



AIRPORT PROJECT MANAGEMENT: SUCCESS IS IN THE DETAILS

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No project is too small when it comes to airport expansion and construction. With dollars, commerce and safety on the line, airport projects – from runways to hangars – are highly detailed and regulated processes, and for good reason. Project managers for airport improvements must exercise an artful balance of both big-picture objectives and immediate finite details.

Insufficient planning and practices regarding development activities can expose an airport to unnecessary risk and great inefficiency, therefore, detailed project management is no small matter. While a relatively general and linear path leads to a project's culmination, the right decisions and actions in each stage can mean the difference between a successful plan and one that could fail. Here are several key steps to consider from planning to completion:

Stage 1: Planning for Success

- **Lay out your plans.** As the communication and agreement document between an airport and the FAA, an Airport Layout Plan (ALP) is the overarching and approved multi-year plan for an airport's layout, airspace and land use. Any development project that falls within the current ALP's time frame must be documented to receive FAA approval of safety, utility, efficiency and funding. If it's not on an airport's ALP, information can be added as a "pen and ink" change simply by adding the information by hand on mylars or digitally on a CAD-drawing. The bottom line is, the ALP needs to acknowledge the project, or the FAA cannot appropriate the funding.
- **Maximize funding sources.** Understanding relevant funding resources and getting your project acknowledged by those resources is critical. Eligible airport owners seeking federal assistance may submit requests for aid through the FAA's five-year Airport Capital Improvement Program (ACIP), which distributes grant funds for construction, expansion and renovation projects. The ACIP is updated annually with input from the owner/sponsor at the Regional Airport District Offices (ADO). The ADOs submit anticipated development needs of airports in their regions for funding requests. While most ACIP forecasts three to five years out, this schedule may be a segment of a more long-term state plan. For instance, Pennsylvania's Department of Transportation funding program operates on a segmented 12-year schedule.
- **Document the impact.** For any airport owner/sponsor, a core planning function at the outset of a project is the assessment of its potential environmental impacts. A project must be

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Stage 1: Planning for Success

1. Lay out your plans
2. Maximize funding sources
3. Document the impact
4. Define project parameters.

environmentally cleared before federal or state funding can be granted. Projects approved for federal funding must meet the requirements of the National Environmental Policy Act, (NEPA) of 1969. Standards and detailed information regarding environmental compliance are outlined in:

- 1) FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*
- 2) FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*
- 3) FAA *Environmental Desk Reference*

Based on the proposed airport project and its potential environmental effects, a determination is made by the funding agency if the project qualifies as a categorical exclusion (CAT. EX.) or if an environmental assessment (EA) or an environmental impact statement (EIS) is required. It is important to note that, depending upon the level of environmental documentation required, it can take anywhere from a few days to many months or even years to complete the document and obtain final environmental clearance.

- **Define project parameters.** Finally, a Notice of Proposed Construction (FAA Form 7460-1) must be submitted for approval by the FAA. Also called “airspace,” this process to ensure that new construction does not interfere with operations, can be completed electronically. Many times, the design process itself defines the parameters requiring approval. In that case the 7460-1 form is submitted after design has begun. For complex construction projects, construction phasing plans that identify airport operational concerns, requirements and consequences should also be submitted for review. Development and design factors that might impact airport operations – such as construction equipment that could interfere with antenna signals – are detailed in the phasing plan; and, because the approval process can take several months, the earlier a sponsor can have these 7460 forms submitted, the better.

Stage 2: Select Partners

- **Pre-qualify.** As federal contractors, the partners that airports engage on development projects are subject to strict criteria. Sponsors should become familiar with the FAA Advisory Circular (AC) 150/5100-14D (or the latest edition), which provides guidance for airports in the selection of architectural,

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1. Pre-qualify
2. Rank performance, rather than price
3. Drive efficiencies with experience
4. Negotiate a “fair and reasonable” price

engineering, and planning consultants. Among the guidelines it offers, the AC discusses services that normally would be included in an airport grant project, types of contracts for these services, contract format and provisions, and guidelines for determining the appropriateness of consultant fees.

- **Rank performance, rather than price.** Consultants must be selected on the basis of their qualifications and experience, not price. This can be accomplished by means of qualifications-based selection procedures, where consultants submit Statements of Qualifications (SOQ). Once the best qualified consultant is identified and both parties mutually agree upon the scope of services, price information and negotiations can be considered.
- **Drive efficiencies with experience.** While every airport is unique, best practices and field expertise from work on other airports delivers top return on investment. Look for aviation consultants with a proven record managing construction projects with successful quality assurance, quality control and constructability metrics, and then leverage that experience for your project’s gain. A firm that has successfully completed similar projects at other airports will be able to recommend the easiest and most cost-effective methods for achieving a project goal, while maintaining optimal airport operations and function.
- **Negotiate a “fair and reasonable” price.** A third-party consultant or internal party could be engaged to conduct an independent fee estimate (IFE) at this point to review the consultant’s scope and price. An IFE is required for projects over \$100,000, but the FAA can request an IFE regardless of project value. Negotiation between parties can be considered reasonable should the agreed-upon price fall within 10 percent of the IFE. However, if an agreement cannot be reached, the airport has the option to engage with its second-highest-ranked consultant. It’s important to know this is a point of no return: once negotiations take place with a second choice, negotiations cannot resume with the first choice, even if the second choice’s costs are higher.

Stage 3: Development & Design

- **Discuss the design.** The sponsoring airport must conduct a pre-design conference to discuss project scope, design parameters, airport safety, routing of aircraft and equipment, sequencing of construction operations, and environmental considerations. A pre-design conference is completed for most projects but is essential when a project is of sufficient magnitude to affect airport

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Stage 3: Development & Design

1. Discuss the design
2. Allow enough time for surveys
3. Allow enough time for permits
4. Understand the environmental obstacles

operations during construction. This meeting is the first step toward resolving conflicts between construction activities and the operation of the airport. If it is determined that the project cannot meet certain design criteria, and the design cannot be altered, a Modification of Design Standards can be submitted to request certain criteria be relaxed or waived.

- **Allow enough time for surveys.** The FAA has increased its mapping and survey standards significantly, now involving a GIS component while requiring FAA approval of scope. From our recent experience, addressing these new mapping and surveying standards takes much longer than it has in the past. So that airport projects aren't delayed while awaiting survey information, it is important to plan ahead to stay on schedule while still meeting the new standards. Some airports and their consultants may take calculated risks and continue the work, but a more informed approach is to enlist a consultant that understands the new requirements in-depth and can work with existing topographical data to create a preliminary design and get the approval process started while awaiting approval of the survey.
- **Allow enough time for permits.** As with the surveys, the airport's consultant can assist in applying for relevant permits. Most airport projects now require land development permits by municipal planning authorities and approval of erosion/sedimentation control plans by county conservation districts or state environmental agencies. Additionally, addressing municipal zoning concerns can be very costly and time consuming. Many older general aviation airports began as small, private airports around which development grew. Eventually these airports expanded and were incorporated as a public airport, but the land remained zoned for suburban residential use rather than commercial and industrial uses. To offset time lost to rezoning late in the project, it's advantageous to actively seek out this information early in design. Also, the airport will likely need to work with the county conservation district or state environmental agency to get approval of an erosion/sedimentation control plan and a National Pollutant Discharge Elimination System (NPDES) permit when projects involve earthwork.
- **Understand the environmental obstacles.** We live in a green world that's only getting greener. If an airport project has the potential to impact wetlands or threaten indigenous species of plants or animals, the plan must be able to show a purpose and need for doing so. This step can also be a time consuming step. Sometimes getting a jurisdictional determination to verify the

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Stage 4: Construction

1. Welcome guidance
2. Manage quality assurance/control
3. Document, document, document
4. Understanding construction safety

presence of wetlands can take months. An experienced aviation design and construction consultant can develop a project to avoid environmentally sensitive issues altogether, or at least mitigate them, by designing the project with thresholds in mind.

- **Drive efficiencies with experience.** While every airport is unique, best practices and field expertise from work on other airports delivers top return on investment. Look for aviation consultants with a proven record managing construction projects with successful quality assurance, quality control and constructability metrics, and then leverage that experience for your project's gain. A firm that has successfully completed similar projects at other airports will be able to recommend the easiest and most cost-effective methods for achieving a project goal, while maintaining optimal airport operations and function.

Stage 4: Construction

- **Welcome guidance.** At this step, a strong construction management consultant views project construction with decisions, consequences and the big picture in mind. Rather than dictating means and methods to the contractor, a construction management consultant will foresee potential pitfalls and make informed recommendations for improvement.
- **Manage quality assurance/control.** The constructability of a project is crucial to building it cost-effectively. The consultant should ensure that the project is executed in the easiest manner, a capability that requires experience with similar work at other airports. It's essential, therefore, that the consultant's team has experience in the field, not just behind a desk.
- **Document, document, document.** It is difficult to over-document a project's plans and progress. Construction claims often occur months, even years after construction took place. It is for this reason that construction managers must document details in near real-time fashion to ensure the information's integrity and accuracy. Photographs, video and detailed reports could prove invaluable in supporting an airport's side in a potential dispute, but it takes a deep knowledge of construction to capture the many fine details of a complex project that would ultimately be most valuable.
- **Understanding construction safety.** Safety is imperative for any airport project, but be aware that it is the contractor who is ultimately responsible for construction safety. If an airport owner is directing safety practices on site, the airport opens itself up to

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liability. Leave safety assurance to the contractors in charge of the workers and equipment. Qualifying contractors for their familiarity with airports and aircraft operations is one way the airport owner helps improve the safety of workers and the aviation public.

Power in the Particulars

The detail-orientation required for airport project management is a necessary challenge. It requires gathering resources, meticulous management of information, and setting and meeting deadlines which sets an extremely high standard for compliance. The FAA's demand is that owners pay attention to detail, be aware of safety and be responsible for federal spending.

Despite the inarguable need for a strict process and regulations, airport project development can be a harrowing endeavor. A trusted and proven aviation consultant on the owner's team can leverage its experience in managing the minutia to a cumulative benefit for the airport.

While it is critical that airport project managers focus on the fine details, it is also important to understand that each airport project will involve many variables. An FAA regional project manager will work with the owner to understand which requirements apply to the specific plan.

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