



Aircraft Hangar Development Guide

A Valuable Airport Resource



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The AOPA Airport Support Network program was introduced in 1997 in order to assist members in preserving general aviation airports throughout the United States. Today, AOPA works with some 1700 Airport Support Network volunteers to promote, protect and defend America's community airports.

This Aircraft Hangar Development Guide is another in a series of publications AOPA has created in order to help individual volunteers keep their airport healthy, vibrant and growing.

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Aircraft Hangar Development Guide
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INTRODUCTION

MANY PILOTS WHO own or plan to own an aircraft want a hangar to protect their valuable investments in personal transportation from the elements. But there seem to be many more general aviation (GA) aircraft than available hangars. Perhaps your name is on one or more hangar waiting lists.

Building hangars can attract new businesses and generate additional revenue for the airport. In fact, a well-executed and successful hangar project can be the key to a financially-secure GA airport.

The purpose of *Aircraft Hangar Development Guide* is to help you and your airport owner successfully plan, design, and complete a new hangar development project at your airport. In an ideal setting, a hangar project would be straightforward: Project scoping, financial justification, preliminary design and budgeting, funding, approvals, construction, and moving in all would fall into place as projected. Unfortunately, the ideal hangar project rarely exists. You could face hurdles such as confusing regulations or funding difficulties. This guide—and your persistence will help you deal with the challenges of building hangars at your airport.

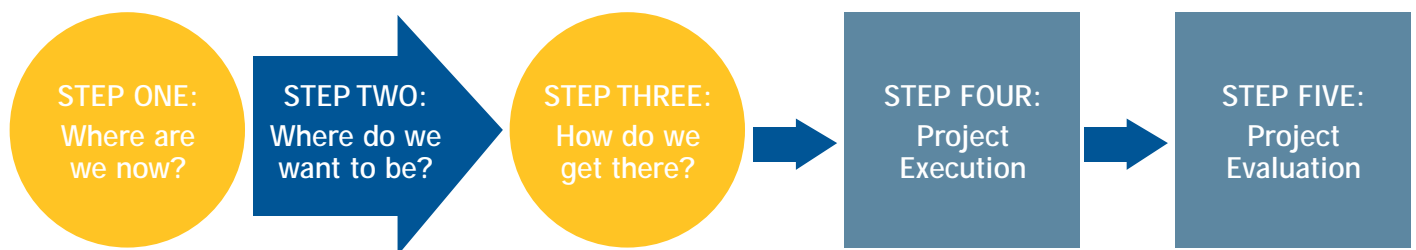
This guide has been tailored to meet the needs of a typical GA airport. Some specific elements may

not apply to your airport, and your locale may not face the same planning complexities as other parts of the United States. Regardless, this comprehensive guide covers many of the details you need to know—from start to finish—about a hangar development project.

Checklists at the end of each section make it easy to determine if you are ready to move to the next phase of the project. The guide also includes references to publications by the Aircraft Owners and Pilots Association (AOPA) and the Federal Aviation Administration (FAA) to provide you with additional information about building hangars.

THE BASIC PROCESS for planning and executing a successful hangar project has five steps. Take a look at the following flow chart and outline to see how the details of each step fit together.

Each of these five steps is equally important, but the success of a hangar project largely depends upon how well the first three steps are executed. Many projects fail because the implementation team neglects the first three planning steps and spends its efforts executing the project (choosing a contractor, setting a completion date, selecting the type of hangar doors). Prematurely jumping into project execution guarantees a



STEP ONE: WHERE ARE WE NOW?

- Determine the need for hangars (type, size, and number)
- Analyze the airport environment

STEP TWO: WHERE DO WE WANT TO BE?

- Explore alternate approaches
- Estimate financial impact
- Analyze strengths, weaknesses, opportunities, and threats
- Analyze boundary conditions
- Conduct stakeholder analysis
- Create a business plan

STEP THREE: HOW DO WE GET THERE?

- Frame and plan the project
- Build stakeholder support
- Prepare the project team
- Create preliminary project estimates
- Identify funding sources
- Prepare financial documentation
- Identify the review and approval steps

STEP FOUR: PROJECT EXECUTION

- Design and secure funding for hangars
- Solicit bids and award construction contracts
- Build hangars
- Complete the project and move in new tenants

STEP FIVE: PROJECT EVALUATION

- Evaluate the project financial performance
- Prepare a project summary for airport owner
- Conduct a user survey

costlier, more difficult, time-consuming effort that is likely to fail. It is important to evaluate the project at the end because this will uncover the strengths and weakness in the process that can be improved upon during future projects. It also can serve to promote the successful operation of the new hangars.

IT IS CRITICAL that each party involved in the project understands and agrees with the elements

detailed in the initial phases of planning. So, much of your effort during the first two steps will be spent building a compelling business case (See Appendix III “Is Your Business Case Compelling?”). At times it might feel as if you are not making progress, but the reality is just the opposite. Think of it as “going slow to go fast.” This approach can produce a high degree of acceptance, support, and commitment from all interested parties and lead to a cost efficient and timely project.

PROJECT PLANNING — STEP ONE

WHERE ARE WE NOW?

In this first step, you will assess the current state of your airport, how well it operates, and the viability of a hangar project. This includes quantifying the demand and need for hangars, assessing the “environment” within which the project will be executed, and obtaining support from key decision makers. It also means becoming familiar with the FAA requirements and regulations that govern airport development.

Before you begin, identify the key players who can assist you with the work. The team could include airport owner representatives, engineering consultants, and airport supporters.

Determine the need

Start by studying your airport hangar waiting list. If your airport does not have one, generate one to learn if there is a demand for hangars. Determine the level of commitment from those on the list—do they intend to occupy a hangar once one is built? In some cases, people have their names on multiple lists at neighboring airports, or they do not currently own an aircraft. In other cases, the waiting lists are not well managed, are out of date, or do not reflect the realistic demand for hangars. In any case, the waiting list and pilot demand for new hangars should be verified. A direct mail solicitation or survey to pilots within the airport’s service area should be considered.

ECONOMICS 101

Need or demand most certainly will be related to the cost of the hangar rental unit. It is wise to include an estimate of the rental cost on any existing or new waiting list or survey. Although basic hangar construction costs are available industry-wide and the hangar manufacturers will help, this first pricing estimate will require sharp estimates on site and land work.

One effective method to gauge the commitment of those on your airport’s hangar waiting list is to require a cash deposit from each individual to hold his or her spot on the list. It is incumbent on whoever manages the waiting list to do so fairly and equitably—never allow back room deals to influence priority on the list.

The type of hangar depends on the demand of your tenants and what is most appropriate at your airport. For example, nested T-hangars most often are attractive to potential renters because they provide the greatest degree of weather protection and security, whereas shade hangars have a structurally supported roof but open sides (no walls). Portable hangars are less expensive to build, but they are less durable and generate less revenue. Box hangars usually are attractive to owners of larger aircraft. These hangars can be quite expensive to build, but they also generate significant revenue.

ADDITIONAL ISSUES TO ADDRESS

- History of hangar project execution at your airport
- Demand for hangars at neighboring airports (and how that demand is being addressed)
- Sensitivity to paying higher hangar rent (new hangars probably will be more expensive to build, requiring higher rental fees)



Analyze the airport environment

Analyzing the environment within which you will be executing your project is a vitally important element that often is overlooked. Airport supporters often presume that if the demand for hangars is strong, then all a person must do is obtain the funding needed to complete the project. But before you seek funding, it is critical to research all of the elements in the airport environment. These elements include airport owner support, community support, airport master plan, zoning and land use, environmental issues, airport community design standards, airport tenant support, availability of project funding, and the current airport financial situation.

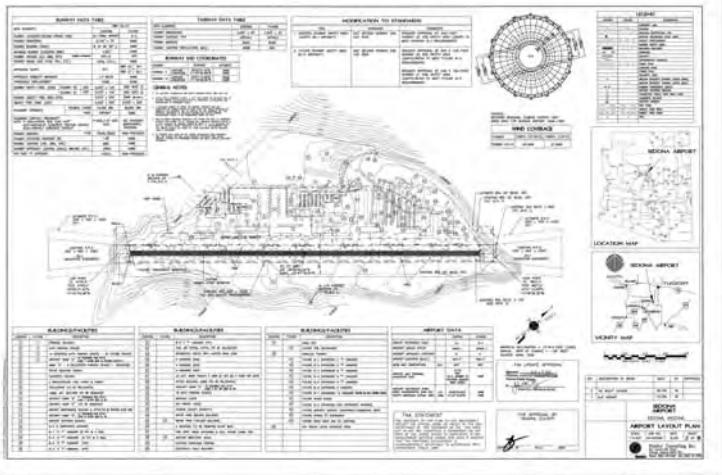
Airport owner support: If you don't have solid owner support for your airport, you will be fighting an uphill battle the entire way. Whether the airport is privately owned or city, county, or even state owned, you'll need a lot of help and support to successfully execute the hangar project. Identify the key decision makers early, because you will need their support to get favorable decisions on funding applications, permits, and contractor bid and award. You will need support from the airport manager, airport commission, city or county council, planning department, and senior city or county staff members.

Community support: A lack of community support for your airport will make your hangar project much more difficult. If your airport has been

a good neighbor, you'll be miles ahead. You might think you know what level of community support currently exists at your airport, but just because you haven't received a series of complaints from neighbors doesn't mean that you have support. Check with local community leaders, newspaper editors, and business groups to learn what they think about the airport. AOPA's *Airports: A Valuable Community Resource* (<http://www.aopa.org/members/files/airport/>) provides strategies that you can use to improve community support.

Airport master plan: Every airport should have an up-to-date master plan—a document approved by the FAA that describes the fully built-out capacity of the airport and the plans for achieving it. It also includes an FAA approved airport layout diagram that illustrates current and future development plans. It is critical that your hangar project is depicted on this diagram early in the planning phase because FAA grant funding, as it may apply to your project, will be based on the airport layout plan.

Zoning and land use: The airport probably has some requirements that govern how land can be used or developed. For example, there may be certain areas on airport property limited to commercial development, designated for aircraft storage, or a combination of the two. Some land



Sample airport layout plan.

might be required to remain open, free from development. If the area available for hangars is not zoned appropriately, you will need to correct that issue first. Consult AOPA's *Guide to Airport Noise and Compatible Land Use* (http://www.aopa.org/asn/land_use/) for basic guidelines on sound land-use planning.

Environmental issues: Environmental issues can be difficult to deal with during airport development. Use a current master plan to address all such issues based on maximum airport built-out capacity. Check with your planning department, community development staff, or other organization that has land-use jurisdiction at the airport, and get their assessment on whether the hangar project will need an environmental impact report (EIR). Typical environmental issues can include noise, traffic, water runoff, water use, soil impact/degradation, visual impact, and vegetation or animal impacts.

Your local FAA Airports District Office (ADO) can be helpful when working through environmental issues, and AOPA can provide technical assistance. An EIR can be time consuming and expensive, so plan accordingly if this becomes unavoidable. It will be important to the airport owner to know what impact an EIR will have on the hangar project. In some cases, EIR

requirements have made hangar projects financially untenable.

Airport community design standards: This may not apply to all airports, but it should be checked. Community design standards usually apply to the architectural design of buildings, including hangars. There may be restrictions on building size, shape, color, materials, and provisions for support infrastructure (parking and handicap access). The airport owner should be able to supply a copy of design standards, if they exist for your airport. These standards can impact the cost of your project, and consequently, your business plan.

Airport tenant support: Even though those on a hangar waiting list might be anxious to have the project completed, others at the airport might not be as enthusiastic. For example, an existing on-airport business may see new hangars as a threat—perhaps the project requires some of the property the business leases, or it creates competition. Determine the level of support you need from current on-airport businesses or other tenants so that they don't prevent the project from moving forward. You also might need to review or modify existing hangar lease documents to address existing or potential conflicts.

Availability of project funding: The main sources of funding for your hangar project will be through existing airport revenues, state aviation fund grants or loans, municipal bonds, and public or private loans. In some circumstances, FAA Airport Improvement Program (AIP) funding may be available thanks to changes made in 2003 by Congress. Vision 100, now Public Law 108-176, allows for the use of AIP funds to construct hangar projects on non-primary airports provided that the airport sponsor has a plan in place to fund all airside development needs first. The local FAA ADO can provide additional information on this program.

Grants through the AIP come with obligations that are intended to support sound financial practices and management of the airport and to ensure that the FAA's investment is secure. The FAA requires all of the grant eligible elements of the hangar project to be included on the airport capital improvement project (ACIP) list. The FAA ADO handles these documents, which amount to an airport wish list. If parts of the hangar project that you expect to be funded by an FAA grant are not included on this list, they won't get approved. Long lead times are associated with ACIP list processing and actually receiving grant funds or other forms of financing for a publicly owned airport, so allow time for this in your business plan and project planning.

To help you understand the obligations associated with FAA grants, the FAA has published two valuable documents: *Airport Compliance Requirements Order 5190.6A* and *FAA Policy and Procedures Concerning the Use of Airport Revenue*. Copies of these are available from the FAA's Web site (www.faa.gov) or from any FAA ADO. A working knowledge of these documents will help in the creation of a sound business plan. It also will be handy when interacting with airport owners and decision makers whose support is needed to successfully execute the project.

If your hangar project is to be a private development, then funding will not be as much of an issue. Check with the airport owner's financial staff for information on sources of private funding. Contact an engineering or aviation-consulting firm that specializes in airport project funding to determine the availability of funding for your project.

Current airport financial situation: Airport supporters and owners often don't fully understand the financial situation of their airport. Depending upon the level of support received and availability of the airport owner's staff, you

might find yourself putting a lot of work into understanding the airport's finances. You might find that the airport owner has not been handling the airport finances properly. For example, airport fuel revenue could have been diverted into non-airport related accounts, depriving the airport of badly needed operating revenue. These issues should be addressed before proceeding with the hangar project.

The airport manager or other individual who is in charge of the airport's finances should be able to help you find the necessary documents to review for the project. Check the monthly revenue and expense statements to see if the financial condition of the airport will support a hangar project. Look through a few years worth of statements to see how revenues and expenses have tracked over time. If your airport has been running deficits, the local owning entity will be less likely to burden the operation with additional debt. This will make it more difficult for you to convince them of the need to build hangars. If a long-term deficit situation exists, you might need to address that first in your business planning before beginning the hangar project. Remember, a well-planned hangar development project could help erase an airport's operating deficit and help the airport turn a profit.

Depreciation is usually a year-end charge to account for the loss of value of an investment over time because of the use of an asset. For example, new hangars put into service are "reduced in value" on the airport financial statement year by year to account for wear and tear. If an airport were to generate enough revenue to cover depreciation charges, it would in effect be building a reserve fund so that when it was time to replace the hangars, sufficient funds would be available to do so without the need of any additional loans or grants. However, few airports are able to do this. (See Appendix I "Airport Revenue and Expense Financial Analysis.")

LISTS OF TYPICAL REVENUE AND EXPENSE LINE ITEMS

Revenues

- Tiedown rent
- Hangar rent
- Ground leases
- On-airport business leases
- Fuel sales
- Personal property tax
- Airline ticket tax (for commercial service airports only)
- Interest

Revenues: For most GA airports, fuel sales and rent generate the largest portion of revenues. But personal property tax also generates revenue. This is handled differently across the United States depending on city, county, and state law. However, it typically is paid by aircraft owners based on the assessed value of their aircraft. In some cases, a portion of the total payments can be returned to the airport. The airport owner and the tax agency can agree upon a funding arrangement. For example, a county might levy the tax and agree to return a portion of it to the airport.

Costs/Expenses

- Salaries and wages
- Debt service (loan payments)
- Fuel purchases
- Maintenance and repair
- Office supplies
- Hazardous waste disposal
- Utilities
- Owner overhead charges
- Insurance and risk management
- Depreciation charges

Expenses: Debt service is typically the largest expense for airports that have continuous development. However, salaries, overhead charges, and fuel purchases might be the biggest expenses at airports where development has been spotty.

You should be able to address each of the items discussed, based on the information you have gathered so far. You probably will not have all of the details, but you should have enough to accurately assess “Where are we now?” and what you need to do in order to move forward. Present this preliminary information to key decision makers to gain the support needed to proceed.



CHECKLIST FOR STEP ONE

- ✓ Quantify and value hangar demand
- ✓ Assess level of current support for airport
- ✓ Identify key decision makers
- ✓ Assess level of current community support
- ✓ Identify zoning and land-use issues
- ✓ Confirm airport master plan in place
- ✓ Assess environmental issues, preliminary judgment in hand
- ✓ Review airport design standards
- ✓ Assess level of current airport tenant support
- ✓ Determine availability of project funding
- ✓ Establish project team
- ✓ Decision to proceed in hand
- ✓ Review airport finances

PROJECT PLANNING — STEP TWO

WHERE DO WE WANT TO BE?

In Step Two of the process, you will learn the scope of this hangar project by exploring alternative approaches and estimating the financial impact of each. Once you have chosen the best approach, you will analyze its strengths, weaknesses, opportunities, and threats. You also will analyze boundary conditions, conduct a stakeholder analysis, identify key decision makers, and create a compelling business plan for your approach.

Explore alternative approaches

There are a number of reasonable approaches to getting new hangars built at an airport. Each has pros and cons (see comparison charts below), so you will need to analyze the options to determine which is best. There are three typical approaches. First, a private company can own the hangars on leased airport property. Second, the airport owner can build the hangars and rent them to airport tenants. Third, the land can be leased to a private developer who will build and rent the hangars to airport tenants.

PROS [Private vs. Owner Development]

PRIVATE DEVELOPMENT

- No up-front owner investment required
- No owner management needed
- No occupancy risk
- One entity to deal with

AIRPORT OWNER DEVELOPMENT

- Good demand
- Highest revenue flow to airport
- Built to airport owner specs
- Greatest control to ensure compliance with airport rules

CONS [Private vs. Owner Development]

PRIVATE DEVELOPMENT

- Lower revenue because open land is leased, limiting control of future rent increases
- Management of hangar waiting list can be problematic
- Owner may lose asset appreciation depending on lease terms

AIRPORT OWNER DEVELOPMENT

- Airport owner management oversight needed
- Potentially highest capital cost
- Maintenance costs come from airport budget

Generating revenue is usually the primary goal for GA airports, so having the airport owner fund, build, and manage a hangar project is frequently the best approach. If the owner is not supportive, then finding a private source for funding, construction, and operation will be the most attractive alternative. The key will be your financial analysis.

Estimate the financial impact

After exploring the alternative approaches, it is critical to assess the financial impact of each on the airport's operation. Take the past financial history of the airport's operation, include the impact of the new hangars, and project the result.

You will need to get budget-type estimates for the various alternatives you reviewed in the prior step. Look into revenue, operating expenses, and capital costs/loan obligation payments.

Remember to include an estimate of increased fuel sales revenue (and the other miscellaneous items that would increase) based on the number of aircraft based at the airport. A cost-effective source for such information can be obtained from prior projects at your airport or neighboring airports, adjusted for inflation and differences in scope. Use an airport consultant or engineering contractor to generate budget type estimates.

Once you have gathered the pertinent information, run the financial projections out at least 10 years, applying inflation-based adjustments for operating expenses and revenues. During this 10-year period, you likely will see that existing loans may be fully paid off, generating the potential for increased positive cash flow and other benefits. These are all important to document in the final business plan as justification for the project. A copy of a typical financial projection, or *proforma*, is included in Appendix II.

Analyze project strengths, weaknesses, opportunities, and threats (SWOT)

The purpose of determining the project's strengths, weaknesses, opportunities, and threats (SWOT) is to uncover the impact that your hangar project will have on the airport's stakeholders. It is helpful to have a group of project proponents working together on the SWOT analysis and interviewing key decision makers or stakeholders—this can uncover potential issues more quickly than doing it alone. Typically, you will discover things that you can use to your advantage or issues that you can address in the early stages of project planning to limit their possible negative impact.

EXAMPLES FROM A SWOT ANALYSIS

STRENGTHS

- History of success
- Full hangar waiting list
- City council support
- Available FAA, state funding
- Contractors committed to airport
- Generally good community relations

WEAKNESS

- Airport manager has minimal project experience
- Possible tenant resistance
- Unknown degree of owner support and staff availability
- Unknown potential neighbor resistance

OPPORTUNITIES

- Provides increased revenues for the airport
- More satisfied airport customers
- Increased airport business opportunities
- Transportation infrastructure improvements

THREATS

- Obstacles to progress created by current tenants
- Unknown community resistance
- Airport Improvement Program is not funded by Congress (a possibility only)
- Developer or other party has conflicting interests

Once you have completed the SWOT analysis, you will have a better idea of where to focus your energy as you start persuading the decision makers and other stakeholders to become supportive of the project. If you are fortunate, you might not have many worries in this regard, but it is best to be forearmed.

Analyze boundary conditions

Boundary conditions are nothing more than the “givens” surrounding the project. They set what’s in bounds and what’s out of bounds. There undoubtedly will be constraints on the project that you will not be able to change. Better to know this now and include it in your initial planning than later, which could put the project in jeopardy.

TYPICAL BOUNDARY CONDITIONS:

- FAA and state will provide funding
- Architectural designs will require review and approval
- City/county council must endorse project plan and contract awards
- Lease agreements must be renegotiated with some current airport tenants
- Neighbors must be included in communication process
- Hangar design is restricted by airport layout plan
- No additional airport staff can be added to administer project
- Owner will not provide any supplemental funding (i.e., hangar project must be self-supporting)

With the boundary conditions identified, you might find more issues that need to be considered as you put together the business plan and deal with stakeholders during project execution. It is key to determine who will be the decision maker, from whom or what group



you will need approvals, and whether this will change at various points during the project.

Conduct stakeholder analysis

A stakeholder is any person or group who has an interest in or will be impacted by the hangar project. Once you have identified the stakeholders, determine their level of support. This will help you manage the level of acceptance and commitment for your project—strong allies can influence those who show little support.

Use the SWOT analysis to create strategies to increase the level of commitment from key stakeholders. Ask yourself: “What would our stakeholders say about the project if it was a success from their perspective?” or “What are their views of the airport operation today?” With these answers, you can develop strategies to get the needed support.

Keep in mind that the stakeholder analysis likely will change over time as issues are addressed or new stakeholders are identified.

STAKEHOLDER ANALYSIS TOOL

Name	Strongly Oppose	Moderately Oppose	Neutral	Moderately Support	Strongly Support	Concerns	Desired Behavior	Influence Strategy
People on hangar waiting list					X	Want hangars ASAP	Support	Keep informed
Current airport tenants				X		Want hangars ASAP	Support	Keep informed
Business tenants (varied support level, multiple tenants)	X			X		Competition from new businesses	Reduced resistance	Demonstrate equity in costs
Airport commission					X	Project success	Demonstrate support	Keep informed
City hall			X			Project problems and financial obligations	Supportive, involved as appropriate	Reduce need for active involvement, project self-supporting
Community			X			Noise, safety	Nominal support	Keep informed
FAA, state				X		Execute project and use their procedures	Satisfaction	Keep informed and use their procedures
Contractors					X	Open dialogue	Active partner	Open dialogue continuously

Use the Stakeholder Analysis data to boost support for the project and minimize opposition.

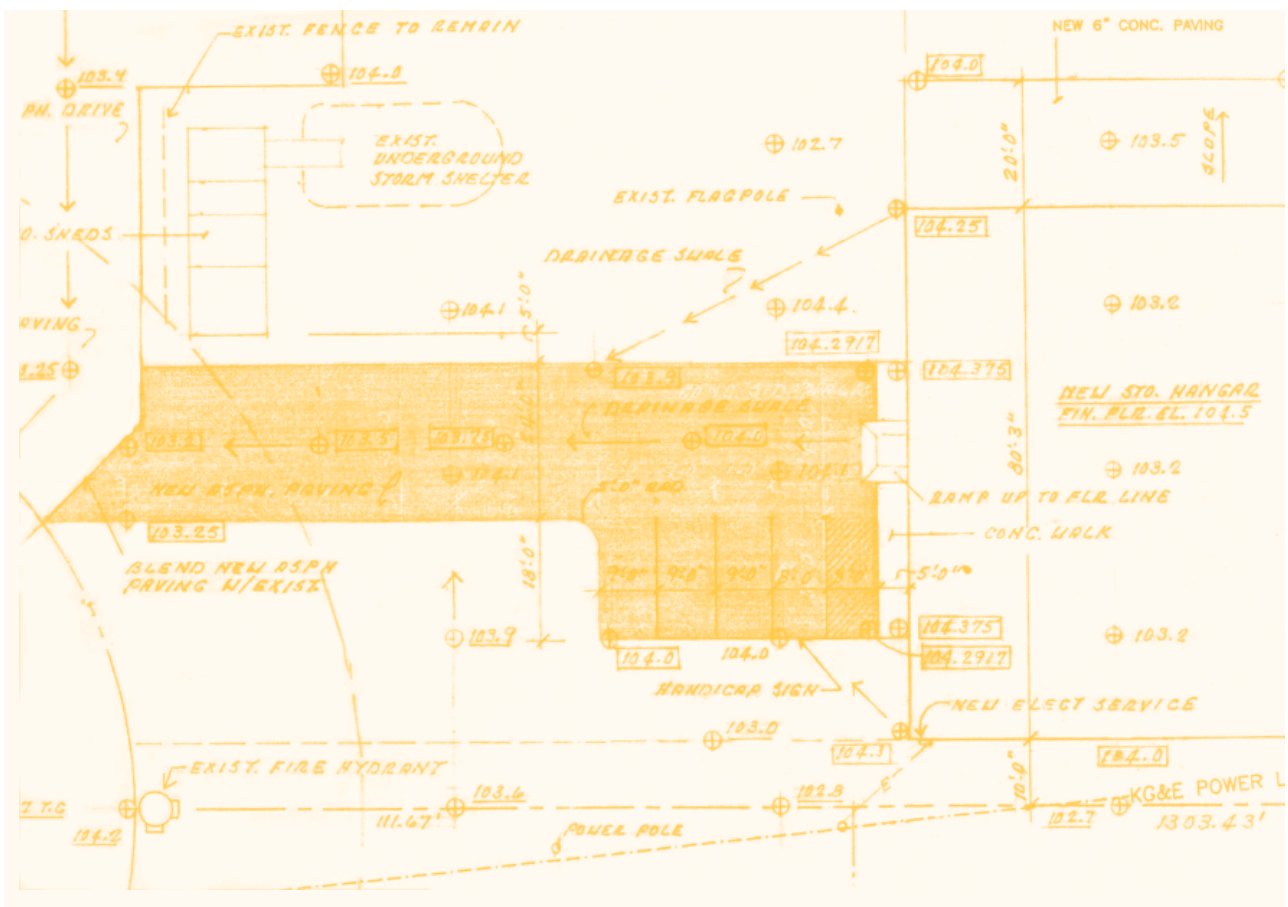
Create a business plan

Even if you don't face all of the issues explained in this guide or need to create an elaborate business plan for your key decision makers, you still should go through these steps. A business plan will assist you throughout the project and will help it run more efficiently.

By now you will have a thoroughly researched document, a compelling financial statement for your selected alternative, and a plan to deal with most of the issues from decision makers and stakeholders. Make sure your business plan is well supported before presenting it. Appendix III provides tips on how to compile a compelling business plan. Use the completed elements from the first two project steps to build your credibility with the key decision makers and stakeholders, which will pay dividends as the project progresses.

CHECKLIST FOR STEP TWO

- ✓ Explore alternatives
- ✓ Estimate the financial impact
- ✓ Complete a SWOT analysis
- ✓ Review the boundary conditions
- ✓ Select decision makers
- ✓ Complete a stakeholder analysis
- ✓ Select desired alternative
- ✓ Report best alternative to decision makers
- ✓ Confirm project team members
- ✓ Prepare and present business plan to decision makers
- ✓ Decision to proceed in hand



PROJECT PLANNING — STEP THREE

HOW DO WE GET THERE?

During Step Three of the process, you will fully develop the preferred hangar alternative. This includes framing the project, setting detailed plans for execution, and building stakeholder support. You also will prepare your project team and establish each member's roles and responsibilities. Creating preliminary

design and budget estimates, identifying funding sources, and identifying the project review and approval process will occur during this step as well.

But before you start developing the preferred hangar alternative, take time to define seven key project management principles that will help to ensure a successful hangar project.

Seven key principles of project management

1 Clear direction

Be certain that everyone involved is clear on his or her roles and responsibilities, the required project approvals, and the way decisions will be made.

2 Sponsorship

Be certain that you have the necessary support for the project from the airport owner and other key stakeholders each step of the way.

3 Communications

Develop a communications plan in order to keep all stakeholders, future tenants, and elected officials informed on progress of the hangar development. Ensure that all stakeholders are included in your communications plan. The objective is to reduce surprises and potential resistance.

4 Engagement

The airport owner and stakeholders will need to be engaged and supportive of the project at different levels and points in time. Establish and confirm the needed level of involvement or support before you proceed.

5 Shaping and reinforcement

Once you've established the level of support needed, use the stakeholder analysis (created in Step Two) to assess any gaps between the sponsors' current level of support and the level of support needed. Develop plans to shape the behaviors you need from each sponsor and reinforce the desired ones.

6 Measurement

Establish qualitative and quantitative criteria at each project step to track progress. During each step, ask yourself, "What would success look like?"

7 Plan modification

Once your plan is established, don't assume it will never need to be changed or updated. Changes are continual on any project; don't ignore or assume everything is as it seems or will be. Frequently update and reassess your plans to make sure it is current.

Frame and plan the project

Project framing builds on the work done during “Project Planning – Step Two”: boundary conditions, SWOT analysis, and the preliminary stakeholder analysis. For a hangar project, this is straightforward. The project frame usually includes the hangars and nearby airport property. A concise project frame will focus everyone involved on what needs to be accomplished and can be used to prevent “project scope creep.” Project scope creep can happen when multiple interests fail to define and maintain a highly-focused discipline in defining and adhering to objectives. A project frame that is too wide can become overwhelming; but if it is too narrow, you might miss critical elements needed for the project. Examples could include underground utility modifications and rainwater drainage.

Build stakeholder support

Now is the time to do some detailed planning to address stakeholder support. Remember, a stakeholder is any group or individual that has an interest in or is affected by this project.

Meet with the individuals or groups identified as stakeholders, and use your stakeholder analysis tool (see page 12) to judge their level of support. Share your completed preliminary hangar project plans with them, and judge their level of support to identify possible obstacles.

There are a number of ways to conduct these discussions with your stakeholders. However, sometimes it is difficult to get the attention of key players. Hook them on the value of your project early in the discussion. AOPA’s *Airports: A Valuable Community Resource* handbook has a useful section, “What’s Your Airport Worth?” (www.aopa.org/members/files/airport/apsup03.html) that is packed with facts and figures about the value of GA airports. Most decision makers in city hall have no idea of the value their local airport adds to the community. Use the AOPA airport hand-

book along with the financial analysis of the positive impact of your hangar project to demonstrate the importance of your project to the health of the airport’s operation.

Members of the project team can use this information when meeting individually with the airport owner’s key senior staff, city council, or other final decision-making group to discuss plans for the long-term financial health of the airport. This will peak their interest because most politicians and senior staff want an airport to be as self-sustaining as possible.

The greatest value of these types of meetings is that you can begin to build credibility with these stakeholders—an important step toward getting their support. In addition to increasing their awareness of your project and the airport’s value, use the meetings to tell these key players what you need from them. For example, ask for their support when the project comes up for approval, request their help obtaining financing, or request help getting a special variance on potential roadblocks.

Make a point to personally thank each stakeholder whenever he or she demonstrates the desired behavior, and tell each the impact that his or her support has on the project. The stakeholders will appreciate the recognition. If they don’t do what you requested, make another contact and ask if there is anything you can do or information you can provide to gain their support. In some cases, you might not be able to change the mind or behavior of a key stakeholder, so recognize this and include it in your project plans. As you progress through the project, be sure that you don’t unintentionally do something that would increase their resistance.

So far, you should have identified the stakeholders, determined their current level of support, identified their concerns, established the desired behavior from them (support for your project), and executed a strategy to influence the desired behavior you don’t have.

Prepare the project team

You might be the driving force behind the project and not have an official team, but there will be many people involved at various times who will influence the project. To effectively prepare your team, you should ensure that each person agrees with the scope of the project and is clear on his or her roles and responsibilities. Each member should commit to do what is expected and meet deadlines. It is up to you to make sure that each member has the resources needed to meet those deadlines.

Keep your team on track

Missed deadlines are often the result of team deficiencies. So what should you do if team members are missing deadlines or won't take on responsibilities?

- First, you should confirm that each individual member agrees to and supports the scope of the project. This can help reveal those who think it will have a negative personal impact or may not be clear on every aspect of the project. You might learn that you need to modify the team because you do not have the right members.
- Then, verify that each member is clear on his or her roles and responsibilities, which will help clear up misunderstandings and false assumptions.
- Some team members may withhold their commitment to doing what is expected because they think they cannot do the job, they do not have the tools or resources to do it, or they do not agree with some aspect of the task or they think they have a better way to do it. In such a case, ensure that each team member has the skills, knowledge, resources and commitment to complete the task. This can include time, equipment, access to information, and decision-making authority. Find out what they need to be able to deliver results. Dealing with such issues usually will resolve a lack of commitment. While you may not be in a position to meet all of the team's needs, you can positively influence those who are.
- Finally, confirm that each person is willing to deliver what is expected by the established deadline before leaving any meetings. This should build commitment to honor agreements.

Create preliminary project estimates

In Step Two you looked at past hangar project costs to estimate the impacts of various alternatives. Now that you've selected the best option for your airport, you will need to refine your estimate to include current design, construction, material, and support costs.

Consider hiring an engineering design firm that specializes in airports to do the preliminary project design and budget estimates. Many airports hire an engineering firm on a "standing contract" basis to do miscellaneous consulting work. If your airport does not have an ongoing contract with such a firm, you most likely will need to go through a bidding and "standing contract" award process to select one. Check with the airport owner's senior staff about how to do this. In many cases, there is an established contract bidding and award process already in place if your airport is municipally, county, or state owned.

Integrate the engineering contractor into the project planning as soon as possible. The contractor's expertise can be invaluable in helping to refine the scope, boundary conditions, project cost estimates, and funding resources. With the engineering design firm on board, you also can begin the preliminary design and budget estimate work.

Be certain that you have sufficient project funds to compensate the engineering firm. Many times there may be sufficient funds available from the airport's operating budget. If not, you may need to request a short-term loan from the airport owner that will be paid back with funds from your financing source. Obtaining this extra funding for the project should be easier thanks to the work you did earlier to build credibility, show the value of the airport, and gain support from key decision makers.

Identify funding sources

An almost infinite number of combinations of grants, public or private loans, bond issues, and other sources of funding are available. Some are quite sophisticated and may require a degree of creativity to get the combination best suited to your project and airport financial situation. Some of the more common methods of financing will be covered in this guide.

As noted earlier, the FAA has Airport Improvement Program (AIP) grants designed specifically for construction, development, and expansion of U.S. airports. When planning a hangar project, FAA grants can be used to pay for utilities, some underground work, paving of ramps and taxiways, and even fencing, gates, and lighting systems. These grants usually cover up to 95 percent of the cost of qualifying parts of an airport expansion with the remainder as “matching funds” coming from the airport owner.

The process of applying and being approved for such a grant from the FAA is not difficult, but it can be time consuming and requires specific working knowledge of the FAA AIP grant process. Airport engineering consulting firms can combine the project design and funding application process. Aviation loan and grant consultants also specialize in helping airports apply for these grants. The engineering consultant should be able to tell you which approach is best for the airport. Regardless of which approach you use, you will need to cover the matching portion of your grant from other funding sources.

In addition, by federal law there is a limitation for what the AIP grant money can be used at a public-use airport. For example, AIP grants cannot be used to pay for strictly revenue-producing parts of the project. This covers the hangar buildings, including foundations, and some of the paving in front of the hangar doors. How to pay for the non-grant eligible parts of your hangar project is where you may need to get creative.



A first step might be to meet with the airport owner’s financial staff. In the case of a city- or county-owned airport, this could be the director of finance. When you meet with the financial staff, discuss the detailed plans for the project, go over your ideas about financing, and enlist their help to contact lending institutions, bond issuers, and other financial resources. You might discover that the airport owner may be willing to consider loaning the airport operation the money from his or her own general revenue fund. In any case, you should have a better idea of your options once you’ve involved them in your quest for funding.

Another option for funding could be your state. Some state governments have aviation loan programs designed to supplement the AIP. These loan programs are often funded by state aviation fuel taxes and are self-perpetuating given the loan payments are made back into the program.

If you decided to have a private developer design and build your hangar project, you still will need to coordinate your efforts closely because there may be parts of the airport infrastructure that they may not be able to provide. For example, a private building developer probably will not pro-

vide utilities to the site, taxiway extensions, security fencing, or area lighting systems. In this case, it may be possible to obtain an AIP grant to develop the infrastructure necessary to support the hangar development project. You probably will need to hire an engineering consultant to design and manage the details between your private developer and the airport.

Financial funding alternatives summary

- **FAA AIP grants**
Contact the local FAA ADO (faa.gov/arp), an engineering consultant, or airport financial consultant.
- **State/county aviation loan program**
Contact the appropriate aviation department.
- **Airport owner**
Check with the finance department about financing from the airport general fund or community development programs.
- **Municipal/county bond issues**
Finance department staff can help, and investment bankers can handle bond issues. (These can take some time to put together, so plan accordingly.)
- **Bank loan**
Check with the finance department staff.
- **Private development funding**
The private hangar developer will provide his or her own financing, but you probably will need to seek additional funding.

Don't be surprised if the construction bids ultimately come in higher than anticipated. Plan for this possibility to prevent an unexpected surprise in the future. It is better to have done some preliminary assessment of options than to be surprised, possibly putting the project in jeopardy. For example, you could evaluate the impact of reducing the project scope; you could check to see what additional loan or other financial resources might be available; or you

could assess the impact of higher hangar rental rates to cover the additional costs. If your project is still viable—even if faced with a significant (20 percent or more) overrun—then you will know that the project is on firm footing to move forward.

Prepare financial documentation

After identifying the available funding sources, finalize the funding plans. But, your work in the financial area is not over yet. You or your airport owner's financial staff also will need to prepare a detailed financial projection, or project *proforma*, for the term of your project's funding. This allows the financial institutions that are providing funding to evaluate the project and decide whether they'll give you all the money you need. The FAA also will want to be assured that your project is well conceived and financially reasonable.

This project *proforma* is just an expansion of the work you did earlier to demonstrate the value of your project and gain stakeholder support. This should be fairly easy because you should have more accurate cost estimates from the engineering design consultant's preliminary design. Use the project cost estimate and your projections for revenue and expenses to complete your project *proforma*. (A sample project *proforma* is included in Appendix II. You will use this project *proforma* in Step Four when you obtain funding. Remember to include other known future expenses, such as fuel system replacement, in your projections. The project *proforma* will be a powerful tool when meeting with decision makers and working to positively influence other key stakeholders of the value of your project.

If you decided to pursue private development, you will need to check with the FAA to see what kind of financial projections they require.

Identify review and approval steps

All the work you've done to this point has been directed toward creating support from key stakeholders and decision makers for the most attractive hangar project alternative at the airport. Now that you've defined your project scope and created a funding plan that is financially credible, you'll need to identify, in advance, the review and approval steps necessary to move forward. An airport project will impact many different areas of the airport owner's responsibilities and jurisdiction, and you most likely will be confronted with numerous levels of reviews and approvals.

Start planning your review and approval sequence, and build the timeline into your overall project plan. Specific stakeholders might require multiple reviews and approvals during different stages of the project. (You might not need to have your project reviewed and approved by all of the following entities.)

The city/county council or commission, the mayor or county supervisor, and the airport commission all probably will need to be involved in the approval process to hire an engineering consultant, apply for FAA grants or loans, request construction bids, award a construction contract, and accept the completed project.

A planning department or commission may be involved in the overall plan approval, architectural review, land-use review, and environmental impact review. The project also will need to be reviewed and approved by the legal and financial departments. Other commissions and committees might need a say in a bicycle/pedestrian review, landscaping, public access and security, and noise and traffic concerns. The fire marshal, police department, and public works/parks and recreation department probably will need to participate as well.

An effective way to plan ahead for these reviews and approvals is to work closely with key stakeholders and ask them what is necessary for the project to proceed. You might find that you can negotiate away several of these steps that are not appropriate to the project. Often the individuals involved in reviewing the project or granting approval to proceed are ignorant of airports and how they operate in particular. Use your credibility and positive stakeholder relationships to your benefit.

Another advantage to planning ahead for the review and approval steps is to uncover issues you missed in your earlier planning. Finding these before the review and approval phase will limit the surprises you could face in the future. With all of this information and a compelling business case in hand, you should be able to get a decision to proceed.

CHECKLIST FOR STEP THREE

- ✓ Complete project framing
- ✓ Build stakeholder support
- ✓ Prepare project team
- ✓ Create preliminary project estimates
- ✓ Identify funding sources
- ✓ Prepare financial documentation
- ✓ Identify review and approval steps
- ✓ Decision to proceed in hand



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