

# Aviation Weather Reporting in Alaska

### Prepared By:

DOWL 4041 B Street Anchorage, Alaska 99502

### **Prepared For:**

State of Alaska Department of Transportation & Public Facilities Division of Statewide Aviation 4111 Aviation Drive Anchorage, Alaska 99502

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# Introduction to Aviation Weather Observations and Reporting

Weather observations are critical to pilots and aviation safety. Having accurate weather is crucial to all types of aircraft operations, from local visual flight rules (VFR) flights by small general aviation aircraft, to international instrument flight rules (IFR) flights in large commercial aircraft. Pilots must check current and forecast weather prior to every flight to make go, no-go decisions, and continually monitor updated weather information enroute to determine if continued flight to the destination airport is possible or if deviations to the flight plan are necessary. Routine weather observations provided by a network of interconnected mechanical sensors and human observers are used by meteorologists to generate weather forecasts and are used by aviation professionals in a multitude of ways.

Alaskans rely heavily on aviation due to the State's lack of roads and other transportation infrastructure. Comparatively to the continental U.S., Alaska's network of approved weather reporting stations available to pilots is relatively sparse. Alaska currently has approximately 160 approved weather observation stations. To replicate the density of weather reporting stations in the continental U.S., Alaska would need approximately two hundred additional stations throughout the State. Alaska pilots routinely utilize both conventional and unconventional weather sources to provide the information needed to satisfy their need for reliable information to be safe for their flight operations. Information from approved weather reporting stations, weather cameras and other types of non-standard weather observations are blended by pilots in Alaska to help understand weather conditions that influence their flight.

# What are "Approved" and "Advisory" Aviation Weather Sources?

### "Approved" Aviation Weather

All weather information that pilots use in making their decisions can be classified as either "Approved" or "Advisory". Title 14 of the Code of Federal Regulations (CFR) and the Federal Aviation Administration (FAA) Order 8900.1 set the regulatory requirements for "Approved Aviation Weather" in relation to pilots and aircraft operators (Federal Aviation Regulations [FAR] Part 91, 135, 121, and others) and defines what type of weather is "Approved" for use by pilots and aircraft operators. Title 14 CFR states that all approved aviation weather, (observations, reports and forecasts), must be via sources approved by the National Weather Service (NWS), (including the National Oceanic and Atmospheric Administration (NOAA)), and a few other specifically identified ones, such as international organizations like ICAO and the Department of Defense (DOD). The collaboration between the FAA and the NWS of how aviation related weather is collected and disseminated for aviation purposes is outlined within the FAA Order 7000.2.

### "Advisory" Aviation Weather

Federal Aviation Regulations allow pilots to augment approved weather sources with "Advisory" weather reports from unapproved sources to assist with making prudent decisions concerning flight operations. The type and purpose of any particular flight determines the type of weather information that must be obtained prior to and during the flight. For instance, for a local, VFR flight, all that may be required of a pilot may be no more sophisticated than simply looking out of the window or calling a friend to see what the winds are like at the airfield. Advisory weather can consist of almost any information that an aircraft operator or pilot uses in support of a flight. One example of advisory weather might be a pilot watching a local news weather forecast for an area they will be flying to the next day. The Alaskan FAA aviation weather webcam network is also an example of advisory weather.

### **Aviation Weather and Instrument Flight Operations**

Aviation weather reporting plays an especially crucial role in terms of approved "Instrument Approach Procedures" (IAPs) at airports. The creation and regulated use of IAPs is very stringently controlled by the FAA, and pilots that wish to fly "on instruments" must endure many hours of training and be properly licensed to do so. Many airports in Alaska have one or more federally approved IAPs, which enable properly equipped private and commercial aircraft to attempt landings at the airports solely by reference to instruments. Although the types and sensitivity of these IAPs varies widely from airport to airport, one key factor in the usability of all of them is the availability of on-field weather reporting. Those airports with an IAP that have a certified weather station located on-field that broadcasts approved aviation weather have a tremendous advantage over those airports with an IAP with no approved weather. The addition of a certified weather station on-field greatly enhances the capability of any existing IAP that might exist there. It also significantly improves those chances of adding an IAP to those locations that do not have an IAP.



Akutan Airport AWOS

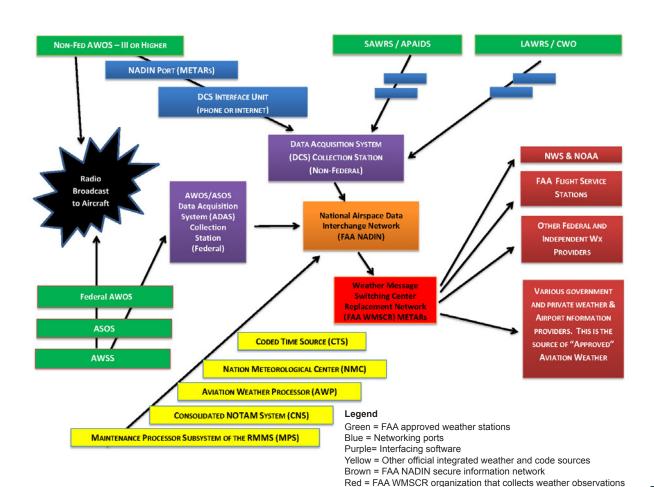
Photo By: Jim Miller / AWOS Inc.

### The FAA's Weather Network

To collect and disseminate all of the observed weather from approved stations all around the country, the FAA uses a self-contained private data network, similar to the internet, accessible only to official sources and those approved for connection to the system. Most of the approved weather stations, including automated units like ASOS, and contract weather observers (CWO) are connected or have access to this system. This system is called the National Airspace Data Interchange Network (NADIN). This system is significantly different and completely separate from the public internet and does not use the same communication protocols as the public internet. The NADIN is specifically isolated from the public system for security reasons. There are some FAA certificated weather sensors that are not connected to the NADIN, because the FAA feels that their connection to the system is either redundant, or not cost-effective for the FAA. In addition to weather, the NADIN transmits NOTAMs, flight plans and other aviation critical information.

One of the access points on the NADIN is a sophisticated organization known as the Weather Message Switching Center Replacement (WMSCR). The WMSCR accepts, organizes and distributes weather observations from approved weather stations from all around the country. These weather observations, known as "METARs", constitute the core of reportable surface weather from the US. Access to both the NADIN and the WMSCR is strictly controlled. Reports generated by the WMSCR are used as the informational source for surface weather observations provided by nearly all public and private agencies.

Also central to the sharing of approved weather information within the FAA NADIN is the Data Collection System (DCS). Several years ago, the National Association of State Aviation Officials (NASAO) signed a memorandum of agreement with the FAA that would allow individual states to assist with the creation of a uniform DCS specification to help allow non-fed AWOS units be assured of connectivity to the system, which paved the way for connections of non-FAA administered AWOS units to the DCS.



Source - JRG

Pink = Independent public and private weather reporting outlets Black = Radio broadcast transmissions directly from weather stations

# "Approved" Weather Sensors and Observers

### **Weather Sensors**

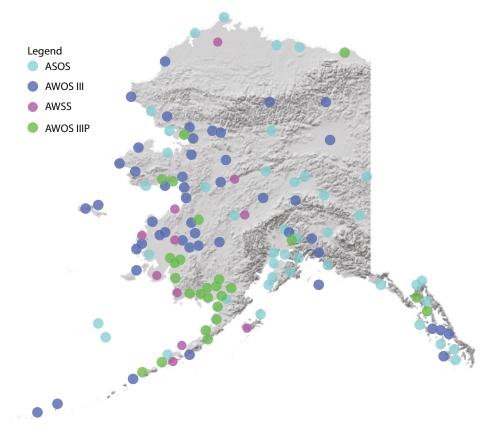
Most surface weather observations in the U.S. are collected by sophisticated, automated sensors that accurately measure various aspects of the environment. These automated observations are sometimes the only source of weather at a station, or sometimes they augment human observations at a station, or just the opposite. In order for weather sensors to be "approved" by the NWS and accepted as part of the aviation weather system, the units themselves must meet rigorous FAA certification standards, be placed and sited according to strict standards, and then commissioned on-site by the approving agency before the data is used. Most of these sensors are connected to the NADIN and WMSCR.

The following are the individual types of approved aviation weather sensors:

### **ASOS - Automated Surface Observation System**

ASOS units are fully automated weather sensors connected to the NADIN and WMSCR and generally report surface observations at hourly intervals, but also report special observations if weather conditions change rapidly and cross typical aviation operational thresholds, such as minimum visibility or minimum ceilings for VFR flight. ASOS units generally report all the parameters included of the AWOS-III, while also having the additional capabilities of reporting temperature and dew point in degrees Fahrenheit, present weather, icing, lightning, sea level pressure and precipitation accumulation.

Besides serving aviation needs, the ASOS system serves as a primary surface climatological observing network in the United States, making up the first-order network of climate stations. Because of this, not every ASOS is located at an airport. Like AWOS units (described in the next section), ASOS units that are located at airports will typically broadcast weather information over discrete radio frequencies available to pilots over a limited range, or be used to append ATIS information at towered airports. Alaska currently has 44 ASOS units throughout the State.



### **AWSS - Automated Weather Sensor System**

AWSS units are multi-sensor automated weather sensors similar to ASOS units, but incorporate the latest technology and are built for ruggedness. AWSS units are connected to the NADIN and WMSCR and generally report surface observations at hourly intervals. Alaska currently has 16 AWSS units throughout the State.

### **AWOS - Automated Weather Observation System**

AWOS is the most common variation of approved automated weather sensors located at airports in the U.S. and Alaska. AWOS units are currently manufactured by several different companies. AWOS III or higher units are eligible to be connected to the NADIN and WMSCR. AWOS units usually broadcast their information over a discrete radio frequency to pilots. There are many different types of AWOS units available, and they can be equipped with a number of different types of sensors. AWOS units generally produce automated surface reports at 20-minute intervals and do not report special observations for rapidly changing weather conditions. Alaska currently has 79 AWOS units throughout the State.

The following describes different types of AWOS units:

AWOS A: altimeter setting (barometric pressure)

AWOS I: altimeter, density altitude, wind and gust speed & direction, temp. and dew point

AWOS II A/V: all AWOS I parameters, plus visibility and precipitation

AWOS III: all AWOS II parameters, plus cloud height, density and sky condition

AWOS III P: all AWOS III parameters, plus sensor which describes type of precipitation

AWOS III P/T: all AWOS IIIP parameters, plus thunderstorm detection via lightning detector

AWOS IV Z: (Also called AWOS III PTZ) all AWOS III P/T parameters, plus freezing rain detection

AWOS IV Z/R: all AWOS IV Z parameters, plus runway surface condition.

### **Automated Unicoms**

A relatively low cost option for providing local, approved weather for an airport can be the Automated UNICOM. These FAA certified automated units can provide pilots with basic weather information and a certified altimeter source, necessary for instrument approach operations. These Automated UNICOMS are certified by the FAA to meet the same capability as a traditional AWOS A/V. These units are not approved to be connected to the NADIN and WMSCR.

# Human Observers - SAWRS, SAWRS II, and BSAWRS (Supplemental Aviation Weather Reporting Stations)

SAWRS is a weather station where human weather observers provide primary weather observations or augment other automated weather sensors. These SAWRS observers are certified and trained according to NWS standards and in accordance with methods in FAA Order 7900.5. A SAWRS is usually established at an airport (includes offshore platform helipads), when the FAA has determined that the augmented weather observations are needed to satisfy FAA Regulations for Part 121 or 135 operations, or for the safe conduct of other aircraft or commercial operations. It is common for SAWRS stations to be supported and funded by private companies dependent upon aviation in a particular area. There are currenly 10 SAWRS type stations located in Alaska funded by various private industries as well as the FAA and the DOD. These stations all provide information to the NWS and many provide information via radio and phone lines.

There are three distinctly different types of SAWRS operations:

SAWRS - A station where a manual observation is the primary source of reporting the weather observation and there is neither a commissioned ASOS or AWOS at the station. The SAWRS observer is the source of the official observation if no other federal or contract weather observers are on duty.

BSAWRS - A staffed station where a commissioned AWOS or AWSS is the primary source of weather observations. The BSAWRS observer provides backup if no other federal or contract weather observers are on duty.

SAWRS II - A staffed station where a commissioned ASOS is the primary source of weather observations. The SAWRS II observer provides backup if no other federal or contract weather observers are on duty.

### A-Paid - (Aviation Paid Weather Observer)

A-Paid weather observers are individuals trained by the NWS and/or the FAA and stationed in locations the NWS feels is necessary to take weather observations to help provide for NWS forecast responsibilities. A-Paid observers are certified by the NWS to take surface observations (i.e., hourly reports of temperature, dew point, estimated cloud cover, estimated visibility, pressure, weather, and wind direction and speed) using equipment provided by the NWS. As their name suggests, these observers are compensated for their work on a per-observation basis, usually by the NWS or airline operators. The purpose of A-Paid observations is to provide information necessary to support aviation forecasting by the NWS. The FAA has no direct requirement for A-Paid stations. The FAA has helped support the program with funding in the past, but does not currently fund any A-Paids in Alaska. Presently, there are 6 A-Paid observation stations in Alaska funded by the NWS: however, this program is currently tenuous and under scrutiny by the NWS to find other solutions for the weather it provides.

### **CWO - FAA Contract Weather Observers**

The FAA's contract weather observer program provides human augmentation to automated weather observations at both towered and non-towered airports throughout the U.S. These contract weather observers are paid for by the FAA. The airports with CWOs are usually higher volume airports that require special attention to rapidly changing conditions, or those other airports that the FAA considers to have special weather observing needs. There are currently 21 CWOs at non-towered airports in Alaska.

### **LAWRS - Limited Aviation Weather Reporting Stations**

LAWRS are air traffic controllers that are trained by the NWS to take weather observations in addition to their duties as tower controllers. These individuals are essentially the same as CWOs. In 2013, the FAA began implementing a program to transition all of the CWOs at towered airports to LAWRS to save money. Alaska was exempted outright from this process.

## Funding of Approved Weather Stations and the FAA Non-Fed Program

### **ASOS**

The ASOS program was a joint effort between the FAA, the NWS and the DOD to deploy a network of high-grade weather monitoring stations across the United States. In 1991, Systems Management Inc. (now All Weather, Inc.) was awarded \$250M via the FAA Facilities and Equipment program to develop and deploy ASOS systems. As a result of this program, roughly 1,000 ASOS weather stations were installed and commissioned throughout the country, with the first ones in Alaska being installed in 1994. Throughout the 1990's there were 569 ASOS sites sponsored by the FAA, and 313 ASOS sites sponsored by the NWS. The ASOS program officially ended in 2004. The ASOS development program no longer exists, and no new ASOS units are currently planned. ASOS sensors were 100% paid for by the federal agencies that installed them, and they are maintained by those same agencies today.

### **AWSS**

In 1999, All Weather, Inc. was awarded a \$4.3M contract to design, develop, and manufacture an advanced AWOS system known as AWSS, and to carry over the original ASOS development program. The original contract called for installation of 33 AWSS sites throughout the U.S.: however, a series of engineering changes requested by the FAA resulted in a reduction to only 17 systems. The AWSS units are entirely owned, controlled and maintained by the FAA.

### **AWOS**

Ownership and maintenance of the AWOS units is diverse, with some units having been 100% paid for and maintained by the FAA, some paid for by an FAA grant and maintained by the airport sponsor, and still others paid 100% and maintained by airport sponsors or other private, public or corporate entities or by combination. Some AWOS units that were originally purchased by individual airport sponsors were eventually given to the FAA for ownership and maintenance as well. Due to FAA funding cuts several years ago, the FAA put on hold the new installation or FAA takeover of any existing AWOS units paid solely by the FAA. New AWOS units today are only available to individual airport sponsors or other public or private entities by either purchasing the units themselves, or through the use of an FAA grant. The cost to purchase, install and maintain an AWOS can vary considerably for new units, depending on the manufacturer and type sensors, but usually range from about \$150,000 to \$300,000, depending on the complexity, with annual maintenance costs that are usually over \$5,000/year.

### **Automated UNICOMs**

These units have the advantage of providing certified altimeter information for an airport at a fraction of the cost of an AWOS. The cost of an Automated UNICOM is usually about \$75,000. The units are self-contained, and come ready to hang and plug. The units are usually FAA AIP eligible as well, and do not require an FAA cost-benefit analysis, as is the case for purchase of an AWOS III. Their drawbacks are their obvious limitations for detailed weather information as compared to an AWOS III, and the units cannot be connected to the NADIN or WMSCR. All maintenance costs for the units are the responsibility of the airport sponsor.

### **FAA Non-Fed Program**

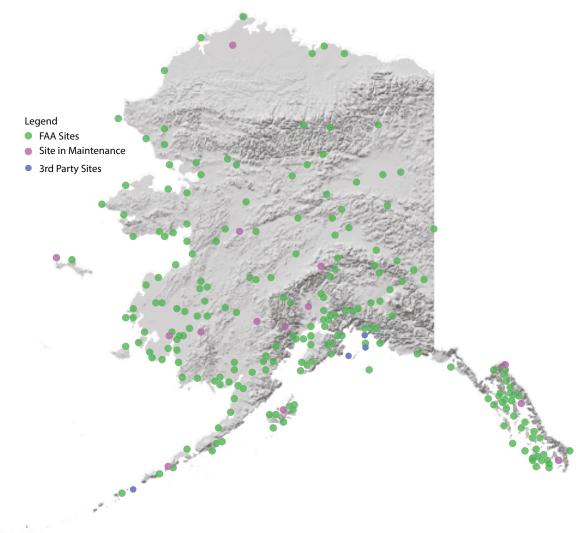
The FAA encourages the continued development of aviation weather reporting stations throughout the United States. With current budget constraints, it is impractical for the FAA or the NWS to fund massive installations and maintenance of federally owned and operated weather sensors, similar to the old ASOS program. One method to increase the number of stations in their system is through the FAA inclusion of similar certified and approved automated weather sensors, such as AWOS units, paid by grants provided by FAA AIP money, or purchased outright by other public or private entities. The mechanism to include these units in the system is known as the FAA Non-Fed program. The program is detailed within FAA AC 150/5220-16D, and supplemented by FAA Orders 6700.20B and 5100.38D. The program essentially allows individual airport sponsors the ability to acquire and install FAA certificated AWOS equipment with FAA AIP or other funding. Ownership and maintenance of the AWOS units is the responsibility of the sponsor. There are certain eligibility requirements that the sponsor must meet, and if the sponsor wishes the unit to be connected to the NADIN and have the information disseminated through the WMSCR, a cost/benefit analysis must be completed and pass FAA standards.

# "Advisory" Weather Sensors

Advisory weather observations by definition meet no specific FAA criteria, and can encompass just about anything that can be considered an "observation." Some common sources of "advisory" weather used in Alaska include:

### **FAA Aviation Weather Cameras**

Aviation weather cameras have become a very popular source of weather information for pilots flying in and around Alaska. The FAA has established a large network of these cameras throughout Alaska and has plans for more installations in the future. The FAA also has a very easy to use interactive website for pilots to access the cameras. Obviously, these weather cameras are of limited use for IFR flight, and the visual information found on them is only useful in an advisory way to pilots. Of all of the "Advisory" weather available to pilots in Alaska, these cameras have become the biggest staple to many pilots throughout the state.



### HANDAR

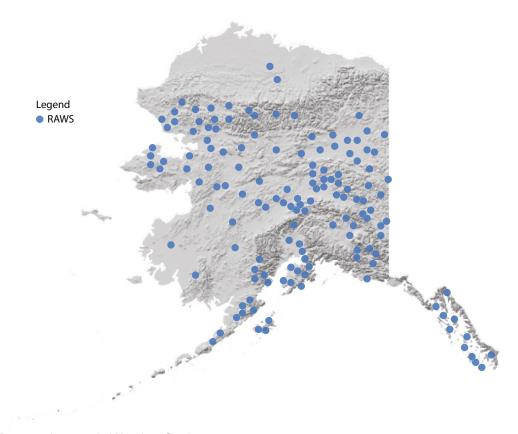
HANDAR was a company that was acquired by weather sensor manufacturer Vaisala in the late 1990s. Occasionally you will see weather units labeled as HANDAR throughout Alaska: however, as is the case with MAWS and RAWS, these units are not FAA certified and have no direct role with producing official aviation weather observations, and are not connected to the NADIN or WMSCR. They are considered advisory only.

### **MAWS - Modulated Automated Weather System**

MAWS units are owned and operated by the NWS and manufactured by the same companies that make AWOS units. MAWS units are not FAA certified and have no direct role in producing approved aviation weather observations, and are not connected to the NADIN or WMSCR. Although there have been discussions between various agencies as to the feasibility of incorporating the information from the MAWS units into the NADIN and WMSCR, no movement has been made and these units are considered advisory only.

#### **RAWS - Remote Automatic Weather Stations**

There are nearly 2,200 Remote Automatic Weather Stations (RAWS) strategically located throughout the U.S., with many located throughout Alaska. These stations are usually affiliated with the United States Forest Service or the Bureau of Land Management and are monitored by the National Interagency Fire Center in Boise, ID. Like MAWS units, RAWS units are not FAA certified and have no direct role with producing official aviation weather observations, and are not connected to the NADIN or WMSCR. They are considered advisory only.



Remote Automatic Weather Stations

### Abbreviated Table of Weather Reporting Stations, Common Benefits, Costs and Connectivity

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Sensor Type	Purpose/Aviation Benefits	Who Pays to Install?	Who Maintains?	Typical Sponsor Costs	FAA Cert	NADIN WMSCR
FAA Approved Weather Stations						
ASOS	Original automated FAA/NWS/DOD certified weather stations. Program has been discontinued	FAA, NWS, DOD (no more being installed)	FAA, NWS, DOD	None	Yes	Yes
AWOS	FAA certified automated stations, FAA may co-sponsor installation costs with FAA grant (90/10 split) Can be funded by other public / private entities	FAA 90% Sponsor 10% (or 100% Sponsor or other entity)	Sponsor thru private Contract Some FAA	10% of \$100,000 to \$250,000 plus \$5,000+/- annually to maintain (100% without FAA help)	Yes	Yes for AWOS III or better
AWSS	FAA owned and operated. Units are 100% federally owned and operated Not FAA AIP eligible	FAA (Program currently on hold)	FAA	None	Yes	Yes
Automated UNICOM	Low cost alternative to AWOS units, provides certified altimeter for IFR approaches. Some units are FAA AIP eligible	FAA 90% Sponsor 10% (or 100% Sponsor)	Sponsor	Usually 10% of \$50,000 & \$5,000 or more annually to maintain	Yes	No
SAWRS/ APAID/ CWOs/ LAWRS	Primary and/or Supplemental human observers that may be co-located with an ASOS, AWOS or AWSS. Airport sponsors cannot demand human observers	NWS, FAA or airlines	N/A	None (Contracts vary and are paid by NWS, FAA or airlines)	N/A	Yes and No
Other Advisory Stations						
MAWS/ RAWS/ HANDAR	Non-FAA approved automated weather reporting stations. Advisory info only for pilots.	Various Federal agencies (not FAA)	Various Federal agencies (not FAA)	N/A	No	No
Aviation Weather Cameras	Cameras that area great advisory tool for VFR pilots. Well liked. Not eligible to individual airport sponsors through FAA AIP.	100% by FAA or individual sponsors if non- FAA	Virtually no routine maintenance necessary	Varies greatly depending upon camera type, location and power source	No	No

# **Existing Alaska Weather Stations**

The NWS Alaska Region Headquarter website (http://www.arh.noaa.gov/obs.php) provides a list of all NWS administered weather observation stations in Alaska.

This list does not include other sites, such as some DOD operated stations and some A-Paids. All of the FAA approved automated aviation weather stations (ASOS, AWSS and AWOS) can be found at the FAA's air traffic weather webpage at (http://www.faa.gov/air\_traffi c/weather/asos/?state=AK). There are also approximately 230 aviation weather cameras available at (http://avcams.faa.gov/).

- 72 airports have an AWOS-III or better
- 16 airports have an AWSS
- 44 airports have an ASOS
- 6 stations have NWS supported paid observers (A-paids)
- 21 stations have some type of CWO augmentation
- 27 sites are administered by the DOD

### How Other Western States Assist with Aviation Weather Reporting Needs

### Idaho

Idaho DOT will contribute up to 20 percent of NPIAS airport sponsor's cost for eligible federal aid projects, which can include weather reporting equipment. Non-NPIAS airports are not eligible.

### Montana

Weather equipment, maintenance costs, and connection fees for all publicly owned airports are eligible for funding through the Montana Department of Transportation aeronautics loan and grant program with a 50/50 sponsor split: however, aviation weather reporting equipment is usually considered a lower priority for these funds unless special circumstances can be shown. MDT also provides a web page that acts as a portal to view a number of various outdoor private and public web cams throughout the state that might be beneficial to pilots.

### **South Dakota**

The South Dakota Aeronautics Commission will consider assistance with the funding of Automated UNICOMS, usually in direct support of Part 135 air charter and ambulance operators for instrument approach procedures. The sponsor must agree to pay for the automated UNICOM installation and operating costs, including utilities, data connection to the vendor's web server, and maintenance. Currently, only 8 of the state's 56 NPIAS airports lack weather reporting equipment

#### Utah

Acquisition of weather equipment is eligible under Utah's grant program with a 90/10 sponsor split. Utah considers aviation weather reporting equipment a lower priority use for its airport grant dollars in comparison to many other items, such as runway rehabilitation. Bringing existing units into the NADIN is a higher priority for the state, but funding to do this is very limited. Automated UNICOMs are eligible, but the state discourages installation of these types of units.

### Washington

Weather reporting equipment is eligible for funding through the Washington Airport Aid Grant Program with a 50/50 sponsor share split: however, aviation weather equipment for NPIAS airports is usually considered a lower priority for these funds, and equipment for non-NPIAS airports are usually considered a very low priority. Maintenance and connection costs are not eligible under this program. Airport sponsors can apply for up to \$5000 of funding of non-weather-specific airport security cameras, which can indirectly aid pilots utilizing them to help ascertain local weather conditions. Washington has a website which enables users to link to various non-weather-related pan-tilt-zoom web cams located at airports which take 4 pre-set directional pictures every 15 minutes, as well as other real-time airport webcams.

### Wyoming

Wyoming Department of Transportation Aeronautics Division's grant program will assist airport sponsors with aviation weather equipment procurement at an 80/20 sponsor share split. Weather reporting equipment is given a high priority ranking. WYDOT will fully pay for any airport sponsors annual maintenance costs incurred in association with non-federal AWOS units. WYDOT has brought all existing AWOS units in the State up to full III-PT capability. WYDOT has installed and maintains 5 state owned AWOS-III units located in various critical mountain passes. Wyoming is in the midst of creating a GIS web based program and web page that will disseminate all AWOS information through the website, and will assist with connection of all AWOS units to the NADIN. WYDOT financially supports airport sponsors with the procurement of weather web cams through its Airport Aid Grant Program.

# Recent Changes in the System

Between 2011 and 2013, Alaskans have seen a net loss of nine weather reporting stations that were previously used in making important operational and flying decisions. While nine AWOS stations were added in western Alaska, eighteen A-Paid observer sites were closed in the interior and south central portions of the state. In 2011, at the request of the FAA Alaska Regional Administrator, a business case study was conducted, which made a positive business justification for Automated Weather Observing System (AWOS) type stations at airports with instrument approaches in thirteen Alaska communities.

### Who is Involved?

### Alaska Department of Transportation & Public Facilities (DOT&PF)

Role: DOT&PF owns and operates 249 airports across Alaska. Statewide Aviation oversees the AIP grant program, the Alaska Aviation System Plan, and many other aviation planning functions. Contact: Rebecca Rauf, Statewide Aviation Planner, 907-269-0728

### **Maintenance and Operations**

Role: Operates one AWOS station at the Akutan Airport. Rob Greene, Maintenance and Operations Supervisor, 907-487-4952

### Federal Aviation Administration (FAA)

FAA Alaskan Region Airports Division Role: Provides AIP grant funding

Contact: Byron K. Huffman, Division Manager, 907-271-5438

### **FAA Flight Service (FSS)**

Role: Assists pilots and provides weather dissemination throughout Alaska Contact: Fairbanks, Juneau or Kenai FAA FSS at 1-800-992-7433

### **FAA Western Service Center**

Role: Provides shared services for Air Traffic, Technical Operations, & System Operations Contact: Kyle R. Christiansen, Flight Procedures Team, 907-271-5187

### Surveillance Broadcast Services (SBS) Western Service Area (WSA)

Role: Provides oversight and management of all ADS-B activities in the Western Service Area, including ADS-B implementation, budgeting, and planning.

Contact: Jere Hayslett, 907-271-5870

### **Enterprise Services, FAA Headquarters, Washington DC**

Role: Serves as Enterprise Services Alaska Liaison for oversight and support of Alaska data communication, navigation and weather program activities

Contact: JoAnn Ford, 202-267-4543

#### **National Weather Service (NWS)**

Role: NWS collects weather data. Prepares weather forecasts and is under contract with the FAA to maintain 17 of the FAA's ASOS stations within Alaska.

Contact: Angel Corona, 907-271-5119

Contact: Michael Couch, 907-271-5125

For more information about this or other Alaska Aviation System Plan work please contact:

Rebecca Rauf

Statewide Aviation Planner, State of Alaska Department of Transportation & Public Facilities.

907-269-0728

Rebecca.Rauf@alaska.gov

or visit

www.AlaskaASP.com