Alaska Aviation System Plan

Planning Alaska's Airports: The Airport Master Planning Process

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Abbreviations

AIP	Airport Improvement Program
ALP	Airport Layout Plan
CAC	Citizen Advisory Committee
CIP	Capital Improvement Plan
FAA	Federal Aviation Administration
MPO	Metropolitan Transportation Organization
NEPA	National Environmental Policy Act
TAC	Technical Advisory Committee
TSA	Transportation Security Administration

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Introduction

Airport master planning is the process of preparing a **20-year blueprint for an airport's future development**. This process follows guidelines set by the Federal Aviation Administration (FAA) and involves technical studies and significant public input. This white paper explains what an airport master plan is, why it's needed, the key steps involved, and why public involvement is so important.

An airport master plan is a comprehensive study of an airport's current state and future needs, providing a roadmap for short-, medium-, and long-term improvements. It ensures the airport can meet demand 5, 10, and 20 years into the future. FAA recommends airports update their master plans every 10 years (or sooner if there's a triggering event – see sidebar) to guide airport development. Airport master plans include an Airport Layout Plan (ALP). An ALP is required for Airport Improvement Program (AIP) funding.

Community input is critical. Master plans are developed with input from stakeholders and the public through a variety of ways, including public meetings, steering committees, open houses, and project websites. Early and continuous public involvement improves the plan's quality and builds community trust and consensus.

Triggering Events

A triggering event is an unplanned/unforseen activity or incident that requires an immediate or expedited planning effort. The FAA identifies examples of triggering events as the introduction of a new carrier, increased or decreased cargo activity, or new availability of building areas or property.

Will Rogers - Wiley Post Airport in Utqiaġvik saw a sharp rise in aviation activity in 2011 due to offshore oil and gas exploration and increased military presence, prompting DOT&PF to quickly update the airport master plan to ensure that the airport was prepared for this unexpected increase in activity.

Airport Master Plan Outcomes	NOT Airport Master Plan Outcomes
Outlines the 20-year vision for airport development	Guarantee project funding
Guides capital improvements	Authorize construction
Supports funding and approvals	Replace project level environmental reviews
Coordinates land use and planning	Dictate air carrier or tenant decisions
Engages stakeholders and the public	Serve as a fixed blueprint

What is an Airport Master Plan and Why is it Important?

An airport master plan is essentially a roadmap for an airport's future. The FAA defines it as "a comprehensive study of an airport that describes the short-, medium-, and long-term development plans needed to meet future aviation demand" (Advisory Circular 150/5070-6B, page 1). In practical terms, it examines everything about the airport – facilities, operations, infrastructure, and forecasted demand – and lays out a plan (with specifics and cost estimates) for how the airport should develop over the next 20 years. The master plan ensures that as aviation activity grows or changes, the airport can safely and efficiently accommodate that growth with the right improvements. It covers improvements both airside (runways, taxiways) and landside, coordinating with community land use and environmental considerations.

Why Master Planning Matters

Master plans serve several critical purposes:

- **Guiding Development:** They provide a clear framework to guide future airport development in an orderly, cost-effective way. By analyzing current conditions and anticipating future needs, a master plan helps airport officials make informed decisions so that facilities are expanded or upgraded when and where needed. It is essentially a **"**big picture" strategy to meet aviation demand while avoiding piecemeal or shortsighted projects.
- **Justifying Funding:** An ALP is required to secure FAA AIP funding. Given the scale of Alaska's airport system and limited resources, most of the Department's ALPs are updated independently of full master plans—a streamlined approach that allows DOT&PF to keep critical planning documents current and aligned with FAA requirements, but without the time and cost of a full master plan.
- **Fulfilling Regulatory Requirements:** Through the master planning process, an airport also develops plans for how to address various federal requirements and safety standards. FAA Advisory Circular 150/5070-6B provides official guidance for master plans, ensuring that plans consider critical factors like design standards, airspace, and environmental impacts. Master plans must align with these guidelines so that any development can later obtain FAA approval and meet National Environmental Policy Act (NEPA) requirements. Essentially, the master plan helps identify environmental and safety issues for future projects but does not guarantee funding.

Strategic Tool for All Stakeholders: An approved master plan becomes a valuable reference document for airport management, government officials, and the local community. It compiles all the data, analyses, and decisions into one comprehensive report plus a set of drawings. This document serves as a technical and policy guide: local planners can reference it when making zoning decisions around the airport, airline and business investors can understand the airport's expansion plans, and the public can see the long-term vision for their airport. It also includes an implementation schedule for projects.

Key Elements of the Airport Master Plan

Key Outputs of a Master Plan: The two primary deliverables are usually a Technical Report and an ALP drawing set. The technical report contains all the analyses (often with chapters covering the topics

outlined below), written in both technical and accessible language. The ALP is a set of detailed maps/drawings – typically showing the airport's existing layout and the proposed future layout (with new facilities, expansions, etc.) drawn to scale. ALP drawings are especially important: the **FAA must approve the ALP**, and it becomes the official plan of record. For project development to happen, it generally needs to be depicted on an approved ALP. So, the master plan process ensures that the ALP is updated to reflect the agreed-upon development strategy.

Table 1. Typical Elements of an Airport Master Plan.

Phase	Description
1. Pre-Planning / Study Setup	*Define scope, budget, and team.* The airport sponsor coordinates with FAA to establish the scope of work for the master plan. This includes identifying the airport's key issues or needs to address, selecting a planning consultant, and securing the funding.
2. Public Involvement Program	*Engage stakeholders and community from the start.* This is a critical phase that runs throughout the master plan process. A Public Involvement Program is launched to solicit input from the airport's sponsors, government officials, airport users, industry groups, and the general public.
3. Existing Conditions (Inventory)	*Take stock of the airport today.* This phase involves an inventory of all data about the airport's current condition. Planners gather information on airport facilities (runways, terminals, hangars, lighting, etc.), operational data (number of flights, passengers, cargo, etc.), environmental data (wetlands, contamination, etc.), the airport's role in the regional aviation system, airspace, and surrounding land use. A solid understanding of existing conditions is critical, as it forms the foundation for identifying issues and future needs. If an airport master plan was previously conducted, planners may review those documents during this phase to identify changes.
4. Aviation Forecasts	*Project future aviation demand and specify the existing and future critical aircraft.* Using the inventory data and industry trends, planners will forecast how the airport's activity will change over the next 5, 10, and 20 years as well as identify the critical aircraft. This typically includes forecasts of passenger numbers, aircraft operations, based aircraft, cargo volume, etc. **The FAA reviews and approves these forecasts** for consistency with national trends. Forecasts matter in an airport master plan because they define future demand, guide facility needs and timing, align the plan with FAA expectations and funding requirements, and provide the foundation for alternatives analysis, environmental review, and long-range financial planning
5. Facility Requirements	*Determine what the airport will need.* Based on the forecasts and FAA design standards, planners assess the capacity and adequacy of airport facilities and identify what improvements or expansions will be required to meet future demand. This is essentially a gap analysis: given the projected activity levels, is a longer runway needed? More aircraft parking space? Upgraded instrument landing systems? The team considers FAA airport design criteria and factors in any specific needs. The outcome is a list of facility needs, both airside (runways, taxiways, aprons) and landside (terminals, access roads, support facilities), for the planning horizon.

6. Alternatives Development & Evaluation	*Explore different ways to meet needs.* With the requirements in hand, planners identify alternative development concepts for the airport, with each alternative representing a different way to address identified needs. For instance, if a runway is nearing capacity, one alternative might extend it, another might add a parallel taxiway to improve flow, and another might reconfigure the apron to reduce congestion. Alternatives are evaluated based on factors like cost, operational efficiency, environmental impacts, and how well they meet airport and community goals. Typically, through discussion and analysis, a preferred alternative emerges. This preferred development plan then becomes the basis for the final master plan recommendations.
7. Airport Layout Plan (ALP)[1]	*Draft the ALP.* One key product of the master planning process is an updated Airport Layout Plan drawing set. In this phase, the preferred development alternative is translated into detailed, scaled drawings of the airport's future layout. The ALP set typically includes drawings of the overall airport layout (showing existing and planned facilities), airspace surfaces, approach zones, property maps, and other specialized plans. These drawings must follow FAA standards for content and format. The ALP is essentially the blueprint that the FAA will review and approve.
8. Facilities Implementation Plan	*Create a phased project schedule.* After deciding future development, the master plan outlines when and how to build it. The implementation plan prioritizes recommended improvements over short-, medium-, and long-term phases. It assigns timeframes and planning level cost estimates to each project. Importantly, this plan must be realistic financially and operationally: it considers funding availability and operational feasibility. The implementation schedule often ties back to demand triggers, meaning some projects might be "on hold" until activity reaches a certain level. This phasing plan is a key tool for budgeting – it helps the airport sponsor plan and prioritize capital improvements through the Capital Improvement Plan (CIP) and allocate future funding.

[1] https://www.alaskaasp.com/media/5849/alp_fact_sheet_final.pdf

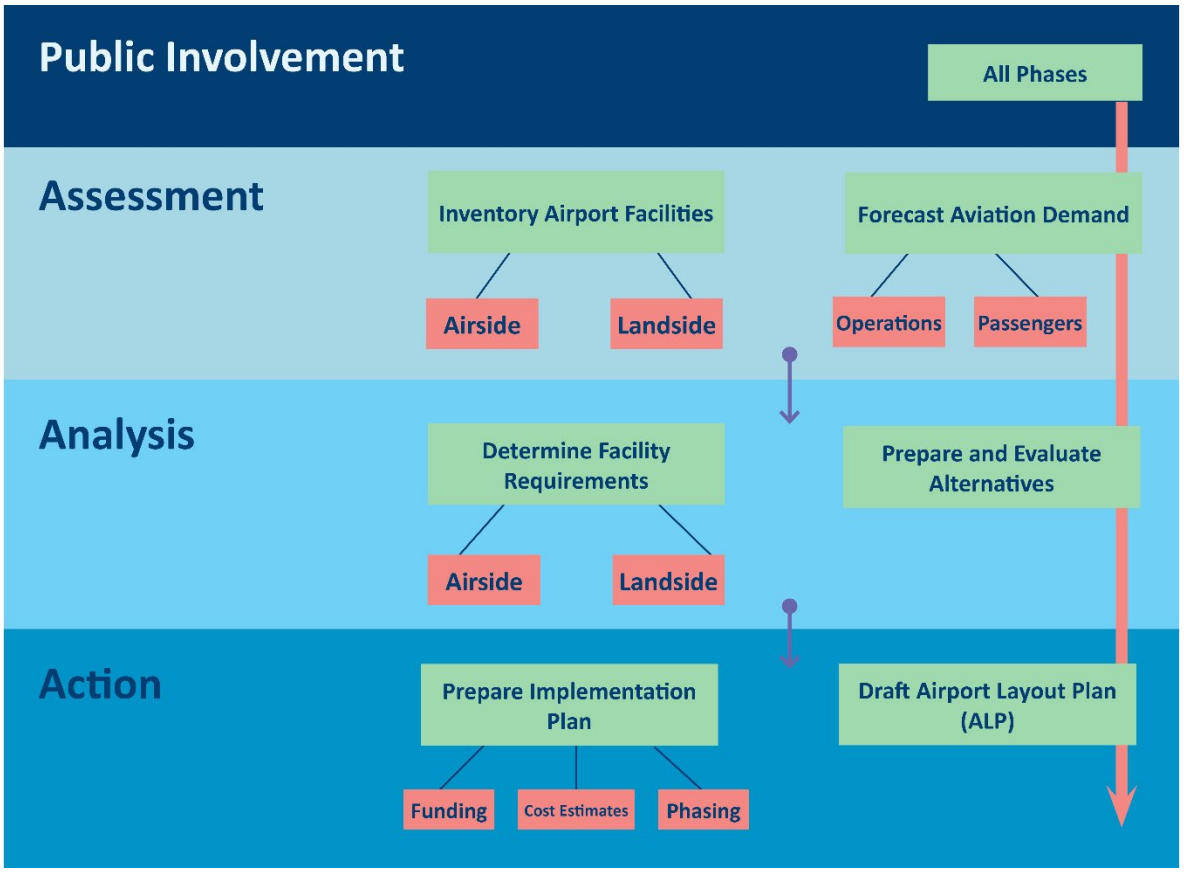

Figure 1. Airport Master Planning Process.

Key Stakeholders and Their Roles

Airport planning involves many players. From airport officials to residents, a variety of stakeholders participate in and influence the master plan. Understanding who these stakeholders are and what roles they play helps highlight why public involvement is so integral. Typically, participants in an airport master plan include:

Table 2. Major Stakeholders in an Airport Master Plan

Stakeholder Group	Role and Interest in the Master Plan
Airport Sponsor (Owner/Operator)	The airport sponsor is the entity that owns or manages the airport and initiates and leads the master plan. The sponsor defines the study's scope of services, develops project contracts and issues RFPs, manages and implements the plan. They are responsible for ensuring the plan meets local needs and aligns with the airport's strategic vision. The sponsor also commits to carrying out the plan's recommendations. It is important to include the groups like airport maintenance and operational staff.
Tribal Governments	Many of Alaska's rural airports serve communities administered by tribal governments and are surrounded by tribal lands. Engaging tribal leaders ensures airport development is compatible with surrounding land uses and accommodates village needs.
Local Government and Authorities	Local officials – such as city or borough planners, or metropolitan planning organizations (MPOs) – are key stakeholders. They ensure the airport's plans mesh with the community's comprehensive plan and zoning. They are also often involved in road improvements or utilities that serve the airport.
Airport Users and Tenants	This group includes airlines or air carriers, air cargo companies, medevacs, flight schools, general aviation pilots, and concessionaires. They provide input on operational needs and future requirements. For instance, an air carrier might indicate changes in their fleet that would prompt longer runways. Users are often represented on the planning advisory committee. Their role is to ensure the master plan accounts for industry demands and operational practicality.
Public / Community	Residents, travelers, and community groups fall into this broad category of stakeholders. They typically have no formal authority, but their input and buy-in are crucial. Community members voice concerns about airport noise, safety, or environmental impacts, or they may simply have an interest in how the airport will grow. The public is engaged through public meetings, surveys, or comment periods. Their role is to provide community perspective – raising issues or preferences that technical experts might overlook. Public feedback can influence plan decisions. Community members become supporters of the final plan if they've been heard, and their concerns are addressed.
Industry Groups	Industry groups bring specialized expertise in their sector and often provide valuable insight on needs at specific airports.

Federal Agencies	The FAA oversees and supports airport planning at federally funded airports. The FAA's regional planners and project managers are involved to provide guidance and oversight. The Transportation Security Administration (TSA) is responsible for airport security at Part 139 airports and needs to be considered when planning features such as fencing and passenger screening.

Public Involvement

One of the defining features of the airport master planning process is its emphasis on public involvement. Both FAA guidance and industry practice underscore that a master plan's success often hinges on how well the public is involved.

Early and Continuous Involvement: FAA Advisory Circular 150/5070-6B explicitly states that the first task outlines a Public Involvement Program [Section 401, 3]. Public involvement has the greatest impact if it happens early, before major decisions are made. Involving stakeholders from the start allows the planners to understand community concerns up front and integrate them while there is still flexibility to consider many alternatives. It also educates the public about the airport's needs, so there are fewer surprises later.

Building Consensus and Transparency: Master plans often deal with sensitive or controversial topics (for example, runway extensions or land acquisition can raise community worries). A robust public involvement effort provides a forum to air these concerns, reach compromise, and build consensus. When people feel heard and see their input reflected, they are more likely to support the final plan. This can make a huge difference when the airport moves toward development.

Meeting Regulatory Expectations: FAA and federal policies (like the National Environmental Policy Act) expect airports to involve the public in planning. For proposed large projects, formal public involvement is required during environmental review and occurs during the design phase too. By integrating public involvement into the plan, the airport is essentially fulfilling some of those expectations proactively. FAA even has a separate Advisory Circular (150/5050-4A, *Community Involvement in Airport Planning*) emphasizing how planners should conduct outreach.

Public Involvement in Practice: Tools and Strategies: Table 3 identifies some common public involvement tools, and how they support this work.

Table 3. Common Public Engagement Strategies in Airport Master Planning

Engagement Method	How It Works and Why It's Used
Planning Advisory Committees	Most master plans establish one or more stakeholder advisory committees, depending on the size of the airport and complexity of the master plan. Two common committees are a Technical Advisory Committee (TAC) or a Citizen Advisory Committee (CAC). The TAC comprises technically knowledgeable stakeholders (e.g. airport staff, airline staff, engineers) who give input on technical issues and data. The CAC includes community representatives, local officials, and neighbors. They provide structured, two-way dialogue. Members review the planning team's work and provide feedback, and they relay information back to the groups they represent.
Public Information Meetings (Open Houses)	Public workshops or open house meetings are held for the broader community at key points in the project. In an open house, meeting attendees can view exhibits, talk one-on-one with planners and airport officials, and share comments in an informal way. It may include a short presentation or slide show to introduce the project. Digital open houses post-COVID provide another venue to receive feedback as well.
Small Group Meetings & Briefings	In addition to big public meetings, planners often meet with smaller groups throughout the process. For example, they might brief a tribe separately. These targeted small group sessions allow for more detailed dialogue on specific concerns, and the planning team can learn about local issues in depth and answer questions in a focused setting. This technique reaches stakeholders who might not speak up in a large meeting or to address technical topics with those who are deeply interested.
Public Awareness Campaign	Keeping people informed requires ongoing communication, not just meetings. Plans include a public awareness campaign to broadcast information and updates. This can include project websites, email newsletters, flyers, press releases to local newspapers, social media updates, and informational fact sheets, and sustains interest and transparency in the process.
Feedback and Comment Tracking	In addition, planners maintain a formal record of public input. Whether input comes from comment forms at meetings, emails, or online submissions, the team documents and analyzes the feedback. Common concerns or suggestions are summarized and responded to in the master plan. For controversial projects, this documentation is important to show decision-makers that public input was received and considered. The master plan may include an appendix of public involvement materials: committee rosters, meeting minutes, copies of presentation boards, and responses to public comments.

Conclusion: A Collaborative Roadmap for the Future

An airport master plan is more than just paperwork – it's a strategic roadmap that guides an airport's evolution in harmony with technical needs, funding realities, and community values. The master planning process brings together planning, engineering analysis and public collaboration. It results in a comprehensive plan that answers: *What improvements are needed? Why are they needed? How will we implement and pay for them?* All of these answers are backed by data and shaped by stakeholder input and compiled into a written plan.

It's important to recognize that master plans directly impact the movement of people and goods within the system. A runway realignment, apron extension, or lighting rehabilitation likely started as a recommendation in a master plan, years prior. By involving the public, airports aim to ensure those projects strike the right balance between meeting travel demand and prioritizing limited federal dollars efficiently.

In the United States, the FAA's framework ensures that every master plan follows a thorough, stepwise approach – from early pre-planning coordination to inventory and forecasting, through developing alternatives, and toward implementation. The emphasis on continuous public involvement is a recognition that airports serve the public, and thus the public should have a voice in their planning. When done right, an airport master plan represents a consensus vision for the airport's future – one that stakeholders can support and work together to achieve.

In summary, the airport master planning process is a carefully orchestrated journey: it charts where the airport is today, where it needs to go, and how to get there responsibly. It blends technical rigor with community wisdom. By reading a master plan (or an accessible summary like this), anyone can understand the rationale behind airport developments and appreciate the planning that keeps our aviation system safe, efficient, and responsive to public needs. The master plan is, quite literally, the master script that will guide an airport's story for decades to come.

References

Federal Aviation Administration, 2015. *Change 2 to AC 150/5070-6B, Airport Master Plans*, available online at https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_150_5070-6B_with_chg_1&2.pdf.