



# Modifications to FAA Standards

## EXAMPLE

Presented at: Workshop for the  
Implementation of Procedures  
for Initial Aerodrome  
Certification & Continuing  
Aerodrome Safety Oversight

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Federal Aviation  
Administration





# Session Objectives

- A. Background - Example**
- B. MOS Process**
- C. Describe Mitigations**
- D. Lines of Business Review**



# Background (handout)



# Background (handout)

- **Airport Layout Plan shows the Runway Design Code (RDC) is a B-III**
- **There are (1,197 “C” Category Operations and 830 Group “III” Operations in 2017)**
- **Critical aircraft is the Q-400 (C-III Aircraft)**
- **The Runway Centerline to Parallel Taxiway Centerline distance is 300’**
- **Runway 9 has visual approach only**
- **Runway 27 RNAV (GPS) has Visibility Minimums not lower than 1 mile**



# Question

**Airport wants to Reconstruct their Apron Pavement.  
They are asking for funding.**


**Do they need to submit a Modification to Standards?**

**Which Standard are they violating?**



# Background (handout)

**A-I**



- Beech Baron 55
- **Beech Bonanza**
- Cessna 150
- Cessna 172
- Cessna Citation Mustang
- Eclipse 500/550
- Piper Archer
- Piper Seneca

**C-I, D-I**



- Beech 400
- **Lear 31, 35, 45, 60**
- Israeli Westwind

**B-I**



- Beech Baron 58
- Beech King Air 100
- Cessna 402
- **Cessna 421**
- Piper Navajo
- Piper Cheyenne
- Swearingen Metroliner
- Cessna Citation I (525)

**C-II, D-II**



- **Cessna Citation X (750)**
- Gulfstream 100, 200, 300
- Challenger 300/600
- ERJ-135, 140, 145
- CRJ-200/700
- Embraer Regional Jet
- Lockheed JetStar
- Hawker 800

**B-II** *less than 12,500 lbs.*



- **Super King Air 200**
- Cessna 441
- Cessna 208 Caravan
- DHC Twin Otter
- Pilatus PC-12

**C-III, D-III** *less than 100,000 lbs.*



- ERJ-170
- CRJ 705, 900
- Falcon 7X
- **Gulfstream 500, 550, 650**
- Global Express, Global 5000
- Q-400

**B-I, B-II** *more than 12,500 lbs.*



- Super King Air 350
- Beech 1900
- Jetstream 31
- Falcon 10, 20, 50
- Falcon 200, 900
- **Citation II, III, IV, V**
- Saab 340
- Embraer 120

**C-IV, D-IV**



- B-757
- B-767
- **C-130 Hercules**
- DC-8-70
- MD-11

**A-III, B-III**



- DHC Dash 7
- **DHC Dash 8**
- DC-3
- Convair 580
- Fairchild F-27
- ATR 72
- ATP

**D-V**



- **B-747-400**
- B-777
- B-787
- A-330, A-340

# Background (handout)

		MMH Existing Conditions	B-III Design Standards	C-III Design Standards
<b>Visibility Minumums</b>		Rwy 9 Visual Rwy 27 > 1 mile	Rwy 9 Visual Rwy 27 > 1 mile	Rwy 9 Visual Rwy 27 > 1 mile
<b>Runway Design</b>		<sup>1</sup>	<sup>2</sup>	<sup>3</sup>
	Runway Length*	7000		
	Runway Width	100	100	150
	Runway Shoulder	10	20	25
	Blast Pad Width	150	140	200
	Blast Pad Length	200	200	200
<b>Runway Protection</b>				
<b>Runway 9 Safety Area (RSA) (No VGSI)</b>				
	Length beyond Departure End	600	600	1000
	Length prior to Threshold	600	600	600
	Width	300	300	500
<b>Runway 27 Safety Area (RSA) (VGSI = PAPI)</b>				
	Length beyond Departure End	600	600	1000
	Length prior to Threshold	600	600	600
	Width	300	300	500
<b>Runway Object Free Area (ROFA)</b>				
	Length beyond Departure End	600	600	1000
	Length prior to Threshold	600	600	600
	Width	720	800	800
<b>Runway Object Free Zone (ROFZ)</b>				
	Length (beyond Each Runway End)	200	200	200
	Width	400	400	400
<b>Runway Protection Zone (RPZ)</b>		<sup>5</sup>		
	Length	1000	1000	1700
	Inner Width	500	500	500
	Outer Width	700	700	1010
	Acres	13.77	13.77	29.465
<b>Runway Seperation</b>				
<b>Runway Centerline to:</b>				
	Holding Position	220	200	250
	Parallel Taxiway/Taxilane Centerline	300	300	400
	Aircraft Parking Area	400	400	500
	Helicopter Touchdown Pad	NA		



# Background (handout)

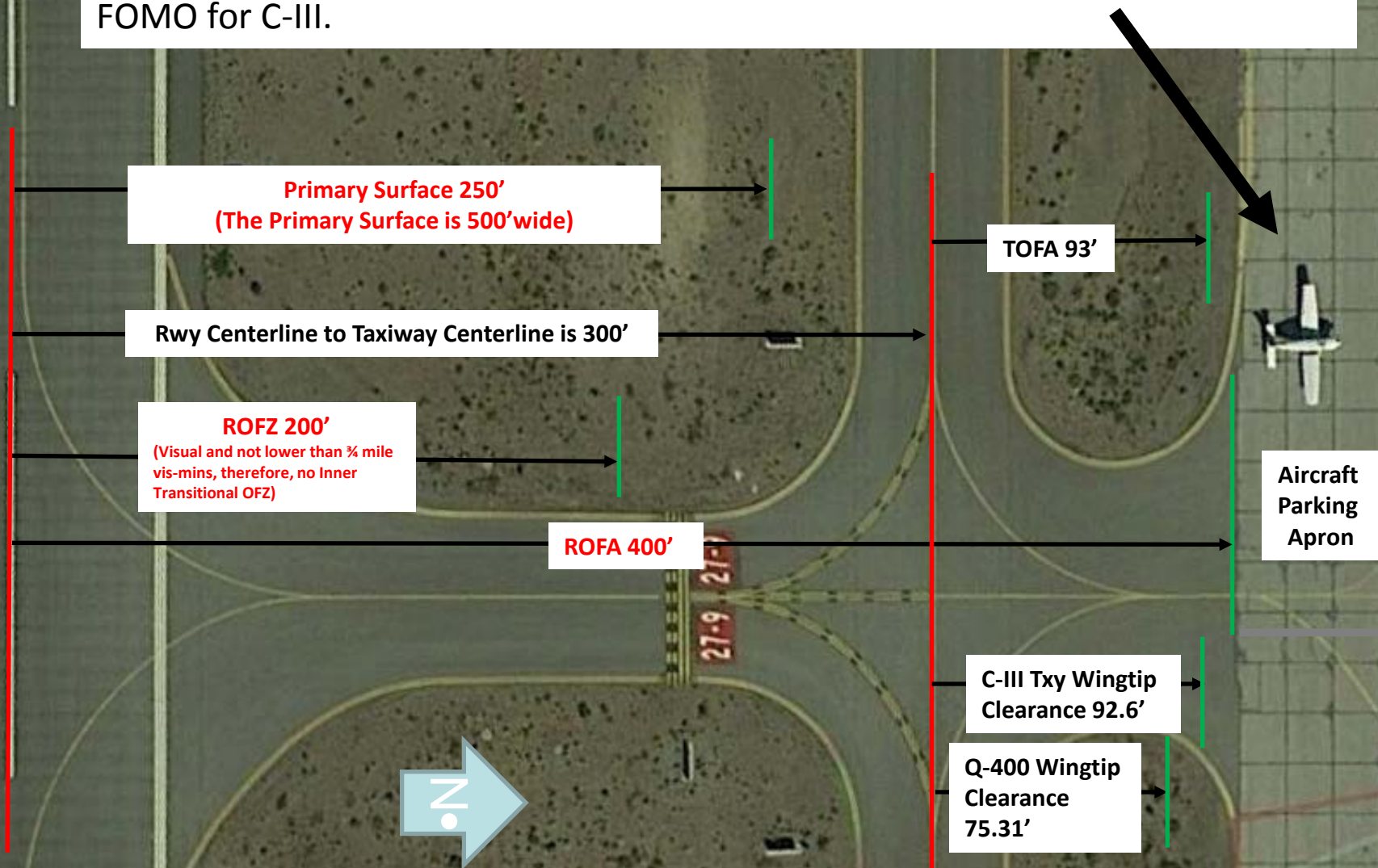
**Table 4-1. Design standards based on Airplane Design Group (ADG)**

ITEM	DIM (See Figure 3-26)	ADG					
		I	II	III	IV	V	VI
<b>TAXIWAY PROTECTION</b>							
TSA	E	49 ft (15 m)	79 ft (24 m)	118 ft (36 m)	171 ft (52 m)	214 ft (65 m)	262 ft (80 m)
Taxiway OFA		89 ft (27 m)	131 ft (40 m)	186 ft (57 m)	259 ft (79 m)	320 ft (98 m)	386 ft (118 m)
Taxilane OFA		79 ft (24 m)	115 ft (35 m)	162 ft (49 m)	225 ft (69 m)	276 ft (84 m)	334 ft (102 m)
<b>TAXIWAY SEPARATION</b>							
<i>Taxiway Centerline to Parallel Taxiway/Taxilane Centerline</i> <sup>1</sup>	J	70 ft (21 m)	105 ft (32 m)	152 ft (46.5 m)	215 ft (65.5 m)	267 ft (81 m)	324 ft (99 m)
<i>Taxiway Centerline to Fixed or Movable Object</i>	K	44.5 ft (13.5 m)	65.5 ft (20 m)	93 ft (28.5 m)	129.5 ft (39.5 m)	160 ft (48.5 m)	193 ft (59 m)
<i>Taxilane Centerline to Parallel Taxilane Centerline</i> <sup>1</sup>		64 ft (19.5 m)	97 ft (29.5 m)	140 ft (42.5 m)	198 ft (60 m)	245 ft (74.5 m)	298 ft (91 m)
<i>Taxilane Centerline to Fixed or Movable Object</i>		39.5 ft (12 m)	57.5 ft (17.5 m)	81 ft (24.5 m)	112.5 ft (34 m)	138 ft (42 m)	167 ft (51 m)
<b>WINGTIP CLEARANCE</b>							
Taxiway Wingtip Clearance		20 ft (6 m)	26 ft (8 m)	34 ft (10.5 m)	44 ft (13.5 m)	53 ft (16 m)	62 ft (19 m)
Taxilane Wingtip Clearance		15 ft (4.5 m)	18 ft (5.5 m)	22 ft (6.5 m)	27 ft (8 m)	31 ft (9.5 m)	36 ft (11 m)





Consistent with FAA Standards, no part of a parked aircraft (tail, wingtip, nose, etc.) is within the C-III ROFA or penetrating the OFZ. Also, no part of a parked aircraft is within the TOFA, Taxiway to object wingtip clearance, or Taxiway FOMO for C-III.



# Laws and Regulations

## • Airport and Airway Improvement Act:

- 49 U.S. Code § 47105 – Project Grant Applications - (b)(3) requires compliance with FAA standards.
- An application for a project grant under this subchapter may propose airport development **only if the development complies with standards** the Secretary prescribes or approves, including standards for site location, airport layout, site preparation, paving, lighting, and safety of approaches.

## • Airport Improvement Program:

## • Passenger Facility Charge:



# Background (handout)

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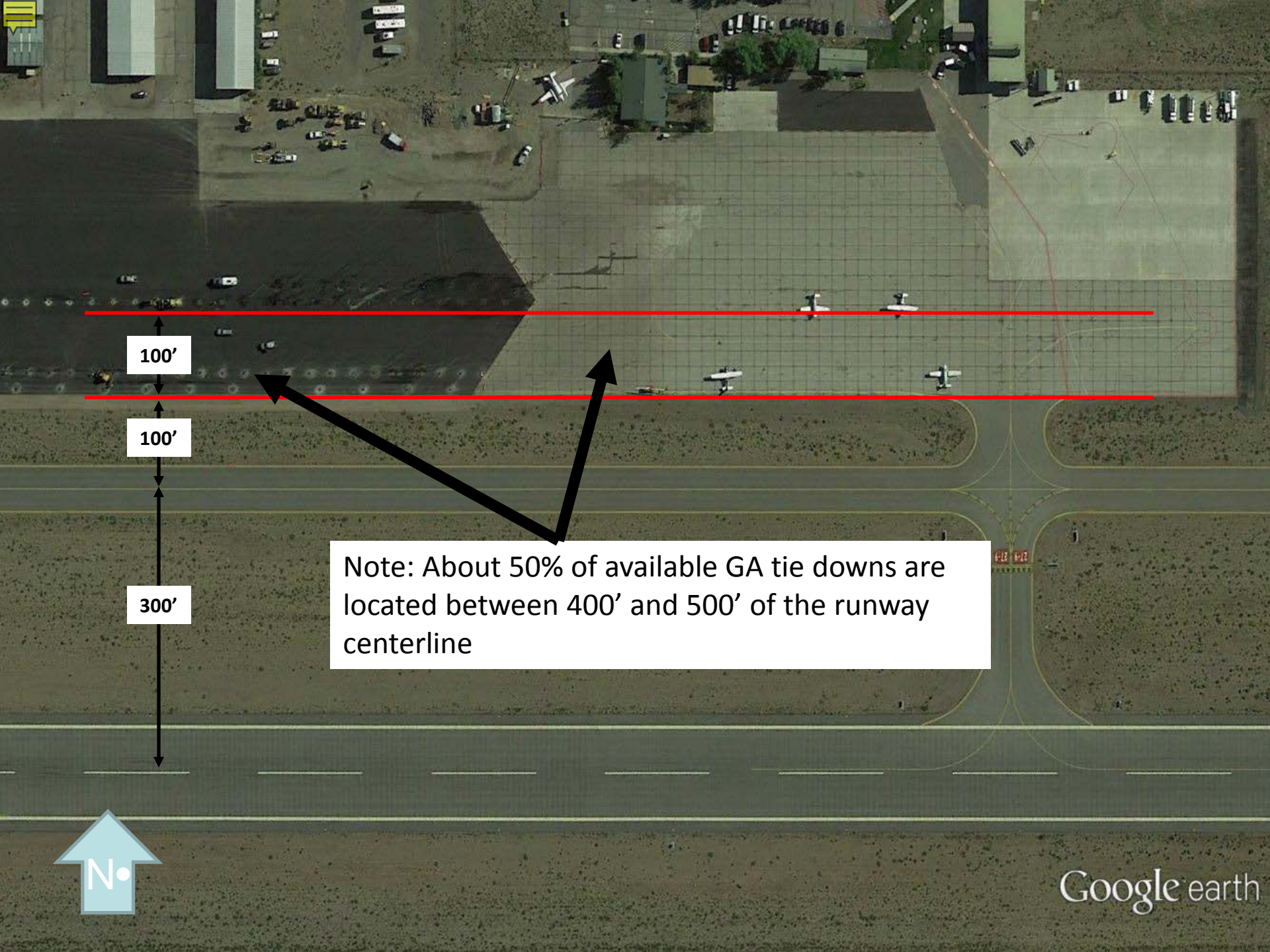




# Which MOS do they need to consider?

- **MOS No1:** The RW  $\mathcal{C}$  to Parallel TW  $\mathcal{C}$  distance is 300'.  
**Needs to be 400'**
- **MOS No2:** The RW  $\mathcal{C}$  to Aircraft Parking is 400'.  
**Needs to be 500'**
- **MOS No3:** The Runway Object Free Area Width is 720'.  
**Needs to be 800'**
- **MOS No4:** The Length beyond the Departure End is 600'.  
**Needs to be 1000'**





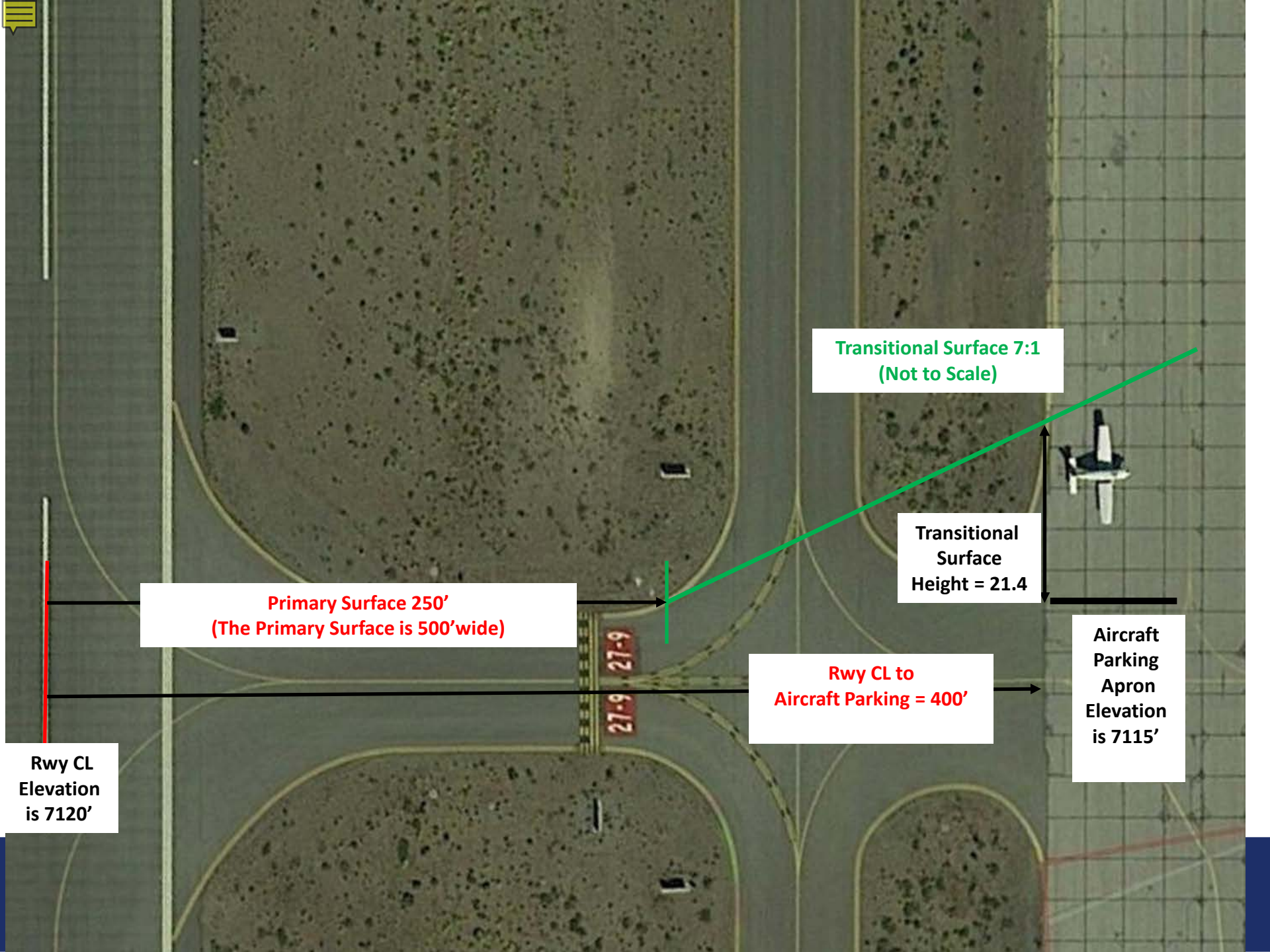
100'

100'

300'

Note: About 50% of available GA tie downs are located between 400' and 500' of the runway centerline





**Primary Surface 250'**  
**(The Primary Surface is 500' wide)**

**Transitional Surface 7:1**  
**(Not to Scale)**

**Transitional Surface**  
**Height = 21.4**

**Rwy CL to**  
**Aircraft Parking = 400'**

**Aircraft Parking**  
**Apron**  
**Elevation**  
**is 7115'**

**Rwy CL**  
**Elevation**  
**is 7120'**

# Recommended Management of GA Aircraft Parking

1. Continue practice of utilizing parking farthest from the runway first and using the parking closer to the runway only when needed to meet demand.

4. The tail height of Q400 is 27.4' therefore relocation avoids penetration of Transitional Surface.

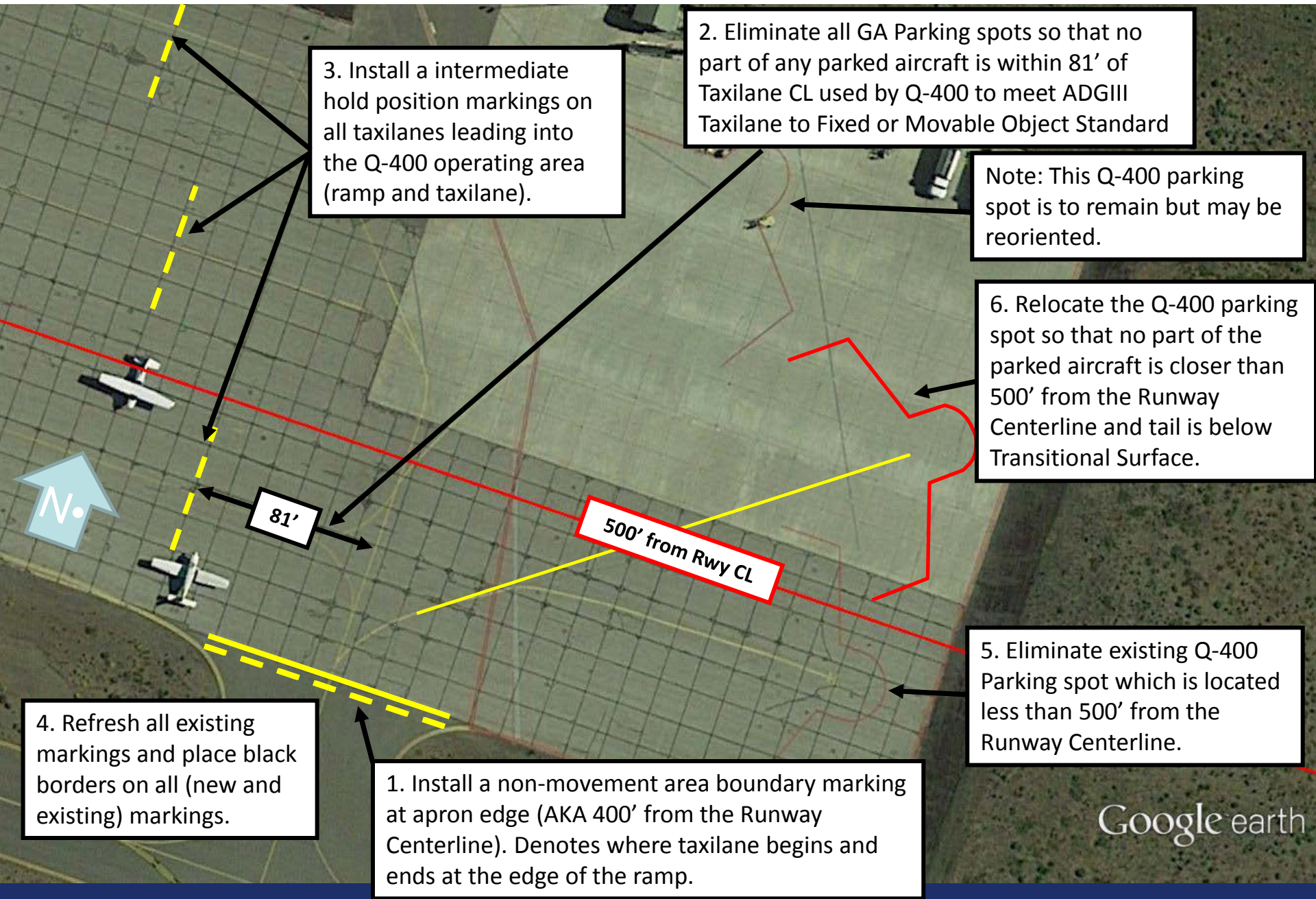
2. At 400' from the Rwy Centerline the Part 77 Transitional Surface is 21.4' above ground level. Limit Aircraft Parking in row closest to runway to Group I aircraft only and/or aircraft with tail heights of 20' or less to avoid penetrations of Transitional Surface.

3. At 500' from the Rwy Centerline the Part 77 Transitional Surface is 35.7' above ground level. Limit Aircraft Parking in second row to aircraft with tail heights of 35' or less to avoid penetrations of Transitional Surface.

Note: The apron area elevation varies from 0' to minus 5' below the nearest runway centerline elevation. However, for the purposes of this discussion the apron is presumed to be equal to the nearest runway elevation.



# Recommended Reconfiguration and Marking of Q-400 Apron and Adjacent Areas





# Session Objectives

- A. Background - Example**
- B. MOS Process**
- C. Describe Mitigations**
- D. Lines of Business Review (NEXT!)**



# Discussion



Federal Aviation  
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