

CAPITAL IMPROVEMENT PROGRAM GUIDE

Shaping your airport's future



UNIVERSITY OF MINNESOTA



CENTER FOR TRANSPORTATION STUDIES



Capital Improvement Program Guide

Shaping your airport's future

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WELCOME

Public Airport Owners,

I am pleased to introduce this *Capital Improvement Program Guide*, published by the Minnesota Airport Technical Assistance Program (AirTAP) of the Center for Transportation Studies (CTS) at the University of Minnesota.

AirTAP offers training and assistance for community and airport personnel throughout the state. The Office of Aeronautics, in partnership with the Minnesota Council of Airports and CTS, sponsors AirTAP. This guide is one of the ways that AirTAP provides information and shares best practices that help airports in their day-to-day operations.

Air travel in the state is critical to its well being. Because of its importance, the Federal Aviation Administration (FAA) and the Minnesota Department of Transportation (Mn/DOT) make funding available for the maintenance and capital improvements that allow public airports to meet the transportation needs of the state's citizens.

The Capital Improvement Program (CIP) is an important tool for planning for the current and future needs of your airport. Mn/DOT and the FAA use the CIP to allocate limited financial resources to airports. Preparing your CIP is the first step you take to access state and federal aviation dollars.

The Office of Aeronautics requests CIP information from airports each year. This guide offers information that will help you develop a plan for meeting current and future needs. A well-prepared CIP can also help you avoid possible project delays by setting realistic timelines and expectations.

Please know that you can request assistance from the Office of Aeronautics at any time. The regional airport engineering teams are more than willing to meet with you at your convenience to discuss the specifics of your CIP.

I encourage you to use this guide as you plan for your capital improvement projects and prepare your CIP. Every airport offers an important service to its community, the region it serves, and the state. Thank you for your continued commitment to providing quality air transportation facilities throughout Minnesota.

Peter D. Buchen
Manager, Airport Development
Minnesota Department of Transportation
Office of Aeronautics

THE FUTURE STARTS NOW

From the Wright Brothers to Charles Lindbergh, famous aviators share more than a common love of flying and the tenacity and talent to conquer the many obstacles they faced. They also envisioned their future, and almost every step that they took moved them closer to their goals.

Minnesota's aviation community remains true to the spirit of aviation's pioneers in its daily activities. Managers at airports, whether large or small, work hard to ensure air travel that supports businesses and consumers in ways once thought impossible.

That kind of commitment requires those who are responsible for the state's airports to think ahead, to anticipate needs, and to develop thoughtful responses. As the pioneers knew, the future starts now.

Because of their potential to enhance airport operations, capital improvements play an important role in an airport's future. Capital improvements include:

- Planning studies and zoning
- Land acquisition and obstruction removal
- Runway and taxiway construction
- Navigational aids
- Equipment purchases
- Building-area development
- Hangar construction
- Infrastructure improvements

Capital improvements also require a serious financial commitment. They often directly impact an airport's ability to deliver or expand its services. They are an important part of an airport's future, and because of their size, scope, and complexity, they take time to complete.

Where can you find support to make capital improvements to your airport?

The capital improvement projects of many state airports qualify for federal or state funding. But there are some important steps that airports must follow to succeed in obtaining funding for their capital improvement projects.

The Capital Improvement Program (CIP) is one such step. Each year, the Office of Aeronautics at the Minnesota Department of Transportation (Mn/DOT) asks airports throughout the state to submit or revise a five-year CIP for their airport.

An airport's CIP identifies its slate of capital projects for up to five years. Airports submit a project description, project cost estimate, federal programming sheets (available at www.mnaero.com), and start year. Federal and state agencies use that information to determine and allocate funding for eligible projects.

The CIP then becomes a very important planning tool for airports. The more the CIP reflects the reality of an airport's situation, the more likely the funding process will go smoothly. Airports that pull together their CIPs at the last minute without thinking through the major steps may experience project delays.

This *CIP Guide* offers practical information that will not only help you complete your CIP, but will also help you plan for your airport's future and manage the capital projects. We hope that you will use this guide as you consider your airport's future and the capital projects that will improve your airport's operations.

Capital improvements play an important role in an airport's future.

This CIP Guide offers practical information that will not only help you complete your CIP, but will also help you plan for your airport's future and manage the capital projects.

You can use this guide as you identify and plan for capital improvements, as well as when you are preparing to complete your CIP submittal to the state.

A PLACE TO TURN

The process to complete the CIP really begins with identifying needs at your airport and understanding the steps involved in each type of capital improvement project. This guide offers information about the process of preparing a CIP and about the major tasks that capital projects require.

The pages that follow include an overview of CIP submission to the state. The overview describes:

- The CIP as a planning tool
- CIP role in funding approval
- General eligibility guidelines for funding
- Identification of needs
- CIP process from submittal to evaluation
- Sample timeline

The remainder of this guide addresses the types of capital improvements with descriptions, explanations of their importance, sample timelines, and resources for additional information. The list does not include all possible capital improvements, but does include the capital improvements that most often appear on airport CIPs:

- Airport Planning
 - Consultant Selection
 - Airport Layout Plan (ALP)/ALP Narrative/Master Plan
 - Federal Environmental Assessment (EA) and State Environmental Assessment Worksheets (EAW)
- Land Acquisition
 - Appraisals
 - Purchase Agreement
- Construction
 - Runway Construction
 - Runway Extension
 - Taxiway Construction
 - Apron Construction
 - Pavement Rehabilitation
 - Obstruction Removal
 - Navigational Aids
 - Building Area Development
 - Hangar Construction
 - Wetland Mitigation
- Maintenance
 - Hangar Door Repair or Replacement
 - Roof Repairs
- Equipment Purchase and Disposal
 - Snow Removal Equipment (SRE)
 - Aircraft Rescue and Fire Fighting (ARFF) Equipment
 - Pavement Sweepers
 - Mowers

You can use this guide as you identify and plan for capital improvements, as well as when you are preparing to complete your CIP submittal to the state. Please note that you may need to submit additional documentation as you move through the funding process, but you can turn to this guide for assistance when you are:

- **Identifying needs.** The CIP Basics section includes items to consider as you identify possible projects, and the Project Planning Guide offers examples of projects and provides timelines.
- **Planning the timing of projects.** Once you identify the projects, you can turn to this guide for information about the key steps of the project, which will in turn help you in obtaining funding and determining project scheduling.
- **Submitting your CIP.** When it comes time to submit your CIP information, this guide will help you complete the task.
- **Managing the project.** The information in this guide helps you prepare your CIP. You also can return to it when your project receives funding consideration, because it contains information that may prove helpful as you submit the paperwork required for funding and as you begin to manage the capital improvement project.
- **Finding additional resources.** This guide offers a listing of resources by type of project, for times when you need more specific and in-depth information about a particular capital improvement.

PART ONE: CIP Overview

CIP—THE BASICS

Government at both the federal and state levels recognize the importance of air travel to the nation's transportation system and economic welfare. To support the infrastructure for air travel, both the federal government and individual states fund projects that will maintain and improve the nation's airports.

Purpose

The purpose of the CIP is to serve as a budgeting tool to plan for the eventual completion of a project by identifying:

- the airport needs
- the steps required to accomplish those needs
- the time required for each
- the order and cost of the project elements required to reach your goal within available funding limits.

Why the Need for a CIP?

Important for funding

Because of the high cost of most capital improvement projects, airports rely on federal and state grants to improve or expand their operations. Airports must submit a Capital Improvement Program (CIP) if they wish to be considered for federal or state funding.

Airports that are listed as part of the National Plan of Integrated Airport Systems (NPIAS) are eligible to receive federal funding for federally eligible projects. Eligible projects at NPIAS airports typically receive 90 percent funding; the local government agency with jurisdictional control and responsibility for the airport funds the remaining 10 percent. For smaller airports, the reauthorization bill in 2004 may change the federal funding to 95 percent. For most public airports, city councils or the county board of commissioners are the local government agencies that own the airports.

In Minnesota, 90 of the state's 136 publicly owned airports are currently included in the NPIAS. For a list of NPIAS airports in Minnesota, log on to www.faa.gov/arp/planning/npias/index.cfm, then click on a "List of NPIAS Airports" and "Minnesota". You also may contact the regional airport engineer responsible for your airport at 800-657-3922 to see if your airport qualifies for state or federal assistance.

Publicly owned airports that are not part of the NPIAS may qualify for state funding of capital improvement projects. Eligible projects for state funding currently receive up to 70 percent for NPIAS airports and 80 percent for non-NPIAS airports. The local government agency with jurisdictional control and responsibility funds the balance.

When airports submit their CIP to the Mn/DOT Office of Aeronautics, they take the first step in the eligibility process for obtaining federal or state funding. The CIP alerts state and federal agencies of the airport's plans, which allows those agencies to determine the allocation of existing funds.

In addition, state and federal agencies use CIP information to determine if sufficient funds exist to meet the requests. Federal and state agencies also can use CIP data in their own plans to justify requests for additional funding support for airports.

Airports must submit a Capital Improvement Program (CIP) if they wish to be considered for federal or state funding of capital improvement projects.

The CIP is a requirement for funding consideration, and it also functions as an important planning tool for airports.

Vital to implementation

The CIP is a requirement for funding consideration, and it also functions as an important planning tool for your airport. When completed, the CIP shows the type of improvements that an airport plans to make in the next five-year period.

Because federal or state funding will not cover all capital improvement costs, the CIP helps the local government agency to budget for its portion of the proposed costs. As you will see in the projects that follow, often airports and their local government agencies must take other steps before they receive funding for a capital improvement project and before work begins on such a project.

For example, a runway extension or new runway construction may require the airport owner to acquire the land needed for the improvement. The proposed improvement also must appear on an approved ALP, airport zoning must be in place, and an environmental assessment determination must be completed. Keep in mind that justification is needed for extending a runway or constructing a new runway before local government agencies can receive funding.

When you make full use of your CIP as a planning tool, you'll be able to plan for all the steps that your project requires.

Eligible Projects

The following types of capital improvement projects are eligible for federal or state funding. Keep in mind that, depending on the amount of available funding and state and federal priorities, not all eligible projects will receive funding.

- Airport planning (feasibility study, master plan and airport layout plan)
- Land acquisition
- Airfield paving
- Lighting
- Utilities to serve eligible airport development
- Navigational Facilities (VOR, ILS, DME)
- Noise mitigation
- Fencing
- Obstruction removal
- Equipment Required for Scheduled Air Service (FAA Part 139)
- Airport Security for Airports with Scheduled Service (FAA Part 107)
- Snow removal equipment and buildings
- Limited terminal development
- Runway and taxiway construction

For a complete list of federally eligible projects, see FAA Order 5100.38B, *Airport Improvement Program Handbook* (www2.faa.gov/arp/aip/order/5100-38B.pdf). Most projects on a publicly owned airport are eligible for state funding. Contact your regional engineer with any eligibility questions.

The CIP Process

A brief description

A CIP includes the title of the capital improvement project, current estimated costs, and the year that you plan to begin project work. Federal programming sheets also need to accompany your CIP.

When you make full use of your CIP as a planning tool, you'll be able to plan for all the steps that your project requires.

Keep in mind that justification is needed for extending a runway or constructing a new runway before local government agencies can receive funding.

The starting point for all CIPs begins with an airport's ability to identify its needs — both short-term and long-term.

A five-year CIP is required. Federal and state agencies will look most closely at projects that require funding in the first two years of the CIP. You can submit a CIP beyond five years—up to ten years—to help you track your airport's needs. You must meet state and federal requirements for funding to ensure that you are ready to proceed with those projects; otherwise you may not receive funding.

Identification of airport needs

The starting point for all CIPs begins with an airport's ability to identify its needs — both short-term and long-term. Airports with master plans already have spent time investigating their needs as part of the 20-year development process. These master plans contain information about capital improvements and their timing that will help airports complete their CIP.

Airports without an airport layout plan (ALP) need to develop one. Airports without a master plan or with an outdated plan may want to consider developing or updating one. For those airports in the NPIAS, federal funding is available to develop these plans. State funding is also available to all publicly owned airports that do not qualify for federal funding.

If your airport has not yet developed a master plan, the following actions may help you as you assess your needs:

- Take a physical inventory of airport facilities, and keep a record of the conditions of existing pavement and buildings.
- Talk to community leaders about their needs. For example, the city council may be aware of a new business that wishes to locate in the area and requires airport use that exceeds current capacity.
- Consider the future directions for your airport. Ask yourself questions about what will be important to your airport in the next five to ten years. The answers will give you some idea of the capital improvements your airport may eventually need.
- Contact other airport managers throughout the state as a resource to learn more about their planning processes and approaches.
- Involve your airport advisory board, airport manager, and local pilots in the discussions about possible capital improvements.

Completing the CIP

The Mn/DOT Office of Aeronautics sends a letter to public airports requesting their CIP information each year and allows about two months for airports to submit it.

To complete the CIP, you'll need to:

- Identify capital improvement projects.
- Determine when you will be ready to start each capital improvement project; the timelines in this guide can help you figure out when you realistically will be ready to begin work.
- Obtain a cost estimate and update old cost estimates.
- Secure any local government approval for the projects that may be necessary.
- Develop a final list of the project title, start date, and estimated cost and return the information to the Office of Aeronautics.

To prepare your cost estimate, visit www.dot.state.mn.us/aero/avoffice/airportdevelopment/forms.htm then click on "Estimated Airport Improvement Costs." This provides a list of project types and a range of their most recent costs.

The Office of Aeronautics also offers assistance for you in preparing your CIP. Regional airport engineering teams will meet with you to discuss the details of your CIP. For information on regional airport teams, visit www.dot.state.mn.us/aero/avoffice/airportdevelopment/staff.htm.

Local government involvement

Capital improvements typically require approval of the local government agency with jurisdictional control and responsibility for the airport. As a result, it makes sense to involve your local government agency in planning. It also allows your local government agency to budget funds in advance for its portion of the project.

Evaluation and approval

The Office of Aeronautics reviews each CIP to make sure the projects qualify for federal and state funding and makes corrections as necessary.

After entering the data, the Office of Aeronautics is able to analyze the types of projects, associated costs, and timing. The office then examines the list and timing of proposed projects against available funding. It forwards the CIP of those airports whose projects are eligible for federal funding to the Federal Aviation Administration (FAA).

The Office of Aeronautics and the FAA meet jointly to discuss the improvements at airports that are eligible for federal funding. The state also meets to evaluate the justification and need for proposed improvements that are eligible for state funding.

When evaluating capital improvement projects, both federal and state officials consider some key questions:

- Is the airport publicly owned?
- Is the airport in the state airport system?
- Does the airport meet licensing standards?
- Does the airport have an up-to-date state-approved airport zoning ordinance?
- Are the federal programming sheets included?
- Does the airport have full runway safety areas?
- Is there adequate justification for the project?
- Is the proposed development included as part of an approved airport layout plan?
- Does the airport have adequate land interests to perform the work and still meet the requirements for runway protection?
- Does the sponsor have obstructions that conflict with Federal Aviation Regulations Part 77, Objects Affecting Navigable Airspace?
- Does the proposed improvement require an environmental document?
- Is a Disadvantaged Business Enterprise (DBE) plan required?

The FAA will prioritize the projects and identify the allocation of federal funds. A list of prioritized projects helps ensure that the FAA identifies available federal funds to those airport projects for which safety and capacity are issues. For all other projects, the FAA will look at the availability of funds from various programs and identify projects for funding in the current year and for funding in upcoming years.

For NPIAS airports, federal entitlement funds must be used first for the project. If the project requires additional funding, the airport owner can seek state apportionment funds (federal money), federal discretionary funds, or state construction funds.

Capital improvements typically require approval of the local government agency with jurisdictional control and responsibility for the airport.

Please keep in mind that having the project on the five-year CIP doesn't guarantee funding.

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Airports that are unable to secure additional federal funds because their project may not have as high a priority as other airports that are seeking federal funds may have to delay projects to a later date or seek state funds to complete the projects. Non-NPIAS airports are eligible for state funding only.

The Office of Aeronautics produces a list of all projects in the five-year period for each airport after it receives information from airport owners. **Please keep in mind that having the project on the five-year CIP doesn't guarantee funding.** Each airport receives a copy of the list of their airport projects with recommendations on grouping of work items, and potential funding status of each proposed improvement.

As a next step, the airport owner writes a letter to the Mn/DOT Office of Aeronautics that outlines the improvements that the airport plans to make in the upcoming year and requests federal or state funding for the proposed improvement. The letter must indicate that the airport owner has secured local matching funds. It must appear on official letterhead and be signed by the mayor or designated official.

Timing

The time that it takes to complete a CIP may vary from airport to airport. Airports with a master plan may find it much easier and quicker to submit their CIPs, because in large part they already did much of the planning work as part of the master planning development process. Airports without a master plan will benefit from doing their homework and identifying their needs.

Here's an example of a reasonable timeframe for preparing your CIP information.

- Identify capital improvement projects (ongoing—two to three months)
- Develop justification for the improvement and determine when you will be ready to start the capital improvement project (two weeks to one year)
- Research and obtain a cost estimate (two weeks)
- Secure any local government approval for the projects that may be necessary (one month)
- Develop a final list of the project title, a schedule, start date, and estimated cost and return the information to the Office of Aeronautics (one week)

Did you know?

Public involvement is a recommended element in project decision making. Involve the public early in the planning and environmental preparation process, providing several opportunities for review and comment on draft and final environmental documents in addition to holding public information meetings to allow comment on proposed projects.

PART TWO: Project Planning Guide

This section includes a description of typical projects included in the CIP, along with resources and estimated time of completion for each.

AIRPORT PLANNING

Consultant Selection

Capital improvement projects often require specialized expertise, and airports may choose to hire a consultant with such expertise to assist them with the project.

Airports that receive federal funding must follow rules when hiring consultants. Title IX, also known as the Brooks Act, requires that airports use qualifications-based selection procedures when choosing an engineering planning, or architectural consulting firm. Airports must follow a fair and open selection process, based on the firm's qualifications and not on costs.

The airport and consultant determine the fees through a negotiation process after selection. Airports must prepare an independent cost estimate of consultant fees before starting the negotiation process. They may ask local experts to review the scope of services or they could hire another consultant to prepare a cost estimate. If negotiations are not settled, the airport can select its next choice for a consultant and begin negotiations with that firm. If the airport is still not satisfied with the negotiations, it may go to its third-choice consultant, but may not go back to its first or second choice.

If the project does not receive federal funding, an airport can develop its own procedures for hiring a consultant.

All FAA Advisory Circulars (AC) can be found at www2.faa.gov/arp/150acs.cfm.

Resources

- FAA AC 150/5100-14C, *Consultant Selection Procedures*
- AirTAP workshop summary, *Airport Project Funding and Development* (includes section on hiring a consultant); available at www.airtap.umn.edu/index.html

Estimated Time From Start to Completion

6–8 weeks

CONSULTANT SELECTION

Request for Statement of Qualifications (SOQ)
(4 weeks)

Review SOQ/select consultant or interview consultant
(2 weeks)

Interview three or four consultants (optional)/select consultant
(2 weeks)



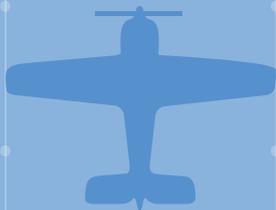
AIRPORT LAYOUT PLAN/ MASTER PLAN

CIP and funding approval

Hire consultant
(2 months)

Develop ALP
(6 months)

FAA review and approval
(12 months)



Airport Layout Plan (ALP)/ALP Narrative/Master Plan

An airport layout plan (ALP) graphically depicts the long range plans for your airport. You must have or prepare an up-to-date ALP to receive federal funding, according to FAA requirements (see FAA AC 150/5300-13 Appendix 7).

The ALP can take up to six months to complete and a year to obtain FAA approval. Most airports develop an ALP in conjunction with a master plan, which provides a written description of the ALP. The FAA and state must conditionally approve an airport's ALP.

A master plan explains and justifies the long-term development of an airport with the goal of providing guidelines for future airport development. A master plan includes the following components:

- Inventory of current airport facilities and conditions
- Forecast of aviation demand
- Facility requirements
- Concepts (development alternatives)
- Environmental overview
- Detail of preferred alternative with cost estimates
- Airport layout plan (ALP)

A master plan also helps communities think about the airport's current and future roles.

An ALP Narrative outlines and justifies airport development on a much smaller scale. Airports may also develop an ALP narrative when a recently prepared master plan needs updates when forecasts need revision. They may also be used for smaller airports and/or smaller projects. Master plans and ALP narratives do not require FAA or state approval.

The Office of Aeronautics can help you determine whether an ALP narrative for your airport would meet requirements.

Resources (ALP)

- AC 150/5300-13 Appendix 7, *Airport Layout Plan Components and Preparation*
- FAR Part 77, *Objects Affecting Navigable Airspace*, www.dot.ca.gov/hq/planning/aeronaut/documents/Part77.pdf
- Minnesota Aeronautics Rules 8800.1200, *Determining Air Navigation Obstructions*, www.revisor.leg.state.mn.us/arule/8800/
- FAA AC 150/5100-14C, *Consultant Selection Procedures*

Estimated Time From Start to Completion

20 months for an ALP

6–12 months for an ALP narrative

Resources (Master Plan)

- FAA AC 150/5070-6A, *Airport Master Plans*
- FAA AC 150/5300-13, *Airport Design*
- FAA AC 150/5100-14C, *Consultant Selection Procedures*

Estimated Time From Start to Completion

12–24 months for a master plan

Federal Environmental Assessment (EA) and State Environmental Assessment Worksheet (EAW)

Environmental Assessment (EA) and Environmental Assessment Worksheet (EAW) documents analyze various environmental impacts of a proposed development project to determine the need for an environmental impact statement.

All Airport Improvement Program (AIP) projects, including projects with plans and specifications, require environmental processing before FAA approval. Each project falls into one of the following categories:

- Those requiring an environmental assessment and preparation of an environmental impact statement (EIS) or a finding of no significant impact (FONSI); or
- Those that are categorically excluded.

The National Environmental Policy Act (NEPA) requires the FAA to analyze project-related environmental impacts and to provide interested parties with an opportunity to participate in the review process. The FAA evaluates airport compliance with federal aviation environmental, design, and airspace requirements, and approves or rejects the environmental document and project funding.

The environmental assessment process starts with the airport owner, who proposes a project, develops project alternatives, and either prepares an environmental assessment or completes the NEPA Review Checklist. The NEPA Review Checklist may indicate a higher level of environmental documentation; verify this with the FAA. It makes sense to involve the public early in the planning process. You also will need to satisfy state requirements in accordance with the Minnesota Environmental Review Program and supply additional data and information to the FAA as requested.

For most projects, you will need to complete a federal EA or a state EAW. If completion of the NEPA Review Checklist can affirm that the project is categorically excluded, an EA may not be necessary. On projects where no federal funds are applied to any portion of the total project, and only state and local funds are used, an EAW may be required as described in Minnesota Rules Chapter 4410. If, in accordance with these rules, it is determined that an EAW is not required, the sponsor should document the evaluation or decision process that led to this determination. Please note that while the rules have sections specific to airports they also contain other mandatory categories that may apply, e.g., wetlands.

Resources

- National Environmental Policy Act (NEPA), <http://ceq.eh.doe.gov/nepa/regs/nepa/nepaeqia.htm>
- CEQ Regulation 1500, *Council on Environmental Quality (CEQ) Guidelines for Preparation of Environmental Impact Statements*, <http://ceq.eh.doe.gov/nepa/regs/ceq/1500.htm>
- FAA Order 1050.1D, *Policies and Procedures for Considering Environmental Impacts*, www.aee.faa.gov/e3/1050pt1d/, and FAA Order 5050.4B, *Airport Environmental Handbook*
- FAA NEPA Review Checklist
- State Environmental Guidelines, Minnesota Rules Chapter 4410, *Environmental Review*, www.revisor.leg.state.mn.us/arule/4410
- FAA AC 150/5100-14C, *Consultant Selection Procedures*

Estimated Time From Start to Completion

6–24 months to complete the EA/EAW process

24–38 months to complete an EIS

ENVIRONMENTAL ASSESSMENT

Prepare ALP
(18 months)

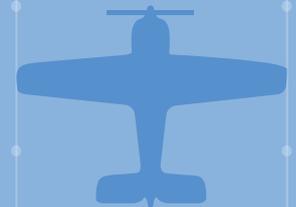
CIP and funding approval

Hire consultant
(2 months)

Environmental
document
(38 months)

Review and approval
(6–12 months)

TIP: If you haven't already prepared your ALP, place your EA or EAW in the second year or later on your CIP.



LAND ACQUISITION

CIP and funding approval

Title opinion
(2 months)

Property survey
(1 month)

Appraisals
(3 months)

Eminent domain
(4 months)

LAND ACQUISITION

Airports must comply with applicable laws when a project requires the purchase of additional land. According to Minnesota Statute 117.52, airport projects that involve the purchase of land with state or federal funds must follow the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970.

The uniform relocation act lists minimum real property acquisition policies and mandates uniform and equitable treatment of individuals who may be displaced as a result of the purchases.

Airport owners must first meet state requirements for airport zoning before implementing the appraisal process: the land to be acquired is shown on an approved airport layout plan and complies with environmental requirements. The airport owner also must complete the required property survey, obtain a title opinion that indicates property ownership, and hire an approved appraiser who understands federal and state requirements for the purchase of land by airports before beginning the appraisal process.

Appraisals

The airport owner determines the amount of land necessary for the capital improvement, as well as the type of acquisition (e.g., fee or easement), then obtains the property's fair market value with an appraisal.

The property owner or the owner's representative may accompany the appraiser during property inspection. A qualified review appraiser reviews all appraisals to determine the validity and reasonableness of the final valuation conclusion.

Purchase Agreement

The airport owner sends a written full and fair offer of just compensation via certified mail to the property owner based on the appraisal. The written offer may not be less than the appraised value or the valuation conclusion of the appraiser and review appraiser.

The airport owner must provide the property owner reasonable opportunity to present factual material about the property's value, as well as a reasonable opportunity to suggest modifications in the proposed purchase terms and conditions.

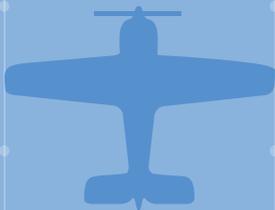
The property owner may claim a higher value for the land than the appraised value. If the claim proves valid, the airport owner can proceed with an administrative settlement to purchase the property. If negotiations fail, the airport owner can pursue the property through eminent domain.

Resources

- Minnesota Statute 117.52 Uniform Relocation Assistance, www.revisor.leg.state.mn.us/stats/117/52.html
- Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, www.house.gov/transportation/highway/compilations/relocate_.PDF
- FAA AC 150/5100-14C, *Consultant Selection Procedures*

Estimated Time From Start to Completion

10–12 months for land acquisition



CONSTRUCTION

As you plan for the construction of airport development projects, consider the following questions. Answers to these questions will help you as you identify the project need, as you request state or federal funding, and as you begin work on the project. Most of these projects, other than buildings, are eligible for federal funds for those airports in the NPIAS. Keep in mind that a construction plan is required for all construction projects regardless of federal or state funding. Also, a licensed engineer or a certified inspector must inspect all construction.

- Is there justification for the project?
- Is the proposed development on an approved airport layout plan?
- Does the airport have adequate land interests (easements, zoning, or ownership) to perform the work and still meet the requirements for runway protection?
- Does the sponsor have obstructions that conflict with Federal Aviation Regulations Part 77, Objects Affecting Navigable Airspace?
- Does the proposed improvement require any environmental documentation?
- Have you performed a qualifications-based selection of an airport consultant?
- Does the airport zoning allow for the proposed project?

Runway Construction

The design and construction of a new airport runway requires site preparation and may involve land acquisition. It must be included in your approved airport layout plan. The environmental review process depends on the extent of the runway construction.

Resources

- FAA Airport Financial Assistance, www2.faa.gov/arp/financial/aip/
- FAA AC 150/5300-9A, *Predesign, Prebid, and Preconstruction Conferences for Airport Grant Projects*
- FAA AC 150/5300-9A Appendix 1, *Agenda Items for Predesign Conference*
- FAA AC 150/5320-6D, *Airport Pavement Design and Evaluation*
- FAA AC 150/5370-10A, *Standards for Specifying Construction of Airports*
- FAA AC 150-5370-2E, *Operational Safety on Airports During Construction*
- PPM 5370.5A, *Construction Safety Phasing Plan*, www1.faa.gov/arp/agl/pub_ppms/5370-5A.pdf
- FAA AC 150/5100-14C, *Consultant Selection Procedures*

Estimated Time From Start to Completion

12 months–4 years (depending on scope of work and funding availability)

RUNWAY CONSTRUCTION

Master plan development and airport layout plan (28 months)

EA (24 months) or EIS (38 months)

Land acquisition (9–13 months)

CIP and funding approval

Design/review (6 months)

Construction (6 months)

TIP: Runway construction requires several key steps before the project is ready for funding consideration. Remember to assess these steps when deciding what year to target on your CIP.



RUNWAY AND TAXIWAY EXTENSION

Master plan development and ALP
(28 months)

EA (24 months) or
EIS (38 months)

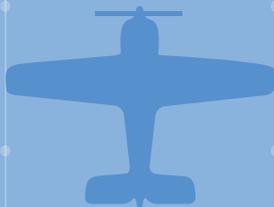
Land acquisition
(9–13 months)

CIP and funding approval

Design/review
(6 months)

Construction
(6 months)

TIP: Depending on the project, you may or may not need to complete an EA or acquire land.



Runway Extension

The design and construction of an extension to an existing runway at an airport requires site preparation and may involve land acquisition. It must be included in your approved airport layout plan. The additional length must be justified through demonstration of need. The environmental review process depends on the scope of the runway extension.

Resources

- FAA AC 150/5300-9A, *Predesign, Prebid, and Preconstruction Conferences for Airport Grant Projects*
- FAA AC 150/5300-9A Appendix 1, *Agenda Items for Predesign Conference*
- FAA AC 150/5320-6D, *Airport Pavement Design and Evaluation*
- FAA AC 150/5370-10A, *Standards for Specifying Construction of Airports*
- FAA AC 150-5370-2E, *Operational Safety on Airports During Construction*
- PPM 5370.5A, *Construction Safety Phasing Plan*
- FAA AC 150/5100-14C, *Consultant Selection Procedures*

Estimated Time From Start to Completion

12 months–4 years (depending on scope of work and funding availability)

Taxiway Construction

The design and construction of a new taxiway at an airport requires site preparation and may involve land acquisition. It must be included in your approved airport layout plan. The environmental review process depends on the extent of taxiway construction.

Resources

- FAA AC 150/5300-9A, *Predesign, Prebid, and Preconstruction Conferences for Airport Grant Projects*
- FAA AC 150/5300-9A Appendix 1, *Agenda Items for Predesign Conference*
- FAA AC 150/5320-6D, *Airport Pavement Design and Evaluation*
- FAA AC 150/5340-1G, *Standards for Airport Markings*
- FAA AC 150/5370-10A, *Standards for Specifying Construction of Airports*
- FAA AC 150-5370-2E, *Operational Safety on Airports During Construction*
- PPM 5370.5A, *Construction Safety Phasing Plan*
- FAA AC 150/5100-14C, *Consultant Selection Procedures*

Estimated Time From Start to Completion

12 months

Apron Expansion

The design and construction of an expansion to an existing apron at an airport requires site preparation and may involve land acquisition. It must be included in your approved airport layout plan. The NEPA Review Checklist should be completed to determine if further environmental review is necessary.

Resources

- FAA AC 150/5300-9A, *Predesign, Prebid, and Preconstruction Conferences for Airport Grant Projects*
- FAA AC 150/5300-9A Appendix 1, *Agenda Items for Predesign Conference*
- FAA AC 150/5320-6D, *Airport Pavement Design and Evaluation*
- FAA AC 150/5370-10A, *Standards for Specifying Construction of Airports*
- FAA AC 150-5370-2E, *Operational Safety on Airports During Construction*
- PPM 5370.5A, *Construction Safety Phasing Plan*
- FAA AC 150/5100-14C, *Consultant Selection Procedures*

Estimated Time From Start to Completion

12 months

Pavement Rehabilitation

Rehabilitation or repair of all or part of any existing pavement at an airport may include removing and replacing the pavement in its existing location. It could also include the repair of existing pavements by crack repairing and/or overlays.

Resources

- FAA AC 150/5370-11, *Use of Nondestructive Testing Devices in the Evaluation of Airport Pavements*
- FAA AC 150/5300-9A, *Predesign, Prebid, and Preconstruction Conferences for Airport Grant Projects*
- FAA AC 150/5300-9A Appendix 1, *Agenda Items for Predesign Conference*
- FAA AC 150/5320-6D, *Airport Pavement Design and Evaluation*
- FAA AC 150/5370-10A, *Standards for Specifying Construction of Airports*
- FAA AC 150-5370-2E, *Operational Safety on Airports During Construction*
- PPM 5370.5A, *Construction Safety Phasing Plan*
- FAA AC 150/5100-14C, *Consultant Selection Procedures*

Estimated Time From Start to Completion

12 months

APRON EXTENSION

Develop ALP
(20 months)

EA
(24 months)

Land acquisition
(9–13 months)

CIP and funding approval

Design/review
(6 months)

Construction
(6 months)

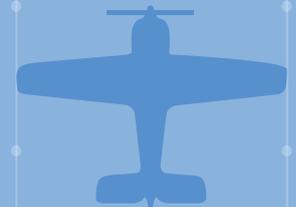
PAVEMENT REHABILITATION

CIP and funding approval

Pavement testing/report
(2 months)

Design
(6 months)

Construction
(1–4 months)



NAVIGATIONAL AIDS

Land acquisition — if off airport property (15 months)

CIP and funding approval

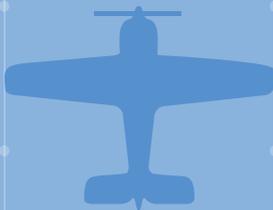
Design/review and airspace review (6 months)

Construction (6 months)

FAA and FCC licensing (12 months)

TIP: Allow one year for FAA and Federal Communications Commission (FCC) licensing.

TIP: Depending on the project, you may or may not need to complete an EA or acquire land.



Obstruction Removal

Obstruction removal involves eliminating any obstructions at or near the airport that penetrate the FAA's FAR Part 77 surfaces, Terminal Instrument Procedure Surfaces (TERPS), state approach surfaces, and safety zones. An obstruction removal includes the removal of trees, grading of ground, and burying of power lines, among other examples.

Resources

- FAR Part 77, *Objects Affecting Navigable Airspace*
- Minnesota Aeronautics Rules 8800.1200, *Determining Air Navigation Obstructions*
- FAA AC 70/7460-1J, *Obstruction Marking and Lighting*, www1.faa.gov/ats/ata/ai/TOC_circV.pdf

Navigational Aids

A navigational aid project involves the design and construction of any navigational aids at the airport. Typical projects include construction of an Automated Weather Observing System (AWOS), Precision Approach Path Indicator (PAPI), Instrument Landing System (ILS), approach lights, edge lights, beacon, and VHF Omnidirectional Range (VOR). A benefit/cost analysis is required for many navigational aids (see FAA Order 5100.38B, Chapter 5, Tables 5 and 6). This project may require an airspace review and should be on an approved airport layout plan. For non-federally owned navigational aids contact the Mn/DOT Office of Aeronautics.

Resources

- FAA AC 150/5300-13, *Airport Design*
- FAA AC 150/5220-16B, *Automated Weather Observing Systems for Nonfederal Applications*
- FAA AC 150/5340-14B, *Economy Approach Lighting Aids*
- FAA AC 150/5340-17B, *Standby Power for Non-FAA Airport Lighting Systems*
- FAA AC 150/5340-18C, *Standards for Airport Sign Systems*
- FAA AC 150/5340-21, *Airport Miscellaneous Lighting Visual Aids*
- FAA AC 150/5340-23B, *Supplemental Wind Cones*
- FAA AC 150/5340-24, *Runway and Taxiway Edge Lighting Systems*
- FAA AC 150/5345-12C, *Specifications for Airport and Heliport Beacons*
- FAA AC 150/5345-27C, *Specifications for Wind Cone Assemblies*
- FAA AC 150/5345-28D, *Precision Approach Path Indicator Systems (PAPI)*

Estimated Time From Start to Completion

24 months–27 months (depending on land acquisition)

Building-Area Development

A building-area development project involves the necessary site preparation for a new building area at an airport. It includes design and construction of taxilanes and utilities for the building area, as well as any necessary land acquisition. The project may or may not require an environmental review process, depending on the extent of the building-area development, but it must be included in your approved airport layout plan.

Resources

- FAA AC 150/5300-9A, *Predesign, Prebid, and Preconstruction Conferences for Airport Grant Projects*
- FAA AC 150/5300-9A Appendix 1, *Agenda Items for Predesign Conference*
- FAA AC 150/5320-6D, *Airport Pavement Design and Evaluation*
- FAA AC 150/5370-10A, *Standards for Specifying Construction of Airports*
- FAA AC 150-5370-2E, *Operational Safety on Airports During Construction*
- PPM 5370.5A, *Construction Safety Phasing Plan*
- FAA AC 150/5100-14C, *Consultant Selection Procedures*

Estimated Time From Start to Completion

12 months

Hangar Construction

Airport hangars can be constructed with public or private funds. Those airports that seek public funding can identify hangar projects on their CIP. The type of hangar to be constructed must be a multiple airplane storage facility (T-hangars) or a fixed-based operation (FBO) hangar. Privately owned hangars are not eligible for public funds.

The Mn/DOT T-hangar loan program is available for publicly owned airports that wish to construct the multiple airplane storage facilities. Mn/DOT will loan the airport owner 80 percent of the hangar's cost, interest free, for a period of 10 years. The loan is issued when the hangar is completed and the structure is accepted by the owner and Mn/DOT. Repayment begins the first month following the issuance of the loan.

This popular program has a waiting list, so the airport owner must formally request a place on the list. Before becoming eligible for the loan, the airport owner also must have plans and specifications prepared by a registered engineer for the proposed structure. When funds become available, Mn/DOT notifies the airport owner that bids can be solicited for the hangar.

Mn/DOT also makes available a grant for FBO facilities. Plans and specifications are required, and, when approved, the airport owner can solicit bids. After approval of the lowest responsible bid, an airport may request a grant from Mn/DOT that currently pays 50 percent of eligible construction items and engineering costs. The airport owner is responsible for the remaining costs.

Resources

- Contact Mn/DOT Office of Aeronautics Regional Engineers

Estimated Time From Start to Completion

9 months

BUILDING-AREA DEVELOPMENT

CIP and funding approval

Design/review
(6 months)

Construction
(6 months)

HANGAR CONSTRUCTION

CIP and funding approval

Design/review plans and
specs/award
(6 months)

Hangar construction
(3 months)



WETLAND MITIGATION

CIP and funding approval

Develop mitigation plan
(4 months)

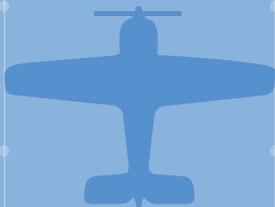
Review, approval and
permits
(6 months)

Mitigation construction
(6 months)

MAINTENANCE

CIP and funding approval

Maintenance repairs
(6–12 months)



Wetland Mitigation

Wetland mitigation involves replacing any wetlands that were displaced by construction at the airport. Wetland mitigation may appear as part of a construction project and environmental document. You will need to coordinate the project with the appropriate agencies and obtain the proper permits.

Resources

- National Environmental Policy Act (NEPA)
- CEQ Regulation 1500, *Council on Environmental Quality (CEQ) Guidelines for Preparation of Environmental Impact Statements*
- FAA Order 1050.1D, *Policies and Procedures for Considering Environmental Impacts*
- FAA Order 5050.4B, *Airport Environmental Handbook*
- FAA NEPA Review Checklist
- State Environmental Guidelines, Chapter 4410, *Environmental Review*

Estimated Time From Start to Completion

16 months

MAINTENANCE

Hangar Door Repair or Replacement

Hangar door repair and replacement involves the replacement of worn-out or damaged hangar doors on publicly owned hangars. Depending on the extent of the project, reimbursement may be requested under the general maintenance and operations agreement between the airport owner and Mn/DOT. For more substantial amounts, the airport may apply for a state grant agreement, which covers 50 percent of the costs.

Roof Repairs

Repairs to the roofs of public buildings at an airport may, depending on the extent of the project, be included under the general maintenance and operations agreement between the airport owner and Mn/DOT. For more substantial amounts, the airport also may apply for a state aid agreement, which covers 50 percent of the costs.

Estimated Time From Start to Completion

6–12 months for maintenance projects

EQUIPMENT PURCHASE AND DISPOSAL

Purchase

The equipment to be purchased must be listed in the CIP. Mn/DOT has three ways for an airport to purchase equipment:

1. If the equipment is valued at less than \$35,000 for municipalities with a population of less than 2,500 or less than \$50,000 for all other municipalities, the airport sponsor can seek quotes and select from the quotes received. Two or more quotes are needed on equipment.
2. If the value of the equipment is expected to be more than \$35,000 for municipalities with a population less than 2,500 or over \$50,000 for all other municipalities, specifications need to be developed and approved by Mn/DOT and bids solicited. Mn/DOT must be assured that there were competitive bids used in the determination of the appropriate vendor.
3. The airport sponsor may also purchase equipment through the Mn/DOT equipment contract. Mn/DOT's Web site lists the types of equipment and options available and the cost of each. The Web site address is www.dot.state.mn.us/equipment/; choose "New Equipment Contracts" or "Used Equipment Sales" to start shopping.

With any of the above methods, Mn/DOT's concurrence is required before actual purchase.

Equipment eligible for federal funding follows. This includes snow removal equipment (SRE) and Aircraft Rescue and Fire Fighting (ARFF) equipment.

Snow Removal Equipment (SRE)

Snow removal equipment (SRE) allows airports to keep the runways, taxiways, and aprons open during the winter months. The type of equipment at each airport depends on the type of airport operations. The larger airports—those that serve air carriers—need multiple types of equipment. A smaller general aviation airport also needs equipment, but not to the same degree as the larger facility.

New SRE for airports in the federal system is eligible for federal funding. The airport owner or the airport's consultants are responsible for preparing specifications for the type of equipment and for advertising for bids.

Used equipment may be eligible for federal funding if the airport owner can show the equipment is mechanically sound, is in good working order, and has a useful life of 20 years.

Disposal and Trade In

To dispose of replaced or unneeded equipment, choose one of the following methods:

Federal participation (for equipment that was originally purchased using federal funds)

1. Equipment with a value of less than \$5,000:
Equipment with a current per unit fair market value of less than \$5,000 may be disposed of at the sponsor's option with no reimbursement to the FAA.

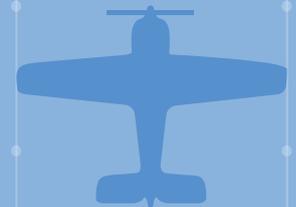
EQUIPMENT PURCHASE

CIP and funding approval

Develop specifications
(1–3 months)

Prepare and evaluate bids
(1 month)

Purchase



2. Equipment with a value of \$5,000 or more:
Equipment with a current per unit fair market value of \$5,000 or more may be retained by the sponsor, sold for salvage value, traded in for replacement, or transferred to another airport. If removed from airport use, sold, or traded in, the value must be used to reduce the amount of the replacement grant.

State participation (for equipment that was originally purchased with state funds)
The salvage value (trade in or sale) of the equipment must be returned to the state at the rate of participation in the original agreement. The salvage value may be used to reduce the amount of the replacement grant. The current state participation rate will be applied to the new agreement. That current rate is 70 percent state, 30 percent local for NPIAS airports and 80 percent state, 20 percent local for non-NPIAS airports.

Smaller equipment with a cost of less than \$25,000 is eligible for federal financial assistance if added to another grant. The FAA will not normally issue any grants less than \$25,000. State funding also is available for SRE at airports.

Resources

- FAA AC 150/5220-20, *Airport Snow and Ice Control Equipment*
- Minnesota Statute 471.345, Minnesota Municipal Contracting Law

Aircraft Rescue and Fire Fighting (ARFF) Equipment

Airports that serve air carriers are the prime users of aircraft rescue and fire fighting (ARFF) vehicles and equipment. You will need to prepare plans and specifications and solicit bids. Federal funds can be used for ARFF equipment.

Resources

- FAA AC 150/5220-10C, *Guide Specification for Water/Foam Aircraft Rescue and Firefighting Vehicles*
- FAA AC 150/5220-19, *Guide Specification for Small Agent Aircraft Rescue and Firefighting Vehicles*

Pavement Sweepers

Pavement sweepers, if justified, would need to follow the same requirements for SRE to receive federal or state funding. Except in the case of large airports that serve an air carrier, sweepers are not eligible for federal funds.

Mowers

The purchase of mowers for your airport should follow the same requirements as other equipment purchases. Used equipment is an eligible item for state funding only. Federal funding is not available for mowers.

Estimated Time From Start to Completion

4–6 months for equipment purchasing

