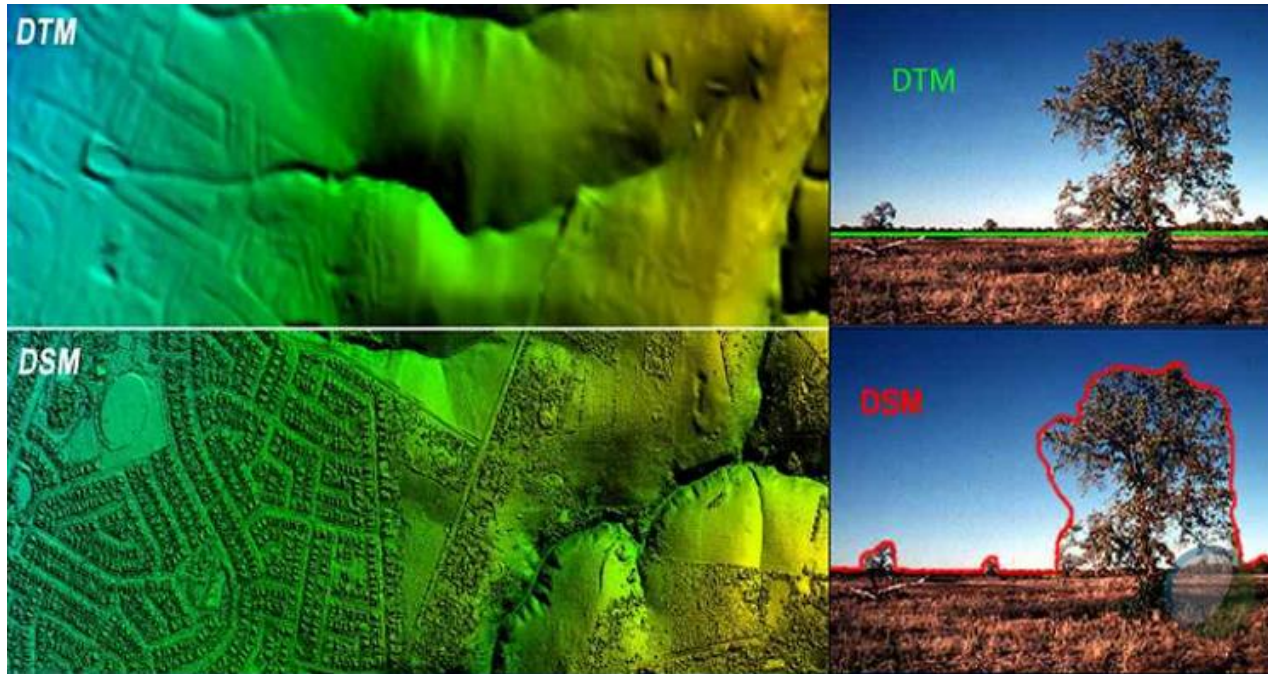
Geologic Resources and Hazards Mitigation

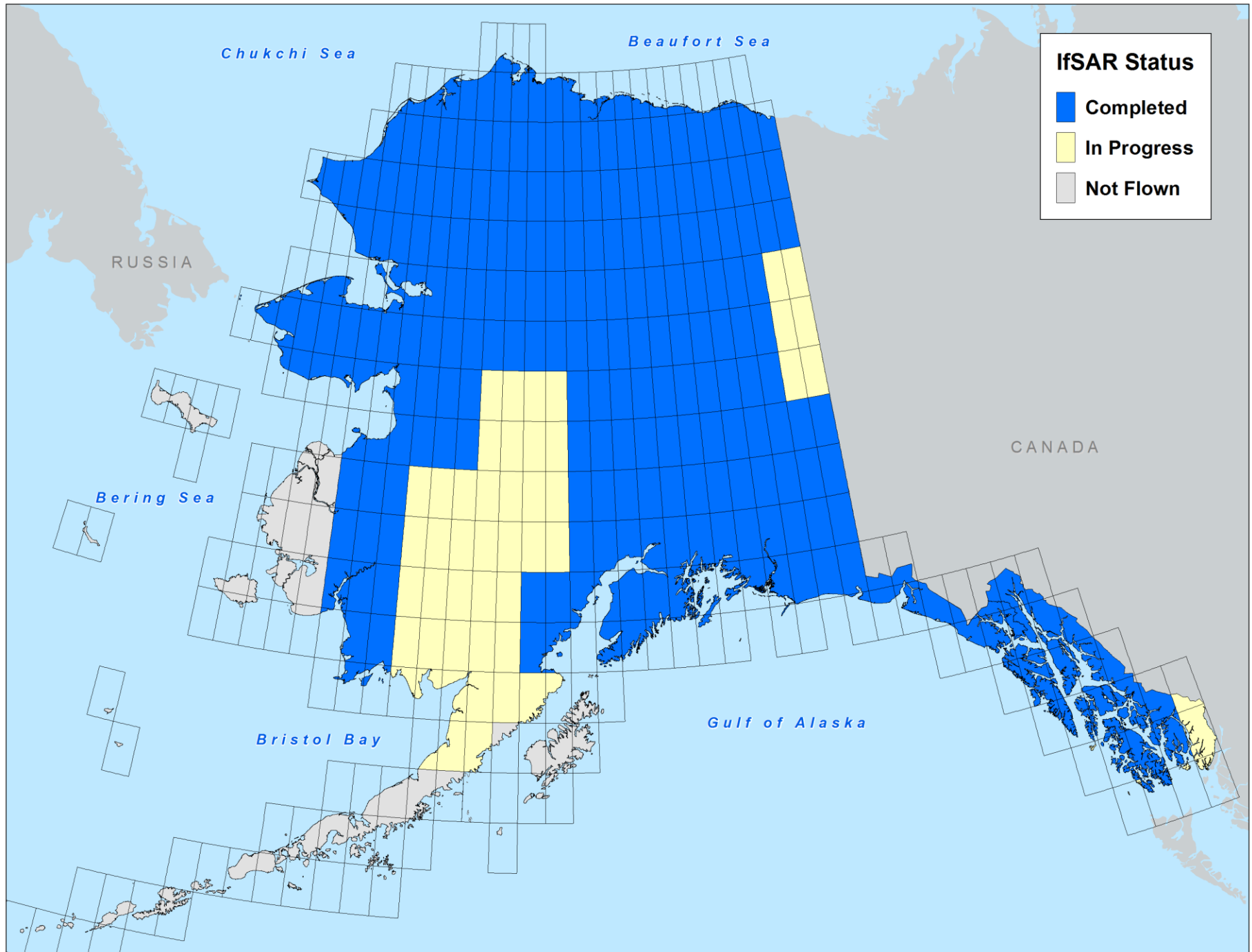


# + Interferometric Synthetic Aperture Radar

The 5-meter elevation data replaces decades old 60 meter elevation data.

IfSAR uses two radar images taken at the same time but from two different places in space.



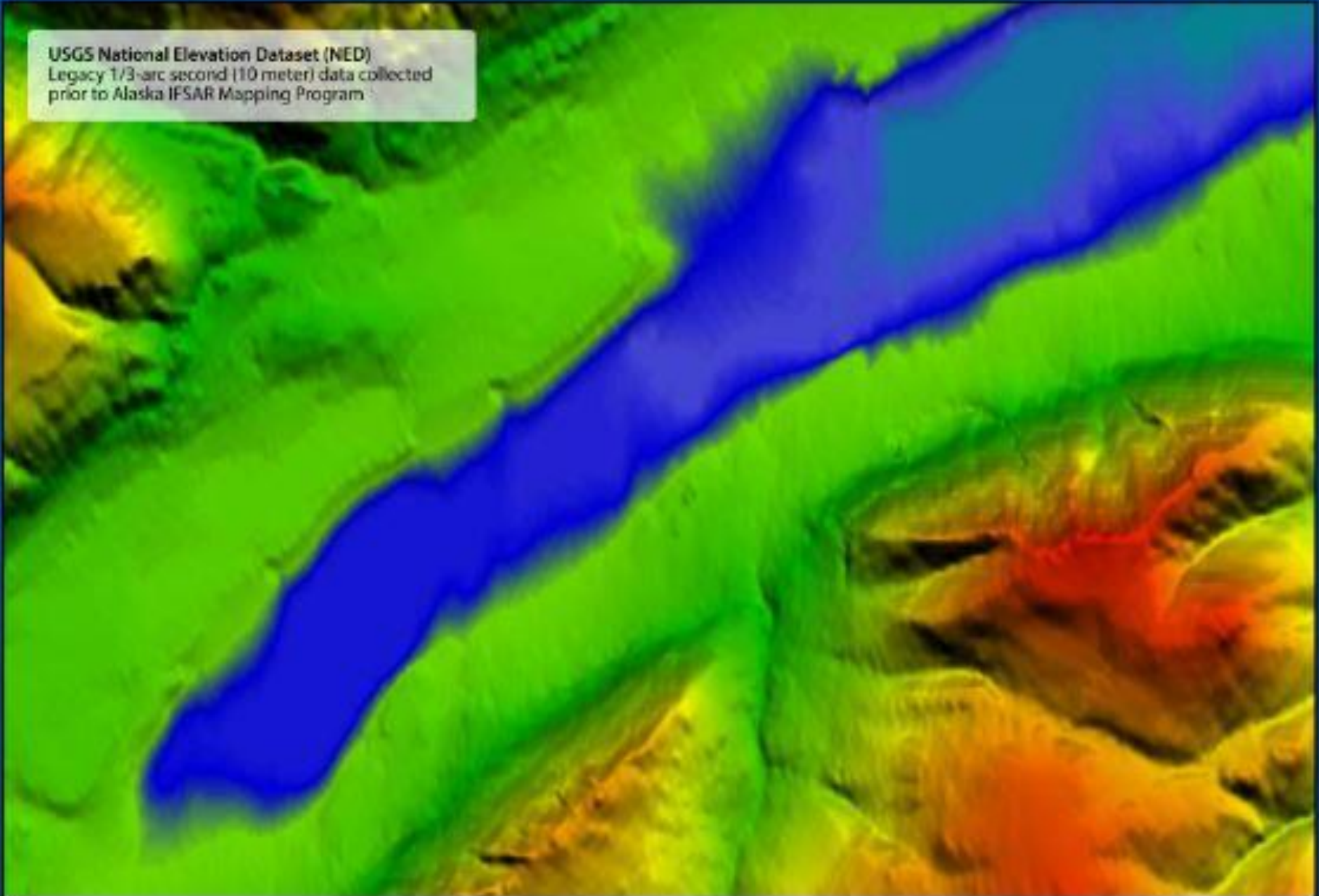


# + Partner Contribution Summary

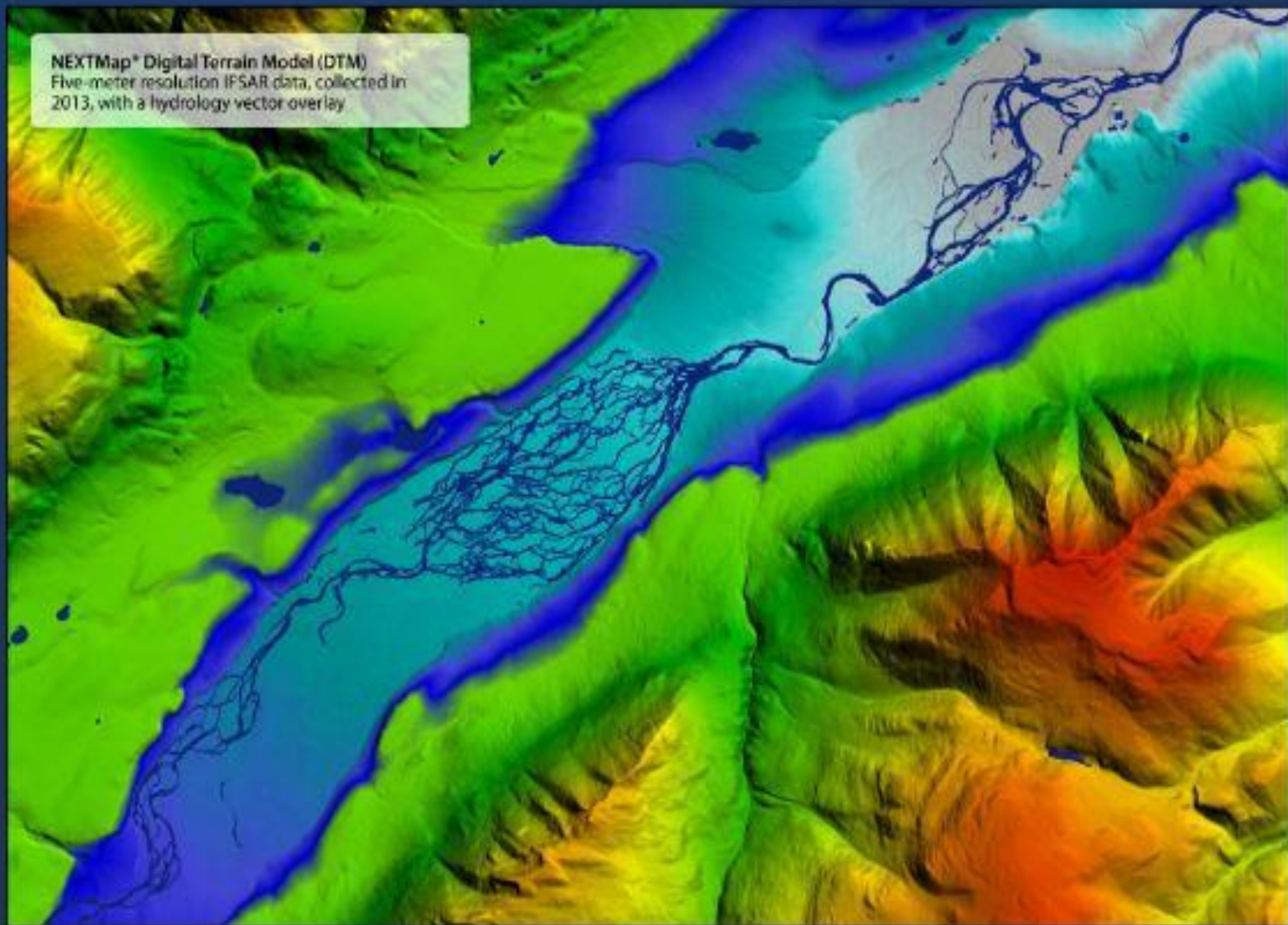
| Partner | 2017 Contribution | 2010-2017 Contributions |
|---------|-------------------|-------------------------|
| BLM     | \$50,000          | \$3,267,355             |
| USFWS   | \$0               | \$950,000               |
| NGA     | \$0               | \$2,399,895             |
| NPS     | \$975,000         | \$3,050,348             |
| NRCS    | \$700,000         | \$3,703,472             |
| USFS    | \$150,000         | \$1,786,842             |
| USGS    | \$7,212,088       | \$27,074,156            |
| Alaska  | \$0               | \$13,340,591            |
| Total   | \$9,087,088       | \$55,572,659            |



USGS National Elevation Dataset (NED)  
Legacy 1/3-arc second (10 meter) data collected  
prior to Alaska IFSAR Mapping Program



NEXTMap® Digital Terrain Model (DTM)  
Five-meter resolution IPSAR data, collected in  
2013, with a hydrology vector overlay





# + BAA in Nutshell

- Think lidar
- Competitive process
- Federal funding to acquire lidar at QL2 level – minimum
- Proposal covers cost for above base deliverables and QL1
- Need to identify why IfSAR does not meet your needs
- Have matching funding
- Begin planning process one-year in advance to identify partnerships
- Contractors can work with partners to develop projects
- Geiger Mode and Single Photon lidar
  - ◆ 2015 - Anchorage Municipality                      765 sq/mi                      QL2
  - ◆ 2016 - Yukon and Kuskokwim Delta                      1700 sq/mi                      QL2
  - ◆ 2017 - Prince of Wales Island                      1600 sq/mi                      QL1
  - ◆ 2017 - Fairbanks North Star Borough                      2500 sq/mi                      QL/QL2

# + BAA Eligible Applicants

Individuals

Small businesses

For profit organizations other than small businesses

Nonprofits having a 501(c) (3) status with the IRS, other than institutions of higher education

City or township governments

Special district governments

County governments - Boroughs (Anchorage and Fairbanks)

State governments (AK DNR, Division of Geological and Geophysical Surveys)

Native American tribal governments (Federally recognized)

Native American tribal organizations (other than federally recognized tribal governments)

Federal agencies

The Nature Conservancy, Anchorage Municipality, Fairbanks North Star Borough, Sealaska, NRCS, US Forest Service, Golden Valley Electric Association, NOAA, Alaska Department of Natural Resources.

# + The National Map

11

The screenshot displays the USGS 3DEP View (v1.0) web application interface. At the top, the USGS logo and 'The National Map' branding are visible. The main navigation bar includes '3DEP View (v1.0)', 'How to', 'Start Over', 'Custom Views', 'Share Link', and 'Contact Us'. The left sidebar contains a 'Datasets' section with 'Advanced Search Options' and a 'Product Search Filter'. The filter includes checkboxes for 'All Subcategories', 'DEM Source (OPR)', 'Ifsar Digital Surface Model (DSM)', 'Ifsar Orthorectified Radar Image (ORI)', and 'Lidar Point Cloud (LPC)'. Below the filter is a 'Data Extent' section (set to 'Varies') and a 'File Format' section (set to 'TIFF'). A 'Description' button is next to a small image of a 3D terrain model. The main map area shows a topographic map of the United States with a purple shaded region covering the western and central parts of the country. Search controls at the top right include 'Use Map', 'Map Indices', and search criteria options like 'Box/Point', 'Current Extent', 'Coordinates', 'Located Point', and 'Polygon'. A search bar with 'Go' and 'Clear' buttons is also present.

## How to Find and Download Products

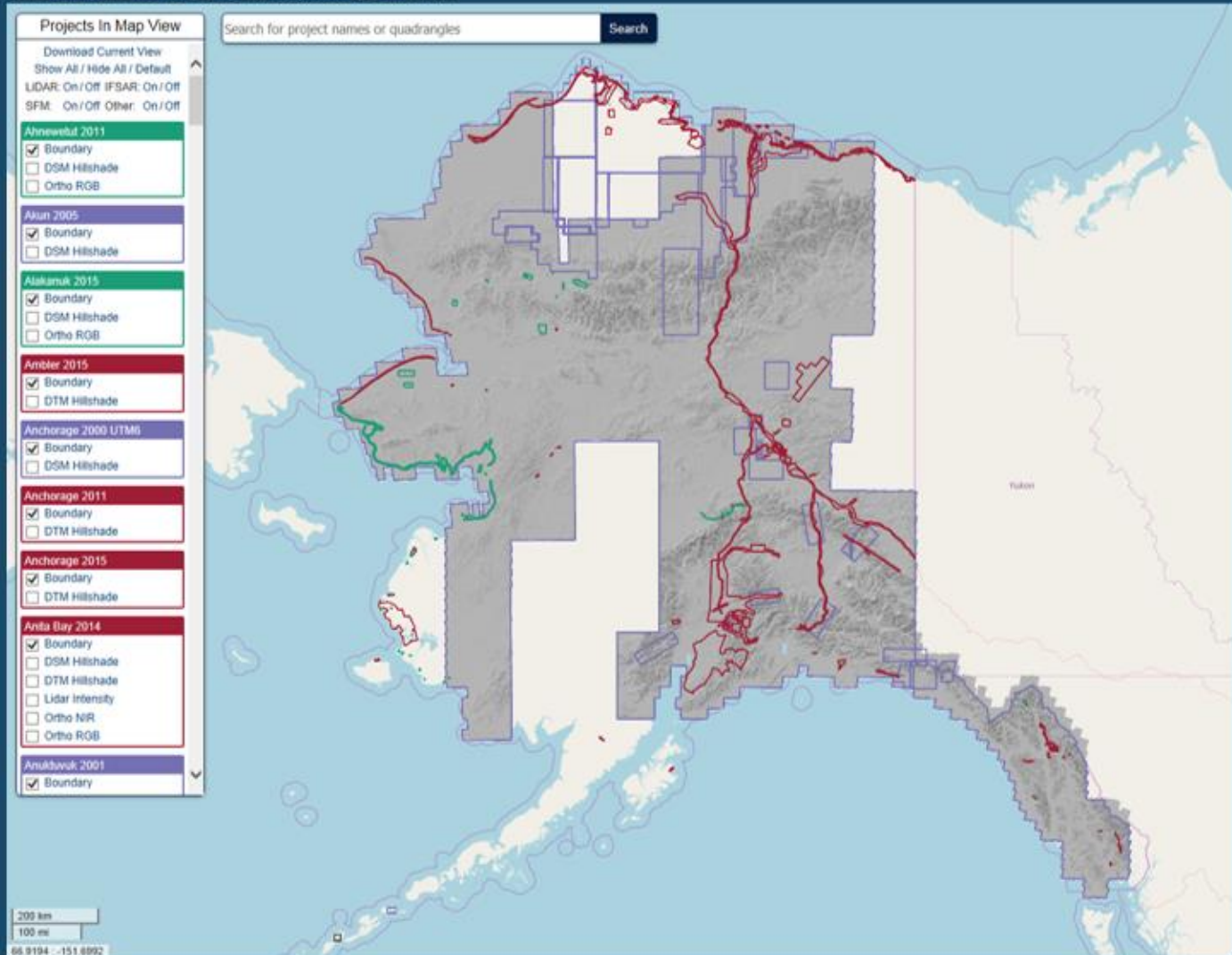
Users can find products in the following steps. [\(Tutorial Videos\)](#)

- A. [Find Products](#)
- B. [Review Products](#)
- C. [Use Cart](#) (Optional)



# Alaska Elevation Distribution & Archive

- 371# IfSAR, lidar, and SfM data products available.
- Covering a total of 540,137 square miles.
- All available for download via an easy to use map interface.



For more information:  
Ken Woods  
907-388-0999  
ken.woods@alaska.gov

Map interface:  
<http://elevation.alaska.gov>

REST endpoint for hillshade service used in application:  
[http://elevation.alaska.gov/arcgis/rest/services/apps/elevation\\_app\\_prod/MapServ](http://elevation.alaska.gov/arcgis/rest/services/apps/elevation_app_prod/MapServ)

# + Geospatial Products and Services Contract

13

- Architecture and Engineering (A&E) Indefinite Delivery/Indefinite Quantity (IDIQ) Contract
- \$750 Million delegated procurement authority for 5 years
- Perform professional mapping services
- Over 18 years old – on version 3
- Competitive qualification based selection (QBS) process for contractors
- Remote sensing and GIS services impervious surface mapping
- Elevation Lidar acquisition and processing; topographic and bathymetric
  - Charge a 5% assessment rate
    - Used to cover staff time to manage contracts and projects

# + GPSC Project Types

- Remote sensing and GIS services
  - Impervious surface mapping
- Elevation
  - Lidar acquisition and processing
    - Topographic and bathymetric
  - IfSAR
- Hyperspectral imagery acquisition
- Orthoimagery acquisition and processing
- Alaska Example: AK DOT UAV Proof of Concept
  - Looking at Airport Obstruction Survey for 1-2 rural artic airstrips/airports



# + What is GPSC?

- 10 contracts
  - Each has a base year plus four option years
  - Valid from 2016 – 2022, if all option years are executed

## Large Business Firms

- Dewberry
- Fugro Earthdata
- Merrick-Surdex JV
- Quantum Spatial
- Sanborn
- Woolpert

## Small Business Firms

- Aerial Services
- Atlantic
- Digital Aerial Solutions
- Precision Aerial Reconnaissance

### Subcontractors in AK

- JOA Surveys
- Kodiak Mapping
- e-Terra
- And others....

*3D Elevation Program (3DEP) FY17/18 Broad Agency Announcement (BAA) Information Sharing Site* <https://cms.geoplatform.gov/elevation/3DEP>

*FY18 BAA Reference Materials Page*  
<http://nationalmap.gov/3DEP/BAARReferenceMaterials.html>

*NOAA sponsored Seasketch site: U.S. Federal Mapping Coordination, A Demonstration Site for Federal Mapping Data Acquisition*  
<http://fedmap.seasketch.org>

*The 3D Elevation Program Initiative – A call for Action*  
<http://pubs.usgs.gov/circ/1399/>

*USGS NGP Lidar Base Specification V1.2*  
<http://pubs.usgs.gov/tm/11b4/pdf/tm11-B4.pdf>

+

# ◆ Where can you find me?

17





U.S. Geological Survey  
Alaska Science Center  
Grace Hall – Room 228  
4230 University Drive  
Anchorage, AK 99508

Brian Wright  
National Map Liaison  
(907) 201-0113  
bwright@usgs.gov

