Alaska Department of Transportation & Public Facilities

Statewide Aviation

2023 State of Alaska Unmanned Aircraft Systems (UAS) & Advanced Air Mobility (AAM)

February 9, 2023

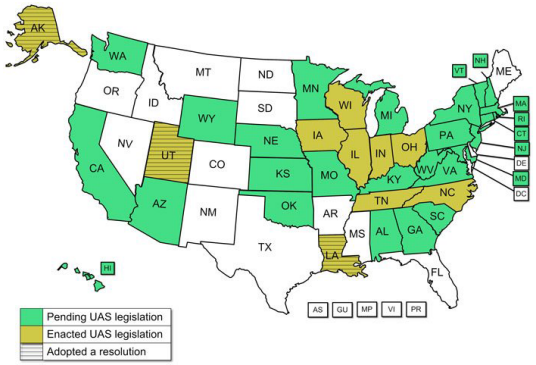
Alaska UAS Regulations

AS 02.10.010. Supervision Over Aeronautics and Communication
AS 02.15.010. Purpose
AS 02.15.220. Enforcement of Aeronautics Laws
AS 02.40.020. Certification of Compliance of Air Carriers

AS 18.65.900 Operational Requirements for UAS
AS 18.65.902 Use of UAS by Law Enforcement Agency
AS 18.65.903 Retention of Images
AS 18.65.909 Definitions

5 AAC 33.398. Use of Aircraft Unlawful
In the Southeastern Area, during an open commercial salmon fishing period, UAVs may not be used to locate salmon for commercial fishing or for any activity related to commercial salmon fishing operations.

11 AAC 20.020. Aircraft
The Alaska Department of natural Resources has established a restriction on drones in Chugach State Park. This law prohibits aircraft in Chugach State Park, except for authorized aircraft flying into/out of Bold Airport.



Alaska UAS Development

$35.4 Million Programmed for CY2023 for UAS Research and Development

- **Funding Sources**
  - U.S. DOT & FAA
  - State of Alaska
  - Private investments
- **Partnerships**
  - Alaska Center for UAS Integration (ACUASI)
  - SOA Agencies
  - Federal
  - Private industry

Alaska UAS Growth for 2022-2023

FAA | UAS Drone Popularity

Reporting data as of 1/10/2023 3:56:10 AM ET

Ratio of Population to Drone Registrations

Rank of Popularity	Name	Population	Registrations	Ratio 1 to Population
1	Alaska	738,432	9,091	81
2	Hawaii	1,431,603	15,628	92
3	Utah	2,995,919	30,821	97
4	Idaho	1,654,930	17,003	97
5	Colorado	5,456,574	55,587	98
6	Washington	7,170,351	68,218	105

Unmanned Aviation (AK)

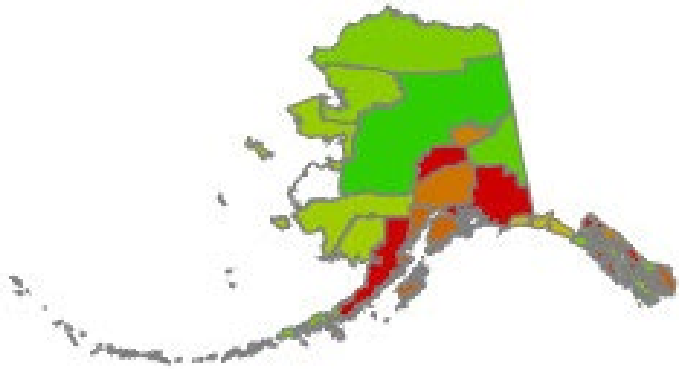
Remote Pilots = **3,241** ↑ 19% from 2022

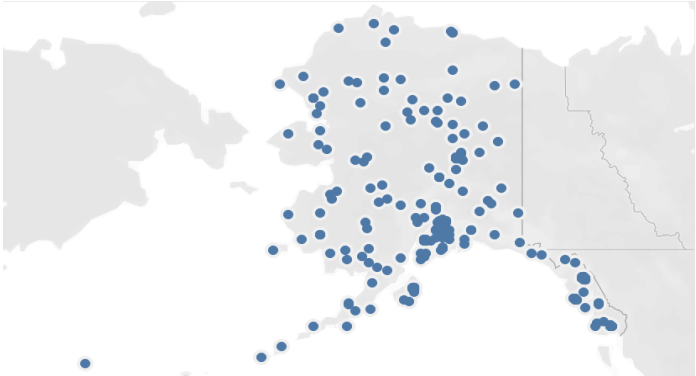
Registered Unmanned Aircraft = **9,095** ↑ 12% from 2022

Manned Aviation (AK)

Manned Pilots = **9,428** ↑ 3% from 2022

Registered Manned Aircraft = **8,668** ↑ 4% from 2022





Recreational UAS Safety Test (TRUST)

TRUST

Recreational flier: A person flying purely for fun, not in support of any business operation (whether paid or unpaid).

UAF UNIVERSITY OF ALASKA FAIRBANKS ACUASI

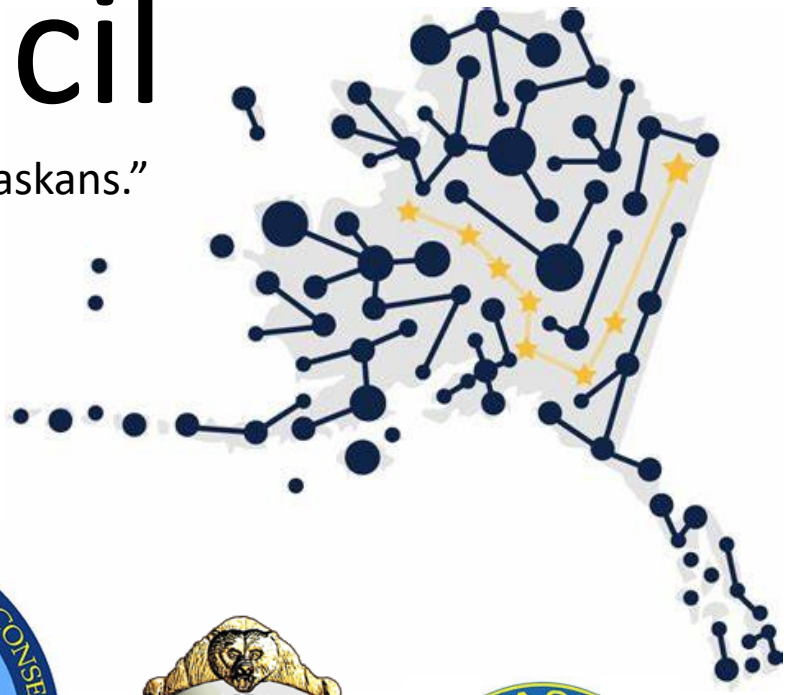
STATEWIDE AVIATION ALASKA DOT&PF SWA

AMA® ACADEMY OF MODEL AERONAUTICS

Beginning September 16, 2023, if your drone requires an FAA registration number it will be also required to broadcast Remote ID information.

Alaska Geospatial Council

"…aims to put the best available geospatial data and technologies in the hands of Alaskans."



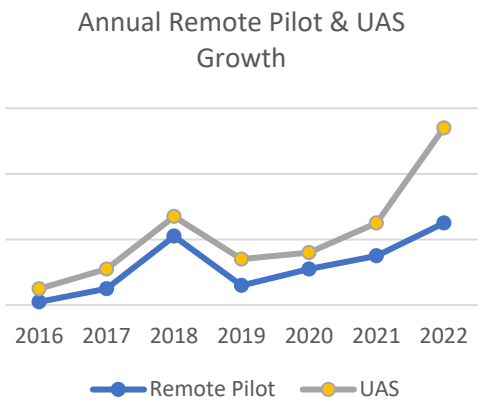
87 38 23 12 10

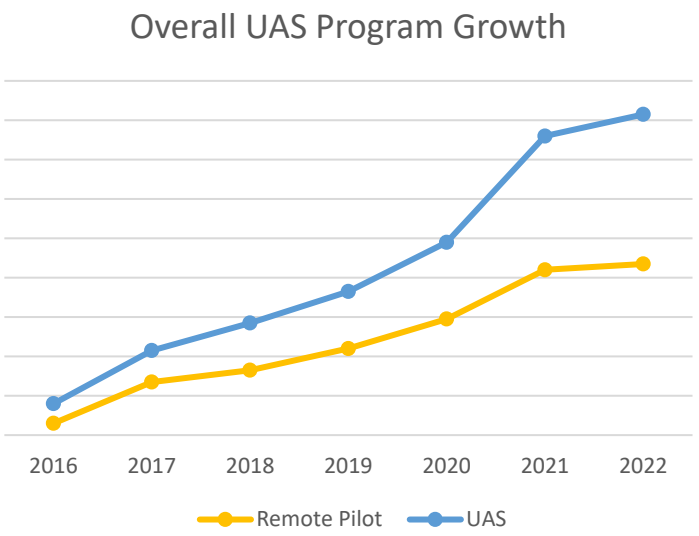
DOT&PF UAS Program

Unmanned Aerial Systems Current Users

- M&O
  - Avalanche
  - Rockslide
- Geology
- R&D
- Statewide Aviation
  - Airport Inspection
  - Advanced Air Mobility
- GIS
- Environmental
- Hydrology
- Northern Region
  - Survey
  - Construction
- Central Region
  - Survey
  - Construction
- Bridge Design
  - Inspection
- Southcoast Region
  - Survey
  - Construction

1:1 Growth Ratio

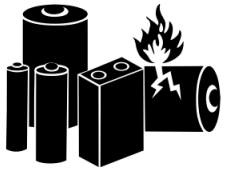




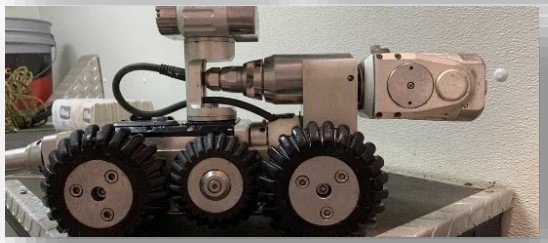
Statewide UAS Support

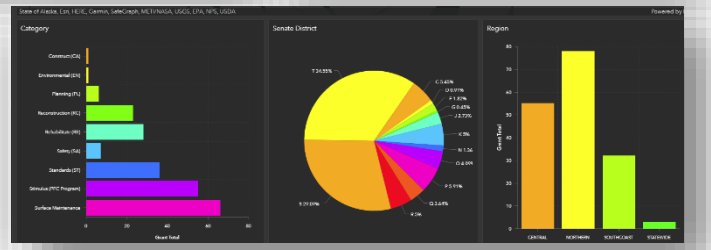
Department of Transportation & Public Facilities
Remote Sensing Lab

Field Support



HAZMAT Shipping





LAB EQUIPMENT

- Surveying Global Navigation Satellite Systems (GNSS) Equipment
- Construction GNSS Equipment
- Robotic Culvert Crawlers
- Small & Heavy Lift UAS
- LiDAR, RGB, IR ,GPR Sensors
- Mobile Radio/ Satellite Stations

LAB SERVICES

- Equipment Management, Maintenance and Replacement
- UAS Training and Certification
- UAS Pilot Records
- UAS Data Processing
- Geographic Information Systems (GIS) / CAD Support
- Reality Capture Support

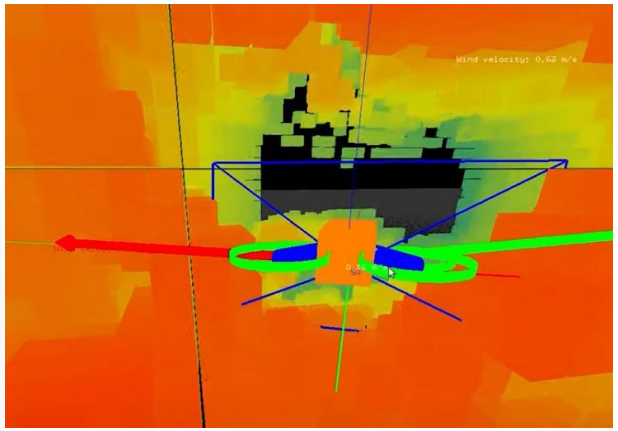
DoD Blue UAS Deployment

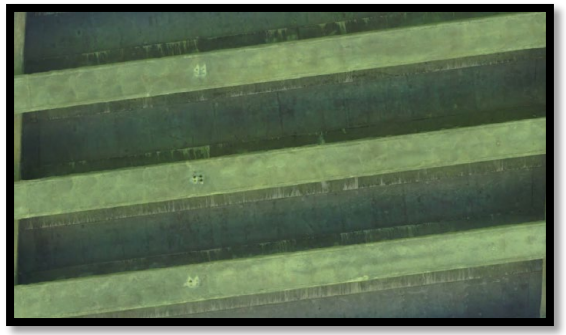
DEFENSE INNOVATION UNIT EXPERIMENTAL

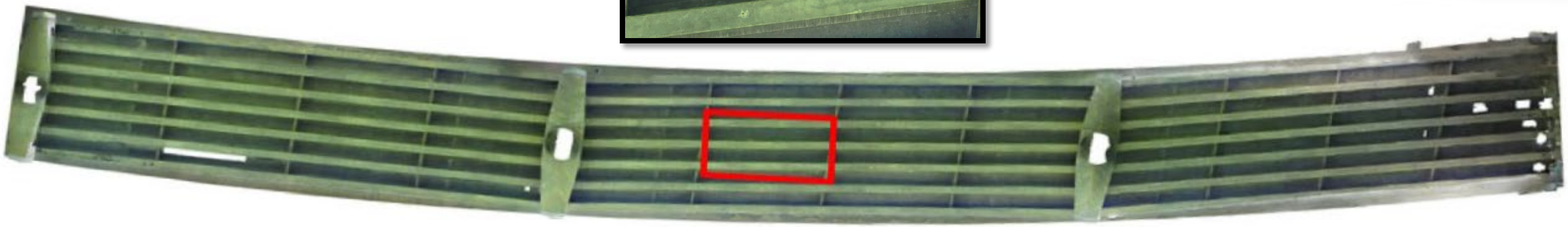
Blue sUAS

NDAA Compliant

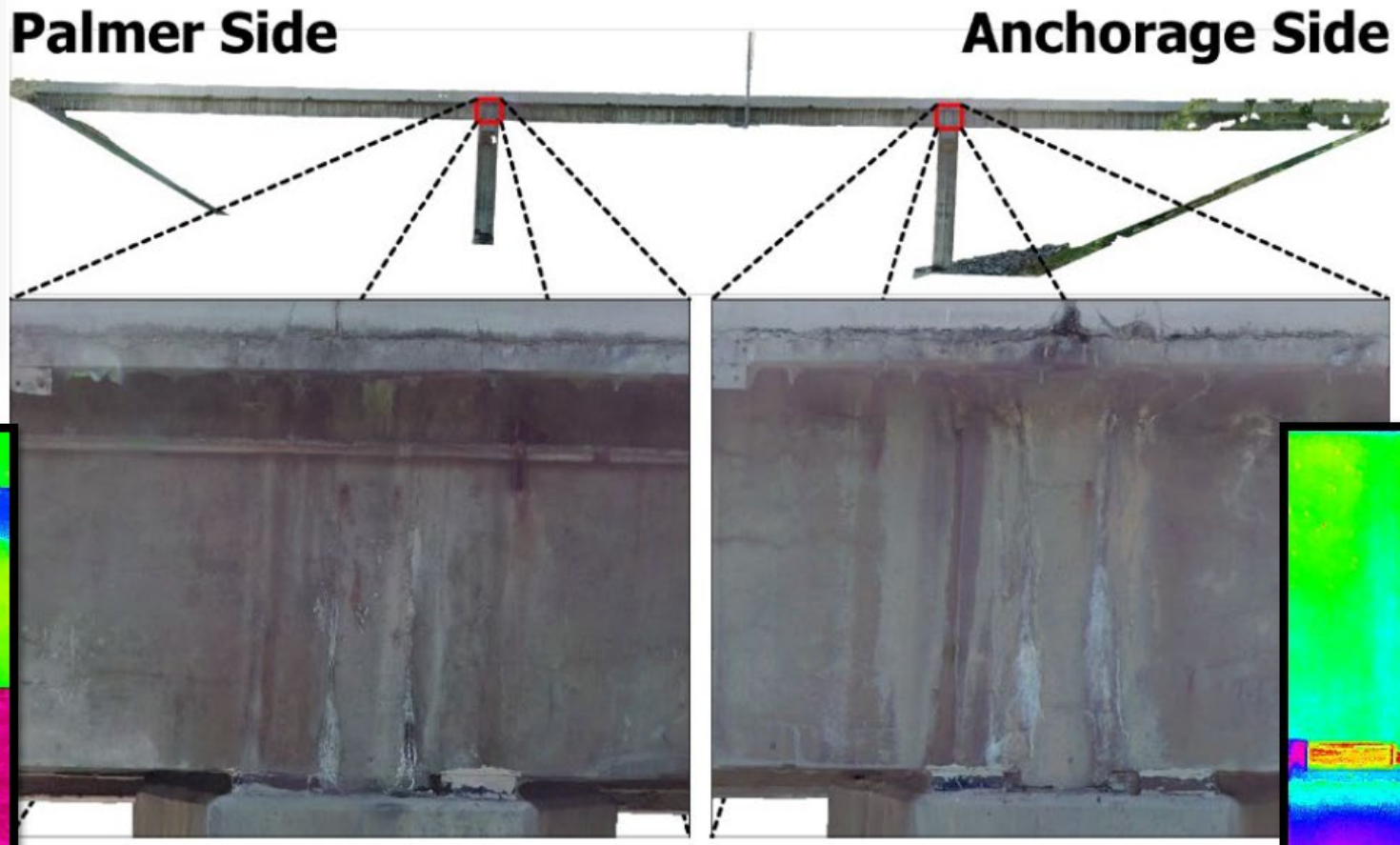
Bridge Inspection and Scanning

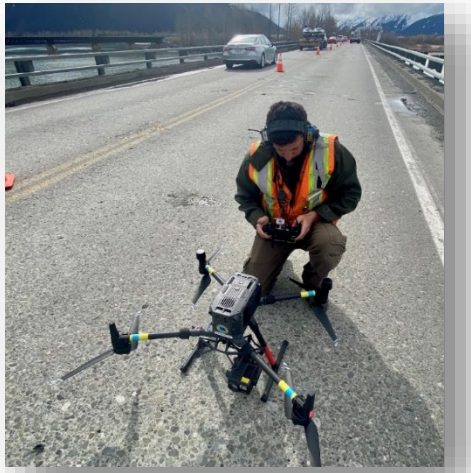


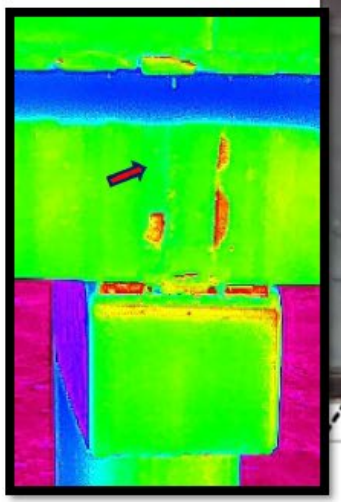


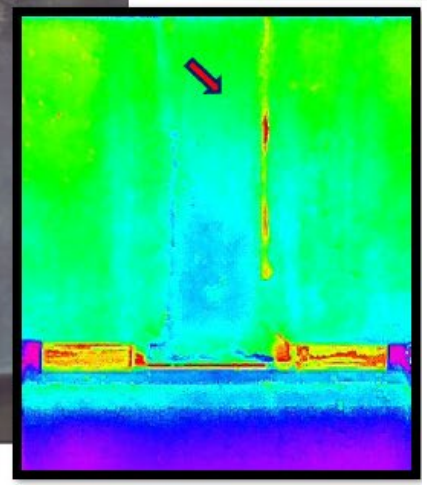


Bridge Inspection and Scanning

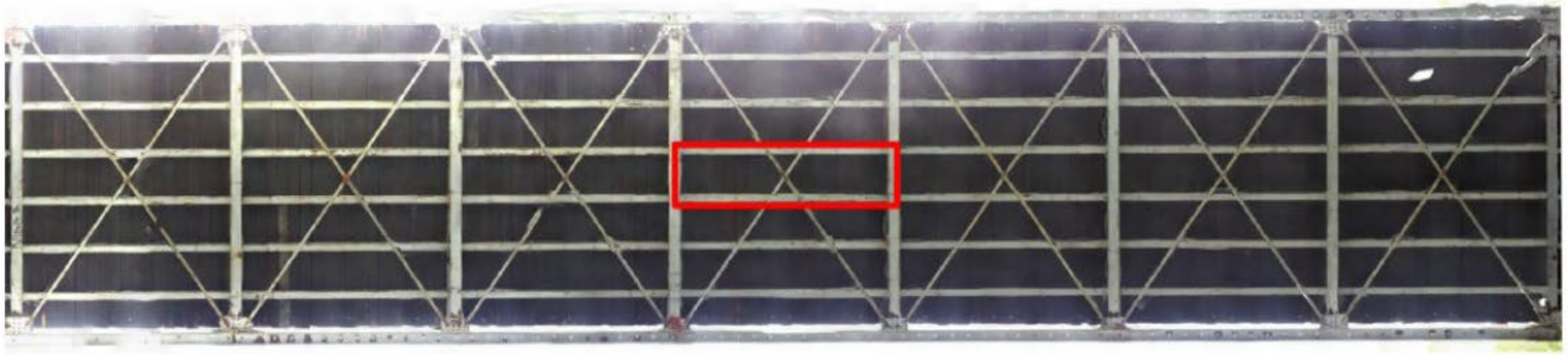




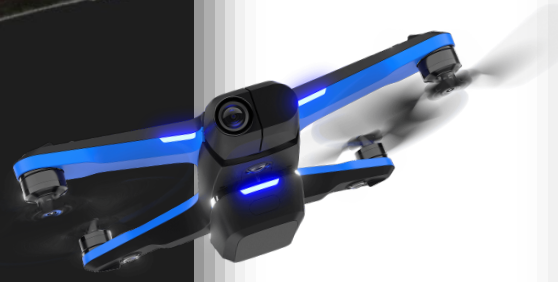




Bridge Inspection and Scanning

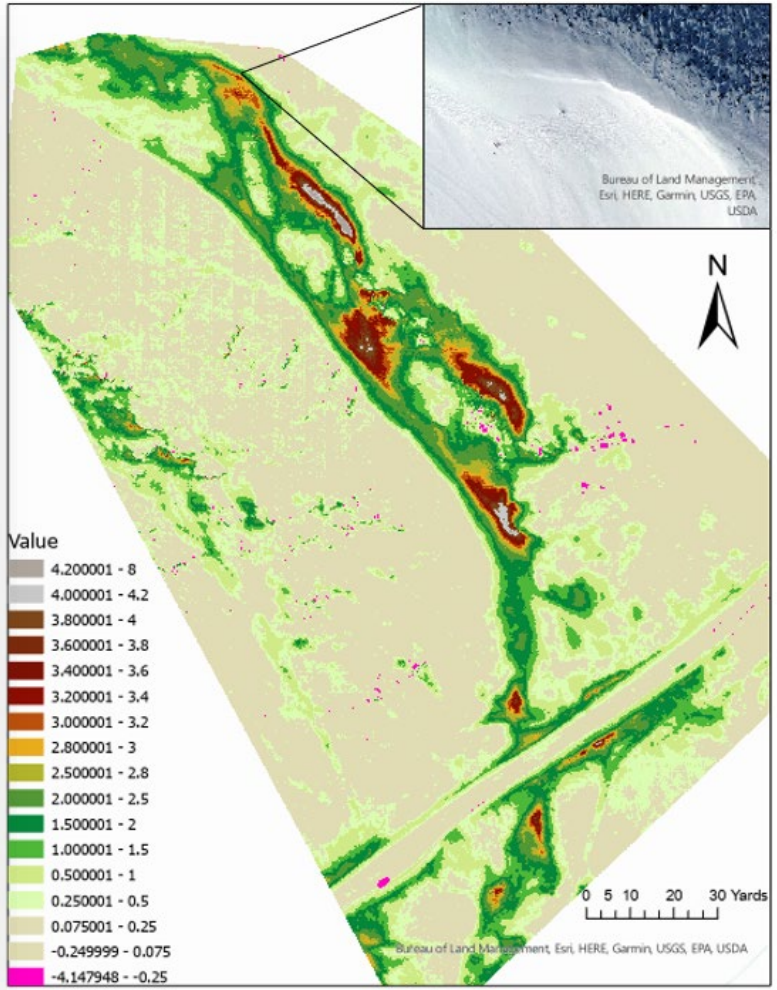


Autonomous Bridge Inspection and Scanning

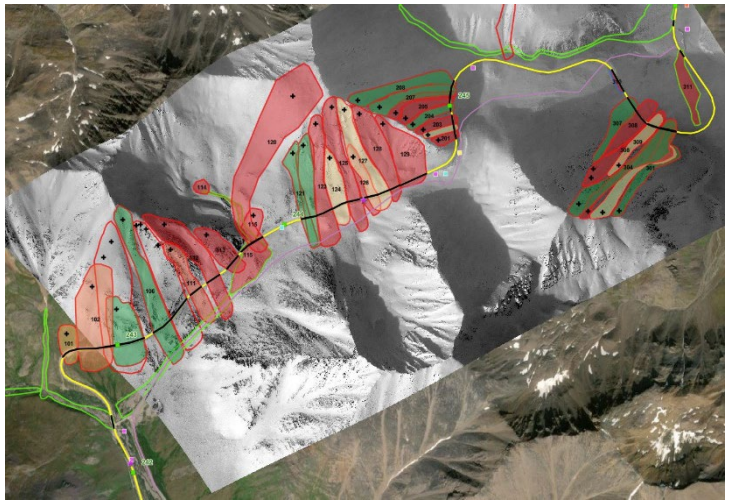


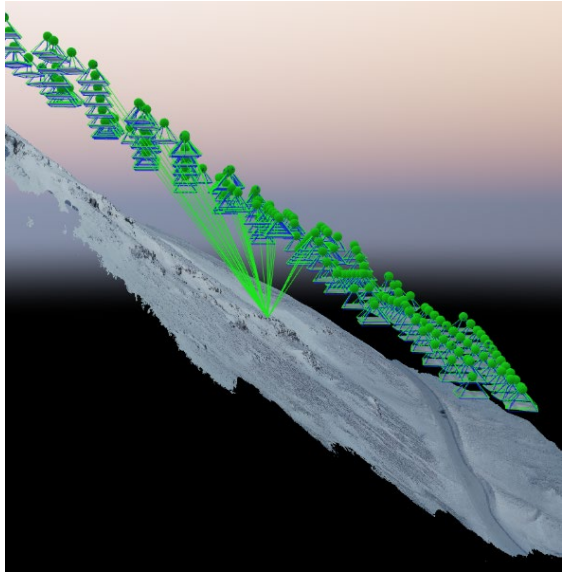
15 mins
1.5mm/pixel (15 ft offset)
850 photos
3D Scan

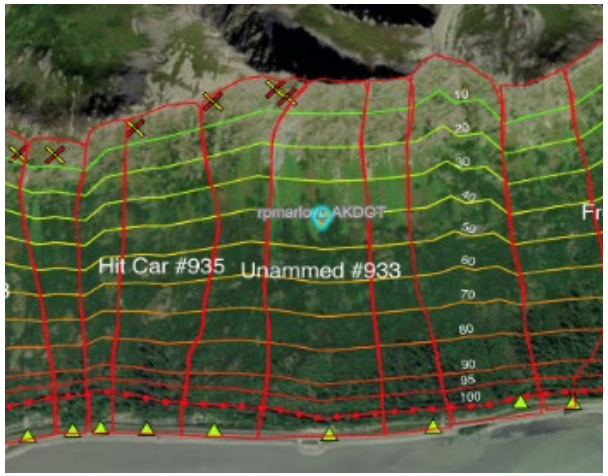
Avalanche Mapping and Monitoring

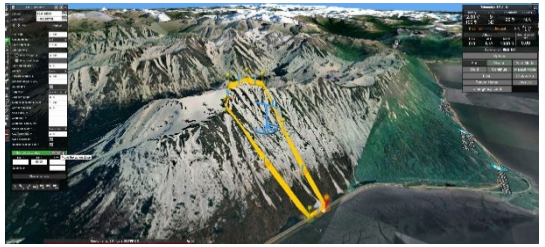


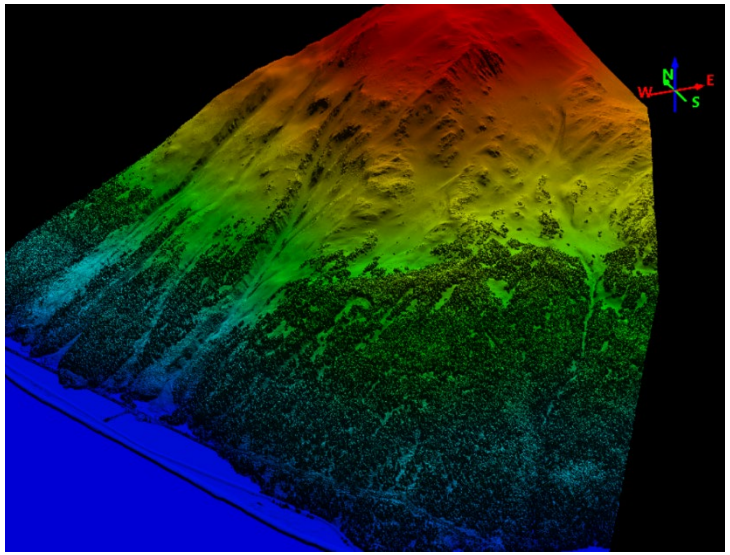
Avalanche Mapping and Monitoring

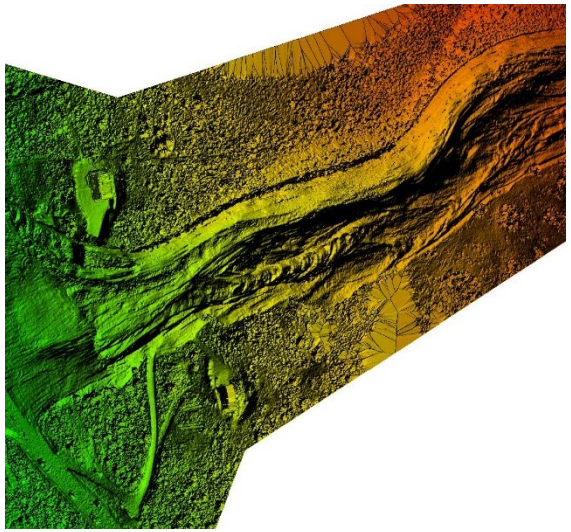


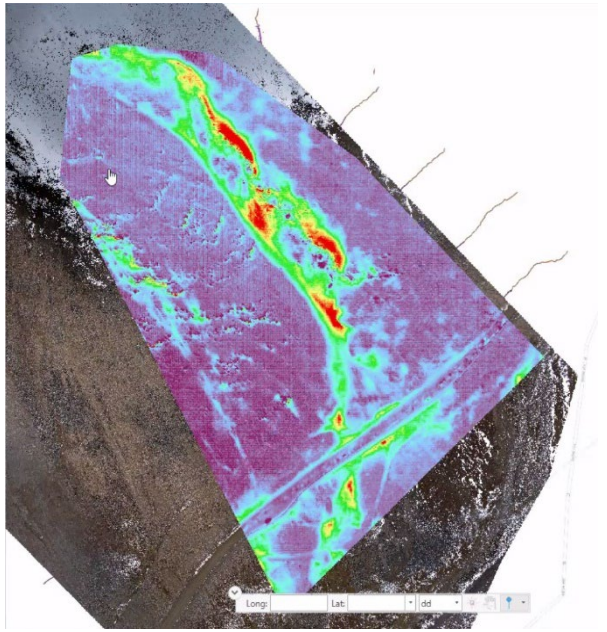




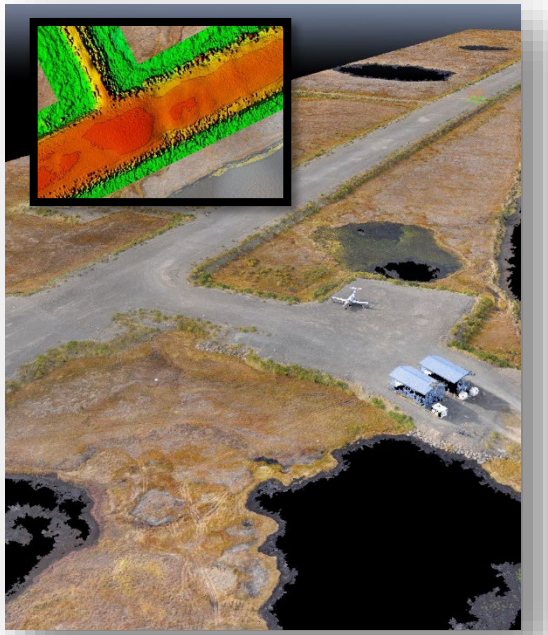


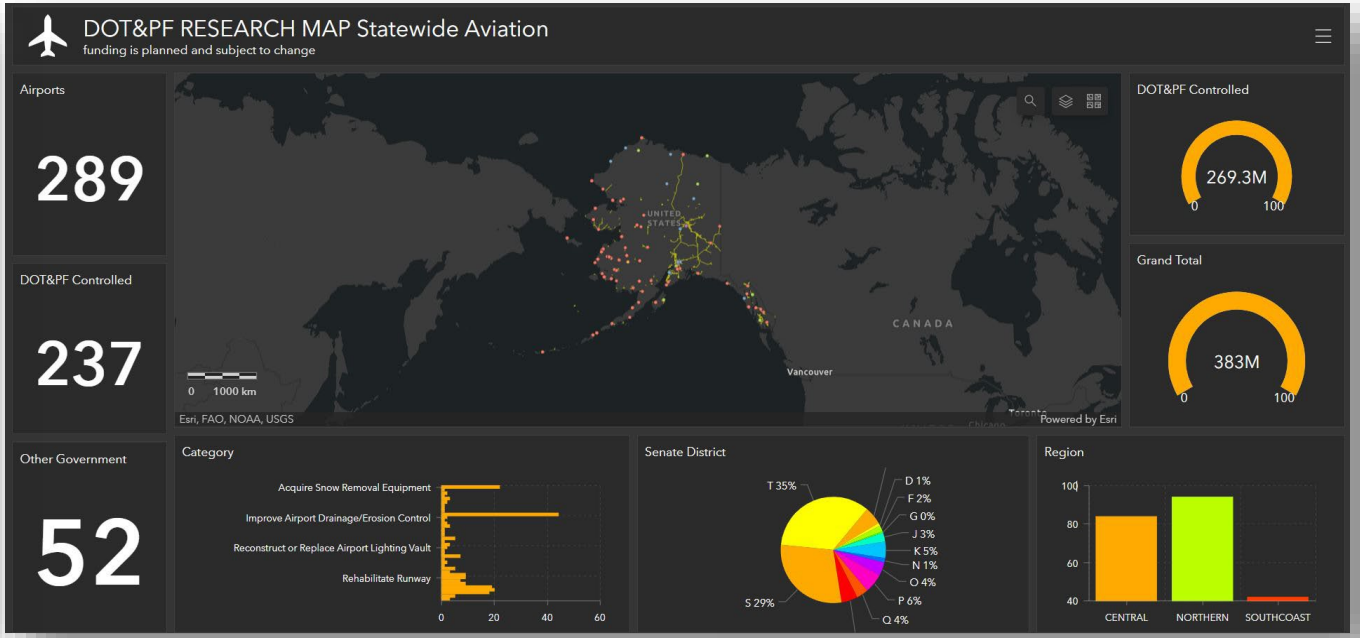


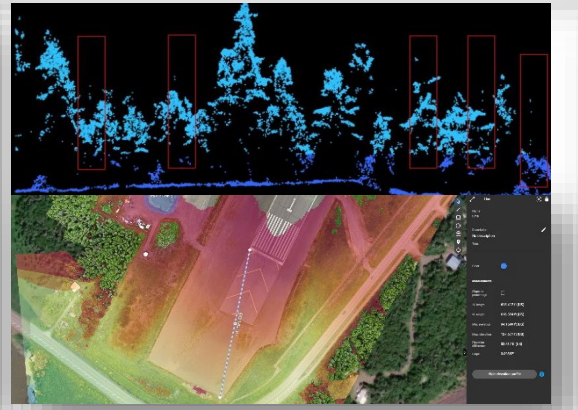




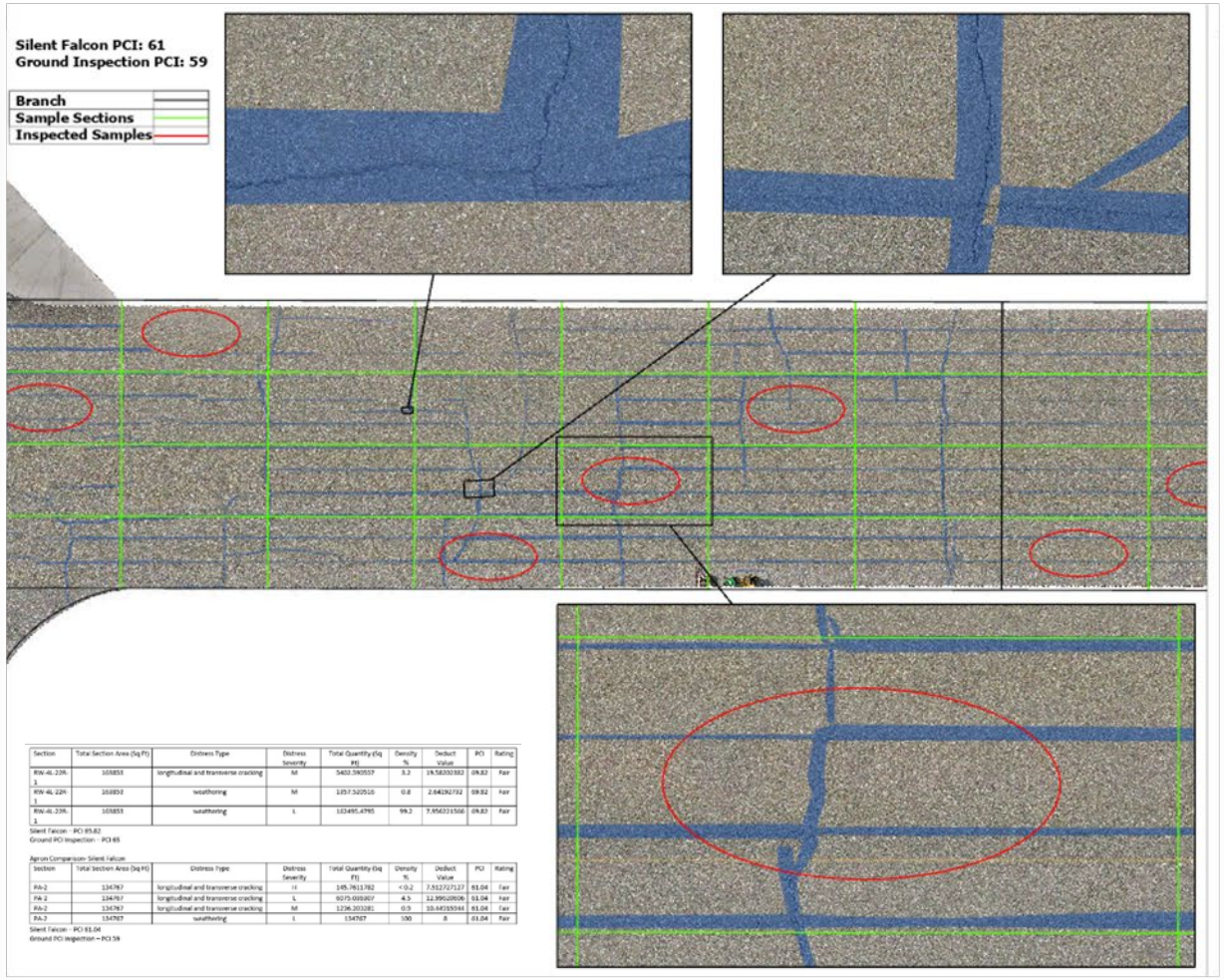
Aviation Infrastructure Monitoring and GIS







AI Crack Detection & Pavement Condition Index (PCI)



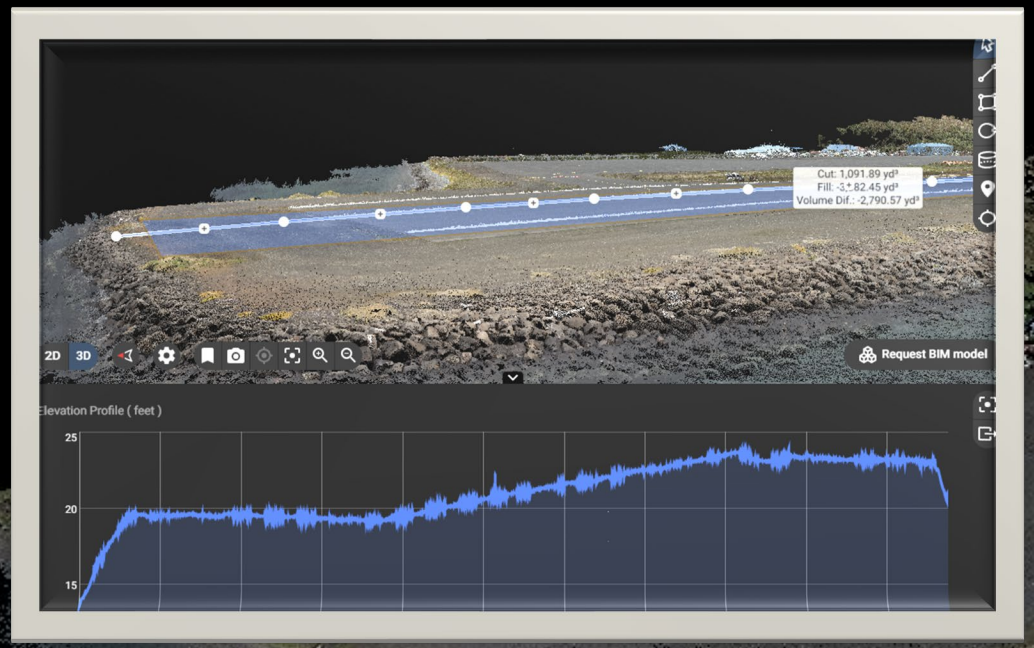
Section	Total Section Area (Sq Ft)	Distress Type	Distress Severity	Total Quantity (Sq Ft)	Density %	Deduct Value	PCI	Rating
RW-4L-22R-1	103853	longitudinal and transverse cracking	M	5402.590557	5.2	19.58202382	09.82	Fair
RW-4L-22R-1	103853	weathering	M	1057.520516	0.8	2.84192732	09.82	Fair
RW-4L-22R-1	103853	weathering	L	103495.4795	99.2	7.956331566	09.82	Fair

Silent Falcon - PCI 65.82
Ground PCI Inspection - PCI 65

Apron Comparison- Silent Falcon

Section	Total Section Area (Sq Ft)	Distress Type	Distress Severity	Total Quantity (Sq Ft)	Density %	Deduct Value	PCI	Rating
PA-2	134767	longitudinal and transverse cracking	H	149.7611782	<0.2	7.932727127	01.04	Fair
PA-2	134767	longitudinal and transverse cracking	L	6075.008407	4.5	12.99602606	01.04	Fair
PA-2	134767	longitudinal and transverse cracking	M	1236.203281	0.9	10.44265044	01.04	Fair
PA-2	134767	weathering	L	134767	100	8	01.04	Fair

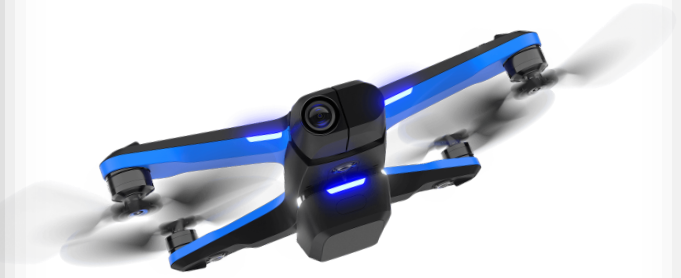
Silent Falcon - PCI 61.04
Ground PCI Inspection – PCI 59

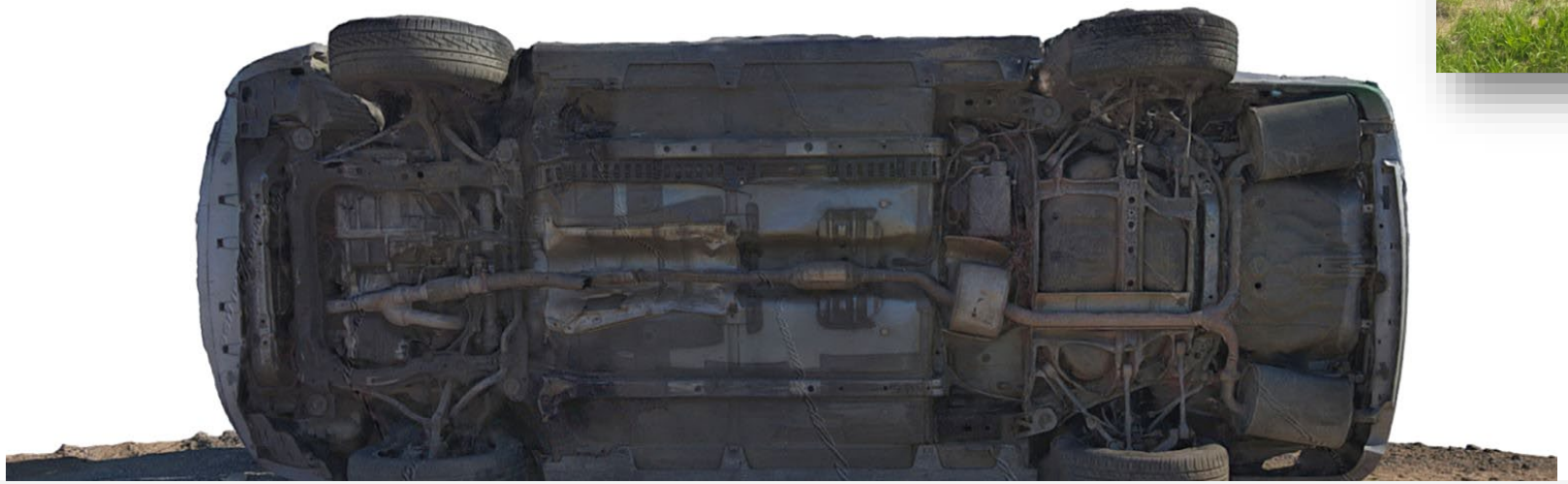


(SDP) Sand Point Airport

Statewide UAS Livestream and Cloud Processing

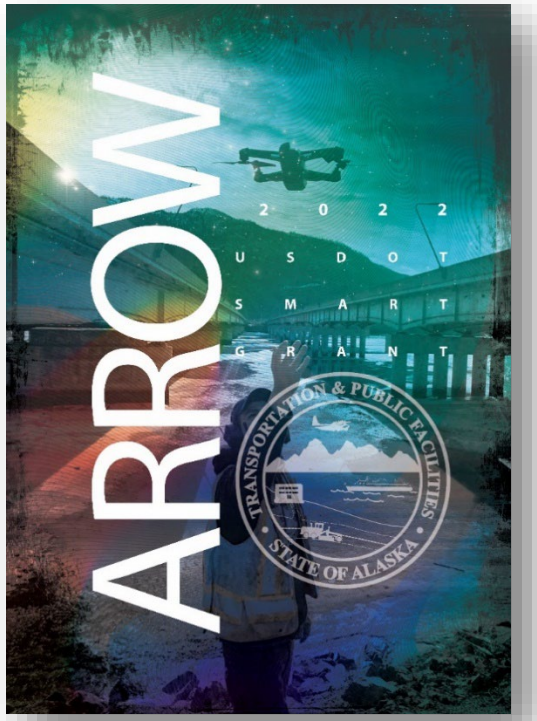
Traffic Safety Intelligent Transportation Systems (ITS)





Alaska Rural Remote Operations Workplan (ARROW)

SMART



Stage 1

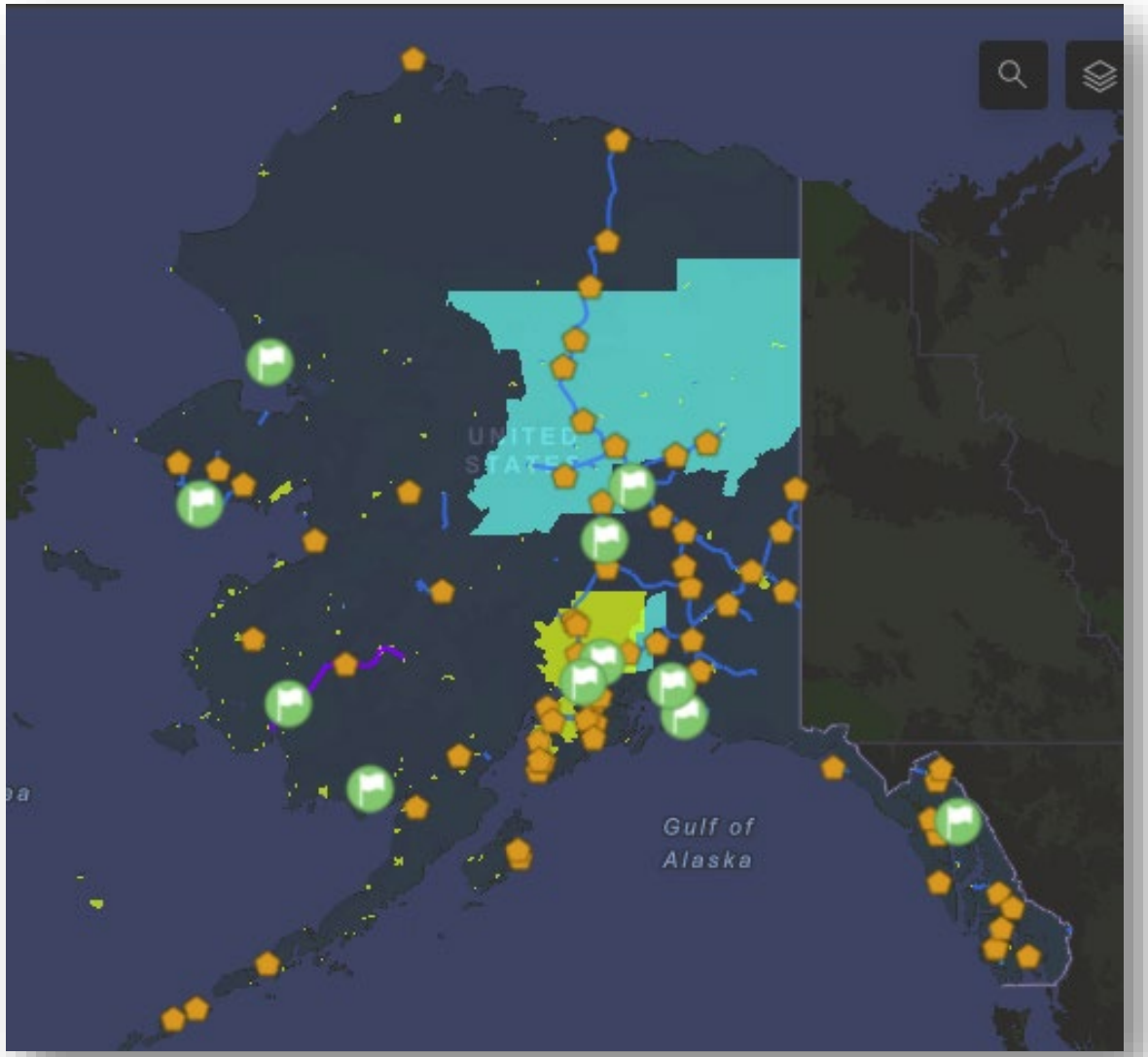
"Planning and Prototype"

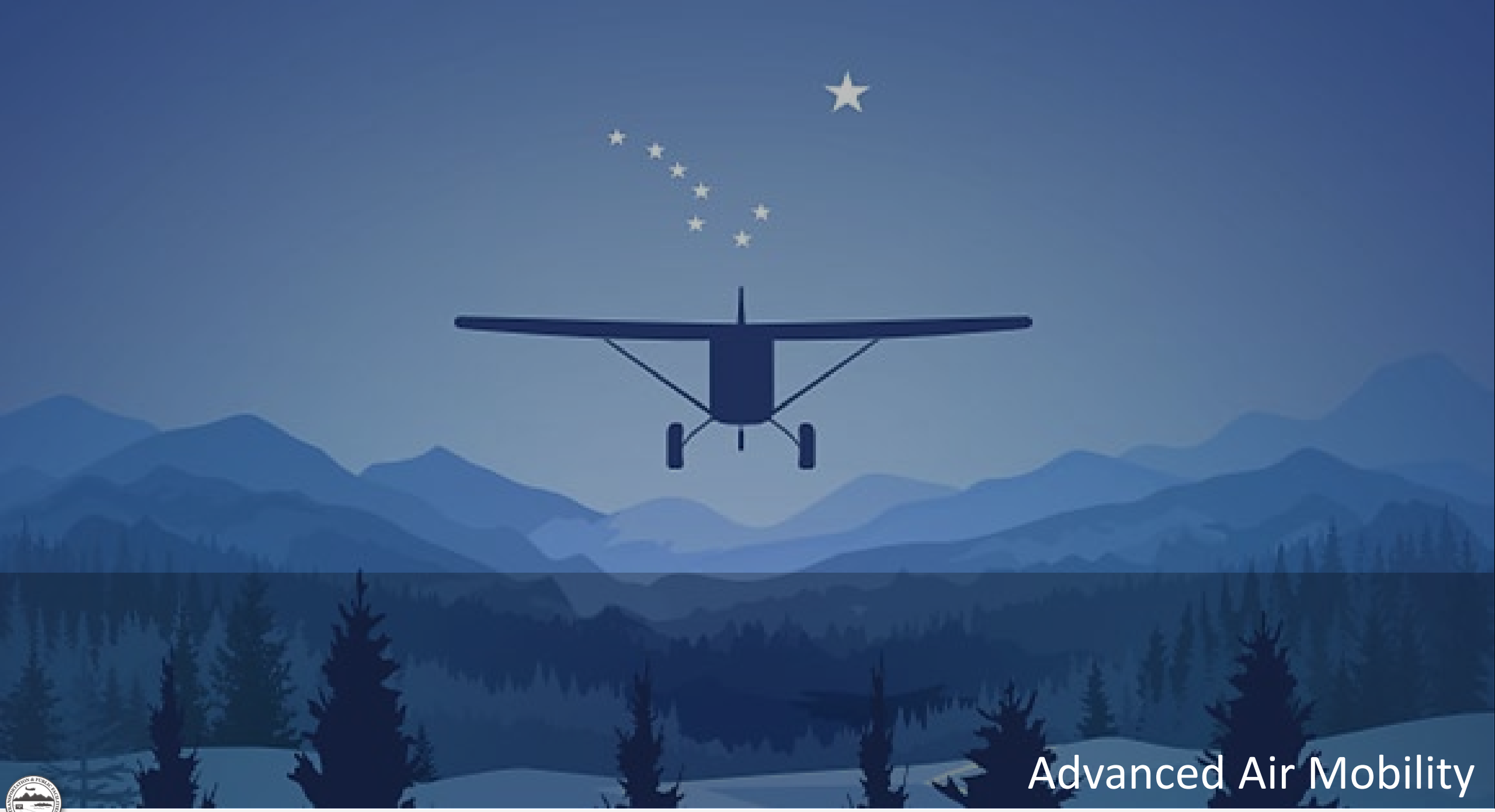
$2 Million over 18 months

Stage 2

"Implementation"

$15 million over 36 months



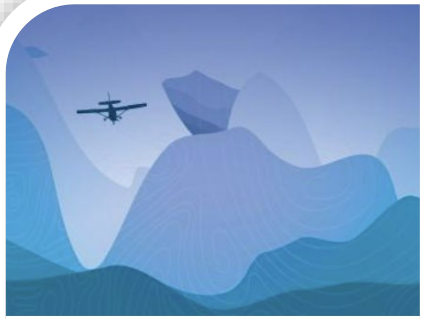


Advanced Air Mobility

FAA Alaska Aviation Safety Initiative (FAASI)

Safety Outreach

Continue and develop new safety outreach collaborations to address concerns...



Aeronautical Charting

Improve navigation charting by verifying and adding mountain pass information...

Weather Reporting Enhancements

Install weather observing systems at airports and continue testing new weather...

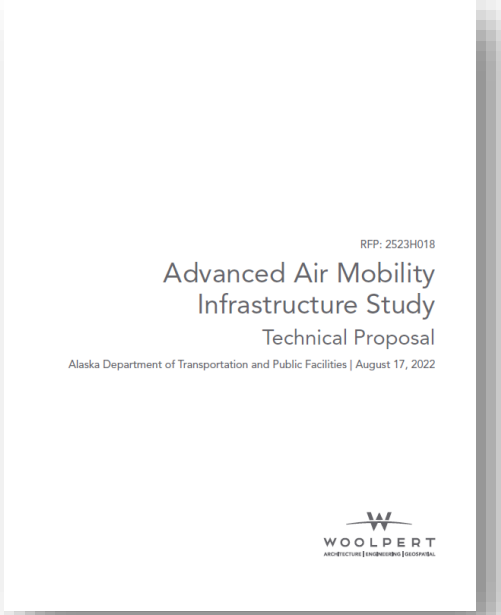
Navigation Strategy Development

Develop an airspace navigation strategy with lower-altitude flight routes and...

Surveillance

Expand ADS-B service coverage to areas that don't have it

AAM Development and Planning


RFP: 2523H018

Advanced Air Mobility Infrastructure Study

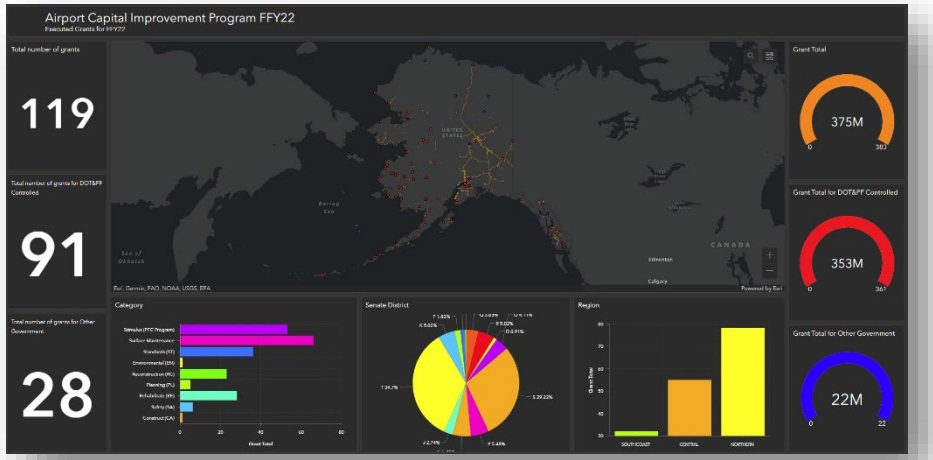
Technical Proposal

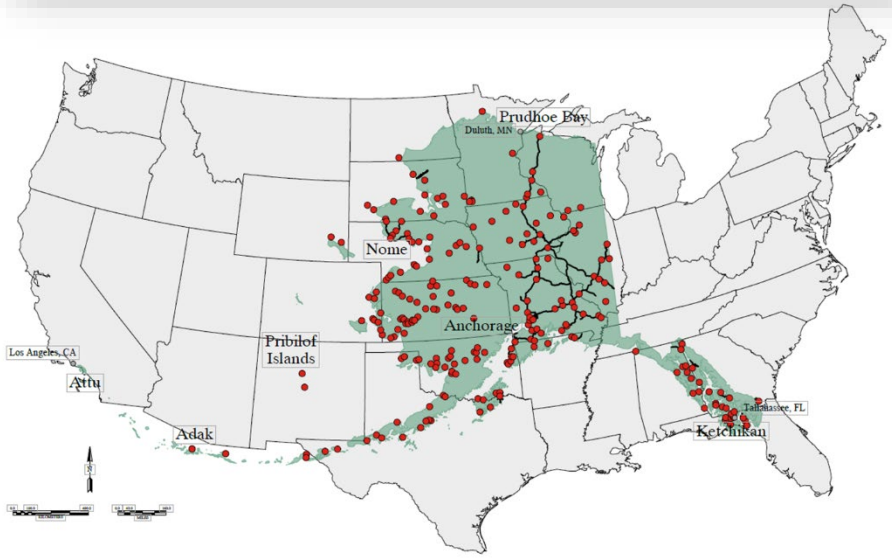
Alaska Department of Transportation and Public Facilities | August 17, 2022

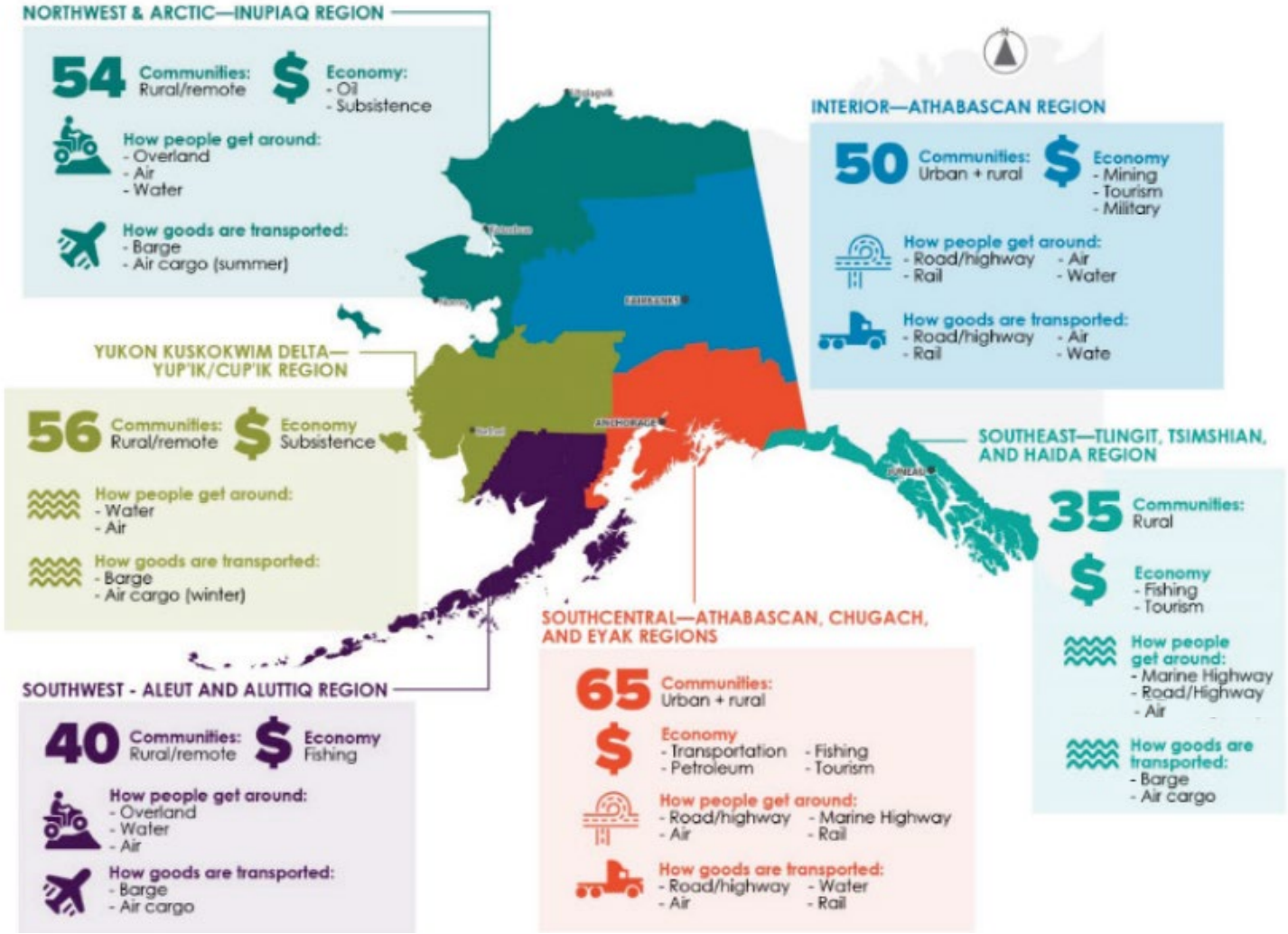
WOOLPERT

- Aviation Infrastructure Review
- Wireless infrastructure Connectivity
- Realtime Statewide GNSS Network
- Satellite Internet and Broadband
- Aviation Weather Coverage
- Electrification for Air/Ground EV
- Power Generation and Battery Backup
- Airspace Surveillance and Live Alerts
- Aviation Management through GIS
- New and Novel Technologies

AAM GAP Analysis and Transportation System

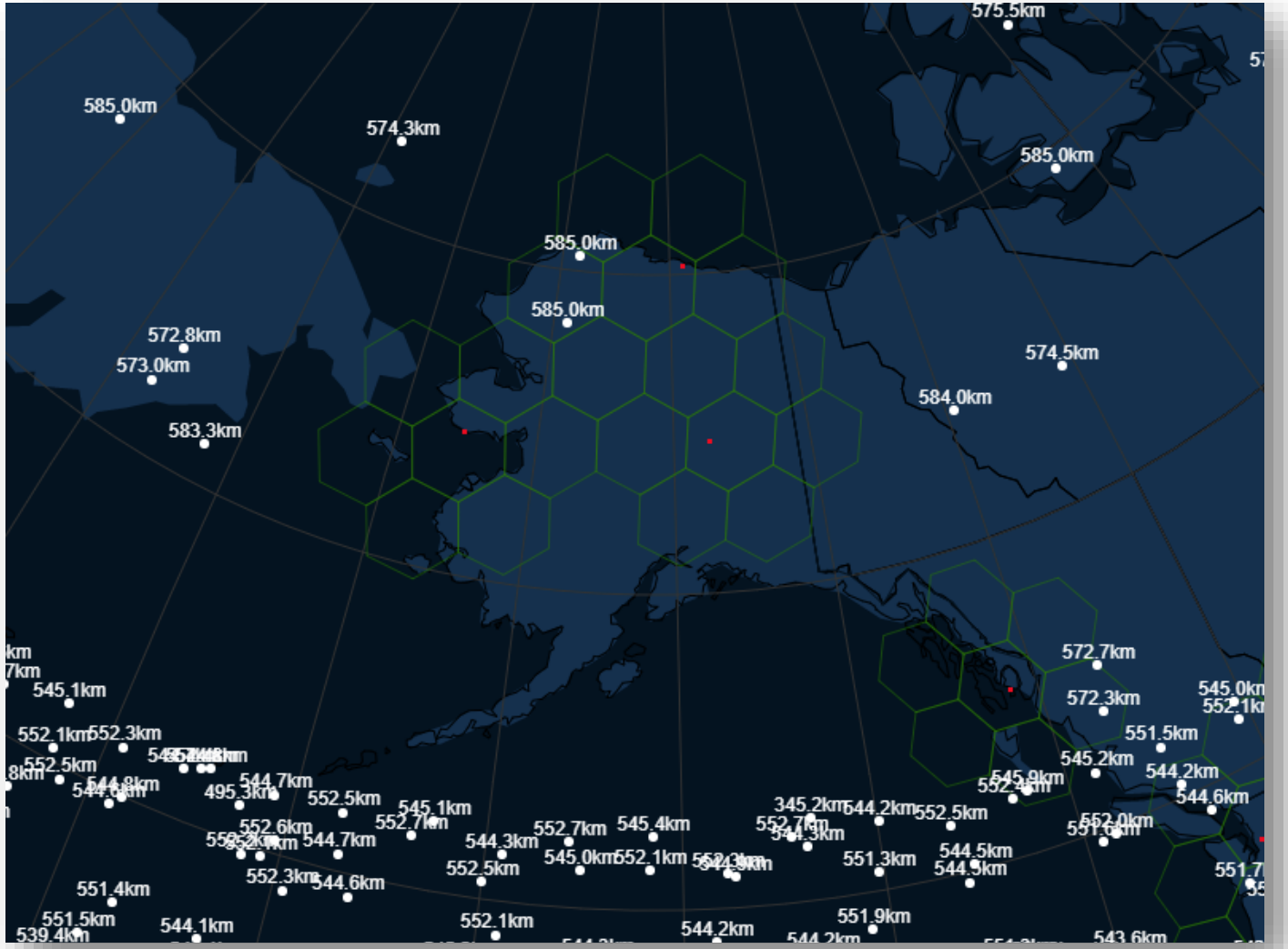




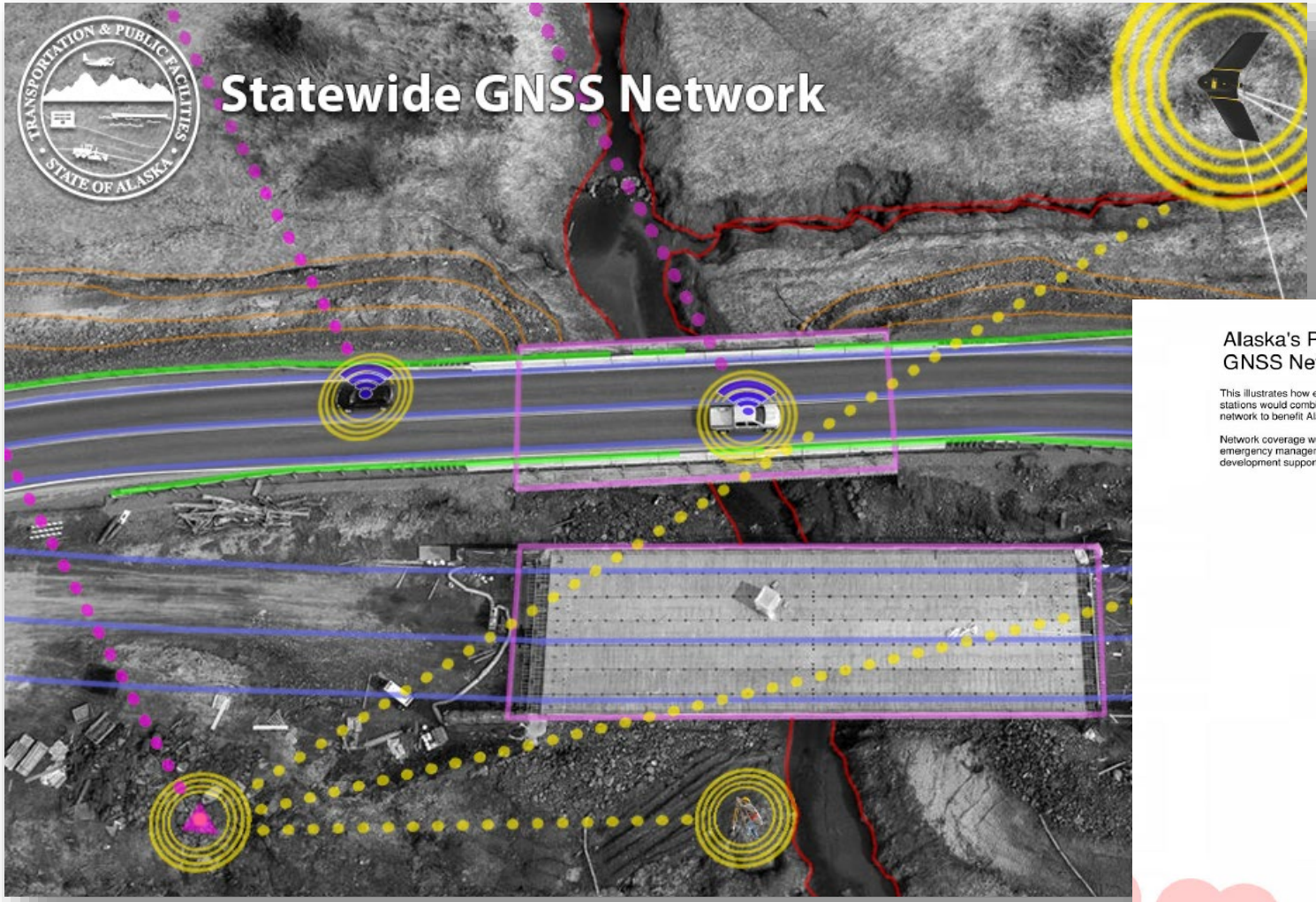


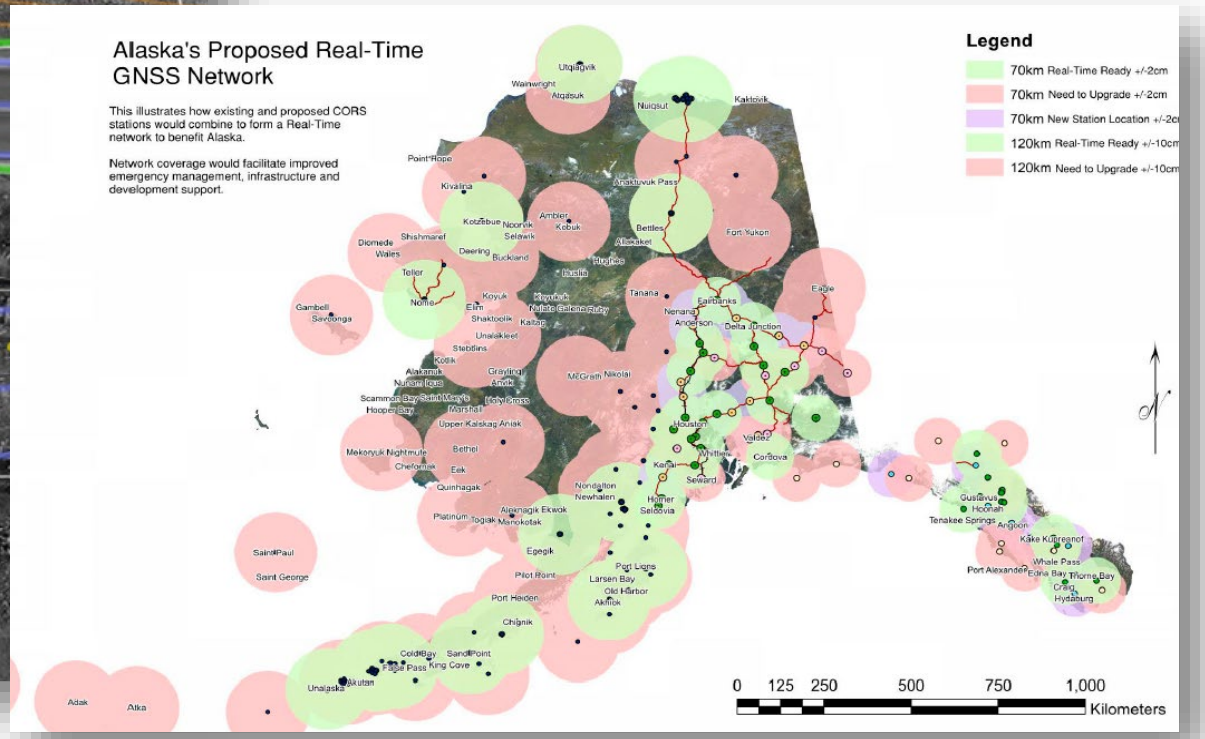
AAM Rural Broadband Connectivity

PING ms	DOWNLOAD Mbps	UPLOAD Mbps
39	174.21	33.40

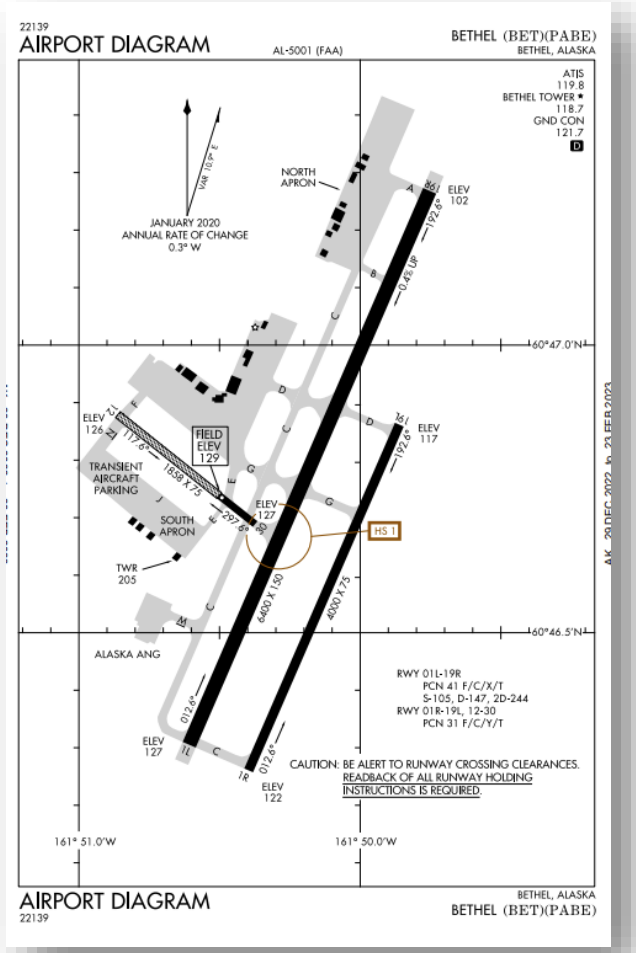


Alaska Continuously Operating Reference Network (ACORN)

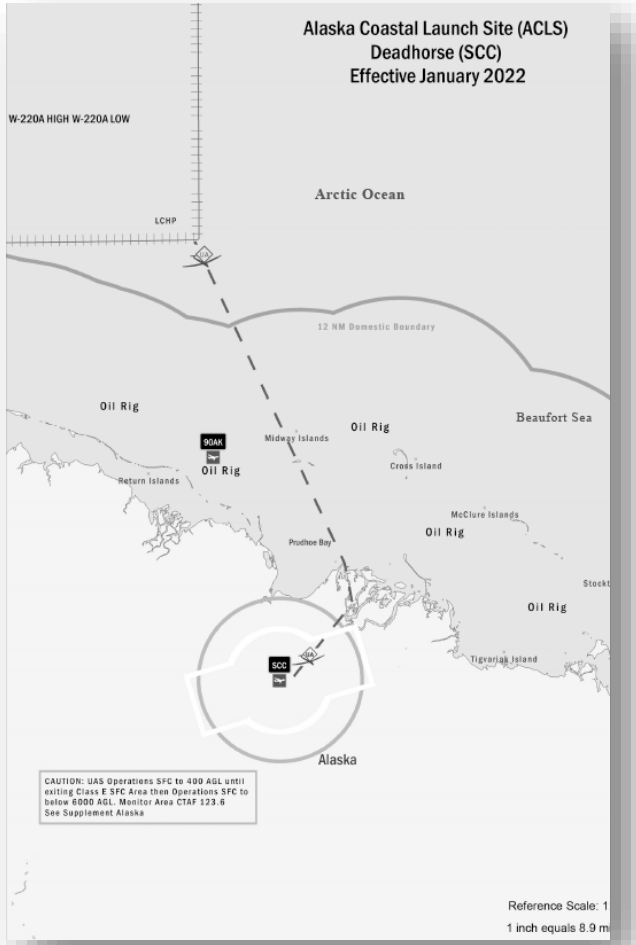




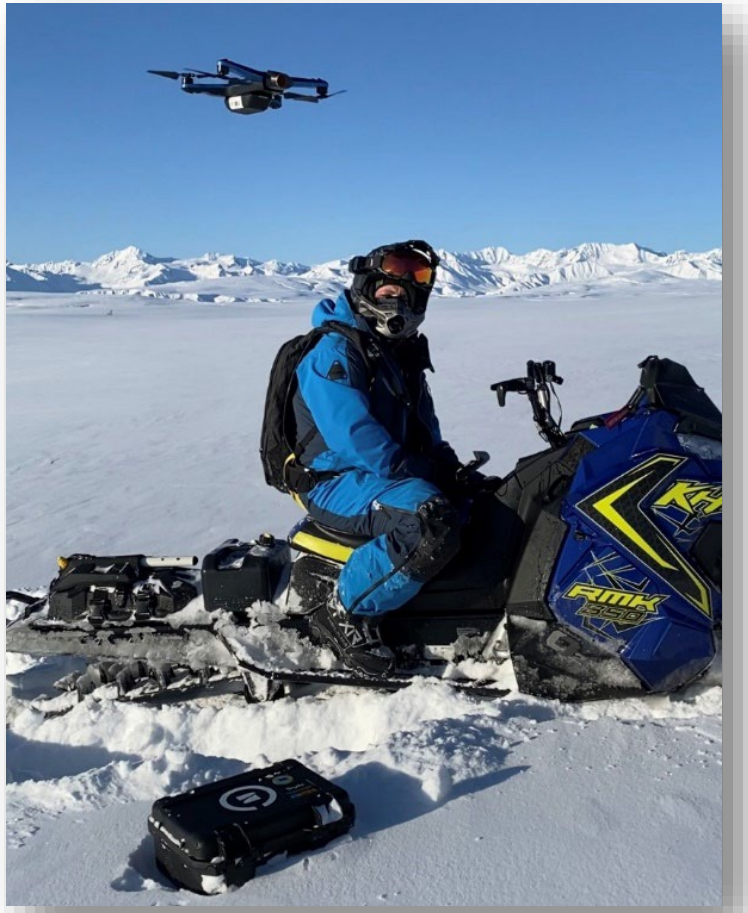
AAM Technology Deployment



Remote Tower



Alaska UAS & AAM Resources



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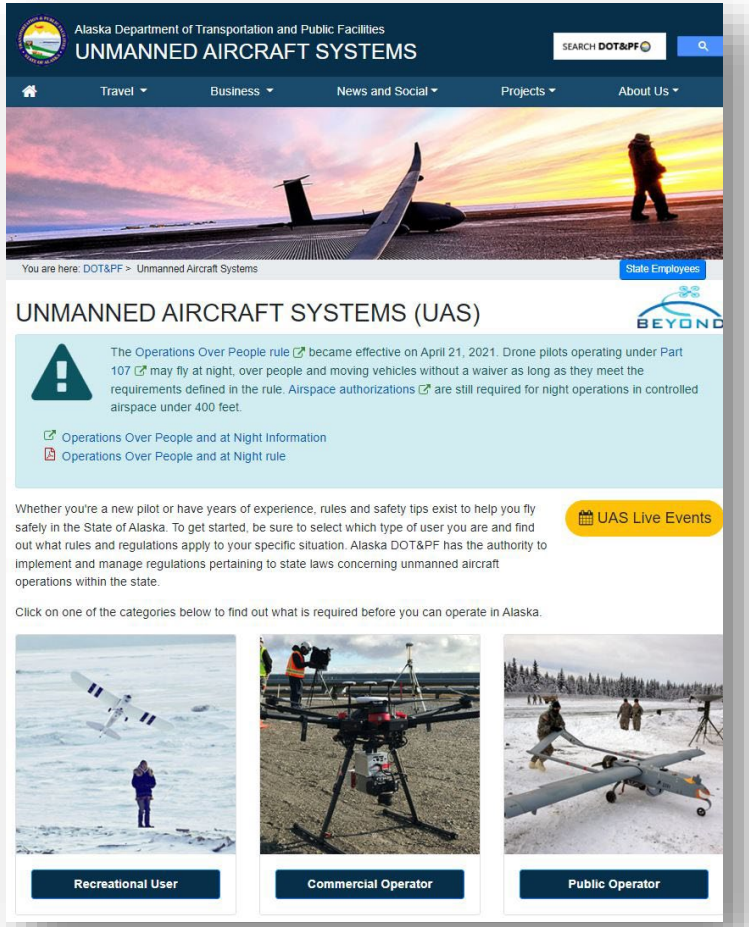
Ryan Marlow, CMS
UAS Program Coordinator,
Statewide Aviation
P: 907-269-0741
E: ryan.marlow@alaska.gov