



**Alaska
Department of
Transportation
and
Public Facilities**

**Alaska Aviation
Preconstruction
Manual**

Alaska Aviation Preconstruction Manual



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1. Introduction

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100. Introduction to the Aviation Preconstruction Manual

- 100.1. Purpose of Manual
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- 100.3. Origin of Aviation Projects

100.1. Purpose of Manual

Use this manual to develop all aviation projects undertaken by the Alaska Department of Transportation and Public Facilities (DOT&PF, referred to as the Department).

100.2. Overview of Aviation in Alaska

Approximately 82 percent of Alaskan communities are not served by roads. Therefore, aviation is an essential mode of transportation in Alaska. The Department owns, manages, and maintains about 240 airports across the state. For more information on Alaska's aviation system, go to the Alaska Aviation System Plan (AASP) website at:

<http://www.alaskaasp.com/>

100.3. Origin of Aviation Projects

Aviation projects in Alaska typically originate through the Airport Improvement Program (AIP) or state process. The AIP is a project grant program administered by the Federal Aviation Administration (FAA) to provide grants to public agencies, and in some cases to private owners and entities, for the planning and development of public-use airports included in the National Plan of Integrated Airport Systems (NPIAS). The AIP is authorized by Title 49 United States Code (USC). Title 49 USC allows FAA to administer the AIP grant program with authorization and appropriations approved by Congress. The *AIP Handbook*, FAA Order 5100.38, provides guidance and sets forth policy and procedures used in the administration of the AIP. This publication is available online at:

http://www.faa.gov/airports/aip/aip_handbook/

The following steps outline an AIP project from origin to construction:

1. **Suggestions for aviation projects are submitted** to the Department's Regional Planning Section by maintenance, design, municipalities, airport users, airport vendors, and others.

The *AIP Handbook* identifies the general types of projects that may be funded with AIP, which are airport planning, airport development, noise compatibility planning and noise compatibility projects. Only these types of projects are eligible and can be funded. See the *AIP Handbook* for identified eligible and ineligible projects or costs.

2. **The Department's Regional Planning Section develops** preliminary project information for the suggested projects that includes information such as funding, scope, schedule, and contacts.
3. **The Aviation Project Evaluation Board (APEB) evaluates and ranks** prospective projects submitted by the Department. The highest ranked APEB projects are typically listed on the State of Alaska AIP Spending Plan. The Department coordinates project funding with FAA based on the AIP Spending Plan.
4. **Preconstruction work can be initiated** once a project is established in the Department's AIP Spending Plan and a project initiation form has been approved by Planning, Statewide Aviation, and the Regional Director. State funds are typically authorized to complete the preconstruction work; however, these funds are partially reimbursed, up to the qualifying federal share, once a grant is issued. The preconstruction schedule should be developed to deliver the project in the fiscal year listed in the plan as either an expected or a contingent project.
5. **FAA includes the Department's eligible projects** in their national Airports Capital Improvement Plan (ACIP), in addition to projects from other sponsors. When FAA approves the project's required pre-grant conditions, such as an approved environmental document, adequate right-of-way interest, and an approved airport layout plan (ALP), the Department can apply for the grant. The Office of the Secretary of Transportation (OST) will approve the grant; then FAA can make a grant offer to the sponsor.
6. **The Deputy Commissioner of Aviation, or designee, will then sign the grant offer** and the

Attorney General's office will review and approve it.

7. **After grant execution**, the project construction contract may be awarded.

For a project to be submitted for an AIP grant, it must be listed on the ACIP and the airport must be listed on the NPIAS. If a concern or question arises, contact the FAA Project Manager assigned to the airport.

The NPIAS, updated every two years, lists all existing and proposed airports considered significant to national air transportation and eligible to receive federal grants under the AIP. The NPIAS provides an inventory of airport development for ACIP purposes. The Alaska Region FAA will submit projects for inclusion in the ACIP.

Aviation projects can also be state funded. Types of state funding may include: General Fund (GF) or General Obligation (GO) Bond. State GF is primarily used to fund required matches for federal funding and for maintenance of airports. The GO Bond is a bond secured by the taxing and borrowing power of the state government issuing it and must be approved by the voters. If work included in the scope of a project is not allowable under AIP, it must be funded by other means, such as state funds.

State funded projects follow a development process similar to the AIP process described in this section. However, state funded projects are not required to go through the APEB or the federal grant process.

Anchorage and Fairbanks International Airports follow a development process similar to the AIP process described in this section. However, each has their own planning and evaluation process for how proposed projects move forward to design. The required federal match for these projects is usually funded through the airports revenue, i.e. landing fees, etc.

2. Organization

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200. Design and Engineering Services Organization

200.1. General

200.2. Statutory Authority

200.1. General

The Department's Statewide Design & Engineering Services (D&ES), Statewide Aviation, and the three regions (Southcoast, Central, and Northern) share responsibility for the engineering standards, policy for aviation facilities, and design engineering. The regions (Figure 2.1) perform the design engineering functions. Statewide Aviation provides support in policy and manages the AIP. Statewide D&ES is responsible for developing statewide standards and specifications.

200.2. Statutory Authority

The Alaska Statutes (AS) 44.42.010, AS 44.42.020, and AS 44.42.040 establish the position of the Department Commissioner, outline the powers and duties of the Department, and define the departmental organization. The referenced statutes are provided:

AS 44.42.010. Commissioner of transportation and public facilities. *The principal executive officer of the Department of Transportation and Public Facilities is the commissioner of transportation and public facilities.*

AS 44.42.020. Powers and duties.

(a) *The department shall*

- (1) *plan, design, construct, and maintain all state modes of transportation and transportation facilities and all docks, floats, breakwaters, buildings, and similar facilities;*
- (2) *study existing transportation modes and facilities in the state to determine how they might be improved or whether they should continue to be maintained;*
- (3) *study alternative means of improving transportation in the state with regard to the economic costs of each alternative and its environmental and social effects;*

- (4) *develop a comprehensive, long-range intermodal transportation plan for the state;*
- (5) *study alternatives to existing modes of transportation in urban areas and develop plans to improve urban transportation;*
- (6) *cooperate and coordinate with and enter into agreements with federal, state, and local government agencies and private organizations and persons in exercising its powers and duties;*
- (7) *manage, operate, and maintain state transportation facilities and all docks, floats, breakwaters, and buildings, including all state highways, vessels, railroads, pipelines, airports, and aviation facilities;*
- (8) *study alternative means of transportation in the state, considering the economic, social, and environmental effects of each alternative;*
- (9) *coordinate and develop state and regional transportation systems, considering deletions, additions, and the absence of alterations;*
- (10) *develop facility program plans for transportation and state buildings, docks, and breakwaters required to implement the duties set out in this section, including but not limited to functional performance criteria and schedules for completion;*
- (11) *supervise and maintain all state automotive and mechanical equipment, aircraft, and vessels, except vessels and aircraft used by the Department of Fish and Game or the Department of Public Safety; for state vehicles maintained by the department, the department shall, every five years, evaluate the cost, efficiency, and commercial availability of alternative fuels for automotive purposes, and the purpose for which the vehicles are intended to be used, and convert vehicles to use alternative fuels or purchase energy efficient vehicles whenever practicable;*

the department may participate in joint ventures with public or private partners that will foster the availability of alternative fuels for all automotive fuel consumers;

- (12) supervise aeronautics inside the state, under AS 02.10;*
- (13) implement the safety and financial responsibility requirements for air carriers under AS 02.40;*
- (14) inspect weights and measures;*
- (15) at least every four years, study alternatives available to finance transportation systems in order to provide an adequate level of funding to sustain and improve the state's transportation system.*

(b) The department may

- (1) engage in experimental projects relating to available or future modes of transportation and any means of improving existing transportation facilities and service;*
- (2) exercise the power of eminent domain, including the declaration of taking as provided in AS 09.55;*
- (3) publish plans, schedules, directories, guides, and manuals for distribution, with or without charge, to private or public entities or persons;*
- (4) operate state housing in support of the department's statutory responsibilities and charge rent that is consistent with applicable collective bargaining agreements, or, if no collective bargaining agreement is applicable, competitive with market conditions;*
- (5) charge reasonable fees to cover the costs of issuing easements, licenses, and permits and to cover the costs of reproduction, printing, mailing, and distribution of contract and bid documents and design and construction standards manuals;*

- (6) charge and collect fees for training services and technical assistance provided by department personnel.*

AS 44.42.040. Departmental organization. *The commissioner shall establish regions within the state. The functions of the department within each region shall be performed, to the maximum extent feasible, through a regional office. Each regional office shall be directed by a regional transportation and public facilities director appointed by the commissioner.*

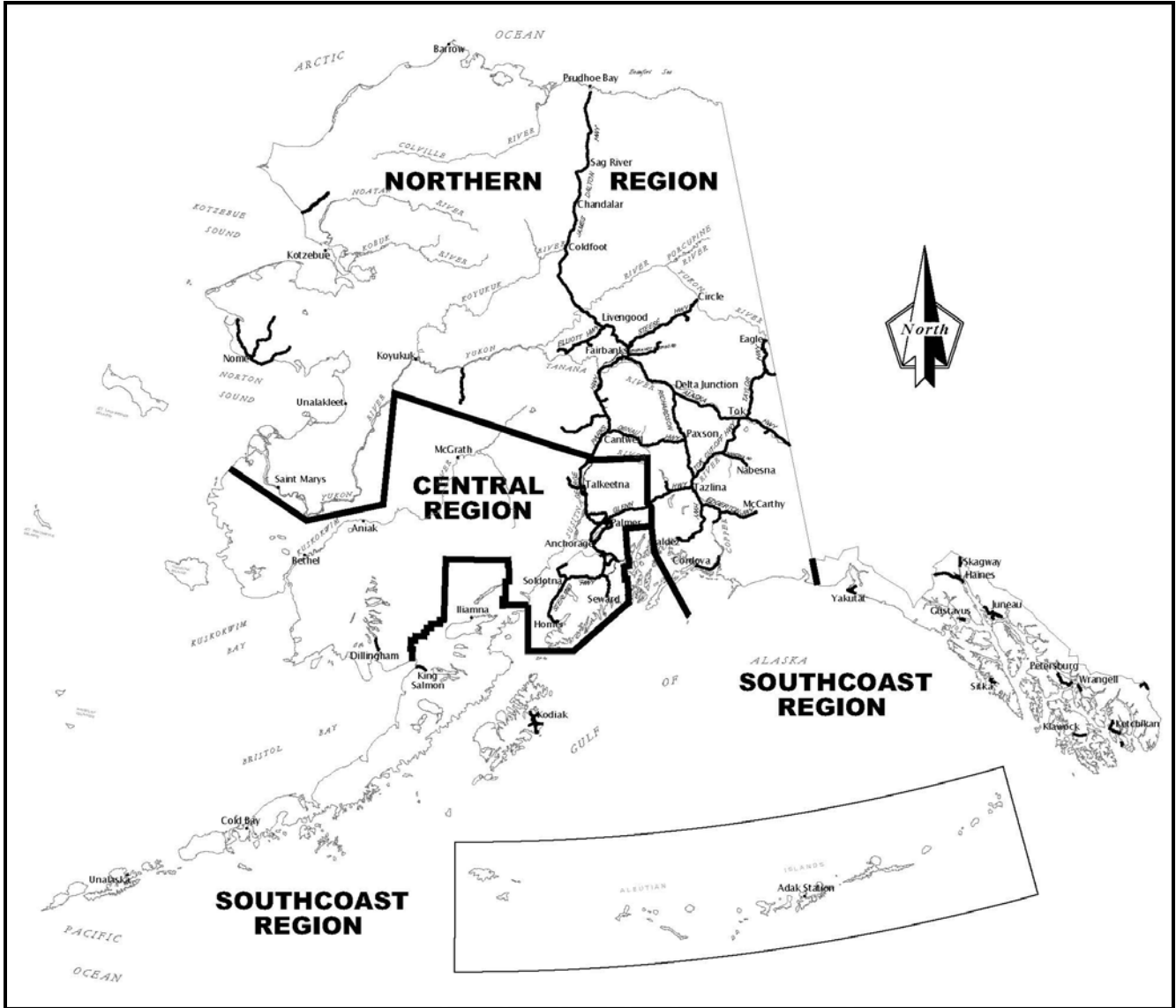


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Regional Map

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300. Professional Services

- 300.1. General
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- 300.3. Contractor Selection
- 300.4. The Contract
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300.1. General

For details on soliciting Professional Service Agreements (PSAs), see Department Policy 10.02.010 - *Construction Related Professional Services Policy*, the *AIP Handbook*, and Advisory Circular (AC) 150/5100-14 – *Architectural, Engineering, and Planning Consultant Services for Airport Grant Projects*, and the *Professional Services Agreement (PSA) Manual*. The *PSA Manual* provides step-by-step instruction for the solicitation, award, and administration of construction-related PSAs. This publication is available online at:

<http://dot.alaska.gov/procurement/prosvcs/psamanuals.shtml>

300.2. Securing Professional Services

Secure services in accordance with the *PSA Manual*. When considering the need for contractor services, regardless of estimated cost, first find out whether the services are available within the Department or from other state personnel.

Forward the Request for Proposals (RFPs) scope of work to the FAA for informational purposes on federally funded projects.

300.3. Contractor Selection

Contractor selection must be in accordance with the *PSA Manual*. Procurement Specialists can answer questions on policy and procedures for contractor procurement.

On federally funded projects, request FAA concurrence to award the contract and provide evidence of cost reasonableness. FAA's concurrence is required before the contract or amendment can be awarded.

No work is authorized until the Notice to Proceed (NTP) is issued. An NTP can be issued when all required items in the contract agreement are properly

executed, received by the Department, and the contracting officer has signed the agreement in accordance with the regional delegation of authority.

Contract managers need to ensure that all work produced by the contractor is owned by the Department.

300.4. The Contract

The basic elements of the contract are:

1. Agreement
2. General Conditions for Professional Service
3. Statement of Services (SOS)
4. Basis of Compensation
5. Indemnification and Insurance
6. Certification of Compliance

300.5. Contract Management

Contract management must be in accordance with the *PSA Manual*. The contract manager (usually the Engineering Manager) is responsible for administering and managing the agreement and ensuring that services provided are complete, accurate, and consistent with the terms of the agreement.

Pay attention to the following issues:

1. Do not let the contract expire before the completion of the work, and then “single source” a new contract in order to complete the work.
2. Check invoices against the schedule, the defined work product, and the project budget.
3. Make sure to use the current audited billing rates for the consultant's indirect overhead (OH) costs.
4. Do not exceed the authorized amount. Do not issue payment for the entire contract amount prior to receiving all the deliverables.
5. Notify the Construction Section of any PSAs required to be maintained when the project moves to the construction phase via the Transfer to Construction memorandum.
6. A performance evaluation must be completed prior to contract closeout. If the contract includes construction assistance, draft the letter at the end

of the design phase and transfer the document to the Construction Section, which will complete the evaluation.

300.6. Contract Closeout

Contract closeout must be in accordance with the *PSA Manual*. If “Design Assistance During Construction” was not negotiated as part of the contract and will not be added by amendment, the Engineering Manager will perform contract closeout.

If “Design Assistance During Construction” was negotiated as part of the contract, the Construction Manager will perform contract closeout. The transfer of the contract would occur after bid opening through a contract amendment transferring the responsibility of the contract from the Engineering Manager to the Construction Manager.

Make sure all deliverables defined in the SOS have been received by the Department prior to contract closeout.

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400. Introduction

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- 400.3. Responsibility
- 400.4. Project Status Meetings
- 400.5. Project Status Reports
- 400.6. Definitions and Acronyms

400.1. Purpose

The purpose of this chapter is to establish procedures and guidance for developing federal-aid-funded airport capital improvement project designs, from authorization through advertisement. It stipulates minimum requirements and provides references to the sources of those requirements. The project manager may determine that additional steps are appropriate to accommodate concerns on individual projects.

400.2. General

The Alaska Department of Transportation and Public Facilities (DOT&PF) designs, constructs, maintains, and operates airports under the authority of Alaska Statute, Title 2 ([AS 02](#)), and Alaska Administrative Code, Title 17 ([17 AAC](#)).

Airport development and improvements are usually funded by the Federal Aviation Administration (FAA). FAA-funded airports are governed by:

- Airports and Airways Improvement Act of 1982 (Public Law 97-248 Section 509[b][2]), as amended
- Airport and Airway Development Act of 1970 (Public Law 91-258 Section 16[c][1])
- Federal Aviation Regulations (FAR) in [14 C.F.R. 152](#)
- [FAA Alaska Region Sponsor Guide](#) (the Sponsor's Guide), as modified by this manual

FAA grant procedures are outlined in the Sponsor's Guide. You must follow the procedures of the Sponsor's Guide, as modified by this chapter, in development of FAA projects.

A flow chart outlining the general airport design process is provided in Figure 400-1.

The FAA Oversight Responsibility Agreement matrix is provided as Attachment A to this chapter.

400.3. Responsibility

Project development is the responsibility of the three regions (Central, Northern, and Southeast). Assign specific project responsibility, in writing, to the engineering manager. Engineering managers are responsible for developing projects in accordance with applicable federal, state, and local laws and regulations and departmental policies and procedures.

In this chapter, references to position titles signify levels of authority rather than specific position names, which vary between regions and over time.

Authorities may be re-delegated one level if confirmed in writing and consistent with Department and regional policy.

400.4. Project Status Meetings

The preconstruction engineer calls periodic meetings to review the status and, where necessary, the technical aspects of projects. These meetings may encompass all projects under development or be limited, for example, to projects that have encountered problems.

The purpose of these meetings is to keep management and support groups informed, and to provide a way for management to be involved in the identification and resolution of problems that are impeding timely development or threatening to affect funding commitments. The meetings are not necessarily limited to discussions of project status and may include topics such as policy, procedures, problem areas, public involvement, and special topics.

400.5. Project Status Reports

The engineering manager is expected to consult with support groups and to review and update schedule, cost, and budget information on a regular basis.

We recommend that design project status reports be concurrent with the project status meetings. If required, these reports may be sent to Department headquarters in Juneau.

400.6. Definitions and Acronyms

Alaska Administrative Code (AAC): The regulations implementing state law, usually referred to by title, chapter, and Section, as 17 AAC 15.011

Alaska Coastal Management Program (ACMP):

The state initiated its coastal management program by adopting the Alaska Coastal Management Act (AS 44.19 and AS 46.40) in 1977. The program received federal approval in 1979. Two sets of regulations carry forward the intent of the act. The first set, 6 AAC 80 and 6 AAC 85, establishes statewide standards for project reviews and sets guidelines for the development of local coastal management programs. The second set of regulations, 6 AAC 50, governs how the state reviews projects for consistency with the Alaska Coastal Management Program. These regulations received federal approval in 1984.

Alaska Statutes (AS): The state's laws, usually referred to by title, chapter, and section, as AS 36.30.100

Airport Improvement Program (AIP): The federal program administered by the FAA to provide grants-in-aid for airport development. The highest aviation priorities are safe and secure operation of airports and the airway system.

Airport Layout Plan (ALP): The ALP is a scaled drawing of existing and ultimate land and facilities necessary for the development and operation of an airport. All airport development carried out at federally obligated airports must be done in accordance with an FAA-approved ALP to ensure the development will not negatively affect the safety and efficiency of airport operations.

Americans with Disabilities Act (ADA): A federal law (#103-366) enacted July 26, 1990, which prohibits discrimination against people with disabilities in access to programs, activities, or facilities provided by state and local governments. It also includes companion regulations in 28 CFR parts 35, 36, 37, and 36 CFR part 1191.

Authority to Advertise (ATA): Departmental approval to advertise a project for bids, requested in a standardized memo format. ATA is effective when all signatures have been obtained and any limiting conditions or exceptions satisfied.

Authorized Funding: The dollar amount of legislative receive/ expend authority for the project (See Legislative Authority)

Aviation Project Evaluation Board (APEB): The APEB is the six-member board that reviews, scores, and establishes priorities for aviation projects at state-owned airports. Projects are categorized as airfield,

building, equipment, or planning. The APEB meets periodically—normally twice a year—depending on the number and urgency of projects needing review.

Aviation Spending Plan: This is the multi-year plan for development of airport projects. Projects are programmed on the basis of their APEB scores and available funding in the AIP. A project is placed in the Aviation Spending Plan the fiscal year that it is expected to be ready to be placed under grant.

Capital Improvement Program (CIP): The Department's plan for project activities for the next six federal fiscal years

Categorical Exclusion (CE): The type of environmental document used on federal-aid projects when there are no significant environmental impacts, as described in Section 440.1.3, Environmental Classification

Code of Federal Regulations (CFR): Regulations that implement federal law. They are referred to by title, part, and section, as 23 CFR 630.114.

Department Policy (DPOL)

Department Procedures and Regulations (DPDR)

Disadvantaged Business Enterprise (DBE)

Environmental Assessment (EA): The type of environmental document used on federal-aid projects when the extent of environmental impact is uncertain. The EA results in a Finding of No Significant Impact (FONSI) or a decision to develop an Environmental Impact Statement (EIS), as described in Section 440.1.3.

Environmental Document: Report required on all federal-aid capital projects because of the National Environmental Policy Act (NEPA). It summarizes the alternative courses of action, evaluates their potential environmental impacts, commits to mitigation measures, and includes agency coordination and public involvement efforts. The type of document (classification), as defined in 23 CFR 771.115, depends on the project's environmental impact. It may be an EIS, CE, or EA, as described in Section 440.1.3. An environmental document may also be necessary on a state-funded project that requires action by a federal agency, such as federal permits or clearances.

Environmental Impact Statement (EIS): The type of environmental document used on federal-aid projects when a significant environmental impact is

anticipated, as described in Section 440.1.3. The concluding action on an EIS results in a Record of Decision (ROD) through the federal agency with jurisdiction.

Equal Employment Opportunity (EEO)

Federal Aviation Administration (FAA)

Finding of No Significant Impact (FONSI): An environmental assessment conclusion, as described in Section 440.1.3, signed by the federal agency with jurisdiction

Grant (FAA Airport Improvement Program Grant): Document that provides money to build or plan airport projects and contains conditions

Legislative Authority (LA): Authority to receive and expend funds given by the Legislature in annual appropriations bill or, in some cases, by action of the Legislative Budget and Audit Committee (LB&A). Authority is granted by project and can only be used for the project intended unless reprogrammed. Sufficient LA is a prerequisite to acceptance of an AIP grant, award of a contract, and any expenditure on a project.

Local (Government) Planning Authority (LPA)

Master Plan: An airport master plan represents ultimate development plans for the airport.

National Environmental Policy Act (NEPA): The act that established the national policy on the environment

National Plan of Integrated Airport Systems (NPIAS): The unconstrained list of proposed airport development projects for all national interest airports. An airport must be on the NPIAS list to be eligible for an AIP grant.

Phase: One of the categories of project development: design (Phase 2), right-of-way (Phase 3), construction (Phase 4), utilities (Phase 7), and planning (Phase 8). Each represents a type of development activity based on primary specialty.

Plans, Specifications, and Estimates (PS&E): Review of the bid-ready set of contract documents

Policy & Procedures (P&P): Documents published by the Department stating policies and procedures

Preferred Alternative: The project design selected as the overall most desirable of all proposed alternatives

PSA: Professional Services Agreement. A contract between the professional service provider (consultant) and the Department.

PDA: Project Development Authorization. A Department programming document showing funding sources and levels in each phase.

Project Management Plan (PMP): As described in Section 420.2

Public Involvement Plan (PIP): A plan to meet NEPA requirements, which includes or addresses those elements described in Section 420.2.4.

Purpose and Need: The stated purpose for the proposed project and the need that the project is intended to meet

Record of Decision (ROD): The concluding action on an Environmental Impact Statement.

Region: One of the four organizational units of the Department: Central, Northern, Southeast, or Headquarters Aviation, having authority for airport program development

Spending Plan: See Aviation Spending Plan.

Sponsor's Guide: The *FAA Alaska Region Sponsor Guide* is the primary guidance for development of federally funded airport projects in Alaska.

Stage: A subdivision of a phase with respect to level or degree of development

Statewide Transportation Improvement Program (STIP): Aviation projects are not listed in the STIP; however, some airport related projects are shown in the STIP when they are funded by programs other than the AIP, such as the realignment of an airport access road that is part of the NHS system and funded with federal highway dollars.

Status Meeting: Regional meeting to allow dissemination of information by project managers and support groups concerning the current status of projects

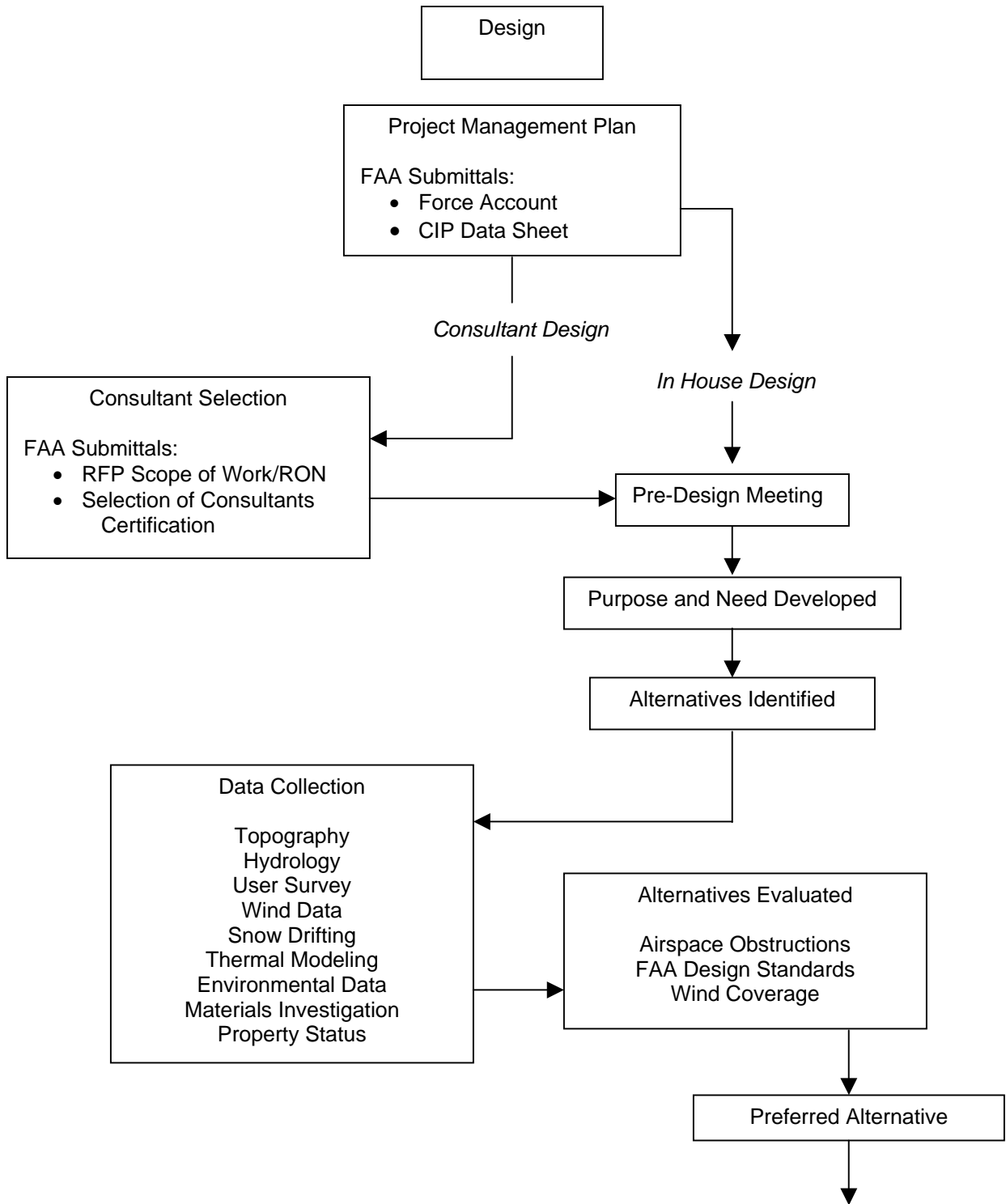
Status Report: Report typically generated from information provided at status meetings

United States Code (USC): The federal laws, usually referred to by title and section, as 23 U.S.C. 109

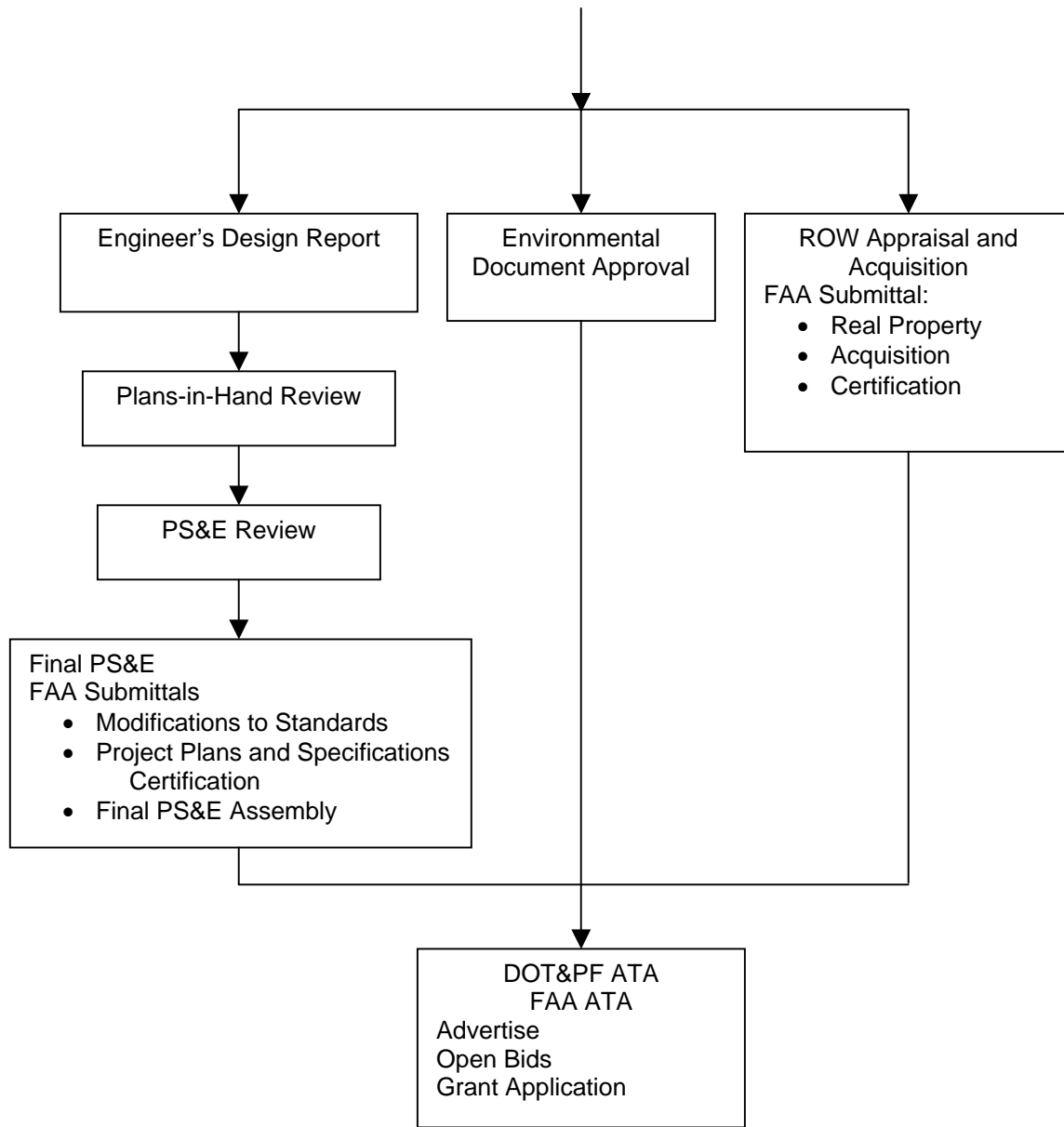
Value Engineering (VE): The systematic application of recognized analysis techniques by a multi-

disciplined team, who identify the necessary function of a product or service, establish a monetary value or worth for that function, generate alternatives through the use of creative thinking, and reliably provide the necessary function at the lowest life-cycle cost consistent with performance, maintainability, safety, and aesthetics.

**Figure 400-1
Airport Design Process Flowchart (Page 1 of 2)**



**Figure 400-1
Airport Design Process Flowchart (Page 2 of 2)**



FAA Approvals

Environmental document
Sign Plan
Airport Layout Plan
Authority to Advertise
Modifications to standards

FAA Submittals

CIP Data Sheet
Sponsor certifications
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410.1. FAA Submittals

The Department and the FAA have executed an FAA Oversight Responsibility Agreement (Attachment A). The agreement specifies products/actions the Department submits to the FAA for approval or for information purposes. The agreement also lists products for which the FAA will Acknowledge Receipt.

410.2. Capital Improvement Program (CIP) Data Sheet

A CIP Data Sheet (Attachment B) is required for information on all projects in FAA's Alaska Region. It is the preliminary notice of the state's intent to construct airport improvements. The CIP data sheet does not obligate the state to undertake the project.

410.3. Sponsor Certifications

The FAA requires Sponsor Certifications (Attachment C) stating that the sponsor will comply/has complied with statutory and FAA-imposed administrative requirements.

The certifications are:

- Construction Project Final Acceptance
- Equipment Construction Contracts
- Project Plans and Specifications
- Real Property Acquisition
- Selection of Consultants
- Certificate of Title

The authorized representative is as per the regional Design and Engineering Services delegation.

Sponsor certification submittals typically are included in the grant application. Forms are located at: http://www.dot.state.ak.us/stwddes/dcsspecs/pop_aptspncertforms.shtml

410.4. Legislative Authority

Prior to advertising, the project must have received legislative authority. Statewide Planning initiates this action, typically one year before the anticipated grant.

410.5. Reasonableness of Cost

The FAA is required to perform a reasonableness of cost determination of proposed project development expenditures. The Alaska Division FAA requires the following to perform the review:

- Force account analysis
- Consultant record of negotiations
- Appraisals
- Administrative settlements
- Final PS&E

FAA will provide the Department with a copy of the determination.

410.6. Force Account Services

The project manager must submit to the FAA a force account analysis for professional services performed by DOT&PF personnel. The FAA will perform a reasonableness of cost determination and forward its findings to the Department. Force account analysis should include as a minimum:

- Project title, location, and AIP number
- Schedule milestones
- Brief scope of project
- Anticipated use of consultants
- Summary of Force Account Costs (Attachment D)

410.7. Airspace Approval

For state-funded projects, the FAA must review and approve FAA Form 7460-1, "Notice of Proposed Construction or Alteration." The FAA review typically takes one to four weeks, depending on the complexity of the project.

For federal-aid projects, the airport layout plan review fulfills the airspace approval.

Terminal and other proposed building construction may require separate airspace review, shadow study, or nav-aid conflict review. Contact the FAA Airports Division for guidance on a case-by-case basis.

410.8. Sign Plan

Part 139.311 requires a certificate holder to provide and maintain a Sign Plan in the Airport Certification Manual (ACM) or Airport Certification Specifications (ACS). A Sign Plan shows the sign system needed to identify hold positions and taxiing routes on the movement area for air carrier aircraft, in accordance with Advisory Circular 150/5340-18 “Standards for Airport Sign Systems.” The Sign Plan must be reviewed and approved by the FAA Airports Division prior to advertising the project for construction.

Elements of a good Sign Plan:

- Sign legends are depicted on an airport layout drawing in approximate location and correct orientation.
- Runways and taxiways are identified.
- Sign legends are legible and of a practical size.
- Signs are numbered.
- Hold position markings are accurately shown.
- Special notes on unusual situations are included.

The project manager will forward the Sign Plan, if applicable, to FAA directly or through the airport safety officer, depending on region policy. Once approved, the project manager forwards the Sign Plan to the airport manager.

410.9. Airport Layout Plan

If the proposed work is not covered by an existing approved Airport Layout Plan (ALP), a revised or updated ALP must be submitted to, and approved by, the FAA prior to issuance of an airport development grant. The division (planning, design) responsible for the preparation and submittal of the ALP is in accordance with region policy. See Attachment I for an Airport Layout Plan Checklist.

410.10. Maintenance Agreements

The Department has maintenance responsibility for all improvements on projects it constructs with FAA

funding. The Department’s obligation duration is the design life of the constructed facility. For facilities to be maintained by others, a formal agreement must be obtained from the other party as to its responsibility for continual maintenance, before advertising the project for construction.

410.11. OST Clearance

Before issuing a grant, the FAA must obtain clearance from the Office of the Secretary of Transportation (OST). In all federal grant programs, as a courtesy to Congress, all grant agencies notify Senate and House members of project approvals in their states or districts before notifying others. No grant offer can be made before this “congressional release” process is completed and OST clearance is obtained. The OST process typically takes four to eight weeks.

In order to proceed with the OST clearance process, the FAA requires that we have an approved environmental document for the project.

410.12. Grant Application

The final project application for federal acceptance serves as the final notice of a sponsor’s intent to carry out the approved airport improvement project.

The grant application is ideally submitted after bids are opened and bid prices are known. There is a cap of 15 percent cost increase over the grant amount for construction projects. No increase over grant amount is allowed for non-construction projects. For projects submitted with project costs based on an estimate and bid results known within the grant year, resubmit a revised Standard Form 424FAA and Form 5100-100, pages four and five, with the revised cost information.

Submit all required certifications that have not previously been submitted with the grant application.

410.13. Records

After contract award, consolidate records pertaining to project development to the fullest practical extent. Retain project records at least three years after FAA pays the final voucher. The retention is automatically extended through resolution of any outstanding litigation, claims, or audits, and it may also be extended by specific retention schedules or regional policy.

Retain permanently records such as grants, grant applications, project design data, original agreements and contracts, final reports, diaries, photographs, and

as-built drawings. For further detail on requirements, see the records retention schedule on file with each regional preconstruction engineer or online at: <http://web.dot.state.ak.us/stwddes/assets/pdf/dc254000.pdf>

You may use microfilmed copies in lieu of original records provided that:

1. Copy legibility and detail are checked and determined to be equal to the originals, prior to disposal of the originals.
2. Legible and detailed copies can be made of the microfilmed records adequate to serve the purposes for which the originals were created.
3. Microfilmed copies are managed, identified, and indexed so that any individual document can be located with reasonable ease.

Make records available for public inspection at reasonable times and places unless the records are confidential and exempt from disclosure under the Freedom of Information Act.

Examples of confidential records include attorney-client correspondence, records pertaining to pending claims or litigation, and personnel matters (AS 09.25.110, AS 09.25.120, and 49 CFR 7). Copying of records may be permitted, provided it does not interfere with ongoing project development, by directing the requestor to a bonded printer.

410.14. 5010 Update

The Airport Safety Data (5010) Program purpose is to collect and disseminate accurate and complete aeronautical information to the public. The program includes the activation and deactivation of airports, maintenance and publication of airport data, and airport safety (5010) inspections. Region policy determines the responsible party for circulating, finalizing, and submitting Form 5010.

420. Initial Project Development

- 420.1. Project Development Authorization
- 420.2. Project Management Plan
- 420.3. CIP Data Sheet
- 420.4. Pre-Design Meeting

420.1. Project Development Authorization

A Project Development Authorization (PDA) is necessary before beginning project development. The PDA establishes the authorized project development funding level.

Either the preconstruction section or planning section (regional option) prepares the initial PDA. The engineering manager initiates subsequent PDAs if additional funding is needed.

The state funds the design through grant acceptance with state dollars. To minimize the use of state dollars, the timing of the initial PDA request should be commensurate with a reasonable lead time for project development to meet the state AIP spending plan for construction.

420.2. Project Management Plan

Upon receipt of Project Development Authorization and project assignment memo, the engineering manager develops the project management plan (PMP). Its purpose is to establish the framework and the anticipated level of public involvement. The PMP includes the following:

1. Project title, location, and AIP number
2. Project scope (description), schedule milestones, and authorized funding as described in Section 420.2.1
3. Work plan, as described in Section 420.2.3, showing activities, durations, manpower, and budget necessary to complete the project within authorized federal funding
4. Listing of anticipated studies, reports, permits, and clearances
5. Public Involvement Plan outlining the level of public involvement activities to be carried out

The PMP, developed as the first deliverable after project assignment, summarizes the “what, where, when, and cost” of the project. It provides a basis for

support groups to schedule their resources and for preliminary engineering work to begin. The PMP will be developed through one or more project definition meetings, one-on-one coordination with support groups, or both.

The PMP satisfies the FAA’s force account requirements.

420.2.1 Project Scope, Schedule, and Funding

Scope of Work

Project “scope” is a general statement of the nature and extent of the work. It answers the question of what transportation need exists and how that need is to be addressed. Examples are “resurfacing runway, widening runway safety area, and replacement of runway lighting for runway 11/29 at Yakutat airport.” The description does not normally include quantities or value, but is more of an intended description statement. Scope is normally derived from the project description in the APEB Project Information Sheet. If a change in scope becomes necessary, the engineering manager coordinates with Planning to define the revised scope. Substantial changes in project scope may require that the project be returned to the APEB for rescoreing.

Schedule

In this context, “schedule” refers to identifying major project milestones.

Authorized Funding

The PDA shows the amount of authorized funding that has been approved and is available for expenditure. As with scope and schedule, the engineering manager is responsible for monitoring the project as it develops, coordinating changes as appropriate.

420.2.2 Studies, Reports, Permits, and Clearances

Make a list of the anticipated studies, reports, permits, and clearances that are applicable at the beginning of the project development process, to guard against inadvertent omission and to serve as a checklist of progress.

It is Department policy to consider all projects with an estimated value equal to or greater than \$4 million for a value engineering study. For those projects that meet

the criteria, it is necessary to document the decision to use or not use value engineering in the project file. If you choose a project for a value engineering study, consult the regional value engineering coordinator. Refer to the Department's procedures for value engineering in the *Procedural Manual* under reference DPDR 05.01.030. The use of value engineering requires FAA's prior approval. AC 150/5300-15 provides general guidance and team qualification requirements.

420.2.3 Work Plan

The work plan is a summary of the activities, durations, manpower, and budget necessary to develop the project. Use the format provided in Appendix D, Summary of Force Account Costs, to develop the work plan.

After soliciting input from each affected support group, the engineering manager reviews, adjusts if necessary, and compiles the data to develop a detailed schedule and budget. List anticipated use of consultants.

The engineering manager is expected to consult with support groups and to review and update schedule, cost, and budget information on a regular basis.

420.2.4 Public Involvement Plan

The Public Involvement Plan (PIP) is prepared under the direction of the engineering manager. The environmental section will review all PIPs. The primary purposes of the PIP are:

- To keep the public informed
- To ensure that all reasonable alternatives are identified and that public and agency concerns are considered and addressed before committing to a preferred alternative

Equally important, public involvement activities should develop support for the project by assuring interested parties of the necessity and best methods for resolving the anticipated problems.

420.3. CIP Data Sheet

Submit a completed CIP Data Sheet to the FAA for information at project startup no later than May 1 of the grant year. Leave the CIP work code and item description blank. FAA will provide the information upon receipt. The project manager is the certifying representative for the Department. Attachment B provides a sample CIP Data Sheet.

Submittal of the CIP data meets the requirement for a sponsor showing intent to use entitlement funds.

420.4. Pre-Design Meeting

The project manager schedules the pre-design meeting. FAA, pertinent Department staff, and parties affected by the airport construction will attend. The purpose of the meeting is to introduce and discuss scope, construction scheduling, design issues, certification requirements, operational safety, and environmental considerations.

430. Project Development Process

- 430.1. Environmental
- 430.2. Right-of-Way
- 430.3. Design

430.1. Environmental

Reserved.

430.2. Right-of-Way

Right-of-way permitting and acquisition must be in accordance with the *Alaska Right-of-Way Manual*. The preconstruction engineer must concur with performing formal appraisals prior to the FAA's approval of the environmental document. The regional director must approve right-of-way acquisitions made prior to environmental document approval.

430.3. Design

430.3.1 Preliminary Design

The initial design may begin at approval of the PDA. Primary activities include all necessary engineering to support the environmental document. This includes preparing or updating engineering and environmental studies to solidify the purpose and need statement and identify and analyze all feasible and prudent alternative solutions to the problem or deficiency.

A pre-design conference is recommended, particularly if the project will affect airport operations during construction. The conference includes parties affected by the proposed construction and should address such issues as project scope, scheduling, certification requirements, airport operational safety, lease holders' access, nav-aid impacts, and environmental considerations.

430.3.2 Final Design

The design stage culminates with a completed plans, specifications, and estimate assembly in contract format, ready for requesting Authority to Advertise.

Primary activities include: engineering to produce detailed, final design plans, specifications, and estimates; review processes; and compilation of a contract assembly.

Supporting activities may include site surveys, soils and foundations reports, bridge design, right-of-way appraisal and acquisition, coordination of environmental issues and obtainment of permits, and

preparation of utility relocation agreements.

Incorporate the Standard Specifications for Airport Construction into all airport construction contracts.

Detailed design requires close coordination with support groups to keep them advised of changes that may affect their work, and to make timely adjustments to design plans and specifications due to feedback from their operations.

Engineer's Design Report

The Alaska Region FAA requires the submittal of an Engineer's Design Report for informational purposes. The content of the report is presented in Attachment E, Engineer's Design Report Outline.

The final Engineer's Design Report is stamped by the engineer of record and submitted to the preconstruction engineer (or designee) for approval. The project manager distributes copies of the approved final Engineer's Design Report in accordance with regional policy with an informational copy to the FAA Alaska Region.

Construction Safety Plan

Bidding documents for projects involving aircraft operational areas must include general and specific safety requirements based on Advisory Circular 150/5370-2C "Operational Safety on Airports During Construction." See Attachment F, Safety Plan Guidance.

Review

Local Review

When the design is 30 to 50 percent developed, the project manager may elect to hold a local review to ensure development is proceeding consistent with project scope and that there is adequate coordination between the support groups. By this time, existing and proposed line, grade, typical section and slope limits, preliminary soils report, and rough estimates of the earthwork quantities and costs should be available. This is an informal review by personnel involved with the various aspects of development (bridge design, design, construction, environmental, maintenance, airport leasing, materials, planning, right-of-way, traffic, utilities, etc.).

As with any review process, comments should be pertinent to the purpose of the review and appropriate to

the level of design development.

Plans-In-Hand (PIH) Review

Projects may undergo a Plans-in-Hand Review, which the engineering manager schedules when the plans, specifications, and estimate are approximately 75 percent complete.

A Plans-In-Hand Review consists of an office review, and a recommended field review of the proposed project site. Its purpose is to ensure conformity with project scope and design standards, verify environmental commitments, review design details and coordinate technical recommendations, assess the cost effective constructability of the project, and evaluate the quality of the product.

Distribution of review assemblies is generally to the following (all projects):

- Leasing
- Design
- Construction
- Statewide Materials
- Planning
- Right-of-Way
- Environmental
- Regional Materials
- City
- Utilities
- Borough
- Review engineer/contracts section
- Maintenance & Operation
- Other involved state/federal agencies
- Tribal governments

PS&E Review

This is the final review of the completed plans, specifications, and estimate (PS&E), packaged to include the bid schedule, invitation for bids, and other project-specific contract documents: a final contract mock-up.

Perform PS&E review on all projects, unless the regional director waives it. Distribution of review assemblies is similar to the departmental list for Plans-in-Hand review, with the project control chief added.

The FAA is included upon request, but other agencies and local governments are normally not sent copies until as-advertised contracts are available.

It is important to give comments objective consideration. The engineering manager usually

adjudicates issues not readily resolved.

Inform reviewers of the responses to their comments with a resolution memo, and provide the construction section with a copy of all comments and resolution.

Final PS&E

Upon completion of changes from the PS&E Review, the registered engineer seals, signs, and dates in ink the original, reproducible plan sheets, in accordance with P&P 70-1003. The responsible individual signs the cover sheet.

The project manager forwards the PS&E to the FAA for the reasonableness of cost determination.

440. Project Development Considerations

- 440.1. Environmental
- 440.2. **Materials Sites and** Soils/Foundation Investigation
- 440.3. Right-of-Way
- 440.4. Civil Rights Programs
- 440.5. Airport Leasing

440.1. Environmental

440.1.1 Introduction

All projects require the following activities:

1. Analysis of environmental impacts
2. Coordination with local governments, resource agencies, and federally certified tribes
3. Obtainment of required environmental permits and clearances
4. Completion of a public involvement process

The project environmental document is prepared during the design stage, using as its foundation the purpose and need (problem statement) and the description and comparison of alternatives.

Final recommendations on how to solve the project's problem statement are the responsibility of the project manager. FAA approval of the completed environmental document, including any public hearing transcripts and certification, constitutes acceptance of the project location and concepts described in the document.

For projects at Anchorage International Airport, which is in an air quality non-attainment area, address conformity with the State Implementation Plan (SIP). The SIP states: "Projects in non-attainment areas cannot increase the number or severity of violations in the area substantially affected by the project." You must address project-level conformity determinations (hot spot analysis) for projects not of the type listed in 40 CFR 51.460.

During final design and PS&E, obtain remaining permits and clearances, and design the project to include permit stipulations and mitigation commitments made in the environmental document.

440.1.2 Initial Environmental and Public Involvement

Soon after receiving the initial approved PDA, and as part of PMP development, the project manager meets with the regional environmental coordinator for a project identification meeting to identify environmental issues, processes, permit requirements, and timelines, and to establish starting dates for environmental and public involvement activities for the work plan. On all projects, complete and record in the project's environmental document an analysis of the social, economic, and environmental effects.

Close and continuous coordination with the environmental section is necessary throughout project development to ensure that the environmental impacts of all reasonable alternatives are being considered.

Early coordination with the public and resource and regulatory agencies through "scoping" is an important aspect of project development. This process establishes the issues to be addressed in the environmental document and the permits that are necessary for construction of the project.

At a minimum, any project that may affect protected resources (e.g. wetlands, floodplains, fish streams, coastal zones and historic sites) requires consultation with state and federal resource agencies and federally recognized tribes.

The regional environmental coordinator sends a scoping letter to federal resource agency area supervisors, local planning authorities, involved federally recognized tribes, and Alaska Native regional corporations. When there is no local planning authority in a community, the letter is sent to the administrative officer (e.g. mayor).

The scoping letter:

- Describes the project in as much detail as possible
- Cites all resources the project will affect
- Identifies any known required permits

Each scoping letter should offer the opportunity to meet (face to face) to discuss the project in the field and in the office. The comment period is generally 30 days, but a 21-day notice is sufficient for minor

projects.

Providing information electronically can expedite the scoping process. Establishing an FTP (file transfer protocol) site is an excellent way to quickly exchange information, such as photos and design drawings, with agencies and interested parties.

The comments received during scoping are documented in the comments and coordination section of the environmental document.

440.1.3 Environmental Classification

One of three levels of documentation is required to comply with the National Environmental Policy Act (NEPA) process. The regional environmental coordinator recommends the appropriate class.

Classes of actions are defined in order 5050.4A.

Class I: Environmental Impact Statement (EIS)

If a project is expected to have a significant effect on the environment, the environmental process requires Notice of Intent, preparation, and FAA approval of a draft EIS, circulation of the draft EIS for comments and public hearing, recommendation on how/whether to proceed, a final EIS, the Record of Decision (ROD), and a published notice of availability. The environmental issues to be addressed vary by project, and some may not become apparent until later in the design process.

The duration of environmental activities, from the PDA to the FAA issuing of the ROD, can take as long as three to four years.

Class II: Categorical Exclusion (CE)

A CE project has no significant individual or cumulative effect on the environment. The list of airport actions that qualify as a CE are identified in FAA Order 5050.4A, Paragraph 23.

The process for a CE, where scoping is not required, can usually be completed within 10 days. A CE that requires agency and public coordination can take 45 days or more, depending on the issues being considered.

Class III: Environmental Assessment (EA)

If the significance of project impacts is not clearly identifiable, an EA is prepared. The EA results either in a Finding of No Significant Impact (FONSI) or a conclusion that an EIS is required, if significant impacts are found.

The process requires public notice, preparation and FAA approval of an EA, notice of availability, public hearing, or hearing opportunity, recommendation on how/ whether to proceed, and (usually) approval of a Finding of No Significant Impact (FONSI). The duration of environmental activity from inception through approval of a FONSI recommendation can take up to a year.

For any document type, the type of environmental investigation can extend the time required. The environmental phase can, in a sense, become open-ended. Schedule field investigations as soon as possible because of the limited field session in Alaska.

Do not release the CE, draft EA, and draft EIS documents to the public until after approval by the Department and the FAA.

440.1.4 Environmental Process

The environmental process and approvals are described in the *Alaska Environmental Procedures Manual for Aviation*.

440.1.5 Agency Coordination and Public Hearing

Early coordination is required with local, state, and federal agencies, as it aids in identifying probable effects and determining the type and scope of the environmental document. The environmental coordinator initiates this process at the direction of the engineering manager.

In accordance with the Airport and Airways Improvement Act, the sponsoring agency for a proposed airport development project must offer the opportunity for formal public hearings if the project involves the following:

5. New airport location
6. New runway
7. Major extension of existing runway

Public meetings can be held at any time, but a formal public hearing is held after approval of the CE, draft EA, or draft EIS.

Whether or not a public hearing should be held in all other situations is discretionary. The FAA has provided guidelines for determining whether hearings should be held based on:

1. The magnitude of the proposal in terms of

environmental impacts

2. The degree of interest in the proposal as evidenced by requests for a hearing from public officials and private citizens
3. The complexity of issues and likelihood that relevant information will be presented at the hearing
4. The extent to which effective public involvement has already been achieved through means other than public hearings

The FAA requires that the sponsor consult with air carriers and fixed base operators regarding the proposed project and submit documentation of the consultation.

Public involvement in accordance with current Department policy and procedures generally consists of:

1. An early workshop during project development to help identify issues, goals, values, and possible impacts
2. Development of a mailing list(s) and ongoing discussion with agencies, the public, and individuals during development
3. A public hearing, or opportunity for hearing, after approval of a draft EA or draft EIS to present studies and interaction in a public forum
4. Availability of the completed EA or final EIS

440.1.6 Permits and Clearances

The environmental section obtains required permits and clearances based on information and drawings provided by the project manager or designated support staff.

The U.S. Army Corps of Engineers (USACE) permit application must accompany the environmental document when it is submitted to the FAA for approval. Obtain FAA approval of the environmental document prior to advertising the project unless the regional preconstruction engineer approves (in writing) advertising the project without FAA approval of the environmental document.

Permits and clearances typically required are:

Alaska Coastal Management Program (ACMP)

Determination of consistency with the state's ACMP plan is required on all projects in the coastal zone before contract award. Refer to Federal Coastal Zone Management Act of 1971 and Alaska Coastal Management Act of 1977 (AS 46.40 and 44.19).

Alaska Department of Natural Resources (DNR)

Approval from DNR is required for projects that affect state refuges, critical habitat areas, cataloged anadromous fish streams, and resident fish streams. All DNR approval(s)/permit(s) must be obtained before the ATA. Projects must provide for habitat protection and accommodation of fish passage (AS 41.05.870, 41.05. 840).

Essential Fish Habitat (EFH)

All projects that may adversely affect EFH require consultation with the National Marine Fisheries Service. EFH means those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity.

If the regional environmental coordinator determines that the project may adversely affect EFH, the project must comply with procedures described in the EFH Finding for Airport Projects in Alaska (James W. Balsiger, Administrator, Alaska Region, NMFS, to Byron K. Huffman, Airports Division Manager, FAA, dated July 31, 2002).

Archaeological and Historical ("Cultural")

All projects for construction require clearance from the State Historic Preservation Office (SHPO) during the design stage (AS 41.35.070 and 36 CFR 800).

Federal and state projects may entail a Section 106 (National Historic Preservation Act) review. This process can involve:

- Surveying and researching to identify sites on or eligible for the National Register of Historic Places
- Assessing the effect of the project on such sites
- Implementing approved mitigation measures for sites adversely impacted. The clearance process may take a considerable amount of time. You must obtain clearance for the project corridor and for materials sources and disposal sites. If materials sources and

disposal sites are contractor-furnished, the contractor is responsible for obtaining clearance.

U.S. Army Corps of Engineers (USACE)

Projects involving fill in wetland areas, rivers, lakes, streams, navigable waters of the U.S., or coastal waters require an individual or nationwide USACE permit, per Section 404 of the Federal Clean Water Act and/or Section 10 of the Rivers & Harbors Act of 1889.

Obtain a consistency determination with the Alaska Coastal Management Program for Corps permits for projects in a coastal zone. Also, obtain a water quality assurance certification (Section 401) from the Alaska Department of Environmental Conservation (ADEC) through the Corps permit process.

Design features such as typical section, alignment, slope limits, etc., must be detailed enough to obtain a Corps of Engineers permit and to avoid costly “loops” and project delays. These features can be fine-tuned during the design phase in recognition that a minor modification to the permit is acceptable.

Wetland use as a vegetative buffer strip requires approval from the Corps of Engineers. Include the use of wetlands as a buffer strip in the narrative of the project Corps of Engineers’ 404 permit.

U.S. Environmental Protection Agency (EPA)

The U.S. Environmental Protection Agency (EPA) National Pollution Discharge Elimination System (NPDES) General Permit currently addresses projects that disturb more than 1 acre of ground by requiring the contractor to use the Department’s Erosion and Sediment Control Plan (ESCP) as a basis for preparing a Storm Water Pollution Prevention Plan (SWPPP). ESCP guidance is provided in Section 620.1 of this manual.

Alaska Department of Environmental Conservation (ADEC)

18 AAC 72.600 requires written approval from the Alaska Department of Environmental Conservation (DEC) of all plans that construct, alter, install, modify, or operate any part of a nondomestic wastewater treatment works or disposal system. The project Erosion and Sediment Control Plan (ESCP) requires DEC approval prior to advertising.

Storm water runoff from a highway is “nondomestic wastewater” as defined by DEC.

Submit project plans to DEC for approval of both the storm water collection and disposal system (e.g. ditches) and the ESCP prior to advertising.

Local Government

AS 35.30 does not apply to airport capital improvement projects. However, the FAA requires that when a new airport is constructed in a non-metropolitan area, the sponsor provides a certification that the community supports the location of the proposed airport.

440.2. Materials Sites and Soils/Foundation Investigation

The regional Materials staff performs soils investigations and reports in accordance with the Department’s *Geotechnical Procedures Manual* and *AASHTO Manual on Subsurface Investigations*.

Their purpose is to determine the nature of underlying soils along the project alignment, estimate the availability and characteristics of construction materials, recommend earthwork structural design parameters, and identify and make recommendations for resolving special geotechnical problems.

This work may be contracted to a consultant in the event regional or statewide Materials are unable to undertake the necessary geotechnical investigation.

440.2.1 Material Sites

Give special consideration to remote rural projects that require borrow, processed aggregates or rock. It is preferable to use local material sources to the extent possible. Whether materials meeting the project requirements are obtainable in proximity to (locally) the project or must be barged in has a significant effect on project cost and schedule. Providing accurate information on the quality and quantity of locally sourced materials, or clearly delineating that imported materials will be required to meet specifications, reduces risk to bidders and gives DOT&PF better pricing.

Best practices for using local material sources on remote rural projects are detailed in the following flow charts provided later in this section:

- Figure 440-2 Determine Local Material Category (Part 1)
- Figure 440-3 Determine Optimal Use of Local Materials Sources (Part 2)

- Figure 440-4 Permits and Landowner Agreements (Part 3)

Tasks displayed as shaded boxes in these flowcharts are those that may require extra effort in the preconstruction phase but add project value by potentially minimizing the need for imported materials, reducing the contractor's effort and uncertainty during bidding to obtain permits and agreements, and providing a fair bidding environment.

The standard specifications for a material may be modified at the discretion of the project manager in consultation with regional materials section. This modification must be justified and approved by FAA. Include a discussion and justification of this modification in the Engineer's Design Report in Section E.2.

Part 1: Determine Local Material Availability and Categories (Ref: Figure 440-2)

For making an initial determination on local material source availability, use the Department's Materials Site Inventory (MSI) that is part of the Geotechnical Asset Management (GAM) Program. The GIS website is found here:

<https://akdot.maps.arcgis.com/apps/mapviewer/index.html?webmap=a3c965428a3b4f5b973d358d9f53096c>

Consult the Regional Materials Section for information relevant to each site and to identify other potential sites not included in the MSI. If there is no information at the project location or the existing information is insufficient, the project manager in coordination with the regional materials engineer should consider conducting a materials site investigation.

Suitability is determined by the material's conformance with the *Standard Specifications for Airport Construction* as modified by any approved MOS.

Part 2: Determine Optimal Use of Local Material Sources (Ref: Figure 440-3)

Imported materials are those brought in from outside the vicinity of the project. Give consideration to mode of transportation: whether materials can be hauled in via an ice road or winter road or must be barged.

When the local material category is "suitable only for some material types," the designer is encouraged to

consider ways to make the local material suitable by modifying the standard specifications, blending with imported material, or making modifications to the typical sections, including considering technologies such as geosynthetics or chemical treatments. Consult the Regional Materials Section on how and when materials and specifications can be modified to provide acceptable performance.

Part 3: Permits and Landowner Agreements (Ref: Figure 440-4)

Tasks shown in Figure 440-4 are intended to provide a fair bidding environment. Items in shaded boxes are most critical to ensuring this and project managers are encouraged to complete these work items during preconstruction.

Include all landowner agreements and permits in the contract appendices following existing standards.

A Fair Bid Letter is a written guarantee from a private material site owner that all bidders will be given the same price. It should include the actual royalty rates for materials obtained from the material site. The Project Manager obtains the Fair Bid Letter.

ROW agreements may include but are not limited to Right of Entry, Temporary Construction Easement, Temporary Construction Permit, and permanent right-of-way.

Material Sales Agreements are obtained by the joint effort of the Project Manager and ROW Section. Obtaining these agreements can be time intensive and should be initiated early.

When a Mandatory Source is used, complete a public interest finding in accordance with P&P 10.02.013

Information to include in the Bid and Contract Documents

When materials are anticipated to be imported, identify all pay items expected to be imported in a Special Notice to Bidders. Additional information may be included on the plans or in the Special Provisions.

When a Material Site Agreement is obtained for the project, include a copy in an appendix to the contract.

Fair Bid Letters shall be included as supplemental information at advertising.

When an Available, Designated, or Mandatory Materials Source (for definitions see SSAC Section

60-02) is used on a project, provide available site-specific information as supplemental information to bidders.

Table 440-1 provides a matrix defining responsibility for obtaining rights to material sources.

Include copies of all permits and landowner agreement in an appendix to the contract.

**Table 440-1
Material Source Responsibility Matrix**

	Contractor-Furnished Source	Mandatory Source	Designated Source	Available Source
Who owns the subsurface rights?	It depends, see narrative	The Department must obtain rights	The Department must obtain rights	The Department must obtain rights
Who obtains permits?	Contractor	Department	Department	Department or Contractor
Materials Report required	No	Yes	Yes	See below
Who prepares mining and reclamation plan?	Contractor – acceptable to Department	Department	Contractor	Contractor

The following definitions of the various types of material sources are derived from Section 60-02 of the SSAC:

Contractor-Furnished Source: A material source that is from a commercial plant or any material source that is not identified-below.

Mandatory Source: A material source required for use by the Department. A Public Interest Finding (PIF) is required to designate a material source as mandatory (See P&P 10.02.013).

Designated Source: A material source that is made available to the contractor, but is not required for use.

Available Source: A material source identified as available for use to the contractor. The Department makes no guarantee as to the quality or quantity of material available. Provide any available information as supplemental information and note its availability in the Notice to Bidders. The contractor is responsible for making their own determination of the quality and quantity of material available.

Excluded Material Source: A material source

that is excluded from use. It may be considered by the contractor as a contractor-furnished source, unless it is identified in the contract as an Excluded Materials source.

To use data from a materials report for a mandatory or designated material source, it must be a project specific report.

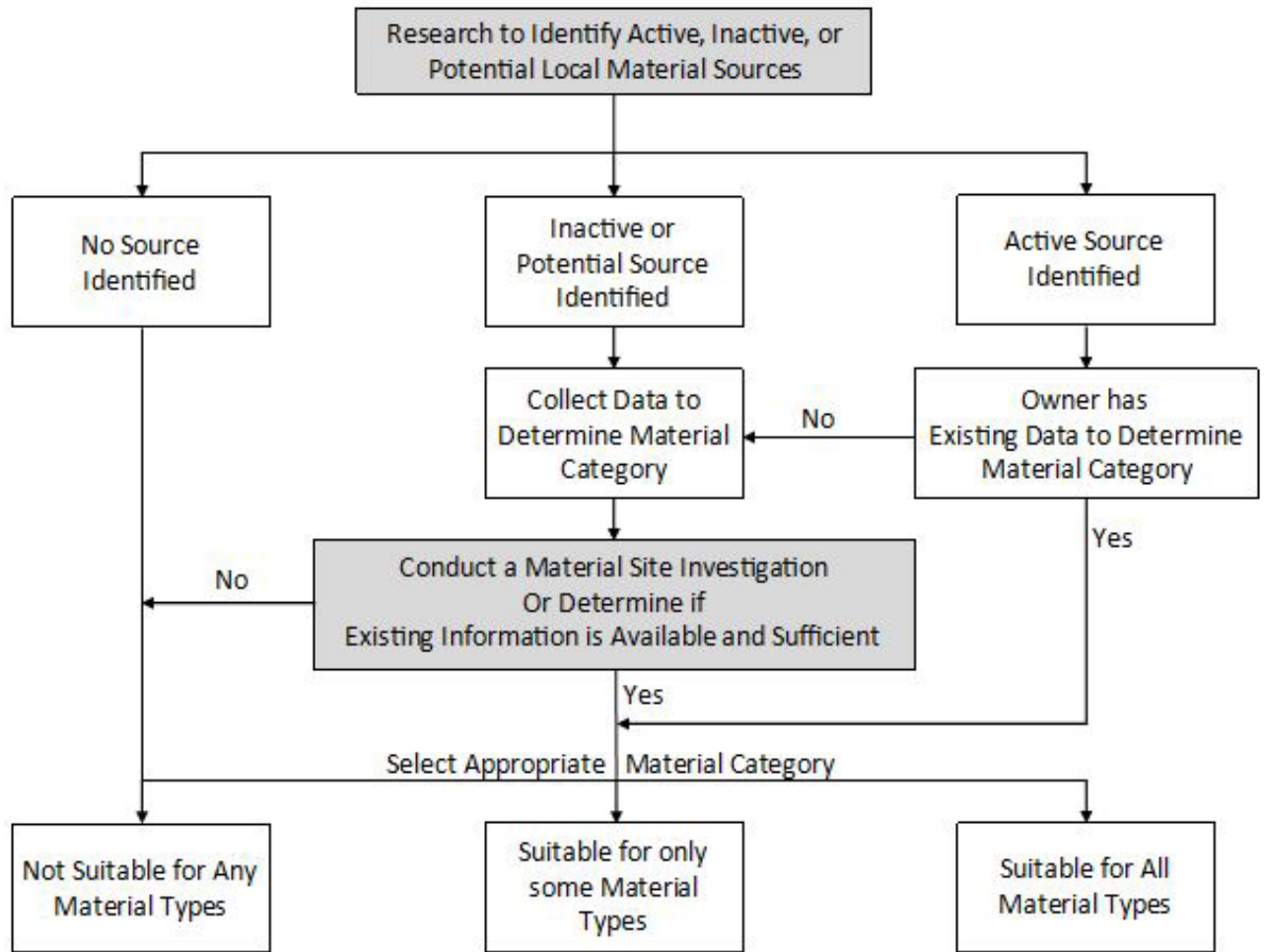
The permits necessary for a material source can be numerous and may include:

- Wetlands
- Floodplain
- State Historic Preservation Office (SHPO)
- Conditional use permit
- Noise

Where Table 440-1 indicates the Department is responsible for obtaining rights to use or otherwise develop a material source, do so prior to advertising a project.

Address permits to be obtained by the Department in final design. Permits to be obtained by the

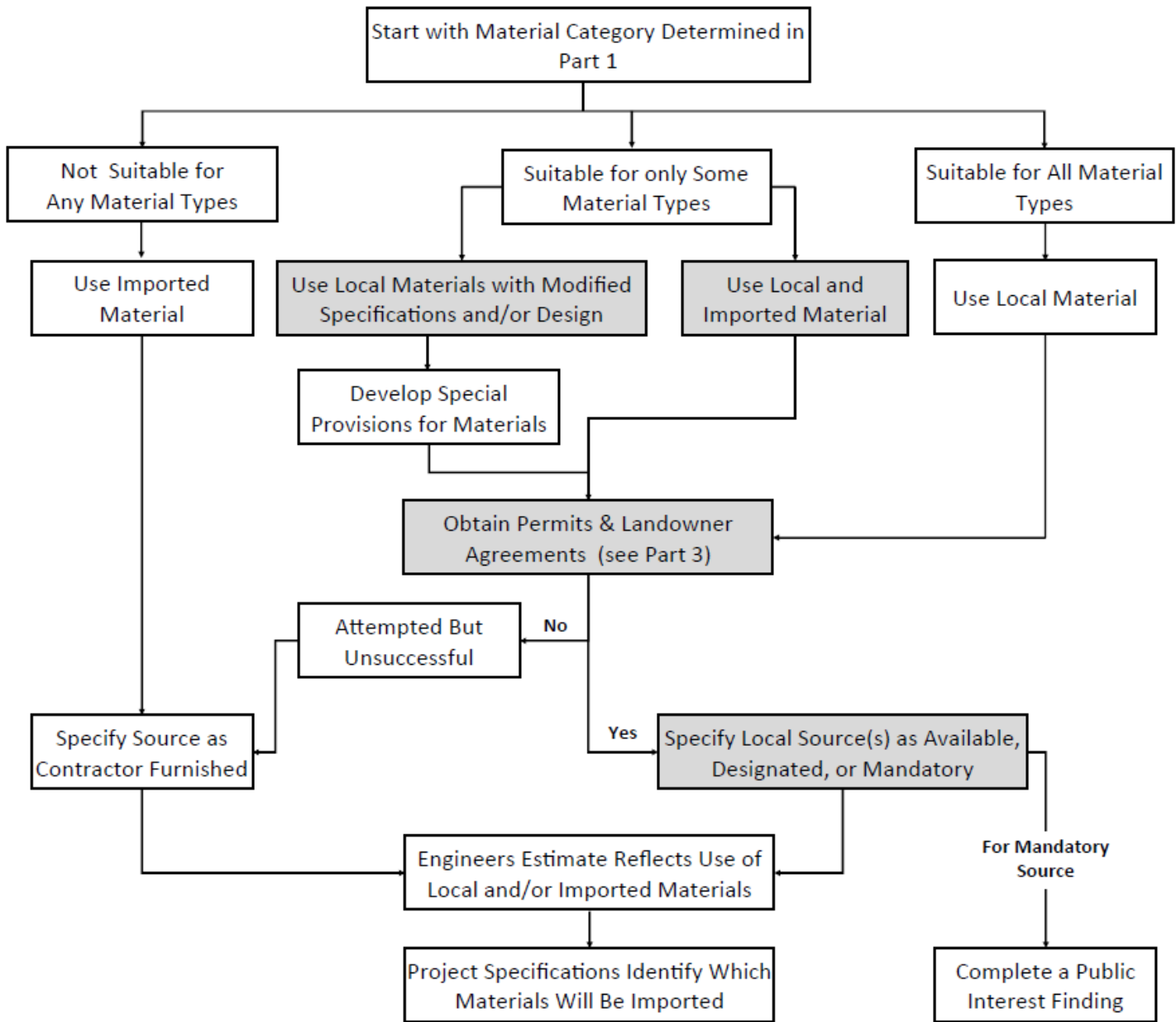
contractor and the mining and reclamation plan will be obtained during construction.



Note: Items in shaded boxes are most critical to ensuring a fair bid environment and project managers are encouraged to complete these work items during preconstruction.

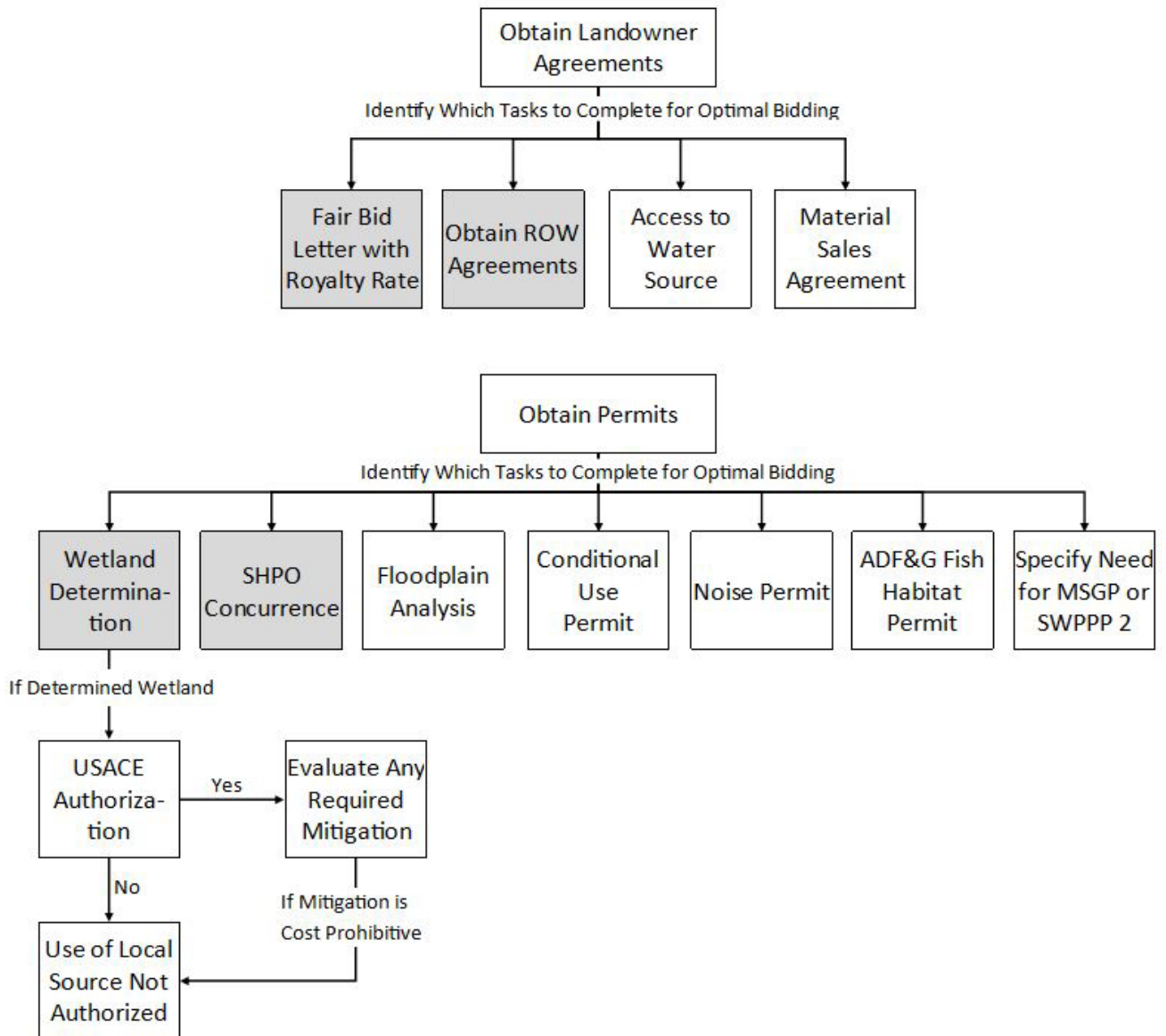
Once Material Category is determined,
Proceed to Part 2 Flow Chart

Figure 440-2
Local Material Sources on Rural Projects Flow Chart
Part 1 – Determine Local Material Category



Note: Items in shaded boxes are most critical to ensuring a fair bid environment and project managers are encouraged to complete these work items during preconstruction.

Figure 440-3
Local Material Sources on Rural Projects Flow Chart
Part 2 – Determine Optimal Use of Local Material Sources



Note: Items in shaded boxes are most critical to ensuring a fair bid environment and project managers are encouraged to complete these work items during preconstruction.

**Figure 440-4
Local Material Sources on Rural Projects Flow Chart
Part 3 – Permits and Landowner Agreements**

440.2.2 Initial Soils/Foundation Investigation

Conduct a geotechnical reconnaissance. Using the description of alternatives, the project scope, and the rough estimate of earthwork quantities as provided by the engineering manager, the engineering geologist evaluates the data, makes a field review, and then

summarizes, in a memo format report, a comparison of soils conditions, materials availability, and possible problems for each alternative. Test holes or pits may be necessary to verify materials source suitability. Major projects may require soil borings and a subsequent formal report. *(Note: The Engineers Geology Geotechnical Exploration Procedures*

Manual is a good reference when conducting geotechnical reconnaissance.)

Complete the review and refinement of the purpose and need, description of alternatives, and cost estimates for incorporation into the project's environmental document.

The preliminary study effort should be commensurate with the complexity of the project.

440.2.3 Soils/Foundations Investigation

Once the preferred alternative has been selected, geotechnical investigations are completed to support design of the selected alternative, that includes "centerline" and materials site borings and test pits, samples analyses, and preparation of a final report with recommendations for design. To support the field investigation, the engineering manager may provide possible line and grade data (existing and proposed), location of cuts and fills, estimates of earthwork quantities, and anticipated provisions for drainage.

The geologist prepares an exploration plan for the approval of the regional materials engineer and the engineering manager. If possible, the engineering manager or principal designer accompanies the geologist on a field review of the alignment and may return for first-hand review of problem areas during field investigations.

The final geotechnical report is not normally completed until after final alignment, grade, and geometry have been selected. Write preliminary geotechnical reports, or memoranda with interim design recommendations, as soon as the results of the fieldwork are known.

440.3. Right-of-Way

The Right-of-Way section obtains the land interests necessary for construction, operations, and maintenance of capital projects in accordance with the Department's *Right-of-Way Manual*. This process involves:

1. Identifying land needs based on the airport layout plan (ALP)
2. Researching titles to properties to be acquired
3. Preparing right-of-way plans, with measurements of areas needed
4. Appraising the fair market value of lands needed, including affected improvements

5. Negotiating property acquisitions
6. Relocating any displaced families and businesses
7. Certifying the Department's ownership or land interest
8. Controlling encroachments and disposing of lands no longer necessary for public use
9. Preparing programming requests for the engineering manager's approval

If negotiations fail, the Department may seek to acquire a property by eminent domain (condemnation) through the courts. Approval to proceed with acquisition through condemnation is reserved for the preconstruction engineer, and the Department of Law handles subsequent proceedings.

440.3.1 Initial Right-of-Way

Using a description of the alternative alignments provided by the engineering manager, ROW staff members prepare estimates of the probable number of parcels for each alternative, their acquisition and relocation costs, and "incidentals," that is, the cost of performing ROW activities.

Staff also assess each alternative in terms of the socioeconomic effects on residences and businesses, and how many displacements it would cause. They report the results in a Conceptual Stage Relocation Study, often in memo format, which is included in the project's environmental document.

If there is a public hearing on the environmental document, ROW presents information from the Conceptual Stage Relocation Study and discusses the acquisition and relocation processes as required by the *Right-of-Way Manual*.

As with other support groups, early and ongoing coordination with ROW helps determine the level of information needed from the engineering manager, facilitates early starts and steady progress, allows timely design response to feedback, and ensures coordination of the effects of plan changes.

440.3.2 Design Right-of-Way

Design changes affecting the amount or location of required land need to be coordinated closely with ROW and all other support groups.

If there is a design public hearing, ROW presents the updated relocation study and other information as

required by the *Right-of-Way Manual*.

Among other factors, the presence of hazardous materials or hazardous waste can significantly affect appraisals. It is important to identify and investigate suspect parcels early in the project development process, usually as part of environmental activities, so that any problems can be quantified and managed in time to minimize delay in the appraisal process.

Property owners may request construction items be added to the plans. The negotiator submits such requests for project manager approval, on a Memorandum of Agreement (MOA), a k a Memorandum of Understanding (MOU), form. If negotiations are concluded successfully, ROW processes the legal and payment documents, arranges for clearing the acquired right-of-way of any improvements, and manages any relocation of families or businesses.

If negotiations fail or title complications exist, and if administrative settlement at a higher-than-market price is imprudent or unsuccessful, eminent domain proceedings are initiated through the Department of Law. These proceedings significantly affect project schedules and budgets. The proposed taking must be for the greatest public good and the least private injury, and the preconstruction engineer must approve the decision to proceed with condemnation.

Forward appraisals and administrative settlements to the FAA for a reasonableness-of-cost determination.

If specifically listed on the Invitation for Bids, make right-of-way information available to bidders.

440.4. Civil Rights Programs

There are numerous state and federal laws and regulations pertaining to civil rights. The Civil Rights Office is a good place to start for specific information. Provisions to implement nondiscrimination and entitlement programs are included in various contract “boilerplate” forms and in the specifications. The provisions for state-funded and federal-aid contracts are similar, but not identical.

440.4.1 Disadvantaged Business Enterprise (DBE) Program

The purpose of the DBE program is to provide an equal opportunity for participation of minority-owned and female-owned businesses in construction contracts and subcontracts.

On all federal-aid contracts, bidders must meet minority business recruitment procedures in order to be considered for award.

When design is nearly complete and ready for PS&E review, prepare a goals worksheet using a brief description of project scope and a listing of subcontractable work items from the engineer’s estimate. From this worksheet, the Civil Rights Office in Anchorage establishes the goal, which is added to the bid schedule prior to advertising.

440.4.2 Title VI

Pursuant to the Civil Rights Act of 1964, the Department has prepared a Title VI Work Plan to ensure compliance with federal civil rights laws and regulations in its programs. The work plan stipulates clauses to be included in construction contracts, professional service agreements, and property actions. It also places coordination and reporting requirements on project managers during the project development and public involvement processes. Copies of the work plan are available through the Civil Rights Office.

440.5. Airport Leasing

Airport leasing is responsible for management of state-owned airport lands in Alaska and therefore deals with airport users on a continuing basis.

Coordinate closely with airport leasing from project inception through final PS&E to ensure that the design is appropriate from a property management standpoint, and to help ensure airport user’s needs are addressed as early in the design process as possible. Consult airport leasing when developing the PMP and PIP. Include airport leasing in the pre-design meeting and all reviews.

450. Advertising and Bid Opening

- 450.1. PS&E Approval and Authority to Advertise (ATA)
- 450.2. Advertising for Bids
- 450.3. Addenda
- 450.4. Bid Opening
- 450.5. Grant Application

450.1. PS&E Approval and Authority to Advertise (ATA)

Request Authority to Advertise from the FAA when the PS&E is complete, and the Project Certification for FAA Projects (see Attachment G) has been prepared and circulated to the appropriate sections and to the preconstruction engineer for signature.

Upon approval of the project certification, the ATA (Attachment H) is circulated to the preconstruction engineer and regional director or designee for signature. The ATA will document the date FAA approval is received.

The responsible party for securing the Project Certification and the ATA is either the project manager or the contracting officer, depending on region policy.

450.2. Advertising for Bids

After receipt of the FAA Authority to Advertise, the contracts section establishes the contract advertising period and prepares an Invitation for Bids for newspaper publishing. By statute, the minimum advertising period is three weeks prior to bid opening. The regional director may waive this requirement.

450.3. Addenda

The engineering manager uses addenda to make changes to the contract documents, or to make sure all bidders are advised of pertinent information, after a contract is advertised. The engineering manager recommends and prepares the addenda in consultation with the contracting officer or a designee. Department sections with expertise or interest should review the addenda with final approval according to D&ES region delegation.

Changes to the proposal, bid schedule, bid bond, federal wage rates, state wage rates, and any replacement plan sheets necessitate an addendum.

Addenda may be sent by certified mail, with a return receipt, up to 10 days before bid opening. After that, send them by fax or other express means, with a cutoff of two workdays before bid opening. Any addenda after this cutoff will require bid-opening extension. Maintain documentation of certification of receipt in the project files.

Furnish a copy of each addendum to those on the "initial distribution list" (a standard distribution) and to all those who requested plans after the project was advertised for bids (the "plan holders list") and the FAA.

The order in which items are listed in an addendum follows the table of contents in the contract, with plan changes at the end. Annotate all sealed plans with the revisions. Directions to plan holders are covered by one of three active verbs: add, delete, or change.

450.4. Bid Opening

At the end of the contract advertising period, the contracting officer or designee publicly opens and reads bids. Immediately after bid opening, the contracts section compiles a summary of unchecked results, available to all interested parties. Then, after a detailed check, the contracting officer or designee prepares and certifies a bid tabulation.

The project manager analyzes the bid tabulation, discusses the bids and funding needs with the construction section, and recommends award or rejection of all bids, for the contracting officer's concurrence.

450.5. Grant Application

The design engineering manager compiles the grant application. The Department's authorized representative is as per the D&ES region delegation.

460. Construction and Project Closeout Support

- 460.1. Preconstruction Conference
- 460.2. Change Orders

460.1. Preconstruction Conference

The designer of record and/or the engineering manager will attend the preconstruction conference.

460.2. Change Orders

Prior to executing change orders, construction staff will consult with the designer of record regarding proposed changes to the plans and specifications. Change orders will be stamped that:

- Adjust typical section
- Adjust structural section
- Change the plan layout
- Alter safety items such as lighting, striping, and signage
- Change materials specifications and testing

The design engineer of record may be asked to perform the action.

For consultant-designed projects where the consultant was not retained for construction support, the Department's design project manager will perform the necessary construction support.

4. Attachment A. FAA Oversight Responsibility Agreement

**Federal-Aid Project Oversight Responsibility Agreement between the
Federal Aviation Administration (FAA) Alaska Region and the
Alaska Department of Transportation and Public Facilities (DOT&PF)**

FAA actions on DOT&PF submittals will be

SUBMITTALS	FAA ACTION		
	APPROVE	INFORMATION	ACKNOWLEDGE RECEIPT
CIP Data Sheet		✓	✓
Sponsor Certification		✓	✓
Force Account		✓*	✓
Design/Build	✓**		✓
Consultant Contract Scope of Work/Record of Negotiation		✓*	✓
Environmental Document	✓		✓
Airport Layout Plan	✓		✓
Exhibit A Property Plan		✓	✓
Title Opinion		✓	✓
Appraisals		✓*	✓
Administrative Settlements		✓*	✓
Design Report		✓	✓
Sign Plan Update (certificated airports)	✓		✓
Construction Safety Plan		✓	✓
Modifications to Standards	✓		✓
Authority to Advertise	✓		
PS&E Assembly		✓	✓
Bid Tabs		✓	✓
Conformed Contract		✓	✓
Addenda		✓	
Contract Award	✓		
Notice to Proceed	✓		
Construction Management Plan		✓	✓
Project Status Reports		✓	
Change Orders		✓*	✓
Supplemental Agreements	✓		✓
Airport Master Record		✓	✓

*necessary for Alaska Division FAA to perform reasonableness of cost determination (49 USC). FAA will provide DOT&PF with their determination.

**Approve for use as contracting method

This agreement is effective from the date of signature and may be modified, as the need arises.

David S. Stelling 3-11-02

David S. Stelling
Manager, Safety & Standards Branch
Federal Aviation Administration

Michael L. Downing 3/6/02

Michael L. Downing, P.E.
Chief Engineer
Statewide Design & Engineering Services
Department of Transportation and
Public Facilities

4. Attachment B. CIP Data Sheet

B.1. CIP Data Sheet Requirements

A Capital Improvement Program (CIP) Data Sheet Package consists of the following elements as shown on the Sample CIP Data Sheet on page 24-B-2 and described below, as a minimum:

1. *Project Data:* Include the following general information:
 - a. Airport name
 - b. Fiscal year of the proposed project
 - c. Project title, as clear and succinct as possible
 - d. AIP Project No.
 - e. Revision No.; if resubmitting the data sheet with changes, show a revision number and date
2. *ACIP Code, Item Description, Fed Share Cost:* Leave blank. FAA will fill in the information.
3. *Environmental Status:* Indicate the status of the required environmental documentation.
4. *Land Title and Exhibit "A" Status:* Provide the status of the title to airport property and currency of the Exhibit "A" Property Map.
5. *Airport Layout Plan (ALP) Status:* Show the FAA ALP approval date (or expected date of approval) for an ALP which shows the development work proposed.
6. *Legislative or Budget Authority:* Discuss the status of legislative or budget authority to accomplish the proposed work.
7. *Project Description:* Provide a more complete description of those ACIP code items listed as proposed items of development. Include quantities of work to be done; i.e., extend runway 32' by 750' to the south.
8. *Project Justification:* Provide a brief program narrative statement that describes the need and justification for each proposed item of development.
9. *Signature, Title, and Date:* Provide the signature, title, and date by an authorized representative of the sponsor. Include the following statement:

"To the best of my knowledge and belief, all data shown in this CIP Data Sheet is true and correct and has been duly authorized by the sponsor."

10. *Sketch:* Include a sketch or drawing that clearly depicts the existing airport configuration and identifies the proposed items of development as listed under the ACIP Code section and more fully described in the Project Description section. Please date the sketch. This is NOT REQUIRED for an equipment project.

CIP DATA SHEET

Airport Name: _____ Fiscal Year: _____
 Project Title: _____ Revision No: _____
 AIP Project No: _____ APEB Score: _____

CIP Work Code			5. Item Description	<i>Federal Share</i>
Purpose	Component	Type		
Total Federal Share:				

Environmental Status:

Land Title & Exhibit "A" Status:

Airport Layout Plan Status:

Status of Legislative or Budget Authority:

Open Projects: (Provide Federal Grant Number and Scheduled Close-Out Date)

Project Description:

Project Justification:

Justification for delay of grant submission beyond 5/1:

Certification

To the best of my knowledge and belief, all information shown in this CIP Data Sheet is true and correct and has been duly authorized by the sponsor.

Representative Name (Print or Type) _____ Contact Name (Print or Type) _____

Signature of Authorized Representative _____ Date: _____ Contact Phone (Print or Type) _____

Title of Authorized Representative _____ Contact Title (Print or Type) _____

4. Attachment C. Sponsor Certifications

Sponsor Certification for Construction Project Final Acceptance

Sponsor's Name

Airport

Project Number

Project Description

Section 47105(d) of the Federal Aviation Reauthorization Act of 1996, as amended (herein called the act), authorizes the secretary to require certification from sponsors that they will comply with statutory and administrative requirements. The following list of certified items includes major requirements for this aspect of project implementation. However, the list is not comprehensive, nor does it relieve sponsors from fully complying with all applicable statutory and administrative standards. Every certified item must be marked. Each certified item with a "no" response must be fully explained in an attachment to this certification. If the item is not applicable to this project, mark the item "N/A." General requirements for final acceptance and closeout of federally funded construction projects are in 49 CFR 18.50. The sponsor must determine that project costs are accurate and proper in accordance with specific requirements of the grant agreement and contract documents.

1. The personnel engaged in project administration, engineering supervision, and construction inspection and testing (were/will be) determined to be qualified and competent to perform the work. Yes
 No
 N/A

2. Daily construction records (were/will be) kept by the resident engineer/construction inspector. These records document work in progress, quality and quantity of materials delivered, test locations and results, instructions provided the contractor, weather, equipment use, labor requirements, safety problems, and changes required. Yes
 No
 N/A

3. Weekly payroll records and statements of compliance (were/will be) submitted by the prime contractor and reviewed by the sponsor for Federal Labor And Civil Rights Requirements (Advisory Circulars 150/5100-6 and 150/5100-15). Yes
 No
 N/A

4. Complaints regarding the mandated federal provisions set forth in the contract documents (have been/will be) submitted to FAA. Yes
 No
 N/A

5. All tests specified in the plans and specifications (were/will be) performed and the test results documented. A summary of test results (has been/will be) available to FAA. Yes
 No
 N/A

6. For any test results outside allowable tolerances, appropriate corrective actions (were/will be) taken. Yes
 No
 N/A

Sponsor Certification for Construction Project Final Acceptance (continued)

- 7. Payments to the contractor (were/will be) made in compliance with contract provisions and verified by the sponsor's internal audit of contract records kept by the resident engineer. If appropriate, pay reduction factors required by the specifications (were/will be) applied in computing final payments and a summary of pay reductions (has been/will be) available to FAA. Yes
 No
 N/A

- 8. The project (was/will be) accomplished without significant deviations, changes, or modifications from the approved plans and specifications, except where approval (was/will be) obtained from FAA. Yes
 No
 N/A

- 9. A final project inspection (was/will be) conducted with representatives of the sponsor and the contractor. Project files (contain/will contain) documentation of the final inspection. Yes
 No
 N/A

- 10. Work in the grant agreement (was/will be) physically completed, and corrective actions required as a result of the final inspection (were/will be) completed to the satisfaction of the sponsor. Yes
 No
 N/A

- 11. The as-built plans and an equipment inventory, if applicable, (have been/will be) submitted to FAA. If requested, a revised airport layout plan (was/will be) made available to FAA. Yes
 No
 N/A

- 12. Applicable closeout financial reports (have been/will be) submitted to FAA. Yes
 No
 N/A

I certify that, for the project identified herein, the responses to the foregoing items are correct as marked, and that the attachments, if any, are correct and complete.

Signed: _____ Dated: _____
Sponsor's Authorized Representative

Typed Name and Title of Sponsor's Representative

Sponsor Certification for Equipment/Construction Contracts

Sponsor's Name

Airport

Project Number

Project Description

Section 47105 (d) of the Federal Aviation Reauthorization Act of 1996, as amended (herein called the act), authorizes the secretary to require certification from sponsors that they will comply with statutory and administrative requirements. The following list of certified items includes major requirements for this aspect of project implementation. However, the list is not comprehensive, nor does it relieve sponsors from fully complying with all applicable statutory and administrative standards. Every certified item must be marked. Each certified item with a "no" response must be fully explained in an attachment to this certification. If the item is not applicable to this project, mark the item "N/A." Standards for advertising and awarding equipment and construction contracts within federal grant programs are described in 49 CFR 18.36. Sponsors may use their procurement procedures reflecting state and local laws or regulations provided procurements conform to specific standards in 49 CFR 18 and Advisory Circulars 150/5100-6, 150/5100-15, and 150/5100-16.

1. A code or standard of conduct (is/will be) in effect governing the performance of the sponsor's officers, employees, or agents in soliciting and awarding procurement contracts. Yes
 No
 N/A

2. Qualified personnel (are/will be) engaged to perform contract administration, engineering supervision, and construction inspection and testing. Yes
 No
 N/A

3. The procurement (was/will be) publicly advertised using the competitive sealed bid method of procurement. Yes
 No
 N/A

4. The request for bids clearly and accurately (describes/will describe) all administrative and other requirements of the equipment and/or services to be provided. Yes
 No
 N/A

5. Concurrence (was/will be) obtained from FAA prior to contract award under any of the following circumstances: Yes
 No
 N/A
 - Only one qualified person/firm submits a responsive bid
 - The contract is to be awarded to other than the lowest responsive and responsible bidder
 - Life cycle costing is a factor in selecting the lowest responsive bidder, and
 - Proposed contract prices are more than 10% over the sponsor's cost estimate.

Sponsor Certification for Equipment/ Construction Contracts (continued)

6. All contracts exceeding \$100,000 (require/will require) a bid guarantee of 5%, a performance bond of 100%, and a payment bond of 100%. Yes
 No
 N/A
- Explanation: Performance and payment bonds, at 50% each, are required for all DOT&PF construction contracts exceeding \$100,000. This bonding meets or exceeds the requirements of AS 36.30.010 and was approved for use by FAA letter dated March 6, 1991, as adequately protecting the government's interest.*
7. Contracts exceeding \$100,000 (contain/will contain) provisions or conditions specifying administrative, contractual, and legal remedies, including contract termination, for those instances in which contractors violate or breach contract terms. They also (contain/will contain) provisions requiring compliance with applicable standards and requirements issued under Section 306 of the Clean Air Act (42 USC 1857 (h)), Section 508 of the Clean Water Act (33 USC 1368), Executive Order 11738, and environmental protection regulations (40 CFR Part 15). Yes
 No
 N/A
8. All construction contracts involving labor (contain/will contain) provisions ensuring that in the employment of labor, honorably discharged Vietnam-era veterans and disabled veterans will be given preference. Yes
 No
 N/A
9. All construction contracts exceeding \$2,000 (contain/will contain) provisions requiring compliance with the Davis-Bacon Act, and bid solicitations (contain/will contain) a copy of the current federal wage rate determination. Provisions requiring compliance with Sections 103 and 107 of the Contract Work Hours and Safety Standards Act (40 USC 327-330) and the Copeland "Anti-Kick Back" Act (are/will be) included. Yes
 No
 N/A
10. All construction contracts exceeding \$10,000 (contain/will contain) appropriate clauses from 41 CFR Part 60 for compliance with Equal Employment Opportunity Executive Order 11246. Yes
 No
 N/A
11. All contracts and subcontracts (contain/will contain) clauses required from Title VI Civil Rights Assurances and 49 CFR 26 for Disadvantaged Business Enterprises. Yes
 No
 N/A
12. Appropriate checks (have been/will be) made to ensure that contracts or subcontracts are not awarded to those individuals or firms suspended, debarred, or voluntarily excluded from doing business with any DOT element and appearing on the DOT Unified List. Yes
 No
 N/A

I certify that, for the project identified herein, the responses to the foregoing items are correct as marked, and that the attachments, if any, are correct and complete.

Signed: _____ Dated: _____
 Sponsor's Authorized Representative

 Typed Name and Title of Sponsor's Representative

Sponsor Certification for Project Plans and Specifications

Sponsor's Name

Airport

Project Number

Project Description

Section 47105 (d) of the Federal Aviation Reauthorization Act of 1996, as amended (herein called the act), authorizes the secretary to require certification from sponsors that they will comply with statutory and administrative requirements. The following list of certified items includes major requirements for this aspect of project implementation. However, the list is not comprehensive, nor does it relieve sponsors from fully complying with all applicable statutory and administrative standards. Every certified item must be marked. Each certified item with a "no" response must be fully explained in an attachment to this certification. If the item is not applicable to this project, mark the item "N/A." General AIP standards are described in Advisory Circulars 150/5100-6, 150/5100-15, and 150/5100-16. A list of current advisory circulars with specific standards for design or construction of airports and procurement or installation of airport equipment and facilities is referenced in the grant assurances.

1. The plans and specifications (were/will be) developed in accordance with all applicable federal standards and requirements, and no deviation from or modification to standards set forth in the advisory circulars (was/will be) necessary other than those previously approved by FAA. Yes
 No
 N/A

2. Specifications for the procurement of equipment (are not/will not be) proprietary or written so as to restrict competition. At least two manufacturers can meet the specification. Yes
 No
 N/A

3. The development (included/to be included) on the plans is depicted on an Airport Layout Plan approved by FAA. Yes
 No
 N/A

4. Development shown in the plans and specifications, which is ineligible for AIP funding, (has not been/will not be) included in the grant application for this project. No reimbursement will be requested for this ineligible work. Yes
 No
 N/A

5. Process control and acceptance tests required for the project by standards contained in Advisory Circular 150/5370-10, or previously approved by FAA, (are/will be) included in the project specifications. Yes
 No
 N/A

6. If a value engineering clause is incorporated into the contract, concurrence (was/will be) obtained from FAA. Yes
 No
 N/A

Sponsor Certification for Project Plans and Specifications (continued)

- 7. The plans and specifications (incorporate/will incorporate) applicable requirements and recommendations set forth in the federally approved environmental finding. Yes
 No
 N/A

- 8. For construction activities within or near aircraft operational areas, the requirements contained in Advisory Circular 150/5370-2 (have been/will be) discussed with FAA and incorporated into the specifications. A safety/phasing plan (has been/will be) prepared, and FAA concurrence (has been/will be) obtained, if required. Yes
 No
 N/A

- 9. The project (was/will be) physically completed without federal participation in costs due to errors or omissions in the plans and specifications that were foreseeable at the time of project design. Yes
 No
 N/A

I certify that, for the project identified herein, the responses to the foregoing items are correct as marked, and that the attachments, if any, are correct and complete.

Signed: _____ Dated: _____
Sponsor's Authorized Representative

Typed Name and Title of Sponsor's Representative

Guidance for AIP Sponsor Certification Forms (Equipment/Construction Contracts and Project Plans and Specifications)

If you have questions about any of the AIP Sponsor Certification forms, contact Jim Green at (907) 465-6961, or e-mail to: james_green@dot.state.ak.us.

Sponsor Certification for Equipment/Construction Contracts

Item 6. Check “No.” The following explanation has been added to the form: *“Performance and payment bonds, at 50% each, are required for all construction contracts exceeding \$100,000. This bonding meets or exceeds the requirements of AS 36.30.010 and was approved for use by FAA letter dated March 6, 1991, as adequately protecting the government’s interest.”* (Note: You need not include a copy of the letter with your certification.)

Item 7. Check “Yes.” No explanation is required. Breach of contract terms are spelled out in GCP 80-08. The environmental protection provisions are covered on form 25D-55.

Item 8. Check “Yes.” No explanation is required. Since the Soldiers and Sailors Relief Act, which is referenced in GCP 70-05, gives preference to all veterans, it satisfies the intent of this requirement.

Item 9. Check “Yes.” No explanation is required. These requirements are satisfied by the language in form 25D-55 and by including the appropriate federal wage determination in the advertised contract.

Item 10. Check “Yes.” No explanation is required. This requirement is satisfied in form 25D-55 and form 25A-301, Federal EEO Bid Conditions.

Item 11. Check “Yes.” No explanation is required. Covered in the new Section G-120, DBE spec.

Item 12. Check “Yes.” No explanation is required. For the list of suspended and debarred contractors, see the GSA listing at <http://epls.arnet.gov> and search by agency (DOT).

Sponsor Certification for Project Plans and Specifications

Item 2. Check “Yes.” No explanation is required. If possible, avoid proprietary product specifying. See 49 CFR 18.36(c) for instructions and limitations.

Item 4. Check “Yes.” No explanation is required. This item has been re-worded to allow a positive response. Ensure that all ineligible items are clearly identified as such on the plans.

Item 5. Check “Yes.” No explanation is required. Process control and acceptance test requirements are included in the approved modifications to AC 150/5370-10.

Item 6. Check “Yes.” No explanation is required. The standard VE clause (GCP 40-08) has been approved by the FAA and included in all contracts.

Sponsor Certification for Real Property Acquisition

Sponsor's Name

Airport

Project Number

Project Description

Section 47105 (d) of the Federal Aviation Reauthorization Act of 1996, as amended (herein called the act), authorizes the secretary to require certification from sponsors that they will comply with statutory and administrative requirements. The following list of certified items includes major requirements for this aspect of project implementation. However, the list is not comprehensive, nor does it relieve sponsors from fully complying with all applicable statutory and administrative standards. Every certified item must be marked. Each certified item with a "no" response must be fully explained in an attachment to this certification. If the item is not applicable to this project, mark the item "N/A." General requirements on real property acquisition and relocation assistance are in 49 CFR 24. The project grant agreement contains specific requirements and assurances on the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended (Uniform Act).

1. Good and sufficient title (is/will be) held on the property in the project. The sponsor's attorney or other official (has prepared/will prepare) and (has/will have) on file title evidence on the property. Yes
 No
 N/A

2. If defects and/or encumbrances exist in the title that adversely affect the sponsor's intended use of property in the project, they (have been/will be) extinguished, modified, or subordinated. Yes
 No
 N/A

3. If property for airport development (is/will be) leased, the term is for 20 years or the useful life of the project. The lessor is a public agency, and the lease contains no provisions that prevent full compliance with the grant agreement. Yes
 No
 N/A

4. Property in the project (does/will) conform to the current Exhibit "A" (property map). The property map is based on deeds, title opinions, land surveys, the approved Airport Layout Plan, and project documentation. Yes
 No
 N/A

5. For any acquisition of property interest in noise-sensitive approach zones and related areas, property interest (was/will be) obtained to ensure land is used for purposes compatible with noise levels associated with operation of the airport. Yes
 No
 N/A

Sponsor Certification for Real Property Acquisition (continued)

- 6. For any acquisition of property interest in runway protection zones and areas related to FAR Part 77 surfaces, property interest (was/will be) obtained for the right of flight and right of ingress and egress to remove obstructions. Interest (was/will be) obtained for the right to restrict the establishment of future obstructions. Yes
 No
 N/A

- 7. Appraisals (include/will include) valuation data to estimate the current market value for the property interest acquired on each parcel and (were/will be) prepared by qualified real estate appraisers hired by the sponsor. An opportunity (was/will be) provided the property owner or representative to accompany appraisers during inspections. Yes
 No
 N/A

- 8. Each appraisal (has been/will be) reviewed by a qualified review appraiser to recommend an amount for the offer of just compensation. The written appraisals and review appraisal are available to FAA for review. Yes
 No
 N/A

- 9. A written offer to acquire each parcel (was/will be) presented to the property owner for not less than the approved amount of just compensation. Yes
 No
 N/A

- 10. Effort (was/will be) made to acquire each property through negotiation with no coercive action to induce agreement. If negotiation (was/will be) successful, project files (contain/will contain) supporting documents for settlements. Yes
 No
 N/A

- 11. If a negotiated settlement is not reached, condemnation (was/will be) initiated, and a court deposit not less than the just compensation (was/will be) made prior to possession of the property. Project files (contain/will contain) supporting documents for awards. Yes
 No
 N/A

- 12. If displacement of people, businesses, farm operations, or nonprofit organizations is involved, a relocation assistance program (was/will be) established. Displaced people (received/will receive) general information on the relocation program in writing, notice of relocation eligibility, and a 90-day notice to vacate. Yes
 No
 N/A

- 13. Relocation assistance services, comparable replacement housing, and payment of necessary relocation expenses (were/will be) provided within a reasonable time period for each displaced occupant in accordance with the Uniform Act. Yes
 No
 N/A

I certify that, for the project identified herein, the responses to the foregoing items are correct as marked, and that the attachments, if any, are correct and complete.

Signed: _____ Dated: _____
 Sponsor's Authorized Representative

 Typed Name and Title of Sponsor's Representative

Sponsor Certification for Selection of Consultants

Sponsor's Name

Airport

Project Number

Project Description

Section 47105 (d) of the Federal Aviation Reauthorization Act of 1996, as amended (herein called the act), authorizes the secretary to require certification from sponsors that they will comply with statutory and administrative requirements. The following list of certified items includes major requirements for this aspect of project implementation. However, the list is not comprehensive, nor does it relieve sponsors from fully complying with all applicable statutory and administrative standards. Every certified item must be marked. Each certified item with a "no" response must be fully explained in an attachment to this certification. If the item is not applicable to this project, mark the item "N/A." General procurement standards for consultant services within federal grant programs are described in 49 CFR 18.36. Sponsors may use other qualifications-based procedures provided they are equivalent to specific standards in 49 CFR 18 and Advisory Circular 150/5100-14.

1. Advertisements (were/will be) placed to ensure fair and open competition from a wide area of interest. Yes
 No
 N/A

2. For contracts over \$25,000, consultants (were/will be) selected using competitive procedures based on qualifications, experience, and disadvantaged business enterprise requirements with the fee determined through negotiation. Yes
 No
 N/A

3. An independent cost analysis (was/will be) performed, and a record of negotiations (has been/will be) prepared reflecting the considerations involved in the establishment of fees. Yes
 No
 N/A

4. If engineering or other services are to be performed by sponsor force account personal, prior approval (was/will be) obtained from FAA. Yes
 No
 N/A

5. The consultant services contracts clearly (establish/will establish) the scope of work and delineate the division of responsibilities between all parties engaged in carrying out elements of the project. Yes
 No
 N/A

6. Costs associated with work ineligible for AIP funding (are/will be) clearly identified and separated from eligible items. Yes
 No
 N/A

Sponsor Certification for Selection of Consultants (continued)

- 7. All mandatory contract provisions for grant-assisted contracts (have been/will be) included in all consultant services contracts. Yes
 No
 N/A
- 8. If the contract is awarded without competition, pre-award review and approval (was/will be) obtained from FAA. Yes
 No
 N/A
- 9. Cost-plus-percentage-of-cost methods of contracting prohibited under federal standards (were not/will not be) used. Yes
 No
 N/A
- 10. If the services being procured cover more than the single grant project referenced in this certification, the scope of work (was/will be) specifically described in the advertisement, and future work will not be initiated beyond three years. Yes
 No
 N/A

I certify that, for the project identified herein, the responses to the foregoing items are correct as marked, and that the attachments, if any, are correct and complete.

Signed: _____ Dated: _____
Sponsor's Authorized Representative

Typed Name and Title of Sponsor's Representative

Sponsor Certificate of Title

CERTIFICATE OF TITLE

Mr. Ronnie V. Simpson
Airports Division Manager AAL-600
Federal Aviation Administration
222 West 7th Ave #14
Anchorage, AK 99513

Dear Mr. Simpson:

The _____ (hereinafter referred to as the "sponsor"), pursuant to Section 47105(d) of the Federal Aviation Reauthorization Act of 1996, as amended, hereby certifies that satisfactory property interest to the land indicated herein is vested in the sponsor under the terms and conditions of a Grant Agreement with the Federal Aviation Administration, Federal Project No. _____

In the opinion of _____ (sponsor representative), the sponsor has full and adequate legal title to the property interest indicated and, as shown on the Exhibit "A," as of the time and date stated in the title documents, and has adequate title to satisfy local laws and ordinances:

Quality of Interest

Parcel Number (Per Exhibit "A")	(Fee, Easement, etc.)
_____	_____
_____	_____
_____	_____

The land interest acquired meets the requirements of the Federal Aviation Administration, except for easements, liens, separate mineral estate, leases, or other encumbrances on the parcels noted below. However, such encumbrances, which are described on the attachment, do not affect the use of the land for airport purposes.

Parcel(s):

_____	_____
_____	_____

Check one of the following:

- The evidence of title is based on an abstract and record examination conducted on _____
- Title insurance Policy No. _____ issued on _____ by the _____ Title Insurance Company.

Recorded _____ in Book _____ Page _____

Sponsor Certificate of Title (continued)

The sponsor recognizes and accepts full responsibility for the clearing of any outstanding encumbrances, defects, and exceptions to the title that may in any way affect the future use and operation of the land for airport purposes as may be determined by the FAA.

It is understood that the FAA reserves the right to cancel this certification at any time.

Although specific title evidence documents are not submitted herewith, copies of deeds and other appropriate evidence of title for the land are on file with the sponsor and are available for inspection by the FAA.

Sincerely,

Name of Sponsor

Signature of sponsor official
authorized to sign grant agreement

Date

Signature of Sponsor's Attorney

(For use when there is a co-sponsor)

Sincerely,

Name of Sponsor

Signature of sponsor official
authorized to sign grant agreement

Date

Signature of Sponsor's Attorney

AIP No: _____

Date: _____

Project Description and Location: _____

	Const. Chief \$0.00	Project Manager \$0.00	Engineer Assistant \$0.00	Resident Engineer \$0.00	Materials \$0.00	Drafting \$0.00	Survey \$0.00	Clerical \$0.00	Total Hours	Total Cost per Item
E. Construction Phase										
Conduct Preconstruction Conference										
Prepare Const.Management Plan										
Review Materials Submittals										
Provide Construction Staking										
Provide Resident Inspection										
Prepare Daily/Weekly Reports										
Prepare Periodic Payment Requests										
Conduct Acceptance and Quality Control Testing										
Conduct Final Inspection										
Prepare Final Close-out Documents										
Prepare Record Drawings										
Travel										
Per diem										
Supplies										
Total Hours and Cost for Construction Phase										
TOTAL COST AND HOURS FOR FORCE ACCOUNT SERVICES										

4. Attachment E. Engineer's Design Report Outline

E.1. Design Analysis

E.1.1 Airport Layout Considerations

1. Conformance with FAA standards contained in AC 150/5300-13, Airport Design
 - a. Width, length, area, slope, and surface texture of pavements including safety areas, separation dimensions, obstacles, and hazards
 - b. Conformance with Airport Layout Plan
 - c. Analysis of alternative and preferred alternative
 - d. Environmental considerations (including required environmental mitigation measures)
 - e. FAR Part 77 clearances
2. Design aircraft: category, group, and maximum weight for airport

E.1.2 Soils and Grading

1. Soils and profile, exploration, ground water table(s), and test results (use Unified Soil Classification System)
2. Internal drainage and frost conditions
3. Field and/or laboratory CBR test results, or foundation modulus determination (k)
4. Cut and fill, borrow considerations, waste, shrink/swell factors, disposal, haul and access routes
5. Special compaction requirements
6. Expansive soil problems and method(s) for control

E.1.3 Drainage

1. Rainfall and runoff data, design flood conditions (flood plain, design storm)
2. Capacity and structure design
3. Ponding, erosion control, extraordinary features

E.1.4 Pavements

1. Design loading basis: critical aircraft or fleet of aircraft (equivalent operations)

2. Existing pavements
 - a. Thickness transitions
 - b. Existing condition (including the Pavement Condition Index [PCI]), if available)
3. Alternative construction
 - a. Cost comparison (life cycle analysis)
 - b. Advantages/disadvantages of each alternative
 - a. Recycling of existing materials
4. Pavement Design Form FAA 5100-1. This form is available at <http://www.faa.gov/arp/ace/forms/f5100-1.doc>.
5. Pavement foundation drainage
6. Frost considerations, including differential heave, water table, and sub-grade material transitions

E.1.5 Lighting and Navigational Aids

1. Existing cable and equipment conditions including age, circuit loads, and resistance to ground readings
2. Power supply sources including reliability, alternates, voltage fluctuation problems
3. Direct earth bury or can-in-duct cable placement
4. New equipment, equipment housing, new circuit loads, electrical designs, and potential communication interference problem with ATCT or FSS for regulators specified
5. Precision approach path indicators (PAPI) location and threshold crossing height calculations (including which runway end, or both and why). Submittal of pre-commissioning data (see project manager)
6. Rotating Beacon: Which intensity is needed, location (clear Part 77 and visibility), and resident shielding requirements
7. Impact to existing FAA visual and electronic navigational aids. Shutdowns or relocations, if relocations require an FAA Reimbursable Agreement, and impact on project schedule

E.2. Modifications of Agency Airport Design and Construction Standards

For AIP projects, all modifications of agency standards must be approved by the FAA. Early notification is necessary because the approval time may affect the project schedule. An airport sponsor's request for modification of standards to accommodate a unique local condition must contain the following:

1. A list of standards requiring modification and a discussion of why the standards cannot be met. Include specifications number and paragraph change.
2. A description of the proposed modifications
3. A discussion of viable alternatives for accommodating the unique conditions
4. Assurance that modification of construction standards will provide a product that will meet FAA standards for acceptance and that the finished product will perform for its intended design life, based on historical data
5. Assurance that modification of airport design standards will provide an acceptable level of safety

Generally, requests will be approved if the FAA determines the modification provides an acceptable level of safety, economy, durability, and workmanship.

E.3. Cost Estimates

1. Quantities and unit costs
2. Additive alternatives

E.4. Project Schedule

1. Time constraints
2. Recommended schedule

4. Attachment F. Safety Plan Guidance

Aviation safety is a primary consideration during airport construction. Plan and schedule construction to minimize disruption of normal aircraft traffic at the airport. Any set of bid documents for airport development work involving aircraft operational areas must include a section addressing operational safety at the airport during the construction activity. To address safety considerations in the earliest stages of project formulation, you must submit a construction safety plan early in the design stages of the project development.

The construction safety plan must provide for a high level of safety taking into consideration Federal Aviation Regulation Part 77 Surfaces, aircraft operations, the impact on navigational aids, weather, security, and local airport rules.

Bid documents for on-airport construction projects must include general and specific safety requirements, based on FAA Advisory Circular 150/5370-2C, “Operational Safety On Airports During Construction,” and the general guidelines outlined here, so that contractors are aware of the costs and constraints that will apply during the project to maintain a high level of safety.

The plan sheets of the contract documents need to be detailed enough to clearly define for the contractor the physical limits of work and the required phasing of construction operations. Details shown on the plans should include, but not be limited to, the following:

- a. Haul routes
- b. Construction phasing/sequence of operation
- c. Runway and taxiway safety areas
- d. FAA navigational aids and associated critical areas
- e. Vehicle traffic control plans
- f. Location of flaggers
- g. Temporary marking and lighting for required runway threshold relocation
- h. Location of temporary runway end identifier lights (REILs)
- i. Marking and lighting of excavations, open trenches, and other hazardous areas

- j. Runway and taxiway closure markings
- k. Setback lines from active taxiways and aprons
- l. Runway obstacle free zones
- m. Utility line locations
- n. Borrow pit locations on airport property
- o. Temporary pavement transition/ramping details

The contract specifications should continue to address the items that are not readily depicted on the drawings; such as required communication with the Tower/FSS, requirement for construction safety meetings, submission of construction schedule identifying runway closures, work within navigational aid critical areas; and should more fully describe those elements depicted on the plan sheets.

Tailor each construction safety plan to the specific project. Submit the safety plan for construction projects within the airport operational area no later than 90 days before the advertisement of a construction contract to the FAA Airports Division office for review.

If the clearances and restrictions contained in AC 150/5370-2C cannot be maintained while construction is underway, take action as appropriate to:

- a. Close runways, taxiways, or aprons
- b. Relocate or displace runway threshold temporarily
- c. Perform work at night or during periods of minimal aircraft activity
- d. Close affected areas to certain types of aircraft
- e. Restrict aircraft use by weight, wingspan, approach speed, or other characteristics
- f. Shut down or restrict use of navigational or approach aids

Determine the appropriate action through coordinated evaluation by the airport sponsor, airport users, and the FAA. Technical involvement by FAA Airports, Air Traffic, Flight Standards, and Airway Facilities Division personnel is necessary in addition to construction engineering and management input.

4. Attachment G. Project Certification for FAA Projects

AKSAS PROJECT NO.: X
 FEDERAL PROJECT NO.: X
 PROJECT NAME: X

<i>Certification</i>	<i>Title</i>
All environmental commitments are included in the PS&E. All regulatory permits necessary for the construction of this project have been obtained.	Regional Environmental Manager
<i>Signature</i>	<i>Date</i>
<i>Certification</i>	<i>Title</i>
Right-of-way has been certified.	Regional Right-of-Way Chief
<i>Signature</i>	<i>Date</i>
<i>Certification</i>	<i>Title</i>
The PS&E is complete.	Engineering Manager
<i>Signature</i>	<i>Date</i>

 Regional Preconstruction Engineer

 Date

4. Attachment H. Authority to Advertise

MEMORANDUM

State of Alaska

Department of Transportation & Public Facilities
Statewide Design & Engineering Services Division

TO: *Name*
Regional Director
Region

DATE:

FILE NO:

TELEPHONE NO:

FAX NUMBER:

TEXT TELEPHONE:

FROM: *Name*
Preconstruction Engineer
Division of Statewide Design &
Engineering Services

SUBJECT: Project No. ###
Project Name: *Name*

AUTHORITY TO ADVERTISE

The referenced project is complete and ready for advertising.

FAA Authority to Advertise received _____ (Date) _____.

Construction Authorization has been received

Construction funding is as follows: Phase 4 Programmed: \$ #,###,###
Construction Estimate: \$ #,###,###

Project Control Manager

Date

On the basis of this certification, I grant approval and authority to advertise the above referenced project.

Regional Director

Date

cc: *Name*, Regional Contracts Officer

4. Attachment I. Airport Layout Plan Checklist

(REVISED FOR ALASKA REGION – October 31, 2001)

To be used in conjunction with Advisory Circular 150/5300-13 Change 6.

All airport development carried out at federally obligated airports shall be done in accordance with an FAA-approved ALP.

- All sheets should be standard sized 22" x 34" (D Size).
- All sheets should contain title and revision blocks.
- All sheets shall have the FAA Airspace number shown.
- In the case of smaller airports, some of the following sheets may be combined if practical and approved by FAA.
- The FAA recommends the development of electronic ALPs.

Components

1. Narrative Report (Summarized or captured on a Standard D size sheet)
2. Airport Layout Drawing
3. Airport Airspace (Part 77) Drawing
4. Inner Portion of the Approach Surface Drawing
5. Terminal Area Drawing (if applicable, or include a Building Table with top building elevations within the Airport Layout Drawing)
6. Land Use Drawing
7. Airport Property Map (Exhibit A)
8. Declared Distances Drawing (if applicable)

Name of Airport: _____

Date of Sponsor Review: _____

Name of Sponsor Project Manager responsible for ALP: _____

Signature of Sponsor submitting Airport Layout Plan to FAA for review:

Date of FAA Review: _____

Name of FAA Project Manager responsible for ALP: _____

Airspace NRA #: _____

AIRPORT LAYOUT PLAN CHECKLIST

<i>Is this airport/runway a utility runway (<12,500 lb. Aircraft, ref, 14 CFR Part 77 par. 77.2)? If yes, ensure narrative and other ALP sheets clearly note "Utility Runway."</i>			
<i>How does the information in the Alaska Supplement compare to this ALP set? If the information in the supplement is not accurate, provide 5010 update to FAA.</i>			
NARRATIVE REPORT SHEET _____ (REVIEW DATE)	YES	NO	N/A
AC 150/5300-13 Appendix 7 p. 131			
Note: The Narrative Report sheet is the last sheet of an ALP set.			
1. Forecasts (0-5, 6-10, 11-20 years)			
Total annual operations			
Itinerant and local operations split			
Number based aircraft			
Critical aircraft: approach speed, wingspan, weight			
Annual operations of current critical aircraft			
Annual operations of future critical aircraft			
Number of enplanements			
Airport Reference Code: existing/ future (p. 4)			
2. Rationale for proposed development; for new runways, discuss items in paragraph 202 (p. 9)			
3. Rationale for modifications of standards or unusual features (p. 5)			
• Equivalent level of safety (Appendices 8 and 9)			
4. Summary of staged development with estimated costs (CIP)			
5. Letters of coordination with all levels of govt. units, as needed.			
6. Is coordination with FHWA required?			
• If yes, is adequate documentation provided?			
7. Would increasing runway width be justified for wind coverage?			
REMARKS:			

AIRPORT LAYOUT DRAWING _____ (REVIEW DATE) (scale 1" = 200' to 1" = 600)(p. 132)	YES	NO	N/A
1. North arrow, magnetic declination and date			
2. Layout of existing and future facilities			
• (If interim development is planned, provide separate drawing to show interim dimensions and locations)			
3. Wind rose and coverage analysis (pp. 10, and 87)			
• Data source and time period of data collection			
• Crosswind coverage 10.5k, 13k, 16k and 20 k			
4. Airport data table (Include English units to 0.1' if metric ALP)			
• Airport elevation (MSL calculated from NAVD88) (p. 1)			
• Airport reference point (NAD 83 datum) (pp. 1 and 107)			
• Mean maximum temperature			
• Airport and terminal nav-aids (i.e. VOR, NDB, ASR ...)			
• Airport design group (pp. 1, 4, 5, 7 and 251)			
• Airport approach category (pp. 1, 4, 5, 7 and 251)			
• Taxiway lighting and marking			
5. Runway data table (Include English units to 0.1' if metric ALP)			
• Approach surfaces (with visibility minimums) (See Appendix 16)			
• Declared distances (p. 133)			
• Instrument runway			
• Pavement strength (AC 150/5335-5)			
• Percentage wind coverage (p. 87)			
• Runway dimensions			
• Runway safety area dimensions (pp. 21, 24, 25, 26 and 139)			
• Runway end coordinates (NAD 83 datum; nearest 0.01 second)			
• Runway lighting type			
• Runway protection zone (RPZ) dimensions (in table and on drawing)			
• Runway marking type			
• Runway object free area (ROFA) dimensions (existing/proposed /ultimate) (p. 22)			
• Runway visual and instrument nav-aids (i.e. PAPI, ILS, MALSR, REIL ...)			
REMARKS:			

AIRPORT LAYOUT DRAWING (continued) (scale 1" = 200' to 1" = 600')	YES	NO	N/A
6. Legend tables (existing and future)			
• Airport reference point (ARP)			
• Buildings			
• BRL			
• Fencing			
• Property line			
• Roads			
• Rotating beacon			
• Shoreline			
• Threshold			
• Trees			
• Topographic contours			
• VASI or PAPI (Is PAPI pad shown on the drawings?)			
• Wind cone/ segmented circle			
7. Modification to standards block (p. 5, appendices 8 and 9)			
8. Vicinity and location maps			
9. Airport reference point (p. 107)			
10. Topographic contours (2' to 10')			
11. Elevations (nearest 1/10 of a foot, NAVD88 datum) (p. 132)			
12. Building restriction line (BRL) and associated Part 77 height at the BRL (pp. 1 and 12)			
13. Runway visibility zone (if not on land use drawing) (p. 56)			
14. Runway dimensions (length and width) pp.21, 24, 25, 26 and AC 150/5325-4			
15. Runway orientation (runway numbers)			
16. Runway true bearing (nearest 0.01 degree)			
17. Runway threshold lights			
18. Runway safety areas			
19. Runway stage lengths (existing and future, discuss interim in narrative report)			
20. Runway end coordinates (may be in Runway Data Table)			
• Key RW stationing is shown (TW and RW intersections, p.132)			
21. Displaced threshold coordinates			
22. Monuments (survey monuments and markers)			
23. RW object free area (ROFA) and precision object free area (POFA) dimensions (pp. 2, 22,24, 25, 26 and 139)			
24. Runway obstacle free zone (OFZ) dimensions, airport elevation may increase OFZ size (pp. 2, 21, 22 and 139)			

AIRPORT LAYOUT DRAWING (continued) (scale 1" = 200' to 1" = 600')	YES	NO	N/A
25. Runway separations (OFZ may increase standard) (pp. 12, 14-16)			
• Aircraft parking			
• Building restriction line			
• Parallel runway			
• Parallel taxiway/ taxi lane			
26. Taxiway dimensions (length and width) (p. 33)			
27. Taxiway separations (pp. 33 and 141)			
• Aircraft parking			
• Parallel taxiway			
• Runway centerline			
28. Taxiway object free area (pp 2, 33, 141)			
29. Taxiway safety area dimension (pp. 3, 33, 142)			
31. Aprons: locations and dimensions (p. 117)			
32. Roads (pp. 23, 123)			
33. Building tables			
34. Location and vicinity maps			
35. Hold position signs and markings (p. 134)			
36. Statement "NO THRESHOLD SITING SURFACE" (p. 133)			
37. Statement "NO OFZ OBJECT PENETRATIONS" (p. 133)			
38. FAA Airspace Review number is shown on each ALP sheet			

AIRPORT AIRSPACE DRAWING _____ (REVIEW DATE) (Part 77) Scale 1"= 2000' plan view, 1"= 1000' approach profile	YES	NO	N/A
ENGLISH UNITS ONLY FOR THIS SHEET.			
1. Plan view (based on ultimate runway lengths)			
• USGS quad for base map			
• Runway end numbers			
• 50' elevation contours on sloping surfaces (NAVD88 datum)			
• Top elevations of penetrating objects (add note for penetrations located within the inner portion of the approach surfaces, p. 135)			
• Note specifying height restriction (ordinances/statutes) (p. 135)			
2. Profile view (existing & ultimate approaches)			
• Ground profile			
• Significant objects (bluffs, rivers, roads, schools, towers)			
• Existing and ultimate runway ends and approach slopes			
3. Obstruction data tables			
• Obstruction identification number			
• Description			
• Amount of surface penetration			
• Proposed disposition of the obstruction			

INNER PORTION OF THE APPROACH SURFACE DRAWING (pp. 2, 13, 19, 20, 134, 135 and 140) Scale 1"=200' Horizontal, 1"=20' Vertical	YES	NO	N/A
1. Plan view (existing and ultimate)			
• Inner portion of approach			
• Aerial photo for base map when available			
• Obstructions (identified by numbers)			
• Property line within the approaches			
• Road and railroad (RR) elevations			
• Physical end of RWY, end number, elevation (NAVD88)			
• Ground contours			
2. Profile view			
• Projected view of plan view			
• Approach slope			
• Obstruction clearance slope (FAA Order 5010.4, Appendix 1, paragraph 57)			
• Terrain in extended RWY safety area (fences, streams, etc.)			
• Obstructions (same numbers as plan view)			
• Touchdown zone elevation (highest point in first 3,000 of RWY)			
• Cross section of road and railroad			
• Part 77 approach slopes: Does it start at threshold? (p. 133)			
3. Obstruction tables for each approach surface			
• Obstruction identification number			
• Description			
• Amount of surface penetration			
• Proposed disposition of the obstruction			

TERMINAL AREA DRAWING _____ (REVIEW DATE) Scale 1" = 50' to 1" = 100'	YES	NO	N/A
1. Plan view of aprons, buildings, hangars, parking lots			
2. Building data table			
• Structure identification number			
• Top elevation of structures			
• Obstruction marking (existing/future)			
3. Buildings to be removed or relocated noted			

DECLARED DISTANCES DWG _____ (REVIEW DATE) (Page 1 & Appendix 14, pages 275 - 282) Scale same as Airport Layout Drawing	YES	NO	N/A
1. Clearway identified			
2. Stopway identified			
3. Displaced threshold identified			
4. Relocated threshold identified			
5. End coordinates of each threshold			
6. Declared distances table			
• Takeoff run available (TORA)			
• Takeoff distance available (TODA)			
• Accelerated stop distance available (ASDA)			
• Landing distance available (LDA)			
• All RPZ dimensions			
7. Runway safety area			
8. Runway object free area (ROFA) & precision object free area (POFA)			
9. Approach RPZ			
10. Departure RPZ			
NOTIFICATION to Alaska Supplement (5010 Update) done?			

LAND USE / PROPERTY & OCCUPANCY PLANS

LAND USE DRAWING (pp.137 - 138) Scale same as ALP drawing (Provide English units if metric ALP).	YES	NO	N/A
1. Plan view of land uses by category (agricultural, aeronautical, commercial, residential, etc.)			
• Land use legend is provided			
2. Public facilities (schools, hospitals, parks, etc.)			
3. Runway visibility zones for intersecting runways			
4. Show off airport property out to 65 LDN (p.136 a.)			
5. Drawing details: Show aprons, BRL, property boundary, runways, taxiways, RPZs and nav-aids			

AIRPORT PROPERTY MAP (EXHIBIT A) (pp. 136 –137 and Order 5100-17 page 1-2) Scale same as ALP Drawing (Provide English units if metric ALP).	YES	NO	N/A
1. Plan view showing tracts and parcels of land			
2. Legend: symbols indicating type of monumentation			
3. Data table (property status)			
• Number or letter and area for each tract / parcel			
• Date property was acquired or property status			
• Federal Aid Project # under which property was acquired			
• Grantor of property			
4. Distances and drawing scale (meanders, line and curve data)			
5. Township / range meridian and vicinity map is shown			
6. U.S. Survey is shown when available			
7. Sponsor surveyor certification			
8. Revision block			
9. Approval blocks (design and ROW)			

LAND OCCUPANCY DRAWING - Is one required? Check with FAA Airport Planner (Provide English units if metric ALP)	YES	NO	N/A
1. Plan view indicating lease lot locations			
2. Reference lines showing distance right or left of runway centerline including the building restriction line (BRL)			
3. Stationing for runway thresholds, safety areas, taxiway, aprons, runway intersections and at least one station per lease blocks.			
4. Stationing every 500' on the runway, with tick marks every 100'			
5. Runway true bearing, length and width			
6. RPZ dimensions and airport boundary			
7. Airport boundary, buildings, towers, nav aids, streams, lakes, ponds, roads, utilities (power lines, fuel tanks, water and sewer lines)			
8. Land occupancy block showing lessee, ADA#, square footage, and expiration date of lease			
9. Revision block			
10. Signature blocks for DOT&PF			

500. Plan Preparation (Reserved)

6. Design

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600. Introduction

- 600.1. Design Criteria
- 600.2. Standard Specifications
- 600.3. Modification of Standards
- 600.4. Definitions

600.1. Design Criteria

600.1.1 Federal Funding

Design AIP projects funded wholly or in part with federal funds in accordance with the FAA Advisory Circulars and Chapter 25 of the *Alaska Highway Preconstruction Manual*. Chapter 25 contains FAA approved interpretations, amendments, and supplements to the advisory circulars.

Airway Improvement Act, recodified at 49 USC 47105(b)(3) states in part, “An application for a project grant under this subchapter may propose airport development only if the development complies with the standards the Secretary prescribes or approves, including standards for site location, airport layout, site preparation, paving, lighting, and safety approaches.” The design and construction standards of AIP projects are contained in advisory circulars listed in the Current FAA Advisory Circulars for AIP Projects (<http://www.faa.gov/arp/150acs.cfm>).

To carry out the intent of the act, the Department must certify that “the plans and specifications were developed in accordance with all applicable federal standards and requirements, and no deviation from or modification to standards set forth in the advisory circulars was necessary other than those previously approved by FAA.” In addition, Order 5100.38, *AIP Handbook*, paragraph 35, provides that “... a sponsor is required to comply with all appropriate technical guidelines incorporated into identified ACs; and these standards become mandatory for the project being funded. Standards in effect on the date of allocation of AIP funds to a project apply to that project. Standards which become effective after the date of allocation may be applied to the project by mutual agreement between the FAA and the sponsor.”

State standards may be developed for airports that are nonprimary airports, in accordance with 49 USC 47105(c), and AC 150/5100-13A, *Development of State Standards for Nonprimary Airports*. Standards appropriate for consideration include airport configuration, pavement design and drainage design.

Excluded for consideration is the development of standards that relate to safety of airport approaches. Chapter 25 of the *Alaska Highway Preconstruction Manual* is the preeminent FAA-approved state design standard for nonprimary airports.

600.1.2 Nonfederal Funding

Aviation capital improvement projects funded with nonfederal funds must comply with advisory circulars and Chapter 25 of the *Alaska Highway Preconstruction Manual*.

600.2. Standard Specifications

Airport Standard Specifications are based on the latest edition of, and published changes to, FAA Advisory Circular (AC) 150/5370-10A, *Standards for Specifying Construction of Airports*. The Department has obtained FAA approval of a modified version of these standards, under the authority of FAA Order 5300.1, *Approval Level for Modification of Agency Airport Design and Construction Standards*. This publication is the *Standard Specifications for Airport Construction*, and is managed by the Division of Design and Engineering Services, Design and Construction Standards.

The *Standard Specifications for Airport Construction* is supplemented, as necessary, by appropriate special provisions included in contracts. Special provisions include statewide and project special provisions. Statewide special provisions are preapproved for use either in state-funded or AIP projects and are issued by the Division of Design and Engineering Services.

If a federal requirement would conflict with a state requirement or cause substantial additional expense or administrative burden on state projects, it is usually issued as a statewide special provision and prescribed for AIP contracts only. Examples: Buy American, DBE Program.

Similarly, a state requirement that would conflict with a federal requirement or cause substantial additional expense or administrative burden is usually issued as a statewide special provision and prescribed for state-funded contracts only. Examples: Alaska Wood Product Preference and Alaska Bidder Preference.

The FAA must approve project special provisions, prior to advertising, under the requirements of FAA Order 5300.1.

Specifications included in the *Standard Specifications for Airport Construction* are effective as of the date shown on the page footers. Subsequent changes to AC 150/5370-10A, issued by the FAA, will govern these specifications.

The *Standard Specifications for Airport Construction* are designed to meet the requirements for primary airports, but are generally suitable for the construction of all commercial service airports (both primary and nonprimary) as well as general aviation airports. However, they will not fit every situation. It is intended that the designer refer to the “notes to the engineer” in the most current AC 150/5370-10A to ensure the specifications for the project will meet applicable FAA standards, and review other acceptable specification options.

AC 150/5370-10A will govern for standard FAA items not included in the *Standard Specifications for Airport Construction*.

Designers must include the Materials Sampling & Testing Frequency table in each advertised contract. This table is located in the appendix to the *Standard Specifications for Airport Construction*.

600.3. Modification of Standards

For a specific project where local conditions preclude compliance with airport design, construction, and/or equipment standards, the designer may request a modification of standards. For federally funded projects, the request must be in accordance with Order 5300.1. For non-federally funded projects, the request must be in the format of Order 5300.1 (8) and approved by the regional preconstruction engineer.

600.4. Definitions

AIP: Airport Improvement Program

Airport: An area of land or water that is used or intended for use for the landing and takeoff of aircraft, and any appurtenant areas that are used or intended for airport buildings or other airport facilities or rights-of-way, together with airport buildings and facilities located thereon

Commercial Service Airport: A public airport that has at least 2,500 passenger boardings each year and is receiving scheduled passenger aircraft service

Community Airport: The main class of rural community airports. See the DOT&PF *Alaska Aviation System Plan* and the 1996 update to the

System Plan for detailed definition of community class airports.

Department: The Alaska Department of Transportation and Public Facilities

FAA: Federal Aviation Administration

Frangible NAVAID: A navigational aid (NAVAID) that retains its structural integrity and stiffness up to a designated maximum load, but on impact from a greater load, breaks, distorts, or yields in such a manner as to present the minimum hazard to aircraft. The term NAVAID includes electrical and visual air navigational aids, lights, signs, and associated supporting equipment.

General Aviation Airport: For the purpose of this manual, a civil airport not designated as a commercial service airport

Nonprimary Airport: For the purpose of this manual, all civil airports with 10,000 passenger boardings or fewer per year

Passenger boardings: Revenue passenger boardings on an aircraft in service in air commerce, including passengers who continue on an aircraft in international flight that stops at an airport in the contiguous states, Alaska, or Hawaii for a nontraffic purpose

Primary Airport: A commercial service airport that has more than 10,000 passenger boardings each year

Public Airport: An airport used or intended to be used for public purposes that is under the control of a public agency; and/or one in which the area used or intended to be used for the landing, taking off, or surface maneuvering of aircraft is publicly owned

Runway (RW): A defined rectangular surface on an airport prepared or suitable for the landing or takeoff of airplanes

Shoulder: An area adjacent to the edge of paved runways, taxiways, or aprons providing a transition between the pavement and the adjacent surface; support for aircraft running off the pavement; enhanced drainage; and blast protection

Standard Specifications for Airport Construction: AC 150/5370-10A, *Standards for Specifying Construction of Airports*, as modified by the Department, and approved by the FAA for AIP contracts in Alaska

Taxiway (TW): A defined path established for the taxiing of aircraft from one part of an airport to another

Threshold (TH): The beginning of that portion of the runway available for landing. When the threshold is located at a point other than at the beginning of the pavement, it is referred to as either a displaced or relocated threshold.

610. Elements of Design

610.1. Community Airport Runway Length

610.1. Community Airport Runway Length

At community airports, provide a minimum primary runway length of 3,300 feet or in accordance with the length provided in the FAA Advisory Circulars, whichever is greater. The regional preconstruction engineer may provide written approval of primary runway lengths less than 3,300 feet at community airports if local site conditions warrant it. In no case may the primary runway length at community airports be less than that provided in the FAA Advisory Circulars unless previously approved by the FAA.

Provide runway lengths exceeding the above stated minimums when necessary to address specific geographic or climatic site conditions, or when coordination with interested parties in accordance with Section 420 of this manual indicates a need for a longer runway.

620. Drainage Design

620.1. Erosion and Sediment Control Plans (ESCP)

620.1. Erosion and Sediment Control Plans (ESCP)

Develop an ESCP for all projects with disturbed ground that meet either of the following conditions:

- Owned by the Department
- Designed (or design administered by) and constructed (or construction administered) by the Department

Projects not owned by the Department (such as utilities projects constructed separately from, but in consort with, a Department project) do not require Department involvement in development of an ESCP.

The ESCP for simple projects, such as lighting projects or overlays, may be shown directly on the plan and profile sheets. Develop more complex ESCPs on separate “site map” plan sheets.

Use Chapter 16 of the *Alaska Highway Drainage Manual* as a reference for design of erosion and sediment control structures. The *AASHTO Highway Drainage Guidelines* provide additional guidance.

Include the following items in the ESCP for projects with disturbed ground of 1 acre or more:

- A description of the nature and extent of the construction activity
- A general area location map and a site map
- The total area of the project in acres (to the nearest quarter acre). Include the area within the right-of-way and any known off-site disturbed areas supplied as materials sources, stockpile sites, etc. List the on-site and off-site areas of the project separately.
- Location of disturbed areas. Include areas of excavation, grubbing, embankment, waste, borrow/quarry sites (when known), stockpile sites (when known), etc.
- The area of disturbed ground in acres (to the nearest quarter acre). Include excavated areas, embankments, etc. Do not include the area of

pavement removal or overlay if the work does not remove the aggregate underlying the pavement. List on-site and off-site disturbed areas separately.

- Drainage patterns
- Slopes (both naturally occurring and constructed) anticipated after completion of grading activities. You may show slopes by contours, typical sections, or notation on the site map.
- The location of all known temporary and permanent erosion and sediment control measures to be included in the project. Include existing vegetation to be used in control of erosion and sediment. Provide an indication of temporary erosion and sediment control measures that may require installation, relocation, and/or removal during construction. Use symbols presented in Chapter 16 of the *Alaska Highway Drainage Manual* to identify erosion and sediment control measures on the ESCP.
- The location and known names of surface waters
- The location of any wetlands or wetlands that may be used for controlling erosion and sedimentation (provided by the regional environmental coordinator)
- The location of any impaired waters (provided by the regional environmental coordinator)
- The location of any waters with approved and final Total Maximum Daily Loads (TMDLs) for Alaska (provided by the regional environmental coordinator)
- Locations where storm water is discharged to a surface water
- Listed threatened or endangered species, or their critical habitat, found in proximity to the project (provided by the regional environmental coordinator)
- Information on historic or archaeological sites, including (1) whether any sites listed on the National Register of Historic Places may

be affected by storm water discharges, and (2) whether any written agreement is in place with the state historic preservation officer (provided by the regional environmental coordinator)

630. Pavement Design (Reserved)

640. Markings (Reserved)

650. Sign Systems (Reserved)

660. Lighting Visual Aids

- 660.1. Introduction
- 660.2. Unpaved Runway and Taxiway Edge Marking

660.1. Introduction

The elements of miscellaneous visual aids are described in AC 150/5340-21, Airport Miscellaneous Lighting Visual Aids.

660.2. Unpaved Runway and Taxiway Edge Marking

For unpaved runways, the Department requires airport designers to use the following standards for runway and taxiway markers.

660.2.1 Runway Threshold Marking

On lighted runways, the use of reflective markers (cones, flexible stakes or wands) is optional. The guidance in this subsection for placement of reflective markers on lighted runways applies when the designer determines augmentation of runway lighting is desirable. Consider installation of reflective markers in combination with lighting on airports with unreliable electrical power sources.

The use of cones over lights may be undesirable at some airports. Consult airport administrators and maintenance personnel to determine if use of cones over lights is desirable.

Unlighted Runways

Threshold cone markers: On unlighted runways, use reflective cone markers to mark the runway threshold.

1. Place three cone markers on each side of a threshold, for a total of six markers on each end.
2. Place the markers in a line perpendicular to the extended runway centerline and 10 feet from the designated runway threshold. Place the innermost threshold cone marker in line with the runway edge markers. Space the remaining threshold cone markers evenly at 10-foot intervals outbound from the runway (Figure 660-1).
3. Use markers that do not exceed 30 inches in height.
4. Use reflective cone markers with 180-degree green and 180-degree red reflective bands.

Position the markers so that only the red color is visible from the runway side, and only green is visible from the approach path. Use a reflective band made of high-intensity sheeting of sufficient width to meet FAA specifications for reflective markers (AC 150/ 5345-39B for reflectivity specifications).

Lighted Runways

Threshold lights: Identify runway threshold by lighting.

1. On a runway used exclusively for visual operations, use six lights on each end (three on each side); on an instrumented runway, use eight lights on each end (four on each side). We advise using eight lights on each end whenever it is likely that a navigation aid and commissioned approach may be put in service at the airport.
2. Place threshold lights in a line perpendicular to the extended runway centerline and 10 feet from the designated runway threshold. Place the innermost runway threshold light in line with the runway edge lights, and space the remaining lights evenly at 10-foot intervals outbound from the runway (Figure 660-1).
3. Use threshold lights with green and red split lenses. Position the lights so that only the red color is visible from the runway side, and only green is visible from the approach path.

Threshold cone markers: On lighted runways, use reflective cone markers in conjunction with lights to identify the runway threshold.

1. Place a reflective cone marker over the top of each light so the light protrudes from the top of the cone marker (Figures 660-1, 2, and 3).
1. Use reflective cone markers with 180-degree green and 180-degree red reflective bands. Position the markers so that only the red color is visible from the runway side, and only green is visible from the approach path. Use a reflective band made of high-intensity sheeting of sufficient width to meet FAA specifications for reflective markers (AC 150/5345-39B for reflectivity specifications).

Lighted and Unlighted Runways

Reflective threshold markers: Mark the ends of lighted and unlighted runways with reflective threshold markers.

1. Use five markers on each side of a threshold, for a total of ten markers on each end (Figures 660-1 and 2).
2. Place the markers perpendicular to the runway centerline and space them at 1.7-foot intervals between the first two runway threshold cone markers or cone markers with lights (Figures 660-1 and 2). Use markers consisting of flexible posts, not to exceed 30 inches in height, covered by reflectivity enhancers.
3. Use orange markers with a 180-degree green reflective band toward the approach path and a 180-degree red reflective band toward the runway (Figure 660-1). Use reflective bands made of high intensity sheeting of sufficient width to meet FAA specifications for reflective markers (AC 150/5345-39B for reflectivity specifications).

660.2.2 Runway Edge Marking

Unlighted Runways

Reflective edge markers: Cones, flexible posts, wands, or other frangible markers are a visual substitute for lights. Position them similarly to runway edge lights (AC 150/5340-24).

1. Line each side of the runway with a row of reflective edge markers. Place each row of edge markers parallel to the centerline and from 2 feet and 10 feet outside the edge of the designated runway. Use equidistant longitudinal spacing not to exceed 200 feet, in accordance with AC 150/5340-24. Place markers from one edge row directly across from the markers on the opposite edge row.
2. The area between the edge of the designated runway and the markers must support an aircraft's weight without causing damage to the aircraft. If the area between the markers and the edge of the designated runway cannot support an aircraft, place the markers on the edge of the designated runway.
3. Use markers that are frangible and are not less than 14 inches or more than 30 inches in height (Figure 660-4).

Use white reflective bands made of high intensity sheeting of sufficient width to meet FAA specifications for reflective markers (AC 150/5345-39B for reflectivity specifications).

Lighted Runways

Combination reflective edge markers and lights:

Where runway lights are in place, install markers, as detailed in the previous section, either on the light (Figure 660-3) or slightly outboard (Figure 660-4). Use reflective bands that match the color of the runway lights (yellow/white) as appropriate. Install runway lights as per AC 150/5340-24.

660.2.3 Taxiway Edge Marking

Unlighted Taxiways

Reflective edge markers: Cones, flexible posts, wands, or other frangible markers are a visual substitute for lights. Position them similarly to taxiway edge lights (AC 150/5340-24).

1. Line each side of the runway with a row of reflective edge markers. Place each row of edge markers parallel to the centerline and from 2 feet and 10 feet outside the edge of the designated taxiway. Use equidistant longitudinal spacing not to exceed 200 feet, in accordance with AC 150/5340-24. The longitudinal spacing of the markers is influenced by the physical layout of the taxiway.
2. The area between the edge of the designated taxiway and the markers must support an aircraft's weight without causing damage to the aircraft. If the area between the markers and the edge of the designated taxiway cannot support an aircraft, place the markers on the edge of the designated taxiway.
3. Use markers that are frangible and are not less than 14 inches or more than 30 inches in height (Figure 660-4).
4. Use blue reflective bands made of high intensity sheeting of sufficient width to meet FAA specifications for reflective markers (AC 150/5345-39B for reflectivity specifications).

Lighted Taxiways

Combination reflective markers and lights:

Where taxiway lights are in place, install markers, as detailed in the previous section, either on the light

(Figure 660-3) or slightly outboard (Figure 660-4).
Install taxiway lights as per AC 150/5340-24.

EDGE SAFETY AREA

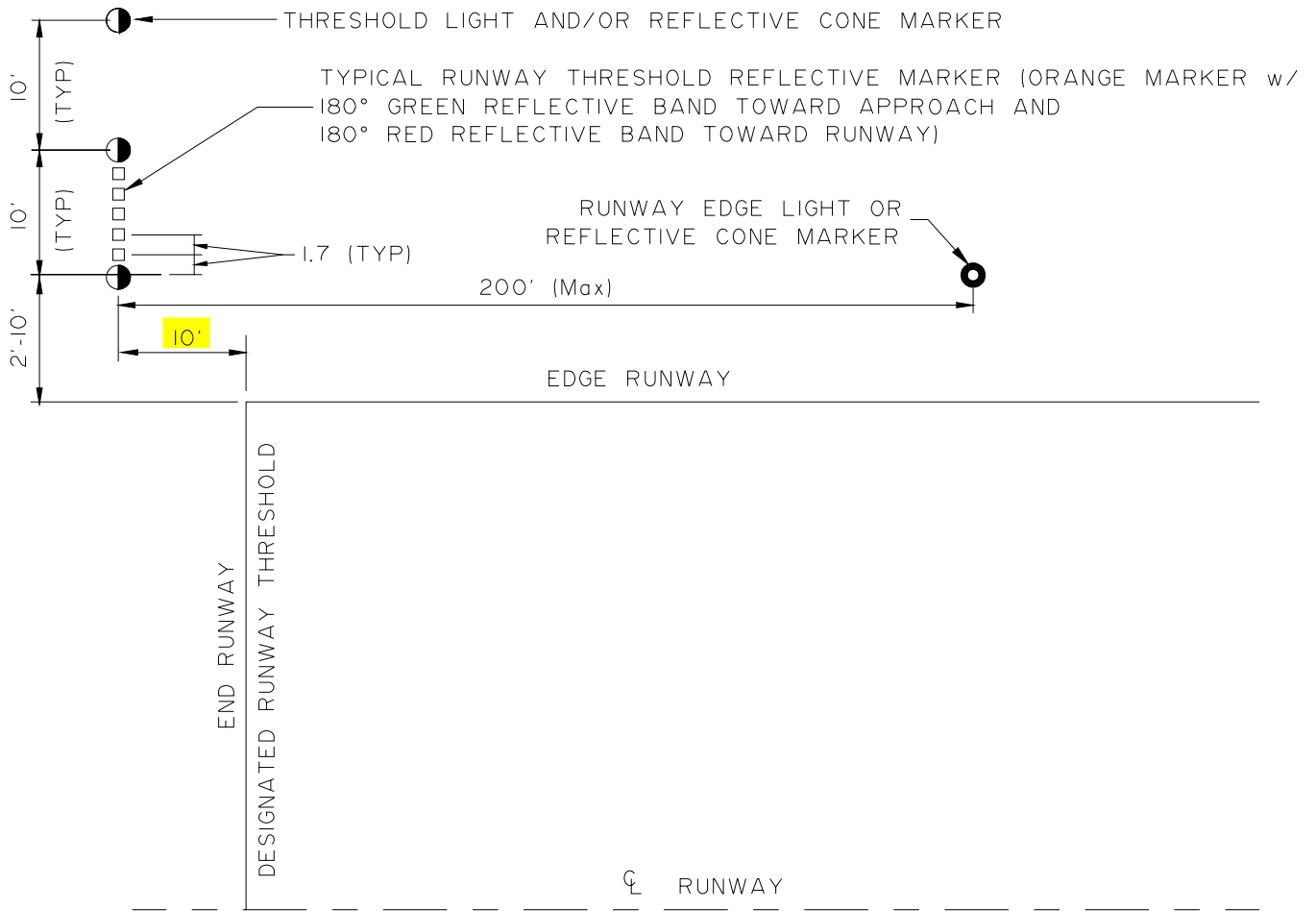


Figure 660-1
Typical Threshold Detail
No Scale

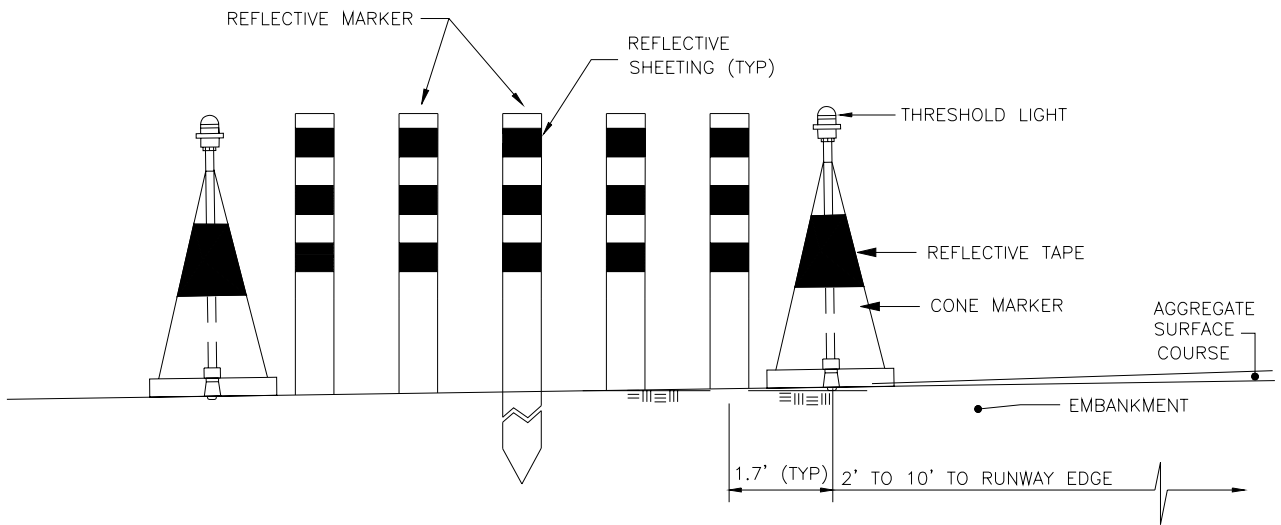


Figure 660-2
Threshold Reflective Marker Details
No Scale

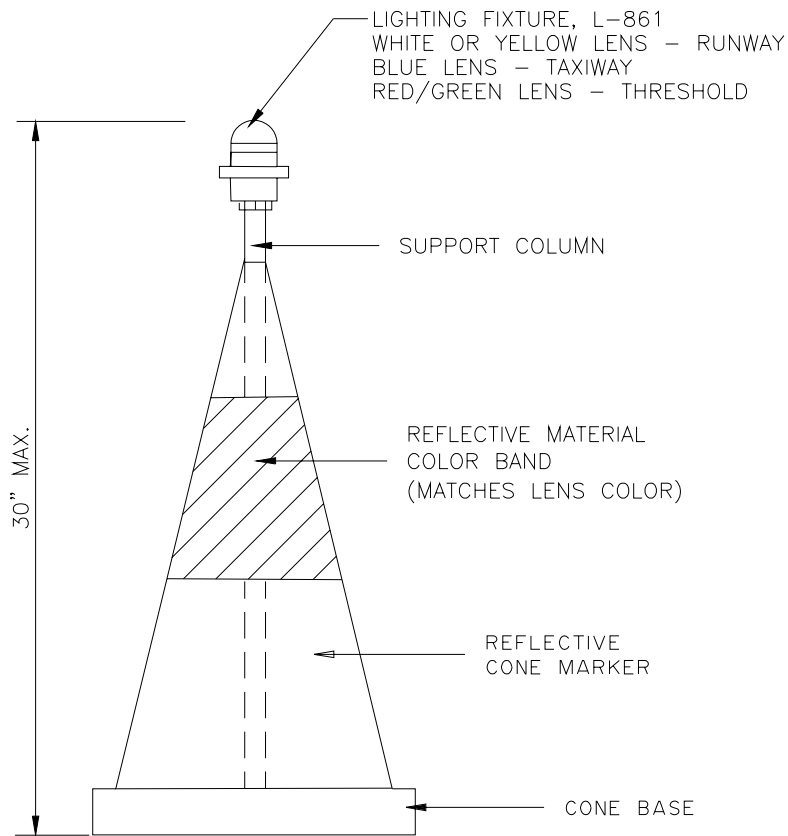


Figure 660-3
Reflective Cone Marker with Light
No Scale

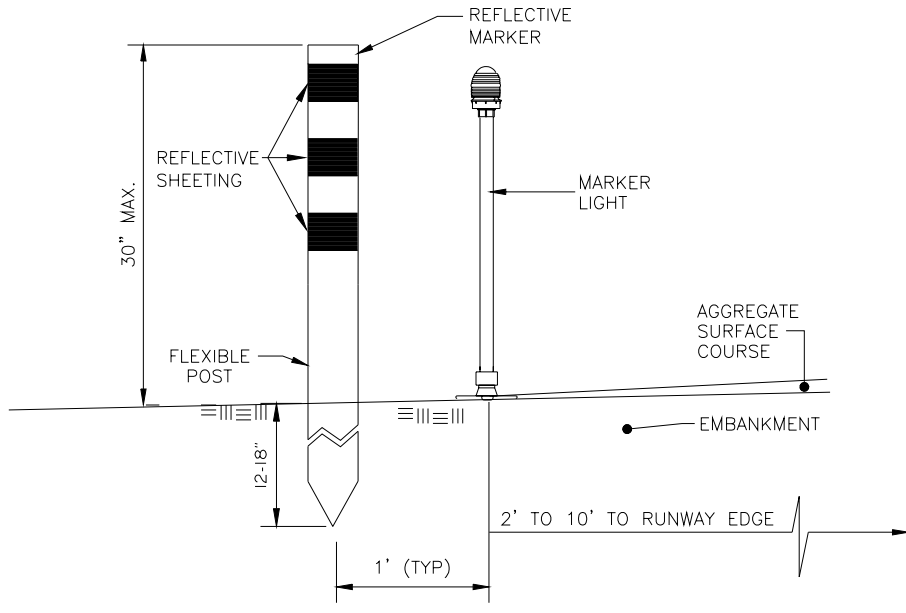


Figure 660-4
Example Detail for Runway/Taxiway Edge Reflective Marker
No Scale

670. Runway and Taxiway Edge Lighting Systems (Reserved)

680. Seaplane Facilities (Reserved)
