



ALASKA

AVIATION SYSTEM PLAN



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Cordova Municipal Airport

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FINAL REPORT

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Acronyms

AASP	Alaska Aviation System Plan
AC	Advisory Circular
ACN	Aircraft Classification Number
AEP	Airport Emergency Plan
AFID	Alaska Facility Information Directory
AIP	Airport Improvement Program
ALP	Airport Layout Plan
APEB	Airport Project Evaluation Board
AOPA	Aircraft Owners and Pilots Association
AVCP	Association of Village Council Presidents
BIA	Bureau of Indian Affairs
BPM	Bypass Mail
CIP	Capital Improvement Plan
CIMP	Capital Improvement and Maintenance Program
DOT&PF	State of Alaska Department of Transportation and Public Facilities
EAS	Essential Air Service
eDocs	State of Alaska Electronic Document Repository
FAA	Federal Aviation Administration
FHWA	Federal Highway Administration
FSS	Flight Service Station
FFY	Federal Fiscal Year

GF	General Fund
GSP	Gross State Product
HAT	Height Above Terrain
HIRL	High Intensity Runway Lighting
HSF	Harbor Float
ICAO	International Civil Aviation Organization
IT	Information Technology
LOC	Letter of Correction
LOI	Letter of Investigation
LP	Localizer Performance
LPV	Localizer Performance with Vertical Guidance
L RTP	Long Range Transportation Plan
M&O	Maintenance and Operations
NA	Not Applicable
NFDC	National Flight Data Center
NPIAS	National Plan of Integrated Airport Systems
NOAA	National Oceanic and Atmosphere Administration
NWATP	Northwest Alaska Transportation Plan
NWS	National Weather Service
OOA	Other Seaplane Operating Area
PAPI	Precision Approach Path Indicator
PCI	Pavement Condition Index
PCN	Pavement Classification Number
RAF	Recreational Airstrip Foundation
RAPT	Regional Airspace Procedures Team
RSA	Runway Safety Area
RSIA	Rural Service Improvement Act
RPZ	Runway Protection Zone
RSF	Refuge Float
SEF	State Equipment Fleet
SPB	Seaplane Base
SPF	Seaplane Float
SOAR	System of Airport Reporting
State FY	State Fiscal Year
TAM	Transportation Asset Management
UAS	Unmanned Aerial System
USDOT	United States Department of Transportation
USPS	United States Postal Service
VGSI	Visual Glide Slope Indicators
WAAS	Wide Area Augmentation System
YKTP	Yukon-Kuskokwim Delta Transportation Plan
SWATP	Southwest Alaska Transportation Plan



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Chapter 1. Introduction

Alaska has an extensive aviation system that spans over half a million square land miles and about 2.5 million square miles of airspace. This aviation system is a diverse mix of approximately 761 recorded landing areas ranging from international airports that support millions of passengers to rural gravel strips, seaplane bases and backcountry airstrips in remote parts of the State. The system consists of 394 public use airports, with 281 land-based, 4 heliports, and 109 seaplane bases. Enplanements reach 6.7 times the state population, boasting a significant number when compared to the Lower 48 states. Alaskans ship an estimated 39 times more air freight than other states and maintains the highest number of pilots per capita in the nation.

With such a large airport system, aviation is not only a lifeline, but a way of life in Alaska. Careful planning is required to ensure these facilities meet the transportation and economic needs of current and future users. The Alaska Department of Transportation and Public Facilities (DOT&PF), in conjunction with the Federal Aviation Administration (FAA), developed the Alaska Aviation System Plan (AASP). The plan sets a long-term vision for aviation in Alaska through a variety of objectives, such as existing conditions classification, goal and performance measure identification, future project prioritization, asset management, and aviation policy reviews.

1.1 Purpose of Airport System Planning

While aviation system plans serve a multitude of purposes, their primary purpose is to study and analyze the performance and interaction of multiple airports to understand how to plan for future development and address essential issues. A system

is made up of many interconnections, so the plan includes all public-use airports across the state, regardless of ownership. It examines the interaction of the airport system with aviation user demands, the economy, population, and fluidity with other primary modes of transportation. The system of airports may include all aviation facilities across Alaska that make up the national airspace system, as well as those that serve state and local aviation needs. The FAA provides specific guidance on the development of aviation system plans in AC 150/5070-7.

The Alaska aviation system is unlike any other system in the United States. The issues facing the 49th state's aviation system are different in nature, scope, and scale than those typically found in other places. Due to such a large inventory of airports, over a land area equivalent to much of the rest of the country combined, the DOT&PF maintains a continuous aviation system planning process. Phases typically last around five years, with Phase I occurring from 2008 through 2013 and Phase II from late 2013 to early 2019. Phase I laid the plan's foundation by developing the facility inventory and identifying issues and needs. Phase II focused on expansion of the website and creation of new inventory reporting tools to allow for more efficient analysis of the system.

1.2. Plan Components & Process

Phase II of the AASP follows guidance from AC 150/5070-7 and identifies main priorities to complete throughout the second phase. Alaska's uniqueness contributes to a distinctive aviation system plan, with the components outlined in **Figure 1.1** included in Phase II.

The FAA provides technical advice, financial support, expertise, and plan implementation guidance and support throughout each phase. Many other organizations and individuals contribute to the AASP planning process. Aviation planners, engineers, designers, and maintenance and operations staff coordinate together to collaborate on the many facets of the plan and to review and evaluate work, propose new tasks, and provide technical input. Additional work groups were formed around special topics. The FAA, the aviation industry, and other relevant organizations assist the AASP through participation in work groups, providing data, and offering suggestions. The development and upkeep of the airport system is a collaborative effort between multiple entities. Alaska's airport system is as unique as the communities it serves.

1.3 Key Accomplishments: Phase II

Phase II achieved several milestones through ongoing planning efforts focused on improving the safety and efficiency of Alaska's airport network. Various special studies summarized in Chapter 10 provide documentation enabling the DOT&PF to find new ways to plan, operate, maintain, and manage the airport system. A few key endeavors are:

- 1 Revised AASP performance measures and created automated scorecards
- 2 Improved tracking and prioritization of airport needs through the CIMP inspections – both maintenance and capital needs

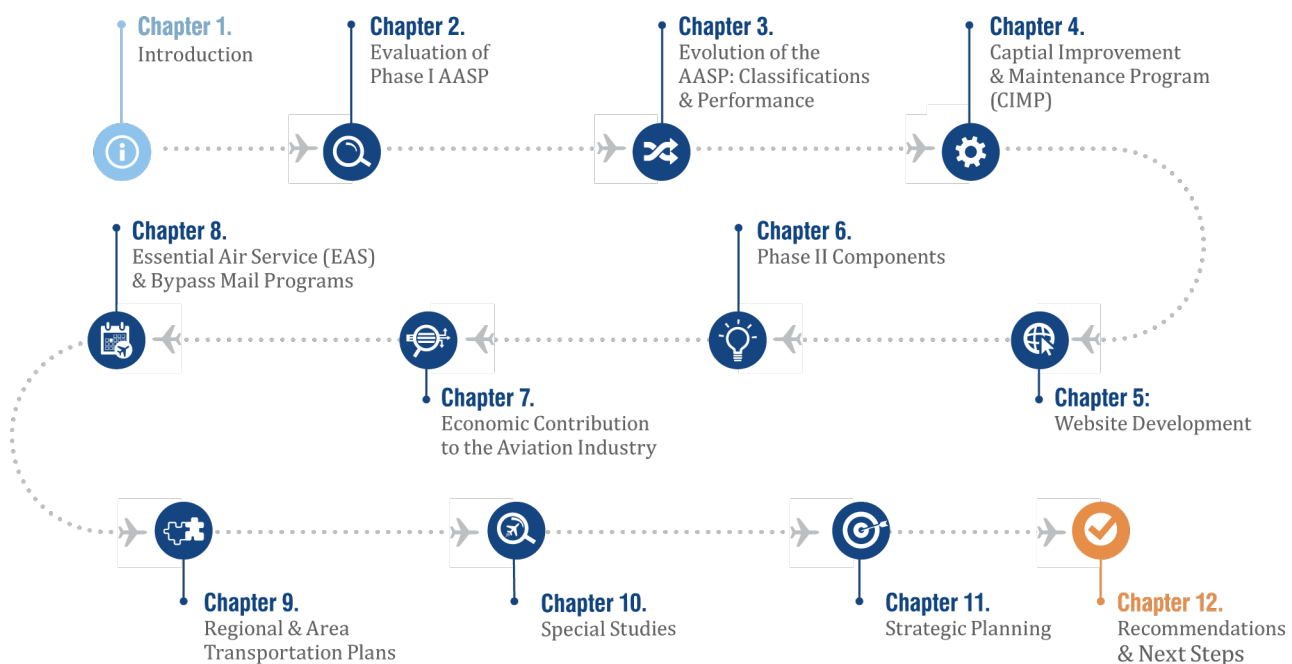
- 3 Improved and digitized the capital improvement project evaluation and prioritization process
- 4 Created numerous reports and query tools on the internal AASP website to assess system functionality and trends
- 5 Developed the Rural Aviation Strategic Plan

A focus on efficiency led to further development of the public and internal AASP websites implemented during Phase I. By storing data electronically, airport sponsors in Alaska are able to use a centralized database containing airport facility information to collect documents, photos, needs, project information, and more. The database provides a one-stop shop for planners over time and minimizes project duplication, while allowing all users to view the same information. New data is easily added into the website and instantly improves project tracking and evaluation. New reports and queries are available to monitor system performance and trends.

To view work products or learn more about Alaska's aviation system visit www.alaskaasp.com.



Figure 1.1. Phase II Components





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Chapter 2. Evaluation of Phase I AASP

An initial Phase II task evaluated the effectiveness and outcomes from Phase I. Information gleaned from this report provided guidance and assisted with priorities over the next phase. Entitled *Evaluation of the Prior AASP – June 2014*, the document examined past efforts in six key areas:

1 Issue Summary

The document identified issues from the 2008 initiation of the AASP and noted whether they were addressed or warranted inclusion in the next phase. Several issues identified in 2008 that were addressed include:

- maintenance and operations (M&O) Working Group
- CIMP program
- comparison of airport needs vs. funding
- rural aviation Strategic Plan
- Backcountry Airstrips work group

2 Task/Deliverable Summary

A summary of all completed tasks and deliverables, lessons learned, and any unresolved issues. Examples of unresolved issues/action items from Phase I are:

- updated performance measures and measured progress
- continued updates to the AASP website
- integrated CIMP and APEB processes
- an updated and enhanced airport inventory/database

- addressing weather reporting deficiencies
- an improved CIMP inspection process

3 Key Stakeholder Interviews

DOT&PF and public stakeholder surveys were conducted to gain insight on the value of prior system planning related work or issues needing further attention in the next five years. Interviews and surveys showed most support for continuing the CIMP program, implementation of performance measures, inventory and website updates, and new initiatives to address a rural airport strategic plan and airport land use compliance.

4 Planner Discussion

A review by the advisory committee of prior system planning efforts.

5 Potential Future Topics

A list of topics to consider for the next phase. Topics recommended in this report and subsequently addressed in the next phase include:

- **Mission, Goals, and Performance Measures:** benchmark analysis and scorecard analysis to determine progress and costs of meeting performance measures

- **AASP Website:** continue upgrades of website, expand DOT&PF familiarity with/use of website, and integrate CIMP/APEB processes
- **Inventory and Database:** update data and provide more query opportunities
- **Airspace/Approaches and Airport M&O Work Groups:** address M&O needs under the CIMP process
- **CIMP:** fine tune inspection and application process, inspect more airports, and use results for CIP and project decision-making
- **Outreach:** continue outreach within DOT&PF and to municipal airports and other stakeholders
- **Rural Aviation Strategic Plan:** continue implementation and update plan as needed
- **Airport Pavement Classification Number Reporting:** complete mandated pavement reporting and update 5010 Airport Master Records

- **Airport Revenue Generation Alternatives:** evaluate existing rates and fees and review potential revenue opportunities

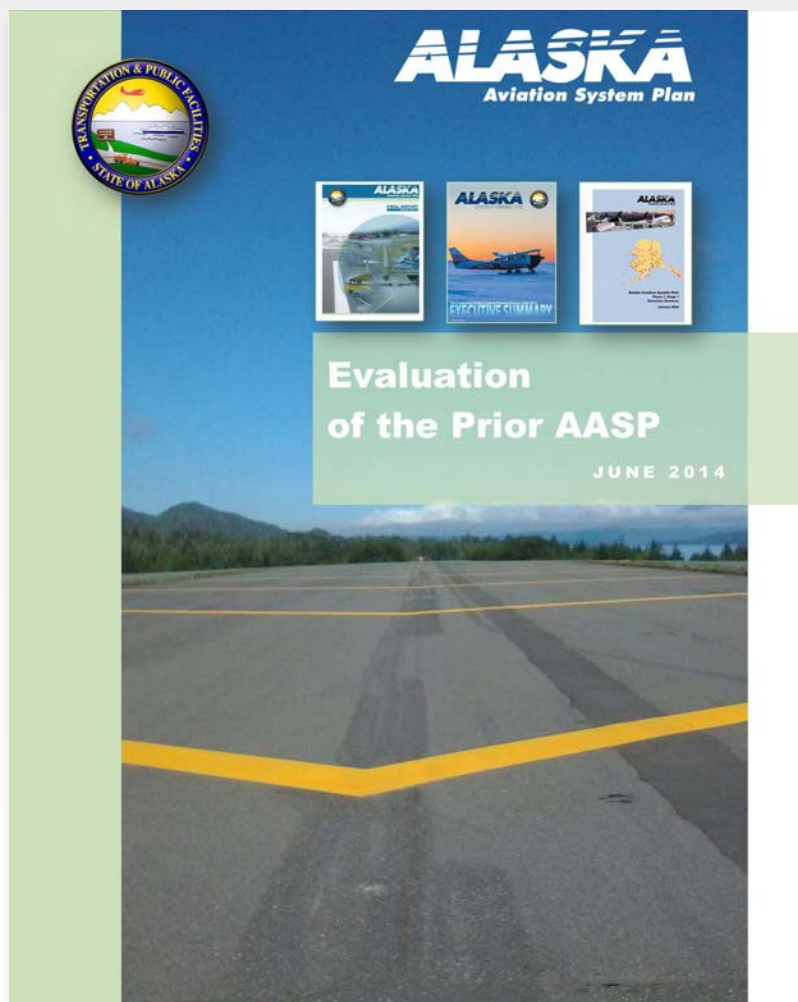
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Communications/Decisions

A summary of the decision-making process for Phase 1 will include suggestions for the near term. The report suggested that Statewide Aviation continue to lead the AASP, with input by the Aviation Advisory Board and technical advice by DOT&PF planners.

Key recommendations from the report include a task list from the previous phase, potential new topics for the 2013-2019 planning period, and a communication and decision-making process for moving forward. The report is available on the project website at www.alaskaasp.com.

Figure 2.1 | Evaluation of the Prior AASP, June 2014



Chapter 3.

Evolution of the AASP: Classifications & Performance

3.1 All Airport Facilities Plan: Classifications/Performance Measures

An essential part of system planning is conducted through analyzing all facilities, classifying them into similar groups, and tracking the evolution of the airport system over time through a consistent set of performance measures. Using the planning process and guided by federal rules and regulations, these classifications assist airport sponsors in determining the type, extent, location, timing, and cost of future airport development to support a viable airport system. These processes are documented in *Evolution of the Alaska Aviation System: Classifications and Performance Measures* and are available on the AASP website. The following sections provide a summary of analyses and findings.

3.1.1 Airport Classification

With over 700 registered airports in the State of Alaska, classifications are an important method to assist in airport planning. Alaska's aviation system ranges from large commercial service international airports to remote and rugged backcountry airstrips. Existing airports serving rural communities lie somewhere in between these two extremes, serving as primary year-round access to small communities off the main road system. The FAA classifies airports in a manner

to suit capital programming and populate the National Plan of Integrated Airport Systems (NPIAS). The NPIAS is an inventory of roughly 3,300 existing and proposed U.S airports that are included in the national airport system. It addresses their roles and federal funding eligibility. DOT&PF's classifications further capture the unique roles and functions of airports in Alaska, where so many communities are not accessible by road.

The purpose for current and updated airport classifications goes beyond the need for administrative organization; it is a tool that assists in:

- 1 understanding the role aviation plays in the Alaska transportation system,
- 2 investment and funding prioritization,
- 3 airport planning, design, construction, maintenance and operations,
- 4 multi-modal and regional planning, and
- 5 overall measurement of the entire system's performance.

Figure 3.1 | Airports by AASP Classification

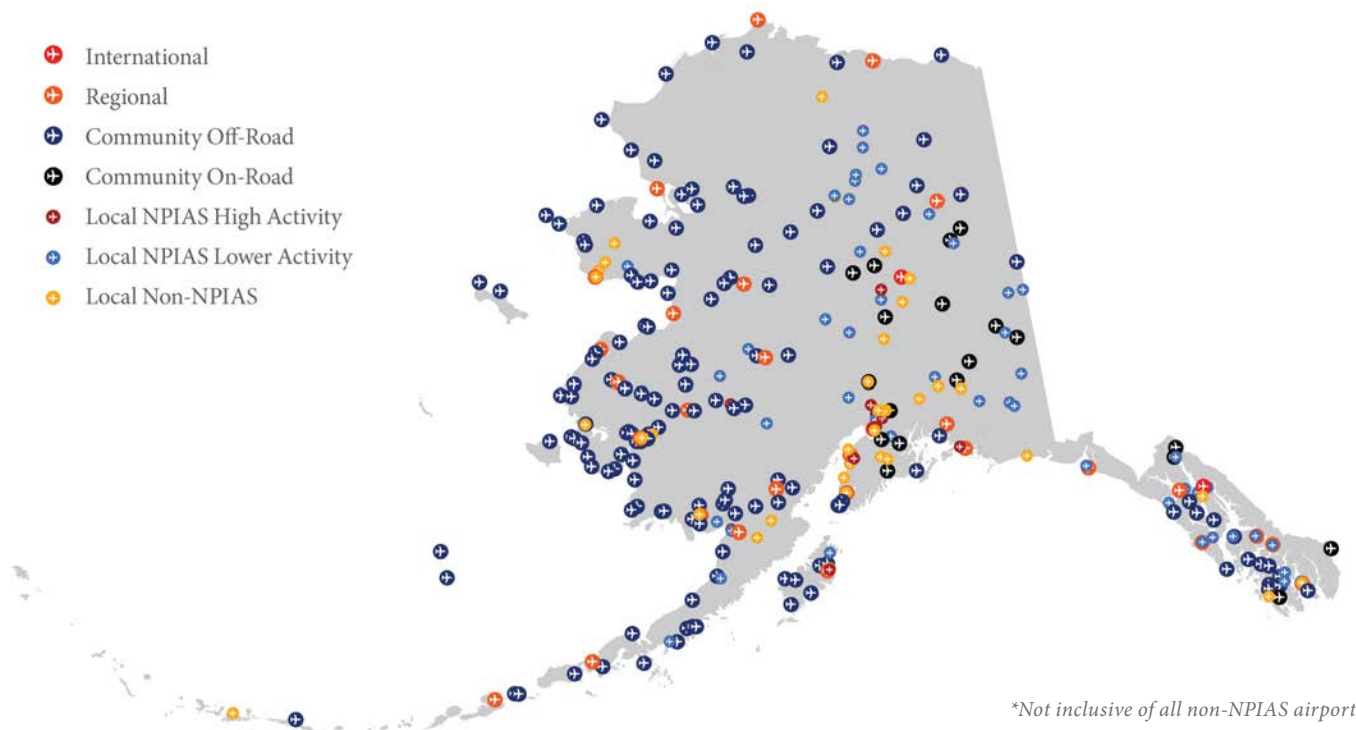


Table 3.1 | Airport Classifications

Classification	# of Airports	Definitions
International	3 Total	Fall within the FAA's definition of small and medium hub airports. A medium hub has at least 0.25 but less than 1 percent of total annual passenger boardings in the United States; a small hub has at least 0.05 percent but less than 0.25 percent. There are 3 airports in Alaska that fall into this category: Anchorage, Fairbanks, and Juneau International Airports.
Regional	28 Total	Airports that are transportation and economic centers for more than one community but are not international airports. They typically accommodate large aircraft with advanced approaches and aviation facilities and services and are often Part 139 certified.
Community	164 Total <ul style="list-style-type: none"> • 18 On-Road • 146 Off-Road 	Serve as small communities' primary airport when International or Regional airports do not serve this function. Provide services such as medical flights and local aviation-related business needs.
Local	536 Total <ul style="list-style-type: none"> • 11 NPIAS High-Activity • 56 NPIAS Low-Activity • 469 Non-NPIAS 	General aviation airports that stand alone or supplement the activities of busier airports. Local NPIAS High-Activity airports have at least 20 based aircraft, while Local NPIAS Low-Activity have fewer.

Examples of criteria considered during the update included the airport's role, size, operations, primary means of community access, and availability of healthcare.

The AASP developed detailed definitions together with a listing showing each airport assignment. Classification updates occur every few years as needed, with past updates in 1986, 1996, 2011, and most recently 2015. Airport classifications are outlined in **Table 3.1**.

The system is constantly evolving, with changing trends that cause an increase in constant traffic and commercial service in some locations and a decrease in others. From 2011 to 2015, two airport classifications were updated. Cordova Municipal increased to the Local NPIAS High-Activity classification based on an increase in based aircraft while Red Devil Airport, with a decrease in population, shifted from Community Off-Road to Local NPIAS High-Activity.

In addition to system-wide classifications, other efforts focus specifically on backcountry airstrips and seaplane facilities. While current classifications do not include a backcountry or seaplane destination, the plan reviewed the importance of such facilities within the system as a whole. The Backcountry Airstrips Workgroup classified over 50 backcountry airstrips by their accessibility (road system or off-road system) and ownership (public or private). Additional facilities exist across the state, but rather than determining locations to create a

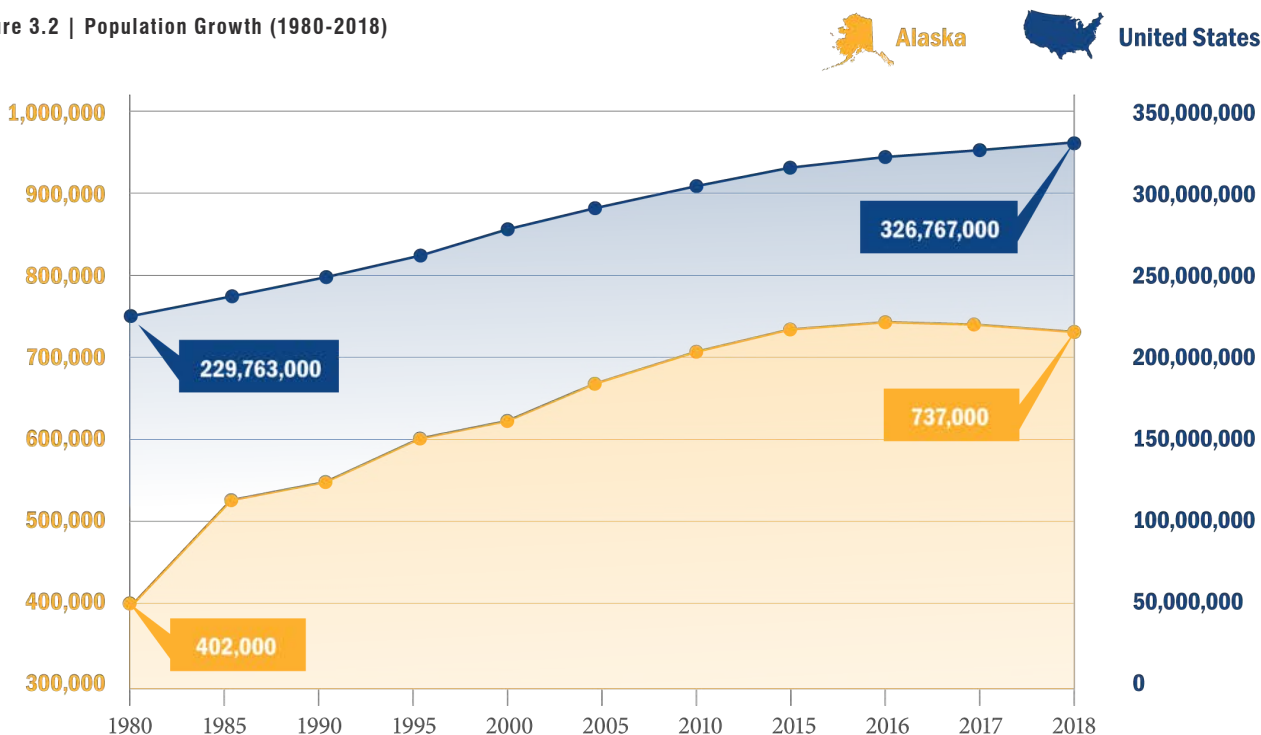
full inventory, the work group decided to focus on how they contribute to safety, access, and the traveling public. These airstrips were not analyzed in the AASP classification update or performance measure exercise and maintained their Local Non-NPIAS grouping.

3.1.2 Evolution of the Alaska Aviation System

Tracking the airport system over time is important from the initial study in 1985, to now, and into the future. These comparisons help provide an in-depth look at the health of the system and acknowledge additions and changes throughout the years.

Aviation stakeholders alongside multiple state and federal departments continue to make great strides to develop and improve the national airspace system (NAS). During the past few decades, Alaska's population and enplanements increased. Similarly, airport maintenance and operations costs inclined, due to inflation as well as expansion of Alaska's transportation system. Alaska's population has nearly doubled from just over 400,000 in 1980 to 737,400 in 2018, an average annual increase of 1.75 percent. By comparison, the population of the United States grew at an annual rate of merely 0.95 percent over the same period. While a variety of reasons are attributed to the rise in population, several main contributors were the state's oil boom, an increase in local industries such as fishing and tourism, and the rapid expansion of international cargo passing through Ted Stevens Anchorage International Airport.

Figure 3.2 | Population Growth (1980-2018)



The price of crude oil in Alaska increased for many years after the 1980s recession. In more recent years, a price decrease tightly constrains the state budget, causing multiple departments to implement changes in policy, personnel, and their general way of conducting business. After ballooning to historic highs of approximately \$100 per barrel from 2011 through 2014, oil bottomed out in 2015 and 2016 to under \$50 per barrel. The current price per barrel is rising but nowhere near previous numbers. This drop in crude oil pricing is devastating to the State of Alaska's annual budget, as oil prices, which provide the bulk of Alaska's General Fund money, decreased below annual state expenditures. To account for budget reductions, DOT&PF shifted from a policy of infrastructure expansion to one of maintenance and preservation. This policy change emphasized DOT&PF's focus on safely maintaining, rather than increasing the airport system. Large scale capital projects related to resurfacing or repaving, lighting/navigational aid replacement, or rehabilitation

of new snow removal equipment buildings are programmed and completed more often than new airport construction or runway extensions. Minor expansion projects include additional certified weather reporting locations, apron expansions, and other tasks that improve safety and efficiency across the airport system.

One goal of Phase II and the *Evolution of the Alaska Aviation System: Classifications and Performance Measures* was to highlight progression and growth over the years. Several key findings included:

- 1 Average runway length of 230 land airports increased from 3,434 feet in 1985 to 3,926 feet in 2014. Airports with paved runways increased from 41 to 52 facilities over this period.
- 2 The number of automated weather stations increased from 112 in 1985 to 165 in 2014, while weather observers decreased from 37 to only 6.
- 3 The Airspace Coordination Work Group noted the expansion of Wide Area Augmentation System (WAAS) use in the state led to the addition of 93 WAAS approaches by 2014: 28 localizer performance without vertical guidance (LP) and 65 localizer performance with vertical guidance (LPV) approaches.
- 4 From 2013 to 2017, Alaska experienced a decline of registered pilots from nearly 7,000 to just under 6,500, an average annual decrease of nearly 1 percent.



To account for budget reductions, DOT&PF shifted from a policy of infrastructure expansion to one of maintenance and preservation.

3.1.3 Performance Measures

The AASP defined performance measures as a basis for measuring performance and adequacy of the airport system. Performance measures serve several system planning functions. They measure each airport's ability to serve the market and help define the overall health and effectiveness of airports individually, by classification, and as a large group. These metrics facilitate the development of prioritized airport improvement projects by providing planners with information viewed from a different lens and through a different set of criterion. Performance measures also review regulatory compliance and level of service and provide analysis to track trends and changes that significantly affect the system over time.

Performance measures include two major indices:

- 1 Airport Design Standards Index:** The index examines seven factors at each airport: Runway Safety Areas (RSA), Obstacle Free Areas (OFZ), Threshold Siting Surfaces (TSS), Runway Protection Zones (RPZ), Runway Visibility Zones (RVZ) Crosswind Coverage, and Parallel Taxiway.
- 2 Airport Service Index:** This index examines the capabilities of 176 Regional and On and Off-Road Community airport classifications to serve their respective markets. It includes criteria for runway length, lighting, instrument approach and taxiway type, and other services such as fuel sales and passenger shelters.

In addition, standalone performance measures account for other factors, including weather reporting and observation, pavement condition, clear approach paths, visual glide slope indicators (VGS), and seasonal airport closure. This information is available within the AASP's website and tracked over time.

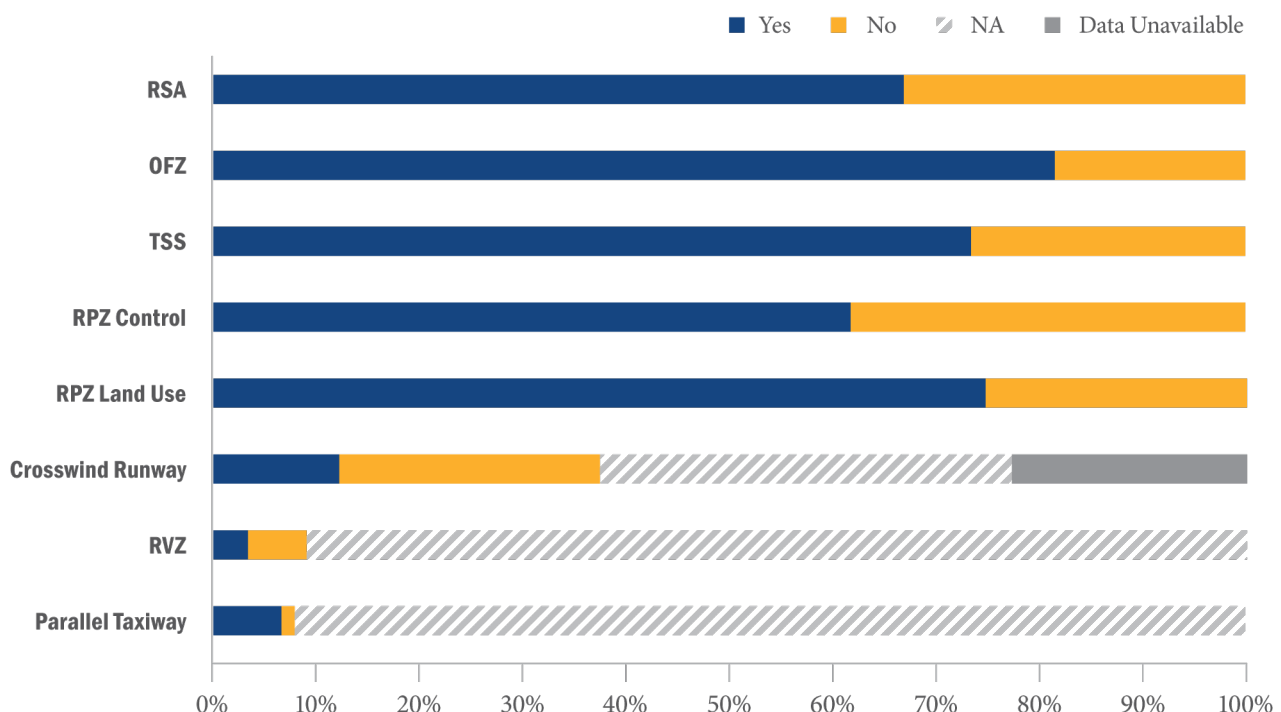
Each facility, service, or factor in the indices accounted for a percentage of the total index score, with 100 percent the highest possible. From 2011 to 2014, the average Design Standard Index increased from 72.2 percent to 73.8 percent, while the Airport Service Index decreased from a 58 percent average to 47 percent average. This decrease is largely attributable to better availability of data in 2014 than in 2011. Some indices still have unavailable data, such as the crosswind runway shown in the chart below. This type of data is often unavailable because many Alaska airports are unattended facilities and have no entity maintaining the inventory of facilities, conditions, and activities. The AASP is dedicated to continually improving the accuracy of inventory data across the system.

3.1.4 Performance Deficiency Costs

Tables in *Evolution of the Alaska Aviation System: Classifications and Performance Measures* summarize deficiencies and costs to bring airports into compliance with existing performance measures. Planning level cost estimates calculate needs across the entire Alaska airport system and are not intended to be detailed engineering level costs on an individual airport basis.

DOT&PF land-based airport deficiencies were approximately \$1 billion in 2015. As the system continues to age, this number increases. Each year the capital improvement program addresses and reconciles a multitude of issues across Alaska's airports. The

Figure 3.3 | Design Standard Index (All Airports)



program recognizes some deficiencies are impractical to resolve due to high cost or extenuating circumstances, such as a need to move a mountain in an approach. Other factors causing a rise in deficiencies across the system include permafrost, coastal erosion, new regulations and existence of more needs than available funding. Prioritization of certain recommendation categories include runway extensions, automated weather reporting, precision path approach indicators (PAPI) and airport layout plans (ALP). **Table 3.2** details the estimated cost of each.

Table 3.2 | Estimated Cost of Addressing Performance Measure Deficiencies (All Airports)

Performance Measure Deficiencies	Estimated Cost
Runway Length	\$350,638,800
MIRL Runway Lighting	\$15,774,000
Parallel Taxiway	\$586,147,000
Passenger Shelter	\$9,300,000
Public Toilet	\$9,425,000
Automated Weather	\$18,000,000
VGSI/PAPI	\$46,200,000
ALP	\$7,800,000

Source: Evolution of the Alaska Aviation System Plan: Classifications and Performance Measures, September 2015

Each evaluation yields a set of deficiencies and possible projects such as those summarized above, helping decision makers and planners at DOT&PF to prioritize improvements throughout the state.

3.2 Seaplane Facilities Plan: Classifications/Performance Measures

Seaplane base attributes greatly differ from land based airports. For this reason, the AASP evaluated water-based facilities through a separate task that aimed to preserve a safe seaplane system while aligning with the plan's safety goals. Phase II inventoried over 50 state-owned seaplane facilities, created a set of classifications, and analyzed performance based on specifically defined criteria.

3.2.1 Seaplane Facility Classifications

Seaplane facilities were classified as five main types: seaplane base, seaplane float, harbor float, refuge, or other seaplane operating area. These classifications are intended to guide planners on future investment and development of water facilities. Classification definitions are outlined in **Table 3.3**.

Fifty (50) state-owned facilities were included in the study, with 32 facilities owned by Alaska DOT&PF, 16 by Alaska DNR, and one by Alaska DF&G. This inventory continues to change as the system is reevaluated to determine if local sponsors are interested in maintaining and sponsoring their local facilities.

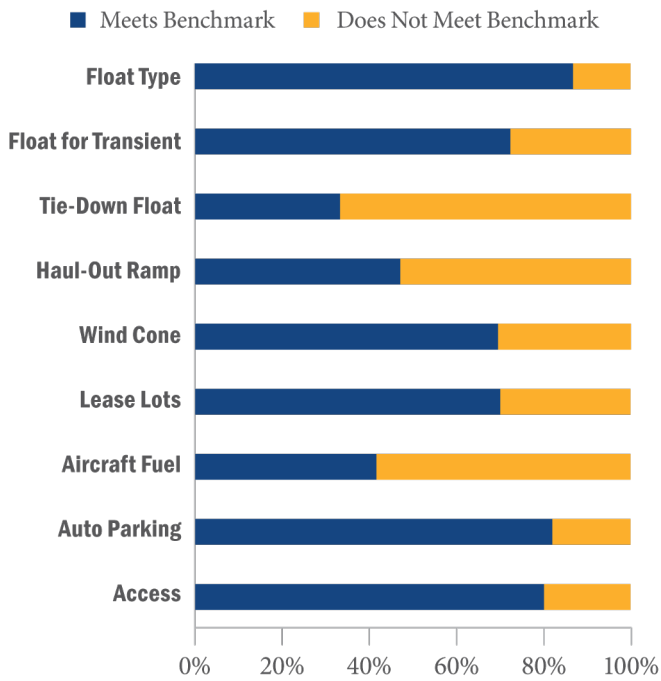
3.2.2 Performance Measures & Index

Performance of Alaska's state-owned seaplane system is measured by presence or absence of the following: float type (including shore access), float space for transient aircraft, tie-down floats, haul-out ramps, wind cones, lease lots, aircraft fuel,

Table 3.3 | Seaplane Facility Classifications

Classification	# of Facilities	Definitions
Seaplane Float (SPF)	21 Total	Facilities used exclusively for aviation that are less busy than SPBs but still important to community transportation and economics. Typically have a float with shore access, space for transient aircraft, and fuel.
Other Seaplane Operating Area (OOA)	14 Total	An area identified as a seaplane landing/takeoff area with published latitude and longitude, but typically has no facilities or float.
Seaplane Base (SPB)	10 Total	Facilities with a high level of seaplane activity; used exclusively for aviation. Typically have tie-down floats, shore access, space for transient aircraft, and on-site fuel. Should be accessible via the road network and have automobile parking.
Harbor Float (HSF)	7 Total	Facilities that cater to aviation but are part of a shared harbor facility. May have space for transient aircraft, tie-downs, and fuel.
Refuge (RSF)	1 Total	A simple, multi-purpose float adequate for mooring a plane if necessary, but not specifically dedicated for seaplane use. Must have published latitude and longitude.

Figure 3.4 | Seaplane Facility Index (Full System)



auto parking, and land access. Benchmarks varied based on the seaplane facility category, with more demanding benchmarks set for higher categories. For example, SPB, SPF, and HSF all have the goal of a float type with shore access; whereas RSF's benchmark is merely a float for mooring and OOA none at all. Each performance measure accounted for a weighted percentage of each airport's total Seaplane Facility Index, with float type typically the highest weighted facility. In addition, performance measures varied by classification, with higher categories required to meet additional benchmarks. In total, all state-owned facilities had an average index score of 73 percent.

Table 3.4 | Seaplane Facility Index Average

Performance Measure Deficiencies	Seaplane Facility Index Average		
	Full State-Owned System *	DOT&PF Facilities	Other State-Owned Facilities
SPF	63%	67%	52%
OOA	100%	100%	100%
SPB	74%	79%	53%
HSF	43%	43%	NA**
RSF	50%	50%	NA**
All Facilities	73%	69%	81%

* All state-owned, public airports
 ** DOT&PF owned facilities only

While 73 percent demonstrates a system well equipped to serve seaplane facility needs, a more detailed analysis of the results reveals where improvement is needed. System-wide, float type benchmarks rated highest at 87 percent of the system, automobile parking at 82 percent, and access at 80 percent. Least met benchmarks included tie-down float (33 percent), aircraft fuel (42 percent), and haul-out ramps (47 percent), all potential areas for development. Different categories often reveal more specific needs. For example, 80 percent of SPBs met fuel objectives but only 33 percent of SPFs and no HSFs did. Overall, the HSF category claimed the lowest group index with 43 percent. This is attributed to low scores for aircraft fuel, tie-down floats, haul-out ramps, and access that are often in remote areas.

Reviewing facilities through this lens produced a list of deficiencies. This list not only provides an assessment of current conditions, but also determines recommendations for future projects. The largest deficiency is tie-down floats, with 24 airports not meeting the benchmark, followed by aircraft fuel with deficiencies at 21 airports.

Table 3.5 | Deficiencies/Potential Projects by Seaplane Facility Category and Performance Measure

Performance Measures	Number of Deficiencies/Projects					
	SPB	SPF	HSF	RSF	OOA	Total
Float Type	2	3	0	0	NA	5
Float for Transient	5	5	0	NA	NA	10
Tie-Down Float	6	12	6	NA	NA	24
Haul-Out Ramp	2	10	7	NA	NA	19
Wind Cone	3	4	4	NA	NA	11
Lease Lots	3	NA	NA	NA	NA	3
Aircraft Fuel	1	12	8	NA	NA	21
Auto Parking	1	4	0	NA	NA	5
Access	0	2	7	2	0	11

Chapter 4.

Capital Improvement & Maintenance Program

4.1 Phase I: Need Assessment

How many needs currently exist in Alaska's airport system? This commonly asked question was met with no clear answer, so Phase I of the AASP created a work group to focus on figuring it out. Through much discussion and coordination, this group implemented a pilot program to identify airport needs and conditions across Alaska's airport network, called the Capital Improvement and Maintenance Program (CIMP). The work group recommended standing up a detailed inspection program for staff to rate deficiencies and better understand their airports. The following lists pilot project methodology:

- 1 Develop inspection methodology checklists
- 2 Identify pilot project airports
- 3 Gather current identified/documented needs
- 4 Test and revise the draft inspection checklists at an airport
- 5 Create a tool to gather data
- 6 Conduct carrier/user interviews
- 7 Conduct pilot project airport inspections
- 8 Develop a needs list for each airport and estimate project costs
- 9 Refine inspection checklists
- 10 Develop a draft report
- 11 Complete a final report

Checklists were created for a number of different elements including Environmental, Gravel Surfacing, Seaplane Facilities, Buildings, Pavement Markings, Pavement Preservation, Safety/ Non-Movement Areas, Visual Aids, and Resources. A later phase expanded to include even more. Each section list contained specific questions and an option to rate deficiencies from an A (highest) through F (lowest) and included example photos of each condition rating to use as reference. Initial checklists were printed out on paper and taken to an inspection, with the goal

to improve that methodology as the program expanded.

The checklists created a comprehensive set of questions that analyzed the airport, reviewing anything from a SREB and ARFF building to the gravel in a safety area or a lip of pavement. Inspectors often walk the full length of the airport to capture as much data as possible. As deficiencies are often difficult to track over time, this in-depth review of all facets across an airport, documented in a centralized location, provides planners, engineers, and other staff the ability to better understand what issues need reconciliation and how to proceed forward. In Phase II, this data would compile into several reports and allow staff to see results over multiple locations and statewide or by region, M&O district, or individual airport.

In an effort to streamline the process, the project team selected an Android platform tablet to create an inspection application that directly correlates to the internal AASP website. Eighteen (18) pilot inspections were conducted from August to September of 2012. Checklists were refined in early 2013, based off findings from inspectors. The work group developed winter checklists but did not program them into the tablet. The pilot study identified more than \$1 billion in existing airport needs at those 18 locations and determined implementing the project statewide for all public airports would provide a way to access all system needs.

4.2 Phase II: Advancing CIMP Inspections

Phase II began with an update and reprogramming of the inspection application to accommodate a tablet platform, allowing DOT&PF's information technology (IT) department to support the application in the future. The application debuted in 2013 on the Microsoft Surface Pro. The Surface Pro required a USB plug-in to capture GPS photo locations. Integration of a secondary GPS application was not always a smooth process.

Other CIMP changes throughout Phase II include additional sample photos to improve consistency between inspectors and checklist question refinement. Checklists expanded to include fences, access roads, airport leasing, and mobile and fixed-tank fuel. The team decided winter checklists were not as useful for data collection, and the department would pursue only summer time assessments. This was not only due to cold weather conditions being much less accommodating for inspectors, but also because snow often covers deficiencies that should be documented for future capital funding. Further refinement of the application continued with the addition of airport sketches, inspector name and date, the ability to load past inspection ratings for comparison, and checklist tips that are easily updatable over time.



© Dwight Stuller, Birchwood Airport CIMP Training with DOT&PF Staff

While consultants led inspections in the early years of the program, DOT&PF staff eventually took over responsibility to implement and continue the program. Several training inspections were completed with staff from a multitude of regional sections such as Planning, Environmental, Design, and Facilities. In addition, the project team coordinated with local sponsors across the state and demonstrated the application, as it is intended for use by any public airport sponsor in the state. Four local, non-DOT&PF airport sponsors tested the program during Phase II.

In total, DOT&PF inspected 184 airports during this phase, using the Microsoft Surface Pro tablet application. The program recently expanded to a new iOS platform available for Apple iPads. This evolution allows for quicker updates, better visuals and added security, improved communication between the application and the AASP website, and is a lighter object to carry. Other minor application updates include new tooltips to guide inspectors out in the field. Statewide Aviation is currently coordinating with the regions to purchase additional iPads to provide better access to the program.

4.3 Deficiencies & Needs

Following field work, inspectors process their inspections through the internal AASP website. Any D or F rated question is reviewed and the reviewer is prompted to create a need to reconcile that initial issue. Deficiencies can be added to existing facility needs already compiled by staff and entered into that facility's needs list; or a new need may be created. This process captures all deficiencies and compiles them into a centralized, "Needs List" for each facility inspected.

4.4 CIMP Inspection Reporting

During development of the CIMP program, the project team determined several key objectives were required to facilitate program success. The program needed to effectively identify, evaluate, track and plan for deficiencies across the system, in a clear and understandable way available to numerous users in different cities, regions, and with a variety of priorities.

Deficiency reporting would become one of the cornerstones of the CIMP inspection process by creating a way to holistically view collected information.

In addition to the standard statewide, regional, and individual filters, the Inspection Deficiency Report includes Senate or House District, Facility Sections (Checklists), and by either all D and F ratings, or by only D or F separately. This report creates a D&F summary bar chart to graphically depict deficiencies and also individually lists each so users can export data to PDF or CSV. Expansion of this report to include all need ratings, from A to F, will be included in Phase III.

A second report tracks completed inspections. This CIMP inspection query searches by date to produce a comprehensive Microsoft Excel report and is displayed in the Reports tab under Deficiency Reporting. Users can use the typical website filters and choose the inspection time period. This query notes the airport, inspector name, inspection date, upload date, and inspection processing time after upload.

4.5 Accomplishments & Efficiencies

The CIMP database increases effectiveness, accuracy and reliability of DOT&PF's Capital Improvement Planning through the Airport Project Evaluation Board (APEB) process. Inspection information provides a consistent, updateable tool to document airport needs throughout the state and over time. It also enables planners to analyze common maintenance issues and easily track trends.

Additional program benefits include improved interdepartmental communications and more available information on the rural airport system. With many rural and unattended airports in remote locations, department staff does not visit or inspect them on a regular basis. The CIMP is an important tool to capture existing conditions on such airports. When M&O staff perform an inspection, they document details, photos and sketches of problem areas. Once the data is processed, the information is immediately available to the various sections across the department who can address the problem and program a project when needed.

Figure 4.1 | CIMP Application

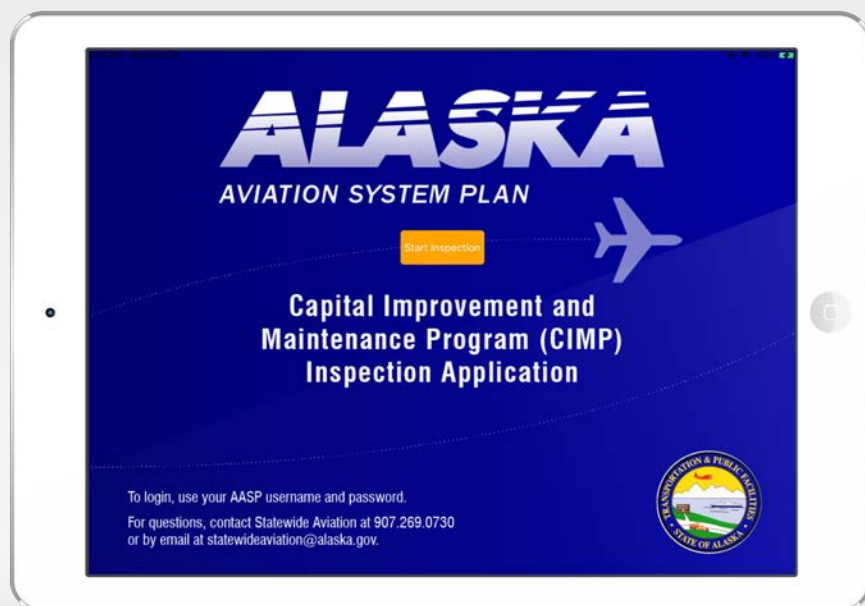


Figure 4.2 | Conducting a CIMP Inspection

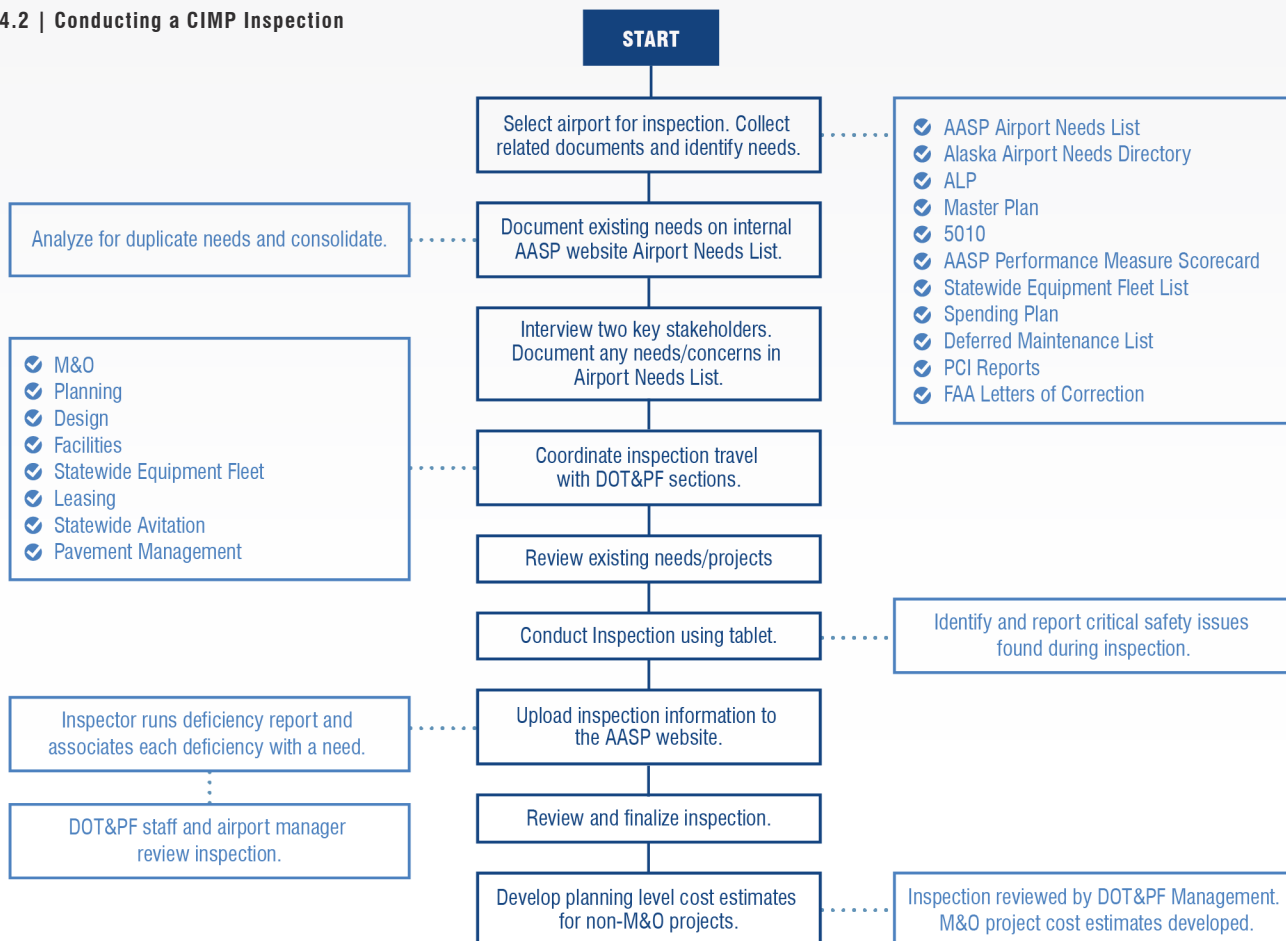
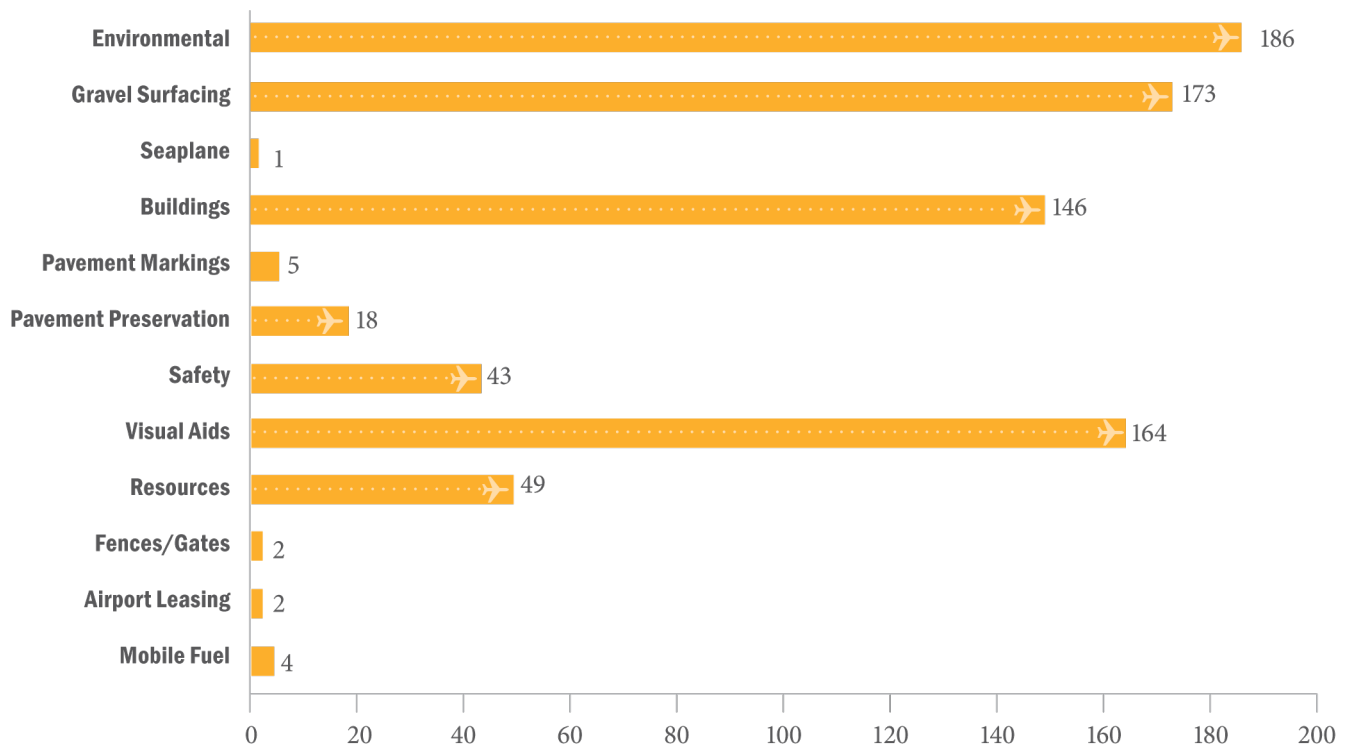


Figure 4.3 | Example D&F Summary by M&O District



Key Accomplishments include:

- 1 Nearly 200 CIMP inspections completed across the system by multiple airport sponsors
- 2 Continual website and application updates
- 3 Expansion to iOS (Apple) iPad platform
- 4 Development of a step-by-step user manual and in-application tooltips
- 5 Addition of reference airport sketches/sample photos
- 6 Ability to compare past inspection data and photos while conducting a new inspection
- 7 Deficiency reporting/program tracking
- 8 Completion of the first step in the online APEB process

The CIMP inspections are proven to be an effective way for DOT&PF and local sponsor airports to identify deficiencies and create and manage airport needs – both capital and maintenance related, and track improvements over time. They are a critical piece of the capital improvement program for airports statewide.

Improvements completed during Phase II include:

1. an inspection manual,
2. inspection approval through the website,
3. needs association updates,
4. expansion to a new platform, and
5. in-depth deficiency reporting tools.

Chapter 5. Website Development

The AASP website contains two key components: a public facing portal at www.alaskaasp.com and an internal gateway at www.internal.alaskaasp.com. Developed under Phase I, both sites are continuously expanded and enhanced to create a user-friendly environment full of accurate data from a variety of sources. The public site provides stakeholders and the broader public with basic information about the AASP and the public airports within Alaska's aviation network. The internal portal assists DOT&PF and local sponsors in managing the system by providing a centralized facility database. It is the AASP's vision that these web tools become a primary source for the public, aviation stakeholders, the FAA, local airport sponsors, and DOT&PF to find information and better understand and capture existing conditions and future needs across the system.

5.1 Public Portal

The public portal houses facility information, including documents and studies, the Alaska Facility Information Directory (AFID), and the plan's schedule and contact information. Members of the public may search the AFID for information regarding most of Alaska's public airports. Users may use search criteria such as facility name, location identifier

or associated community, or customize searches through other factors like landing area surface or runway length. Information within the AFID includes: general airport information pulled from the FAA Form 5010 Airport Master Record, U.S. Department of Transportation T-100 statistical data, documents and links, and facility photos. In late 2018, the new look debuted to reflect DOT&PF website standards, fonts, and colors.

5.2 Internal Website Portal

The internal portal boasts a robust system for airport sponsors and the FAA to perform a variety of functions. Internal users require a username and login. To request access, download and submit the user request form from the login page. Each user receives rights to various areas of the website based on their roles and responsibilities within DOT&PF or their local sponsor airport.

Nine main areas are available: inspection, AFID search, communities, facilities, operators, reports, projects, resources and AIP spending plan. The internal website is the foundation for an airport system information repository, providing tools to help plan and manage individual airport and system-wide data. As the site develops, useful tools, features, and information may transfer to the public portal.

Figure 5.1 | Public Portal Homepage

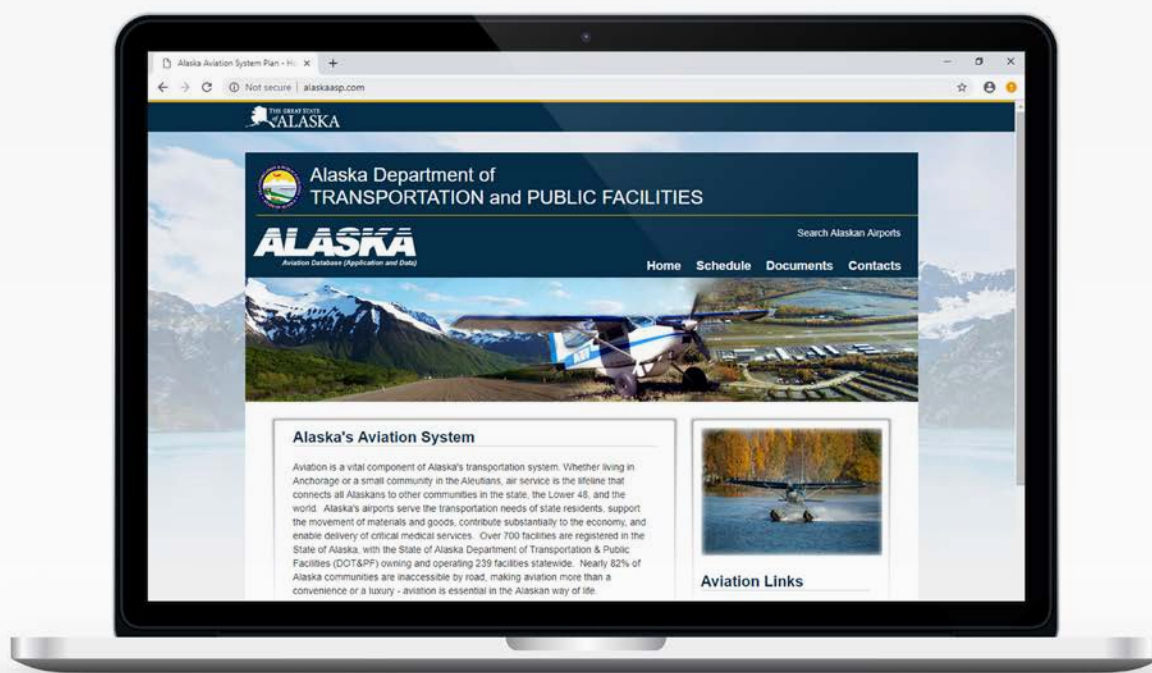
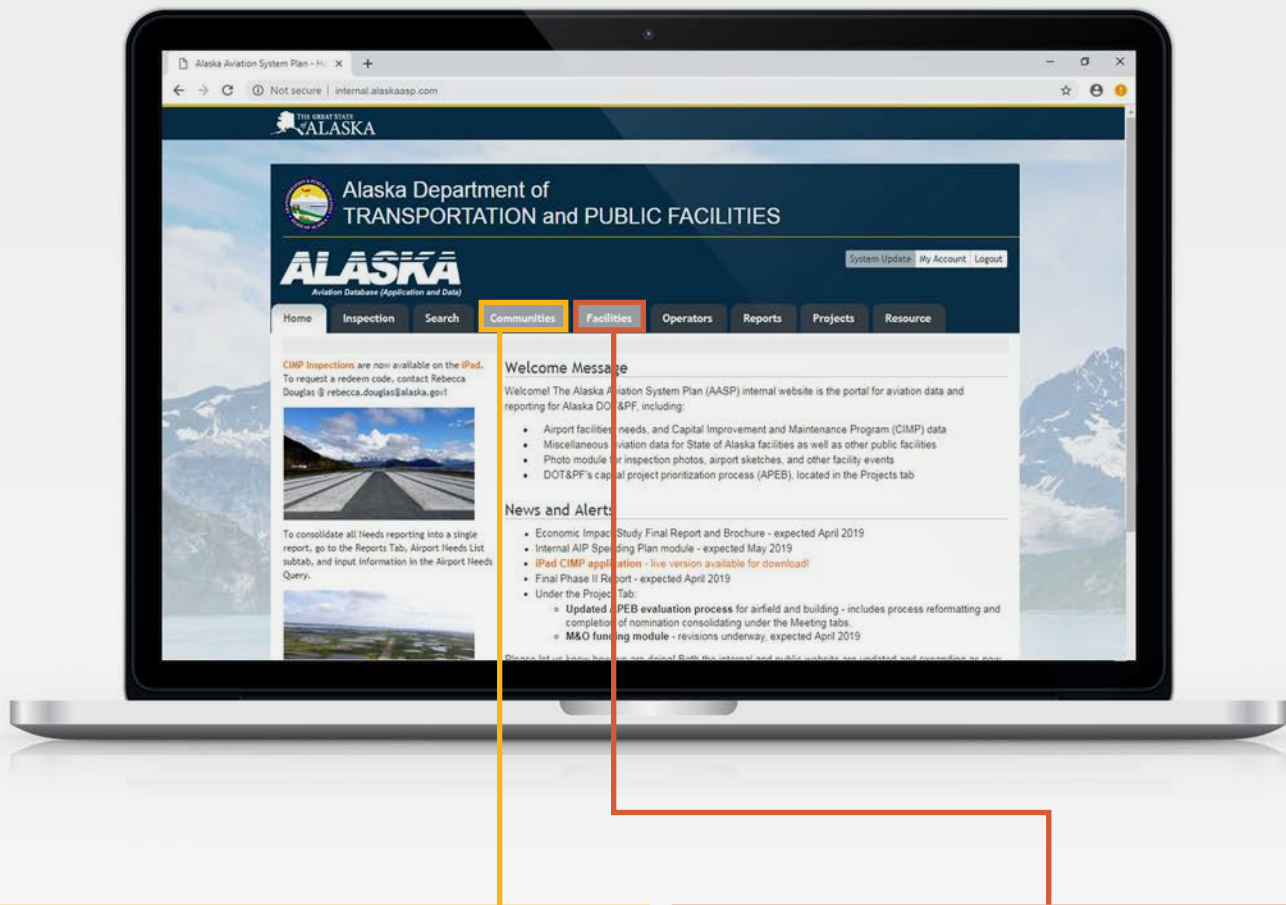


Figure 5.2 | Internal Portal Homepage



Alaska Department of TRANSPORTATION and PUBLIC FACILITIES

Navigation: Home, Inspection, Search, Communities, Facilities, Operators, Reports, Projects, Resource

Dashboard > Facilities

Switch Facility: BIRCHWOOD

General Information

Owner: ALASKA DOT&PF CENTRAL REGION
FAA Associated City: BIRCHWOOD
NPIAS: 02-0034
DOT&PF Region: Central
Airport Use: Public
DOT Owned: True
Type: Airport
Facility Status: Active

Base Information

Names: BIRCHWOOD
DOT Owned: Yes
State Region: Central
MBO District: Anchorage
FAA Site ID: 50069.7A
NPIAS Number: 02-0034
NPIAS Level of Service: General Aviation
AASP Classification: Local NPIAS High Activity
Maintenance Provider: DOT MBO

FAA Associated City: BIRCHWOOD
Location ID: BCU
Borough/Census Area: Municipality of Anchorage
Facility Use: Public
Facility Type: Airport
Facility Status: Active
EAS Facility: Yes
Part 139 Designation: No
Staffed Airport: No

Contact Information

Superintendent: Tom Grman
Phone: (907) 338-1432
Airport Manager: TOM GRMAN
Phone: (907) 338-1432

Area Planner: James Starzec
Phone: (907) 269-0507

5.2.1 Alaska Facility Information Directory (AFID)

The internal AFID compiles a comprehensive inventory of airport facility, associated community and operator data, and airport inspections. This directory provides airport data through direct links from the FAA Form 5010 Airport Master Record database and the U.S. Department of Transportation's T-100 database in addition to information supplied by DOT&PF staff and other state departments. Detailed system planning data is accessible for more than 300 public facilities and includes details regarding system classifications, contact information, existing services, and equipment. The majority of information can be manually updated by airport planners as the system evolves and changes.

The Community tab displays data from the State of Alaska Department of Commerce, Community and Economic Development (ADCCED) and the Alaska Department of Labor. Examples include school, postal, and health facility information, community access, and population statistics. Accurate community data is important when prioritizing airport projects. Another tab, Operators, refers users to air carriers and the communities and facilities served by each.

5.2.2. Phase II Updates

Phase II website enhancements allow multiple types of projects to be input, such as state and capitol funded maintenance projects (equipment, visual aids, etc.), system planning and special studies,

and regional area plans. Entering all information into the AASP allows all projects to be entered and tracked in a single location, from project initiation to programming within the Spending Plan.

5.2.3 CIMP Inspection

All CIMP inspection data is stored within the internal AASP website. Inspectors and airport staff process the inspection by reviewing and associating any deficiencies with an airport's needs list (Needs subtab). Photos from each inspection save automatically into each facility's photo management area (Facility Photos subtab) and are memorialized by inspection. Inspection reports are an important tool to better ascertain existing conditions on an airport and determine if a future project is required. Additional CIMP history and an outline of the inspection process is described in detail in Section 4.2 on page 11 of this report.

5.2.4 Needs Development

The development of an airport needs database began in Phase I of the AASP and continues throughout Phase II. Prior to the electronic needs list, DOT&PF staff within multiple divisions maintained various lists electronically, and sometimes on paper. Lack of collaboration often produced project duplication and money spent on similar work but in different parts of the department. The AASP tackled this issue by creating a Needs List within each facility on the internal website; a single place to house all needs related to each facility, regardless of what type, available funding, or who

Figure 5.3 | Create Need Example Form

Create Need

* defines the item as being required

Name*: Example Airfield Need

Funding Source*: AIP

Category*: APRON

Sub Category*: Rehabilitate Apron

Estimated Cost*: \$750,000

Description: Rehabilitate existing apron, including replacement of tie downs and new pavement markings.

Priority*: Short Term

Need Origination*: Sponsor

Justification: The existing pavement was constructed in 2000 and condition has deteriorated, especially on the southern portion. PCI reports note the apron pavement sections range from a 44 (very poor) to a 54 (poor).
This need could be combined with the upcoming runway rehabilitation project.

Notes:

Insert Cancel

requested it. FAA work code category and subcategory were added in 2017 to provide a mechanism to track types of needs across the system. Phase II also created the ability for staff to easily filter, add, or close a need in a project and/or APEB nomination. **Figure 5.3** displays an example form to create a need. Sponsor staff use this form to add a need to a facility.

The information captured when inputting a need continues to evolve over time and now populates the Airport Needs Book, located in the Reports tab. Prior to this report, creating an accurate report to collectively capture needs, using information from numerous sections that were not always collaborating, became increasingly difficult. Various staff update the needs information on the AASP website, associate inspection deficiencies, and the system escalates costs annually to account for inflation. The digital Airport Needs Book pulls airport data as well as need information from a variety of places across the website and consolidates it into a downloadable Microsoft Word or Excel file. Storing this information electronically allows the tracking of needs from identification through completion and better documentation of the aviation system as a whole. This report is an efficient way to capture current information on a facility very quickly, and is often used to answer public inquiries. It is available to the public upon request.

Needs are eventually combined into projects and nominations for programming into the annual capital improvement program. The DOT&PF Airport Project Evaluation Board (APEB), discussed further in Section 5.2.5.1.1, uses a set of criteria to determine project priorities. Creation of the automated Airport Needs Book saves staff significant time in data collection and depicts an improved reflection of needs that does not vary between sections. Future AASP phases will continue to expand and improve this process.

5.2.5 Process

Basic framework for the internal portal was completed in Phase I while Phase II focused on expansion to accommodate several existing processes within the department, including transitioning a need into a project, APEB nomination prioritization, and programming into the department's capital improvement plan, or CIP. These processes were developed for several reasons. First, a centralized database allows all users to see the same information at the same time, reducing duplication and confusion. Secondly, the time needed to create a project or nomination package decreases and adds transparency within DOT&PF. Lastly, it aligns together and minimizes variation that can be time intensive.

5.2.5.1 Funding Process

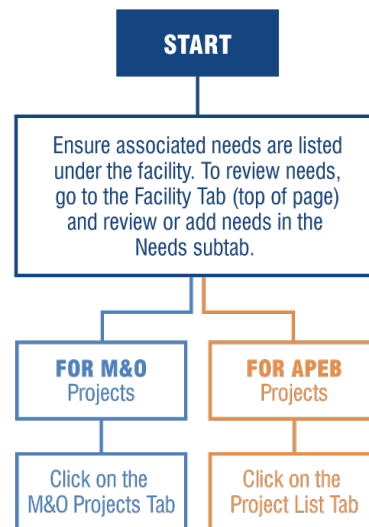
Once a need is created, staff select a funding source that best reflects the funding eligibility. Funding source options include:

1 Airfield

- 2** Building
- 3** Equipment
- 4** Other/Pavement
- 5** M&O Operating
- 6** M&O AIP
- 7** Planning

The funding source automatically drives the category of the need. For example, when AIP is chosen, the need is presumably eligible for AIP funding. The FAA has very specific requirements for a need or project to be eligible for AIP funding based on categories and subcategories. The funding source therefore determines which path a need will follow to receiving funding.

Figure 5.4 | Needs Flowchart

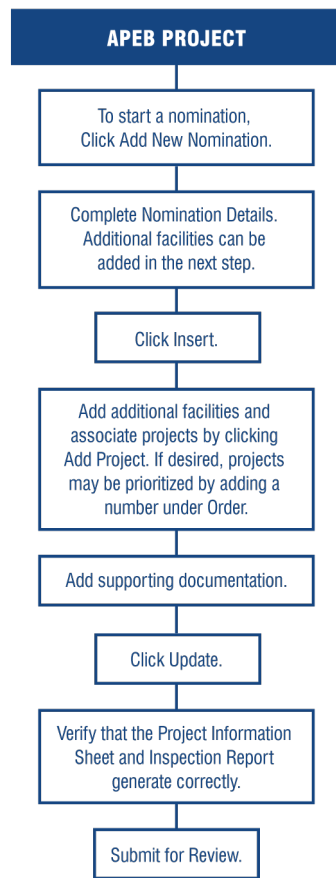


Simple flowcharts, like this one, are located throughout the Projects tab to guide users through the process of creating projects.

5.2.5.1.1 APEB

The APEB considers, evaluates and numerically scores airport projects for future capital funding and inclusion in the department's Spending Plan. In-depth analysis is conducted by regional planning sections to gather data, compile nomination

Figure 5.5 | APEB Project Flowchart



packages, and rate nominations using a set of predefined criteria, either for building or airfield projects. The new website tools allow planners to create a project at any time by pulling current needs from the website for consolidation in the Projects tab. Multiple airports can be included in a single nomination. All supporting documents load into the nomination and scoring

takes place within the site, allowing revisions at each step of the process. Standardized Project Information Sheets and Score Cards are automatically produced and saved within the project. Once finalized, nominations are ready for review and scoring by the APEB scoring team. Placing this process into the website allows for planners to share information more efficiently, easily start and stop work throughout the process, and store information in an integrated electronic system for record keeping and reporting. Nominations are searchable over time and project data stays with each facility. Voted scores are saved in each meeting and easily accessible.

5.2.5.1.2 Capital Maintenance Program

Capital maintenance projects, such as equipment, visual aids, and surfacing maintenance, are funded directly by DOT&PF Maintenance and Operations and entered, flagged and grouped individually or as statewide. These projects automatically bypass the APEB process and move directly into the Spending Plan after regional review. Prioritization and approval or rejection of the project is tracked by user, time and date. M&O projects can easily be searched by facility and district, allowing users the ability to focus on projects in a selected area.

5.2.5.1.3 Digital Spending Plan

After need prioritization, all types of projects are added into the DOT&PF Spending Plan, or Capital Improvement Plan (CIP). While this is not a new process, the digital version on the AASP mimics the routine used for more than a decade. Managed by the Division of Statewide Aviation, the multi-year plan tracks projects and funding allocations to ensure the program is delivered on time and all available funding is spent each year. This information is now housed on the internal web portal and improves staff communication while promoting consistency, transparency and efficiency throughout the project process. Tracking projects from inception to completion is easier than ever! Using the AIP module, internal staff can search, filter and export the AIP program for any given year and run funding queries using the AIP Project Listing, Fund Management and Spending Plan tabs. Notes on projects can be updated as funding changes occur.

Using the AIP Project Listing tab, projects can be queried by year using facility, funding type, region or M&O district filters and project status. Projects contain tracking information, such

Figure 5.6 | Example of M&O Project Overview

<div> Home Inspection Search Communities Facilities Operators Reports Projects Resource AIP </div>																															
Dashboard > Projects																															
<div> <div>Project List</div> <div>Building APEB</div> <div>Airfield APEB</div> <div>Planning Projects</div> <div>M&O Projects</div> </div>		<div>Maintenance & Operations Project Overview</div> <div> <div>Filters</div> <div> <div>Region</div> <div>Select All</div> <div>District</div> <div>Select All</div> <div>Review Status</div> <div>Select All</div> <div>Search</div> </div> </div>																													
		<table> <tr> <th></th><th>Year</th><th>Airport</th><th>Priority</th><th>Description</th><th>Original Estimate</th><th>Final Estimate</th><th>Review Status</th></tr> <tr> <td>Select</td><td>2020</td><td>AKIACHAK</td><td></td><td>Akiachak Surface Maintenance</td><td>\$314,238</td><td></td><td>In Development</td></tr> <tr> <td>Select</td><td>2020</td><td>ATKA</td><td></td><td>Atka Pavement Markings</td><td>\$15,000</td><td></td><td>In Development</td></tr> </table>							Year	Airport	Priority	Description	Original Estimate	Final Estimate	Review Status	Select	2020	AKIACHAK		Akiachak Surface Maintenance	\$314,238		In Development	Select	2020	ATKA		Atka Pavement Markings	\$15,000		In Development
	Year	Airport	Priority	Description	Original Estimate	Final Estimate	Review Status																								
Select	2020	AKIACHAK		Akiachak Surface Maintenance	\$314,238		In Development																								
Select	2020	ATKA		Atka Pavement Markings	\$15,000		In Development																								

Figure 5.7 | Example of Digital AIP Spending Plan

Alaska Department of TRANSPORTATION and PUBLIC FACILITIES

ALASKA
Aviation Database (Application and Data)

System Update | My Account | Administration | Logout

Home | Inspection | Search | Communities | Facilities | Operators | Reports | Projects | Resource | AIP

Dashboard > AIP

AIP Project Listing

Fund Management

Spending Plan

AIP Project List

Filter

Filter Type: Facility

Facility: All

Expected Funding Year(s) (FFY): 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028

Status: Select All (Exclude Closed)

Include Contingency Projects: ☒

Search

Projects

Project Title	APEB Date	Airport	P/NP	APEB Score	Category	APEB Cost	Tracking	Expected Year	C. Year
New Taxiway	10/24/2018	GUSTAVUS	NP	124.6	Airfield	\$25,845,000	Programmed	2020	
S Naknek Resurface	10/24/2018	SOUTH NAKNEK NR 2	NP	121.7	Airfield	\$9,204,000	Programmed	2020	
Cordova Airport ARFF Building	09/07/2017	MERLE K (MUDHOLE) SMITH	P	73.0	Building	\$15,700,000	Programmed	2020	2019
Sitka Airport SREB Rehabilitation	09/07/2017	SITKA ROCKY GUTIERREZ	P	41.0	Building	\$1,413,500	Programmed	2020	
Mekoryuk Airport Access Road and Rehab	09/26/2016	MEKORYUK	NP	147.0	Airfield	\$13,000,000	Programmed	2020	
Deering Airport and Access Road Improvements	09/26/2016	DEERING	NP	142.0	Airfield	\$6,800,000	Programmed	2020; 2021	
Mekoryuk SRE Building Replacement	07/11/2016	MEKORYUK	NP	66.0	Building	\$4,542,000	Programmed	2020	
Napaskiak 2 Bay SRE Building	07/11/2016	NAPASKIAK	NP	71.0	Building	\$3,310,000	Programmed	2020	
Seward SREB and Sand Storage Building	07/11/2016	SEWARD	NP	71.0	Building	\$3,110,000	Programmed	2020	
Urea Bay (Sand Storage Addition)	07/11/2016	VALDEZ PIONEER FIELD	P	44.0	Building	\$1,973,274	Programmed	2020	
Cordova Airport Perimeter Fence Installation	09/29/2015	MERLE K (MUDHOLE) SMITH	P	104.9	Airfield	\$4,971,000	Programmed	2020	

as DOT&PF internal project numbers, critical project dates, FAA work codes and grant numbers all intended to enhance current and future organization and allow for improved tracking over time.

Using the Fund Management tab, approved funding is added to the Spending Plan and allocated by federal fiscal year, funding type and amount with associated comments. This section is only editable by the AIP Manager who programs all projects. This tab highlights multiple program funding types:

- 1 Discretionary
- 2 Cargo Entitlement
- 3 Passenger Entitlement

- 4 State Apportionment
- 5 Non-Primary Entitlement
- 6 Alaska Supplemental

The Spending Plan tab allows staff to generate funding allocation queries. Like the AIP tab, information can be requested by funding year using facility, funding type, region, or M&O district filters. Funding balances, sorted by type, are then generated and displayed by funding availability, total projects and funding balance. In addition, Spending Plan queries can be further filtered by project type, meaning airfield project funding can be viewed separately from building, equipment, or M&O projects. All information exports to Microsoft Excel; individual years can be chosen to view. Additional query information is available in the

output, such as: primary status, tracking data, contingency year, airport identifier, projects by FAA work code, and notes.

Spending Plan information is useful to DOT&PF and FAA staff in a variety of ways. Standard website queries return funding balances by project type and year and the Excel export allows users to further summarize and sort queried data by available, allocated and remaining funding, funding type and fiscal year. It also provides a venue for project information without needing to request it ahead of time. Real-time project information is anticipated to show on the live site in mid-2019.

5.2.6 System Reporting

Phase I of the AASP focused heavily on data collection, with information requiring download into a large Microsoft Excel file and sorted manually, filtered, and manipulated based on user expertise. Other inventory data was recorded but not yet usable for reporting purposes. Phase II implemented new tools in the Reports tab to receive collected information and use it to analyze the aviation system and support future development. These tools are useful for performance measure reporting, assessing trends, and producing informative statistics for individual airports or at a district or regional level and are based upon collaboration between Statewide Aviation, Program Development, Design, and M&O throughout Phase II, including:

- 1 Airport Needs List and Needs Query:** These reports provide an in-depth view of airport needs system wide. Filters are available for region, district, and individual airport as well as FAA work code category, subcategory, M&O activity, and funding source. All information is hyperlinked on the webpage report as well as exportable to Microsoft Excel for further analysis.
- 2 Deficiency Reporting:** Deficiencies from the most recent inspection are gleaned from completed CIMP inspections to produce a report noting D and F ratings across chosen checklists. Charts display summary information for multiple locations and checklists.
- 3 Miscellaneous:** This page includes reports that stratify airport layout plan (ALP) and master plan approval dates; APEB nominations by category, year and type; pavement condition index (PCI) reports by deficiency range; and system runway lighting.
- 4 Performance Measures:** This page compiles individual airport scorecards or design or service objective data by region or statewide.
- 5 Query Tool:** An updated query tool provides additional search mechanisms on Community or Facility information and outputs to Microsoft Excel.
- 6 Statistical Reporting:** This report delivers annual revenue and operational costs for DOT&PF airports and mail, freight and passenger data.

Digitizing reports creates efficiencies and a dynamic, useful set of tools for all airport sponsors. These tools assist DOT&PF and local sponsors with data collection and create a meaningful and simply way to sort, filter and generate reports and track the performance of individual, multiple airports, or the entire system. The following sections provide further details on each report type.

5.2.6.1 Airport Needs List and Directory

Facility Needs Lists capture and track airport requests, from large capital projects down to minor maintenance items, and provide a comprehensive view. Needs are determined in a variety of ways; public requests, inspections, department staff, letter of correction or simply issues that arise throughout the year. Directory updates in 2018 included a second, larger version that displays an airport sketch, hours of operation, last major improvement, NPIAS number, and the ability to see which needs are already included in development projects. The Airport Needs List is offered on demand within the Reports tab of the internal portal, pulls information immediately after website changes or inputs, and creates a Microsoft Excel or Microsoft Word document.

In addition, the Needs Query produces information by DOT&PF region, M&O district or individual facility. Because the database is constantly updated, queries always reflect the most current information. This query proves very useful in comparing issues throughout an M&O district or region and extracts a Microsoft Excel file that includes need data and justification, associated planning level costs, origination, priority, and user input information.

5.2.6.2 Miscellaneous Reporting

Several reports are presented under the Miscellaneous tab, including: Airport Layout Plans (ALPs), APEB Nominations by Category, Master Plans, Pavement Condition Index (PCI), and Runway Lighting type. Website information for all reports is updatable within the Facility tab, and immediately updates the queries as information changes. All reports export directly to a Microsoft Excel file.

- 1 ALP:** This report yields all ALP date approvals by statewide, region, M&O district or individual facility. The official, approved date refers to the FAA approval letter date, included with completed plans.
- 2 APEB Nomination:** This report queries APEB nomination information by category (Airfield or Building), meeting year, and type (New, Reevaluated or Replaced nominations).
- 3 Master Plans:** This export produces a list of airport master plans by approval date, filtered by statewide, region, M&O district or facility.



4

PCI: This report creates a pavement overview with filters by region, M&O district or facility. Pavement conditions indexes filter by value ranges predetermined by Statewide Materials. For example, a user may query all Central Region facilities with PCI values of 55-59 to determine what airports have deficient pavement in need of rehabilitation. Report information is updated annually and housed in the Runways/Helipads subtab of each facility.

5

Runway Lighting: This report pulls directly from the 5010 FAA Airport Master Record database and depicts the type of lighting system on all public airports, by runway. Additional output includes edge intensity, runway ID, VGSI, REIL, and approach lights, as available.

Figure 5.8 | Needs Book Example with Sketch

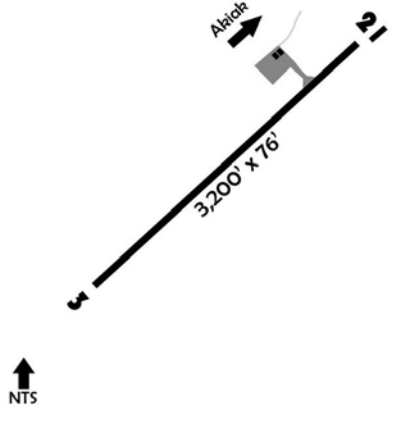
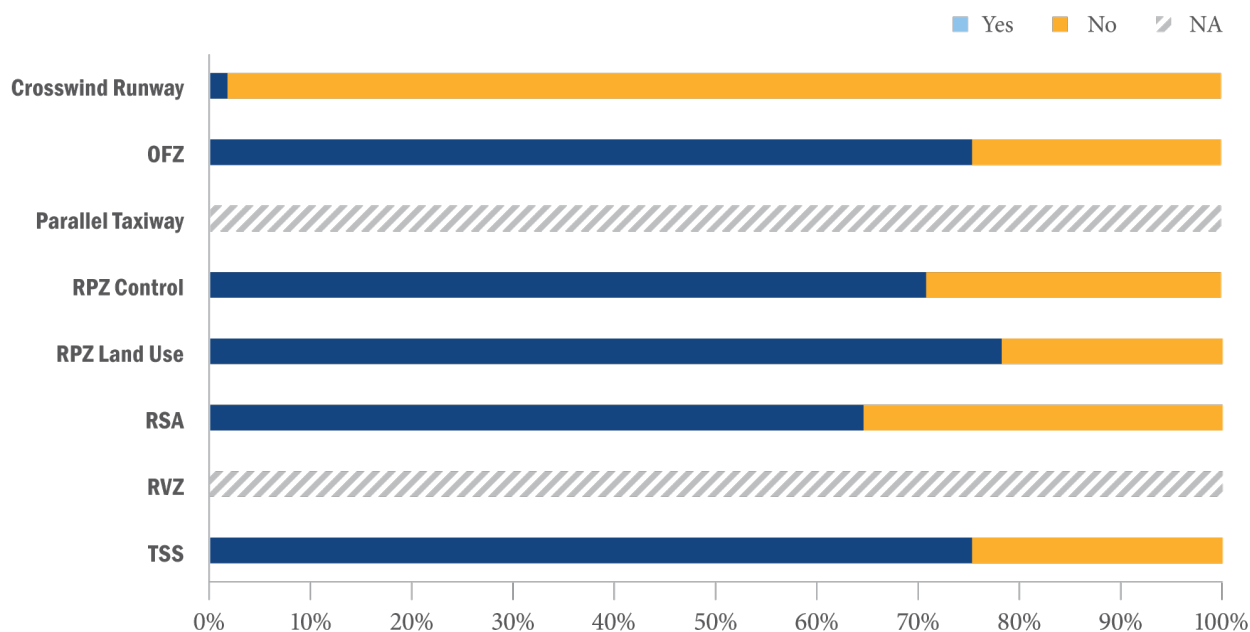
AKIAK (AKI)	
<div>AIRPORT DIAGRAM Akiak Airport (AKI) September 2018</div> <div></div>	<div>Runways: 03/21 - 3,200</div> <div>Surface: GRVL-G</div> <div>Lighting: MED</div> <div>Classification: Community Off-Road</div> <div>Air Carrier Hub: No</div> <div>USPS Hub: Yes</div> <div>Part 139 Cert: No</div> <div>Last Major Improvement: Construct SREB 3-02-0004-002-2003</div> <div>Airfield Manager: LAWRENCE DAVIS, (907) 543-2498</div> <div>CY16 Enplanements: 3,570</div> <div>Medical Facility: No</div> <div>School Facility: K-12</div> <div>On/Off Road: Off</div> <div>Borough: Bethel Census Area</div> <div>FY18 Revenue: \$0.00</div> <div>FY18 Ops Cost: \$28,665.14</div> <div>Last CIMP Inspection Date: 08/20/2014</div> <div>Hours of Operation: UNATNDD</div>
NEEDS:	
Building organization and cleaning	replace fuel tank signage and install security lighting
Construct new SREB	Runway, taxiway, and apron pavement rehabilitation
Construct Passenger Shelter	Test Akiak Need for Training
Construct Tie-Downs	Tree obstruction removal
Construct Toilet Facilities	Update ALP
Dust Control	Vandalism Issues
Grader	
Install ASOS or AWOS	
Install VGSI (PAPI)	
Loader	
MIRL Inoperable	
Obstruction Removal	
provide a portable emergency eye wash station	
Replace all cones and unlit markers	

Figure 5.9 | Performance Measure Scorecard Example



Note: Parallel Taxiway and RVZ performance measures are not applicable to all facilities and classes of airports.

5.2.6.3 Performance Measure Scorecards

As described in Chapter 3, performance measures help quantify how well the aviation system is performing, using a number of different factors. Measuring performance annually, once every five years or even less does not always accurately portray system changes. By including performance measure data inside the internal portal and using AFID data, scorecards document up-to-date performance. Available scorecards include: individual scorecards based upon AASP classification, statewide or region design measure scorecards, or service objective scorecards by statewide or region.

5.2.6.4 Statistical Reporting

Each facility contains a Statistics subtab with imported data from USDOT T-100. Annual updates occur for department revenue and operational costs, typically added in January of each year.

This subtab ties to statistical analysis in the Reports tab, displaying state fiscal year annual revenue and operational costs or enplaned and deplaned freight, mail, or passengers using federal fiscal year information. The standard state region, M&O district, and facility filters are included, with an additional option to query all districts within a region for a more inclusive look at activity. Reports specify a year or period of time, include a graph and tables, and print to Adobe PDF.

5.3 Aircraft Registration

With over 9,000 FAA-registered aircraft in Alaska, no method exists to track where they are based. Understanding the demands at each airport is an important step in developing the state's airport system. An aircraft registration design and website was created as part of Phase II, with the intention to facilitate better communication across the state, allow the department to share important aviation information with aircraft owners, including public notices about upcoming improvements and emergency alerts, and compile more accurate information on based aircraft. Information gleaned from the site would further assist the department in future system development projects. The FAA requires airports to update www.basedaircraft.com on a regular basis to account for aircraft based at a facility. One NPIAS requirement relates to the number and type of aircraft based at an airport or that use the airport on a regular basis. In addition, the FAA also uses this information in their biannual Report to Congress. Project implementation is not yet underway and will be reassessed in the future.

5.4 Air Carrier Compliance

Alaska Statute 02.40.020 Certification of Compliance of Air Carriers, mandates Part 121 and Part 135 air carriers who provide intra-state service within Alaska to maintain

a Certificate of Compliance. The statute authorizes the department to verify commercial air carriers are insured and requires them to publicly demonstrate they meet insurance coverage minimums. The Division of Statewide Aviation administers the Certificate of Compliance program. To improve efficiency, the AASP created a portal to not only capture data and automate much of the process, but allow carriers to do their annual update at their leisure rather than waiting until

business hours. In 2019, carriers will be able to visit the website to easily update their accounts. Payments will process through the website, further increasing productivity for DOT&PF staff and streamlining customer interactions. Once completed and approved, air carriers will receive their Certificate of Compliance electronically. The compliance website will debut mid 2019 at www.alaskaaircarriercompliance.com.

Figure 5.10 | Annual Revenue and Operations Cost

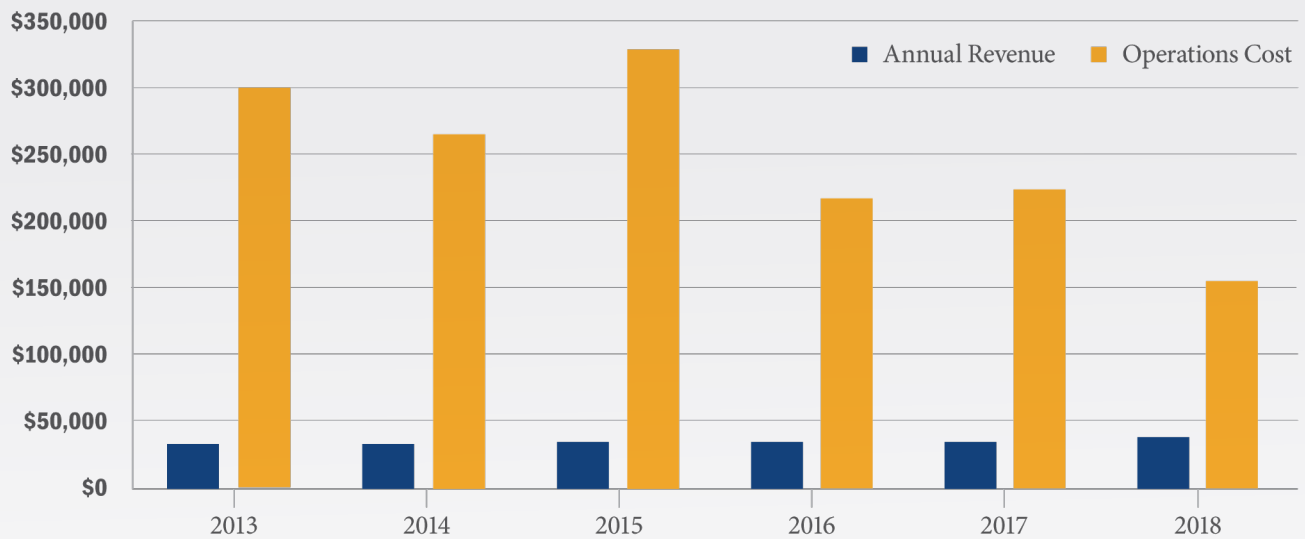
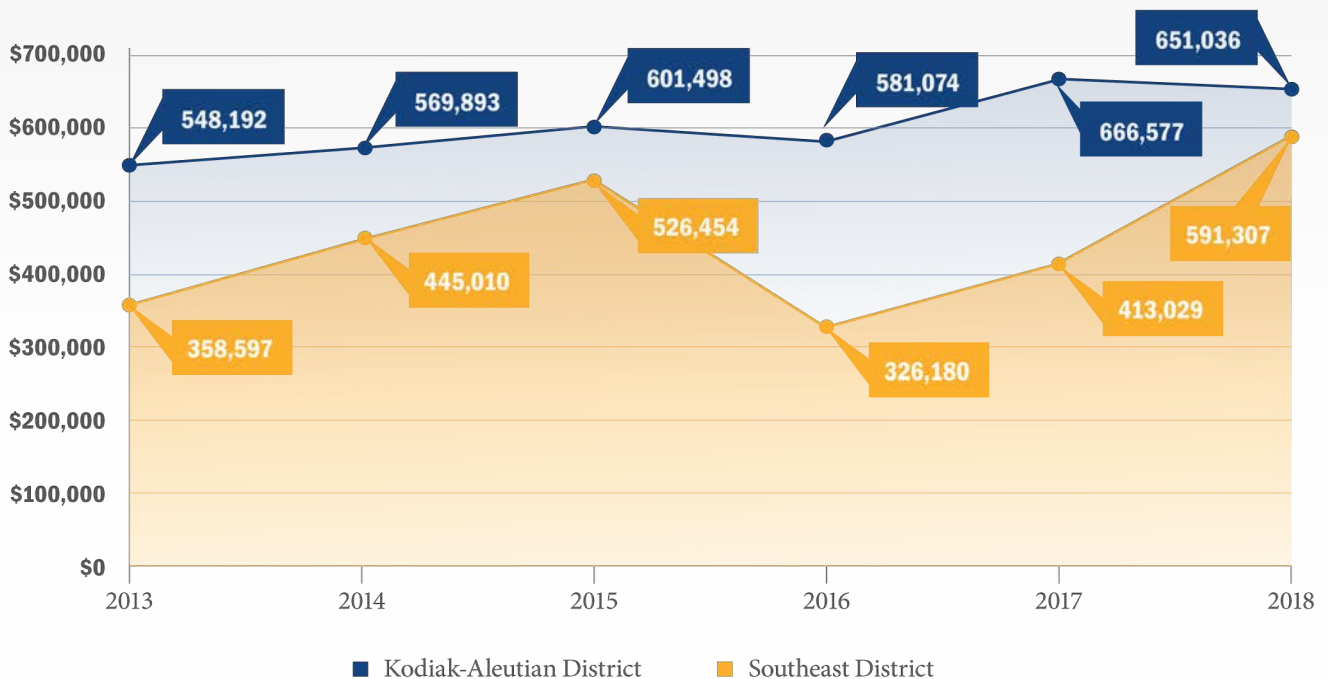


Figure 5.11 | Example of Annual Revenue for DOT&PF's Southcoast Region



Chapter 6. Phase II Components

6.1 AASP Work Groups

System planning heavily relies on stakeholder collaboration. Both plan phases include work group cooperation between the project team, DOT&PF staff from various divisions, and key stakeholders such as the FAA, industry leaders and experts, and various aviation groups like the Aircraft Owners and Pilots Association (AOPA), Alaska Air Carriers, Alaska Airmen, and Recreational Airstrip Foundation (RAF). Collaboration is often the key to success of all work groups. Phase II had four main focuses:

- 1 Flight Procedures Coordination
- 2 Aviation Weather Equipment
- 3 Backcountry Airstrips
- 4 Adopt an Airport

Work groups are typically comprised of about ten members and meet several times, with members providing input, expert guidance and feedback to the project team. Phase II topics were identified by recommendations from prior work groups or from different tasks within the AASP.

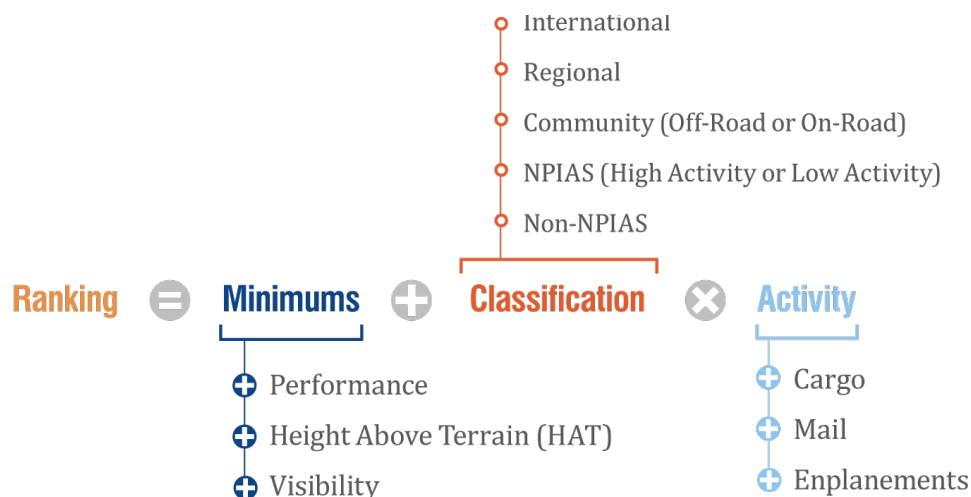
6.1.1 Flight Procedures Coordination Work Group

Airport approach procedures are vital to ensuring year-round air access to remote communities and contribute to a safer system for the flying public. Continuing from Phase I, this group focused on key airport infrastructure to develop new or improve existing approaches by prioritizing locations missing aeronautical surveys, with the intent to increase the number of LP and LPV approaches across the airport network. The work group researched airports that met a specific set of criteria, including: airports with existing aeronautical surveys, runway lighting, minimum runway length, and availability of weather reporting. Work group members included representatives from: the Alaska Airmen, Aircraft Owners and Pilots Association (AOPA), Alaska Air Carriers Association, FAA (locally and nationally), and other local pilots and industry leaders.

Unsurprisingly, the most common missing component was certified weather reporting. FAA recommended installation of automated weather reporting stations at locations with existing instrument approaches. This group morphed into the aviation weather work group to continue efforts to advance approaches and safety throughout Alaska.

A total of 21 airports, with existing surveys, were recommended to the Regional Airspace Procedures Team (RAPT) in fall of 2014 as priorities for approach development by the work group (**Appendix D**). The work group prioritized those without existing surveys using a mathematical equation and stakeholder input (shown in **Figure 6.1**).

Figure 6.1 | Prioritization Equation



6.1.2 Aviation Weather Work Group

The Flight Procedures Coordination group previously identified the lack of reliable site-specific aviation weather information across the state. This resulted in the creation of a new working group focused exclusively on weather.

Membership in the work group included representatives from the aviation industry, organizations and staff from the FAA, DOT&PF, the National Oceanic and Atmospheric Administration (NOAA), and the National Weather Service (NWS). The work group met four times over the span of 18 months and presented its findings at the 2017 Alaska Air Carriers Association Annual Conference and Tradeshow in Anchorage.

All weather information that pilots use in making their decisions can be classified as either Approved or Advisory. Title 14 of the Code of Federal Regulations (CFR) and the Federal Aviation Administration (FAA) Order 8900.1 set the regulatory requirements for “Approved Aviation Weather” in relation to pilots and aircraft operators (Federal Aviation Regulations [FAR] Part 91, 135, 121, and others) and defines what type of weather is approved for use by pilots and aircraft operators. One hundred and sixty (160) approved weather observation stations exist in Alaska as of May of 2016. A location inventory is found in **Appendix E**. The work group prepared the Alaska Weather Equipment Needs Summary. This document highlighted Alaska’s aviation weather system, agency involvement and how reporting

works, the different types of weather sensors and stations, their benefits and cost, and how funding in Alaska differs from other western states.

Alaska needs approximately two hundred more stations to replicate the density of weather reporting in the contiguous United States. Between 2011 and 2013, an additional nine previously staffed stations closed in Alaska.

Sixty Alaskan public airports lack certified weather reporting as of 2016. Twenty-one of these airports have existing instrument approach procedures, but no on-airport weather reporting. Weather reporting from airports within 75 NM and 6,000 vertical feet may be used for instrument operations other than Part 135, with reductions in minimums taken based on the distance. For Part 121 and 135 operators to utilize the instrument approach weather must be located onfield. Kyle Christiansen, FAA Flight Procedures Team, assisted the work group with an analysis identifying the exact distance from each airport with an instrument approach procedure to the closest weather source. The list was ordered in priority from furthest weather source to closest.

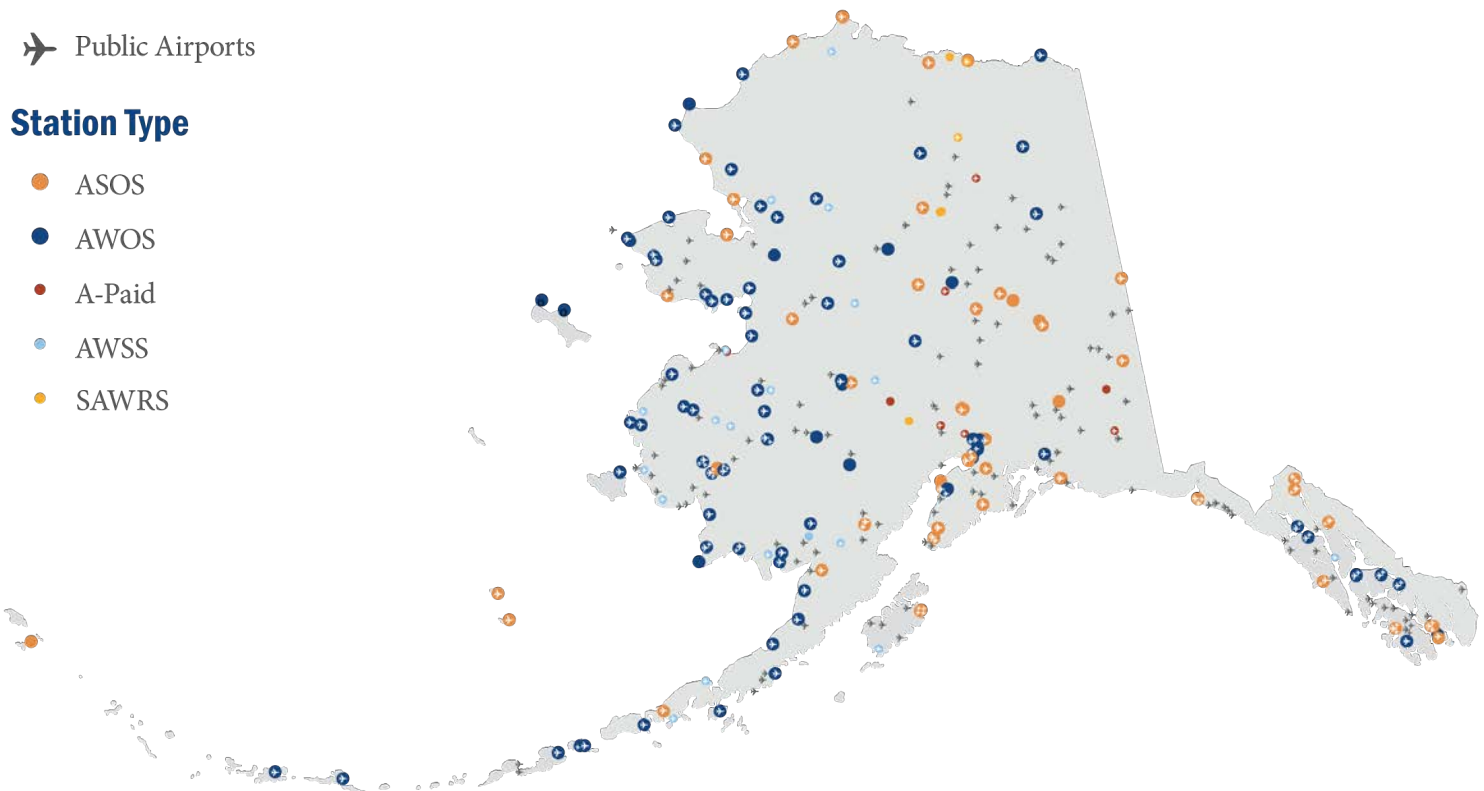
The work group prepared a prioritized list of the 21 site-specific recommendations for installation of new airport on-field weather reporting equipment at airports that have instrument approach procedures. To view the needs summary and equipment recommendations, please refer to: www.alaskaasp.com.

Figure 6.2 | Weather Sites in Alaska

✈ Public Airports

Station Type

- ASOS
- AWOS
- A-Paid
- AWSS
- SAWRS



6.1.3 Backcountry Airstrip Work Group

Backcountry airstrips are a vital component of the aviation system. Alaska's vast size, considerable remote public and private lands, lack of alternative access, and large distances between more developed airports make backcountry airstrips particularly important. These airstrips provide access to remote residential, recreational, and industrial uses as well as emergency landing areas. Phase II examined this aspect of the aviation system to ensure future preservation opportunities remain supported.

DOT&PF formed a Backcountry Airstrips Work Group, comprised of stakeholders from the aviation industry, aviation organizations, and FAA and DOT&PF planners. The work group met and reviewed analysis four times. The group agreed on several main focuses, including starting a backcountry airstrips inventory, identifying current impacts, and guiding future preservation decisions to enhance this important component of Alaska's airport system.

For purposes of the work group, backcountry airstrips are defined as airports that have been improved or marked as landing areas, are open to public use, are ineligible for federal funding, not primarily associated with a community, and are generally remote. While most backcountry facilities are not part of the NPIAS and often federally ineligible, the FAA recognizes their importance, impact and contribution to the NAS, the flying public, and aviation systems across the country.

The work group developed a web-based backcountry airstrip user survey to identify issues regarding the use and importance of backcountry airstrips. About 70 percent of survey respondents reported using backcountry airstrips on a year-round or seasonal basis. Primary issues reported were potential loss or closure and the physical conditions, maintenance and safety of the airstrips.

Respondents mostly reported using the airstrips for hunting and non-hunting recreation, as an emergency landing strip, and for access to nearby communities and adjacent property.

Results of the survey are summarized in a brochure on the AASP website (www.alaskaasp.com).

6.1.4 Adopt an Airport Work Group

The backcountry survey identified 35 percent of pilots are concerned with physical conditions, maintenance and safety of airstrips in Alaska. With many places unmaintained, public feedback expressed strong interest in volunteering. This prompted the creation of an Adopt an Airport program, recognizing additional work may be required during Phase III of the plan. The project team researched similar programs, such as DOT&PF's Adopt-a-Highway program, as well as programs in Washington, Montana, Texas, and Minnesota and presented findings to the work group in December of 2018. Project team research includes a program flow chart, a potential task list for volunteers, and draft program materials. Further collaboration will continue in Phase III.

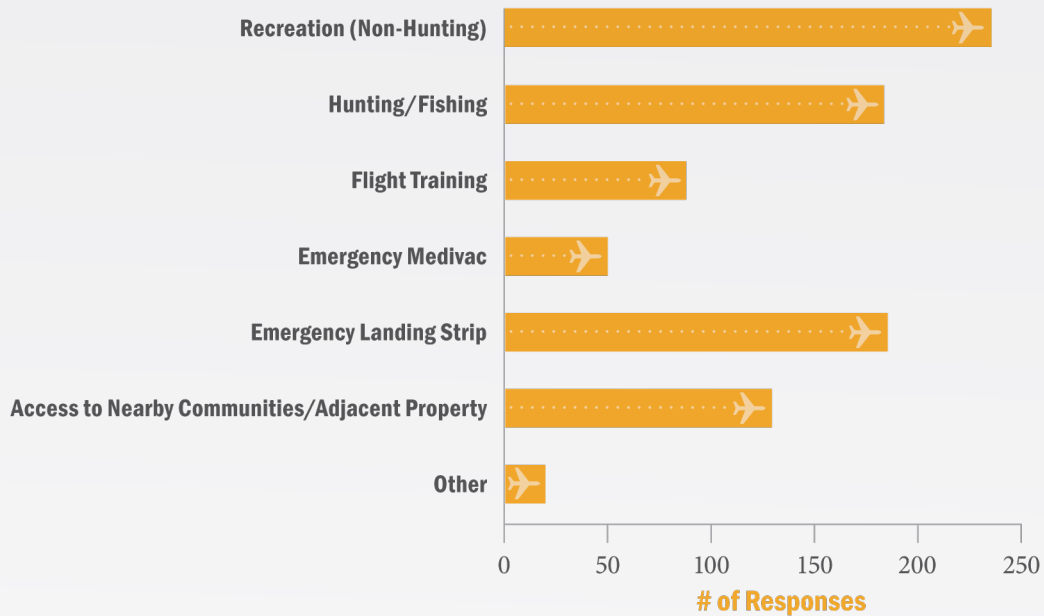
Figure 6.3 | Backcountry Airstrip Inventory

Location	Airport Name
Aleknagik	Tripod
American Creek	American Creek
Anchorage	Bold
Basin Creek	Basin Creek
Bear Creek	Bear Creek 3
Bear Lake	Johnsons Landing
Black Rapids	Black Rapids
Christochina	Christochina
Clear	Clear Sky Lodge
Clearwater	Clearwater
Cooper Landing	Quartz Creek
Copper Center	Copper Center 2
Eureka Creek	Eureka Creek
Eva Creek	Eva Creek
Fairbanks	Gold King Creek
Feather River	Feather River
Glacier Creek	Glacier Creek
Horsfeld	Horsfeld
Jakolof Bay	Jakolof Bay
Kantishna	Stampede
Kasilof	Kasilof
Koggiung	Koggiung
Kulik Lake	Kulik Lake
Lawing	Lawing
Livengood	Livengood Camp
McCarthy	Jakes Bar
Middleton Island	Middleton Island
Nakeen	Nakeen
Pilot Point	Ugashik Bay
Purkeypile	Purkeypile
Quartz Creek	Quartz Creek/Kougarok
Rainy Pass	Rainy Pass Lodge
Salmon Lake	Salmon Lake
Sheep Mountain	Sheep Mountain
Summit	Summit
Tatitna	Tatitna
Tazlina	Tazlina
Thompson Pass	Thompson Pass
Totatlanika River	Totatlanika River
Umiat	Umiat
Yakutat	Alsek River
	Dry Bay
	East Alsek River
	Harlequin Lake
	Situk
Yankee Creek	Tanis Mesa
	Yankee Creek 2
Yukon Charley Rivers	Coal Creek

Note: This is not a comprehensive inventory of all backcountry airstrips in Alaska. This lists represents those airstrips identified by the Backcountry Airstrip Work Group.

Figure 6.4 | Backcountry Airstrip Polling Responses

Q: Why are backcountry airstrips important to you?



Q: What issues concern you the most regarding backcountry airstrips in Alaska?

- A:**
- Loss or closure of airports
 - Physical conditions, maintenance, safety
 - Lack of information about the airports
 - Other Reasons

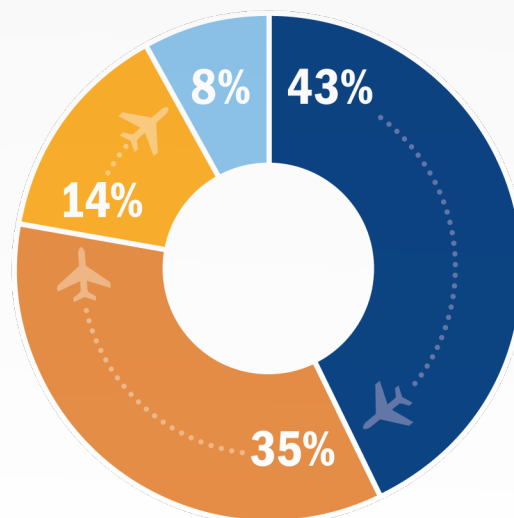
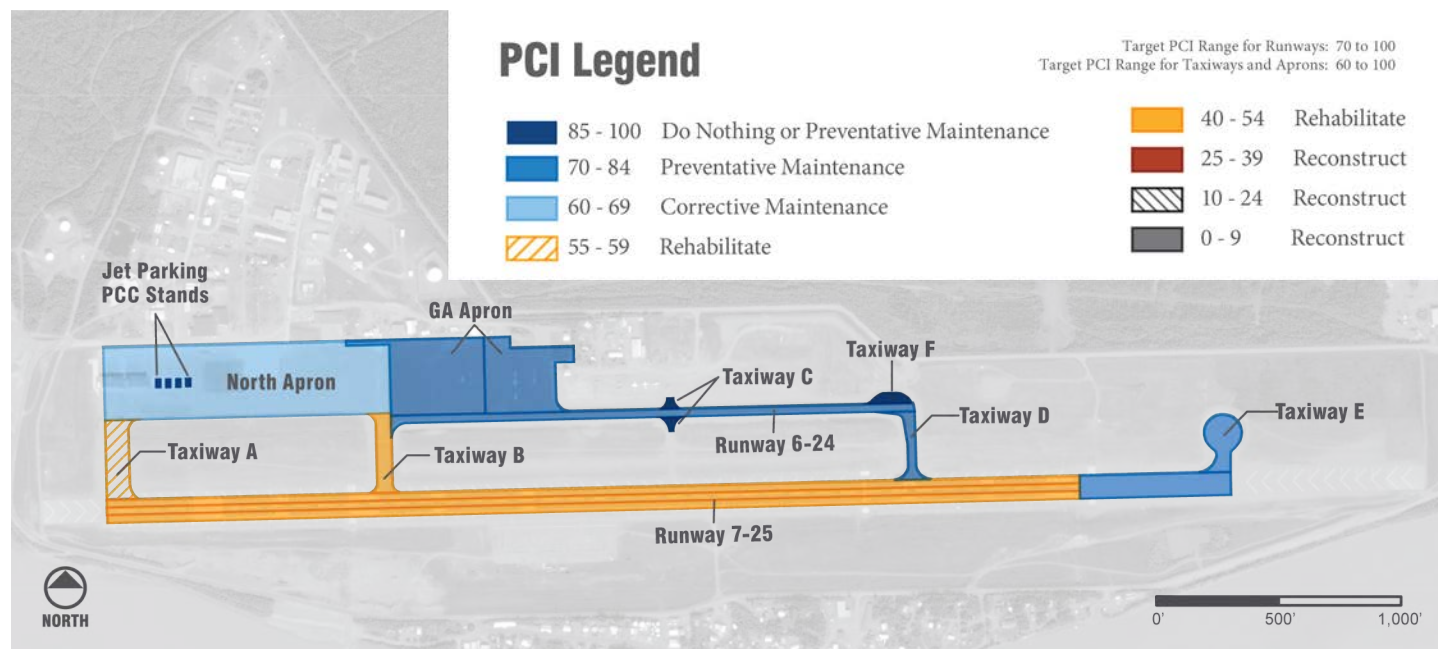


Figure 6.5 | Pavement Condition Index Example



6.2 Pavement Management Program

The Airport Pavement Management Program is a rolling, three-year inspection program assesses all paved, public airports across the state to assist decision makers in finding cost-effective strategies for maintaining, upgrading, and operating the pavement network.

6.2.1 Pavement Condition Index (PCI)

Airport pavement inspections in Alaska involve analysis of surface conditions every third year to determine any changes and plan accordingly. This includes visual assessment of representative sample units to quantify the extent and severity of various distresses. A microPAVER database then generates a Pavement Condition Index, or PCI, rating based on analysis and pavement surface age. PCI ratings have eight target ranges that coincide with general pavement recommendations. For example, a runway rated at 68 falls into the Corrective Maintenance (60-69) category, meaning planning for the next pavement project should begin in the near-term. A taxiway rated 95 falls into the Do Nothing or Preventative Maintenance category, meaning it is relatively new and not currently in need of a capital project repair.

PCI ratings are a valuable resource for airport planners to use when determining future pavement projects across the system. Current information and general pavement recommendations, housed on the internal side of the AASP website, provide input on average rates for runways, taxiways, and aprons as well as pavement square footage per airport. New reporting tools are now available to analyze multiple facilities' pavement status based on DOT&PF region or M&O district.

6.3 Pavement Classification Number (PCN) Reporting

The AASP compiled PCN reports for 20 DOT&PF airports and 2 local sponsors, following FAA Advisory Circular (FAA AC) 150/5335-5C Standardized Method of Reporting Airport Pavement Strength. The final PCN number is added to the 5010 Airport Master Record and assists airport operators in deciding which aircraft can safely operate on an airport, without damaging the pavement or the aircraft. The AASP completed PCN reports and master record updates for the following airports:

Paved Airports 	
Adak	King Salmon
Aniak	Kodiak
Bethel	Merrill Field (<i>local sponsor</i>)
Cold Bay	Petersburg
Dillingham	Sand Point
Galena	Sitka
Gustavus	Unalakleet
Homer	Unalaska
Hoonah	Valdez
Kenai (<i>local sponsor</i>)	Wrangell
Ketchikan	Yakutat

6.3.1 PCN Background

PCN reporting is included within the Pavement Management Program. Analysis is compared to PCI data and assists planners and designers in prioritizing pavement projects across the system.

Adopted by the International Civil Aviation Organization (ICAO) in 1977, this method is known as the Aircraft Classification Number (ACN) – Pavement Classification Number (PCN). ACN-PCN is a single, international method of reporting pavement strengths at airports. The ACN defines the effect of an aircraft on different pavements based on aircraft weight and configuration (tire pressure, gear assembly, etc.), pavement type (flexible or rigid), and subgrade strength. The PCN expresses the load carrying capacity of a specific airport's pavement. Under the ACN-PCN system, an aircraft can safely operate on pavement at a specific airport if that aircraft has an ACN number equal to or less than the PCN number. A single airport can have multiple PCN numbers across different surfaces like runways, taxiways, and aprons; this is due to varying pavement age, usage, and weather conditions.

6.3.2 Methodology

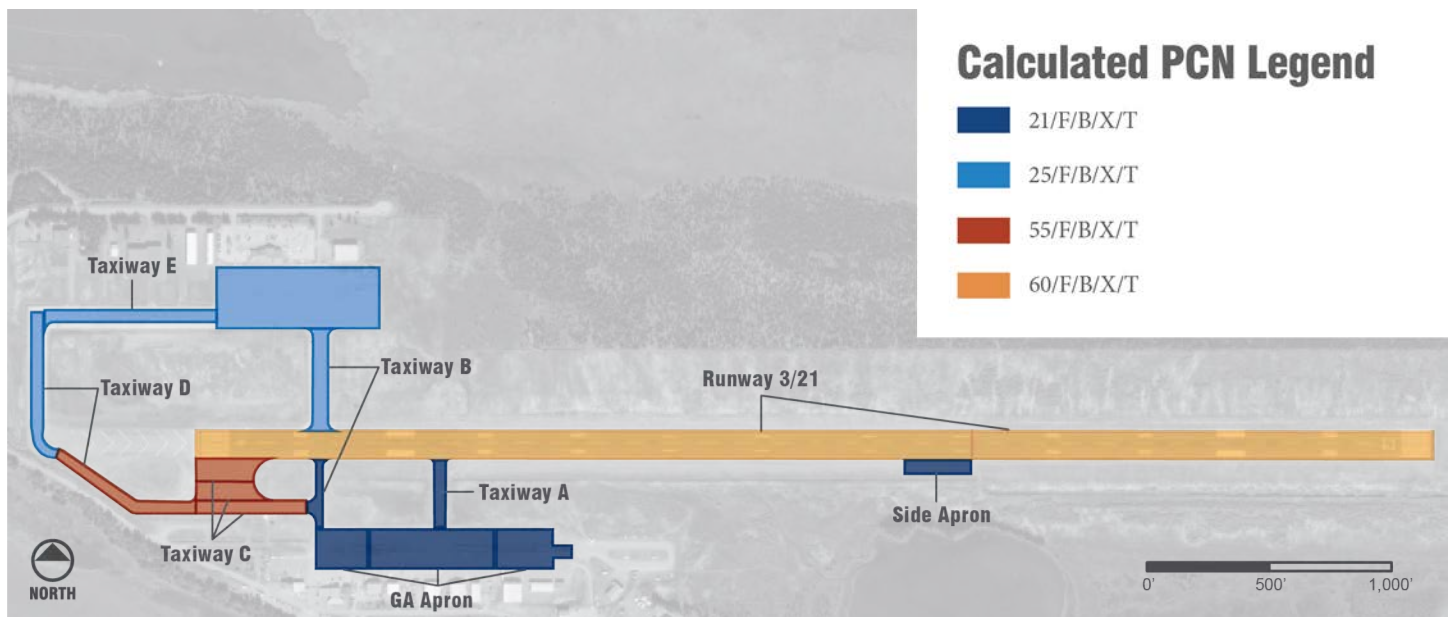
There are two methods used to evaluate and report a PCN, the Using method or the Technical Evaluation method. The

Using method uses the ACN of the largest allowable aircraft and reports that value as the determined PCN. The Technical Evaluation method interprets a combination of aircraft loading conditions, pavement support conditions and frequency of aircraft operations to establish practical pavement strength. The accuracy of a technical evaluation is better than that produced with the Using aircraft procedure but requires a considerable increase in time and resources. To ensure accuracy the AASP used Technical Evaluation method for this study.

6.3.3 Results

PCN's vary considerably across the airport network due to a wide range of traffic levels, fleet mix, and pavement and subgrade thicknesses, and climate conditions. Many results showed no required weight restrictions while some recommended them for the primary runway/taxiway system (such as Cold Bay, Dillingham, and Gustavus). Other analysis proposed restrictions for selective pavements designed to only support smaller aircraft (ex. Bethel's crosswind runway). PCN data is used to guide airport managers and maintenance staff when considering airline requests to use an airport, often with large aircraft. The reports also assist airport sponsors in determining if weight limitations mean an airport needs to upgrade its pavement or plan for a near-term capital improvement project.

Figure 6.6 | Pavement Classification Number Example



Chapter 7. Economic Contribution to the Aviation Industry

The Economic Contribution of the Aviation Industry to Alaska's Economy provides an update from the prior 2011 study. This update includes direct and indirect economic impacts regarding aviation in Alaska AIP program funding supporting future development projects and details the importance of Alaska's airport system to its residents. Data is based on 2017 statistical information and a survey that targeted all public and private airports throughout the state, DOT&PF leaseholders and nearly 800 residents. This report depicts case studies regarding access to healthcare, tourism and remote areas and air cargo industry trends and discusses the importance of the Bypass Mail and Essential Air Service programs. Other topics include current aviation activity and technology trends and future challenges for Alaska aviation.

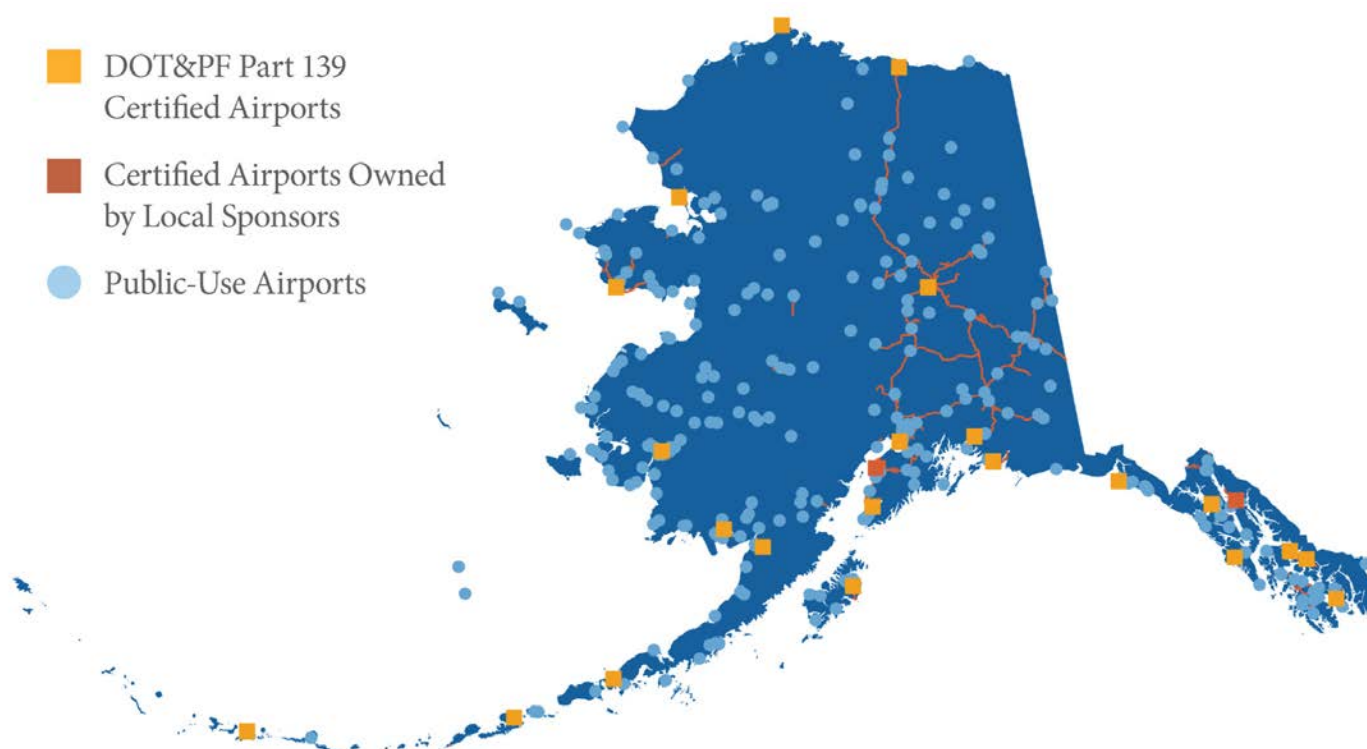
Analysis indicates the aviation industry generated nearly \$3.8 billion in economic activity throughout Alaska's airport system—an amount equal to 7.1 percent of the state's \$52.8 billion gross state product (GSP) in 2017. The GSP decreased by 0.9 percent since 2007, when the industry

generated approximately 8 percent of GSP. The total economic contribution is comprised of "on-site" expenditures such as payroll and maintenance/operations activities and "off-site" spin-off spending from aviation employees and businesses who support on-site entities.

Other significant findings from the study include:

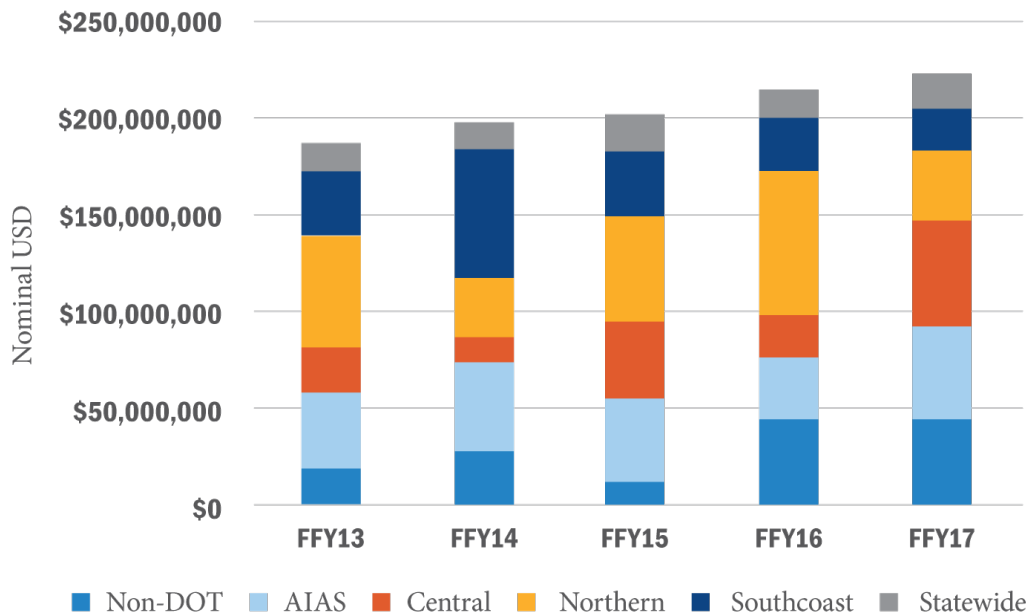
- 1 Compared to other economic sectors in Alaska, the aviation industry would be the 6th largest in the state, ahead of Construction and Manufacturing, Trade and Hospitality and Leisure.
- 2 In 2017, AIP funding in Alaska contributed a total of \$222.5 million and nearly 2,600 jobs.
- 3 The aviation industry contributed more than \$3.8 billion to the state economy in 2017.

Figure 7.1 | Alaska's Airport System



Source: Alaska DOT&PF, 2018.

Figure 7.2 | Annual AIP Grant Funding by DOT&PF Region



Source: Alaska DOT&PF, 2018

The study identifies the following trends:

- 1 Passenger enplanements and air cargo have recovered and grown past pre-recession levels, while GA operations and new aircraft shipments continue a steady decline.
- 2 The national pilot population declined at an average annual rate of 1.61 percent between 2008 and 2017. Due to new regulations greatly increasing the cost of flight training, as well as increasing costs for aircraft, fuel, and insurance, this downward trend will continue.
- 3 Elements of NextGen, such as ADS-B are becoming increasingly prevalent and will soon be required for certain airspaces.
- 4 The reach of wide area augmentation services (WAAS)/GPS into Alaska has expanded substantially in recent years, allowing additional instrument approaches throughout the state.
- 5 The shift to unleaded aviation fuel will have far reaching impacts on aviation in the state.
- 6 Climate change may also affect the safety of Alaska's airports. Several airport managers noted difficulty with degraded conditions, such as runway slumping or settling.
- 7 Airport leaseholders are concerned about a shortage of qualified labor and the cost of aircraft fuel.

Aviation contributes significantly to economic activity, employment and the quality of life throughout Alaska. Air transportation will continue to be the most efficient means for moving people, goods, and materials into and out of remote communities for the foreseeable future. Looking ahead, the future is not without challenges, but reliance on air transportation will continue and aviation safety will improve.

The full Economic Impact Study is available for review at: www.alaskaasp.com/documents/.

Chapter 8.

Essential Air Service (EAS) & Bypass Mail Programs

EAS is a federally funded program implemented after the deregulation of the U.S. airline industry in 1978. The program ensures a minimum level of commercial air service continues to be available in rural areas across the country. The program ensures that rural areas across the country maintain a minimum level of commercial air service. Remote communities depend on the program for affordable travel. There were 237 Alaska communities on the original list of EAS-eligible communities. The EAS list of eligible communities is updated multiple times per year, and as of May 2018, 62 Alaska communities receive subsidized air service. The average subsidy per community was \$357,927, which is far less than the \$2,553,332 average of subsidized communities in the Lower 48 (*Hall et al. 2015, USDOT 2018*).

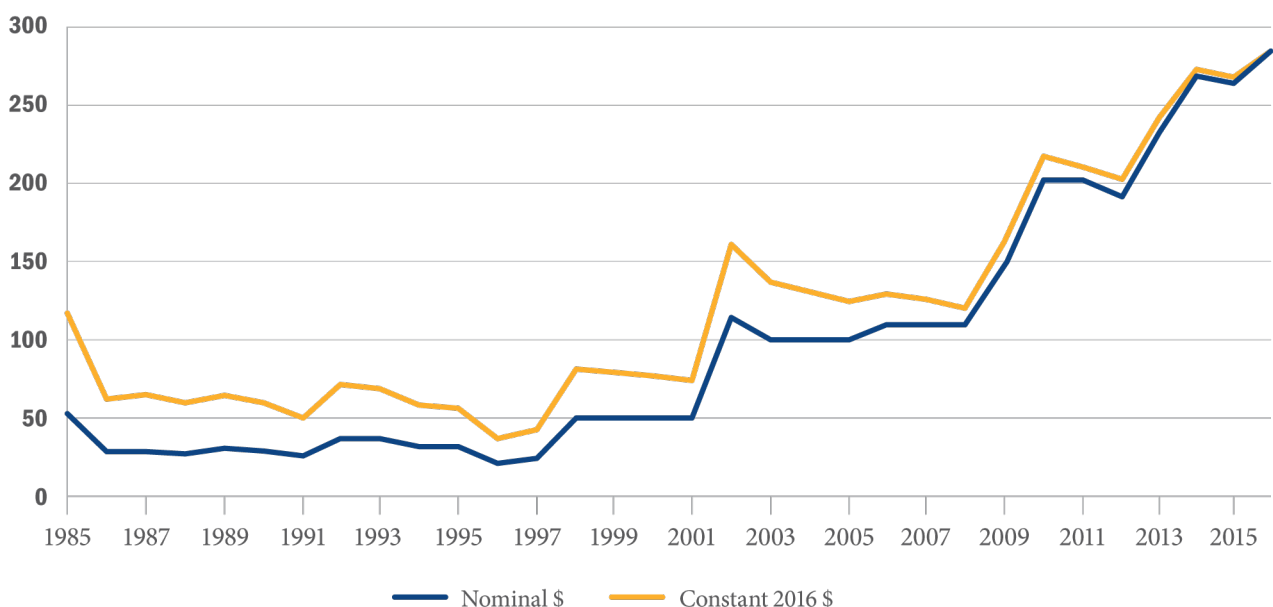
The Alaska Bypass Service program is a system administered by the United States Postal Service that allows bulk shipments of palletized goods, largely foodstuffs, to be sent to rural Alaska communities. These shipments “bypass” usual USPS postal sorting and handling, going straight from shipper to the recipient. Bypass mail is classified as non-priority parcel post mail by the USPS, which is a ground-based service, but is delivered via air to Alaska’s communities. The ABS program

is unique to the state and was designed so that goods and supplies could be delivered to Alaska’s communities efficiently and affordably.

The communities included in the bypass mail program are defined by United States Postal Service according to statutory authority. The bypass mail program provides community residents access to fresh food and basic supplies that they otherwise could not afford with higher air freight prices. Moreover, the program means more frequent air passenger service and lower fares for residents because the revenues air carriers receive from the program help cover their operating and fixed costs (*Northern Economics, Inc. 2013a*).

Removing the ABS program would result in increased passenger fares and/or lower flight frequencies for many rural Alaskans. Northern Economics, Inc. (2013a) estimated the overall increase in average ticket fares to replace lost revenues from the program, if it was scaled down. If revenues dropped by 50 percent (or roughly \$50 million), ticket prices would need to increase 5 to 10 percent if carriers evenly distributed cost across all passengers (i.e. likely routes to ineligible as well as eligible communities). The Rural Service Improvement Act of 2002 attempted to modify the bypass mail program to

Figure 8.1 | Annual Estimated Cost of EAS Program, 1985-2016 (in Millions of \$)



Source: Tang, 2017



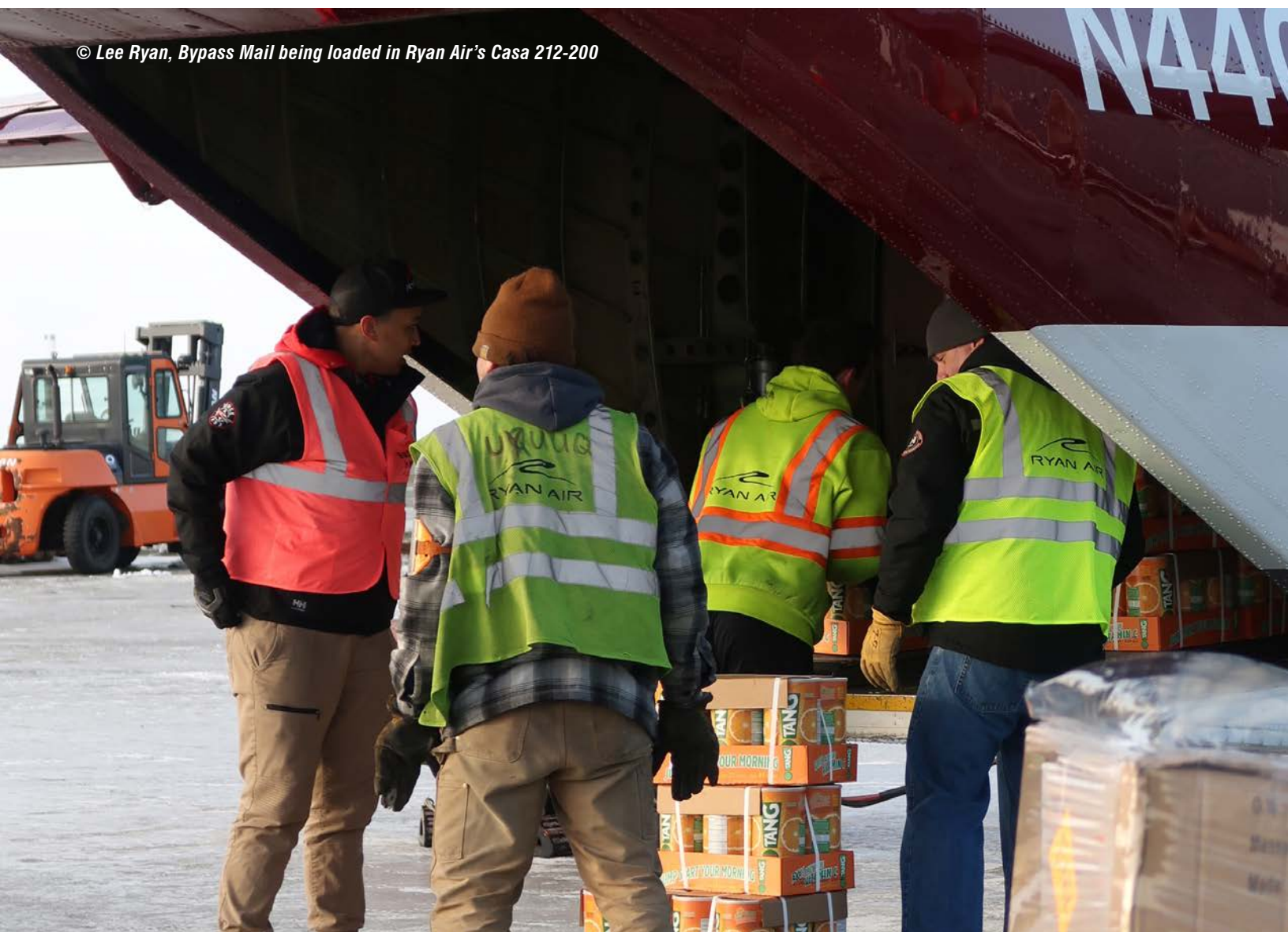
improve passenger air service and make Alaska's air carrier industry more efficient by excluding from the program carriers that did not provide sufficient passenger and air cargo service. Between 2002 and 2010, total estimated efficiency, as measured by average revenue ton miles per operating hour, increased more than 40 percent (*Northern Economics, Inc. 2013a*). At the same time, the number of participating air carriers declined dramatically. The result was a more efficient system, as measured by payload moved by a given unit of effort and air carrier profitability. However, the data shows limited gains in efficiency in more recent years.

The EAS and Bypass Mail service programs are similar in that they provide many of the same benefits to rural Alaska communities, namely passenger, freight, and mail carriage. In addition, they both help keep costs down for rural residents who daily deal with some of the highest prices for food, heating fuel, electricity, and transportation in the United States. However, there are no communities that benefit from

both the EAS and Bypass Mail service programs (Anchorage and Fairbanks interact directly with both programs but only as primary hubs). Alaska Bypass Mail service program communities are eligible for EAS program subsidies should the number of flights they receive fall below a prescribed level.

In combination, both the EAS and Bypass Mail service programs have long-term demographic consequences for the state by improving the daily lives of rural Alaskans. Over the past two decades, an average of 7,700 adults moved from a rural to an urban area in the state during each five-year period. This number represents about 11 percent of the rural population in Alaska (*Howell 2015*). Some rural areas recoup population losses through higher birth rates. However, in the absence of an economical and efficient mail system and passenger carrier network, it is likely that out-migration would increase at a pace that would soon leave many rural communities with insufficient populations to maintain basic public services, thereby creating a self-reinforcing cycle of decline.

© Lee Ryan, Bypass Mail being loaded in Ryan Air's Casa 212-200



Chapter 9.

Regional & Area Transportation Plans

In addition to high-level analysis, system planning delves into regional and area transportation plans to better understand current conditions and how to plan for them. Due to the vastness of Alaska's airport system, both geographically and logistically, area plans are essential for a closer look into specific areas. These plans are often multi-modal, with aviation analysis funded by the system plan and surface and water transportation by other funding sources. Phase II of the AASP focused on several key areas in Alaska, including the Southwest Alaska Transportation Plan (covering the Aleutian Chain and Dillingham and Kodiak areas), the Yukon-Kuskokwim Delta Plan (Bethel and surrounding areas), and the Northwest Alaska Transportation Plan (Kotzebue, Nome, Barrow, and more northwest areas).

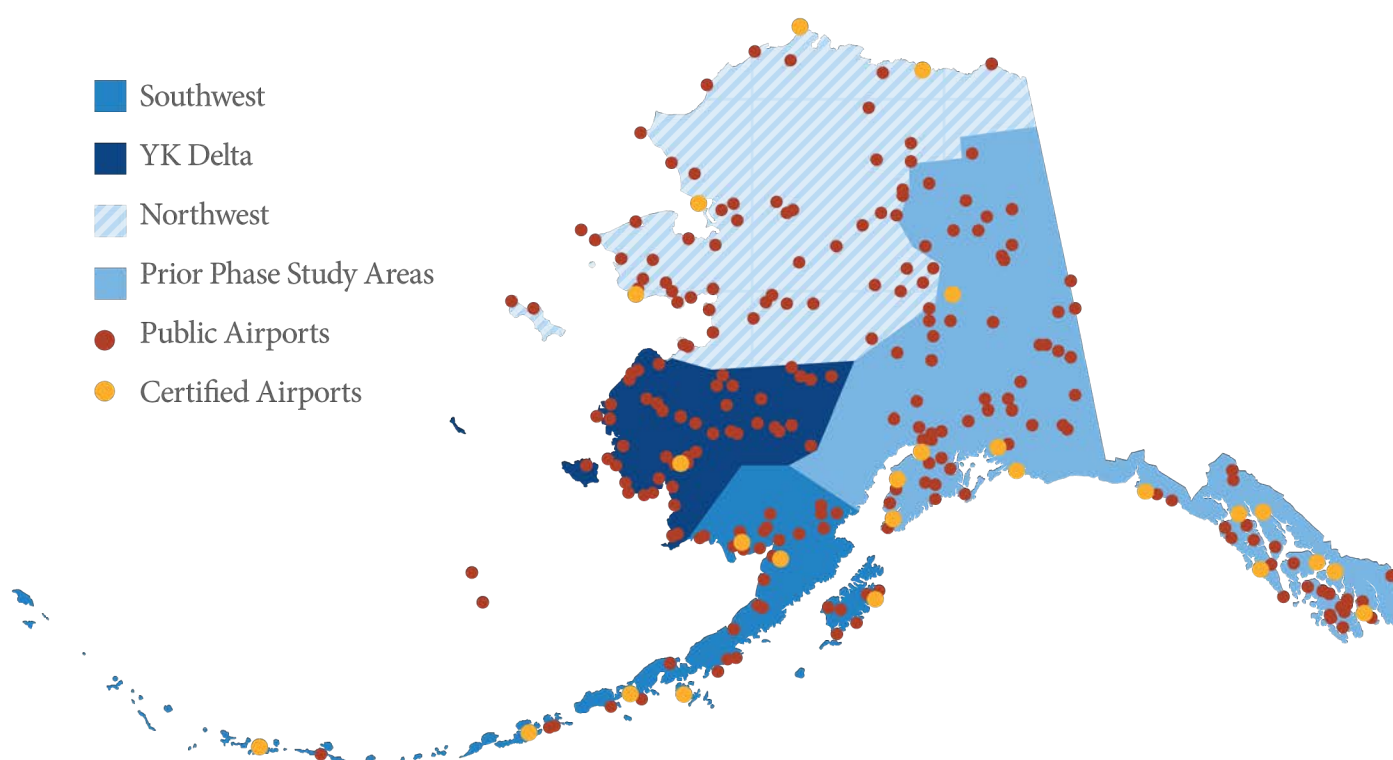
These sub-plans provide analysis that feeds into the AASP; which, in turn, feeds into the Alaska 2036 Long-Range Transportation Policy Plan (LRTP), updated by DOT&PF in 2016. The LRTP aligns with State policy and addresses a multitude of needs for all modes of transportation, including

aviation. This plan interlinks with the AASP to help identify and prioritize projects across Alaska's Transportation Network. Two regional plans are finalized within Phase II and the Northwest Alaska Transportation Plan is ongoing. See the following section for additional plan details.

9.1 Area Transportation Plans

Phase II conducted the 2017 Southwest Alaska Transportation Plan (SWATP) and 2018 Yukon-Kuskokwim Delta Transportation Plan (YKTP) updates and incorporated both into the LRTP. These area plans were funded by both the FAA and Federal Highway Administration (FHWA) and provide recommendations for future transportation development across Alaska, allowing communities, tribal and city governments, and funding agencies to use analysis as a mechanism to secure future project funding. Area plans are not fiscally constrained and assess needs across the system at a high planning level. Both plans prioritize and recommend projects that improve transportation and enhance public safety for each mode of

Figure 9.1 | Alaska Transportation Plans



transportation (aviation, surface and marine) analyzed with consideration of the remoteness of the regions. The analysis in the plans describe the improvements made since the last regional plan. Overall the infrastructure has improved in both regions over the last one to three decades.

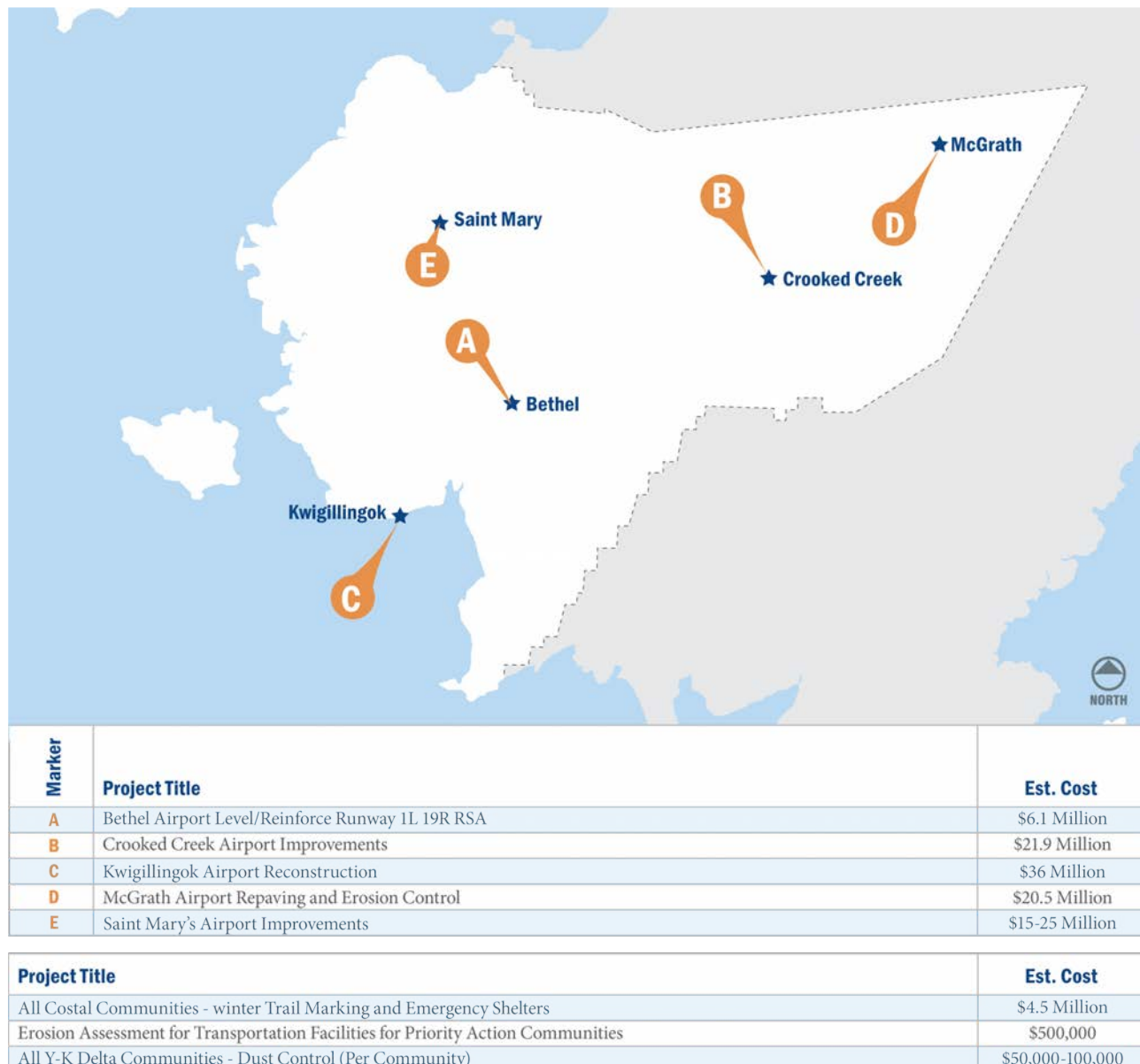
Phase II also includes an on-going study for the Northwest Alaska Transportation Plan. This plan is expected to conclude in 2019.

9.1.1 Yukon-Kuskokwim Transportation Plan (YKTP) Update

The YKTP inventoried transportation facilities and issues, documented transportation needs, and recommended

regionally significant projects, or projects that were found to be significant to the health and growth of the region, for each mode of transportation (aviation, marine, and surface) in the Yukon-Kuskokwim region. The plan identified transportation needs and project nominations through an extensive public involvement effort, with public meetings held in Bethel, St. Mary's, Emmonak, and McGrath. The planning team interviewed a broad range of regional stakeholders, including the Association of Village Council Presidents (AVCP), the Bureau of Indian Affairs (BIA), DOT&PF aviation and surface transportation staff, and aviation and transportation providers.

Figure 9.2 | YKTP Update and Recommended Projects



The same four planning goals (safety, system preservation, connectivity, and economic value) as the SWATP guided identification of regionally significant projects in the area. One hundred and seven (107: 40 aviation, 40 surface, and 27 marine) regionally-significant project nominations were evaluated using evaluation criteria. A regionally significant project is a transportation project that is on a facility which serves regional transportation needs. The evaluation criteria consisted of scores numbered 1-4, tied directly to the four goals (safety, system preservation, connectivity, and economic value). This criteria was used to evaluate and rank the projects. An in-depth report of the 2018 YKTP Update, including a listing of recommended projects, is available on the DOT&PF website under Statewide and Area Transportation Plans. Recommended aviation priority projects included:

- 1 Bethel Airport Level/Reinforce Runway 1L -19R RSA
- 2 Crooked Creek Airport Improvements
- 3 Kwigillingok Airport Reconstruction
- 4 McGrath Airport Repaving & Erosion Control

5 Saint Mary's Airport Improvements

The study analysis revealed improvements in the transportation facilities last studied in 2002. For example, in 2002, 21 of 45 Community Off-Road airports were less than 3,000' long. In 2014, only eight airports remain shorter than 3,000'. Several airports identified in the 2002 YKTP were proposed to be relocated to a new site with adequate land to extend the runway and meet FAA required safety standards, thirteen airports have relocated in the YK Delta since 2002. The recommendations of the YKTP focused on continued overall airport improvements and reconstruction projects versus construction of new facilities or expansion of existing facilities.

9.1.2 Southwest Alaska Transportation Plan Update

The SWATP study area covers four incorporated boroughs and two federal census areas: Aleutians East, Bristol Bay, Kodiak Island and Lake & Peninsula Boroughs as well as the Dillingham and Aleutians West Census Areas. Due to the lack of road system connections, Southwest Alaska is extremely dependent on air transportation (**Figure 9.1**).

Final recommendations comprised of 11 regionally significant projects, ones that impact several or more communities, and listed a total of 77 (35 aviation and 42 surface) projects as future development needs in Southwest Alaska. The significant aviation projects include:

Figure 9.3 | Southwest Alaska Transportation Plan Public Engagement & Methods

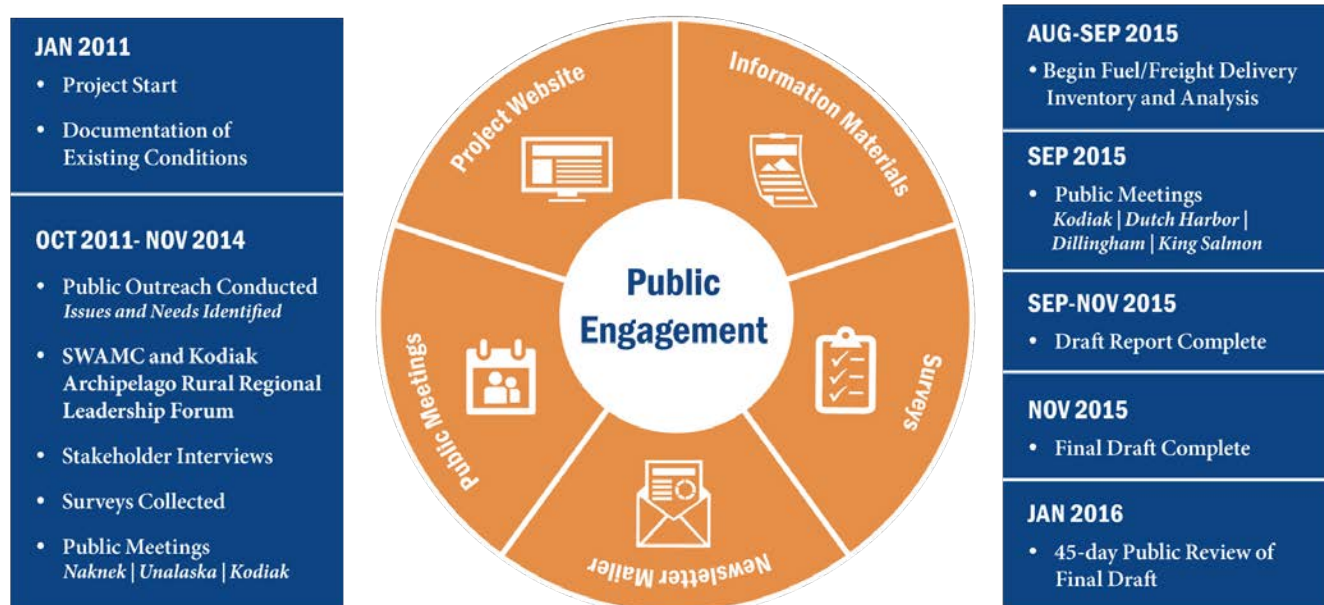


Figure 9.4 | Southwest Alaska Transportation Plan Recommended Projects



*To be determined

- 1 Dillingham Airport Pavement Rehabilitation
- 2 Togiak Airport Resurfacing, Lighting Replacement, & Snow Removal Equipment Building
- 3 Chignik Lake Airport Runway Resurfacing & New Snow Removal Equipment Building

- 4 Chignik Airport Resurfacing & Snow Removal Equipment Building
- 5 False Pass Airport Runway Resurfacing, Erosion Control & Lighting

The vision and goals determined by the project team guided the planning process. The vision simply focused on “transportation development decisions to maximize public benefits from

Figure 9.5 | Southwest Alaska Transportation Plan Final Report, April 2016



transportation investments in the region.” The four goals, concentrated on safety, system preservation, connectivity and economic value, were broadly defined to comply with future guidance updates.

The DOT&PF planning team conducted public outreach throughout the process (**Figure 9.3**), traveling to King Salmon, Dillingham, Unalaska, and Kodiak to determine transportation priorities in the region. Many stakeholders participated, including Borough, City and Tribal Governments, FHWA, BIA, Bristol Bay Native Association, Southwest Alaska Municipal Conference FAA, industry leaders and the Denali Commission.

Analysis determined several successes in the area. First of all, the average runway length in the region grew dramatically, increasing by an average of 500 feet per airport. About half of the 59 airports in the Southwest region have 3,300-foot runways, as recommended for Community Airports under the AASP. Another project evaluation included recommending new and improved LP or LPV approaches. Seven airports received a recommendation for improved approaches: St Paul Island, Manokotak, Adak, New Stuyahok, St George, Sand Point, and Kodiak, with two moving forward (Sand Point and St. Paul) since the implementation of the study. Other improvements include four community class airports and one local class airport that are now paved. Lastly, further research noted

Figure 9.6 | Northwest Alaska Transportation Plan: Study Area and Subregions, May 2019



airport expansion within Southwest Alaska is no longer the top priority for the DOT&PF. Instead, maintaining the system and ensuring airport surfaces are clear and in good condition ensures safety and effectiveness from now and into the future.

An in-depth report of the 2016 SWATP Update, including a listing of recommended projects, is available on the project website: Southwest Alaska Transportation Plan.

9.1.3 Northwest Alaska Transportation Plan

The Northwest Alaska Transportation Plan (NWATP) is a 20-year multi-modal transportation plan that will guide future public investments on transportation infrastructure in Northwest Alaska. This plan update identifies infrastructure improvements completed since the 2004 plan, current conditions, and future aviation infrastructure needs.

This planning effort conducts aviation analysis, to include public involvement activities, a broad regional aviation forecast, a careful analysis of existing route structures, and documentation of existing fleet mixes and any evolving or proposed fleet changes. It documents weather availability at airports and determines recommendations where having on-site weather capability would improve access and for any aviation infrastructure changes needed to accommodate area growth. This effort is currently underway and expected to finalize in 2020.

Chapter 10. Special Studies

Special studies examine relevant aviation topics that fall within the framework of a system plan and contribute to successful continuous planning. Analysis provides support for decisions on an airport's role in the NAS, look for creative methods to solve long-standing issues, and guide high-level recommendations. Topics often vary year to year and capture real time problems occurring in the aviation industry. Several Phase II focuses include:

- 1 Rural Airport Rates and Fees
- 2 Rural Airport Lighting Analysis
- 3 Northern Region Non-Aeronautical Land Use Study
- 4 Other minor studies include updating airport layout plans (ALPs) and aeronautical surveys

10.1 DOT&PF Rural Airport Rates & Fees

Maintenance expenses at DOT&PF owned and operated airports far surpasses revenue for a number of reasons. The majority of small airports off of the road system see minimal activity and have no based aircraft or leaseholders for revenue collection. Maintenance costs are extremely high in remote areas, especially with very few airports staffed with department personnel. In state fiscal year 2017, operating costs in the rural airport system were estimated at close to \$37.0 million while revenues reached only \$5.3 million.

The AASP worked with Statewide Aviation Airport Leasing to analyze the rates and fees structure of the rural airport system. The study, deemed timely and necessary by both the FAA and DOT&PF, sought to ensure that Airport Leasing's rates and fees

structure reflects existing market conditions and Fair Market Rent by reviewing and analyzing previous rates and fees setting methodologies, making recommendations for new rates and fees methodologies as well as solidifying methodologies for rates and fees adjustments. The analysis included surveys of local Alaska airport sponsors as well as other rural airport systems in the Pacific Northwest, concluding that Alaska's rates and fees structure is comprehensive and sophisticated. In summary, the study determined that the best course of action is to continue with the existing rates and fees structure, implementing industry standard methodologies for rates and fees adjustments.

10.2 Rural Airports Lighting Analysis

The goal of this special study is development of a consistent rural system approach to lighting improvements across Alaska's airport system. Through consultant services, this project assesses the current status of airport lighting in the rural system with an in-depth review of runway and approach lighting practices, analysis of potential benefits and costs of various alternative standards that might be implemented, and standard recommendations to support systemic decision-making regarding airfield lighting projects. This study is on-going.

10.3 Northern Region Non-Aeronautical Land Use Study

This study, under Phase II of the AASP, completed a land-use report that documented and evaluated non-aeronautical land uses on airports within DOT&PF's Northern Region. The project focused on airports with documented non-aeronautical land uses but also evaluated the entire region. The study explored opportunities to increase revenue and economic benefits through non-aeronautical development within the system and provided mechanisms to steer lease requests to appropriate locations while encouraging long-term planning.



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Chapter 11. Strategic Planning

Statewide Aviation's goal within the DOT&PF is to sustain and improve the quality of life throughout Alaska. This phase includes annual updates to the Strategic Plan for the rural airport system. Each year DOT&PF staff meet to review relevant aviation issues, update Statewide Aviation goals, core values and objectives, and determine what key subjects to research and review in the following year. Departmental core values help guide key Strategic Initiatives and improve efficiency, communication, and planning across the system through integrity, innovation, excellence, and respect.

Several key, strategic planning topics discussed throughout this phase are:

- 1 New federal rules and regulations
- 2 Shrinking government and internal communications
- 3 Airport capabilities versus resources

- 4 Technology changes such as unmanned aerial systems (UAS)

- 5 Village outreach and education

- 6 Revenue generation opportunities

Multiple strategic initiatives stemmed from internal annual meetings. In 2014, for example, staff reviewed the Department's training goals and opportunities and developed a strategy to improve personnel access to aviation related training. In 2015 and 2016, new topics were reviewed such as revenue optimization, performance scorecards implementation, non-standard aircraft policies, unattended airport standards, and rural community engagement. All initiatives feed into the AASP and help prioritize future work within the plan.

Figure 3. DOT&PF Commitments





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Chapter 12. Recommendations & Next Steps

The aviation system is an important transportation link and asset to the State of Alaska. DOT&PF's continuous aviation system planning process works to improve the airport system through constant research and recommendations relating to aviation safety, system performance, data collection and refinement of information, processes and systems. The future of the AASP involves all of these efforts, with Phase III following in mid-2019 to continue the foundation from Phase I and the advancement of Phase II.

While improved data accuracy was one of the plan's main focuses; what does this new information tell planners to better strategize for the aviation system, now and into the future? The following is a brief overview of high-level findings from Phase II planning tasks, including successes, needed improvements, and recommendations for future phases of the plan and for Alaska's aviation system.

12.1 Capital Improvement & Maintenance Program (CIMP)

Over 200 airports were inspected throughout Phase II; with an average of about 15 per region per year and several municipally owned airports. The digital inspection process was refined and expanded to adequately capture airport deficiencies across the system and for any public airport. The program expanded to a new platform, the Apple iPad, and implemented a number of updates to both the application and the website to increase

productivity and streamline the process further.

Using the new CIMP Inspection by Date Query, **Figure 12.2** distributes the number of completed inspections by maintenance district and total number of airports in DOT&PF's inventory. Every district has received several inspections at a minimum, some even multiple ones at single locations

Figure 12.1 | Total Inspections per Year

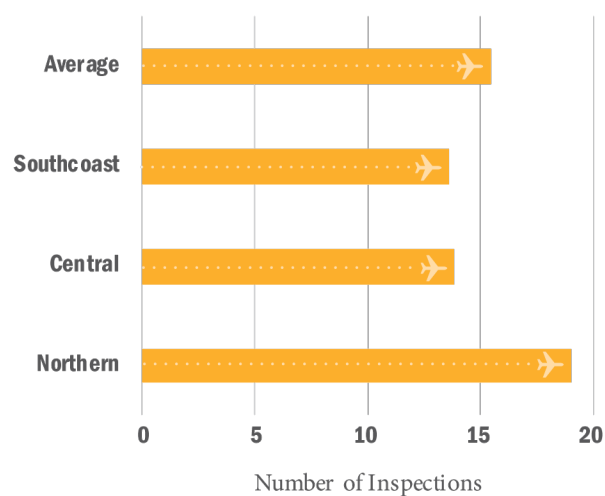


Figure 12.2 | Phase II CIMP: Completed Inspections by DOT&PF M&O Districts and Municipal Airports

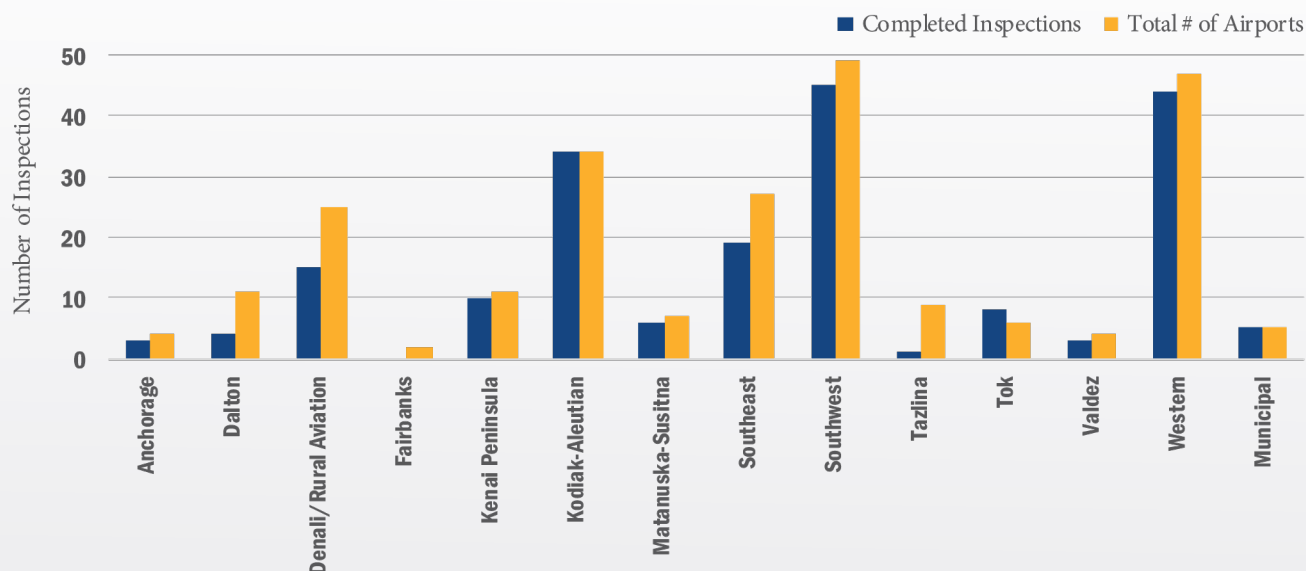
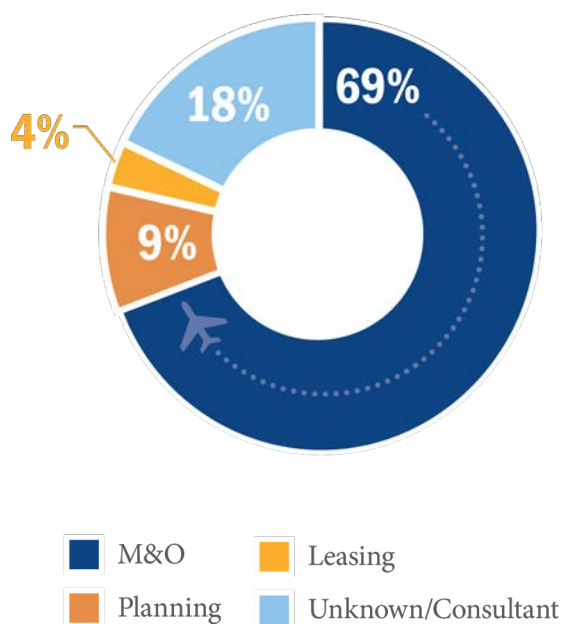


Figure 12.3 | Inspections by Department



as conditions change. Three areas very dependent on air transportation, the Southwest, Kodiak-Aleutian, and Western districts, all boast many inspections with data to use for future capital improvement projects.

Standing up a new program always has its challenges. Analysis of this task shows the average time to process an inspection on the web portal is 89 days. While improving this number in the future will ensure new data is readily available and usable, more process definition is required to determine how much time is needed and acceptable to complete tasks.

More internal collaboration between DOT&PF sections is needed. For example, the following chart highlights completed inspections by department section. M&O staff conducted over 130 inspections during the Phase II period and actively used the program. Planning staff attended far fewer inspections, around 20 total or 9 percent. These statistics capture areas to improve and are vital to the success of the program and usage of data. Deficiency data gleaned from ongoing inspections is used for project prioritization, the project nomination process and eventual programming into the Capital Improvement Plan. Additional section cooperation will improve the program going forward and better enhance available system statistics.

Program Recommendations:

- ✓ Continue to improve the overall process and adequately educate staff using the application and the website.

- ✓ Consider if other platforms are needed in the future and what additional IT collaboration would be required.
- ✓ Define the process once capital improvement projects are constructed and deficiencies fixed. Who should conduct an inspection update? Does it need to be added to the project closeout checklist? Noting which deficiencies were corrected during capital improvement projects and providing a reporting mechanism need consideration. Data can shed light on existing funding allocations in relation to different types of projects. For example, it could determine how many runway rehabilitations occurred over five years or how many taxiway light projects were completed last year.

Recommendations to Enhance the System:

- ✓ Outline CIMP inspection schedule and determine how often inspections should occur to provide important input on existing conditions.
- ✓ Promote the application to other public airport sponsors in Alaska and ensure sponsors are aware of this tool and the training videos and manual.

12.2 AASP Website

Phase III will continue to improve, enhance, and expand the AASP public and internal website portals. With the goal of a digital “one stop aviation shop” in mind, the website will continue to coordinate with stakeholders to ensure the correct data is captured and maintained throughout future project cycles. Phase II greatly expanded the AASP website and centralized database, including additional facility information and analysis. The website banner update and data reorganization created a more user friendly and efficient environment for users. New reports allow the data to be easily queried and used for public, legislative, and internal requests and high-level system analyzing.

Continuing to add new datasets related to airport operations, planning, and projects will be useful. Adding a new component to determine trends for Letter of Correction (LOC), Letter of Investigation (LOI) and TSA write-ups will increase airport planning effectiveness. Additional evaluation of gravel surfaces across the system is needed; similar to the PCI reporting done in this phase. Expanding contact lists and connecting to existing departmental programs can better inform the public on day-to-day work.

Program Recommendations:

- ✓ Continue to reevaluate and expand the website with usable information. Review relevance of two AASP websites and determine if combining all data would be more useful to all airport sponsors across the state.

Recommendations to Enhance the System:

- ✓ Make more airport information available for airport stakeholders across DOT&PF and Alaska’s airport system.
- ✓ Determine existing data gaps or other enhancements to improve communication and data sharing.
- ✓ Expand the database to include a module containing LOCs, LOIs, and TSA data and build reporting tools to track trends.
- ✓ Evaluate gravel surface condition across the system and determine what, if any, additional data sharing or reporting would be beneficial to airport users.
- ✓ Make airport specific contact information available and easy to access.

12.3 AASP Facility Needs & Deficiency Collection

Phase II of Alaska’s Aviation System Plan captured need, project, and programming processes while updating and maintaining its database, coordinating with stakeholders to address new issues, and expanding to accommodate changes in both the system and during a fiscally constrained period of Alaska history. Phase III continues moving forward to finding more efficiencies and adapt as needed to an ever evolving transportation system.

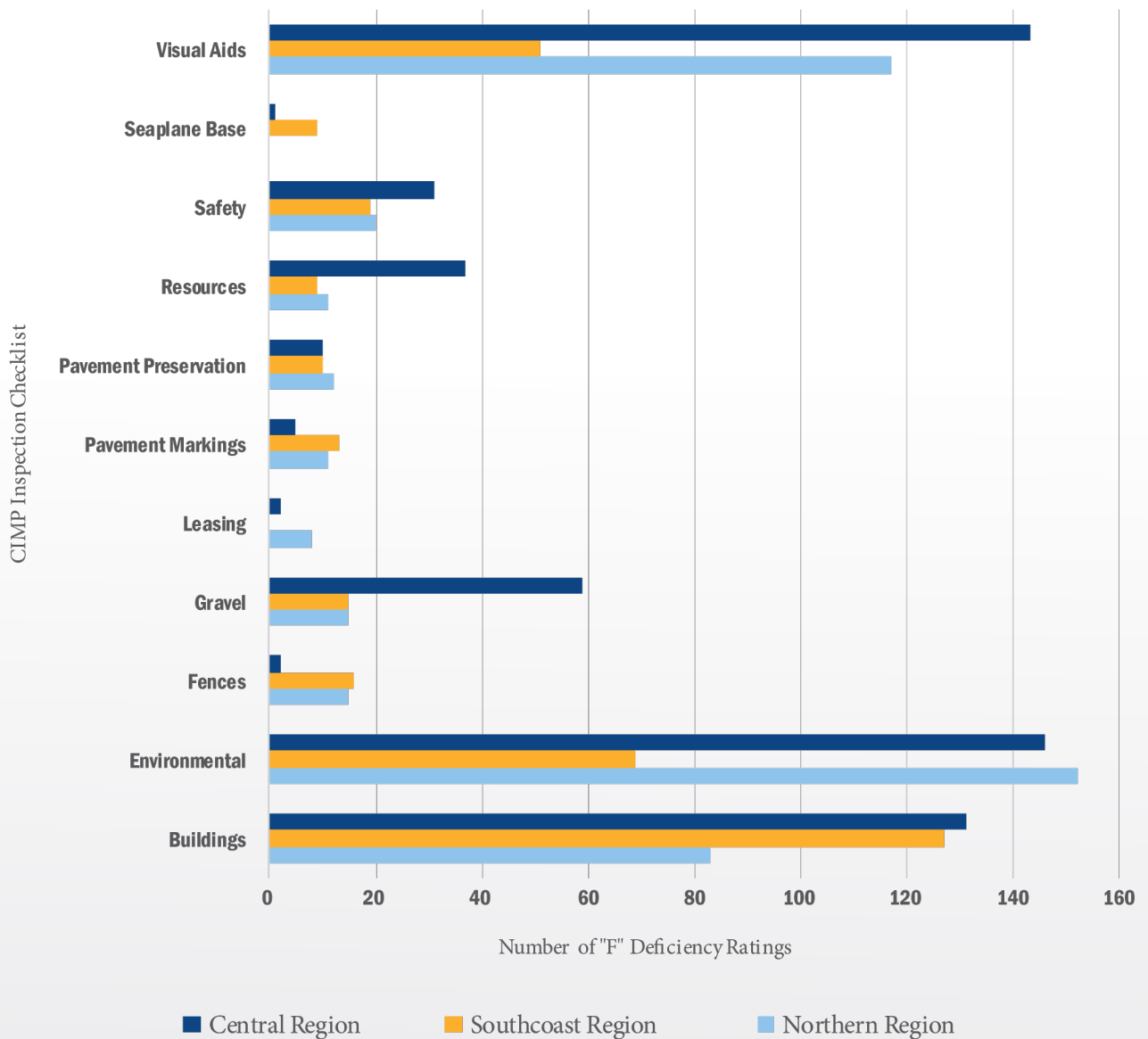
The AASP plan went to great strides to determine how the aviation system is currently functioning and what problems exist that need future resolution. Needs lists, by facility, track problems over time, with information located in a centralized location and available to staff. Implementing new reporting tools allows users to quickly review large datasets that depict how well an airport is functioning. At this time, the best available data from Phase II quantifies the number of deficiencies rather than determining system need by magnitude of cost. Future project improvements will better quantify this method of analysis and refine cost data to reflect better accuracy.

Running a Deficiency Report can tell the story of how each region is doing based on their current CIMP inspections.

Figure 12.4 shows at the end of Phase II, Environmental, Visual Aids, and Building needs have the most deficient “F” ratings statewide. It informs planners that future projects are likely needed to fix lighting, windsocks and other visual aids that are deficient and highlights more research is needed in those specific areas. Additional reports and research can provide further clarification.

Figure 12.4 highlights one data gap for Airport Leasing. It shows only eight “F” ratings are listed across all three department regions, when realistically much greater needs exist in the system. Further assessment is needed to determine why this category is not accurately captured in the AASP and requires review in Phase III.

Figure 12.4 | Total “F” Deficiencies by Inspection Checklist

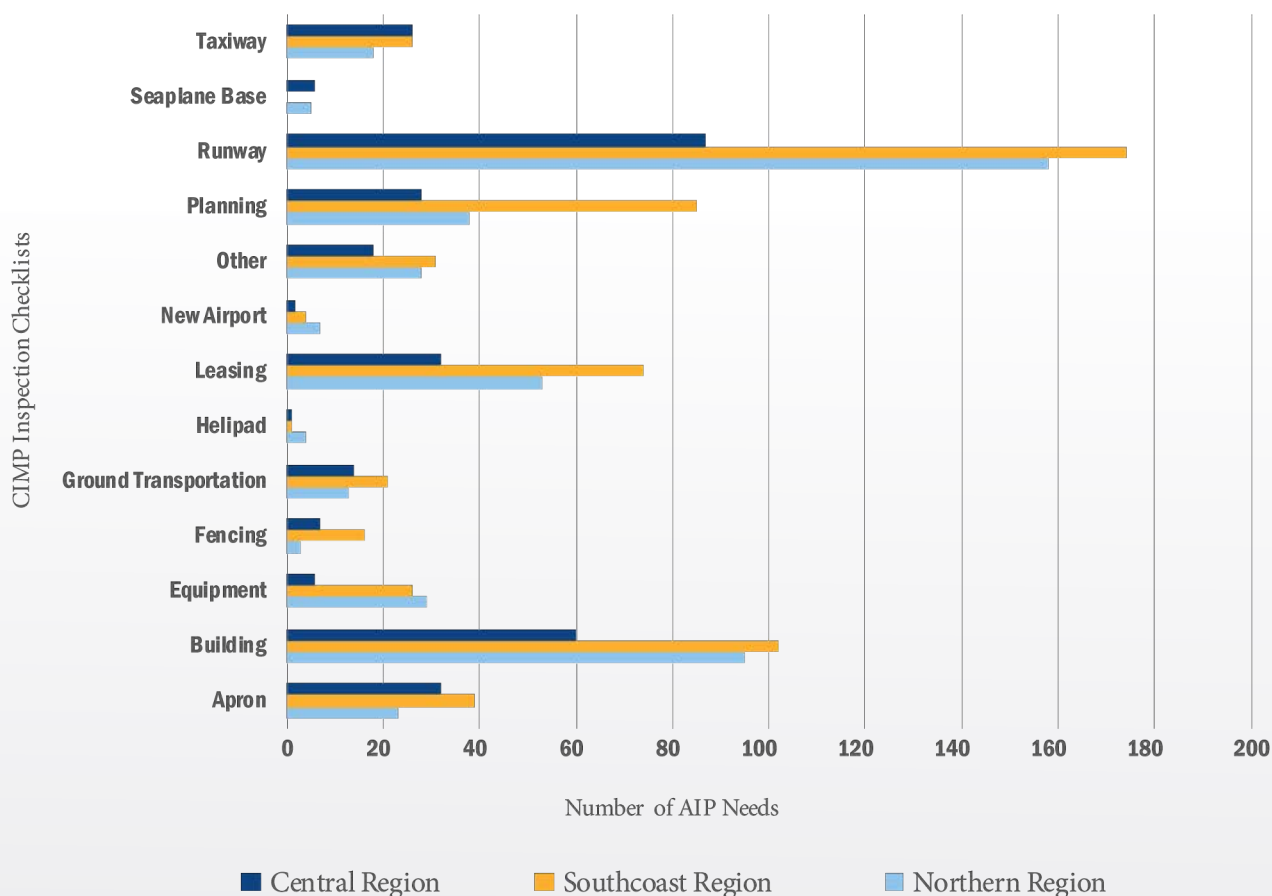


Other available reports display need data using the inspection checklists. The report indicates runway related needs are high within all three regions. This is attributed to both constant and extensive use and how the data is input into the database. Many runway needs also include taxiway and apron information, as remote area projects typically improve or repair all three surfaces during a capital improvement project. Data is sortable in multiples ways, or broken out to show the subcategories of those needs, such as rehabilitation, lighting or resurfacing work. It also illustrates which needs are in an existing project and

already going through the APEB process or programmed in the Spending Plan.

Figure 12.5 provides a breakdown of AIP eligible needs, excluding AIP eligible maintenance needs like equipment, within the AASP’s facility Needs List. As of this report’s publication, over 1300 federally eligible AIP needs are saved and categorized in multiple facilities on the AASP site. The predominant category for future programming relates to runway work, including constructing, rehabilitation, and even extensions.

Figure 12.5 | AIP Needs by Category

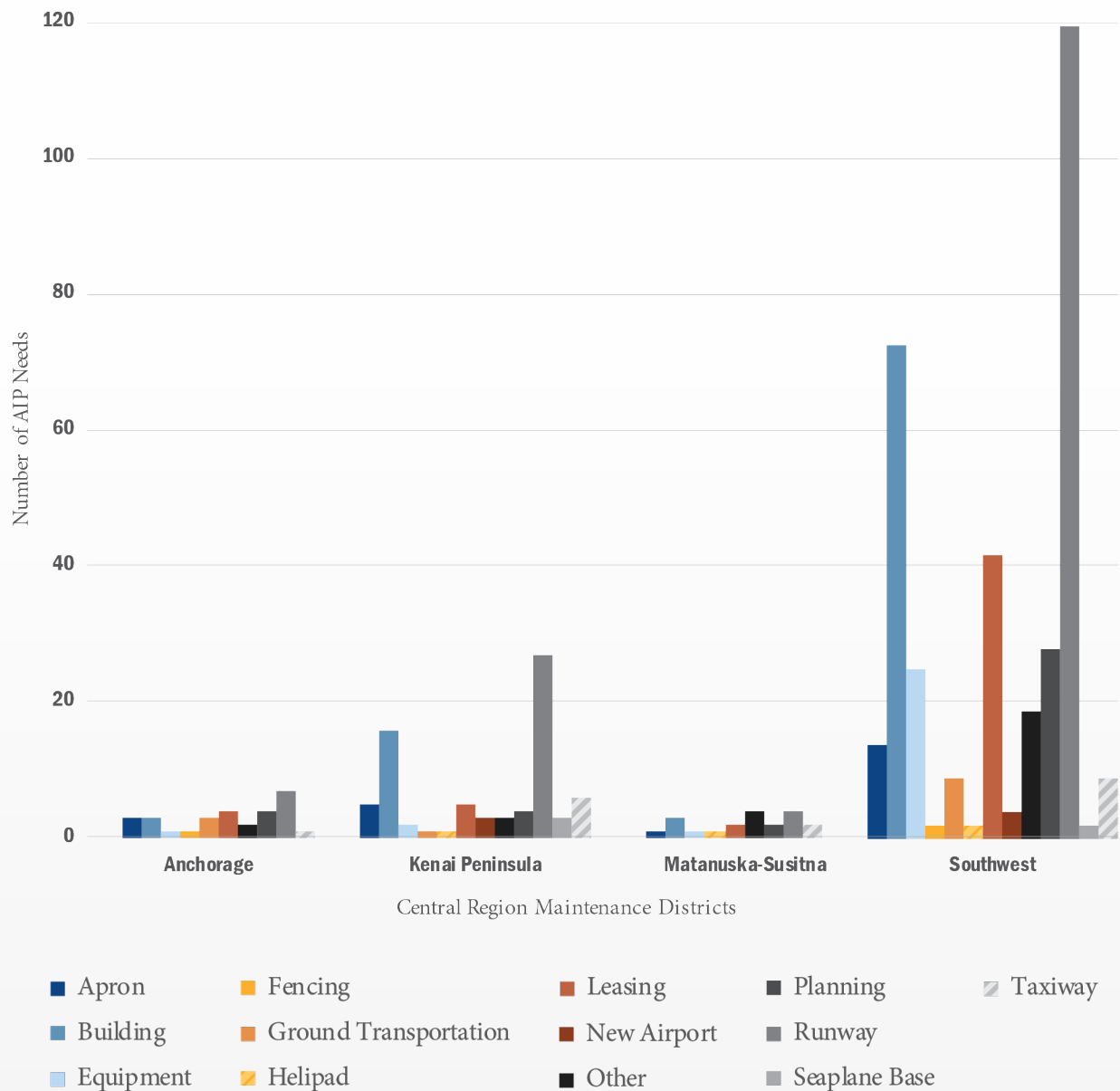


12.3.1 AIP Eligible Needs

Further breakdowns within the database are available for needs marked for future AIP funding. The following figures provide a breakdown by DOT&PF M&O districts, using the FAA's work code categories, and excludes maintenance focused needs. Using new website reporting tools, this data provides an easily attainable idea where future funding should focus. Central Region's Southwest District's (49 airports) highest category of need relates to Runways, with Buildings in second. Similarly in Northern Region, the Western District's (47 airports) highest two needs are Runway and Buildings, with Planning in third. The Kodiak-Aleutian District in Southcoast Region mimics with the same top two categories, with Leasing coming in third. The following charts, divided by DOT&PF region and M&O district, display needs within the AASP and highlight needed project areas.

The Southwest District in Central Region, which covers much of the Yukon-Kuskokwim and Dillingham area airports and is located off the contiguous road system, contains the most airport needs within the region. In comparison to the other three on-road maintenance districts, Southwest's need lists pertain to runways, buildings, leasing, fencing and equipment. Helipads, ground transportation, and seaplane base related requests are minimal across the region, often because the districts have fewer of those types of facilities. Anchorage, Kenai Peninsula, and the Matanuska-Susitna district requests are more similar, with runways, taxiways and apron projects looking for future programming at a lower cost than in Southwest.

Figure 12.6 | Central Region AIP Needs by Category



Northern Region's Western District records the most issues in need of future AIP funding. This off-road system district sees variant and extreme weather conditions much of the year, has many coastal communities with minimal barge service, and uses airports as the primary means of access for most residents and travelers. Unsurprisingly, airport ground surfaces and structures require rehabilitations and reconstructions to continue safe travel practices for Alaskans. Other districts mimic similar results, with Buildings often showing as a higher need than other categories.

Southcoast Region's two maintenance districts remain similar to the Central and Northern regions' depictions. While both are predominantly off-road communities, many Southeast locations utilize the Alaska Marine Highway System for freight and passenger travel in addition to air. Extreme weather conditions throughout the Aleutian Chain and Kodiak often contributes to necessary capital improvement projects over time. The Kodiak-Aleutian District also contains more Leasing related needs, mostly concerning Land Use Control and a need for more aircraft tie-downs, and the highest amount of Runway related needs.

Figure 12.7 | Northern Region AIP Needs by Category

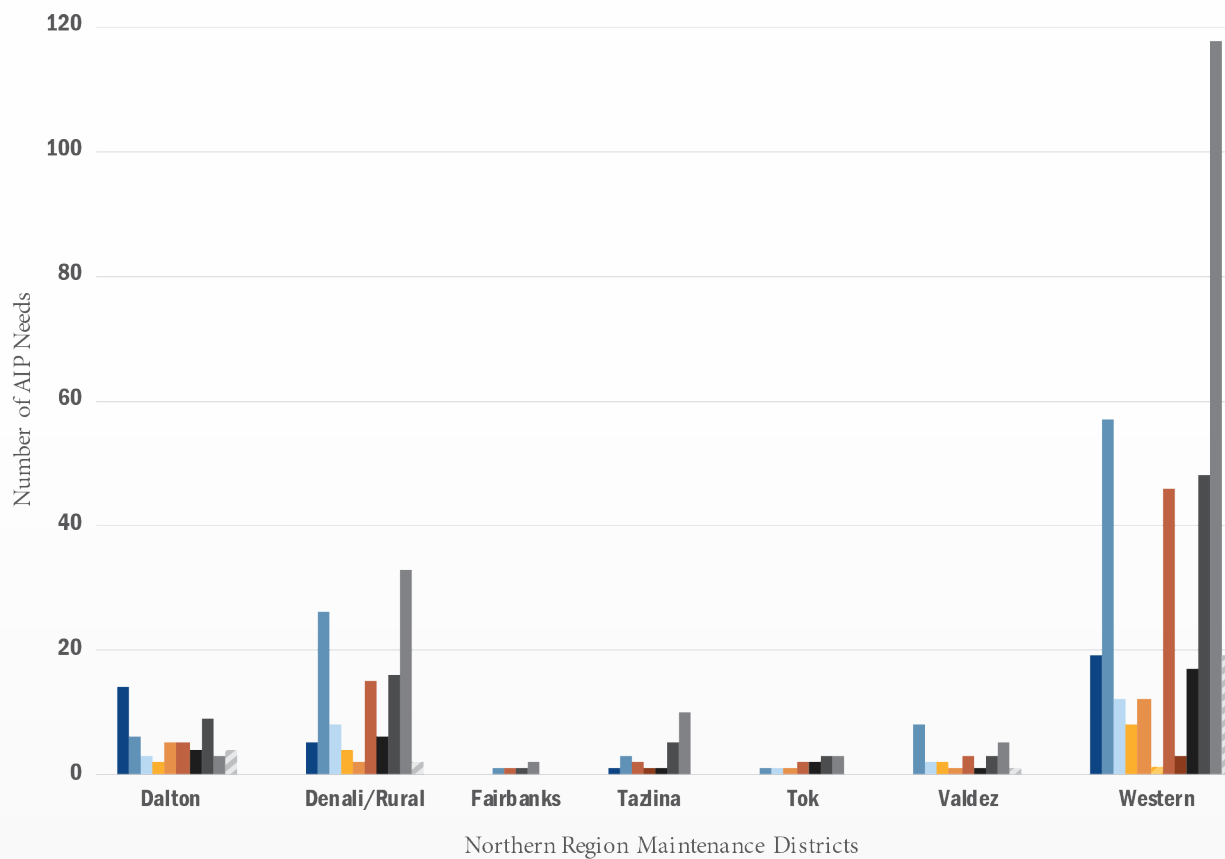
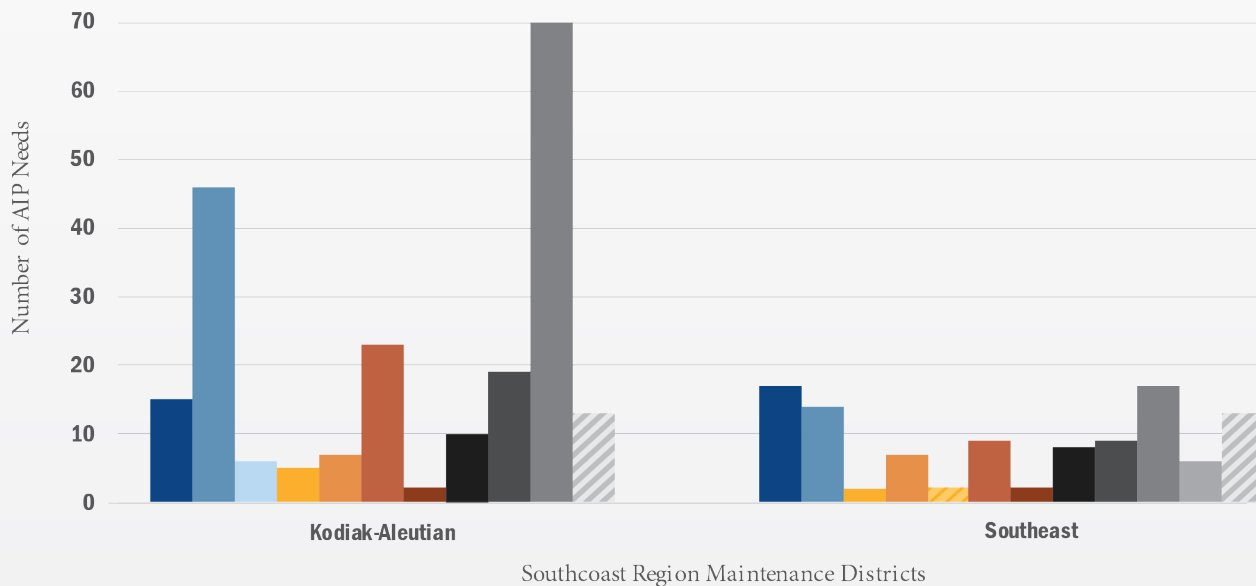


Figure 12.8 | Southcoast Region AIP Needs by Category

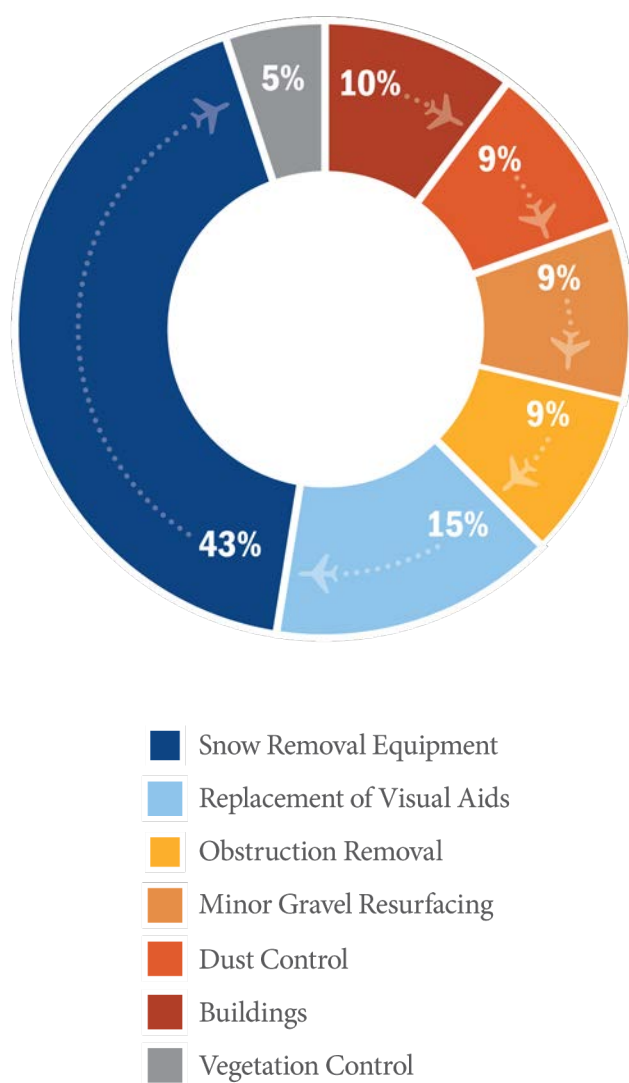


- Apron
- Fencing
- Leasing
- Planning
- Taxiway
- Building
- Ground Transportation
- New Airport
- Runway
- Other
- Seaplane Base
- Equipment
- Helipad

12.3.2 AIP Eligible Maintenance Needs

Within the AASP's facility needs list, federally eligible maintenance and equipment needs (using the website's funding source M&O AIP) show that Snow Removal Equipment is by far the highest need across all three DOT&PF regions and M&O districts. As **Figure 12.9** notes, 43 percent of all maintenance needs relate to Equipment, with Visual Aid Replacement the next highest at 15 percent and Buildings at 10 percent. Due to Alaska's extreme weather, maintaining adequate and working equipment is incredibly important to a safe and operational airport system, with many airports in need of newer equipment purchases or existing repairs.

Figure 12.9 | Top Seven M&O Needs on AASP



Expansion of the AASP reporting system to provide high-level statistics can only further benefit airport sponsors and provide valuable information quickly. Additional collaboration between stakeholders, Program Development, and Statewide Aviation is needed to determine further benefits and what additional data needs analyzing.

Program Recommendations:

- ✓ Facility information only remains accurate when it is continually reviewed and updated by staff. Outlining specific database ownership, by department and section as needed, is an essential component to ensure information is not only accurate, but current. Further coordination is required to verify the accuracy of all facility information.
- ✓ Consider funding additional equipment. This need far outweighs any other AIP eligible M&O categories across the system.

Recommendations to Enhance the System:

- ✓ Continue to use the needs database to plan the airport AIP program. This information is a valuable tool to understand problem areas and funding gaps across Alaska's airport system.
- ✓ Review data gap and expand data collection to accurately depict leasing issues. Improving accuracy on this type of need will assist in the planning of future capital funding and be beneficial to airport tenants and stakeholders.

12.4 Digital Project Prioritization Updates

Digitizing the capital improvement project priority process (APEB) and Spending Plan allows staff to see real-time project programming across the department. Requiring each region to compile all capially funded airport projects in the same database improves consistency and data sharing while providing a central location to track projects, CIP datasheets, project scoping, costs and more. Making the Spending Plan internally available to staff minimizes requests to Statewide Aviation while allowing the information to be available. It assists with future project tracking and promotes transparency.

As with any new program, using it will shed light on needed improvements or issues not specifically realized during the planning and design periods. Minor updates, in addition to all project input, will occur in Phase III. Other intended improvements include improved process and streamlining the creation of Alaska DOT&PF's CIP.

Program Recommendations:

- ✓ Add all projects and past nominations into the website and begin using the new tools to improve communication, system tracking, and project prioritization.
- ✓ After full year of project input and tracking, review system and determine if changes or improvements are needed to accurately and efficiently capture information.
- ✓ In Phase III, the plan should consider if existing project tracking system (MRS) can link to the AASP, creating an even better “one-stop shop” for aviation project data.

Recommendations to Enhance the System:

- ✓ After several funding cycles, compare planned, programmed and newly constructed projects to needs across the system. Is funding allocated to problem areas? Assessment of the system will provide informative input on how well capital improvement projects are helping enhance the system.
- ✓ Consider future website expansion to include CIP information for local sponsor airports.

12.5 Airport Performance Measure Implementation

Managing a large airport system makes performance measures an important method to ensuring the system is functioning properly. As of report publication, the DOT&PF's airport design and services rating show that improvements could be made to a variety of factors outlined in the Evolution of the Alaska Aviation System Plan: Classifications and Performance Measures document. These performance measures are fluid and continually changing as the system both deteriorates and improves with projects.

On the Statewide Design Index, wind data indicates that a number of airports would benefit from crosswind runway additions, as only 9 percent are currently compliant according to the website, with 79 percent of DOT&PF airports non-compliant and 12 percent Unavailable. These numbers also highlight data gaps still exist at various airports, such as the 12 percent of locations with no existing wind data. While additional capital improvement projects for crosswind runways may be needed, further evaluation must take place on a case-by-case basis to determine feasibility.

Service Objectives, which can sometimes relate more to needs for the public than the prior design needs in **Figure 12.11**, highlight the lack of fuel services, passenger shelters, and public restrooms across the state. According to current data, lease lot and new-tie down demand is minimal and within the 10-11 percent range, and continues to improve as new apron projects are designed and constructed. Other planning efforts to determine ways to meet objectives like public toilets and passenger shelters are ongoing.

Figure 12.10 | Statewide Design Index Compliance

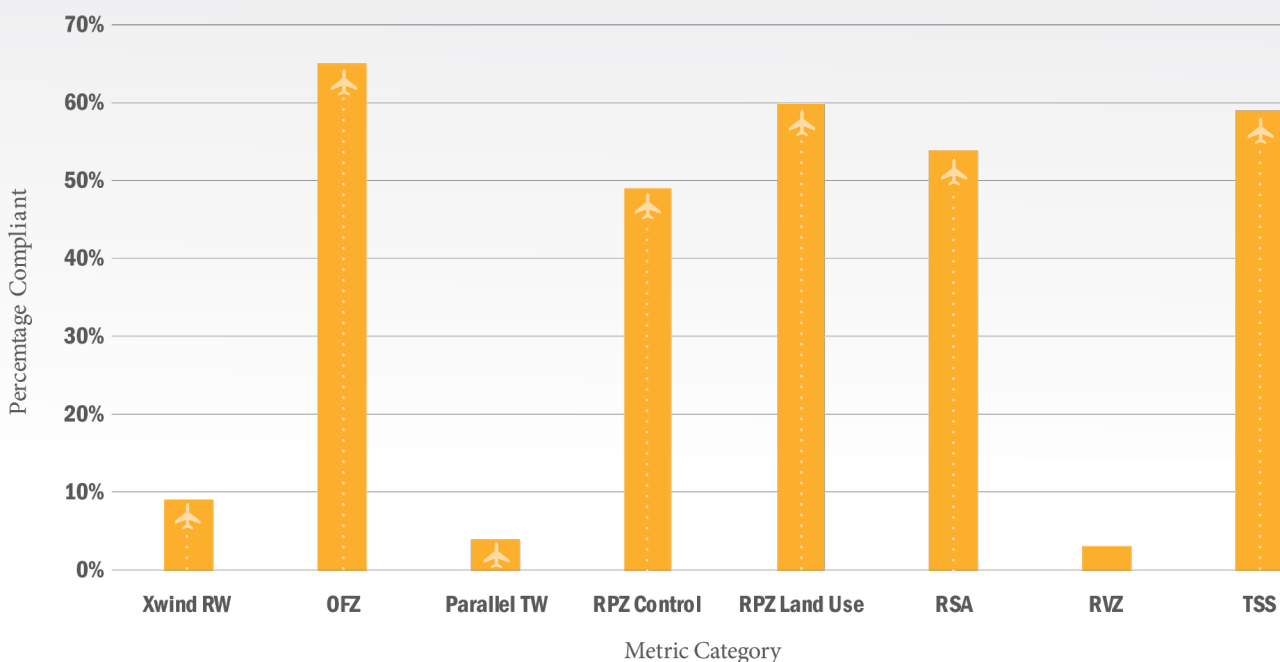
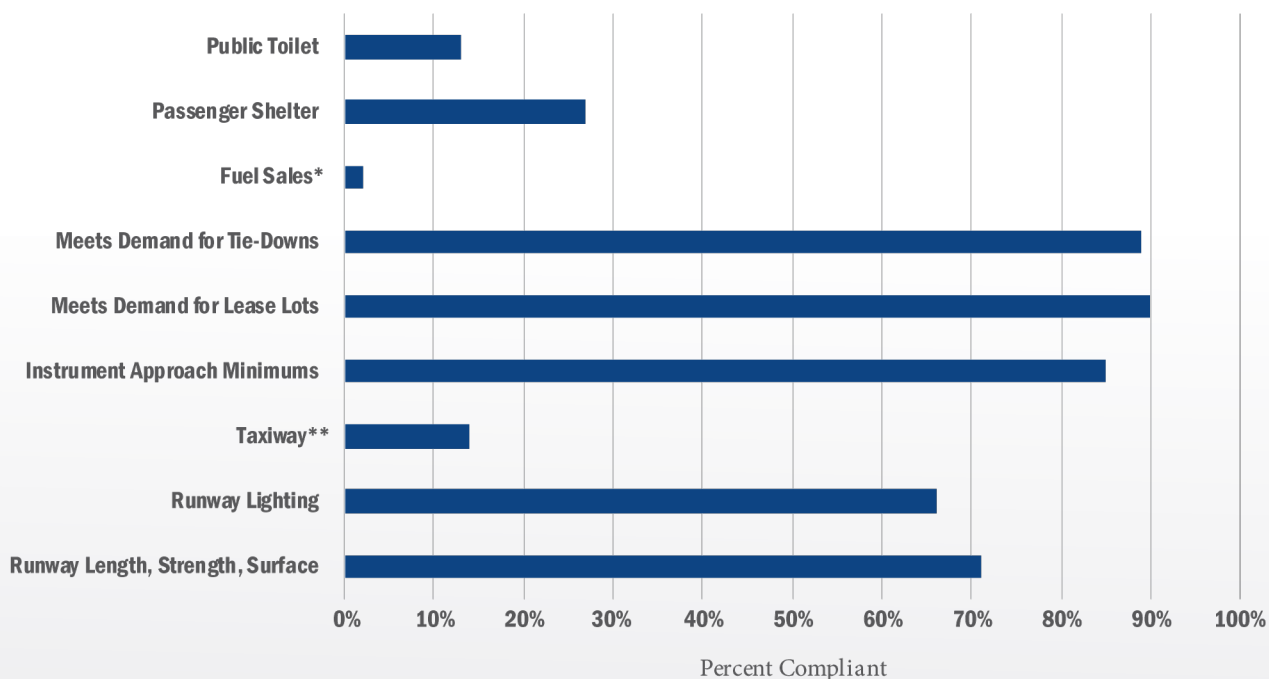


Figure 12.11 | Statewide Service Index Compliance



*Only Applicable to Regional and Community Class Airports

**Only Applicable to Regional Class Airports

Program Recommendations:

- ✓ Ensure data is continually updated to reflect most recent existing conditions and establish a baseline to track trends.
- ✓ Determine process or policy to establish trends.

Recommendations to Enhance the System:

- ✓ Review fuel sales performance measures. The availability of aviation fuel is one of the most basic services an airport can provide its users. While DOT&PF does not directly offer this service, airport tenants can obtain permits to do so. The AASP's performance measures evaluate this metric for the Regional and Community classifications only. Compliance numbers are very low on this service index. Do opportunities exist to improve available services across the system?
- ✓ Determine if seaplane base measures, created in Phase II, need tracking on the website.

12.6 Work Groups

Multiple work groups were held in Phase II, with the Weather Work Group playing an important role in the planning of new certified aviation weather systems recently allocated through Supplemental AIP infrastructure funding. The Backcountry Work Group quantified the importance of small, non-NPIAS

airports to Alaska's airport system, and determined future opportunity to work with stakeholders to improve maintenance and communication across Alaska. The Airspace Work Group reviewed and prioritized airports in need of new approaches, weather, or design components to allow for new approaches. All work group topics tackled essential aviation issues in Alaska and coordinated with stakeholders on ways to improve the system.

Program Recommendations:

- ✓ Recommend continuation of further work group topics as aviation issues arise across the state. This task, as part of the AASP, allows essential topics to be evaluated by aviation stakeholders and experts in the industry as well as department staff and local airport sponsors.

Recommendations to Enhance the System:

- ✓ Review information from Phase II's Adopt-an-Airport task and implement the program. Final program recommendations should consider expanding the program to all types of airports across the state.
- ✓ Consider new tools to capture essential issues across the system. In Phase I several videos captured how aviation is "Alaska's lifeline" and provides access and necessities to remote residents. Review if other topics specific to Alaska could be used as educational tools, such as certified weather, airport vandalism or operations.

12.7 Pavement

Phase II collected pavement condition index (PCI) ratings for all paved, public airports in Alaska, including those owned and operated by DOT&PF and local sponsors. These ratings help assess pavement needs across the state and inform planners where priorities are. While this information is very informative, conducting a full Pavement Management Plan would provide a deeper view into problem areas and assist in future programming. This component should use evaluations to forecast future needs across the system, including all publically owned, paved facilities, in order to forecast preventative maintenance schedules as well as future pavement replacement. AIP funded pavement projects continually reset pavement ratings over time, resetting to the corrected Do Nothing/Preventative Maintenance category with completion of capital improvement projects. Overall, a very small portion of pavement surface remains in the Reconstruct, with only 16 surfaces, or about 5 percent, scoring below a 39.

Pavement ratings for public airports in Alaska remain relatively close in score. Current AASP reporting shows the average rating is currently within the Preventative Maintenance recommendation range of 70 to 84 on runways, taxiways and aprons. All average ratings remain similar across the whole system, with DOT&PF's highest rating of 77.33 on taxiways and Local Sponsor's a 78.68 on aprons.

Recommendations:

- ✓ Expand on Alaska's current pavement condition and conduct a full pavement management plan.
- ✓ Assess problem areas and determine programming schedule for paved airports.

Figure 12.12 | Pavement Recommendations for All Public, Paved Airports in Alaska (2018)

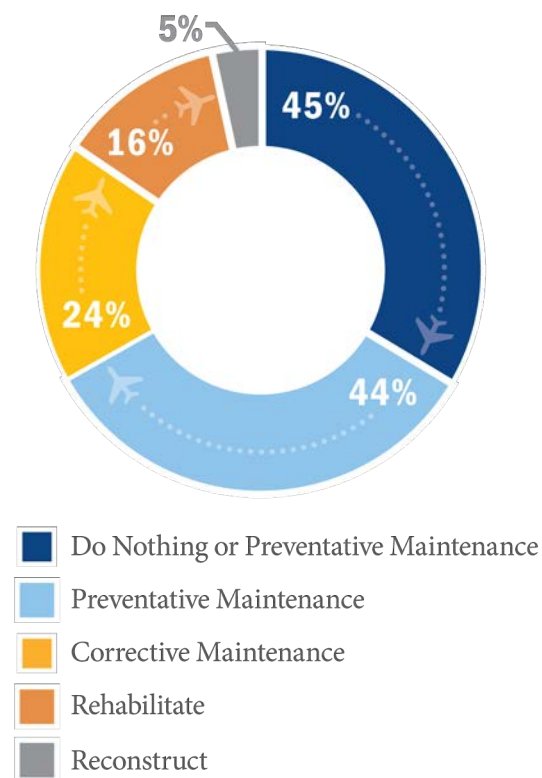
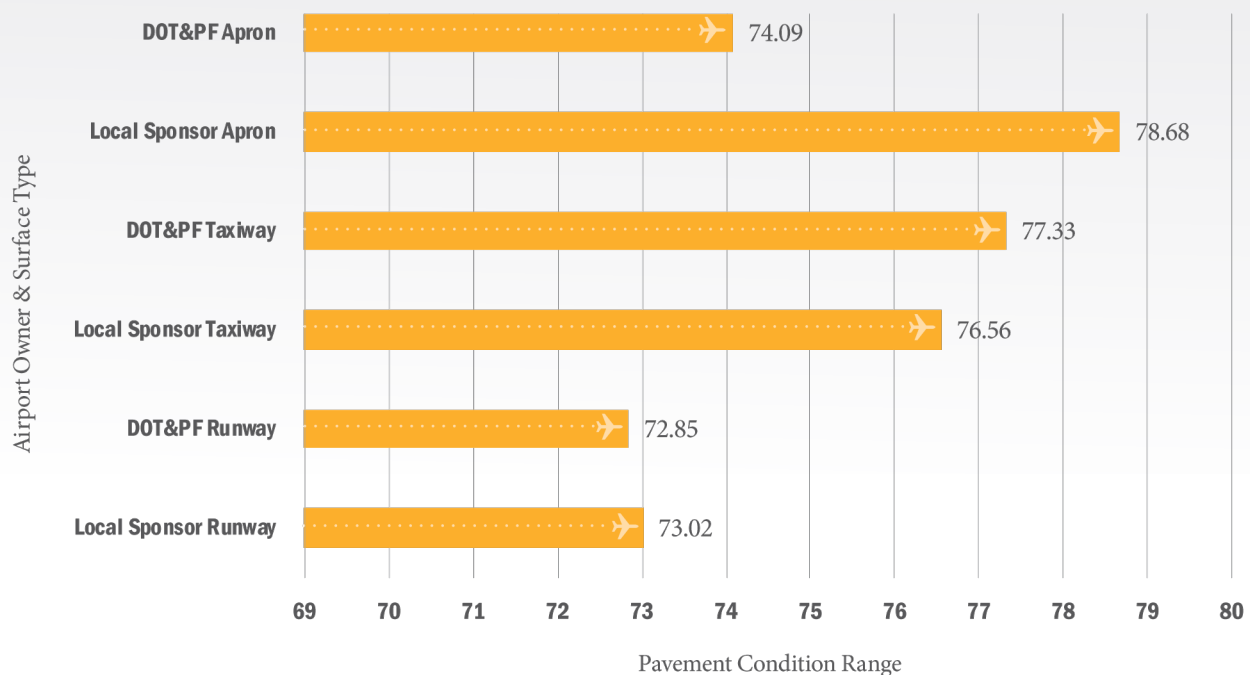


Figure 12.13 | Average PCI Rating (2018)



12.8 Area Plans, Special Studies and Contribution to the Economy Update

Regional and specific area plans within Phase II assisted regional planners in ascertaining existing conditions at subsets of Alaska's airport system, including areas in Southwest, Kodiak and the Aleutian Chain, the Yukon-Kuskokwim, and Northwest Alaska. All studies reviewed existing conditions and analyzed multiple modes of transportation in relation to one another. As stated in the prior Phase I study, the aviation industry is an important contributor in Alaska's economy. This economic update calculated and concludes the industry supported more than 35,000 jobs statewide and over \$3.8 billion to the state economy in 2017.

Plan Recommendations:

- ✓ Phase II recommends continuation of area studies in future phases, especially in places with outdated information or with significant changes occurring, and in combination with other transportation modes.

Recommendations to Enhance the System:


- ✓ Find ways to provide a better understanding to communities, legislators, and other stakeholders across the state on the importance of the aviation system to Alaska and continue to highlight its significance using plan tools, documents, and database information.

12.9 Key Takeaways

Over the past five years the AASP reviewed and studied current events, created and expanded programs and work groups, analyzed existing conditions across Alaska's airports, and created new tools to improve airport planning within the state. Two main sets of recommendations derive from this phase, one focusing on improving the plan itself, and the other specifically on the betterment of Alaska's aviation system, using data derived from the project.

12.9.1 Improving the AASP

After review of Phase II, several key recommendations for planning and managing Alaska's airport system plan are:

-  **To continue expanding the website's capabilities**
The AASP website is an important tool for planners, designers, maintenance staff, and local airport sponsor personnel to adequately understand existing conditions across the state. Continual expansion of both the public and private portals assists multiple stakeholders in project prioritizing and long term project tracking, including a new section for LOC, LOI, and TSA needs. Designing new reports that analyze already collected data is important. With more accurate data from Phase II updates, Phase III can better focus on analyzing system capacity.



To support the CIMP program and Needs List

Continuing deficiency analysis and need collection ensures airport sponsors can accurately assess current problems and plan for the future. Creation of additional resources to assist inspectors would be beneficial, including but not limited to basic handouts, update process manual, or new policy and procedure (P&P) guidance. Defining a program schedule is also needed. Ensuring the airport facility needs list continues to receive updates as new deficiencies arise is important to the success of the entire project process. With all needs located in a centralized location, duplications are minimized and all staff see the same list grow and change over time.



To conduct a full Pavement Management Study

This component should build on current evaluations to forecast future needs across the system.



To evaluate Phase II digital processes and functionality

Updates may be needed to ensure components are complimenting one another and working correctly on the website. The APEB project priority system and Spending Plan require time to see what problems arise or edits are needed. Additional updates should be evaluated later in Phase III.



To implement routine data tracking

Determine tracking processes for performance measures, needs and deficiency reporting through planner and stakeholder coordination.

These five recommendations aim to improve the AASP to become a better tool for airport planners and sponsors to use. Phase III will continue to progress and capture aviation issues across the system.

12.9.2 Strategizing for Alaska's Aviation System

The second set of recommendations relate to future planning of Alaska's airport system, with a focus on:



System Safety and Efficiency

- To continue to focus on safety and efficiency: ensuring the traveling public, pilots, and all other transportation users can safely travel to their destinations remains essential.
- To use CIMP inspections and deficiency data to highlight problems and work to fix them.



Prioritizing Federal Funding

- To use trend analysis to determine if the highest priority deficiencies across the system are receiving adequate portions of AIP funding.

- To prioritize federal AIP funds on highest needs using the APEB process and data from the Airport Needs Book and CIMP inspections.
- To maximize AIP entitlement funding.



Finding Partnership Opportunities

- To find opportunities to partner with airport stakeholders and improve communication, maintenance and safety across Alaska's rural airport system.
- To collaboratively identify and prioritize airport system priorities from a user, customer, and operator perspective.
- Finalize and implement the Adopt-an-Airport program.



To Determine Data Gaps within the System

- To determine existing aviation data gaps and decide how to collect information. For example, placing acoustical counters across the rural airport system would greatly improve the accuracy of operational counts across the system. Filling this data gap would allow local sponsors to better plan for future improvements and understand capacity constraints at their airports.

Each recommendation recognizes ways to increase information and better plan for the future of aviation in Alaska. Because Alaska's system is so large and rather complicated, a variety of tasks provide the opportunity for growth of both the airport system and the plan studying it. As technology advances, priorities change and new needs arise, the AASP is ready to tackle pertinent issues and work to improve aviation across the state of Alaska.



**For more information on
the AASP, contact
Statewide Aviation at**

statewide.aviation@alaska.gov



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For more information, contact us at:
statewideaviation@alaska.gov
or visit:
www.alaskaasp.com

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