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Airports



FAA Great Lakes Regional Engineer Update

Presented to: South Dakota 2021 Airports Conference

By: Michael Ferry, P.E., Senior Civil Engineer

Date: April 1, 2021



FAA
Office of Airports

Topics for Discussion

- **GA RSA Initiative**
- **What can I update on my 5010? (and how?)**
- **Modifications to FAA Standards**

RSAs Background

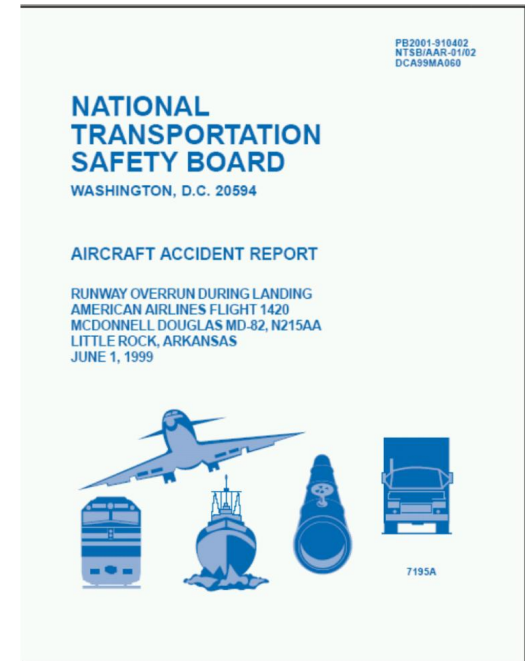
- June 1999: Commercial flight attempted landing on Runway 4R at Little Rock during thunderstorm
- Aircraft continued off the departure end, striking a support for the RW 22L Approach Lights
- Post-crash breakup and fire followed
- 11 fatalities, 110 injured



RSA Background

- **NTSB Investigation**

- **Finding #33: “The development of recent technologies to convert nonfrangible structures to frangible ones would provide a safety benefit to airport facilities.”**



Runway Safety Areas

- As a result of the Little Rock accident, the 1999 FAA Order 5200.8 (still current) required RSA determinations by June 2000 for all 14 CFR Part 139 (Air Carrier) airports, and **with master plans, or before major FAA re-investment in a runway**, for non-139 runways.

ORDER	U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION	5200.8
SUBJ: RUNWAY SAFETY AREA PROGRAM		
1. PURPOSE.		
This order establishes		
a. The Federal Aviation Administration's (FAA) Runway Safety Area (RSA) Program and		
b. The procedures that FAA employees will follow in implementing that program.		

An aerial photograph of an airport. A long, straight runway runs vertically through the center of the image. The runway has white markings, including a large '16' in the middle. To the left of the runway, there are taxiways and a large, dark, irregularly shaped area that appears to be a construction site or a large pit. In the foreground, there is a large, rectangular terminal building with a light-colored roof. A tall utility pole stands in front of the terminal. The surrounding area is mostly green grass and some paved areas.

**The FAA did
monumental RSAs
Program from 2000 —
2018 at air carrier
airports certificated
under 14 CFR 139.
However, the next step
is GA RSAs, which are
now being focused
strategically**

FAA GA RSA Goals

- 2021: Evaluate and develop plan for 10% of largest non-standard or unknown GA RSAs
 - Preliminary # in South Dakota: 4
- 2022: Draft plan is to assess all remaining GA RSAs at classified NPIAS airports



RSA Inventory

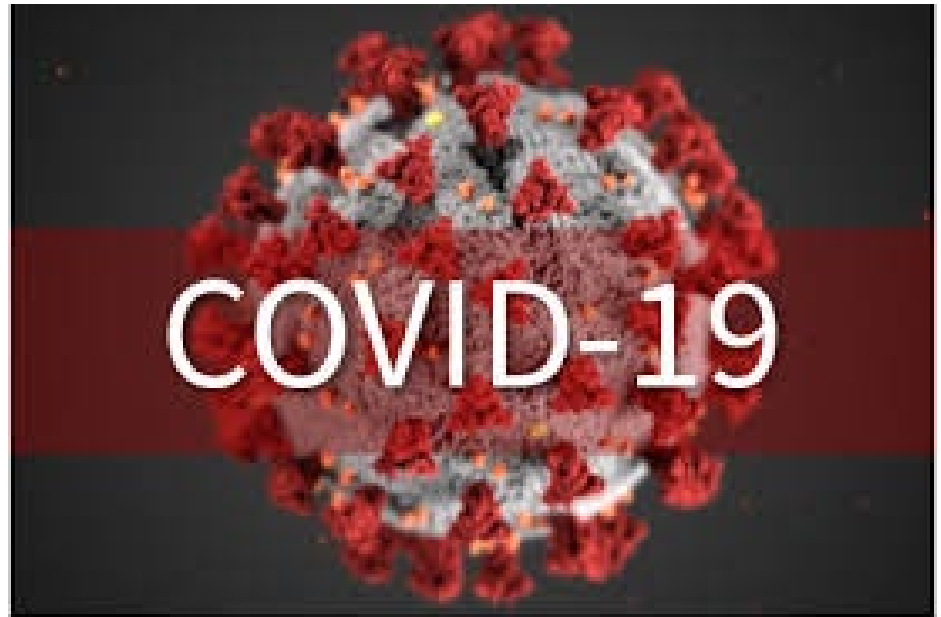
- “Evaluate”
- New FAA ADIP RSA tool
- Required for RSA Determination
- Entered by FAA staff, however info from Sponsor



Object Identification			Object Location				Object Status							Note
No	Type	Name	RWY End	RWY End Dist	L/R	L/R Dist	Fixed By Function	Can be Relocated	Frangible	Frangible to 3"	As Practicable	High Mass	Owner	
7	VNAVAID	REIL-25	25	0	L	121	✓		✓	✓			Airport	
8	VNAVAID	REIL-25	25	0	R	121	✓		✓	✓			Airport	
9	VNAVAID	PAPI-25	25	860	L	125	✓		✓	✓			Airport	
11	VNAVAID	PAPI-07 POWER	07	1097	L	210	✓		✓	✓			Airport	Crouse-Hinds PAPI. Power panel is therefore classified as Fixed By Function
12	VNAVAID	PAPI-25	25	860	L	147	✓		✓	✓			Airport	
13	VNAVAID	PAPI-25	25	860	L	169	✓		✓	✓			Airport	
14	VNAVAID	PAPI-25	25	860	L	190	✓		✓	✓			Airport	
15	VNAVAID	PAPI-25 POWER	25	860	L	201	✓		✓	✓			Airport	Crouse-Hinds PAPI. Power panel is therefore classified as Fixed By Function
16	SITE	FENCE	25	-997.1	L	176.5		✓					Airport	Approximate location. Mitigated by declared distances

RSA Inventory

- RSA assessments by ADO extremely limited
 - FAA travel currently extremely limited
 - Some airports may have ADO outreach seeking needed info from you, as our 'eyes', to help complete your RSA inventory



RSA – Fixed by Function NavAids

- Items allowed in RSA, due to function
- Must be frangible
- ADO will coordinate FAA owned violations will be documented for FAA's Facilities considerations

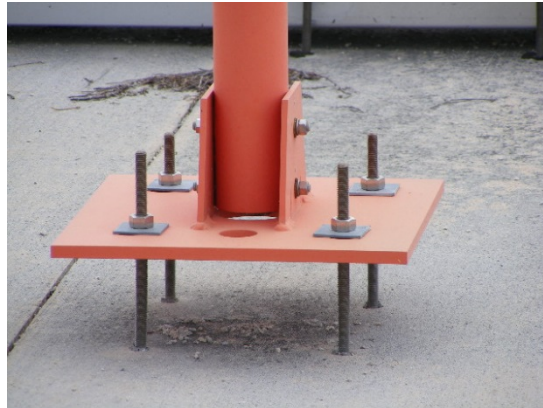
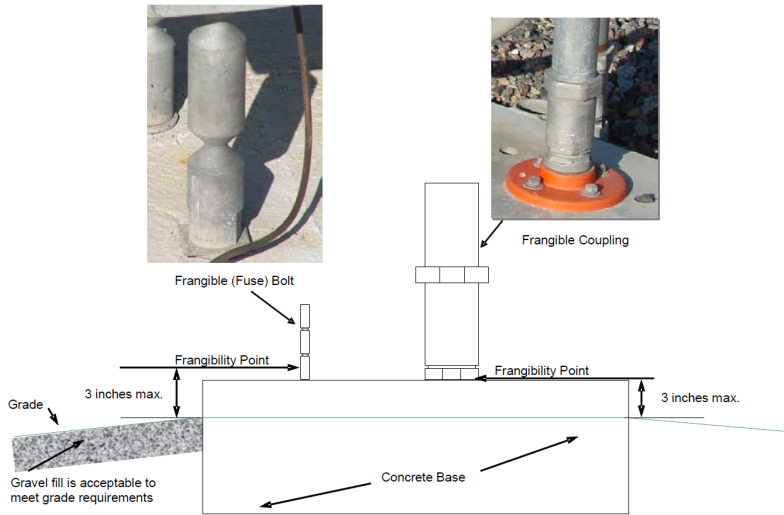
Table 6-1. Fixed-by-function designation for NAVAID and Air Traffic Control (ATC) facilities for Runway Safety Area (RSA) and Runway Object Free Area (ROFA)

NAVAID	Fixed-By-Function		
	In RSA	In ROFA	Associated Equipment
Airport Beacon	No	No	N/A
ALS	Yes	Yes	No ¹
ASDE-X	No	No	N/A
ASOS, AWOS	No	No	N/A
ASR	No	No	N/A
ATCT	No	No	N/A
DME	No	No	No
GS	No ²	No ^{2,3}	No
IM	Yes	Yes	Yes
LDIN	Yes	Yes	No ¹
LOC	No	No	No
LLWAS	No	No	No
MM	No	No	No
NDB	No	No	N/A
OM	No	No	No
PRM	No	No	No
REIL	Yes	Yes	No ¹
Runway Lights and Signs	Yes	Yes	No
RTR	No	No	No
RVR	No	Yes	Yes
RWSL	Yes	Yes	No
Taxiway Lights and Signs	Yes	Yes	No
VOR/TACAN/VORTAC	No	No	N/A
PAPI & VASI	Yes	Yes	No
WAAS	No	No	No
WCAM	No	No	No
WEF	No	No	No
Wind Cone	No	No	No

Notes:

1. Flasher light power units (Individual Control Cabinets) are fixed-by-function.
2. End Fire glideslopes are fixed-by-function in the RSA/ROFA.
3. Allowing a GS within ROFA due to a physical constraint should be evaluated on a case-by-case basis.

Typical RSA Violations – Frangibility Standards



See FAA Engineering Brief 79A

Typical RSA Violations – Not Fixed-By-Function



See FAA Engineering Brief 79A

Runway Safety Areas

Benefits of frangibly mounted equipment

- MDW Sep 2003
- No fatalities
- Aircraft overran runway end, struck localizer, but remained intact



What are we all looking for?

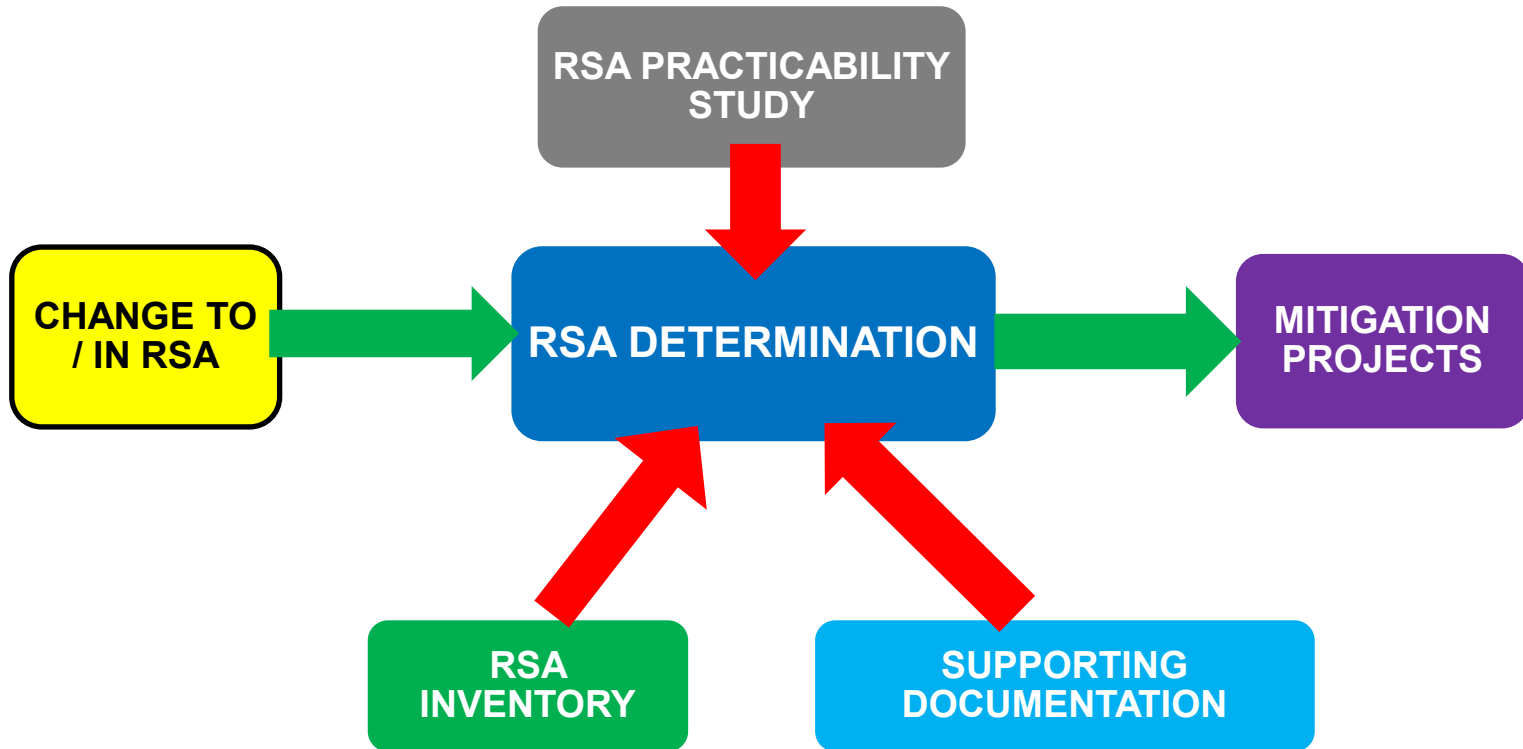
- Inspect your equipment to ensure it is maintained (e.g., grading of equipment bases)



Typical RSA Violations – Others



Big Picture: How does RSAD work?



RSAD Mitigations

Examples of Mitigations

- **Land Acquisition**
- **RSA Improvement Construction (such as airfield grading, retaining walls, airfield drainage projects, etc.)**
- **Road Realignment or Relocation**
- **Use of Declared Distances (modifications to the ASDA & LDA)**
- **Threshold Displacement**
- **EMAS (per FAA Order 5100.9)**

Correcting RSAs - Requirements

- Must be continuously evaluated for all practicable alternatives **until the RSA meets all standards**
 - Incremental improvements are common
- Runway and RSA improvement **projects must comply with the RSA Determination approved by AGL-600**

How Do I update 5010 Info in ADIP?

- Step 1: Review Info before starting an update
- NEW: Airport Master Record Updates – ‘Projects’

ADIP Portal Home Facility Dashboard Help Michael Ferry

Airport Data and Information Portal - Home

COVID-19 NOTICE: Please click here to see the latest ADIP updates related to COVID-19

Search 5010 Facilities by Name or Loc Id...

★ Manage Favorite Facilities
(DTW) DETROIT METRO WAYNE COUNTY
(ORD) CHICAGO O'HARE INTL
(MSP) MINNEAPOLIS-ST PAUL INTL/WOLD-1

Go To Advanced Facility Search

AGIS Survey Projects

- My Survey Projects
- Projects Pending Approvals
- Test a Survey File
- Survey Reports
- User Guides & Templates

Airport Master Record (AMR)

- View Facility Data (Airport/Heliport)
- Update Facility Data (Airport/Heliport)**
- View Submissions
- Airport Change Log
- User Guide

Modification of Standard (MOS) Runway Safety Area (RSA) Search Wind Data

How Do I update 5010 Info in ADIP?

- Airport limited to Addition Info submissions (normally State or 139 inspector will update 5010 for NPIAS airports)

The screenshot displays the 'Update Facility Data' interface in the ADIP (DEV) system. The page includes a navigation bar with 'Portal Home' and 'Facility Dashboard' links, and a 'Help' button. The main content area is divided into two sections: 'Select Facility To Update' and 'Chart Supplement Submission Cut-Off Dates'.

Select Facility To Update

Facility:
This is an "auto-lookup" field; type locator ID or airport name.

Submission Type:

Chart Supplement Submission Cut-Off Dates

Effective Date	Cut-Off Date
Dec 31, 2020	Nov 18, 2020
Dec 8, 2020	Dec 7, 2020
Feb 25, 2021	Jan 13, 2021
Apr 22, 2021	Mar 10, 2021
Jun 17, 2021	May 5, 2021
Aug 12, 2021	Jun 30, 2021

How Do I update 5010 Info in ADIP?



Quick Links ...

- What can I update?

Airport Data and Information Portal - Online Help

[+ Expand All](#) [- Collapse All](#)

- [Airports](#)
- [Info for Surveyors](#)
- [Update My Account](#)
- [Update My Password](#)
- [Airport Survey Projects](#)
- [Survey Viewer User Guide](#)
- [Modification of Standards \(MOS\)](#)
- [Facility Documents](#)
- [Support Desk User Guide](#)
- [Airport Master Record \(AMR\)](#)
 - [Airport Master Record Data Dictionary](#)
 - [Airport data submission workflow \(for Airport Owners/Managers\) \(PDF\) \(PowerPoint\)](#)
 - [Airport Master Record \(AMR\) User Guide](#)
 - [Airport Master Record Data Dictionary](#)
 - [Airport Master Record Field Permissions](#)
 - [Aeronautical Data Team \(formerly NEDC\)](#)

Quick Links:

- [ADIP Home](#)
- [Public User Registration](#)
- [MyAccess](#)
- [Public Login](#)
- [Online Help](#)
- Public Tools**
 - [Facility Search](#)
 - [Wind Analysis](#)
 - [Download Private Airport Report](#)

ADIP 5010 Field Permissions

- Fairly limited without ADO coordination

Field #	Field Name	Airport Manager	FAA	STATE	State Inspector	Remarks Required	Comments
21	Elevation	N	N	N	N	N	FAA FORM 7480-1 REQUIRED
	Survey Method	N	N	N	N	N/A	
22	Acreage	Y	Y	Y	Y	N	
23	Right Traffic	N	N	N	N	N	FAA FORM 7480-1 REQUIRED
24	Non.-Comm. Landing Fee	Y	Y	Y	Y	N	
25	NPIAS/Federal Agreement	N	Y	N	N	N	
26	FAR 139 Index	N	Y	N	N	N	
26	FAR 139 Carrier	N	Y	N	N	N	
26	FAR Part 139 Date	N	Y	N	N	N	
30	Runway/Helipad ID	N	N	N	N	N	FAA FORM 7480-1 REQUIRED
31	Length	N	N	N	N	N	FAA FORM 7480-1 REQUIRED
32	Width	N	N	N	N	N	FAA FORM 7480-1 REQUIRED

How Do I update 5010 Info in ADIP?

- Program highlights pending changes and allows you to undo

Viewing Comparison Between Your Changes and FAA Data

When a value is changed and saved in the ADIP AMR application, the data field for the particular item will be highlighted (yellow). Placing your mouse cursor over this highlighted field will display a comparison tool tip window displaying the differences between the official FAA data and the changed data entered. (See FIGURE 29: DATA COMPARISON TOOL TIP).

Facilities	
80. Airport Beacon ⓘ	C-Clear <input type="text"/> <input type="button" value="↶"/> <input type="button" value="🗨"/>
81. Airport Lighting Schedule ⓘ	SS-SR (Sunset to S <input type="text"/> <input type="button" value="🗨"/>
Airport Beacon Light Schedule	SS-SR (Sunset to S <input type="text"/> <input type="button" value="🗨"/>
85. Control Tower ⓘ	Y <input type="text"/>
86. Flight Service Station (FSS) ⓘ	MONTGOMERY COUNTY <input type="text"/>
87. FSS on Airport ⓘ	N <input type="text"/>

FAA Value - CG-Clear Green

How Do I update 5010 Info in ADIP?

- Check Project Summary before submitting changes

The screenshot displays the ADIP (DEV) web application interface. The top navigation bar includes 'Portal Home' and 'Facility Dashboard'. The left sidebar contains 'Project Summary' (highlighted with a blue arrow), 'Facility Data', and a 'Back To Project List' button. A yellow banner provides instructions: 'For Airports with no data changes, click on "Submit Changes" button to keep your airport active.' The main content area is divided into several sections: 'Project Information' (Project Type: Additional Information, Created By: Demo Inspector, Created Date: Today 9:17 PM, Last Modified By: Demo Inspector, Last Updated Date: Today 9:17 PM), 'Notes' (with an 'Add Note' button), 'Project Activity' (a table of recent actions), and 'List AMR Data Changes' (a table of data changes, highlighted with a red border). At the bottom, there are 'Terminate Project' and 'Submit Changes' buttons.

Project Information

Project Type: Additional Information
Created By: Demo Inspector
Created Date: Today 9:17 PM
Last Modified By: Demo Inspector
Last Updated Date: Today 9:17 PM

Project Activity

Date	User	Action
Today 9:17 PM	Demo Inspector	Updated AMR Data
Today 9:17 PM	Demo Inspector	Created Project

List AMR Data Changes

	Action	Previous Value	New Value
Airport0 - Direction	EDIT	East	West South West
Airport3 - CBD to Airport (NM)	EDIT	2	22

MOS Overview

- **MOS definition, requirements and process are found in FAA Order 5300.1G**

- **MOS Definition:**

“Any deviation from, or addition to standards, applicable to airport design, material, and construction standards, or equipment projects resulting in an acceptable level of safety, useful life, lower costs, greater efficiency, or the need to accommodate an unusual local condition on a specific project through approval on a case-by-case basis.”



What does MOS pertain to?

- **Deviations to projects involving Federal funds** OR as required to support public approach procedure
- Only Airports Division standards
 - Applicable to design AC 5300-13 and lighting (5300 series ACs)
 - Construction methods and materials (AC 5370-10)
 - Equipment Projects (AC 5200 series)

	U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION	ORDER NUMBER 5300.1G
	National Policy	Effective Date: 9/29/17
SUBJ: Modifications to Agency Airport Design, Construction, and Equipment Standards		
<p>1. Purpose of this Order. This order establishes the process for the initiation, revision, coordination, and management of Modifications of Standards (MOS) applicable to airport design, construction material, and equipment projects. This order is the foundation of a web-based automated application of MOS. The automated application for submitting MOS is a step-by-step process facilitated within Airports Geographic Information System (AGIS).</p>		

Construction

- Most common type of MOS



WHO IS INVOLVED?

- Sponsor / Consultant
- FAA
 - Others Lines of Business as needed
 - ADO
 - Regional Office
 - Headquarters



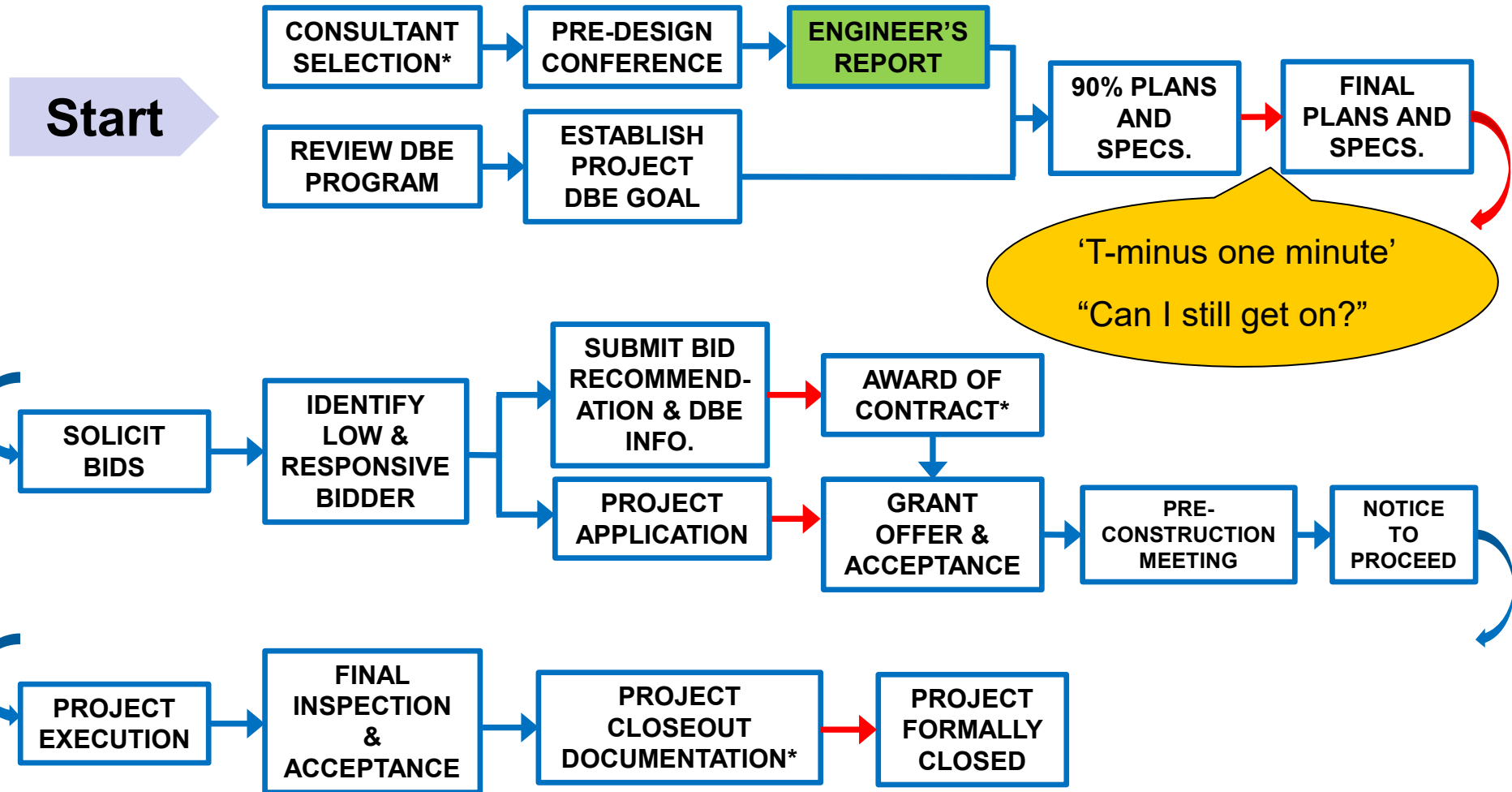
MOS – When?

- **Before FAA review of ALP with proposed non-standard design**
- **New Scheduled Service Design Aircraft**
 - Operational restrictions?
- **Construction MOS completed with Engineer's design Report for P&S Review (Before Final Design!)**



Grant Process Overview

→ SEEK FAA APPROVAL PRIOR TO NEXT STEP



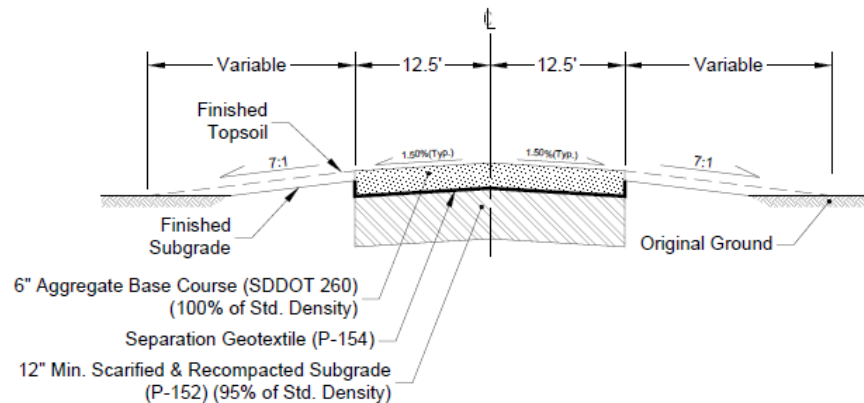
MOS - When?

- **Most effective** prior to project Scope / CIP (3+ years)
- **Good Planning can often eliminate MOS**
 - Even for existing MOS, at 5 year expiration, Sponsor must demonstrate efforts and why MOS is still needed
- **MOS must be reviewed whenever there is an opportunity to meet standards (i.e. grant, operational change)**



Taxiway Design

Standard Crown

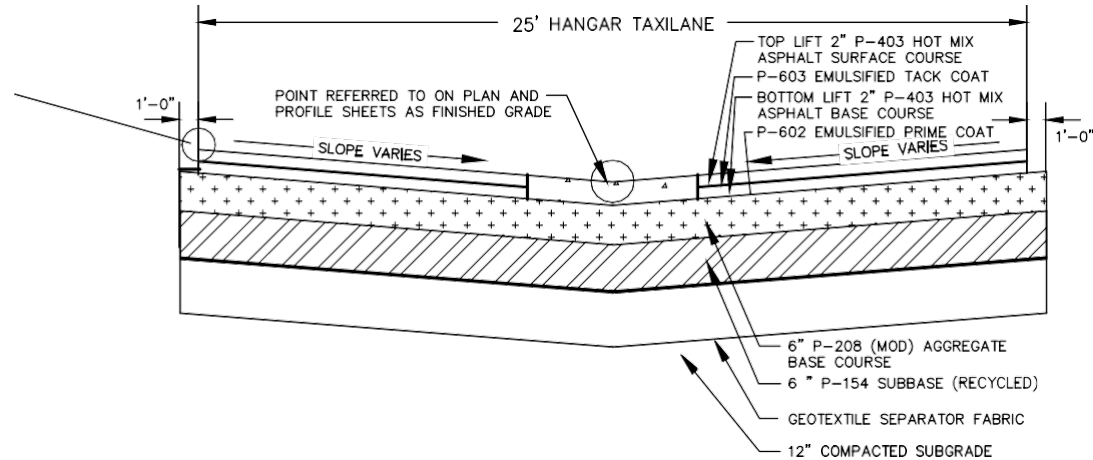


- **Drainage goes off the side of the taxiway.**
- **No area of ponding occurs on the taxiway.**
- **Is AIP eligible.**



Taxiway Design

Inverted Crown



- Designed to drain to the center of the taxiway.
- Does not meet design standards.
- **Not AIP eligible** without an approved MOS.
- An MOS will most likely not be approved.



Keys to State Specs in lieu of P-403

P-403

State highway department specs **may** be used in lieu of this specification for:

1. Access roads, perimeter roads and other pavements not subject to aircraft loading
 2. Stabilized base courses under Item P-501
 - 3. Pavements designed for aircraft gross weight of ~~12,500~~ 30,000 pounds or less**
- If density requirement is not specified, it shall be modified to include 403 requirements
 - Must have a demonstrated satisfactory performance record under equivalent loadings and exposure.
 - Include all applicable/approved state specifications

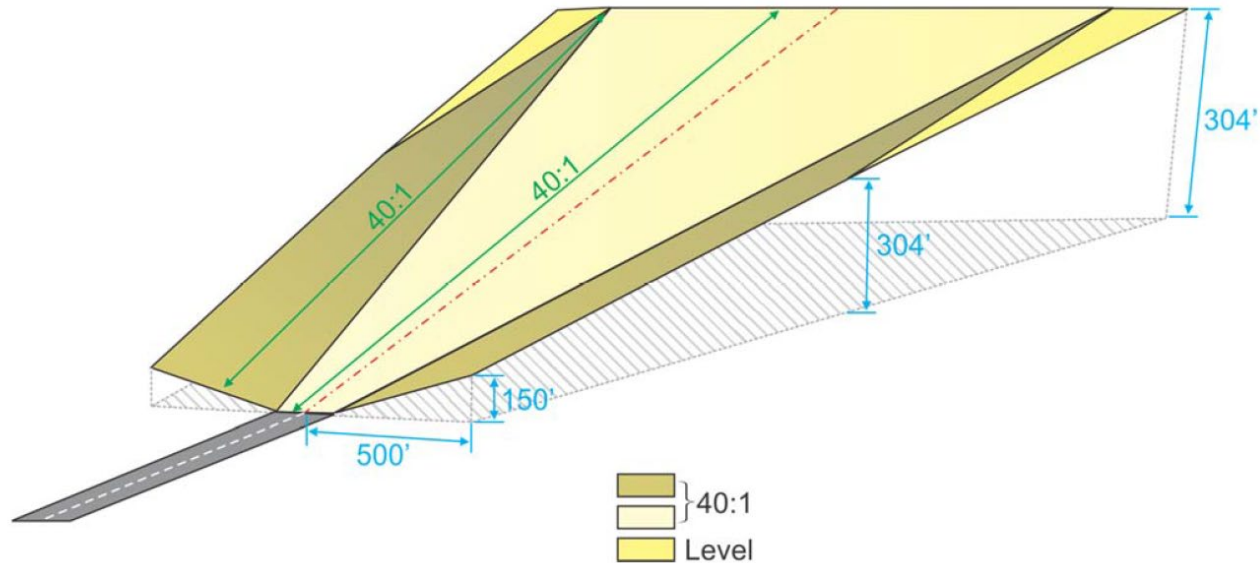
**Not
a
MOS**

The use of state highway specifications for pavements subject to aircraft loading greater than 30,000 pounds and less than 60,000 pounds requires a MOS

40:1 Departure Surface

- FAA is evaluating the possibility of modifying the 40:1 departure surface
- Impacts AFP, ATO and Airport Operators
- The FAA is completing its risk assessment

Done



Approach/Departure Holding Positions

(Still ongoing)

- Delayed implementation due to:
 - various publication revisions
 - controller training
- Need to coordinate locations with ATCT during design phase
- Displaced thresholds that only affect the approach surface may retain the APCH legend but must update the hold line marking

Questions


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