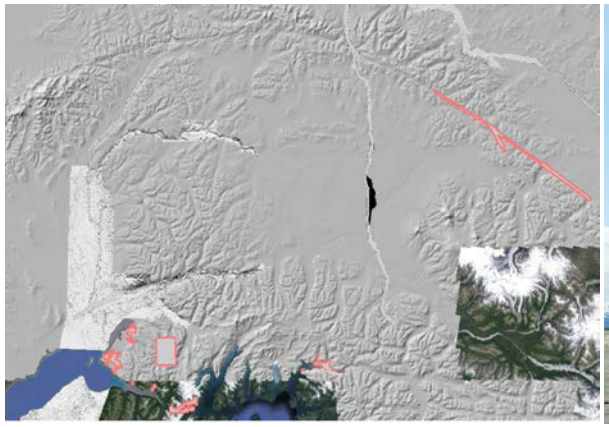
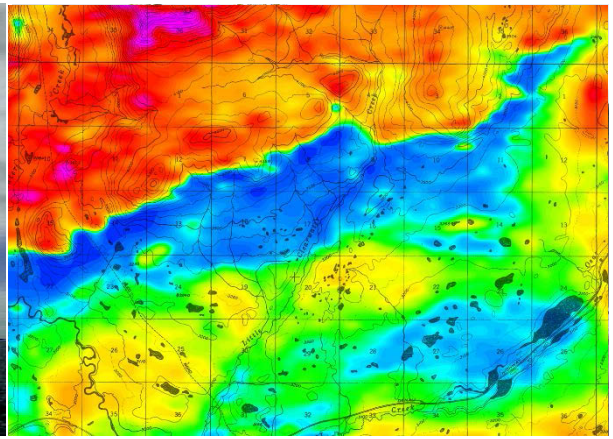


Alaska Geospatial Council

October 30, 2015

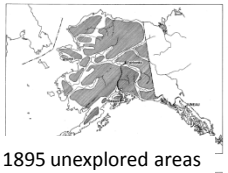


Agenda

1. Call to order; introductions (10 minutes)
2. Orientation: history and background (30 min. + 10 min. questions)
3. Alaska Geospatial Council Mission and Charter (10 minutes)
4. Member annexation (15 minutes)
5. Initial working groups (10 minutes)
    a. Framework datasets
        i. Elevation
        ii. Imagery
        iii. Hydrography
        iv. Geodetic control
        v. Transportation
    b. Data standards
    c. Data distribution (geoportal)

6. Next meeting date – early December

Mapping in Alaska



1895 unexplored areas

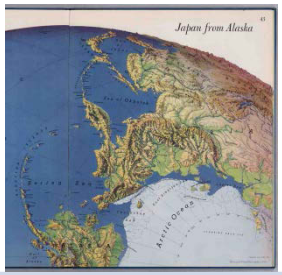
1905 unexplored areas

1728-1867: Russian occupation

- Coastal charting driven by fur trade (Russia, England, France, Spain, Italy and Portugal).

1895-1902: First systematic topographic mapping (USGS)

- 1904-1914: Demarcation and survey of international boundary in SE Alaska
- 1910: $100,000 federal appropriation for public land surveys, conducted primarily in the Fairbanks vicinity
- 1913-1917: $100,000 federal appropriation for topographic mapping in Alaska



1978-1986: Alaska High Altitude Aerial Photography (AHAP) Program

- 95% of the state imaged at 1:60,000 (color infrared) and 1:120,000 black and white. Not orthorectified.

2006: Statewide Digital Mapping Initiative $6M Appropriation

- 2010 Digital elevation pilot project
- 2010-2015 statewide orthoimagery

1728 1867 1895 1940 1978 2006 2012

1867: United States purchases Alaska

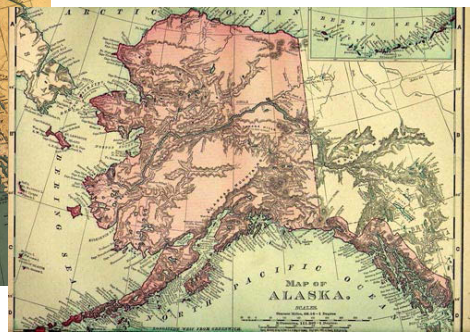
- Continued coastal surveying and charting; river basin exploration

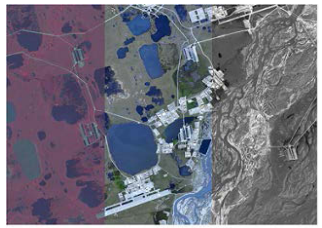
Figure 5.--United States Coast and Geodetic Survey ship Patterson, Seattle, Wash. 1915.

1940-1950: WWII drives aeronautical and coastal mapping in Alaska and geodetic surveys.

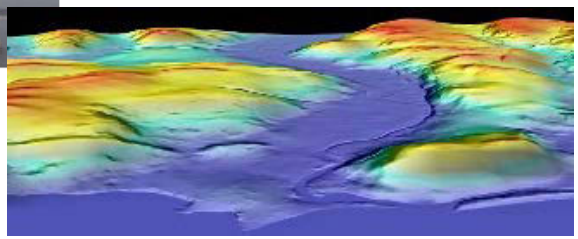
1990's-2006: Alaska Geographic Data Committee (AGDC)

2012: Alaska Mapping Initiative

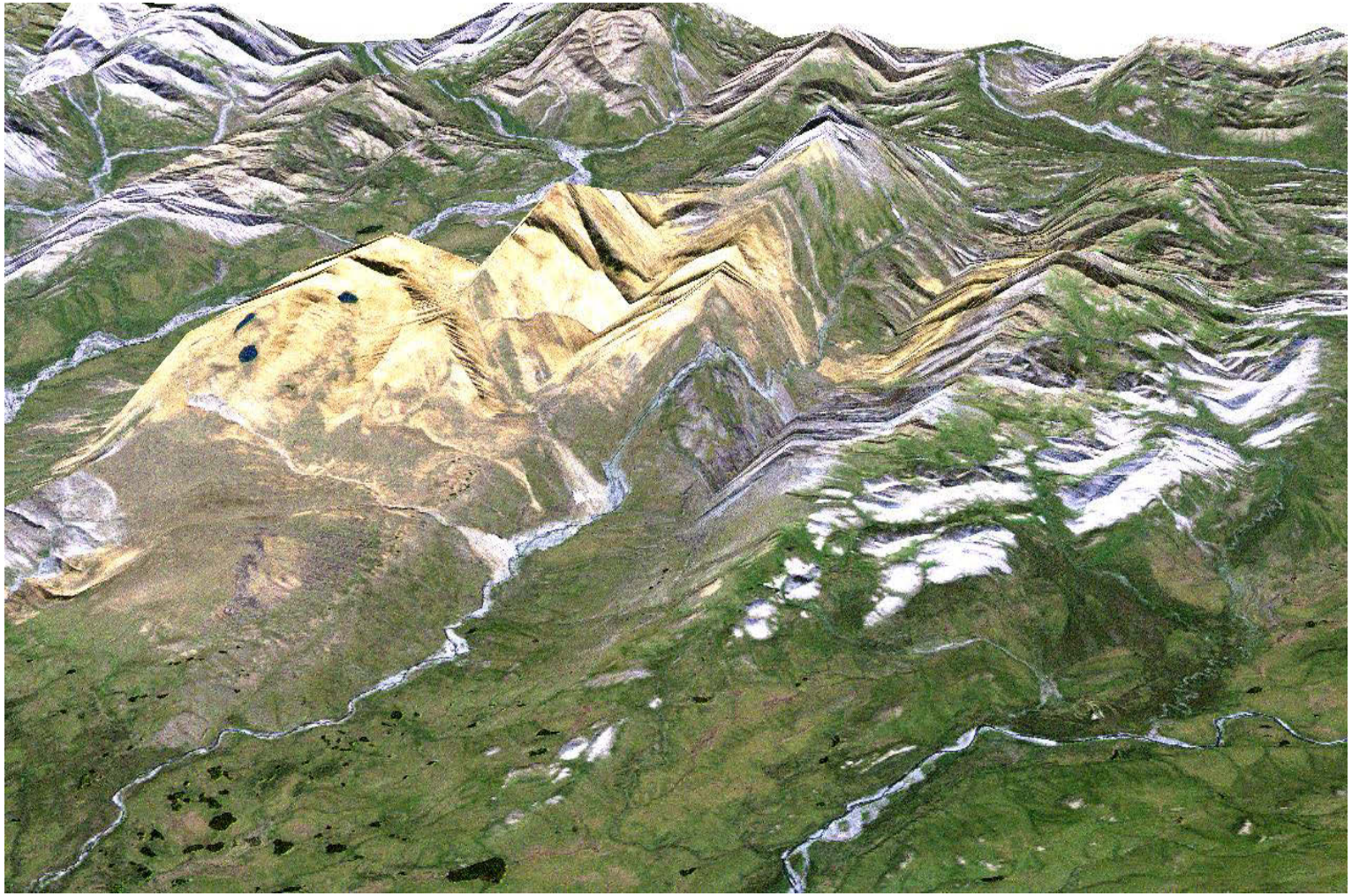




Deadhorse Airport, North Slope, Alaska. Color-infrared, natural color, and panchromatic products.

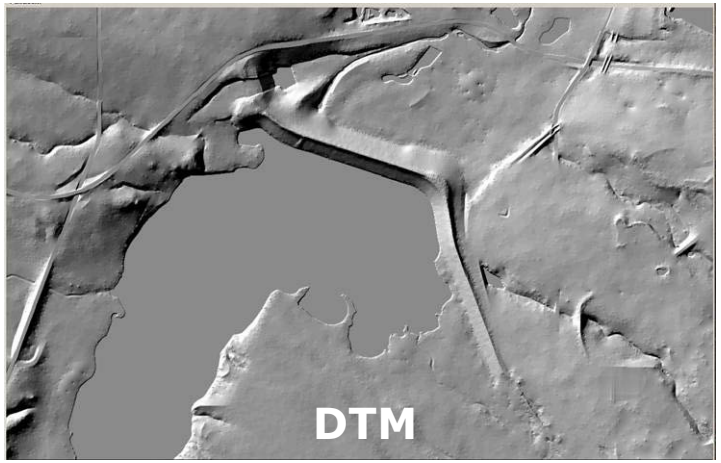


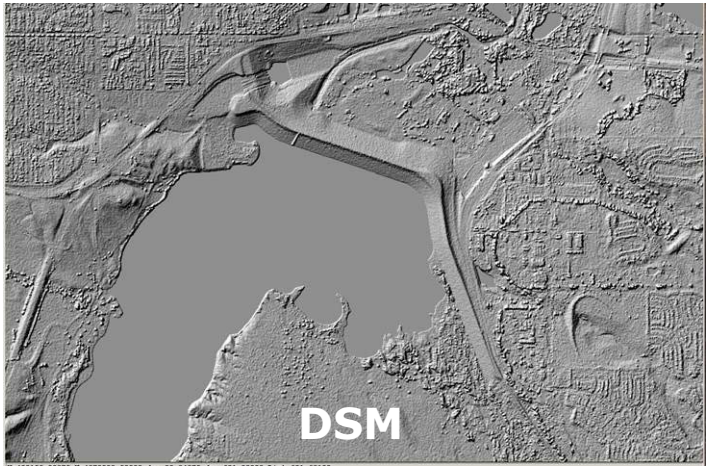
The Problem



Dewberry®

The Elevation Solution





- Three normal airborne IFSAR products
- Could register satellite imagery to ORI to improve positional accuracy with minimal GCPs

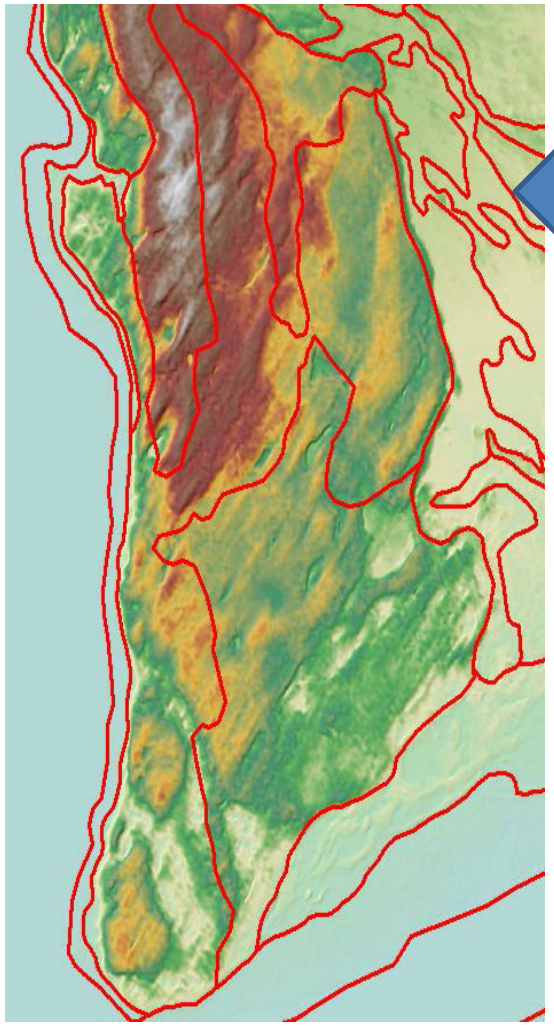
Dewberry®

Resolution/content significantly better than the National Elevation Dataset (NED)

IFSAR (left) and NED (right)

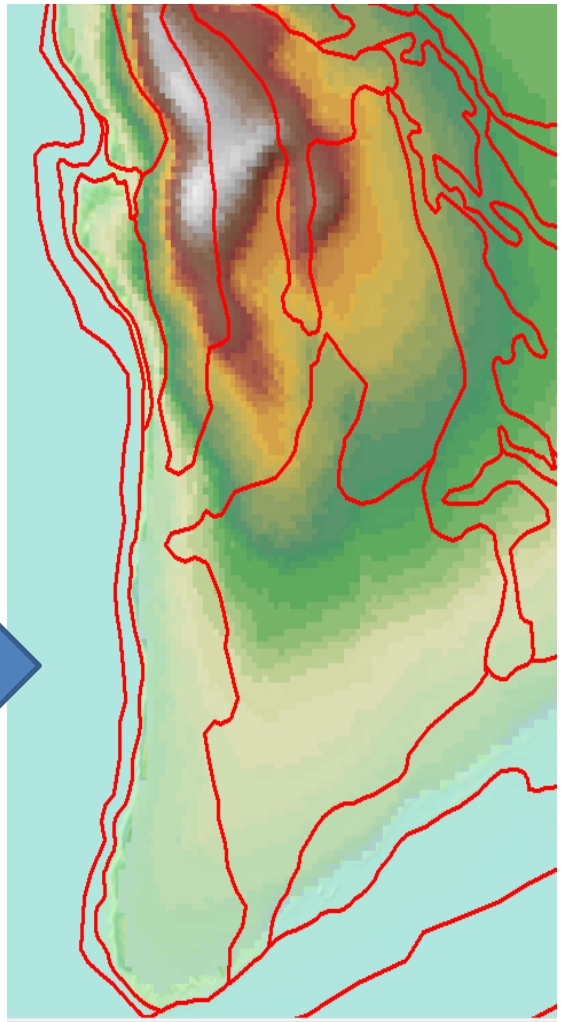
Dewberry®

Clearer delineation of coastlines and landforms

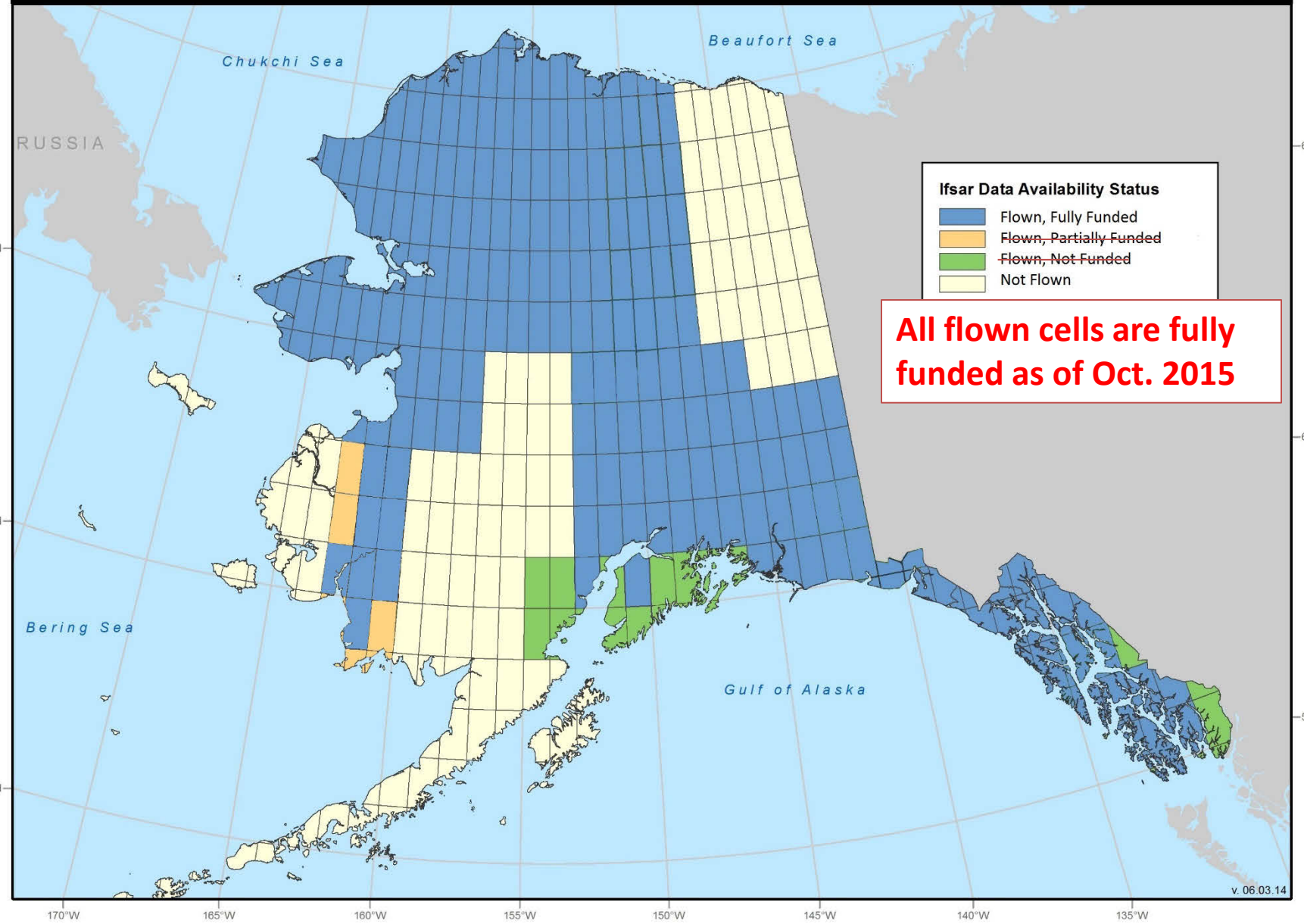


5-meter IfSAR hillshade

60-meter NED hillshade

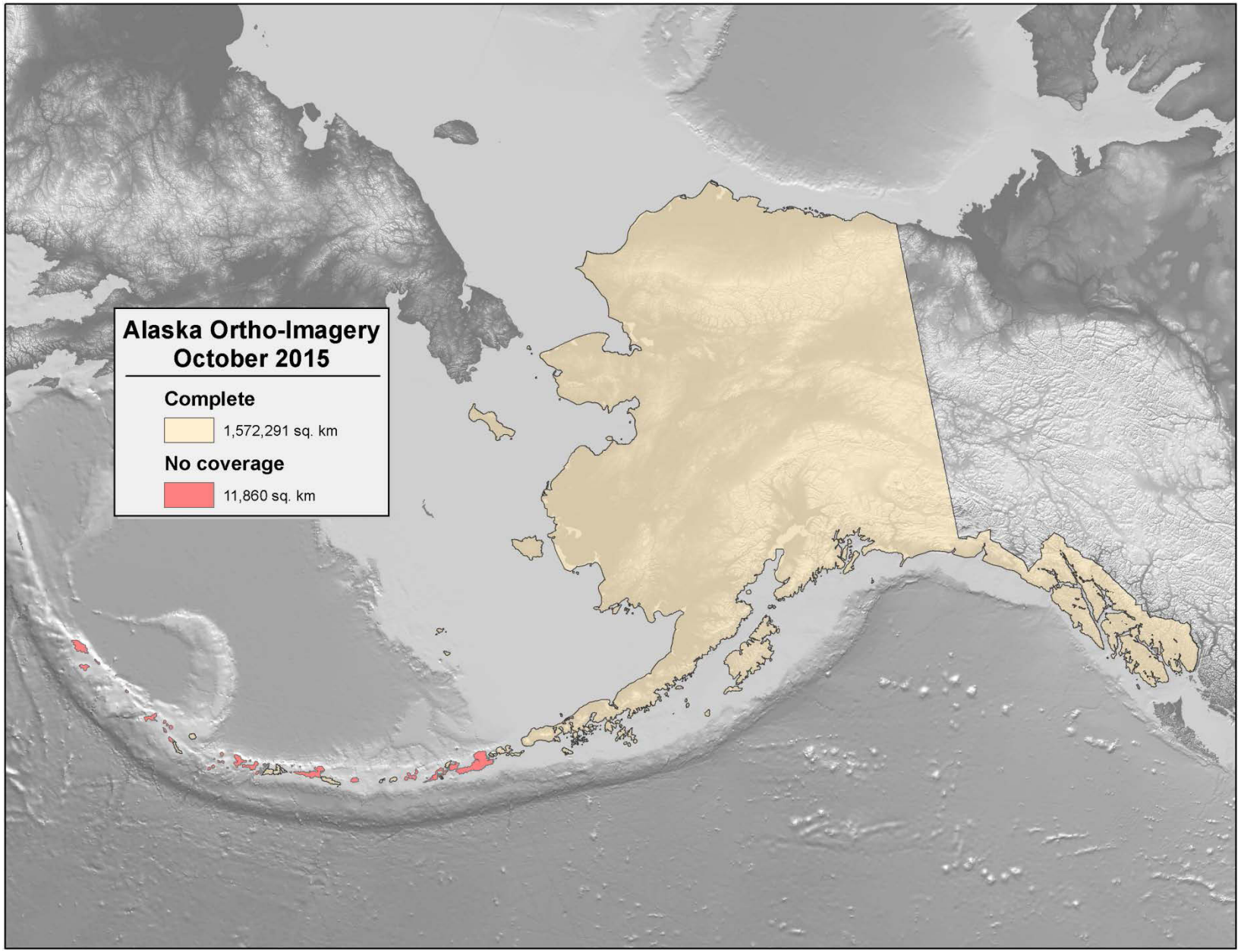


Status of Alaska Elevation Data (5-meter resolution ifsar)



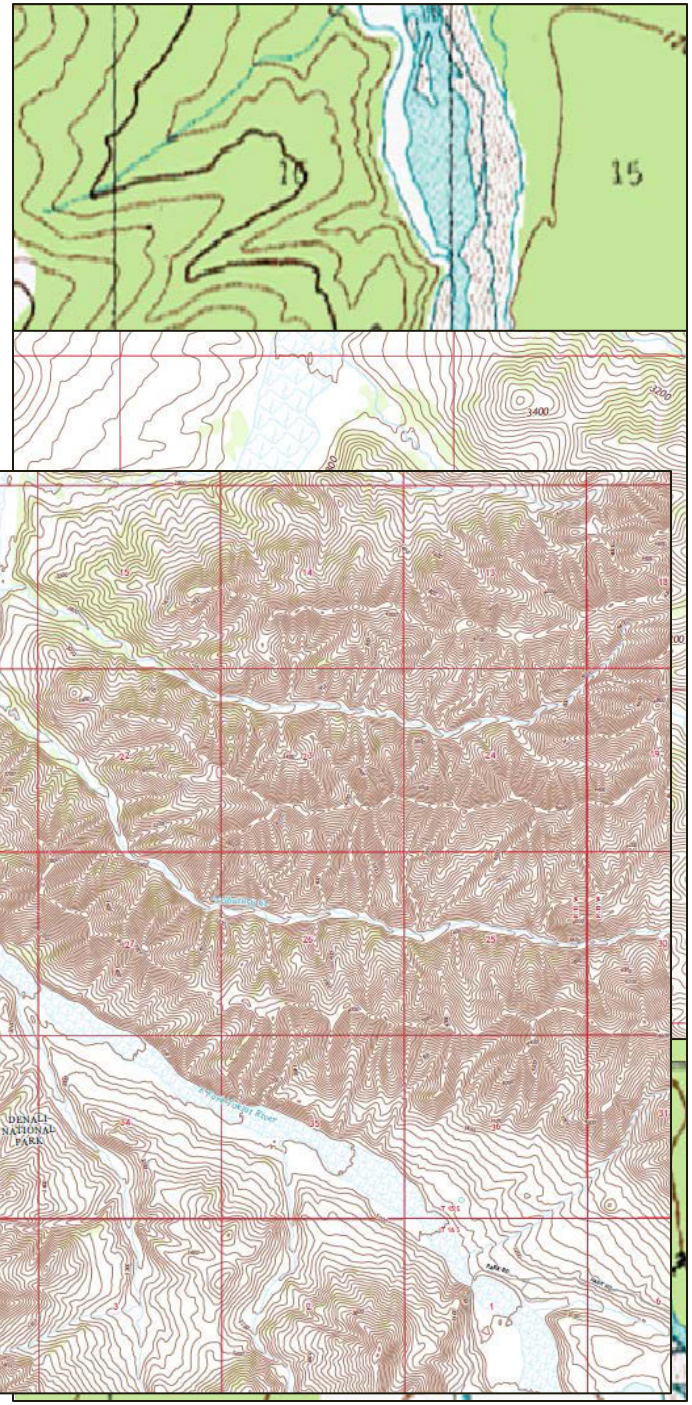
Golovin, southwest Alaska.
Landsat 15-meter imagery vs. 2.5-meter orthoimage.

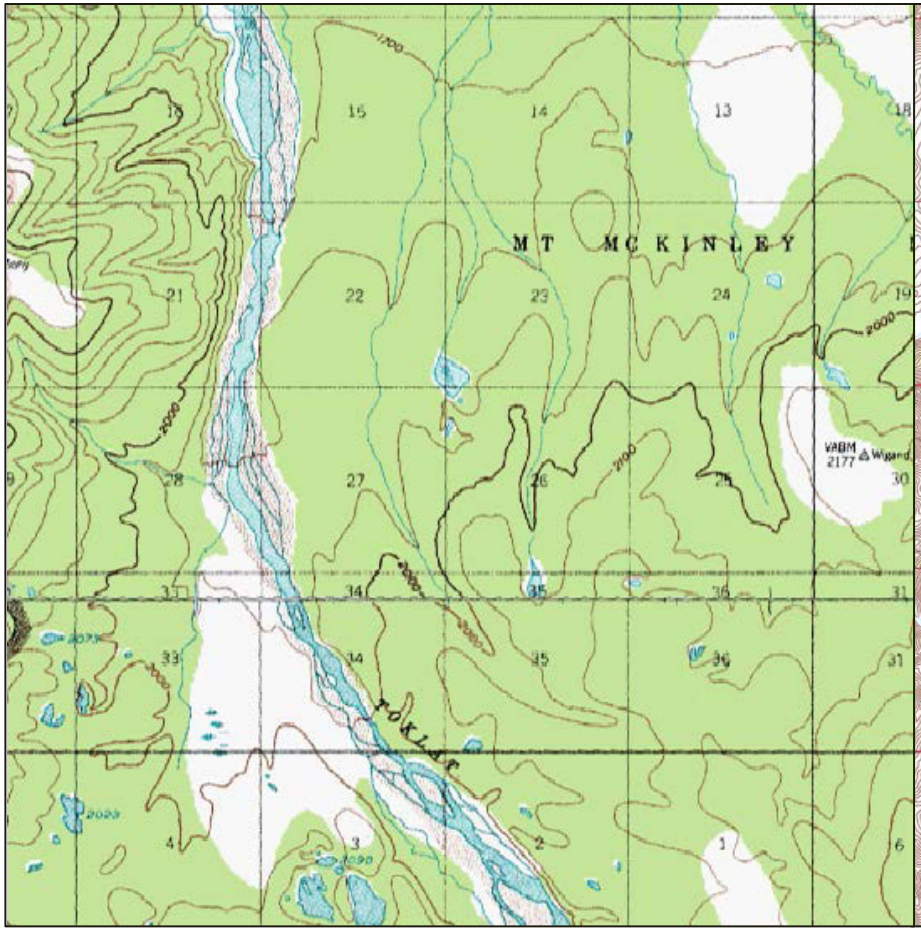
Statewide Digital Mapping Initiative Orthoimagery Status



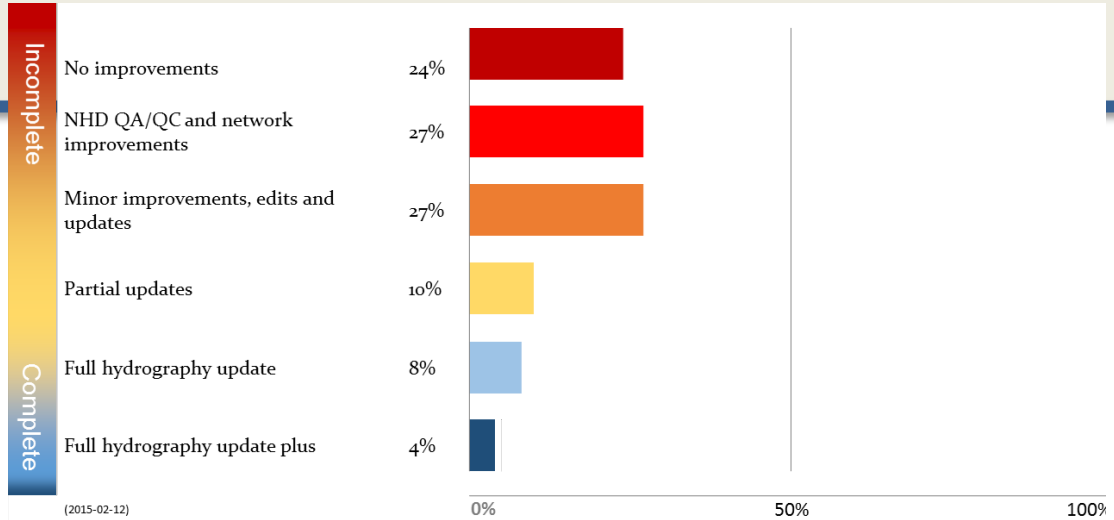
Topographic Improvements

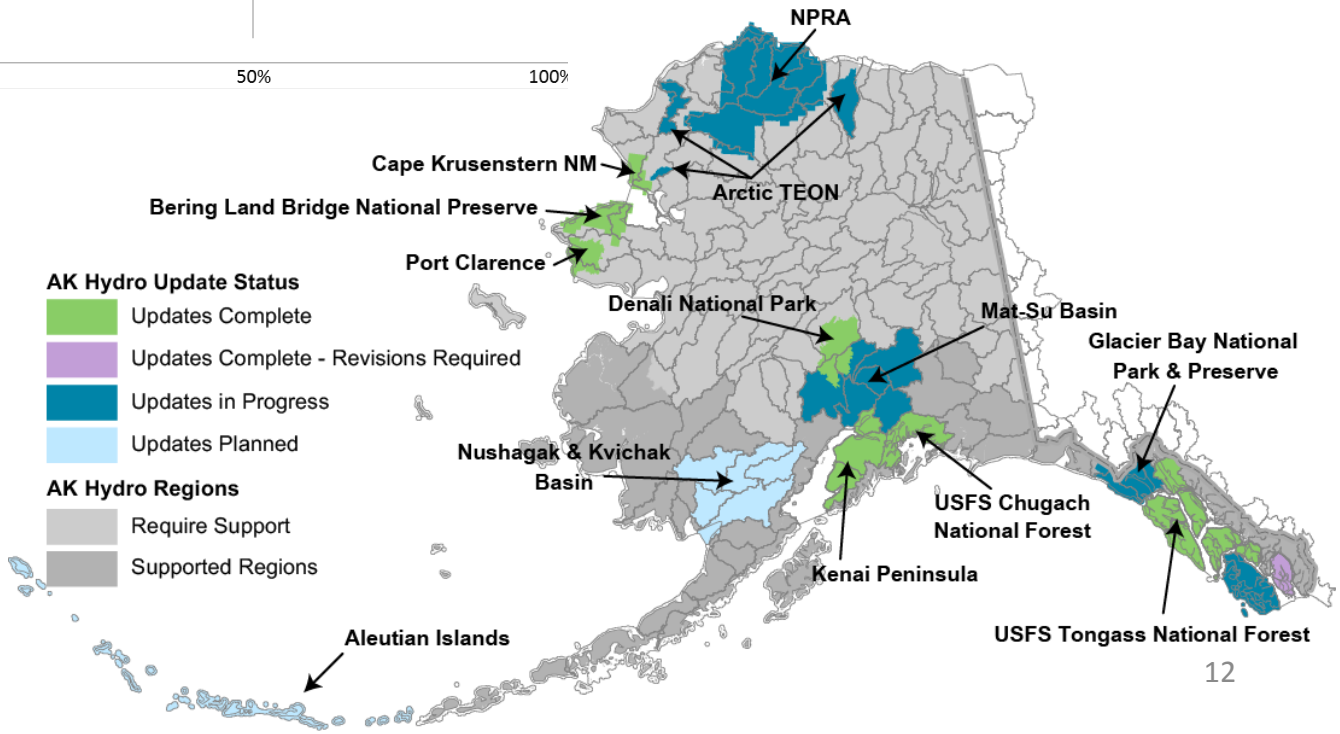
Hydrology modeling





Hydrography





VISION: *Alaska will create a sustainable statewide geospatial framework to provide technology, policies, standards, and human resources necessary to help improve the sustainability, quality, and availability of geospatial information to all Alaskans.*

MISSION: *Create a spatial infrastructure that will be supported by a participatory environment to facilitate collaboration and communication between all public and private stakeholders based on a philosophy of shared responsibilities, shared costs, shared benefits, and shared control.*

Strategic Goals:

- **Strategic Goal 1: Establish a sustainable participatory governance structure to effectively and efficiently coordinate and communicate geospatial efforts**
- **Strategic Goal 2: Ensure statewide spatial data and technology are available to as many potential users as possible and are developed, managed, and coordinated according to best practices**
- **Strategic Goal 3: Expand and improve the use and awareness geospatial technologies through increased collaborative educational opportunities and outreach**
- **Strategic Goal 4: Identify and secure sustainable funding sources used to support ongoing statewide geospatial programs**

Requirements

1. Organizational
   - Geographic Information Officer
   - Geographic Council
   - Technical Working Groups
2. Policies, Standards and Best Practices
3. Communication and Outreach
4. Statewide Framework Data
5. Unified Clearinghouse

Alaska Geospatial Council

DNR Comm. Mark Myers, chair

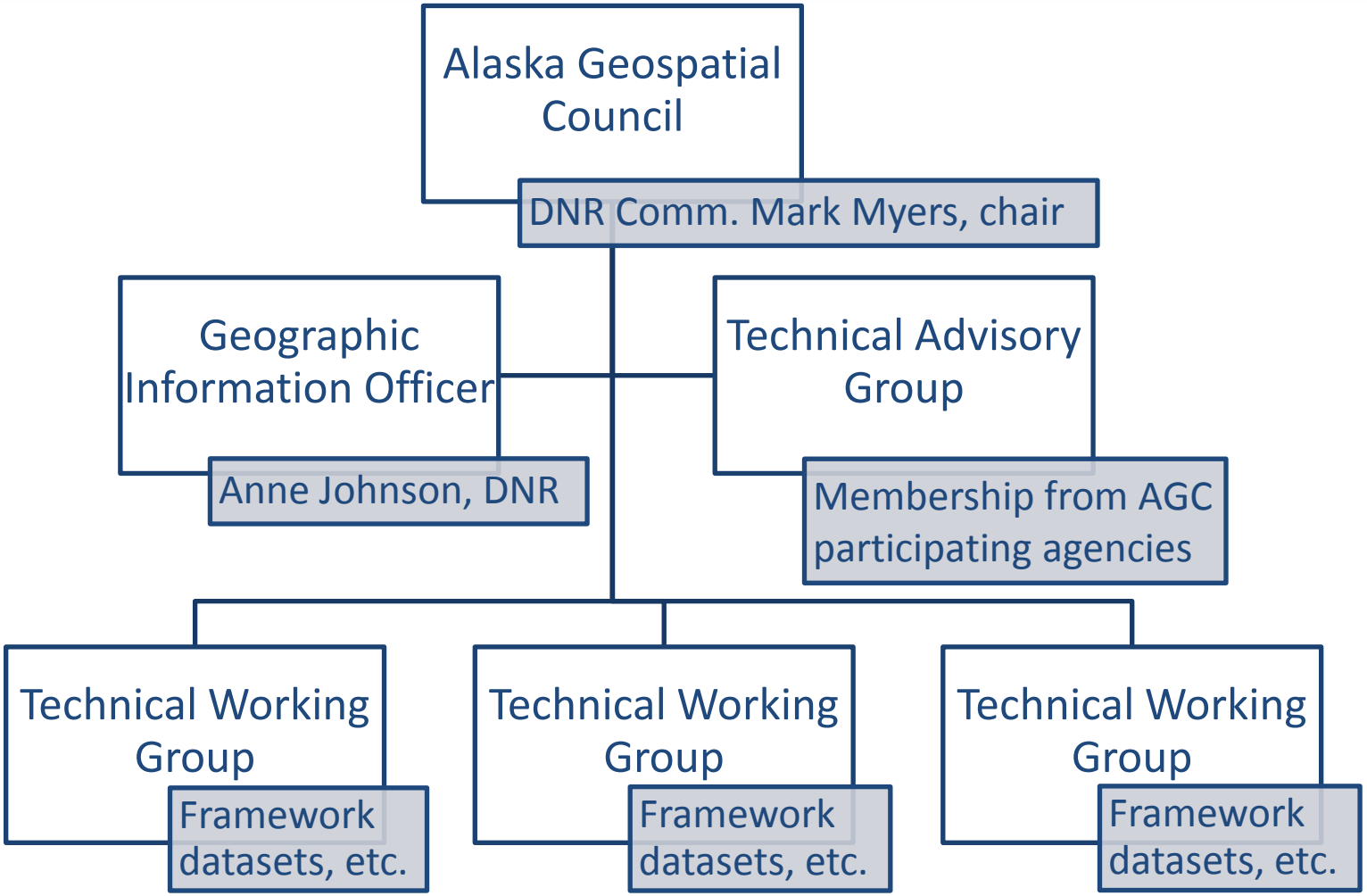
State Memorandum of Agreement

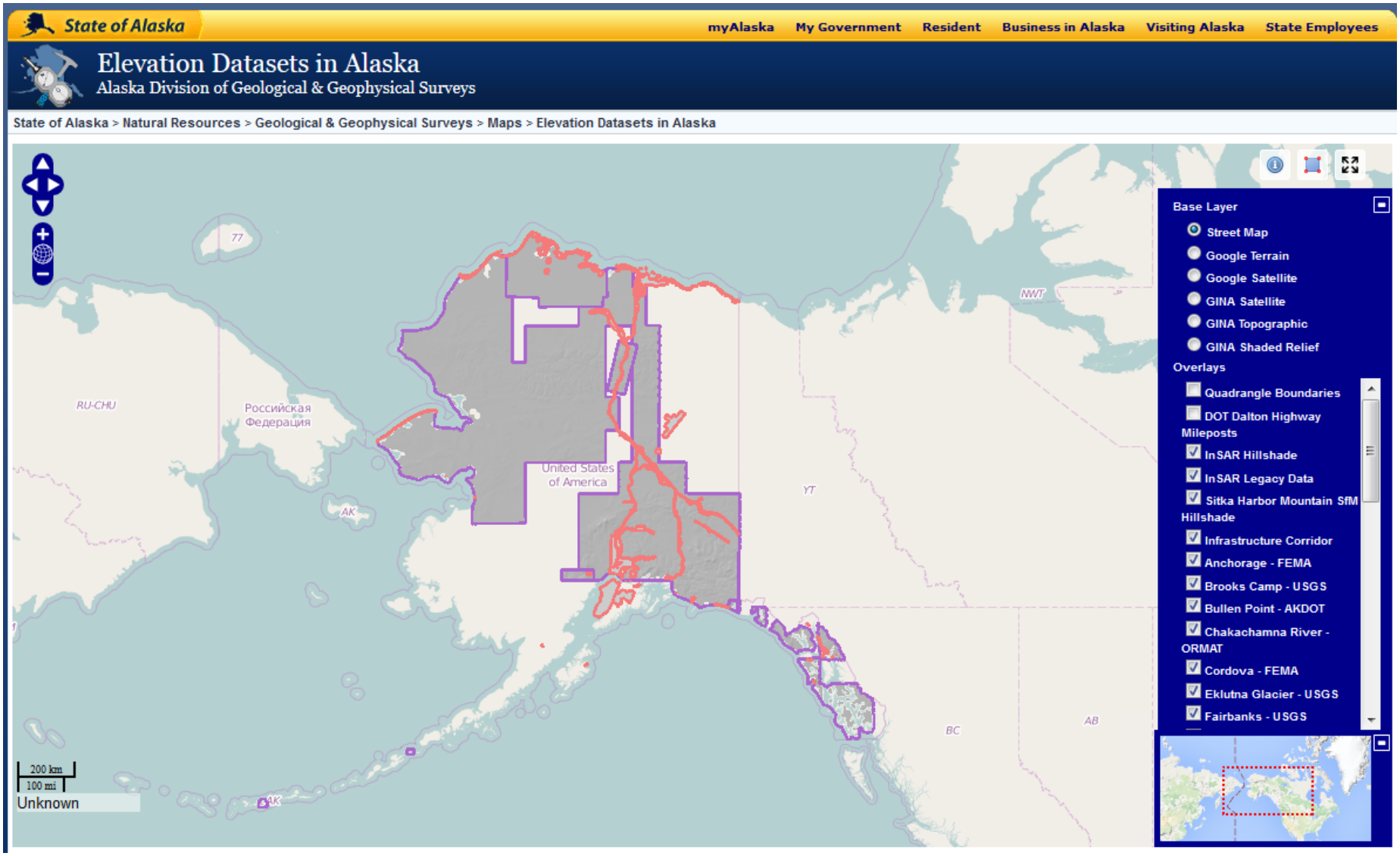
- Natural Resources
- Environmental Conservation
- Fish & Game
- University of Alaska
- Transportation & Public Facilities
- Military & Veterans Affairs
- Commerce, Community & Economic Development

Members to be annexed

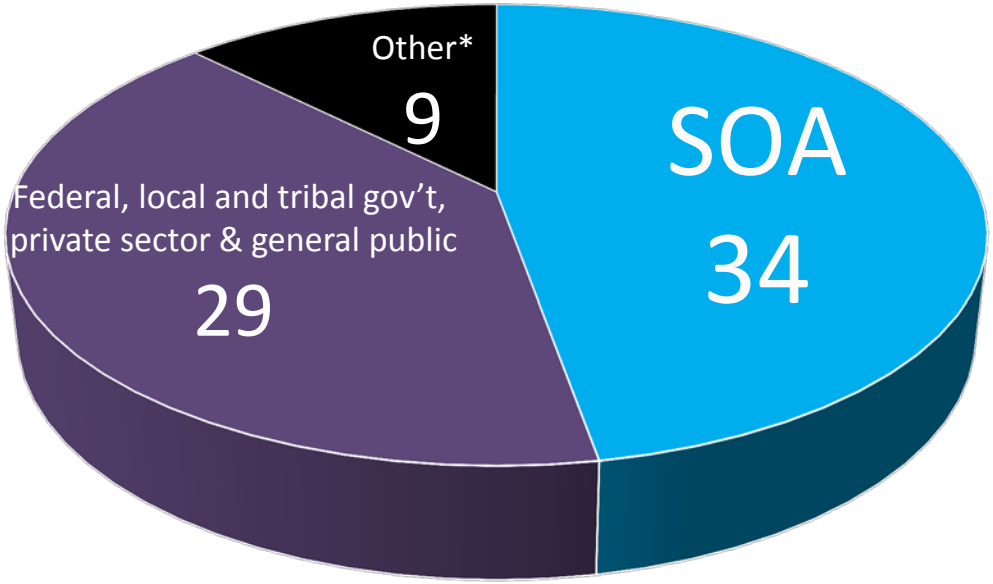
- 3 Federal agencies, inc. USGS
- eral ncy
- eral ncy
- Alaska Native Corporation
- Local Gov't

Alaska Geospatial Council



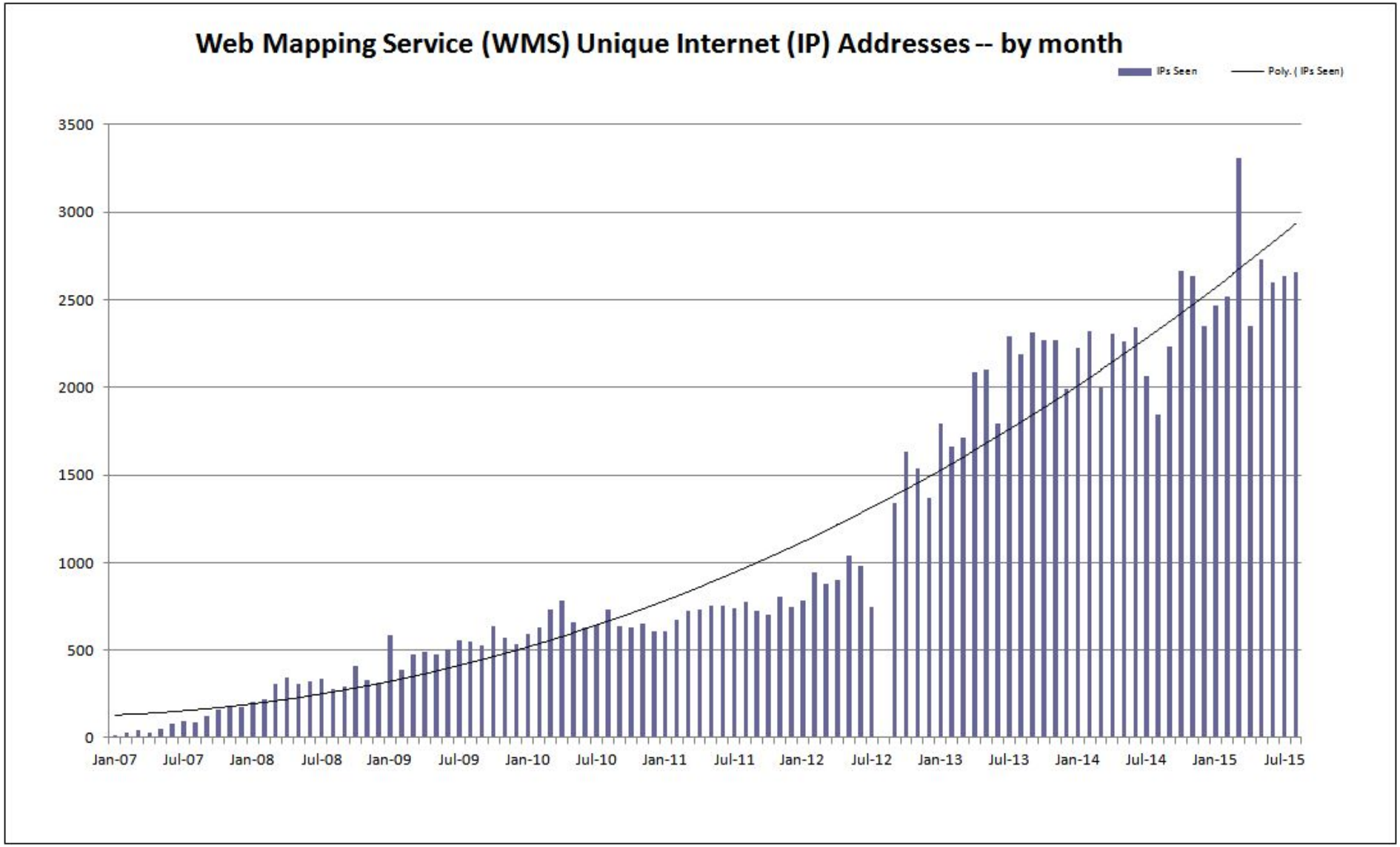

State of Alaska
myAlaska
My Government
Resident
Business in Alaska
Visiting Alaska
State Employees
Elevation Datasets in Alaska
Alaska Division of Geological & Geophysical Surveys
State of Alaska > Natural Resources > Geological & Geophysical Surveys > Maps > Elevation Datasets in Alaska
RU-CHU
Российская Федерация
United States of America
AK
NWT
YT
BC
AB
200 km
100 mi
Unknown
Base Layer
Street Map
Google Terrain
Google Satellite
GINA Satellite
GINA Topographic
GINA Shaded Relief
Overlays
Quadrangle Boundaries
DOT Dalton Highway Mileposts
InSAR Hillshade
InSAR Legacy Data
Sitka Harbor Mountain SfM Hillshade
Infrastructure Corridor
Anchorage - FEMA
Brooks Camp - USGS
Bullen Point - AKDOT
Chakachamna River - ORMAT
Cordova - FEMA
Eklutna Glacier - USGS
Fairbanks - USGS

2013 Web Service Requests (in millions)



*out-of-state national and international users

- 72 million total requests in 2013
- **120 million** requests projected for 2014
- That's **35,000 maps per day** sent to user screens – a map every other second around the clock!


Web Mapping Service (WMS) Unique Internet (IP) Addresses -- by month
IPs Seen
Poly. (IPs Seen)
3500
3000
2500
2000
1500
1000
500
0
Jan-07
Jul-07
Jan-08
Jul-08
Jan-09
Jul-09
Jan-10
Jul-10
Jan-11
Jul-11
Jan-12
Jul-12
Jan-13
Jul-13
Jan-14
Jul-14
Jan-15
Jul-15

Impact of Proposed USCG CORS Decommissioning

Alaska's Geodetic Control
The geodetic control network in Alaska is comprised of 111 operational Continuously Operating Reference Stations (CORS). The stations receive positioning system signals from satellites, including the Global Positioning System (GPS). The received signal differential from the known location is used to improve vertical and horizontal accuracy for GPS devices, from 15-meter accuracy to within centimeters of the National Spatial Reference System.

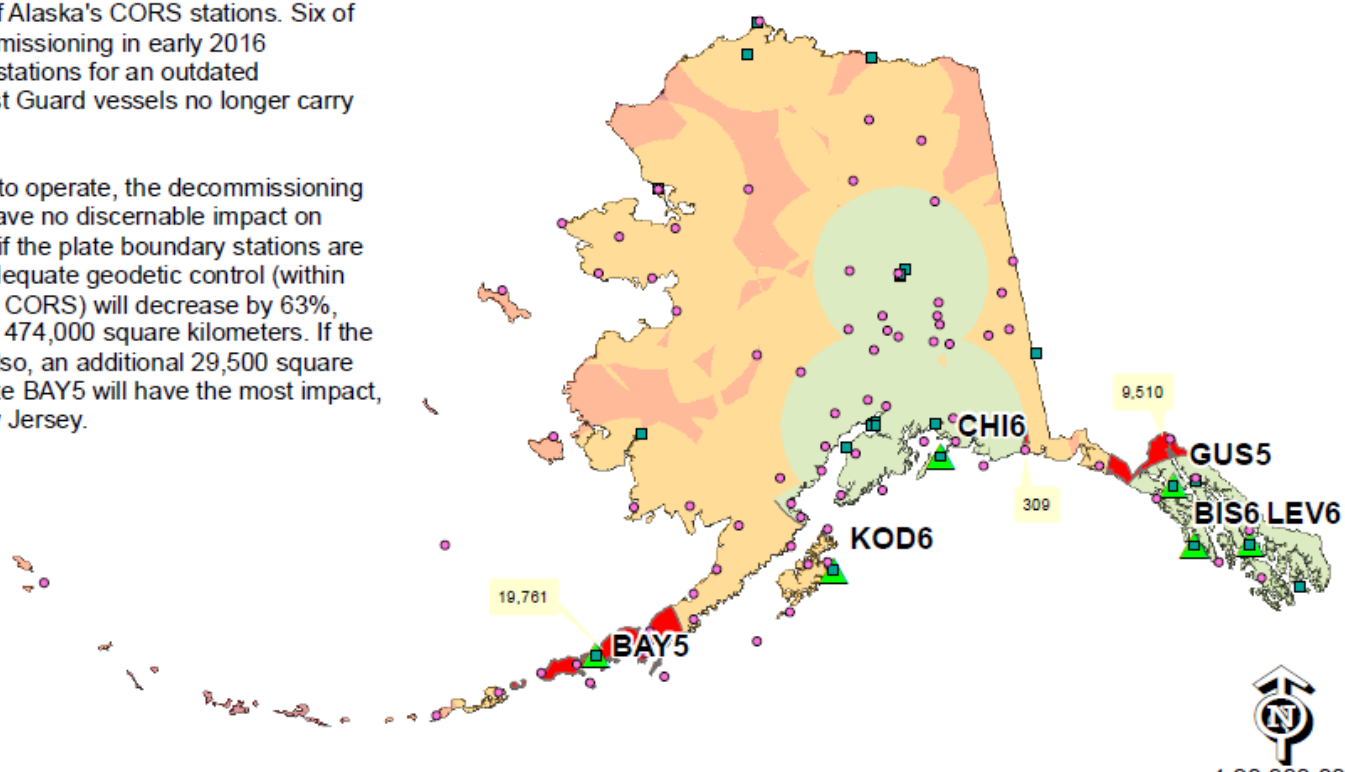
Plate Boundary Observatory Stations
More than half of the CORS in Alaska are run by the Plate Boundary Observatory program, a part of the UNAVCO EarthScope project estalished through a 2013 National Science Foundation award. Funding to support these plate boundary observatory stations will run out in two years.

U.S. Coast Guard Stations
The U.S. Coast Guard runs about 20 of Alaska's CORS stations. Six of these stations are proposed for decommissioning in early 2016 because they also serve as broadcast stations for an outdated navigational signal which modern Coast Guard vessels no longer carry receivers for.

If the plate boundary stations continue to operate, the decommissioning of the six U.S. Coast Guard sites will have no discernable impact on Alaska's geodetic coverage. However, if the plate boundary stations are decommissioned, the total area with adequate geodetic control (within 250 kilometers of at least 3 operational CORS) will decrease by 63%, from 1.278 million square kilometers to 474,000 square kilometers. If the six CORS sites are decommissioned also, an additional 29,500 square kilometers will be lost. The Cold Bay site BAY5 will have the most impact, affecting an area about the size of New Jersey.

Loss of coverage due to USCG CORS decommissioning if plate boundary observatory stations are also shut down.

Station ID	Area (sq. km.)
BAY5	19,761
GUS5	9,510
CHI6	309
BIS6	0
LEV6	0
KOD6	0



Legend

- Non-UNAVCO
- UNAVCO
- USCG proposed decommision
- USCG impacted coverage
- non-plate boundary coverage
- Plate Boundary Observatory coverage
- Inadequate Coverage
- No Coverage

CORS site information from http://www.ngs.noaa.gov/CORS/, Oct. 7, 2015. Anne Johnson, AKDNR