



Federal Aviation
Administration

FY22 FAASI Progress Report



September 30, 2022

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1.0 Introduction

In 2021, the Federal Aviation Administration (FAA) initiated the FAA Alaska Aviation Safety Initiative (FAASI) in response to National Transportation Safety Board (NTSB) recommendations and a tasking by former FAA Administrator Steve Dickson. The outcome of the 2021 efforts was an inventory of existing safety efforts, stakeholder feedback, and 11 recommendations to improve aviation safety in Alaska.

The 2022 FAASI Roadmap provided a high level outline for how the FAA will move along the recommendations from the FY21 Final Report (<https://www.faa.gov/alaska>). This Progress Report provides an update as of May 25, 2022. The progress for the second half of FY22 will be included in the FY23 FAASI roadmap/progress report.

The 11 recommendations can be found in Appendix A. The FAASI 2022 Roadmap can be found in Appendix B. The acronyms used in this progress report can be found in Appendix C. Stakeholder feedback gathered during the FY22 listening sessions can be found in Appendix D.

2.0 FY22 Progress Report

Recommendation 1.1: Automated Weather Observing System (AWOS)

Recommendation: Enhance weather reporting capability utilizing the Automated Weather Observing System (AWOS) including:

1. Continue installation and transfer of Airport Improvement Program (AIP) funded AWOS.
2. Examine the root cause of Service A outages, associated impacts, and identify mitigations.
3. Consider necessary changes to FAA Joint Order 7900.5 Surface Weather Observing and FAA Order 7930.2 Notices to Air Missions (NOTAM).

FY22 Progress:

1. **Installation of AWOS:** As of June 1, 2022, the installation of AWOS units located at Akiachak, Coldfoot, Nulato, Perryville, Tok Junction, and Tununak, is substantially complete. The only remaining element at each location is completion of final project closeout work, often referred to as punch list items, which is scheduled for September 30, 2022. The new-install AWOS unit located at Kotlik requires work to redesign the mast which should be complete by mid-June. Afterwards, an estimate for the redesign work will be obtained from the construction contractor. The FAA Alaskan Region Airports Division (ARP) anticipates funding approval for the redesign, with installation work planned for completion by September 30, 2022.

Installation work for the new AWOS unit located at Crooked Creek is scheduled to commence in July 2022, with completion by September 30, 2022. The timing of this new-install work is being coordinated with a larger-scale airport improvement project at Crooked Creek.

Regarding the transfer of these units to FAA maintenance and operation, as of June 1, 2022, five of the eight units (Akiachak, Coldfoot, Nulato, Tok Junction, and Tununak) are connected to FAA information technology/data/communications infrastructure and are transmitting weather and condition data as expected. The FAA anticipates the Perryville unit will achieve full connectivity by July 1, 2022. The Kotlik and Crooked Creek units will be connected as soon as installation work is completed.

FAA is analyzing data integrity and reliability of the five units presently transmitting, consistent with a testing program which is in place through December 31, 2022. The FAA plans to make data from these five units available to the public in summer 2022. Data transmittal and dissemination from the remaining three units is planned to occur by fall 2022.

2. Service A Outages: Air Traffic Organization (ATO) Technical Operations, Anchorage District (Tech Ops) continues to monitor the status of all Automated Surface Observing System (ASOS) and AWOS Service A capabilities in Alaska. With COVID community spread rates declining, telecommunications service providers have increased and improved their response to line outages. Tech Ops is working directly with the management entities of these companies to assure their understanding of the impacts and the priority needed for restoration activities.

Tech Ops has elevated the response priority for all AWOS and ASOS services in Alaska. Travel to remote sites is being expedited and ordering of all replacement parts is the highest priority. There are still some supply chain challenges in receiving parts. Tech Ops is working directly with management in the FAA's Logistic Center on specific issues.

Tech Ops actions have succeeded in reducing the number and duration of AWOS and ASOS Service A interruptions. In addition, Tech Ops has prioritized AWOS and ASOS telecommunications for conversion to the FAA Telecommunications Infrastructure (FTI). This conversion modernizes some aspects of the circuits and adds real-time monitoring at the circuit level for these sites, which should translate into improved performance.

3. Review of FAA Order 7930.2 NOTAM: The AWOS and ASOS technical team met on May 16, 2022 to review the need for NOTAMS on Service A outages. The complexity of the issue requires an additional meeting with SMEs to better understand the associated impacts to stakeholders who require long-line Service A dissemination and determine if other appropriate solutions need addressing. Some of the topics being discussed are back-up procedures, infrastructure updates, and training.

Recommendation 1.2: Visual Weather Observation System (VWOS)

Recommendation: Enhance weather reporting capability utilizing the Visual Weather Observation System (VWOS) including:

1. Test and evaluate VWOS capabilities at four Alaskan airports and document the findings in a final report.
2. Develop standards for non-sensor visual-based weather information.
3. Upon successful completion of the evaluation, seek funding for VWOS unit acquisition and installation at airports where AWOS or ASOS units do not exist.
4. Modify FAA-issued Operations Specifications to allow for use of VWOS as requested by aircraft operators.

FY22 Progress:

1. Test and Evaluate VWOS: The VWOS test and evaluation period started in May 2021 and ends in June 2022. A final report with all of the findings will be completed by the end of July 2022.

System Operations (AJR) and AFS are currently conducting analysis and comparison of the VWOS system at four Alaska locations (Eek, Tatitlek, Healy River, and Palmer). Palmer is the key site since a direct comparison to the Palmer ASOS allows for close scrutiny.

The technical performance of the VWOS system is being evaluated against success criteria/thresholds in five categories:

- 1) Meteorological accuracy against comparison data sources
- 2) System reliability and availability
- 3) Useful error reporting and self-checks
- 4) Supporting and benefiting operations
- 5) System security

Overall, the VWOS shows strong agreement with comparison sources in close proximity to the VWOS platform at all sites. Data fields analyzed to date include temperature, dew point, surface pressure, visibility, wind speed and direction, cloud height, and present weather. The VWOS predictably had only moderate agreement with observations from comparison data sources located at a significant distance or across large terrain discontinuities from the VWOS platform.

The VWOS test data was available to multiple engaged operators through a test website in early May 2021, and all respondents who completed the survey to date indicated positive usefulness of VWOS components. All respondents indicated moderate ease of

use for the website and moderate to high confidence in their decision-making using VWOS. Most of the website navigation responses were rated a three out of five, which indicates slight potential for improvement.

2. Develop Standards for Non-sensor Information: Development of performance based weather standards is currently underway in conjunction with Industry ASTM F38 working group. Three tiers of weather data are proposed. Operational use will be based on the level of risk and which mitigations are imposed. The tiers are based on variability and confidence (probability of detection) levels established. VWOS is being compared to Tier 3 standards which are based on ASOS and AWOS and FMH-1 documented sensor accuracy.
3. Seek funding for additional VWOS: AFS and ATO will conduct a safety analysis to determine where VWOS could be deployed to address shortfalls in weather data. The FAA will use its acquisition management system processes to conduct an investment analysis to determine whether a business case exists for the FAA to deploy VWOS. Funding for VWOS deployment is dependent on the approval of the business case.
4. Modify Operations Specifications: AFS has drafted some Operations Specification language which may be modified due to any risks identified by the data collection and analysis. Once the analysis is finalized, a Notice will be published and optional text provided to allow the FAA certificate management office to evaluate the air carrier and air operator procedures and approve the use of VWOS via Operations Specification amendment.

Recommendation 2.1: Evaluate Operator Authorization Requirements

Recommendation: Evaluate and clarify aircraft operator authorization and eligibility requirements for commercial aircraft operations under Instrument Flight Rules (IFR). Update the policy and guidance related to equipment requirements for commercial operators when using GPS for navigation.

FY22 Progress: A team of subject matter experts has been identified and is being assembled and tasked to examine the current GPS navigation policy and authorization framework. Initial steps include examining and defining policy areas that have been identified as inconsistent and contributing to confusion in order to determine equipage and operational requirements. These initial actions are critical to ensure alignment and consistency while determining if updates to policy guidance and the associated navigation authorization framework are required.

Recommendation 2.2: Establish and Chart Communications Gaps on Published Routes

Recommendation: Evaluate potential policy change permitting communication gaps on routes where communication capability is the determining factor for the minimum enroute altitude.

FY22 Progress: A team of subject matter experts from AFS and ATO has been established to identify T-Routes or segments within the airspace overlying Alaska where establishing a

communications gap would be beneficial to aircraft operators. The group will begin collaboration with aircraft operators in June 2022.

Recommendation 2.3: GPS Resiliency

Recommendation: Develop strategies to address GPS backup resiliency in Alaska.

FY22 Progress: The ATO Program Management Organization, Enterprise Services, Navigation Programs, and Aviation Safety (AVS) have begun compiling information required to develop a GPS resiliency strategy. This includes:

- a. Briefing the Alaska Industry Council and various FAA navigation retention groups on the overall goals of the GPS Resiliency Study.
- b. Analysis of threats to GPS signals in Alaska.
- c. Conducting an analysis of more than 20 years of fatal aviation accidents involving aircraft flying under Part 135.
- d. Identifying conventional and GPS/Wide Area Augmentation System (WAAS) instrument approaches published at all airports in Alaska. These approaches will also be correlated with the presence of weather stations at the airports.
- e. Developing coverage plots of conventional navigation aids and radar in Alaska.
- f. Investigating aircraft equipage with conventional Non-Directional Beacon (NDB) navigation aids.

A concept for conventional navigation aid retention in Alaska will be developed after the information above has been compiled. This concept will be vetted with government and user groups, including the military, and altered as necessary.

Recommendation 2.4: T-Route Development

Recommendation: Continue the development of T-routes as a replacement for Low Frequency/Medium Frequency (LF/MF) and other conventional airways.

FY22 Progress: The design and environmental phases for all planned T-Route replacement airways have been completed. T-Route replacements scheduled for September 8, November 3, and December 29, 2022 are being processed for final development, quality control, flight inspection, and charting. The T-Route replacements scheduled for February 23, 2023 is expected to begin processing for final development no later than June 15, 2022.

Recommendation 3.1: Mountain Pass Working Group Initiative

Recommendation: Continue the Mountain Pass Working Group initiative and partnership with the Aircraft Owners and Pilots Association (AOPA) aimed at verifying existing mountain pass information and adding additional mountain passes to the Alaska Visual Flight Rules (VFR) sectional charts.

FY22 Progress: The Alaskan Mountain Pass Working Group continues to meet on a semi-annual basis. Carter and Naqsralugiaq Passes were added to VFR charts effective March 24, 2022. Most recently, and with concurrence from AOPA and regional FAA offices, the Holmes Pass was deleted from Fairbanks Sectional effective May 19, 2022. The FAA is updating guidance on the VFR Waypoint Chart Program within *FAA Order 7210.3 Facility Operation and Administration*.

The *Aeronautical Information Manual (AIM)* will also see complimentary updated guidance for Mountain Flying and GPS. The intent of publishing on the November 3, 2022 update to these publications. Once implemented this will expand the use of VFR checkpoints and VFR waypoints for better planning and pilot orientation in the vicinity of select mountain passes.

Recommendation 3.2: Aeronautical Charting Meetings

Recommendation: Aeronautical Charting Meetings (ACM) will ensure adequate focus is placed on Alaska specific charting needs that may be different than the contiguous United States.

FY22 Progress: The ACM continued to occur in accordance with the FY22 Roadmap. The last ACM was held April 25-28, 2022.

ATO will continue to hold biannual ACM meetings and address Alaska charting issues. The meeting times are adjusted to more optimally match west coast and Alaskan time zones. The last AMC was held April 25 – 28, 2022.

Recommendation 4.1: Education and Outreach of ADS-B Out Equipage

Recommendation: Continue education and outreach related to the benefits of ADS-B Out equipage within certain airspace in Alaska. Outreach will focus on the safety enhancing benefits of aircraft position notification and display for users within all airspace.

FY22 Progress: The FAA continued the various safety programs already underway and sought to maximize adjacent opportunities for program integration and stakeholder outreach. AVS held discussions with stakeholders during numerous events regarding the benefits of ADS-B Out equipage. Those events included: Controlled Flight Into Terrain (CFIT) Avoidance, Northern Alaska Pilots, RSAT meetings, Pre-Season Air Tour Meetings for Southeast AK, Talkeetna, PIREP Work Group, Alaska Aviation Coordination Council, AK Civil-Military Aviation Council, Designated Pilot Examiner (DPE)/Certified Flight Instructor (CFI) Meetings, Palmer Airport Safety Seminar, AK Floats and Skis Outreach and many more.

Recommendation 4.2: ADS-B Services

Recommendation: Continue to deploy Automated Dependent Surveillance-Broadcast (ADS-B) services for non-implemented service volumes in a manner that will provide coverage along major air routes in Alaska.

FY22 Progress: FAA Surveillance Services has continued to work diligently with the service provider in conducting the necessary site surveys ahead of the planned installation of the agreed upon ground-based transceivers (GBTs) in the five remaining service volumes. This includes detailed analysis of previously installed radar and communication assets across federal agencies to determine potential collocation solutions. The intended start date for GBT installation is still calendar year 2023.

Recommendation 5.1: Safety Outreach Collaboration

Recommendation: Continue safety programs already underway and seek to maximize opportunities for program integration.

FY22 Progress:

1. **Expanded Participation in Existing Programs:** At least one representative of the Regional Administrator's (RA's) office attended each of the Alaskan Region FY22 RSATs, including in person attendance at Bethel, Anchorage, Merrill Field, and Lake Hood. The Acting RA attended air tour operator safety meetings and communicated upcoming events at the regularly scheduled Regional Management Team (RMT) meetings where they also advocated for increased Line-of-Business (LOB) participation in all FAA safety meetings. The RA's office included all events gathered through the RMT on the Alaskan Region aviation events list, which is posted and updated monthly on the FAASI website.
2. **Increase External Stakeholder Collaboration:** The Acting RA encouraged stakeholder participation in existing FAA safety programs, including the Bethel User Group meetings. The Acting RA also increased communication of upcoming events at the FAA Alaska Industry Council and Alaska Aviation Coordination Council meetings. The Acting RA published the Alaskan Region aviation event list to the FAASI website and continues to update it monthly with events received from the RMT. The Acting RA used the Alaskan Region aviation event list to identify opportunities to combine existing safety efforts, such as the Talkeetna preseason safety meeting and the Palmer Airport Safety Seminar, to make them more efficient and meaningful for stakeholders. As requested by the users, the regular meetings of the Bethel User Group will continue at least quarterly with an expanded scope to include runway safety, local air traffic and traffic patterns, Class D airspace requirements, accident analysis, and any other collaborative efforts brought forward by the group. The designated representative of the RA will continue to facilitate these meetings.

3.0 Stakeholder Comments

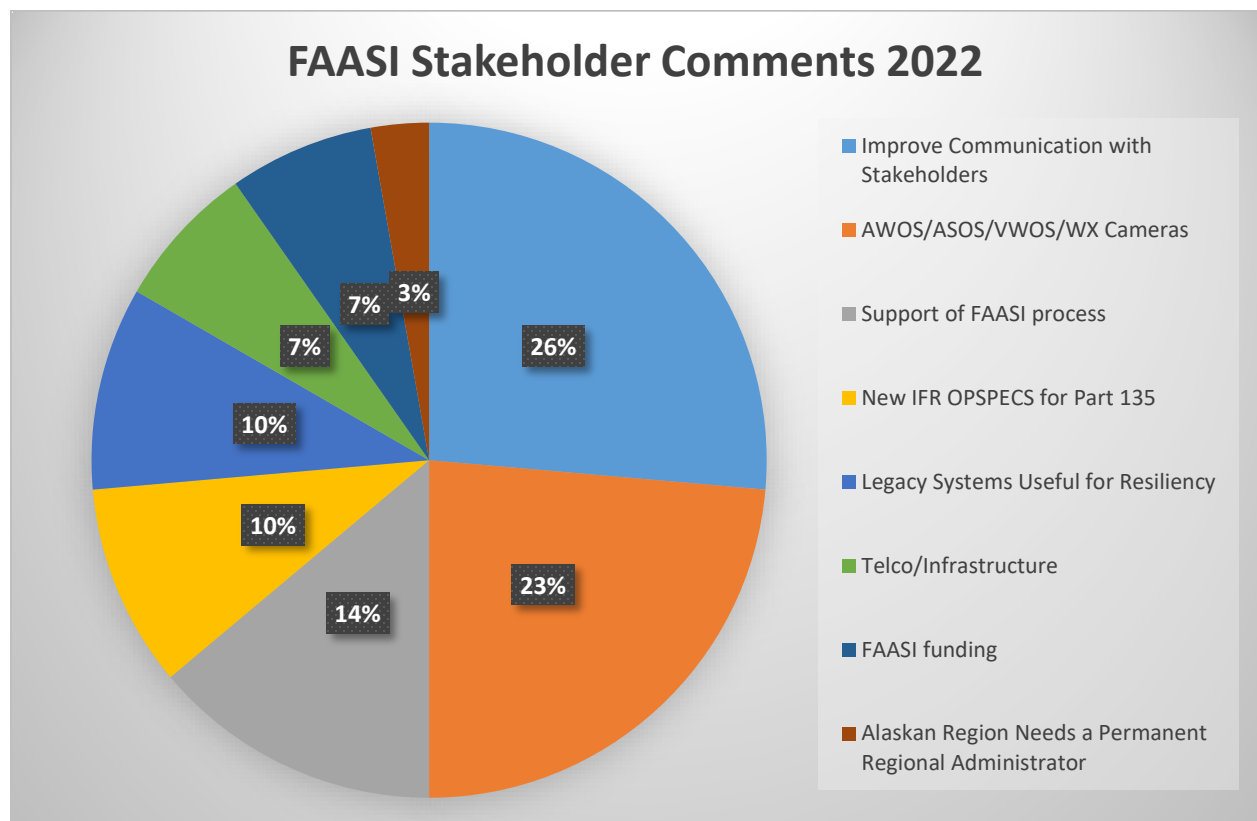
The FAASI Tiger Team held six listening sessions with stakeholders between March and April 2022. Below is a summary of those listening sessions. A comprehensive list of comments received is contained in Appendix D. Attendance at the listening sessions totaled 14 stakeholder participants.

There were 75 comments submitted during the listening sessions that account for eight primary categories. There were also 19 miscellaneous and uncategorized comments.

Among the 75 comments, more than 60% fell into three categories. In summary, the stakeholders want to be better informed about ongoing projects, they are requesting better more reliable weather reporting equipment, and they want to express support for the FAASI process. Of the 93 total comments received over six listening sessions, there were none that were not supportive or contributory in nature. Every stakeholder supported the FAASI process.

The eight primary categories are as follows:

- FAA should improve communication with stakeholders regarding ongoing projects
- Weather reporting issues and outages including AWOS, ASOS, VWOS, and weather cameras
- Statements of support for FAASI and inclusion of stakeholders
- New approved IFR procedures and Operational Specifications (OPSPECS) should be developed for Part 135
- Legacy navigation systems may be useful for resiliency
- FAASI team should work on strategies for funding
- Telecommunication and infrastructure is the primary problem for weather reporting and operations
- Alaskan Region needs a permanent Regional Administrator



4.0 FY23 FAASI Stakeholder Communication

FAASI remains an initiative intended bring focus to activities needed to enhance aviation safety in Alaska. The work on existing FAA programs will continue, both within and outside of the FAASI process.

In FY23 and subsequent years, the Tiger Team will host stakeholder feedback sessions similar to those previously conducted to support the original FAASI report and this progress report.

Starting next year and moving forward, the FAASI team will prioritize accomplishing work detailed in the roadmap over document production. Therefore, the Tiger Team will produce a combined roadmap and progress report during the second quarter of FY23 and subsequent years.

Next year's document will focus specifically on continuing the FY22 roadmap targets, since many of these activities are multi-year endeavors. Additionally, it will report on progress for the second half of FY22. This combined document will cover the work of the previous fiscal year, and map out future goals and targets. In future years, the Tiger Team will adhere to this schedule of developing a roadmap and progress report in a single document.

Appendix A: 2021 FAASI Recommendations

Recommendation 1: Weather Reporting Enhancements (AWOS/VWOS)

One of the primary focal points of FAASI is the requirement for additional and enhanced weather reporting capability via ground-based systems such as AWOS and VWOS.

Recommendation 1.1: Automated Weather Observing System (AWOS)

Continue FAA focus on new-installation AWOS units at airports for which the airport sponsor requests unit acquisition, installation, and FAA certification with funding under the Airport Improvement Program. Consistent with Section 147 of the FAA Reauthorization Act of 2018, complete each of the initial eight AWOS unit transfers at Alaskan airports (Kotlik, Tok Junction, Coldfoot, Nulato, Perryville, Crooked Creek, Tununak, and Akiachak) to the FAA by October 2022. Optimize the process to transfer AWOS units from airport sponsor ownership to the FAA, enabling seamless completion of the same in a timelier manner.

Stakeholder feedback also expressed concern about the FAA's timely acknowledgment and repair of existing FAA-owned AWOS/ASOS units which experience frequent service outages, including associated surface communication outages. FAA should conduct a study to examine the root cause of "Service A" outages and associated impacts and identify alternative mitigations which could include infrastructure improvement recommendations, alternate notification procedures, and/or the issuance of NOTAMs advising of outages. FAA should consider any necessary changes to FAA Joint Order 7900.5 Surface Weather Observing and FAA Order 7930.2 Notices to Air Missions (NOTAM).

Recommendation 1.2: Visual Weather Observation System (VWOS)

Continue testing and evaluating VWOS systems at four Alaskan airports (Palmer, Healy River, Tatitlek, and Eek) with the goal of completion by August 2022. FAA has developed standards for air carrier use during testing and validation of the VWOS units and will develop standards for non-sensor visual-based weather information to support gridded weather analysis information currently available from the National Weather Service.

Upon successful completion of the evaluation, the FAA seek funding for VWOS unit acquisition and installation at airports throughout the state of Alaska where AWOS and/or ASOS units do not exist. Aircraft operators intending to utilize VWOS technology to support IFR operations are required to submit a program for acceptance to their FAA Principal Operations Inspector to grant modification of FAA-issued Operations Specifications.

Recommendation 2: Navigation Strategy Development

Collaboration with Stakeholders prompted a significant amount of discussion related to development of an Alaska airspace navigation strategy, associated policy for lower-altitude operations, and plans for GPS resiliency. Specific points of reference centered on equipment

requirements when using GPS for navigation and optimizing/enabling lower-altitude direct flight paths.

Recommendation 2.1: Evaluate Operator Authorization Requirements

The FAA evaluate and clarify aircraft operator authorization and eligibility requirements for commercial aircraft operations under Instrument Flight Rules. Specifically, FAA should update the policy and guidance related to equipment requirements for commercial operators when using GPS for navigation.

Recommendation 2.2: Establish and Chart Communications Gaps on Published Routes

The FAA evaluate a potential policy change permitting communication gaps on routes where communication capability is the determining factor for the minimum enroute altitude. This would allow flexibility for aircraft operators with performance limitations or icing concerns while still maintaining acceptable terrain and obstacle clearance.

Recommendation 2.3: GPS Backup Resiliency

The FAA develop strategies to address GPS backup resiliency in Alaska. These strategies may include plans for retention and long-term support for conventional navigation aids.

Recommendation 2.4: T-Route Development

The FAA continue the development of T-routes as a replacement for Low Frequency/Medium Frequency (LF/MF) and other conventional airways by 2025.

Recommendation 3: Aeronautical Charting

The importance of accurate and relevant aeronautical charting, given the extent of topographical and geographical challenges in Alaska, was discussed intently during the FAASI process.

Recommendation 3.1: Mountain Pass Working Group Initiative

The FAA continue the Mountain Pass Working Group initiative and partnership with the Aircraft Owners and Pilots Association aimed at verifying existing mountain pass information and adding additional mountain passes to the Alaska VFR sectional charts as coordinated through the Service Center and as information becomes available.

Recommendation 3.2: Aeronautical Charting Meetings

Aeronautical Charting Meetings (ACM) are held bi-annually to identify issues concerning safety and usefulness of aeronautical charts and flight information products/services. To ensure adequate focus is placed on this initiative, FAA should ensure time is reserved at every future meeting to specifically address Alaska-specific charting needs that may be different than the continental United States.

Recommendation 4: Surveillance

Stakeholder discussions and FAASI internal conversations often revolved around the need for additional air traffic surveillance capability, particularly given the number of recent aircraft incidents, accidents, and near mid-air collisions in Alaska. ADS-B equipage and coverage was a frequent topic.

Recommendation 4.1: Education and Outreach of ADS-B Out Equipage

The FAA continue education and outreach with Stakeholders related to the requirement for equipage of ADS-B Out within certain airspace in Alaska, with a focus on the safety-enhancing benefits of aircraft position notification/display for users within all airspace. Indeed, a large number of Alaska operators have independently equipped with ADS-B Out and In or were participants in the FAA Capstone upgrade program which replaced first-generation equipment on approximately 400 aircraft with rule-compliant equipment. And, the extensive usage of it demonstrates the positive safety impact not only in airspace for which ADS-B is required, but also where the system is not required.

Recommendation 4.2: ADS-B Services

The FAA continue its efforts to deploy ADS-B services for the five non-implemented service volumes in a manner that will provide coverage along major air routes in Alaska.

Recommendation 5: Safety Outreach

The FAASI team and Stakeholders both repeatedly recognized the value of safety programs and, importantly, the opportunity to conduct them jointly while realizing the resultant synergistic value.

Recommendation 5.1: Safety Outreach Collaboration

The FAA continue the various safety programs already underway and seek to maximize adjacent opportunities for program integration. For example, FAA sponsors and/or participates in numerous programs such as Runway Safety Action Team meetings, the Aviation Safety Action Program, and Alaska-specific working groups including the Bethel Work Group and the AOPA-sponsored Mountain Pass Working Group. There are opportunities for FAA LOBs to conduct safety outreach efforts jointly among each other and via these program initiatives to address an entire realm of operational and environmental safety requirements and best practices. One such opportunity may exist at the Bethel Airport (BET). The FAA should explore combining efforts between AVS, ATO, and ARP utilizing the BET as a pilot program that addresses runway safety, local air traffic and traffic pattern safety, Class D airspace requirements, and accident/incident analysis and discussion utilizing a shared set of safety data. FAA-derived data and subject matter expert presentation material would become even more meaningful and would be more apt to be cohesively delivered in prospective multi-meeting settings.

Appendix B: FY22 Roadmap

Recommendation 1.1: Automated Weather Observing System (AWOS)

Who: This recommendation will be implemented through a collaboration between the Airports Division (ARP) and the Air Traffic Organization (ATO).

1. Installation of AWOS: ARP and ATO Operations Support are the co-leads for this portion. ARP will lead the process with respect to funding and identification of AIP eligible locations. ATO Operations Support will lead and complete the review of the request, siting, security, inspection, and acceptance.
2. Service A Outages: ATO Technical Operations and Mission Support Services will lead this portion with support from the ATO Program Management Organization.
3. Review of FAA Order 7930.2 NOTAM: ATO Mission Support Services Aeronautical Information Services will lead this portion with support from ATO Operations Support.

What: ARP and ATO will implement three changes to enhance weather reporting capability.

1. Installation of AWOS: The FAA will finish the installation of the AIP-funded AWOS systems at airports and continue the transfer process from airport sponsor ownership to the FAA. The FAA will utilize FAA Directive Advisory Circular 170-9A Criteria for Assumption of Ownership of Non-Federal Systems and other guidance as appropriate to complete the installation and transfer.

In accordance with Section 147 of the 2018 FAA Reauthorization Act, ARP will coordinate with the Alaska Department of Transportation & Public Facilities (ADOT&PF) to determine locations for the next round of AWOS system installations. Potential funding sources will be identified including utilizing AIP, Bipartisan Infrastructure Law (BIL), CARES (Coronavirus Aid, Relief, and Economic Security Act), and American Rescue Plan Act (ARPA) funds. After additional locations and resources are identified, ARP will coordinate with ATO and ADOT&PF to ensure proper equipment and processes are in place and establish critical timelines.

To optimize the process for transferring new AWOS systems from airport sponsor ownership to the FAA, ATO will work on acquisition strategies that cover the elements of logistical support for the systems. ATO will complete cyber security authorizations to meet Federal Information Security Management Act (FISMA) and operations requirements.

2. Service A Outages: The FAA will form a team of subject matter experts (SMEs) to examine the root cause of Service A data outages, associated impacts, and identify mitigations. These mitigations could include infrastructure improvement recommendations and improvements in logistics.

3. Review of FAA Order 7930.2 NOTAM: The ATO US NOTAM Governance Team will review language in FAA Order 7930.2 regarding reporting weather system outages for AWOS and Automated Surface Observing Systems (ASOS) to determine if Service A Outages meet NOTAM reporting criteria.

How: ARP and ATO will use a variety of options to implement these changes, including:

1. Installation of AWOS: The FAA and ADOT&PF will continue to collaborate on the installation and FAA takeover of the AIP-funded AWOS locations at Kotlik, Tok Junction, Coldfoot, Nulato, Perryville, Crooked Creek, Tununak, and Akiachak.

ARP will coordinate additional AWOS locations and funding sources with ADOT&PF to initiate the AIP planning process. Upon inclusion in the ARP Capital Improvement Program (CIP) database, ARP will initiate a workgroup with ADOT&PF and ATO.

ATO will develop an action plan for each new AWOS. This action plan will improve scheduling and allow for submitting requests for telecommunications lines, frequency research, and identifying Weather Message Switching Center Replacement (WMSCR) connectivity issues in advance. ATO will submit out-year budget requests for the systems and upgrades to telecommunications, data transfer, and operational budget needs. ATO will also complete system cyber testing.

2. Service A Outages: The FAA will work with a team of subject matter experts to determine the root cause of telecommunication outages. ATO will work with the FAA Logistics Center to improve the spare parts availability for Alaska. ATO will begin stakeholder outreach activities to enhance education and awareness.
3. Review of FAA Order 7930.2 NOTAM: The US NOTAM Governance Team will work with the AWOS/ASOS office to determine if policy on NOTAM criteria requires modification to address Service A outages.

When: The changes will be implemented starting in calendar year 2022 with specific milestones listed below.

1. Installation of AWOS: The AWOS installation will be conducted with the following milestones:
 - Begin coordination with ADOT&PF for additional AWOS locations by February 28, 2022.
 - Complete the installation of the AIP-funded AWOS sites by September 30, 2022.
2. Service A Outages: The FAA will examine the root cause of Service A outages, associated impacts, and identify mitigations by January 31, 2023. ATO will begin the stakeholder outreach activities by November 30, 2022. ATO will work with the telecommunications providers to obtain acceptable levels of service. ATO will coordinate with the FAA Logistics Center to improve spare parts availability by January 31, 2023.

3. Review of FAA Order 7930.2 NOTAM: A determination of the policy criteria will be completed by June 30, 2022. Further actions may be taken at a later date.

Recommendation 1.2: Visual Weather Observation System (VWOS)

Who: ATO, Aviation Safety (AVS), and Flight Standards (AFS) will collaborate to implement VWOS capabilities, including:

1. Test and Evaluate VWOS: ATO System Operations and Flight Services will test and evaluate the VWOS capabilities with input from AVS.
2. Develop Standards for Non-sensor Information: AVS and AFS will collaborate to develop standards for the non-sensor visual-based weather information to support gridded weather analysis information currently available from the National Weather Service (NWS).
3. Seek funding for additional VWOS: Upon successful completion of testing and evaluation, ATO Flight Services will seek funding for VWOS.
4. Modify Operations Specifications: FAA-issued Operations Specifications will be modified by AVS and AFS as requested by aircraft operators who intend to utilize VWOS technology to support Instrument Flight Rules (IFR) operations.

What: These changes to enhance weather reporting capability by utilizing VWOS will be conducted by:

1. Test and Evaluate VWOS: The FAA will continue the testing and evaluation of VWOS capabilities at four locations in Alaska. The four locations are Palmer, Healy River, Tatitlek, and Eek. Upon completion of the testing, the FAA will document the findings in a final report.
2. Develop Standards for Non-sensor Information: The FAA has developed standards for air carrier use during testing and validation of the VWOS and will develop standards for non-sensor visual-based weather information to support gridded weather analysis information currently available from the NWS.
3. Seek Funding for Additional VWOS: To be determined after testing and evaluation.
4. Modify Operations Specifications: Once VWOS capabilities are approved, aircraft operators intending to utilize VWOS technology to support IFR operations will be required to submit a program for acceptance to their FAA Principal Operations Inspector. The Inspector will evaluate the request and will grant a modification of the FAA-issued Operations Specifications as appropriate.

How: A variety of options will be used to implement these changes, including:

1. Test and Evaluate VWOS: The FAA will test and evaluate VWOS capabilities at four airports and will summarize the findings in a report. The report will identify potential next steps on whether the FAA will implement VWOS capabilities.
2. Develop Standards for Non-sensor Information: Standards will be developed following current research that is being performed.
3. Seek Funding for Additional VWOS: To be determined after testing and evaluation.
4. Modify Operations Specifications: FAA Principal Operations Inspectors will work with aircraft operators to update the Operations Specifications as appropriate depending on the outcome of the VWOS test and evaluation.

When: The changes will be implemented starting in calendar year 2022 with specific milestones listed below.

1. Test and Evaluate VWOS: The testing and evaluation of the VWOS capabilities at four airports will be completed by April 30, 2022. The report summarizing the findings of the test will be completed by September 30, 2022.
2. Develop Standards for Non-sensor Information: Standards will be developed following current research that is being performed.
3. Seek Funding for Additional VWOS: To be determined after testing and evaluation are complete.
4. Modify Operations Specifications: The milestones for modifying aircraft operator Operations Specifications will be established after additional VWOS funding has been identified.

Recommendation 2.1: Evaluate Operator Authorization Requirements

Who: Flight Standards Service (AFS) will lead an internal process to collaborate across LOBs to examine the current navigation policy and equipage requirements as it relates to GPS. The collaborations will include the Alaskan Regional Management Team (RMT).

What: The FAA will review and evaluate current GPS navigation policy to include regulatory requirements, equipment requirements, guidance, and associated authorization framework. The review and evaluation will determine if updates are required to clarify and align operational and equipment requirements for commercial operators using GPS for navigation.

How: A team of FAA subject matter experts (SMEs) from applicable LOBs will be assembled to conduct the review. This review will focus on inconsistencies, areas requiring clarification, and opportunities for improving navigation policy.

Using existing safety risk management principles and processes, the FAA will analyze and review any new recommendations identified by the team of SMEs. This analysis will include not only potential policy guidance updates, but also possible recommendations and updates to the associated authorization framework.

Proposed updates identified by the FAA review team will be coordinated across LOBs to provide additional clarity and transparency. Updates will be published in applicable FAA documents.

When: Beginning in FY22, a team of SMEs will be assembled to initiate a review of the navigation policy and associated requirements. Members of the Flight Standards Leadership Team will provide routine updates to the RMT. The updates will include information on milestones.

Recommendation 2.2: Establish and Chart Communications Gaps on Published Routes

Who: The Flight Technologies and Procedures Division and Aeronautical Information Services (ATO) will evaluate the current policy.

What: The Alaska T-Route working group consists of FAA employees and external stakeholders. The FAA will use the Alaska T-Route working group to identify geographic areas of consideration for establishing communications gaps on published routes. Once the routes are identified, the FAA will follow the waiver and approval process to assist in determining the communication gaps and publishing updated T-Routes.

How: The FAA will use the Alaska T-Route working group to identify geographic areas of consideration for establishing communications gaps on published routes. The Flight Procedures Team will conduct a feasibility analysis of the routes identified to assist in determining the communication gaps. The Flight Procedures Team will collaborate with the Alaska T-Route working group on the proposed altitudes for each identified route.

A waiver will be initiated using existing safety risk management principles for the identified routes. The FAA will consider mitigations that can be implemented to ensure an equivalent level of safety for flight in areas where communications gaps are proposed. Aeronautical Information Services will submit the procedures and waivers to Flight Inspection for evaluation.

Upon completion of the flight inspection, Aeronautical Information Services will submit the procedures to Flight Standards for review and possible approval at the Procedures Review Board (Flight Standards Safety Management System). Once approved, the FAA will chart communications gaps on the published T-Routes.

When: Western Flight Procedures Team will begin collaboration with Flight Standards on potential waivers beginning in June 2022. Publication of the T-Routes will depend on the review and approval process.

Recommendation 2.3: GPS Backup Resiliency

Who: ATO Program Management Organization, Enterprise Services, and Navigation Programs with input from AVS.

What: Develop a GPS resiliency plan for Alaska navigation accounting for potential loss or interference of GPS or WAAS signals.

How: Develop strategies for mitigating the loss of integrity of GPS navigation across the various geographic areas of Alaska. Factors that will be considered in the strategies include:

- Plans for retention and long-term support for conventional navigation aids (NAVAIDs),
- Threat to GPS signal,
- Availability of safe landing sites,
- Use of various ground-based NAVAIDs,
- Assess accident locations and causes related to navigation from NTSB and other accident sources, and
- Current and planned ground-based and satellite-based NAVAIDs and infrastructure.

The GPS resiliency concept will be coordinated with military and civil users and revised as appropriate. Alaska-located conventional NAVAIDs will be included in the appropriate navigation programs for funding, implementation, and long-term support.

When: The initial draft plan will be submitted by September 30, 2022 and will be updated periodically as ATO Enterprise Services Navigation Programs plans evolve.

Recommendation 2.4: T-Route Development

Who: ATO Mission Support Services Western Service Center Flight Procedures Team will work together to implement this recommendation.

What: The Flight Procedures Team is working to add or revise 56 T-Routes to replace the LF/MF airway structure. Of the 45 obsolete LF/MF airways, 31 will be cancelled. The remaining airways and dependent instrument approach procedures will be amended to allow the decommissioning of 51 of 59 Alaska Non-Directional Beacons (NDBs). At the request of the Department of Defense, eight NDBs and 14 LF/MF airways will remain.

How: New and amended Performance Based Navigation (PBN) T-Routes are currently near the end of Phase 2 of the implementation process. The proposed NDB cancellations are currently being evaluated to determine which routes can be feasibly divested.

When: T-Route replacements will start to be developed beginning February 2022. T-Route replacements will be published in phases along the following timeline:

- September 8, 2022 – 20 replacements will be published
- November 3, 2022 – 15 replacements will be published

- December 29, 2022 – 15 replacements will be published
- February 23, 2023 – 6 replacements will be published

NDB cancellations are expected to start the validation and prioritization process in March 2022. The approach procedure projects are in the pre-planning phase and do not currently have an estimated timeframe for completion.

Recommendation 3.1: Mountain Pass Working Group Initiative

Who: ATO Mission Support Services, Aeronautical Information Services, and Visual Charting Team will lead the Mountain Pass Working Group.

What: The Visual Charting Team will continue to participate in the semi-annual meetings. An action plan was developed to update the existing mountain pass inventory and identify an ongoing workflow to add additional passes as required.

How: The Visual Charting Team is working with the Western Service Center, AOPA, and the United States Geological Survey (USGS) to capture and complete the existing inventory of mountain pass information. The collaboration is verifying the location, elevation, and naming conventions applied to the Alaska sectional charts.

When: The Alaskan Mountain Pass Working Group continues to meet on a semi-annual basis to confirm success and assist elsewhere with its expertise. The Alaska Sectional Charts were completed on October 7, 2021. The Naqsrallugaq Pass will be added to the Point Barrow and Fairbanks VFR Sectionals effective March 24, 2022.

Recommendation 3.2: Aeronautical Charting Meetings

Who: ATO Mission Support Services, Aeronautical Information Services, and Charting Products Integration Team will lead the changes to the ACMs.

What: Meetings are held biannually to identify issues concerning safety and usefulness of aeronautical charts and flight information products.

How: The ACM agenda will have a designated time to address Alaska charting issues. Meeting times will be adjusted to more optimally match west coast and Alaskan time zones.

When: The next scheduled ACM is April 25 – 28, 2022.

Recommendation 4.1: Education and Outreach of ADS-B Out Equipage

Who: Flight Standards will lead the efforts with an emphasis on utilizing the FAA Safety Team (FAAS Team) in Alaska.

What: Outreach will consist of a multifaceted information campaign utilizing posters, presentations, brochures, e-mails, and accident case studies that promote and educate operators on the use and benefits of ADS-B.

How: Flight Standards will maintain an outreach plan, in harmony with the FAASTeam National Performance Plan, which identifies opportunities for the FAA to collaborate with the stakeholders on ADS-B Out equipage. The FAASTeam in Alaska will partner with stakeholders to conduct the outreach meetings. Flight Standards will review the outreach plan and add new events as identified. The below events are a part of the outreach plan.

- Spring Air Safety Meeting
- Great Alaskan Aviation Gathering
- Quarterly Safety Meetings
- Individual outreach with the public, including complaint investigation
- RSAT (Runway Safety Action Team) meetings
- Bethel Work Group meetings
- Pre and Post-season Air Tour meetings
- Occasional Alaska Airmen meetings
- Air Carrier briefings as requested

When: Flight Standards will meet quarterly to review and update the outreach plan. The FAASTeam will attend meetings and conduct outreach on ADS-B equipage as meetings occur.

Recommendation 4.2: ADS-B Services

Who: ATO Program Management Organization and Surveillance Services

What: The FAA completed a business case for expanding ADS-B services in Alaska and identified five ADS-B service volumes (SVs) which were not implemented in the original Surveillance and Broadcast Services Capstone Plan. The ADS-B Service Expansion Project will increase the number of SVs in Alaska from nine to fourteen.

How: Initial FAA Joint Resources Council (JRC) approval of the Alaska ADS-B Service Expansion Project was obtained in September 2021. This approval provides incremental funding for the ADS-B Service Expansion Project and enables a preliminary service expansion and site coverage assessment. After completion of the preliminary service expansion and site coverage assessment, five additional ADS-B ground-based transceivers (GBT) will be installed.

When: Final approval of the Alaska ADS-B Service Expansion Project, including the larger ADS-B Enhancements Package is expected in summer 2022. Final approval will provide the funding to begin ADS-B GBT installations at the identified locations.

The preliminary service expansion and site coverage assessment will be completed in September 2022. Completion of the GBT installations will occur in calendar year 2023.

Recommendation 5.1: Safety Outreach Collaboration

Who: The Regional Administrator (RA) will lead an internal process to increase safety collaboration across FAA LOBs. The expected outcome of this collaboration is enhanced external engagement. The RA will engage the RMT for the internal collaboration.

What: The RA will implement two changes within the Alaskan Region to increase safety outreach collaboration.

1. Expanded Participation in Existing Programs: The RA will encourage expanded FAA participation in existing Alaska focused safety programs. The FAA currently sponsors or participates in numerous programs such as Runway Safety Action Team (RSAT) meetings, the Aviation Safety Action Program (ASAP), the Bethel Work Group, Aeronautical Charting Meetings (ACM), and the AOPA sponsored Mountain Pass Working Group. The RA will work with the RMT to ensure these existing programs are supported.
2. Increase External Stakeholder Collaboration: The RA will evaluate the opportunity to increase safety outreach collaboration by combining existing safety efforts currently in place by AVS, ATO, and ARP to make the programs more efficient and meaningful for stakeholders.

How: The RA will use a variety of options to implement these changes, including:

3. Expanded Participation in Existing Programs: The RA will advocate for increased LOB participation in all FAA safety meetings. The RA will attend RSATs, air tour operator safety meetings, and other meetings as appropriate. RMT members will communicate upcoming events at the regularly scheduled RMT meetings and will include the events on the Alaskan Region aviation events list.
4. Increase External Stakeholder Collaboration: Many of the safety programs in Alaska are a collaboration between the FAA and the stakeholders. The RA will encourage stakeholder participation in existing FAA safety programs by increasing communication of upcoming events at the FAA Alaska Industry Council and Alaska Aviation Coordination Council meetings. The Alaskan Region aviation event list is a publicly available document and is distributed via e-mail. The RA will make this document more accessible by posting it to the FAASI website.

The RA will use the Alaskan Region aviation event list to identify opportunities to combine existing safety efforts to make them more efficient and meaningful for stakeholders. One opportunity is to expand the RSAT to include information about the Alaska Chart Supplement update initiative.

Using the success of the Bethel Users meetings, the RA will continue to explore expanded collaboration opportunities. The Bethel Users meeting started out addressing near mid-air events in and around Bethel. The users requested the FAA continue the

regular meetings with an expanded scope to include runway safety, local air traffic and traffic patterns, Class D airspace requirements, and accident analysis.

When: The RA will implement the two changes starting in calendar year 2022. The changes will continue beyond 2022.

1. Expanded Participation in Existing Programs: Beginning in March 2022, the RA will address the RMT on a monthly basis to identify upcoming events and encourage wider participation across the LOBs.
2. Increase External Stakeholder Collaboration: Beginning in April 2022, the RA will use the bimonthly FAA Alaska Industry Council meetings hosted by the FAA and the bimonthly Alaska Aviation Coordination Council meetings hosted by the stakeholders as an opportunity to communicate upcoming events. The RA will post the Alaskan Region aviation event list to the FAASI website by April 2022 and will update the list on a monthly basis.

The RA will continually consider opportunities to combine safety efforts for efficiency and to make them more meaningful. An update on the opportunities identified in FY22 will be included in the year end FY22 Progress Report.

Appendix C: List of Acronyms

ACM – Aeronautical Charting Meetings
ADS-B – Automated Dependent Surveillance-Broadcast
AIP – Airport Improvement Program
AIM – Aeronautical Information Manual
AFS – Flight Standards
AJR – System Operations
AOPA – Aircraft Owners and Pilots Association
ARP – FAA Alaskan Region Airports Division
ASOS – Automated Surface Observing System
ATO – Air Traffic Organization
AVS – Aviation Safety
AWOS – Automated Weather Observing System
CFI – Certified Flight Instructor
CFIT – Controlled Flight Into Terrain
DPE - Designated Pilot Examiner
FAA – Federal Aviation Administration
FAASI – FAA Alaska Aviation Safety Initiative
FTI – FAA Telecommunications Infrastructure
GBT – Ground-based transceivers
GPS – Global Positioning System
IFR – Instrument Flight Rules
LOB – Line of Business
NDB – Non-Directional Beacon
NOTAM – Notices to Air Missions
NTSB – National Transportation Safety Board
OPSPECS – Operational Specifications
PIREP – Pilot Report
RA – Regional Administrator
RMT – Regional Management Team
RSAT – Runway Safety Action Team
Tech Ops – ATO Technical Operations, Anchorage District
VFR – Visual Flight Rules
VWOS – Visual Weather Observation System
WAAS – Wide Area Augmentation System

Appendix D: Stakeholder Comments

Stakeholder Comments
FAA needs to improve communication with stakeholders regarding ongoing projects
No visible progress being made on FAASI. There are some PR problems with FAASI. One way to address the issue is to not wait until the end of the fiscal year to update the roadmap. The stakeholders appreciate hearing from the FAA on the progress being made and the actions taken, but that information isn't being shared with the public.
No visible progress being made on FAASI – There isn't a lot of visible progress being made on FAASI. The FAA needs to make sure they don't slip on the timelines and there needs to be visible progress to gain the faith and trust of the public.
Does the FAA offer the aviation industry the opportunity to assist in prioritizing the location of new AWOS?
Recommendation 1.1 AWOS – The FAA indicates in the roadmap they are working with Alaska DOT&PF to identify locations for potential future AWOS. There are other airport sponsors who would need to be involved in the process. Specifically mentioning Alaska DOT&PF, but leaving out the other stakeholders, puts up a red flag that something isn't right.
Recommendation 1.1 – Locations for future AWOS need to be collaborated with the air carriers. The operators know the types of aircraft being flown into the airports, the types of services needed at each airport, and what weather systems will actually be useful to the pilots. An example Akiachak, outside of the Bethel airport. The pilots aren't going to fly scheduled IFR service to that village. The village doesn't support it and it is too close to Bethel, the main hub. Another example is Crooked Creek who only gets scheduled service a couple times a week. There are other villages in the YK Delta that have service five or six times a week and have a greater need for an AWOS than Crooked Creek.
Recommendation 1.2 VWOS Status – The roadmap indicates the first reports should be finished by Mach 2022. Is there an updated on those reports or a location where the stakeholders can find the reports? Since it is now April 2022, the roadmap should be updated to include the current status of the VWOS.
Wording is misleading – The way some things are worded is misleading to the public. Specifically with the ADS-B infrastructure and the new GBTs. The roadmap talks about additional SVs then later in that section it mentioned there will be 5 new GBTs. This isn't accurate and has been confirmed with Jamal Wilson. One GBT won't cover a full SV. There will most likely be 10 or 11 GBTs installed. How is the FAA going to correct examples like this where the roadmap is misleading?
Recommendation 4.1 (Education and Outreach of ADS-B Out Equipage) – There is a list of events that are part of the FAA outreach plan. Propose adding three additional events; the Lake Hood User's Group Meeting, the Alaska Air Carriers Meetings and the Airport Operators Maintenance or Operations Meetings.
Recommendation 4.2 WAAS/ADS-B – Operators have spent millions investing in their fleet and upgrading to ADS-B In and Out so they can use this capability and fly precision

approaches. The FAA doesn't provide the services with the ground-based ADS-B to provide the needed coverage for the Part 135 operators that are flying below 10,000 feet. The FAA needs to look at how decisions are made for implementation of new systems. For example, placing a new station near Delta Junction which is a very limited route for Part 135 operations versus a station that provides coverage north of Fairbanks which is an extremely busy route yet has no coverage below 15,000 feet.

Recommendation 5.1 Safety Culture – The safety outreach is really a cultural aspect. With Medallion and Capstone, we were able to project to the public that Alaska isn't the 1950s and 60s bush pilots anymore. We are professional airlines with professional operators and our goal is to conduct safe operations.

Recommendation 5.1 – FAASI needs to include more operator participation and also include the POIs that are the feet on the ground. The major problem with many of the FAA programs/Teams is they are all internal to the FAA and include a lot of people not located in Alaska. These external to Alaska FAA employees have no idea what aviation is like here and what the operators deal with on a daily basis in Alaska. You can't apply general FAA policies across the board to a state that is as unique as Alaska.

Recommendation 5.1 RSATs – There is a lot of dependence being put on the RSATs as a communication tool. The problem with that is the RSATs are being held at inconvenient times for the operators. They are being held in the afternoons when the operators are in the middle of their final push for the day. This is resulting in low participation by the operators.

Recommendation 5.1 Aviation Event List – Recommended a calendar of events be posted on the FAASI website instead of just a list.

Recommendation 5.1 SMS Pilot Program – The SMS pilot program or any of the ASAP programs aren't mentioned in recommendation 5.1. With the SMS pilot program, there is an inherent conflict of interest with the way it is currently run. If the revenue production decision makers were in charge of supervising the flight risk decisions then ultimately risky, unsafe flights would be happening for the sake of revenue. That is similar to the conflict of interest happening with the SMS pilot program. The inspectors are really good at the enforcement side of aviation. They are probably really good at managing an SMS program. What the Part 135 operators see is the inspectors also running the SMS pilot program and ASAP and the conflict of interest that presents. It would be better if the FAA safety team could run these instead. Operators don't want to participate in a voluntary safety program that is being managed by the same person who issues the operator safety violations.

Mountain Pass Charting – The roadmap mentions the Alaska sectional charts were completed in October 2021. Unclear what that is referencing. In October, elevations were added to over 50 mountain passes but the charts weren't actually completed for that. This workgroup is waiting on the policy changes to 7210.3 which will allow us to start putting some VFR checkpoints and waypoints to improve situational awareness for pilots operating in the vicinity of major mountain passes. The roadmap also lists this as an AOPA sponsored workgroup. AOPA did

participate in the meetings and raise the issue, however, this isn't an AOPA workgroup. There are other stakeholders involved also and this is an aviation charting workgroup.

Empower the POIs – If new standards and policies need to be written for VWOS to be used, then the POIs need to be supported and empowered. We, the operators, are seeing time and time again that the POIs aren't being supported by FAA leadership. The monthly and quarterly meetings with the operators aren't taking place.

Wait and see mentality – There is a wait and see mentality from the stakeholders. We have heard all of this in the past from the FAA about making change. We know the FAA has great intentions. A lot of the roadmap depends on funding and things that are way beyond the scope and control of FAASI. Recommends picking some of the low hanging fruit and easy wins to show the public that FAASI is really making progress. An example of an easy/early win would be to get the Galena VOR back online sooner rather than later. This would be a good show of faith in FAASI for the stakeholders and something that has been asked for by the stakeholders for years.

A lot of the outreach mentioned here are meetings and events. Is the FAA coordinating with any of the lodges or the visitor bureaus to help get out the message about aviation safety? Those pilots are private pilots and not Part 135, but there are a lot of them in Alaska and they do fly passengers.

Weather reporting issues and outages including AWOS/ASOS/VWOS/Weather Cameras

There has been a lot of discussion recently regarding weather observation systems in Alaska. Anticipated a single conversation about the Yakutat ASOS, but it has become a pretty robust discussion.

The FAA has taken the position in the past that as long as one of the three outlets is working then the AWOS is still operational. Stakeholder is encouraging the FAA to reconsider this opinion based on the following:

AWOS has three outlets for data:

- 1) Radio broadcast – This is so the pilot can keep the radio tuned to the frequency and listen to the AWOS broadcast during flight. Pilots use this within 15 or 20 miles from the airport during their landing approach.
- 2) Dial-in phone number – Pilots use this to call up the AWOS information with a phone and listen to the report prior to flight. The 800 number is the backup for when Service A isn't working.
- 3) Service A – This is the primary method pilots use for pre-flight weather information.

Each of the three AWOS outlets serves a different purpose. All three of the outlets are needed by pilots and if any one isn't operational then it hinders the pilot's ability to make safe flight decisions. The radio broadcast outlet is critical to pilots as they land. They tune to the frequency as they are approaching the airport to obtain updated weather information that may have changed during flight. Service A is the primary pre-flight source of weather information. This is used to make a decision if it is safe for the flight to happen. If Service A is down, then the dial-in phone number is the backup for a pre-flight decision. If one of the two primary outlets, either

Service A or radio broadcast isn't working, then the AWOS should be considered out of service. If one of these two outlets isn't working it hinders the pilot's ability to make a safe flight. There needs to be a focus on both Service A and radio broadcast outages.

Weather and Communications – FAASI needs to address the lack of weather data and the lack of communications in Alaska. It is expensive for a pilot to start a flight and head out to a community and then all of a sudden, an AWOS stops reporting and the pilot has to turn around mid-flight because they don't have weather information.

Lack of weather data is costly to the airlines – When an airplane is dispatched to an airport and the pilot finds out mid-flight that the AWOS isn't working and the weather is below minimums, the airplane has to turn around and return to Anchorage. There is a monetary impact to the airline for the cost of the fuel used during the flight. There is also a reliability of service issue when aircraft have to turn around. This is especially true for southeast Alaska and Kodiak where air carriers have seen the greatest impact from unreliable AWOS and ASOS.

Recommendation 1.1 AWOS – We run into daily operational issues with the AWOS and ASOS. There are constant telecommunications issues and other infrastructure problems. The FAA will say an AWOS is operating, however, the AWOS isn't actually transmitting the data to the users. The AWOS are included in the FAASI roadmap, but there is a concern regarding the implementation timeline. The stakeholder outreach for the AWOS isn't scheduled to begin until November and the identification of mitigations isn't scheduled until January 31, 2023. Our company is advocating for this timeline to be expedited. Our company has documented safety reports on multiple occasions where airplanes were dispatched to an airport but the AWOS or ASOS at that location was failing to transmit data. This resulted in aircraft flying into weather that was below the minimums for flight at the destination airport. FAASI focuses on Part 135 operations, but the AWOS is a big problem for Part 121 operations also.

Recommendation 1.1 AWOS Service A Outages – The FAA needs to change their definition on what an AWOS outage is and how they identify it. Just because the AWOS is measuring weather, it does the operators no good if we do not have access to the info for planning and dispatching aircraft to a destination or while the plane is en-route. We understand that the FAA may not have direct control of internet and telecommunications issues, however, you at least need to identify there is a problem. As opposed to developing a team of SME on the root cause, which for the most part we know this already, and work with the responsible parties towards a solution.

Lack of weather data is costly to the airlines – My air cargo operator is also having to turn planes around mid-flight due to a lack of AWOS data when attempting to land at an airport. There is a monetary impact for our company when aircraft have to turn around. We do have a standalone program that allows for special terminal operations for our aircraft in Alaska so they can avoid some of the aircraft turning around. That program only applies to the Part 121 operations and not their Part 135 operations. Real-time, accurate weather information is needed in Alaska for all operators.

<p>Is there a process established on how to transfer new AWOS from AK DOT&PF to the FAA or is that process still being developed? Is there commitment by the various FAA LOBs to transfer the AWOS to the FAA for maintenance?</p>
<p>When the AWOS isn't fully functional, pilots lack the necessary information to conduct safe flight decisions. It should be unacceptable to have an AWOS out of service for 3 months instead of that being the norm.</p>
<p>Existing AWOS Project –I was surprised to see the existing AWOS project as part of the FAASI future project. The stakeholder had the understanding that this project was well underway and had started a few years ago. We know the project isn't complete yet. The stakeholder was hoping to see new movement with AWOS and not the existing project.</p>
<p>NEXRAD Expansion – In the lower 48, you can fly all the way from the west coast to the east coast with proper weather data. In Alaska, we need more NEXRAD. There are only seven little areas covered currently. Even the IFR pilots are begging for NEXRAD in Alaska. Pilots need adequate weather data for safe flight operations.</p>
<p>Recommendation 1.2 VWOS - This system is already providing three times more weather information than a typical AWOS. As opposed to spending the next several years developing standards for the use of VWOS, why not focus on making this a certified weather system. I should not need an OPSPEC signed off by a POI to use a system that provides much more info than the current systems at a fraction of the cost.</p>
<p>Recommendation 1.2 VWOS Locations – The roadmap mentions potential deployment of future VWOS at additional airports. These shouldn't be limited to airports. The FAA should consider key locations along major VFR Routes and mountain passes for installation.</p>
<p>Recommendation 1.2 – Agree with everything other stakeholders have said on this. Creating new procedures and new standards doesn't make sense. This sounds difficult in the long term, much like Section 333 Reauthorization. We already have the regulations and the requirements to say we can't fly an IFR approach to a destination without approved weather. Why can't the VWOS just be an approved weather source once the testing is complete? We don't need to put in the time, effort, and money to write another inch of policy and procedures in our manuals. Just make VWOS an approved weather source and we can use the current standards.</p>
<p>The stakeholder has expressed an interest in putting in an additional weather camera. A justification has already been completed to request the new weather camera. Who is the new POC to send the request to? Note: Stakeholder was provided with POC information during the listening session.</p>
<p>Stakeholder works with various vendors in the state. They use the FAA weather cameras a lot to conduct pre-planning and for aircraft flight conditions.</p>
<p>Better progress need to be made towards improving weather data in Alaska. There were approximately 100 locations identified for new weather cameras, but the FAASI roadmap doesn't talk about any of that.</p>
<p>Statements of Support for FAASI and inclusion of stakeholders</p>
<p>FAASI is a good model that can be applied nationally by the FAA as a great way to work with the stakeholders.</p>
<p>I appreciate the effort from the cross LOB group. This is essential to moving FAASI forward.</p>

I appreciate hearing what the FAA is looking into to address AWOS reliability
The aviation advisory board did provide support for the FAASI process. The hope was for the FAA to hold more listening sessions with the stakeholders so it is good to see this happening.
Kudos to the FAASI team on the roadmap layout. Really like how it is structured and easy to follow.
I agree with other stakeholder comments on the format of the roadmap. It ties back to the FY22 Final Report and the information is really easy to read and follow.
FAA Commitment to FAASI – Thank you for continuing forward with FAASI. The operators want to see this as a lasting report. We don't want to see this initiative die with a change in Administration, be it Regional or in DC. This report shouldn't go sit on someone's desk for the next 10 years and then get dusted off and we start all over again.
I appreciate the effort that has gone into FAASI to this point.
We support FAASI and want this initiative to stick. We have been through many other FAA initiatives, and they all came to an early end. We know Alaska is different. Alaska doesn't fit all of the parts and pieces of FAA policy and directives that come down from Washington DC. Aviation is extremely critical in rural Alaska. Everyone relies on it for emergency services, business travel, personal travel, or for cargo delivery.
FAASI Support – We want to see support for FAASI from the FAA. We don't want to see this die out or just sit on a shelf somewhere. Aviation safety is too important of an issue in Alaska and this needs to be addressed. Alaska's infrastructure needs to be improved and that takes commitment and funding from the FAA.
New approved IFR procedures and OPSPECS should be developed for part 135
Instrument Approach Procedures – Missing from the roadmap is the need for more instrument approach procedures. There are 27 communities in Alaska with instrument approach procedures that are not supported by weather data. The operators have installed the necessary equipment into their aircraft, at their cost. The FAA needs to step up and do their part.
Point in Space Procedures – The number of airports in Alaska that airport based NAVAIDs is slim. That is standard equipment in the lower 48. PAPIs help a pilot conduct a safe approach, but there aren't many airports that have PAPIs. The operators have asked for point in space procedure development to help serve some of these airports.
Recommendation 2.2 Establishing Communication Gaps – It is important for pilots to have the lowest possible MEA to keep the aircraft out of icing conditions as much as possible. Lower MEAs would help some additional aircraft consider the use of IFR over VFR and increase flight safety.
T-Routes in Southeast Alaska – Expanding the availability of T-Routes in southeast Alaska to be equipped with modern navigation equipment needs to happen. New standards need to be developed that would allow the operators to use the T-Routes.
Section 322 FAA Reauthorization Act – The FAA has completed screwed this up. The FAA wasted well over a year to put out policy and guidance on this that prevented implementation of this law. The FAA approved it for only one operator with virtually no procedure written by that

<p>operator and failed to approve it for anyone else or rescind the approval of the operator that was issued authorization. The FAA then applied this after taking a year plus to write an Advisory Circular and 8900 guidance as regulation. My POI sat on my procedure and training program for several months before providing any real comments. The AC was written by a DC person that had never even been to the state, other than Anchorage. Section 322 was developed to enhance safety immediately not 5-10 years down the road. We all know how funding works and the government agencies work at a snail’s pace on program changes. Part 135.225(b) already provides for this operation for eligible on-demand operations. Does this operation have an 11 page Advisory Circular? Because of the FAA’s lack of action on this law, I am still, after equipping my aircraft with added safety features to perform this operation, flying into airfields under marginal VFR condition versus flying a valid and safe approach.</p>
<p>Recommendation 2.1 – This recommendation mentions evaluating authorizations for commercial operations. Is there a need for further authorizations for non-commercial operations?</p>
<p>Is it possible to address some of these areas with infrastructure improvements and some of the areas with a change in policy?</p>
<p>Legacy Navigation Systems May be Useful for Resiliency</p>
<p>Older Technology is Useful – The older technologies are still useful and can be a great backup system.</p>
<p>Legacy VORs – The legacy VORs in Alaska should be maintained. Alaska still needs some level of Class 1 navigation in place.</p>
<p>Amber Airways – The amber airways and T-Routes are a great backup resiliency for GPS. There are some T-Routes that pilots fly lower altitudes on so the T-Routes aren’t helpful.</p>
<p>Deactivated system could be the backup network – Agree that some of the older colored airways are seemingly useless. Distinction between a Class 1 navigable airways keeps it a Class 1 even outside of a Service Volume. There is a very real implication to the authority to fly in certain places when some of the systems are deactivated. Some of the deactivated systems would offer the backup network needed in the event of a catastrophic event with the GNAS.</p>
<p>Recommendation 2 - Navigation Strategy Development – Specific interest in GPS resiliency and T-Route development. How was the strategy for implementation of these developed? There is a lot more to the navigation strategy for the Part 121 operators. The authorization to fly in an area utilizing an internet system, a standalone strap on navigation system or satellite-based GPS, would require special authorization in the Class A arena. That is something that is typically seen when flying greater distances without land-based navigation. If land-based navigation is eliminated and we go straight to T-Route, we would have an issue as an air carrier getting all of the authorizations from the different LOBs in the FAA to be able to fly in Alaska with the Class 1 and 2 designations. Is the FAA ready to do away with Class 1 distinction in light of the work that is being done in Alaska? How does this fit into the FAASI roadmap and the strategy development going on?</p>
<p>Older aircraft aren’t compatible with GPS navigation – Some air cargo operators use DC-6 aircraft in Alaska. It is very critical for the infrastructure here that we are able to fly larger</p>

<p>aircraft to some of the bush communities. If the FAA moves everything to satellite navigation and cargo operators are flying 1950s aircraft, this could cause some problems.</p>
<p>Recommendation 2.3 NAVAIDS – With the lack of up keep on NAVAIDS in Alaska and the decommissioning of multiple NAVAIDS it is almost impossible for smaller operator that are only equipped with GPS to fly IFR due to the requirements of Class I NAV under the OPSPECS. Alaska should get rid of all NDBs and that stuff. The pilots don't use it so why spend money on it. Use the NDB money to fund actual NAVAID improvements. The use of military jamming of GPS in Alaska is a major safety hazard. I know they have specific requirements with regards to weather, however, the range of jamming spans areas that have multiple weather systems. There are also many VFR only pilots that are dependent on GPS for navigation regardless of the weather.</p>
<p>FAASI team should work on strategies for funding</p>
<p>Funding for Alaska – The FAA needs to include funding in their appropriations request to address flight safety in Alaska. The Alaska Congressional delegation has told the FAA the money can't come from Congressional earmarks. It needs to be identified in the FAA appropriation's request as specifically for Alaska so it can't be diverted elsewhere in the FAA budget.</p>
<p>Alaska's Congressional delegation is in a great position to help the FAA with one delegate a senior member of the Appropriation Committee and on the Transportation, Housing, and Urban Development Subcommittee.</p> <p>The best way for that delegate to assist the FAA is for the FAA to push for AWOS funding to be included in the President's budget to Congress. The show of support for FAASI from FAA HQ by putting the funding in the President's budget request will allow Alaska's Congressional delegation to support the funding when it reaches the Appropriations Committee. It is very hard to lobby for funding that wasn't in the President's budget.</p>
<p>For the funding part, what the FAA receives is largely, probably 90%, of what the President submits in his budget request. Congress is starting the FY23 appropriate cycle. Now would be a great time for the FAA to push to have the funding included in the President's request. It is easier to get approval if the Alaskan Region concerns are rolled up through FAA HQ into the President's budget and then down to Congress that way. The days of adding onto the President's request are behind us.</p>
<p>Funding – FAASI needs to stay relevant and take Alaska to the next step. Our industry group believes that the next step is for Alaska to have better infrastructure. The FAA needs to allocate money to FAASI to improve infrastructure in Alaska.</p>
<p>Is it possible to address some of these areas with infrastructure improvements and some of the areas with a change in policy?</p>
<p>Telecommunication and infrastructure is the primary problem for weather reporting and operations</p>
<p>There are four areas where AWOS suffers.</p> <ol style="list-style-type: none"> 1. Archaic telecommunications system – The current telecommunication system is fraught with problems that result in unusable Service A on the AWOS. The current

telecommunication system relies on copper wires and circuits that aren't manufactured anymore. The local carriers like AT&T aren't used to maintaining this older system and their technicians aren't trained on how to maintain it. The FAA should put more emphasis on converting our AWOS to the newer technologies such as IP capabilities to prevent outages from outdated telecommunications.

2. Not prioritizing Service A outages – Prioritization of AWOS outages should be re-evaluated. There are often times when the outage responsibility is bounced back and forth between the FAA and the telecommunication carrier over who is responsible for fixing the outage. Meanwhile, the AWOS sits offline while the blame game is happening. Over time, the extended AWOS outages has resulted in an overall relaxation on the importance of AWOS in aviation safety for Alaska. It is now common to have an AWOS out of service for 3 months and that should never happen. AWOS outages need to be refocused as a high priority issue.
3. Logistics and equipment availability – The lack of available AWOS parts causes a lot of problems. A centralized management works for some industries, but it doesn't work for Alaska to have a central location in the lower 48. When an AWOS outage occurs, a technician is dispatched to the location to determine the issue. Then technician then returns to their duty location and orders the parts needed to repair the AWOS. Then they wait for 6 weeks until Oklahoma City ships the needed parts to Alaska. Then the technician needs to be scheduled to return to the AWOS site to conduct the repairs. This process results in unnecessarily lengthy outages that can last 3 months or longer. The FAA needs to store spare parts for the AWOS in Alaska so they are easily accessible and the outage times can be reduced.
4. Electrical power – A lot of the villages in Alaska don't have reliable electrical systems. They run their system off generators and when the generators have problems the power surges and goes out. The FAA then sends technicians out to the village to reset a system because of a power outage or a brownout. The FAA should look into battery backups and newer diode technologies that can help prevent the AWOS from needed to be reset.

There appears to be some telecommunication and broadband issues with the weather observation systems causing operations status and equipment issues. As soon as one system is repaired and back online, another one falls off.

NOTAMS – NOTAMS aren't the solution for the Service A problem. This is a telecommunications issue. There needs to be a solution other than NOTAMS.

Root Cause of Telecommunications – Why is the FAA trying to determine the root cause of telecommunications? The cause is known to be the copper wires that are connected to the AWOS. Those wires are old and they are corroded. The FAA needs to move on from researching the root cause and needs to implement a short term alternative instead. Satellite communications work in Alaska. Why isn't the FAA switching to that? The operators deserve access to accurate and reliable weather data.

For Service A outages, is there a program to convert the AWOS over to Internet Protocol?

Alaskan Region needs a permanent Regional Administrator

We Need a Regional Administrator for Alaska – The Alaskan Regional Administrator is the identified lead point of contact for FAASI, but there is a credibility issue since that position has been vacant for a year now.

Need a Regional Administrator for Alaska – The roadmap and FAASI talks about the Alaskan Regional Administrator being the single point of contact for FAASI. The problem is, there isn't a permanent Regional Administrator and hasn't been for a year now. This is a serious PR problem for Alaska and this position needs to be filled quickly.

Operationally specific comments on safety and stakeholder engagement

How can we help our shareholders and the Department of Defense (DOD)? Here in Alaska, we are unique with the Alaska NORAD Region.

DoD would like the ability to increase search and rescue capabilities within Alaska, specifically at the Nome airport. What is the potential to increase the infrastructure at Nome so DoD can increase their search and rescue capabilities on the western coast of Alaska?

Recommendation 4.1 ADS-B – The FAA needs to designate additional airspace as ADS-B required. A one size fits all approach for ADS-B designations doesn't work in Alaska. The Bethel area really needs to be designated as ADS-B, but it doesn't meet the FAA requirements. Bethel have a massive amount of traffic in and out of the area and difficult weather conditions a lot of the time. Aircraft flying around Bethel without ADS-B are causing dangerous situations.

Recommendation 4.1 Bethel User Group – The Bethel User Group is winding down and declaring the major issue fixed, but in reality the issue hasn't been addressed. We shouldn't just move on because a few reports haven't been filed. There are still actionable items that need to be addressed by the group. The ATC tower in Bethel is a contract tower, but they are still having manning issues. The controllers in Bethel are fatigued and are quitting because of being overworked. This is resulting in a contact lack of experience at the Bethel Tower which has also caused issues. The FAA is saying everything is fine with the Bethel Tower, but the actual controllers working there and the aircraft operators are saying the opposite.

Recommendations 4.1 and 4.2 Bethel ADS-B – ADS-B should be required at additional airports, specifically Bethel. Bethel is the fourth or fifth busiest airport in Alaska and the Part 135 operators in Bethel have invested in their fleet and installed ADS-B on their aircraft.

Bethel ATC Tower Issues – There have been times when Bethel has gone to ATC Zero due to lack of air traffic controllers. Staffing at the Bethel airport is an issue. Controllers are reporting to pilots that they work 180 days straight without days off and they are getting burned out. Bethel can't keep controllers on staff so it is a constant revolving door with new employees showing up.

Recommendation 2.2 (Establish and Chart Communication Gaps on Published Routes) – Is the FAASI team coordinating with anyone on the IIJA (Infrastructure Investment and Jobs Act) money? There are other groups that are receiving or anticipating receipt of that money and it could be used to address communication gaps at the villages. FAASI could coordinate with some of the villages on new cell towers and improved broadband coverage.

CTAF Area – Since the NTSB came out with their document not too long ago about the CTAF in Alaska, industry groups have been receiving a lot of input and feedback from members regarding the issue. There is concern for the Kenai area and the west side of the Cook Inlet along with additional areas in Alaska.

Recommendation 5.1 Safety Outreach Collaboration – I appreciate the goal of the Regional Administrator's office to increase collaboration across the LOBs with external stakeholders. One opportunity not mentioned is the CTAF areas in Kenai. The stakeholders have requested the FAA evaluate and assign some CTAF areas in Kenai and the FAA has yet to respond to that request.

<p>Communications Requirement/Text Message Capability – There is currently no requirement for communications in Alaska, but this needs to change. The FAA should mandate communications and look into using new technology such as the ability to send text messages to ATC.</p>
<p>Cost/Benefit Analysis Issues – The traditional cost/benefit analysis doesn't apply to Alaska. We understand the formula comes from the NTSB. The population in Alaska won't ever be high enough for Alaska to compete with larger cities in the lower 48 if decisions are made based on the formula. A risk based approach should be used in Alaska which takes into consideration the risk to human life and not just the cost/benefit analysis.</p>
<p>Runway Length Importance – Runway length is critical in Alaska. Shortening runways limits the size of the aircraft that can fly to some villages, and it impacts the economics of the local region. A one size fits all approach for runway length doesn't apply in Alaska.</p>
<p>Recommendation 3.2 - I'm not sure when this occurred, but why are all of the Alaska VFR Chart Sectionals being reproduced at every cycle? This is specific to Alaska. Nothing changes and there should be no need for operators to buy these expensive charts each cycle.</p>
<p>Recommendation 3.2 Charting – There is a lack of availability of paper charts in Alaska. Not all locations in Alaska have reliable internet access so we rely on paper charts. Stakeholders have to get the charts printed off each time and shipped out to multiple locations in the state. The FAA changed the approved supplies recently, but the approved supplies aren't taking on new clients. That is resulting in operators not being able to purchase charts because there isn't anyone who will print them off for the operators. We can't fly without the charts, but we can't get printed copies of the charts so we can fly.</p>
<p>Short Term Initiatives – FAASI can be a great program for Alaska. Unfortunately, it is only focused on long term programs and not short term solutions that keep the program moving. A lot of the decisions are being made by people in DC that have never even been to Alaska and don't understand the problem. Something as simple as runway lighting improvements will make a big difference at some of the airports here. FAASI needs to implement some short term solutions with improvements NOW while working on the long term solutions.</p>
<p>In the big picture, FAASI needs to focus on short term solutions instead of all the long term solutions. The short term, in between solutions are what will make a difference now why we wait for the long term solutions to be studied and implemented. We need to address safety now, not five years from now.</p>