ALASKA ADVANCED AIR MOBILITY STRATEGY



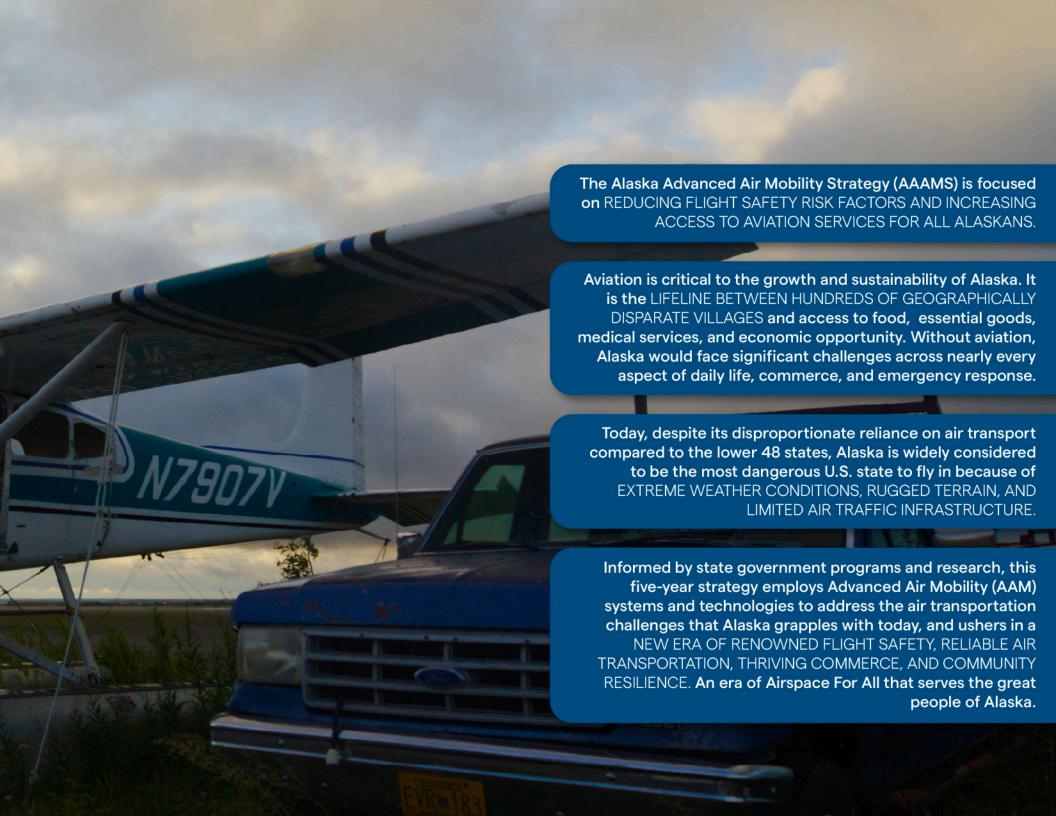


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This strategy guides investment and implementation decisions with the most potential to improve flight safety, commerce, and community resilience for all Alaskans. Derived of data-driven solutions, this strategy is directed by:

IDENTIFIED PRIORITY AREAS

for aviation-related safety, economic, and community issues that burden Alaskans

DATA DRIVEN ASSESSMENTS

of factors hindering progress toward safer, more stable, and more accessible airspace system

ESTABLISH SMART GOALS

to track and achieve measurable strategic improvements within the defined timeline

SOLUTION IMPLEMENTATION

of modern technologies and proven systems to achieve priority area objectives

MONITORING PERFORMANCE

to identify priority areas that are progressing well, and where more attention is needed



Through a pragmatic and coordinated approach, the AAAMS seeks to modernize Alaska's air traffic system through improvements that align with state and federal aviation programs including:



By fulfilling the above strategy to establish a world-class Advanced Air Mobility (AAM) aviation segment in Alaska, Alaskans reap the benefit of programmatic efficiencies, investment advantages, and long-term interoperability of systems and technologies.

ALASKA ADVANCED AIR MOBILITY STRATEGY

Ushering in a new era of airspace for all Alaskans

The AAAMS presents four North Star Goals with the aim to improve community resilience and provide all Alaskans access to the benefits of an Advanced Air Mobility (AAM) ecosystem.



IMPROVE FLIGHT SAFETY

Air transport in Alaska is difficult and, at times, impossible. Through scalable improvements to safety systems, advanced remote technologies, and stakeholder collaboration, the AAAMS seeks to improve aviation safety across the state.



GROW COMMERCE

Systematic challenges to flight safety and route schedules reduce the state's ability to reach its full economic potential. The AAAMS aims to achieve improvements to commerce in Alaska by creating new economic opportunities.



MODERNIZE INFRASTRUCTURE

The unreliable nature of flying in Alaska is amplified due to airspace system technology gaps. By complimenting baseline improvements to infrastructure with modern Uncrewed Aerial Systems (UAS), the AAAMS seeks to improve airspace efficiencies.



STRENGTHEN COMMUNITY RESILIENCE

Disrupted flight operations have serious consequences and can cut off Alaskans from access to food, medicine, and essential goods. Through strategic implementation of AAM systems, the AAAMS seeks to improve community resilience across Alaska





"I think we have the ability and desire to meet the challenges of the future that the real problem will be whether we have the will to use the modern technology to deal with some of the problems."

Ted Stevens

ALASKA ADVANCED AIR MOBILITY STRATEGY

VISION & MISSION

The AAAMS vision and mission are guided by the Alaska DOT&PF mission statement:

Keep Alaska Moving

VISION

To usher in a new era of AIRSPACE FOR ALL that serves to better the lives of Alaskans.

MISSION

To advance community resilience across Alaska by enhancing flight safety, improving food security, and increasing economic opportunity through coordinated infrastructure and Advanced Air Mobility (AAM) improvements to the state's airspace system.

PERFORMANCE TARGETS

AAAMS establishes and tracks performance targets using the SMART goal methodology:



Annual General Aviation (GA) accident data

Airspace system infrastructure and reliability

Statewide economic development strategies

Aviation and aerospace related jobs statistics

Emergency response and mitigation times

Federal and state aviation related programs

Improve emergency 30% response times by

reduce accidents by 45% (from 82 to 37 or fewer)

Reduce air-transport food-spoilage by 15%

Grow aviation-related jobs in Alaska by

The critical role of AVIATION IN ALASKA

Alaska's vast size, rugged terrain, weather and remoteness means aviation is often the only viable mode of transportation for people, critical goods and emergency services.

Mitigates

rural food insecurity which is 2x the national average.

Essential part of Alaska's emergency response capability

of Alaska's communities depend on aviation for year-round access.

rural airports supporting >2.4 million square miles of airspace.

as many pilots per capita, and 16X as many aircraft vs. lower 48 average.

jobs contributing \$3.8 Billion to state's economy



ALASKA'S AVIATION INFRASTRUCTURE

Statewide aviation systems depend on an array of aviation sensors and networks, but reliability and



"Infrastructure in Alaska is Decades Behind the Rest of the Country"

- Stakeholder input, FAASI FY21 Final Report

SURVEILLANCE & NAVIGATION

40 - 45% of Alaska's airspace has no RADAR coverage

AIR TRAFFIC SERVICES

94.5% of rural system airports have no Air Traffic Control Towers

NETWORK CONNECTIVITY Limited high-speed broadband services

limit the state's ability to deploy modern systems and collaborate



IMPROVED RESILIENCE • SCALABLE AND AUTOMATED • READY FOR THE FUTURE

The Alaska AAM strategic plan is intended not only to address today's operational issues and aviation safety levels – but it also provides a path to future aviation capabilities that will contribute to improved community resilience and quality life for all Alaskans.

Implementing novel surveillance and air traffic systems will maintain continuity of aviation operations through adverse conditions.

Introducing new, autonomous aviation services will expand airspace accessibility in a safe, affordable and efficient manner.

REDUCE AIR-TRANSPORT FOOD SPOILAGE
IMPROVE EMERGENCY RESPONSE TIMES
GROW AVIATION-RELATED JOBS IN ALASKA



"For a lot of our communities our population relies solely on aviation."

"It's a compounded issue. We have a lack of infrastructure but our infrastructure is hard to maintain. And so it's crumbling."

SITUATION ASSESSMENT

The challenges and issues with aviation safety in Alaska are not new and have been documented in several recent agency studies. These include the 2017 RTCA report on low-altitude performance-based navigation reports; the FAA Alaskan Aviation Safety Initiative (FAASI*) status updates; and an FY23 Aviation Gap Analysis completed for DOT&PF Statewide Aviation by the Woolpert aviation consultancy.

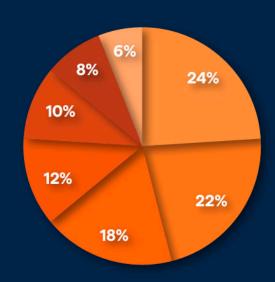
These studies have highlighted similar reliability and capability gaps in Alaskan airspace when compared to the rest of the country. However, Alaska's geography, weather and remoteness drive a greater need per capita for safe and reliable aviation services. The need for accessibility and wide coverage are unique, and infrastructure gaps are cited most frequently as significant contributors to aviation incidents.

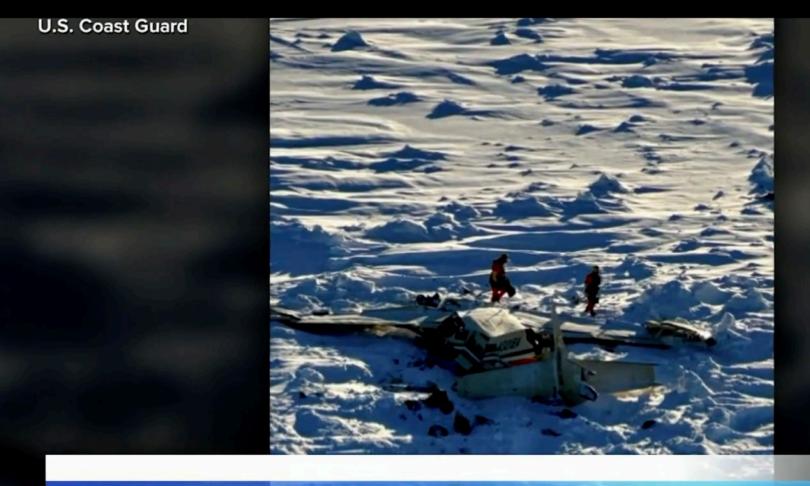
The charts on the right highlight these findings from both qualitative and quantitative perspectives. Based on these analyses, SWA has worked with its partners to develop a strategy based on specific Emphasis Areas that have the best potential to significantly improve the availability and sustainability of safe and effective aviation services in Alaska.

*continuing from 2024 as the Don Young Alaska Aviation Safety Initiative (DYAASI)

FAASI Stakeholder Feedback by Issue Type



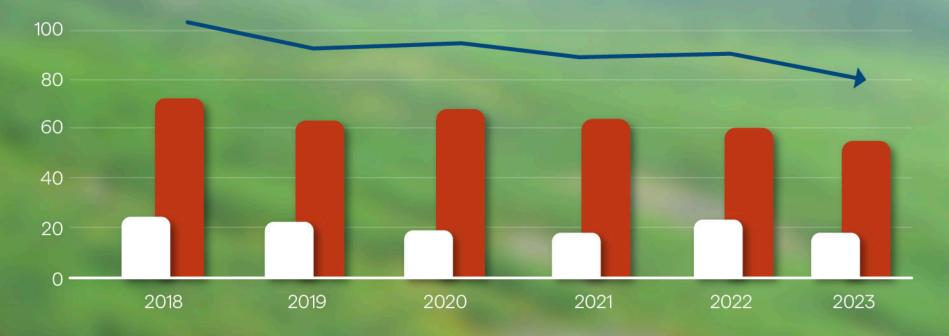




NTSB INVESTIGATING AFTER WRECKAGE OF MISSING ALASKA PLANE FOUND



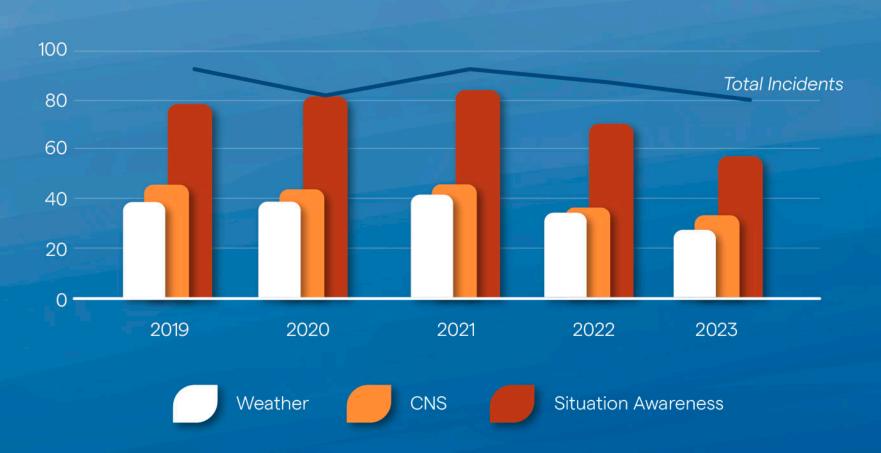
Aviation accident rate in Alaska remains 2.4x the national average, with a 1.3x fatality rate



AVIATION ACCIDENTS 2018-2023

Based on Analysis of NTSB incident data.

AK Aviation Incidents Attributable to Infrastructure Gaps 2019-2023







"Bering Air shut down for a couple of days when [the crash] happened. And when the first plane came, people here all went up to the airport and formed a [circle] to say a prayer, and be thankful."

EMPHASIS AREAS

Emphasis Areas set the priorities for where Alaska focus funding, resources and efforts to modernize the airspace and improve overall aviation operations. The four Emphasis Areas are Aviation Infrastructure, Weather Reporting, Airspace Operations, and Stakeholder Collaboration.

These four Emphasis Areas were derived from available prior reports on Alaska's airspace; accident trend data and stakeholder focus groups and discussion.

Each Emphasis Area is further segmented into different focus areas covering different aspects of infrastructure, technologies and operational processes as informed by the situation assessment.















* AVIATION INFRASTRUCTURE

>78%

Aircraft in Alaska lack ADS-B to report position and altitude.

42%

of Stakeholder Feedback directed to infrastructure gaps and reliability issues.

Limited

high-speed broadband services.

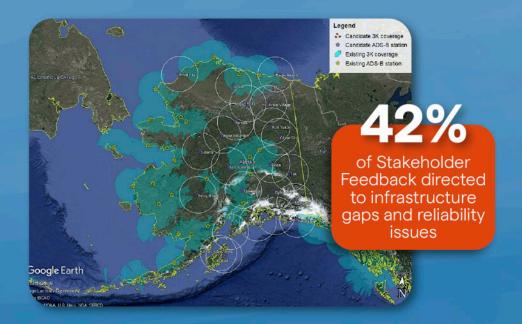
Alaska's aviation landscape, defined by vast geography and extreme weather, is critical for connecting remote communities. The state's aviation infrastructure has evolved through various eras, each marked by significant developments but also by challenges that have accumulated over time. Safety and operational issues faced today stem from decisions made under unique circumstances over the past decades—whether due to rapid wartime expansion, the demands of economic booms, or the unpredictable nature of Alaska's environment.

These past challenges are not historical footnotes; they represent an ongoing accumulation of aviation infrastructure gaps that have yet to be fully addressed. Unmet needs for coverage and persistent reliability issues continue to affect safety and operational efficiency today, particularly in regions that have traditionally seen less attention from FAA initiatives focused on higher density commercial operations. In order to modernize Alaska's aviation infrastructure and address the most urgent gaps in capability and coverage, the AAAMS prioritizes programs and investments in the areas of Flight Safety Communications; Traffic Surveillance (ADS-B); Navigation Aids; and Broadband Connectivity to improve Flight Service Station access to real-time airspace information.



Flight Safety Communications

- Develop comprehensive RCO coverage map and reliability analysis to prioritize future RCO investments
- Collaborate with FAA to develop reporting of outages and restoration status on regular basis
- Evaluate digital text messaging technology to augment coverage and support airspace operations automation



Navigation & GPS Resiliency

- Continue efforts to expand use of space-based GPS augmentation (WAAS/SBAS) and support implementation at more airports in Alaska
- Work with FAA and other stakeholders to develop plans for long-term sustainment of conventional ground-based navigation aids (VOR/NBD) where necessary

Traffic Surveillance

- Continue education on safety benefits of ADS-B while developing funding proposals to incentivize adoption through subsidies for pilots and operators
- Support continued expansion of FAA ADS-B receiver installations in remote areas
- Explore WAM network expansion and evaluate space-based ADS-B solutions or gap-filling radars to address unique Alaskan airspace needs

Broadband Connectivity

- Identify and quantify aviation challenges attributable to lack of broadband access at many rural airports (i.e., ability to support real-time weather)
- Collaborate with other state agencies and partners to pursue funding for statewide broadband network implementation

WEATHER REPORTING

Alaska's unique geographical and meteorological challenges necessitate a rethinking of its aviation weather systems. The state's reliance on aviation demands a robust, reliable weather monitoring system that can withstand its harsh environment. Currently, the outdated Automated Weather Observing Systems (AWOS) and other related infrastructure do not meet the resilience requirements to effectively support safe aviation operations across Alaska's diverse landscapes.

The FAA's 2024 Reauthorization highlights the need for improved aviation safety through enhanced data collection and sharing mechanisms. Alaska's weather monitoring systems lack the capability to integrate with newer technologies that could facilitate real-time data sharing and predictive analytics. This not only poses risks to aviation safety but also limits the operational capabilities of airlines and emergency services, affecting everything from routine flights to critical medical evacuations.

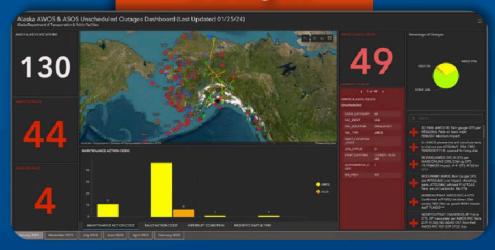
Weather observation sensors are a critical tool for enhancing flight safety in Alaska, where rapidly changing weather conditions and challenging terrain can create hazardous flying conditions. These optical sensors, strategically placed across the state, provide real-time visual data on current weather conditions, allowing for more informed decisions before and during flights. The aviation industry has identified the expansion of the weather camera program as an immediate opportunity to improve flight safety. There are additional non-federal potential weather sensing technologies that should also be evaluated as part of the AAAMS, including lower cost gap-filling radars and UAS that can be deployed on-demand to survey weather conditions in remote areas.



Weather Sensing

- Continue expansion of AWOS and ASOS network in Alaska to reduce gaps in availability of FAA-standard flight weather data
- Support continued evaluation of advanced VWOS systems with the objective to expand approved use for IFR operations
- Explore and evaluate deployment of commercially available, lower cost gap-filling weather radars, additional web cams at critical points lacking AWOS/ASOS coverage
- Augment availability of advisory weather systems such as crowd-sourced in route aviation weather and meteorological UAS

AWOS & ASOS Unscheduled Outages



(https://storymaps.arcgis.com/8843f4d7-5a9b-416e-bde0-5569e14635e2)

Weather Data Aggregation

- Explore utilization of NWP/AWD capability developed by FAA to create Alaska-specific capabilities to be shared with AK State Aviation airports
- Develop options and requirements for advanced modeling of location-specific weather and incorporate into flight planning systems
- Explore future state weather requirements to support highly automated weather modeling to support uncrewed and autonomous operations

Weather Data Distribution

- Improve resilience of communications between weather stations and FSS to reduce outage frequency and increase aviation operational efficiency
- Explore alternative communications technologies (e.g. satellite) to provide back up capability and/or cover gaps in remote areas

AIRSPACE OPERATIONS

Alaska's expansive terrain, extreme weather and limited infrastructure pose significant challenges for aviation safety and operational efficiency. The state's unique geography includes over 400 public-use airports, many of which are in remote locations with minimal infrastructure and no control towers. In these areas, pilots must rely on their own situational awareness and communication with flight service stations, which are often hindered by outdated systems and a lack of real-time data.

This lack of comprehensive airspace awareness leads to an increased risk of accidents, particularly during takeoff, landing, and low-altitude flights - with a significant proportion of these accidents attributed to controlled flight into terrain (CFIT) and weather. Between 2010 and 2019, Alaska experienced an average of 24 aviation accidents annually involving general aviation, with many occurring in areas without adequate access to tools that provide real-time weather and traffic information. This means that pilots in these areas are left vulnerable to sudden weather changes and unexpected obstacles. This situation endangers pilots and passengers, disrupts essential services such as medical evacuations, and causes negative economic impact in terms of delayed delivery of critical supplies and increased food spoilage.

The AAAMS has identified several technologies and other efficiency improvements to improve airspace situation awareness in remote locations, including the use of virtual control towers, integration of real-time information in FSS and automation achieved through the digitalization of key operational processes.



Airspace Procedures

- Sponsor development and expansion of performance-based navigation using RNAV and RNP including T-Routes
- Continue support for FAA initiatives such as Mountain Pass Working Group to improve accuracy and availability of VFR charts and routes
- Leverage SPOCS to improve awareness of ground and water-based aviation operations and increase efficiency of port/airport operations



- Implement advanced virtual systems to enable remote ATC services without traditional physical infrastructure
- Implement state-of-the art SA technology across all FCTs and FSSs to improve operational safety while simplifying training, support and mobility for controllers

Process Digitalization

- Evaluate and implement digital flight data management capabilities to reduce errors and enable more automated and efficient controller workflow
- Modernize ATC to pilot information sharing and broadcast through automation of ATIS capabilities to provide timely, accurate and expanded information on the operational environment
- Develop and implement safety-focused training and simulation exercises focused on extreme weather and other unique challenges of Alaskan airspace

Path to Autonomous Operations

- Develop concepts of operations and use cases for future state integration of uncrewed and highly autonomous vehicles into Alaska's airspace
- Invest in research, testing and evaluation of novel airspace technologies to enable fully automated flight planning and flight operations



STAKEHOLDER COLLABORATION

Effective public participation and stakeholder engagement are crucial components of the Alaska Advanced Air Mobility (AAM) Strategic Plan. The Alaska DOT&PF is committed to ensuring that the voices of all Alaskans—particularly those in remote and underserved communities - are heard and considered throughout the planning and implementation process. This approach ensures that the deployment of AAM technologies aligns with the needs and expectations of the people who will be most impacted and contributes to the successful integration of AAM technologies into Alaska's transportation system.

The engagement process begins with the development of a comprehensive public participation plan. This plan outlines the strategies and methods that will be used to inform, consult, and involve a wide range of stakeholders, including local communities, industry partners, government agencies, and other relevant organizations. The goal is to foster an inclusive dialogue that allows for the exchange of ideas, concerns, and suggestions.

Key elements of the public participation plan include Stakeholder Identification and Outreach to ensure that all relevant voices are included in the conversation; Public Meetings and Awareness campaigns to provide opportunities for residents to learn about the AAM Strategic Plan, ask questions, and provide feedback; Collaboration with Local Leaders, Organizations and Tribal Governments to facilitate engagement and ensure that the AAM Strategic Plan reflects the priorities of the people it serves; and Collaboration with Alaska's educational institutions to educate Alaska's next generation on the role aviation plays in our communities and the opportunities that creates for future aviation jobs and economic opportunities.





Stakeholder Outreach

- Collaborate with federal and other state agencies and first responders to identify and prioritize gaps in aviation safety, reliability and efficiency
- Conduct regular pilot and operator stakeholder reviews and focus groups to maintain support for AAAMS objectives and encourage aircraft equipage such as ADS-B
- Ensure appropriate representation by Alaska's Tribes and Nations on working teams, focus groups and other initiatives given their dependence on aviation services

Public Education

- Develop public awareness campaigns and announcements about the need for, and benefits to Alaska, of a modernized, safer and more efficient airspace
- Conduct community focus groups to identify concerns of non-aviation professionals and stakeholders regarding future airspace activities such as autonomous and uncrewed vehicles

Workforce Planning & Education

- Develop inventory of key skillsets and job profiles required to sustain current airspace operations and support new future airspace innovations
- Collaborate with vocational, secondary and university educational institutions to develop job training and experiential learning opportunities with SWA and aviation operators
- Create opportunities for younger Alaskans to learn about aviation's role and contribution to Alaska's welfare and engage through demonstrations, camps and other events

AAAMS GOVERNANCE

Roles & Responsibilities

- Foster adoption of the North Star Goals and the realization of an Alaska Advanced Air Mobility Strategy Objectives
- Hold one another accountable for implementing actions toward "Aviation for All" and AAAMS SMART goals
- Recruit additional team members at local communities to participate
- Identify successor if no longer able to successfully serve in their role

ADVANCED AVIATION
& TECHNOLOGY
INNOVATION STEERING
COMMITTEE

Aviation Advisory Commitee

Statewide Aviation Division

AAAMS EMPHASIS AREA WORKING GROUPS

Tribal Advisory Commitee Alaska Statewide Aviation has defined the roles and responsibilities for each group who participates in the AAAMS.



ADVANCED AVIATION & TECHNOLOGY INNOVATION STEERING COMMITTEE

- DOT&PF Statewide Aviation, Regional Directors, FAA AK Region, ACUASI, Key Airports and Aviation Industry Partners
- Oversees overall plan progress, provides resources and facilitates collaboration among agencies & stakeholders

Aviation Advisory Commitee

Provides guidance on strategic plan priorities

Ensures aviation user participation in stakeholder focus groups and working teams

Statewide Aviation Division

Monitors plan progress and reports outcomes to exec steering committee

Approves changes in emphasis area action plans, timelines and objectives

Identifies funding requirements and sources, and prepares grant proposals

Directs resources to approved projects and initiatives

Tribal Advisory Commitee

Shares insights & experiences with on aviation needs within the specific contexts of Alaska's Tribes and Nations

Participate on relevant emphasis area teams and focus groups

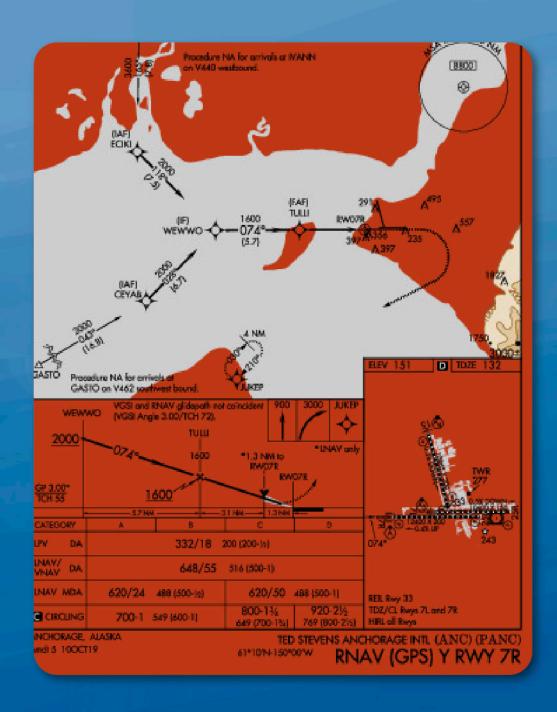
AAAMS EMPHASIS AREA WORKING GROUPS

Collect and analyze data relevant to the emphasis area strategies

Conduct stakeholder focus groups to define specific action plans

Implement action plans, identify obstacles and track progress Update Statewide Aviation Division on progress, challenges and needs

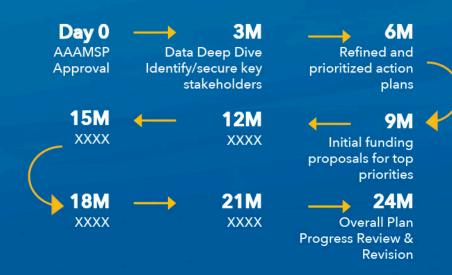
IMPLEMENTATION & UPDATE TIMELINE



Implementation of the AAAMS will be following approval of the plan by the Executive Steering Committee and other required State approvals.

The initial focus will be on refining the strategies outlined for each emphasis area based on further data analysis; identification and assessment of alternatives and potential solutions; and the identification of potential funding sources for system upgrades and development.

Ongoing implementation and updates are dependent on funding, stakeholder collaboration, partner engagement and evaluation of outcomes,



AAAMS STAKEHOLDERS

The Director of Statewide Aviation, along with the Policy and Planning Team, Airport Operations Staff, and Safety Team, guide the implementation of the Alaska Advanced Air Mobility Strategic Plan (AAMSP). Their work ensures that the plan directly supports Alaska's strategic transportation goals, particularly by addressing critical infrastructure gaps in communication, navigation, surveillance, and situational awareness. This effort prioritizes safety, reliability, and year-round accessibility for all Alaskans, especially in remote regions.

Key stakeholders support AAMSP alignment with Alaska's transportation goals, providing input that focuses on crewed aviation improvements while laying the groundwork for the integration of Advanced Air Mobility (AAM) infrastructure. Their contributions ensure that infrastructure upgrades serve the current aviation system while preparing for the future. Key stakeholders include:

- Federal Aviation Administration (FAA)
- Alaska Aviation Advisory Board
- Alaska Air Carriers Association (AACA)
- Alaska Airports Association (AAA)
- Alaska Aviation Safety Foundation (AASF)
- Alaska Airmen's Association (AAA)
- Alaska Center for Unmanned Aircraft Systems Integration (ACUASI)
- Regional and Local Governments
- Alaska's Tribes and Nations
- Aircraft Owners Pilots Association (AOPA)

APPENDIX A ACRONYMS

AAA Alaska Airmen's Association

AAM Advanced Air Mobility

AAAMS Alaska Advanced Air Mobility Strategy

AACA Alaska Air Carriers Association

AASF Alaska Aviation Safety Foundation

ACUASI Alaska Center for Unmanned Aircraft

Systems Integration

ADS-B Automatic Dependent Surveillance – Broadcast

AIP Airport Improvement Plan AAA Alaska Airports Association

ASOS Automatic Surface Observation System
ASTM American Society for Testing and Materials

ATC Air Traffic Contro

AWD Aviation Weather Display

AWOS Automatic Weather Observation System

CFIT Controlled Flight Into Terrain

CNS Communications, Navigation & Surveillance
DOTP&F Department of Transportation & Public Facilities

DYAASI Don Young Alaska Aviation Safety Initiative

EFS Electronic Flight Strips

FAA Federal Aviation Administration

FAASI FAA Alaska Aviation Safety Initiative

FCT Federal Contract Towers
FSS Flight Service Station

GA General Aviation

GPS Global Positioning System NBD Non-directional Beacon

NOTAM Notice to Airmen

NTSB National Transportation Safety Board

NWP NextGen Weather Program

RNP Required Navigation Performance

RNAV Area Navigation

SPOCS

SWA

UAS

VOR

WAM

WAAS

RTCA Radio Technical Commission for Aeronautics

RCO Remote Communications Outlet SBAS Space-Based Augmentation System

A Situation Awareness

SMART Strengthening Mobility and

Revolutionizing Transportation

Surface and Port Operations

Coordination System

Statewide Aviation

Uncrewed Aerial System

Visual Flight Rules

VHF Omnidirectional Range

Wide Area Multilateration

Wide Area Augmentation System





"We are going to work with you to make sure you get the upgrade necessary to radically improve the safety in Aviation in Alaska."

Sean Duffy U.S. Secretary of Transportation



"It's only through safety and safety concepts that we have eliminated the number of people that die in this state."

> Ted Stevens U.S. Senator, Alaska