

# AIP HANDBOOK

Your Guide to Safety, Standards, and Infrastructure Development



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## APPENDIX F – LIGHTING, SIGNAGE AND MARKINGS

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27 **F-1. OVERVIEW**

28 This appendix outlines the eligibility and justification requirements for lighting, signage, and marking  
 29 projects needed to support eligible aircraft operational surfaces (AOS). This appendix discusses projects  
 30 undertaken as part of an eligible AOS project as well as stand-alone projects.

31 **F-2. GENERAL ELIGIBILITY AND JUSTIFICATION**

32 See: 49 U.S.C. §§ [47101\(f\)](#), [47102\(3\)\(A\)](#), [47102\(3\)\(B\)\(ii\)](#), [47102\(3\)\(G\)](#), [47102\(3\)\(H\)](#), [47102\(3\)\(Y\)](#), and  
 33 [47110\(d\)](#)

34 See also: 14 CFR § [139.311](#)

35 For eligibility and justification requirements applicable to all projects funded with AIP, see [Chapter 2,](#)  
 36 [Eligibility & Justification.](#)

37 **F-2.1. ELIGIBILITY CRITERIA**

38 **TABLE F-2.1. GENERAL ELIGIBILITY REQUIREMENTS FOR LIGHTING, SIGNAGE, AND MARKING PROJECTS**

Item	Description
<b>Location</b>	Project must be on airport property, and the AOS must be eligible.
<b>Scope</b>	Project must be necessary to support safe aircraft operations on the airfield and meet FAA-prescribed standards.

39 **F-2.2. JUSTIFICATION REQUIREMENTS**

40 Projects must be necessary to achieve a statutorily directed policy including:

- 41     ▪ Completing an eligible AOS project;
- 42     ▪ Bringing an airport into conformity with FAA standards;
- 43     ▪ Enhancing safety at a Part 139 airport when a safety deficiency has been identified through a  
 44         Part 139 requirement or violation;
- 45     ▪ Providing a required runway incursion prevention measure; or
- 46     ▪ Addressing a documented Runway Safety Action Team (RSAT) recommendation.

47 Justification for rehabilitation or reconstruction or replacement is based upon the applicable useful life  
 48 standards discussed in [Section F-2.2.2.](#) and [Chapter 2, Paragraph 2-3.2., Minimum Useful Life.](#)

49 **F-2.2.1. SCOPE & ALLOWABLE COSTS**

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

53 When a lighting, signage, or marking project is necessary to achieve the overall development objective  
 54 of an eligible AOS project, it should be included in the scope of work for that AOS project unless  
 55 allowable as a stand-alone project under the following exception:

56 **Exception:** Stand-alone lighting, signage, and marking projects may be required to meet  
 57 FAA standards or satisfy a documented safety requirement, deficiency, violation, or  
 58 recommendation.

59 Excluded work and costs are not eligible.

60 F-2.2.2. USEFUL LIFE

61 [Chapter 2](#) discusses minimum useful life requirements applicable to all AIP-funded projects. One  
 62 component of the minimum useful life requirement for equipment or a facility being rehabilitated or  
 63 reconstructed is that the equipment or facility must no longer be operational or maintainable. [Chapter](#)  
 64 [2, Section 2-3.2.](#), provides additional details on what factors the ARP Field Office must evaluate if the  
 65 equipment or facility has not achieved its minimum useful life.

66 Tables [F-3.1.](#), [F-3.2.](#), and [F-3.3.](#) include specific minimum useful life requirements applicable to lighting,  
 67 signage, and marking projects.

68 **F-3. ELIGIBLE LIGHTING, SIGNAGE AND MARKING PROJECTS**

69 For scope of work requirements applicable to all AIP-funded projects, see [Chapter 2](#).

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

- 71 ▪ [AC 150/5340-1, Standards for Airport Markings](#);
- 72 ▪ [AC 150/5340-30, Design and Installation Details for Airport Visual Aids](#);
- 73 ▪ [FAA Order JO 7110.118, Land and Hold Short Operations \(LAHSO\)](#);
- 74 ▪ [FAA Order JO 6030.20, Electrical Power Policy](#); and
- 75 ▪ [FAA Order JO 6950.2, Electrical Power Policy Implementation at National Airspace System](#)  
 76 [Facilities](#).

77 See the [AC checklist](#) for a list of the latest version of ACs applicable to AIP-funded projects.

78 **TABLE F-3.1. ELIGIBLE LIGHTING PROJECTS**

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
<b>Runway Lighting - Edge, Centerline, and Touchdown Zone</b>  <i>Stand-Alone: Acquire, Install, Construct, Rehabilitate, &amp; Reconstruct</i>	Airport must have night or instrument approach operations, and lighting must support those operations.  Project may include centerline and touchdown zone	Lighting fixtures, lenses, transformers, pedestals, conduit, cabling, bases, and handholes. May also include lighting vault and associated equipment, Airfield Lighting Control and Monitoring System (ALCMS), utility service and airfield lighting	Enhanced centerline lighting at a non-Part 139 airports.  Rehabilitation as part of an AOS project.  Flight check under a reimbursable agreement for a

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
<p><b>Necessary to Complete AOS:</b> <i>Construct, Expand, Relocate, &amp; Reconstruct</i></p> <p><b>Unit of Measure:</b> <i>Item Type</i></p>	<p>lighting when landing operations below 2,400 feet of runway visual range (RVR) are permitted on Category II and III runway ends. Project may include centerline lighting when takeoff operations below 1,600 feet RVR are permitted.</p> <p>Reconstruction after 10 years and the equipment is no longer functional or maintainable, rehabilitation after 5 years to extend the equipment’s useful life.</p>	<p>engine generator as necessary.</p> <p>Rehabilitation is limited to replacing fixtures, lenses, transformers, and / or cabling. The majority of light bases and conduit will remain untouched.</p> <p>See <a href="#">Paragraph F-3.1.1., Lighting Projects Supporting USAF and ANG</a>, for requirements directly supporting the United States Air Force (USAF) or the Air National Guard (ANG) at the airport.</p> <p>See <a href="#">Paragraph F-3.1.2., Light Emitting Diode (LED) Lighting</a>, for additional requirements.</p>	<p>stand-alone runway edge lighting project, including LED conversions, unless ATO and ARP Headquarters determine a flight check is required.</p> <p>Routine work.</p>
<p><b>Runway Lighting – Land and Hold Short Lights (LAHSO)</b></p> <p><b>Stand-Alone:</b> <i>Acquire, Install, Construct, Rehabilitate, &amp; Reconstruct</i></p> <p><b>Necessary to Complete AOS:</b> <i>Construct, Expand, Relocate, &amp; Reconstruct</i></p> <p><b>Unit of Measure:</b> <i>Item Type</i></p>	<p>Requires an approved LAHSO plan and meets minimum requirements in <a href="#">FAA Order 7110.118</a>.</p> <p>Replacement after 10 years and the equipment is no longer functional or maintainable, rehabilitation after 5 years to extend the equipment’s useful life.</p>	<p>Fixtures, lenses, transformers, pedestals, conduit, cabling, bases, handholes, modifications to ALCMS, lighting vault, airfield lighting engine generator as necessary.</p> <p>Rehabilitation is limited to replacing fixtures, lenses, transformers, and cabling. The majority of light bases and conduit will remain untouched.</p>	<p>Costs for associated equipment, such as trucks and “follow-me” signs.</p> <p>Rehabilitation as part of an AOS project.</p> <p>Routine work.</p>
<p><b>Runway Incursion Lighting</b></p>	<p>Airport must be commercial service or have a documented</p>	<p>May include status lighting, clearance bars, runway</p>	<p>The sponsor is prohibited from transferring</p>

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
<p><b>Stand-Alone:</b> <i>Acquire, Install, Construct, Rehabilitate, &amp; Reconstruct</i></p> <p><b>Necessary to Complete AOS:</b> <i>Construct, Expand, Relocate, &amp; Reconstruct</i></p> <p><b>Unit of Measure:</b> <i>Item Type</i></p>	<p>safety deficiency identified by a 14 CFR Part 139 certification inspector or in an RSAT recommendation.</p> <p>Replacement after 10 years and the equipment is no longer functional or maintainable, rehabilitation after 5 years to extend the equipment’s useful life.</p>	<p>guard lighting, and stop bars.</p> <p>Surface Movement Guidance and Control System (SMGCS) lighting may include runway guard lights, clearance bars, stop bars to assist aircraft taxiing from a Category II / III runway to the apron with approved SMGCS plan.</p>	<p>ownership and maintenance of these systems to the FAA’s ATO.</p> <p>Rehabilitation as part of an AOS project.</p> <p>Routine work.</p>
<p><b>Lighted X’s</b></p> <p><b>Stand-Alone:</b> <i>Acquire</i></p> <p><b>Necessary to Complete AOS:</b> <i>Acquire</i></p> <p><b>Unit of Measure:</b> <i>Item Type</i></p>	<p>AOS project must require runway closure and be approved in the Construction Safety and Phasing Plan (CSPP).</p> <p>Replacement as a new acquisition after 10 years and the equipment is no longer functional or maintainable and the equipment remains required.</p>	<p>Acquisition of lighted X’s.</p> <p>Contractor may furnish lighted X’s as an allowable cost under an AOS project.</p>	<p>If a contractor furnishes runway closure markings during an AOS project, the sponsor cannot require the contractor to turn lighted X’s over to the airport as part of the AOS project.</p>
<p><b>Taxiway Lighting - Edge and Centerline</b></p> <p><b>Stand-Alone:</b> <i>Acquire, Install, Construct, Rehabilitate, &amp; Reconstruct</i></p> <p><b>Necessary to Complete AOS:</b> <i>Construct, Expand, Relocate, &amp; Reconstruct</i></p>	<p>Taxiways must be associated with lighted runways.</p> <p>For centerline lighting, one of the following conditions must be met:</p> <ul style="list-style-type: none"> <li>▪ The taxiway connects to a Category II or III runway; or</li> </ul>	<p>May include lighting necessary to complement lighted runways, fixtures, transformers, pedestals, conduit, lenses, cabling, bases, and handholes. May also include runway incursion lighting, ALCMS, lighting vault, and airfield lighting engine generator as necessary.</p>	<p>Enhanced centerline lighting at a non-Part 139 airport.</p> <p>Rehabilitation as part of completion of an AOS project.</p> <p>Routine work.</p>

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
<p><b>Unit of Measure:</b> <i>Item Type</i></p>	<ul style="list-style-type: none"> <li>▪ The lighting is an RSAT recommendation.</li> </ul> <p>Reconstruction after 10 years and the equipment is no longer functional or maintainable, rehabilitation after 5 years to extend the equipment’s useful life.</p>	<p>Rehabilitation is limited to replacing fixtures, lenses, transformers, and cabling. The majority of light bases and conduit will remain untouched.</p> <p>Reflectors are eligible in lieu of taxiway edge lights where a centerline system is installed or to enhance taxiway edge lights on short taxiway sections, curves, and intersections.</p> <p>See <a href="#">Paragraph F-3.1.1., Lighting Projects Supporting USAF and ANG</a>, for requirements directly supporting USAF or the ANG at the airport.</p>	
<p><b>Taxilane Lighting - Edge</b></p> <p><b>Necessary to Complete AOS:</b> <i>Reconstruct</i></p> <p><b>Unit of Measure:</b> <i>Item Type</i></p>	<p>Taxilane lighting must exist.</p>	<p>May include all fixtures, transformers, pedestals, lenses, transformers, bases, cabling, and modifications to lighting vault / ALCMS.</p> <p>May be funded only with primary, nonprimary commercial service, general aviation, cargo, and state apportionments (also referred to as entitlement funding) or the Small Airport Fund.</p>	<p>Stand-alone taxilane edge lighting projects.</p> <p>Construction, rehabilitation, and routine work.</p>
<p><b>Apron Lighting – Flood and Edge</b></p> <p><b>Stand-Alone:</b> <i>Acquire, Install, Construct, Rehabilitate, &amp; Reconstruct</i></p> <p><b>Necessary to Complete AOS:</b> <i>Construct, Expand,</i></p>	<p>Reconstruction after 10 years and the equipment is no longer functional or maintainable, rehabilitation after 5 years to extend the equipment’s useful life.</p>	<p>May include free standing apron flood light(s) or apron edge lighting, power vault and ALCMS upgrades or modifications as necessary.</p> <p>Rehabilitation is limited to replacing fixtures, lenses, transformers, cabling. The majority of light bases and</p>	<p>Rehabilitation when the apron is primarily used for deicing. See <a href="#">Paragraph F-3.1.3., Deicing Pad Lighting</a>, for special considerations.</p> <p>Projects that will have an adverse</p>

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
<p><i>Relocate, &amp; Reconstruct</i></p> <p><b>Unit of Measure:</b> <i>Item Type</i></p>		<p>conduit will remain untouched.</p> <p>May be used to light a deicing apron.</p> <p>See <a href="#">Paragraph F-3.1.1., Lighting Projects Supporting USAF and ANG</a>, for requirements directly supporting USAF or the Air National Guard ANG at the airport.</p>	<p>effect on airport operations.</p> <p>Routine work.</p>
<p><b>Airfield Lighting Control and Monitoring System (ALCMS)</b></p> <p><b>Necessary to Complete Lighting or AOS:</b> <i>Construct, Expand, Relocate, Modify, &amp; Reconstruct</i></p> <p><b>Unit of Measure:</b> <i>Item Type</i></p>	<p>Airport must have an Air Traffic Control Tower (ATCT).</p> <p>Reconstruction after 10 years and the equipment is no longer functional or maintainable.</p>	<p>May include ALCMS control panel in the ATCT, power and control cables, conduit, handholes, and connections in the airfield lighting vault.</p> <p>Construction and reconstruction are considered competitive procurements, while improvements and modifications are considered noncompetitive proposals. Both must follow the applicable requirements of <a href="#">2 CFR Part 200</a>.</p>	<p>Stand-alone projects.</p> <p>Rehabilitation and routine work.</p>
<p><b>Airfield Lighting Vault and Associated Equipment</b></p> <p><b>Stand-Alone:</b> <i>Construct &amp; Reconstruct</i></p> <p><b>Necessary to Complete AOS:</b> <i>Construct, Expand, Modify, Improve, &amp; Reconstruct</i></p> <p><b>Unit of Measure:</b> <i>Item Type</i></p>	<p><b>Equipment Useful Life:</b> Reconstruction after 10 years and the equipment is no longer functional or maintainable.</p> <p><b>Building Useful Life:</b> Reconstruction after 20 years (40 for concrete block structures) and the building is no longer functional or maintainable.</p>	<p>May include building, utility service (power only), constant current regulators, power and control wiring, conduits, duct banks, handholes, and manholes.</p>	<p>Rehabilitation as a stand-alone project.</p> <p>Routine work.</p>

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
<p><b>Airfield Lighting Engine Generator (E/G)</b></p> <p><i>Stand-Alone: Acquire, Install, Construct, &amp; Reconstruct</i></p> <p><i>Necessary to Complete AOS: Construct, Expand, Relocate, &amp; Reconstruct</i></p> <p><i>Unit of Measure: Item Type</i></p>	<p>Airport must be designated as a Continuous Power Airport (CPA) or supporting lighting on a Category II / III runway.</p> <p>Reconstruction is after 10 years and the equipment is no longer functional or maintainable.</p>	<p>May include engine generator, generator pad, bollards, above ground fuel tank, piping, conduits, cabling, control, power, automatic transfer switch, duct banks, handholes, and manholes.</p>	<p>Rehabilitation and routine work.</p> <p>Portable or mobile E/G installation.</p>
<p><b>Terminal Gate Position Lead-in Lights</b></p> <p><i>Stand-Alone: Install</i></p> <p><i>Unit of Measure: Number of Lights</i></p>	<p>Gate must not be exclusive use.</p>	<p>May include free-standing lighting used to lead aircraft into position at a terminal gate.</p> <p>Sponsor must coordinate with ARP Field Office and ARP Headquarters to ensure added lighting will not cause confusion for aircraft operations.</p> <p>May be funded only with nonprimary commercial service, general aviation, and cargo apportionments.</p>	<p>Lighting attached to the terminal building.</p>

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80 **TABLE F-3.2. ELIGIBLE SIGNAGE PROJECTS**

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
<p><b>Runway /Taxiway Signage</b> (including distance-to-go signs, also known as runway distance remaining signs)</p>	<p>Lighted signs are only eligible at airports with a demonstrated need for night operations.</p> <p>Distance-to-go signs are only eligible on</p>	<p>May include fixtures, housing and panels.</p> <p>Conduit, boxes, transformers, and cabling may be included if signs are lighted or replacing signage due to changes in</p>	<p>Rehabilitation and routine work.</p> <p>Replacement of faded panels as a stand-alone project.</p>

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
<p><b>Stand-Alone: Acquire, Install, &amp; Replace</b></p> <p><b>Necessary to Complete AOS:</b> Construct, Expand, Relocate, &amp; Replace</p> <p><b>Unit of Measure:</b> Item Type</p>	<p>primary and secondary runways, and the runway must have turbojet operations.</p> <p>Replacement after 10 years and the equipment is no longer functional or maintainable.</p>	<p>designations based on magnetic variation, changes in airfield geometry, or required by standards.</p> <p>Faded panels may be replaced as an incidental cost of an eligible AOS project.</p>	
<p><b>Apron Signage</b></p> <p><b>Stand-Alone: Acquire, Install, &amp; Replace</b></p> <p><b>Necessary to Complete AOS:</b> Acquire, Install, Expand, Relocate, &amp; Replace</p> <p><b>Unit of Measure:</b> Item Type</p>	<p>Lighted signs are only eligible at airports with a demonstrated need for night operations.</p> <p>Reconstruction after 10 years and the equipment is no longer functional or maintainable.</p>	<p>May include initial installation to delineate non-movement areas.</p> <p>May include fixtures, housing, and panels.</p> <p>Conduit, boxes, transformers, and cabling may be included if signs are lighted or replacing signage due to changes in designations required by standards.</p> <p>Faded panels may be replaced as an incidental cost of an eligible AOS project.</p>	<p>Rehabilitation and routine work.</p> <p>Replacement of faded panels as a stand-alone project.</p>
<p><b>Taxilane Signage</b></p> <p><b>Necessary to Complete AOS:</b> Acquire, Install, Expand, Relocate, &amp; Replace</p> <p><b>Unit of Measure:</b> Item Type</p>	<p>Lighted taxilane signs are only eligible at airports with a demonstrated need for night operations and where other lighted signs exist.</p> <p>Taxilane signage is not eligible as a stand-alone project, therefore, meeting a minimum useful life is not required.</p>	<p>May include reconstructing signage including fixtures, housing, and panels.</p> <p>Conduit, boxes, transformers, and cabling may be included if signs are lighted or if replacing signage.</p> <p>Faded panels may be replaced as an incidental cost of an AOS project.</p>	<p>Rehabilitation and routine work.</p> <p>Stand-alone projects.</p>

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
<p><b>Airfield Guidance Signage</b></p> <p><i>Stand-Alone: Acquire, Install, &amp; Replace</i></p> <p><b>Necessary to Complete AOS:</b> <i>Acquire, Install, Expand, Relocate, &amp; Replace</i></p> <p><b>Unit of Measure:</b> <i>Item Type</i></p>	<p>Lighted signs are only available at airports with instrument approach operations.</p> <p>Part 139 airports must have included proposed signs in their FAA-approved airport certification manual. The ARP Field Office may impose this same requirement on non-Part 139 airports.</p> <p>Reconstruction after 10 years and the equipment is no longer functional or maintainable.</p>	<p>Airfield guidance signage projects provide wayfinding along multiple eligible AOS to eligible buildings or other eligible AOS.</p> <p>May be used for an identified safety deficiency that encompasses multiple areas of the airfield.</p> <p>May include signs on service roads to notify drivers of an active runway.</p> <p>May include fixtures, housing, and panels.</p> <p>Conduit, boxes, transformers, and cabling may be included if signs are lighted or replacing signage due to changes in designations based on magnetic variation, changes in airfield geometry, or required by standards.</p> <p>Faded panels may be replaced as an incidental cost of an eligible AOS project.</p>	<p>Rehabilitation and routine work.</p> <p>Replacement of faded panels as a stand-alone project.</p>

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82 **TABLE F-3.3. ELIGIBLE MARKING PROJECTS**

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
<p><b>Runway Markings</b></p> <p><i>Stand-Alone: Install &amp; Re-mark</i></p> <p><b>Necessary to Complete AOS:</b> <i>Install &amp; Re-mark</i></p>	<p>Re-marking after 3 years (paint) or 7 years (thermoplastic).</p> <p><b>Alaska Only:</b> Runway markings can be conducted annually at Part 139 airports in</p>	<p>May include marking numbers, designations, edge marks, and centerlines.</p> <p>Re-marking existing pavement as needed for changes in designations or standards, to match</p>	<p>Stand-alone projects at Small, Medium, or Large Hub airports.</p> <p>Routine work.</p> <p>See <a href="#">Paragraph F-3.1.4., Thermoplastic</a></p>

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
<p><b>Unit of Measure:</b> <i>Item Type</i></p>	<p>Alaska if approved by the ARP Field Office.</p>	<p>updated signage, or to re-mark faded markings.</p> <p>Runway closure markings necessary to complete an eligible AOS project are an allowable cost of the AOS project.</p>	<p><a href="#">Markings</a>, for requirements.</p>
<p><b>Taxiway Markings</b> <b>Stand-Alone:</b> <i>Install &amp; Re-mark</i> <b>Necessary to Complete AOS:</b> <i>Install &amp; Re-mark</i> <b>Unit of Measure:</b> <i>Item Type</i></p>	<p>Re-marking after 3 years (paint) or 7 years (thermoplastic).</p>	<p>May include marking numbers, designations, edge marks, and centerlines, including enhancing taxiway centerline markings at runway-taxiway intersections, and hold short markings.</p> <p>Re-marking existing pavement as needed for changes in designations or standards, to match updated signage, or to re-mark faded markings.</p>	<p>Stand-alone projects at Small, Medium, or Large Hub airports.</p> <p>Routine work.</p> <p>See <a href="#">Paragraph F-3.1.4., Thermoplastic Markings</a>, for requirements.</p>
<p><b>Apron Markings</b> (including deicing apron) <b>Stand-Alone:</b> <i>Install &amp; Re-mark</i> <b>Necessary to Complete AOS:</b> <i>Install &amp; Re-mark</i> <b>Unit of Measure:</b> <i>Item Type</i></p>	<p>Re-marking after 3 years (paint) or 7 years (thermoplastic).</p> <p>The minimum useful life is not applied when re-marking is necessary to complete an AOS reconstruction project.</p>	<p>May include marking or re-marking existing pavement as needed for changes in designations or standards, to match updated signage, or to re-mark faded markings.</p>	<p>Stand-alone projects at Small, Medium, or Large Hub airports.</p> <p>Routine work.</p> <p>See <a href="#">Paragraph F-3.1.4., Thermoplastic Markings</a>, for requirements.</p>
<p><b>Taxilane Markings</b> <b>Necessary to Complete AOS:</b> <i>Install &amp; Re-mark</i> <b>Unit of Measure:</b> <i>Item Type</i></p>	<p>The minimum useful life is not applied when re-marking is necessary to complete an AOS reconstruction project.</p>	<p>May include marking or re-marking existing pavement as needed for changes in designations or standards, to match updated signage, or to re-mark faded markings.</p>	<p>Stand-alone projects.</p> <p>Routine work.</p> <p>See <a href="#">Paragraph F-3.1.4., Thermoplastic Markings</a>, for requirements.</p>

Project Type	Justification and Useful Life	Additional Requirements and Considerations	Excluded Work
<p><b>Airfield Markings</b></p> <p><i>Stand-Alone: Install &amp; Re-mark</i></p> <p><i>Necessary to Complete AOS: Install or Remark</i></p> <p><i>Unit of Measure: Item Type</i></p>	<p>Re-marking after 3 years (paint) or 7 years (thermoplastic).</p>	<p>May include marking or re-marking existing pavement as needed for changes in designations or standards, to match updated signage, or to re-mark faded markings.</p>	<p>Stand-alone projects at Small, Medium, or Large Hub airports.</p> <p>Routine work.</p> <p>See <a href="#">Paragraph F-3.1.4., Thermoplastic Markings</a>, for requirements.</p>

83 F-3.1. SPECIAL CONSIDERATIONS

84 F-3.1.1. LIGHTING PROJECTS SUPPORTING U.S. AIR FORCE (USAF) AND AIR NATIONAL GUARD  
85 (ANG)

86 Section 752 of the FAA Reauthorization Act of 2024 ([P.L. 118-63](#)) prohibits shortening the length or width  
87 of the runway, apron, or taxiway of the airport if the airport directly supports a base of the USAF or the  
88 ANG at the airport, regardless of the stationing of military aircraft. Runway, taxiway, and apron lighting,  
89 markings and signage necessary to support the AOS project may be rehabilitated or reconstructed to the  
90 AOS dimensions supporting continued USAF or ANG operations.

91 F-3.1.2. LIGHT EMITTING DIODE (LED) LIGHTING

92 Light emitting diode (LED) technology may be used in lieu of halogen for certain applications. LEDs are  
93 permitted for high intensity runway lights (HIRL), including edge and centerline, obstruction lights (see  
94 [Appendix C, Airfield Infrastructure](#)), and approach lighting systems (see [Appendix G, NavAids](#)).

95 HIRL construction or HIRL reconstruction (replacement) must either:

- 96     ▪ Include a lifecycle cost comparison between LED and halogen lighting technologies, or
- 97     ▪ Be a recommendation in the airport energy management plan.

98 Replacing halogen with LED lighting at any time other than construction or reconstruction must include  
99 LED lighting as a recommendation in the airport energy management plan (see [Appendix D,  
100 Environmental & Energy](#)).

101 F-3.1.3. DEICING PAD LIGHTING

102 Deicing pad lighting eligibility is established under [49 U.S.C. § 47102](#), which includes constructing and  
103 reconstructing deicing pads and appropriate lighting as airport development. Because the statute  
104 specifies that deicing pads are only eligible for construction and reconstruction, if the primary purpose of  
105 the apron is as a deicing pad, the lighting is also only eligible for construction and reconstruction.

106 F-3.1.4. THERMOPLASTIC MARKINGS

107 [FAA AC 150/5340-1, Standards for Airport Markings](#), provides specifications for the use of thermoplastic  
 108 markings instead of paint for AOS and airfield markings. The use of thermoplastic markings in lieu of  
 109 paint requires additional justification, including a life cycle cost comparison demonstrating that the costs  
 110 are reasonable, and the procurement must meet [2 CFR Part 200](#) requirements.

111 **F-4. RELATED PROJECTS**

112 The projects in this section are not eligible for lighting, signage, or marking purposes; however,  
 113 references to related projects that may be eligible are provided as applicable.

114 **TABLE F-4.1. RELATED PROJECTS**

appr	When Scope of Work Includes	See Appendix
<b>Electrical Emergency Generator</b>	Documented as needed in an Energy Management Plan or equivalent planning document	D, Environmental & Energy
<b>Lighting</b>	Deicing pads	D, Environmental & Energy
	Approach lighting systems	G, NAVAIDS
	Security access control lighting	M, Security
<b>Runways, Taxiways, Aprons, and Taxilanes</b>	Construction, rehabilitation, reconstruction, extend, expand	B, Aircraft Operational Surfaces

115