

Weather Reporting in the NAS, Current and Future Needs

Presented to: Friends and Partners in Aviation Weather

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Federal Aviation
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Weather Reporting in the NAS, Current and Future Needs

Panel 1: Scott Stacy & John Steventon

- **NAS Weather Reporting**

- Present state of observations
- Lack of Weather Observations
- Tom George (AOPA) GA Needs. Discussing the challenges of operations with lack of reliable weather reporting and access.
- Don Eick (NTSB) Discuss the accidents in low level remote areas.
- Dave Kochevar (AAWU) Challenges in Alaska

Panel 2: FAA Options

- **Visual Observation System (VWOS) Gordy Rother (FAA)**

- Silver Standard

- **RTMA: Danny Sims (FAA)**

Panel 3: FAA and Industry Options for Solutions

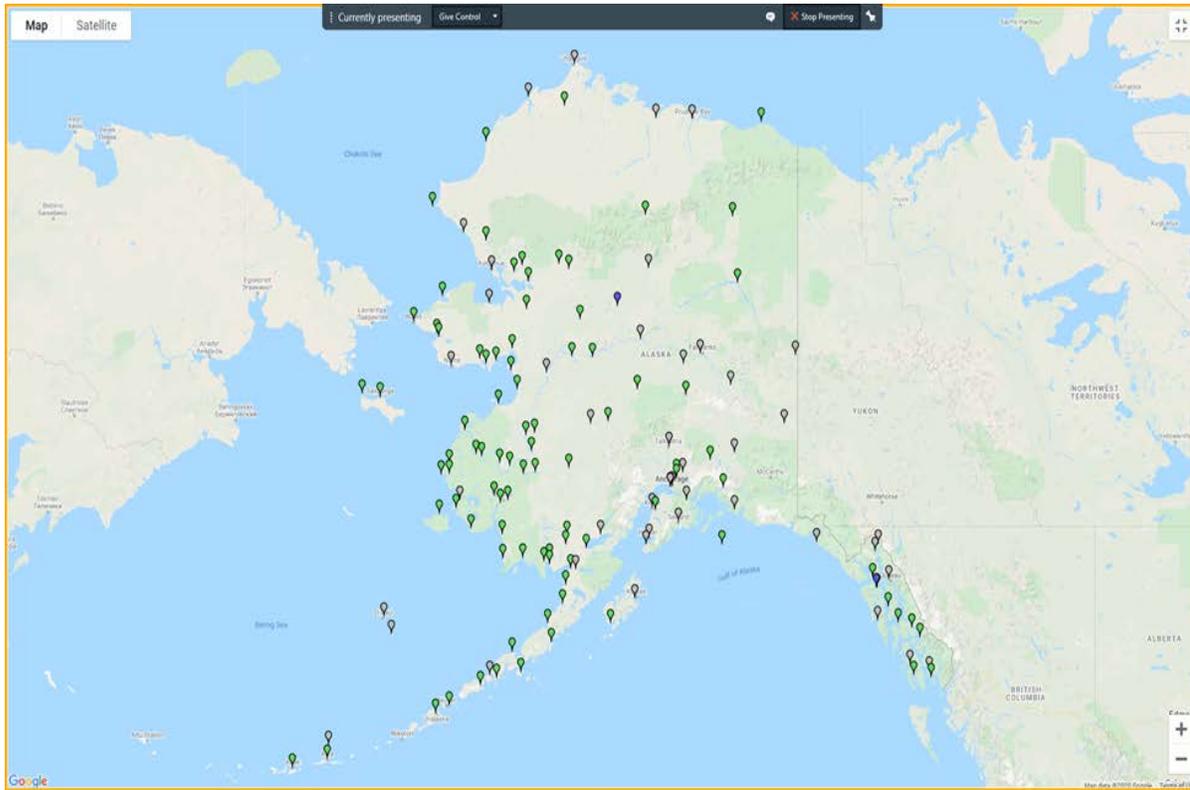
- **FAA Weather Research: Kevin Johnston and John Steventon (FAA)**

- **Industry Don Berchoff (TruWeather), Chris Baur (Hughes Aerospace), Justin Hilliard (UPS Flight Forward)**

Panel 1: NAS Weather Reporting

- **2278 total certified weather reporting systems in the CONUS covering 178,823 square miles.**
- **3,041,149.19 Square Miles of uncovered ASOS/AWOS weather report**
- **97.5% of CONUS does not have an Approved Weather Source**
- **Boundary Layer**

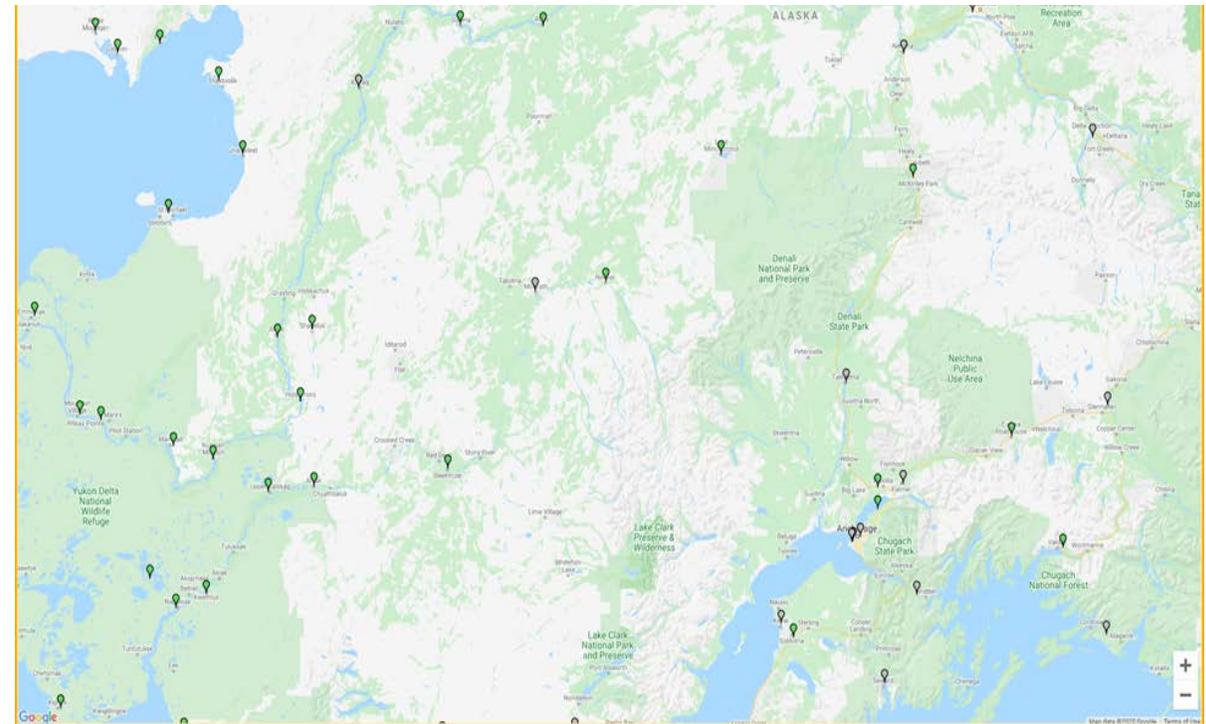
Certified Weather Observations in the State of Alaska



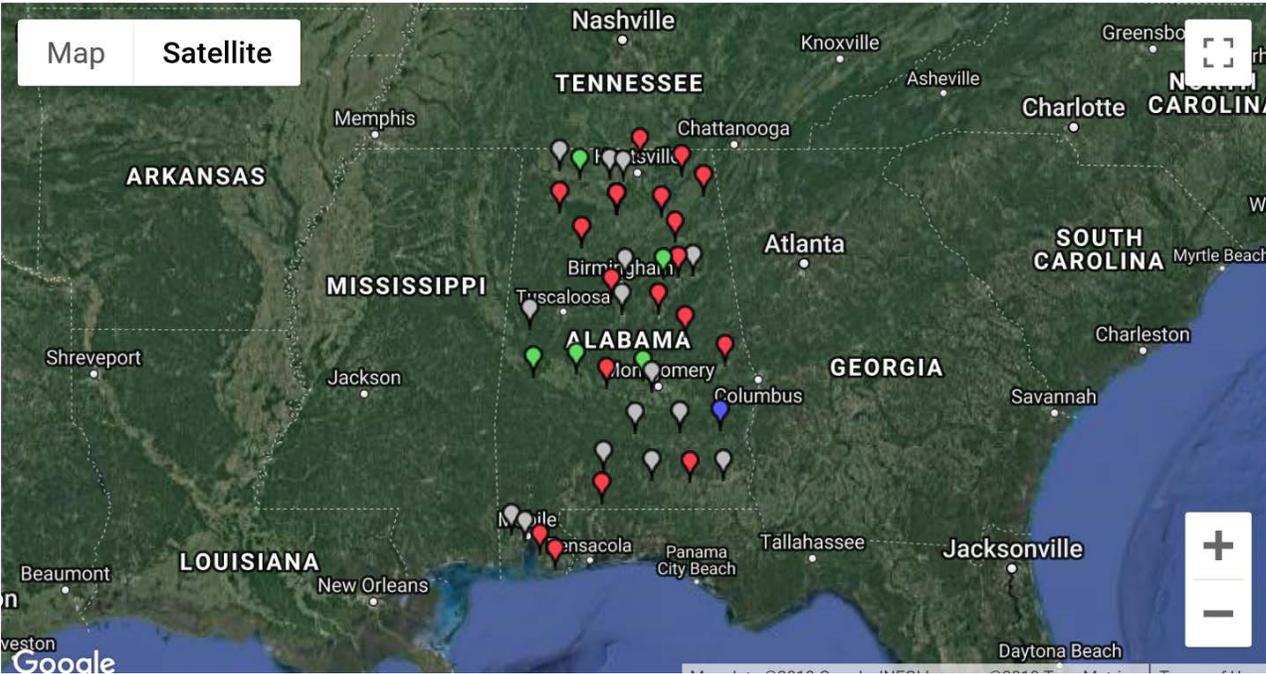
Legend: weather station types

- AWOS A:
- AWOS A/V:
- AWOS I:
- AWOS II:
- AWOS III:
- AWOS IIIIP:
- AWOS IIIIT:
- AWOS IIIIP/T:
- ASOS:
- AWSS:
- AWOS IV:
- Misc.:

Detailed View of the Vastness of the Lack of Weather Information



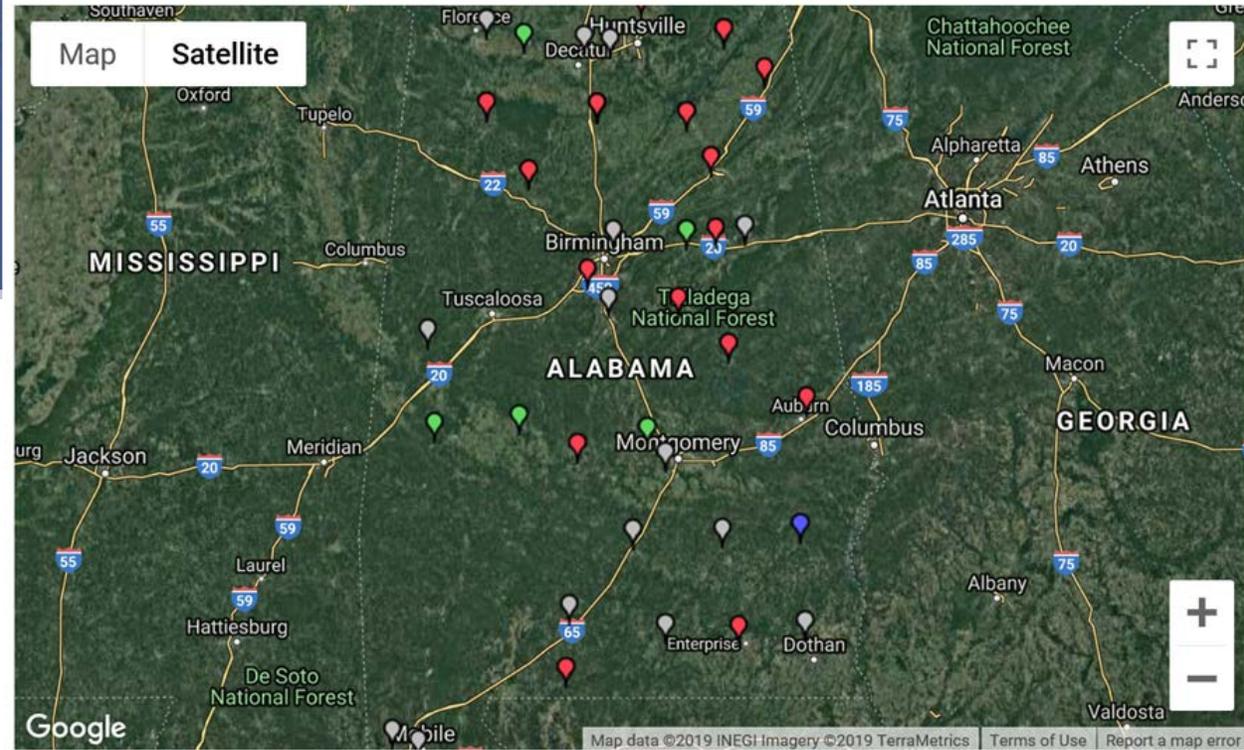
Certified Weather Observations in the State of Alabama



Legend: weather station types

- AWOS A:
- AWOS AV:
- AWOS I:
- AWOS II:
- AWOS III:
- AWOS IIIIP:
- AWOS IIIT:
- AWOS IIIIP/T:
- ASOS:
- AWSS:
- AWOS IV:
- Misc.:

Detailed View of the Vastness of the Lack of Weather Information



Lack of METARs in the NAS

- **Severe lack of weather OBS and Forecasts**
 - Widespread operational impacts
 - Economic impacts attributable
 - Accidents and fatalities attributable
- **Aviation Weather Data Needs**
 - UAS Operations Boundary Layer
 - HAA Operations
 - Low Level GA Traffic
 - Uncontrolled airports needing weather information
 - Part 137 AG Ops

The Gold Standard - METAR

- **AWOS/ASOS is the only approved source**
 - Only use for IFR Operations
 - FAA-Only approved sensors are allowed
 - FAA-Only Technicians authorized to Certify
- **New Technologies are smothered by FAA constraints**
- **Industry reluctance to establish other solutions- FAA will not approve**
- **AWOS cost ~\$1.2M per copy**
- **Airports Improvement Plan (AIP) funding allows for the procurement of weather systems**
- **There are no other viable solutions on the horizon**

Potential Solutions

- **We need an Alternative: “Silver Standard”**
- **Visual Weather Observation System (VWOS – FAA) Weather Camera’s Upgraded with 360 degree Pan, Tilt and Zoom Functionality with additional sensors.**
- **Industry – VWOS system specifications are expected to be open source. This will allow industry to build a lower cost solution. With more of these systems we will receive more data and more data will enhance other programs/systems like RTMA, in turn producing better forecast models.**
- **Real Time Mesoscale Analyses (RTMA) - NWS**

RTMA

- **AFS-400 has funded research with National Center for Environmental Prediction (NCEP) and Environmental Modeling Center (EMC)**
 - First year analysis yielded positive results using RTMA in lieu of AWOS/ASOS
 - Second year statement of work has been finalized to focus the analysis into regional areas
- **RTMA has a potential to support low level remote operations where certified observations are not available**
- **Funding has been provided for RTMA continued research and is being arranged for VWOS project development**