APPENDIX C – AIRFIELD INFRASTRUCTURE

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C-1. OVERVIEW

Airfield infrastructure projects improve or enhance operational safety at the airport. These projects ensure aircraft operational surfaces (AOS) remain protected from obstructions, hazards, and incompatible land uses which could impede their utility or preclude future airport development.

This appendix contains information on different types of airfield infrastructure projects. Table C-1. categorizes airfield infrastructure projects into four areas.

TABLE C-1.1. AIRFIELD INFRASTRUCTURE AREAS

Area Type	Description	Details
Operational Safety	Projects that improve or enhance the safety of operations, particularly related to runways.	C-3.
Air Operations	Projects that help with the condition of and access to the air operation area (AOA).	C-4.
Wildlife Hazard Mitigation	Projects that mitigate or prevent wildlife hazards.	C-5.
Airfield Boundary Protection	Projects that mitigate or prevent wildlife hazards.	C-6.

C-2. GENERAL ELIGIBILITY AND JUSTIFICATION

See: 49 U.S.C. §§ 47102(3)(B), 47107(a)(9), 47107(a)(10), 47107(c)(1), 47110(b)(4), and 47144

See also: 42 U.S.C. § 4601 et seq., 49 CFR Part 24, and 14 CFR Part 77

For eligibility and justification requirements applicable to all projects funded with AIP, see Chapter 2, *Eligibility & Justification*.

C-2.1. ELIGIBILITY CRITERIA

TABLE C-2.1. ELIGIBILITY REQUIREMENTS FOR AIRFIELD INFRASTRUCTURE PROJECTS

Item	Description
Ownership & Operator	Equipment and facilities must be owned and operated by the airport sponsor.
Location	**On Airport** - Project must be on airport property and depicted on the latest FAA-approved ALP or exclusively operated on airport, or **Off Airport** - Sponsor must possess the necessary rights and powers to carry out the project.
AOS	If the project is associated with an aircraft operational surface (AOS), the AOS must be eligible.

Item	Description
Function	The project must support landing and takeoff or aircraft movement to or from aeronautical facilities.
Scope	The project must be necessary to support safe aircraft operations and meet FAA-prescribed standards.

C-2.2. JUSTIFICATION REQUIREMENTS

Table C-2.2. includes general justification requirements for airfield infrastructure projects. Certain projects require additional coordination, may have scope of work limitations, and/or useful life criteria that must be met. These are discussed in Sections C-3, C-4, C-5, and C-6.

TABLE C-2.2. JUSTIFICATION REQUIREMENTS FOR AIRFIELD INFRASTRUCTURE PROJECTS

Item	Description
Objectives	▪ The project must achieve at least one of the congressionally directed priorities: ○ accommodate capacity; ○ achieve compliance with standards; or ○ address safety determinations; and ▪ There is an actual need for the project and a timeframe for the need; and ▪ Only the elements required to obtain the full benefit of the project are included in the scope.

C-2.2.1. SCOPE & ALLOWABLE COSTS

Projects must align with the actual operational needs of the airport and not exceed the scope or quantities identified. The project's scope must contain only the elements that are required to obtain the full benefit of the project.

FAA flight inspections, when required by the Air Traffic Organization (ATO), are allowable in accordance with Chapter 2, Section 2-3.6.6.6.1, Flight Inspection costs.

C-2.2.2. USEFUL LIFE

Chapter 2 discusses minimum useful life requirements applicable to all AIP-funded projects. One component of the minimum useful life requirement for equipment or a facility being reconstructed is that the equipment or facility must no longer be operational or maintainable, while rehabilitation must extend the useful life. Chapter 2, Section 2-3.2, provides additional details on what factors the ARP Field Office must evaluate once the equipment or facility has not achieved its minimum useful life.

Tables C-3.1., C-4.1., C-5.1., and C-6.1. include specific minimum useful life requirements applicable to airfield infrastructure projects.

C-3. OPERATIONAL SAFETY AREAS

Projects, activities, and actions that prevent runway incursions are essential to ensure the safe operation of the airport and airway system, because they serve to improve airport surface surveillance and mitigate surface safety risks. Projects in operational safety areas primarily focus on the safety of aircraft operations related to runways and taxiways.

Table C-3.1 discusses the types of operational safety projects, along with justification, useful life, additional requirements and considerations, and exclusions. See Appendix B, Aircraft Operational Surfaces (AOS), for details on associated AOS projects.

Relevant Advisory Circulars (ACs) and Orders include, but are not limited to, the current version of:

- FAA Order 5100.37, Land Acquisition and Relocation Assistance for Airport Projects;
- FAA Order 5200.8, Runway Safety Area Program;
- FAA Order 8260.3, United States Standard for Terminal Instrument Procedures (TERPS);
- AC 150/5100-17, Land Acquisition and Relocation Assistance for Airport Improvement Program Assisted Projects;
- AC 150/5220-22, Engineered Materials Arresting Systems (EMAS) for Aircraft Overruns;
- AC 70/7460-1, Obstruction Marking and Lighting;
- AC 150/5300-13, Airport Design;
- AC 150/5370-10, Standard Specifications for Construction of Airports; and
- AC 120-91, Airport Obstacle Analysis.

See the AC checklist for a list of the latest version of ACs applicable to AIP-funded projects.

C-3.1. JUSTIFICATION REQUIREMENTS

Certain projects require additional coordination, may have scope of work limitations, and/or useful life criteria that must be met.

TABLE C-3.1. ELIGIBLE OPERATIONAL SAFETY AREAS PROJECTS

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
Runway Safety Area (RSA) *Construct, Extend, & Acquire Land* ***Unit of Measure:*** *Area of RSA or Parcel of Land Acquired*	Necessary to satisfy a documented safety deficiency or RSA determination.	Project may include land acquisition, grading, clearing, road relocation, fencing relocation, threshold relocation, Engineered Material Arresting System (EMAS) installation (when EMAS is not the only remediation), and removing, relocating, or mitigating other impediments	Routine work.

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
		necessary to meet the RSA determination findings. Land acquisition beyond the RSA dimensional standards is allowed if necessary to purchase a complete parcel of land.	
RSA Repairs ***Unit of Measure:*** *Area within the RSA*	The following must all be true: ▪ The airport is a public-use, NPIAS airport; ▪ The RSA was damaged as a result of natural disaster; ▪ The airport was denied funding under the Robert T. Stafford Disaster Relief and Emergency Assistance Act with respect to the natural disaster; ▪ The airport sponsor has exhausted all legal remedies, including legal action against any parties (or insurers) whose action or inaction may have contributed to	Repair of an RSA damaged as a result of natural disaster needed to maintain compliance with FAA requirements related to RSAs.	

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
	the need for the repair of the RSA; ▪ There is still a demonstrated need to accommodate current or imminent aeronautical demand; and ▪ The cost of repairing or replacing, as determined by the FAA, is reasonable in relation to the anticipated operational benefit of repairing the RSA.		
EMAS *Construct, Reconstruct, & Rehabilitate* ***Unit of Measure:*** *Item Type*	Necessary to satisfy a documented safety deficiency or RSA determination. For lid replacement, the threshold for rehabilitation of EMAS is limited to replacement of 30% or fewer lids. Replacing more than 30% of the lids is considered reconstruction. If costs are not covered by insurance, reconstruction is eligible after 20 years and the bed is no	See Section C-3.2, EMAS Evaluation Criteria. Rehabilitation may include replacing blocks or other components of the EMAS bed that have been damaged due to an accident, incident, or natural disaster.	Routine work.

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
	longer functional or maintainable. If costs are not covered by insurance, rehabilitation is eligible after 10 years to extend the useful life. **Rehabilitation to repair damaged components**: The 14 CFR Part 139 inspector must concur with the scope of rehabilitation at Part 139 airports. The ARP Field Office must concur with the scope of rehabilitation at non-Part 139 airports.		
Airfield Safety Mitigation Measures *Construct, Acquire, & Install* ***Unit of Measure:*** *Item Type or Area of Pavement Constructed or Removed*	Needed to satisfy a documented safety deficiency, a runway incursion mitigation measure, hot spot mitigation, or runway safety action team (RSAT) recommendation. An ALP update with narrative is required to support the scope of work for projects without a documented safety deficiency, which must document meeting standards or achieving an equivalent or improved level of safety.	Projects may include removal of pavement to cure a safety deficiency or work related to clearing an AOS safety and object free area(s), installation of runway guard lights or airfield geometry modification of multiple AOSs. Dimensions must be based on the needs of the critical aircraft for the AOS. AIP funds to purchase unmanned aircraft detection and mitigation systems will become available once the equipment is successfully tested and certified, permitted, or authorized. Until then, these systems are not eligible for AIP funding.	

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
Obstacle Removal, Including Hazards *Lower, Remove, & Relocate* ***Unit of Measure:*** *Item Type*	Needed to address an identified obstacle determined to be a hazard to air navigation by the ARP Field Office (on airport) or by the ATO (off-airport). Hazards may be identified by a Part 139 violation or by an airspace study.	Project may include lowering, removing, or relocating nonconformance obstacles to airport design standards such as the obstacle free zone (OFZ), approach and departure surfaces, and United States Standard for Terminal Instrument Procedures (TERPS). This also applies to other obstacles encroaching on standards like the object free area (OFA), the runway visibility zone (RVZ), and others. Although lowering / topping the same vegetation multiple times is typically not eligible, it may be necessary to address vegetation in environmentally sensitive areas more than once to protect approaches and prevent obstructions under 14 CFR Part 77. Eligibility of these situations must be evaluated on a case-by-case basis. Equipment to lower or remove persistent vegetation may be acquired on a case-by-case basis as part of an obstruction removal project if approved by the ARP Field Office. See Table 2-3.2 for equipment useful life.	Redevelopment in connection with obstacle removal is not eligible, unless required by court ordered mitigation.
Obstruction Mitigation *Mark & Light*	Needed to mitigate an obstruction that penetrates 14 CFR Part 77 surfaces.	Projects may include marking or lighting of the identified obstructions.	

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
Unit of Measure: *Item Type*			
Land & Avigation Easements *Acquire* ***Unit of Measure:*** *Area of Rights Acquired*	Necessary to protect a runway approach and departure from incompatible land use and obstacles, including hazards. Necessary to control land use on property within a Runway Protection Zone (RPZ). Project must be supported by ALP update.	Acquire land, in fee simple or avigation easement rights, necessary to protect airspace needed for the landing or taking off of aircraft or prevent incompatible land uses. Acquisition of property rights must adhere to the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as well as 49 CFR Part 24.	

C-3.2. EMAS EVALUATION CRITERIA

EMAS proposals shall be evaluated based on the following criteria:

> Proposals demonstrating, through design, that they can meet the requirements for a standard EMAS (70 knot stopping capability for the design aircraft) will take precedence over proposals that do not demonstrate that they can meet the requirements for a standard EMAS.

If all the proposals are unable to demonstrate that they can meet the requirements for a standard EMAS, but still demonstrate that they can meet the requirements for a non-standard EMAS (minimum of 40 knot stopping capability for the design aircraft), the sponsor must apply the following rating method for relative importance for these primary categories:

- Stopping capability of aircraft within the fleet mix (50% weighting);
- Cost of the bed (40% weighting);
- Maintenance requirements and costs of the bed annually over the design life (5% weighting); and
- Other unique local conditions, such as severe occurrences of jet blast and environmental and operational impact of the EMAS footprint (5% weighting).

C-4. AIR OPERATIONS AREAS

Projects within the air operations area primarily support the safe and efficient operation of runways, taxiways, and associated safety areas. These projects must be related to aeronautical use and necessary to maintain compliance with applicable FAA standards, advisory circulars, and safety requirements.

Projects, activities, and actions that prevent runway incursions are essential to ensuring the safe operation of the airport and airway system, because they serve to improve airport surface surveillance and mitigate surface safety risks. Projects in operational safety areas primarily focus on the safety of aircraft operations related to runways and taxiways.

Relevant ACs and Orders include, but are not limited to, the current version of:

- AC 150/5220-26, Airport Ground Vehicle Automatic Dependent Surveillance – Broadcast (ADS-B) Out Squitter Equipment;
- AC 150/5210-19, Driver's Enhanced Vision System (DEVS);
- AC 150/5220-25, Airport Avian Radar Systems; and
- AC 150/5220-24, Foreign Object Debris Detection Equipment.

See the AC checklist for a list of the latest version of ACs applicable to AIP-funded projects.

C-4.1. JUSTIFICATION REQUIREMENTS

Certain projects require additional coordination, may have scope of work limitations, and/or useful life criteria that must be met.

Extended warranties are not allowable for any equipment acquisitions.

TABLE C-4.1. ELIGIBLE AIR OPERATIONS PROJECTS

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
Airport Drainage / Erosion Control *Construct & Reconstruct* ***Unit of Measure:*** *Linear Feet or Number of items*	Necessary to meet standards or satisfy a safety deficiency. Engineering analysis assessing the conditions must document the drainage deficiency and recommend corrective action. Reconstruction after 20 years, and the system is also no longer functional or maintainable.	Projects may include installation of drainage structures (pipes, culverts, catch basins, underdrains, pump systems, dikes, drainage tiles, etc.), grading, constructing ditches, detention ponds or erosion control systems, constructing blast pads at the ends of runways to reduce erosive effects of jet blast and propeller wash, installing sod, adding rip-rap, installing geogrids, and shoreline strengthening. Project must serve eligible areas and facilities at the airport or be prorated if benefiting ineligible areas or facilities or if benefiting off-site entities.	Routine work, such as ditch cleaning or vegetation management.

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
		For the construction of new facilities, drainage and erosion control costs are included as necessary costs of the development project.	
Friction Measuring Equipment *Acquire & Replace* ***Unit of Measure:*** *Number of Items*	Necessary to meet standards or satisfy a safety deficiency. The airport must be commercial service, hold a Part 139 certificate and have scheduled turbo jet operations; other airports with documented climatic conditions and jet traffic. Replace after 10 years, and the equipment is no longer functional or maintainable.	Initial acquisition or replacement of equipment for testing runway surface friction and monitoring runway pavement surface conditions. Includes delivery and calibration. Must include a fully functional piece of friction measuring equipment. Friction measuring equipment generally requires towing by a vehicle, however, if the equipment is required to be towed, the vehicle is not AIP-eligible. The vehicle must be a designated sponsor-owned and operated vehicle.	Routine work.
Airfield Equipment – Driver Enhanced Vision Systems (DEVS) & Forward Looking Infrared System (FLIRS) *Acquire & Replace* ***Unit of Measure:*** *Number of Items*	Necessary to meet standards or satisfy a safety deficiency. The airport must hold a Part 139 certificate with published operations below 1,200 feet visual range. Replace after 10 years, and the equipment is no longer functional or maintainable.	Initial acquisition or replacement of DEVS. Primary fire station that services the airfield can have DEVS on a maximum of two vehicles. One additional DEVS is allowable for each fire station that services the airfield beyond the first station. FLIRS is a component of DEVS. A stand-alone FLIRS is allowable for AIP-eligible ARFF vehicles if mounted in vehicle.	Routine work.

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
Airfield Equipment – Vehicle Movement Area Transmitters (VMATs) *Acquire & Replace* ***Unit of Measure:*** *Number of Items*	Necessary to meet standards or satisfy a safety deficiency. The airport must be equipped with airport surface detection equipment model X (ASDE-X), airport surface surveillance capability (ASSC), or a surface awareness initiative (SAI) system approved by the FAA's ATO. Replace after 5 years and the equipment is no longer functional or maintainable.	Limited to installation in airport-owned, airport employee-operated vehicles that operate on pavements that are controlled by FAA Air Traffic Control (ATC). Equipment may only be acquired from FAA authorized manufacturers. Projects may include installation and commissioning services, including site acceptance testing (SAT) costs.	More than 200 VMATs. Routine work.
Airfield Equipment – Runway Incursion Warning Systems (RIWS) *Acquire & Replace* ***Unit of Measure:*** *Number of Items*	Necessary to meet standards or satisfy a safety deficiency. Replace after 5 years and the equipment is no longer functional or maintainable.	Limited to installation in airport-owned, airport employee-operated vehicles that operate on the AOA. May be acquired to augment VMATs equipped vehicles or as stand-alone equipment. Project may include a stand-alone unit within a vehicle or used as an app on a smartphone. One-time RIWS hardware and software costs are eligible in the following scenarios: ▪ Standalone RIWS hardware with integrated software, including installation costs, for use on an eligible vehicle; ▪ An airport-owned mobile device, including	Routine work.

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
		hardware and RIWS software, to be used in connection with operating an eligible vehicle; or ▪ RIWS software that is compatible with existing airport-owned hardware when used in connection with an eligible vehicle.	
Airfield Equipment – Foreign Object and Debris (FOD) Removal Equipment *Acquire & Replace* ***Unit of Measure:*** *Number of Items*	Necessary to meet standards or satisfy a safety deficiency. The airport must hold a Part 139 certificate. Replace after 10 years, and the equipment is no longer functional or maintainable.	Limited to: ▪ One power sweeper where primary areas are less than 500,000 square yards and where the airport's annual operations level is 40,000 or less; or ▪ Two or more power sweepers where primary areas are 500,000 square yards or more, or where the airport's annual operations level is more than 40,000.	Towed FOD sweepers are not considered eligible power sweepers. More than one FOD detection vehicle. Optional features that exceed FAA design standards for system output requirements on mobile systems.
Airfield Equipment – Foreign Object and Debris (FOD) Detection Equipment *Acquire & Replace* ***Unit of Measure:*** *Number of Items*	Necessary to meet standards or satisfy a safety deficiency. Airport must be Large hub. The sponsor must provide supporting information for the selected runway, such as the number of aircraft operations per average 24-hour	An airport is eligible for either one fixed system for a single primary runway at the airport, or one mobile system, not both. Mobile FOD detection systems must be configured to provide real-time alerts, FOD identification, and FOD location to airport operations personnel.	Optional features that exceed FAA design standards for system output requirements.

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
	period, percentage of wide body aircraft per day and overall diversity of fleet-mix using the runway, surface material and condition, climatic conditions at the airport, significant construction activity on or near the airfield, and available historical FOD data. Requires ARP Field Office Approval. Replace after 10 years, and the equipment is no longer functional or maintainable.	Project may also include the vehicle on which the equipment is mounted if the airport does not already own a suitable vehicle that can be converted to FOD detection system use. AIP participation is limited to 50% of the eligible items associated with the project at the normal Federal share. Reimbursement of administrative costs is limited to $2,000. The system must be configured to provide real-time alerts, FOD identification, and FOD location to airport operations personnel.	
Airfield Equipment – Avian Radar Systems *Acquire & Replace* ***Unit of Measure:*** *Number of Items*	Necessary to meet standards or satisfy a safety deficiency. The airport has a wildlife hazard management plan that has been accepted by the FAA. The airport has an ongoing bird harassment plan in place incorporating the recommendations for continued harassment by airport employees to reduce wildlife hazards. Replace after 10 years, and the equipment is	The project may include the radar equipment, antenna(s), and radar equipment acquisition and installation, and acquisition of the digital radar signal processor. The costs of a trial installation and a final operational installation are allowable. The sponsor must have a training plan in place that includes initial and yearly follow-up training on the proper use of radar readings, analysis, and interpretation. The sponsor must maintain data to evaluate the radar performance, including daily archives or radar recordings	Costs to modify existing office space to accommodate avian radar equipment, acquire a mobile trailer, and construct a permanent structure to support the avian radar equipment.

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
	no longer functional or maintainable.	of birds tracked, related logs of birds harassed, hours in service, hours out of service, service and repair records, and updates to software or hardware. Data must be available for review by FAA upon request. If the airport holds a Part 139 certificate and has an Airport Certification Manual, the manual must include the requirements for operation and maintenance of the avian radar system, as well as requirements for analyzing the incoming data feeds, tracking the data, and acting on the data trends.	
Service Roads *Construct, Improve, Rehabilitate, & Reconstruct* ***Unit of Measure:*** *Length in Feet*	Necessary to meet standards for airside access to an eligible facility or satisfy a safety deficiency. **Paved Roads**: Reconstruct after 20 years and the road is no longer functional or maintainable. Rehabilitation after 10 years to extend the useful life. **Gravel Roads**: Reconstruct after 10 years and the road is no longer functional or maintainable. Rehabilitation after 5 years to extend the useful life. Eligibility for new construction is tied to	Construction, improvements, rehabilitation, or reconstruction of a non-public service road used for airport operations. Provides a path for aircraft rescue and firefighting (ARFF) trucks, snow removal equipment (SRE) vehicles, airport and FAA vehicles, and ground service equipment to minimize operations in movement areas. The scope may include paving, grading, drainage, and signage. Improvements may extend an existing road to a new facility, strengthen the road to accommodate larger ARFF vehicles due to a change in index, or change the route of an existing road due to	Routine work.

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
	the overall development objective and should be constructed with the project requiring the need for the service road.	airfield geometry requirements. The scope may include the construction of a temporary gravel road on either side of a fence during the construction of the fence. Service roads providing access for ARFF and SRE vehicles to the airfield are typically paved. Service roads providing access to navigational aids (NAVAIDs), power vaults, and other critical infrastructure for airport operations are typically gravel. Road width and strength must be appropriate for the intended operational vehicles. Reconstruction includes addressing pavement failure down to the base course or below. Gravel reconstruction may include regrading and replacing gravel as needed.	

C-5. WILDLIFE HAZARD MITIGATION AREAS

Wildlife hazard mitigation area projects must reduce the risk of wildlife strikes, support compliance with applicable safety requirements, or implement measures identified in an FAA-accepted wildlife hazard management plan (WHMP). Projects must be related to aeronautical use and necessary to maintain compliance with FAA wildlife hazard management requirements or other safety standards. See Appendix K, Planning, for planning project requirements for wildlife hazard mitigation.

Relevant ACs, but are not limited to the current version of:

- AC 150/5200-33, Hazardous Wildlife Attractants on or near Airports, and
- AC 150/5370-10, Standard Specifications for Construction of Airports.

See the AC checklist for a list of the latest version of ACs applicable to AIP-funded projects.

C-5.1. JUSTIFICATION REQUIREMENTS

Certain projects require additional coordination, may have scope of work limitations, and/or useful life criteria that must be met.

TABLE C-5.1. ELIGIBLE WILDLIFE HAZARD MITIGATION PROJECTS

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
Wildlife Perimeter Fencing *Construct & Reconstruct* ***Unit of Measure:*** *Feet*	Necessary to implement mitigation measures included in a WHMP or the sponsor's written adoption of a wildlife hazard site visit report. Reconstruct after 20 years, and the fencing is no longer functional or maintainable.	Construct or replace wildlife exclusion fencing, including gates and necessary access controls. Projects may include standard gate and mechanical locking devices and installation or replacement of buried fencing or anti-burrowing measures. Electric locking devices and automatic gates require ARP Field Office approval.	Rehabilitation and routine work. Epoxy-coated fencing.
Wildlife Mitigation Measures *Implement, Acquire, & Remove* ***Unit of Measure:*** *Varies Based on Mitigation*	Necessary to implement mitigation measures included in a WHMP or the sponsor's written adoption of a wildlife hazard site visit report. Useful life varies depending on the measure.	Projects may include habitat modification such as grading, drainage improvements, and removal of vegetation that attracts wildlife. Installation of infrastructure necessary to support wildlife deterrence may be included. May also include bird wires to prevent perching and nesting, wildlife hazard reduction equipment (e.g., avian radar systems, equipment for broadcasting distress calls, exploding gas cannons, shotguns, and pyrotechnic pistols, etc.). For avian radar systems, see Table C-4.1.	Routine wildlife harassment activities and consumable materials. Projects intended primarily for aesthetic landscaping or general grounds maintenance.

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
		Other potentially eligible projects must be approved by the ARP Field Office.	

C-6. AIRFIELD PROTECTION BOUNDARY AREAS

Airport protection boundary projects protect the AOA perimeter, maintain security, and preserve land necessary for the safe operation of the airport. These projects include perimeter fencing, AOA perimeter protection measures, and land acquisition necessary to prevent incompatible land uses or encroachments near the airport.

Even though many infrastructure and construction elements may not be eligible for funding, the land they occupy may be eligible to purchase. For instance, purchasing land to protect the RPZ at a Small hub airport is eligible, but constructing a revenue producing parking lot within the limits of the purchased parcel is not eligible.

Relevant ACs and Orders include, but are not limited to the current version of:

- FAA Order 5100.37, Land Acquisition and Relocation Assistance for Airport Projects; and
- Advisory Circular 150/5100-17, Land Acquisition and Relocation Assistance for Airport Improvement Program Assisted Projects.

See the AC checklist for a list of the latest version of ACs applicable to AIP-funded projects.

C-6.1. JUSTIFICATION REQUIREMENTS

Certain projects require additional coordination, may have scope of work limitations, and/or useful life criteria that must be met.

TABLE C-6.1. ELIGIBLE AIRFIELD PROTECTION BOUNDARY PROJECTS

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
Perimeter Fencing *Construct & Reconstruct* ***Unit of Measure:*** *Linear Feet*	Necessary to prevent unauthorized access to the airfield or to serve as a notice of legal boundary. Reconstruct after 20 years, and the fencing is no longer functional or maintainable.	Construct or reconstruct fencing around the perimeter of the airport property that is not required by the airport's 1542 Plan or for wildlife mitigation. May include installation of appropriate fence materials and gates, clearing and grading necessary for fence installation, temporary haul	Rehabilitation and routine work. Epoxy-coated fencing. Fencing installed solely to enclose nonaeronautical development. Fencing installed primarily for aesthetic purposes or

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
		routes or a road for fence installation. The fence height will be determined based upon project need and purpose. Complete perimeter fencing is not mandatory. Fencing a portion of the perimeter may be appropriate. See Table C-5.1 for wildlife fencing.	property demarcation.
Access Roads (Non-Terminal) *Rehabilitate & Reconstruct* ***Unit of Measure:*** *Length in Feet*	Necessary to access an AIP-eligible and justified aeronautical facility, other than a passenger terminal. Reconstruct after 20 years and the road is no longer functional or maintainable. Rehabilitation after 10 years to extend the useful life.	Project may include landside paved roadway, lighting, signage, drainage, and markings.	Routine work. Construction as a stand-alone project.
Acquire Land / Easement for Development *Acquire* ***Unit of Measure:*** *Acres*	Necessary to support airport development within 20 years of purchase.	The project may include acquisition of fee simple land ownership, acquisition of avigation easements or other property interests, appraisals, surveys, title work, and required environmental documentation. May include reimbursement of a previously acquired fee purchase of land if the land can be currently used for existing airport purposes. May include more than what is required, but the sponsor must promptly dispose of the excess land.	Land for nonaeronautical development or revenue-generating commercial purposes.

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
		May include a remnant when the acquisition leaves the property owner with an uneconomical parcel. May include land acquired to a logical boundary, such as a river or highway. Acceptable types of land interests include fee simple (preferred) and easements or lesser interests. ARP Field Offices have the option to approve a lesser interest in instances where the sponsor provides a valid and just reason substantiating the lesser interest. When lesser property interests are appropriate, the cost of the lesser interest must be significantly less than the cost to acquire the property in fee simple.	

C-6.2. LAND REQUIREMENTS AND CONSIDERATIONS

Airport protection boundary areas projects are justified when required to protect airport property from unauthorized access or when needed to support airport development. Certain types of land transactions have additional requirements.

TABLE C-6.2. ADDITIONAL REQUIREMENTS FOR LAND TRANSACTIONS

Transaction Type	Requirements
Acquire Land / Easement for Development	▪ Costs must be supported by an appraisal or an appraisal waiver, accepted settlement justification, and evidence of property rights acquired. ▪ Marketable title to the property is conveyed to the airport free and clear of any interest or encumbrance that may conflict with the airport's need and use for the property. ▪ Airport property title and interests must be recorded in the local public land records. The sponsor's attorney must certify to the ARP Field Office that good title has been acquired. The attorney may rely on title insurance, a title abstract, or an attorney's title opinion.

Transaction Type	Requirements
	▪ The land or easement must be depicted on the ALP, and the Exhibit A Property Inventory Map must be updated with the acquisition. ○ When land negotiations result in an airport sponsor acquiring more property than is required for airport development, the sponsor must promptly dispose of the land. ▪ Land acquired from other public agencies must be a bona fide sale from one public entity to another and not merely a transfer for the purpose of making the land eligible for Federal funding. ○ Sponsor must comply with 49 CFR Part 24, Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally Assisted Programs.
Reimburse a Sponsor for Land / Easement Acquired for Development	▪ Costs are supported by a real estate appraisal establishing the fair market value (FMV) of the land / easement *at the time of purchase* unless the airport is privately owned. If privately owned, the FMV of the land at the of the project must be used. ▪ The Exhibit A Property Inventory Map is updated to reflect the parcels acquired by the AIP grant.
Credit a Private Sponsor for Land / Easement Donated to the Airport in Lieu of its Local Share of an AIP-Funded Project	▪ Costs are supported by a real estate appraisal establishing the *current* fair market value of the land / easement. ▪ The Exhibit A Property Inventory Map is updated to reflect the AIP obligation.
Long-Term Lease of Publicly Owned Land	▪ May only be considered when the sponsor can document that acquisition, easement or other interest in the land is not available. ▪ A long-term lease (20 years or more) is required to ensure adequate rights needed to operate the airport. ▪ The land must be needed for airport purposes within the next 20 years, and the associated development driving the need for the land must be shown on an FAA-approved ALP. ▪ The lease is between the sponsor and a public agency (the Federal government is not considered a public agency in this instance). ▪ The pre-paid rent must reflect the present value of the rent payments, not to exceed current fair market value of the real property leased. ▪ Periodic rental or lease payments are not allowable. ▪ The lease meets the requirements outlined in the Uniform Relocation Assistance and Real Property Acquisition Policies Act, FAA Order 5100.37, and AC 150/5100-17.

Transaction Type	Requirements
	▪ Coordination with APP-400 and ACO is required. ▪ The Exhibit A Property Inventory Map is updated when the purchase is complete.
Exchange of Land / Easement	▪ Land "swaps" or exchanges constitute two separate actions. The first action is for the sale and disposal of airport property, and the second action is for the acquisition of a parcel. The sale and disposal of sponsor-owned land requires the ARP Field Office to release obligations if it is determined that the FAA retains approval authority before the land can be exchanged. **Appraisals** supporting the fair market value of both parcels are required. Complex transactions may require coordination with APP-400 and ACO. ▪ Appraisals must be completed for the sponsor-owned land and the property to be acquired. If one piece of property has a higher value than the other, the owner of the higher valued property must be offered the difference. ▪ The Exhibit A Property Inventory Map is updated when the purchase is complete.

C-7. RELATED AIRFIELD INFRASTRUCTURE PROJECTS

The projects in this section are not eligible for airfield infrastructure purposes; however, references to related projects that may be eligible are provided as applicable.

TABLE C-7.1. RELATED PROJECTS

Project Type	When Scope of Work Includes	See Appendix
Access and Service Roads	Access roads and service roads associated with ARFF or SRE facility construction	E, Equipment & Facilities
	Public use roads to other eligible buildings	L, Revenue Producing
	Public-use access roads to terminals	N, Terminal Development
Acquire Land	Noise	I, Noise
Aircraft Operational Surfaces	Drainage / erosion control associated with AOS construction or other facility construction	B, Aircraft Operational Surfaces
Drainage Collection Equipment / Discharge Systems	Deicing	D, Environmental & Energy
Fencing and Gates	Security fencing	M, Security

Project Type	When Scope of Work Includes	See Appendix
Noise	Acquiring land or easements for noise mitigation.	I, Noise
Study	Airport-wide obstruction study	K, Planning
	Airport drainage study	
	Wildlife hazard assessment / site visit / management plan	

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