# Safety and Engineering

## Airports Runway Incursion Mitigation (RIM) Program

Prepared for: 2018 Southwest Region Airport Conference

Presented by: Joseph G. Washington
Manager, Airports Safety and Standards Branch, ASW-620

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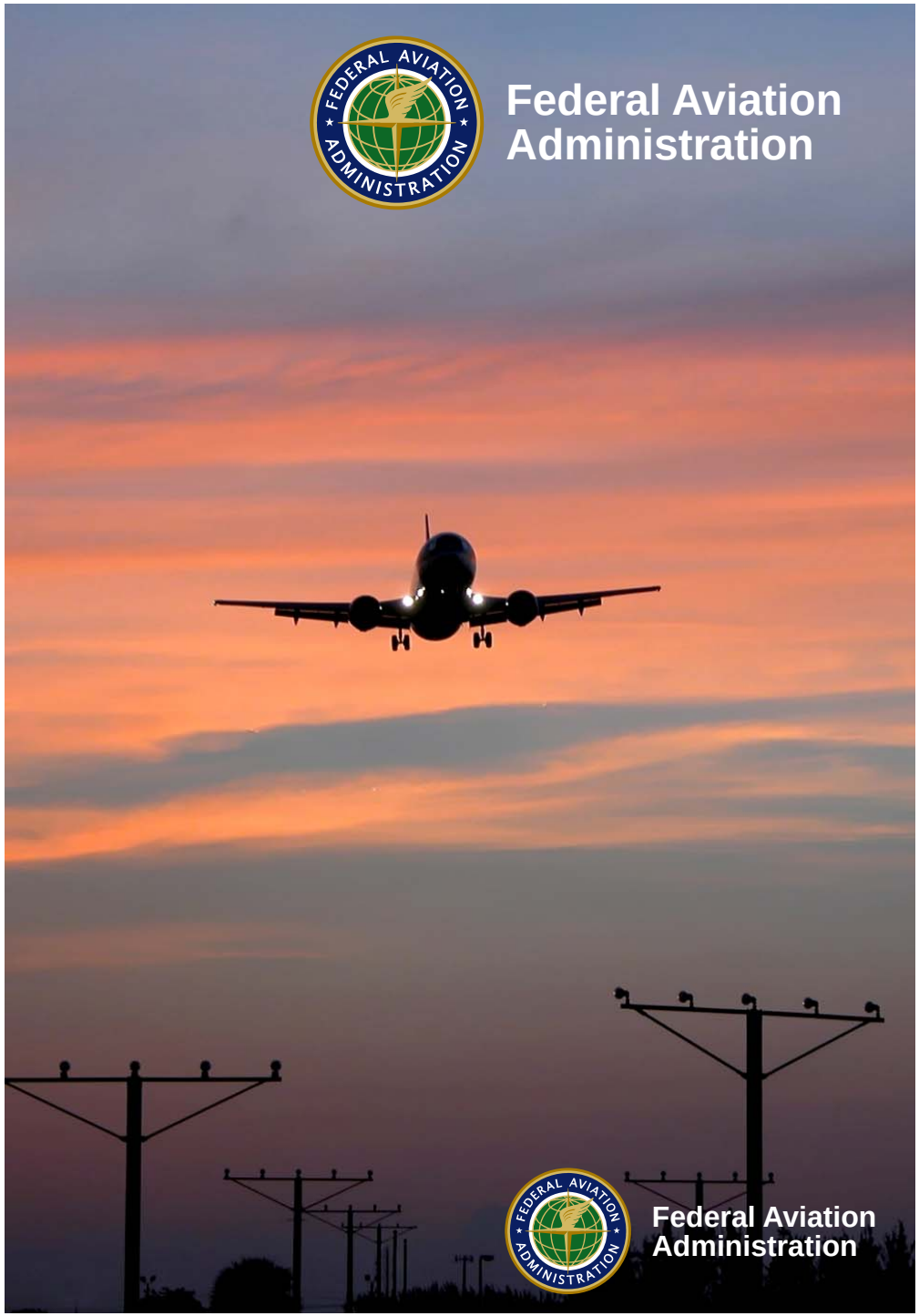


# RSA & RIM Program Video

# What is the RIM Program?

**An Airports Division Program, officially begun in 2015, that:**

- Identifies
- Prioritizes; and
- Develops strategies

**With Sponsors and FAA LOBs to**

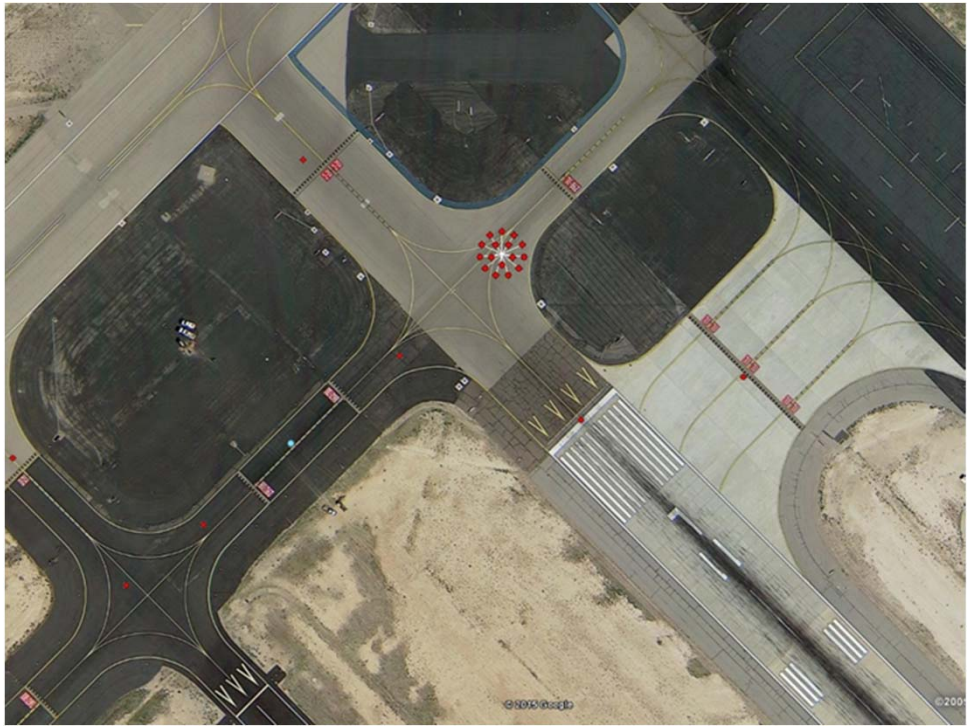
- Mitigate problematic airfield geometry; and/or
- Marking and/or lighting and signage

**Inconsistent with FAA Standards that might contribute to Runway Incursions (RIs).**

# RIM Program Location = RI Data + Point Validation

**Locations Determined by:**

- 3 or more RI (V/PDs & PDs) in a CY
- Average of 1 or more RI per year over study period (2007-2015, but ongoing reevaluation)
- ADO/RO personnel review RI event information and validate georeferenced location and geocoded cause of RI event



A RIM Location may be a hotspot, but a hotspot is not necessarily a RIM Location!

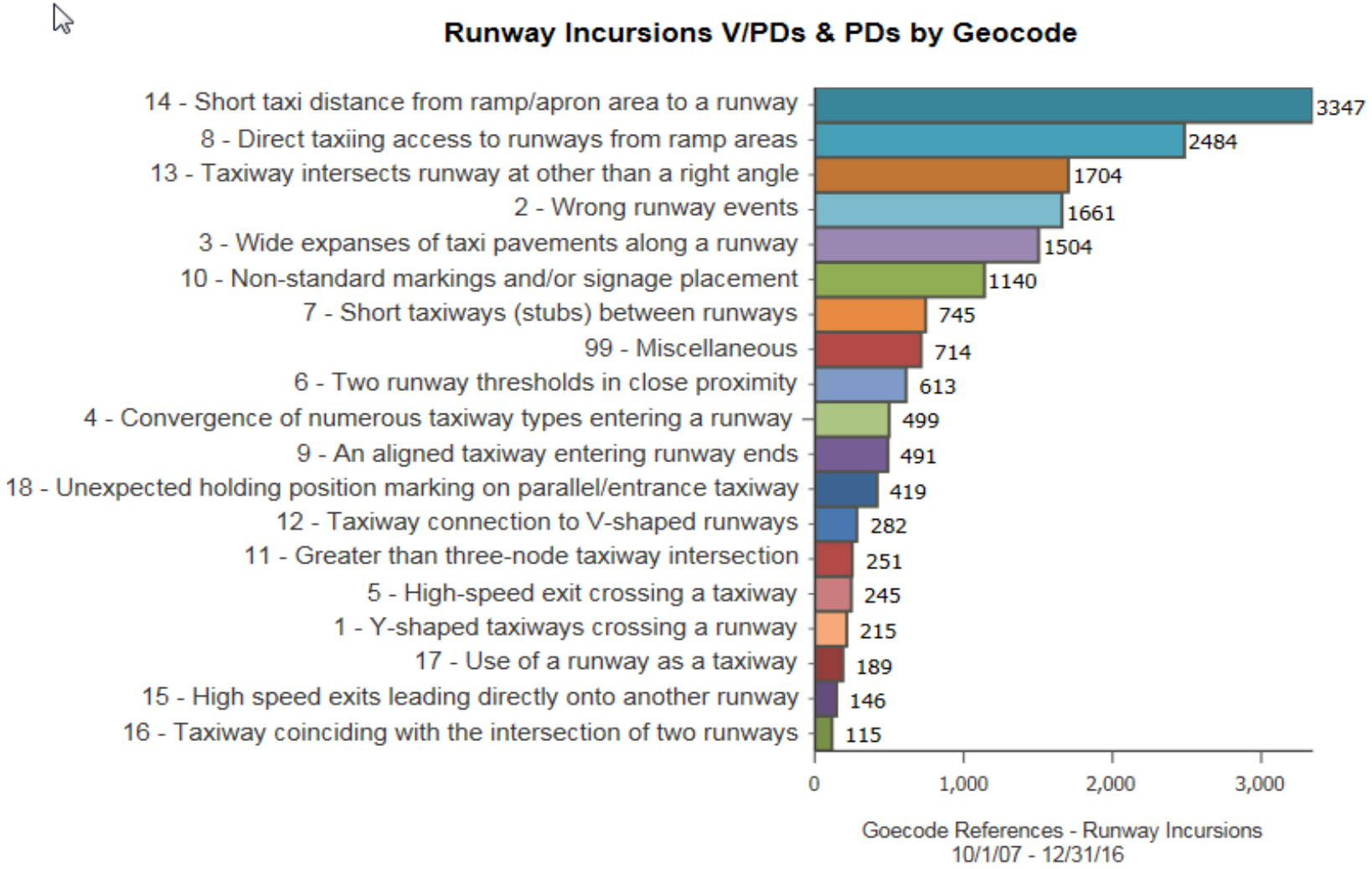
# 19 RIM Geocodes (Causes of RI)

1. Y-shaped Taxiways crossing a Runway
2. Wrong runway events
3. Wide expanses of taxi pavements entering or along a runway
4. Convergence of numerous taxiway types entering a runway
5. High-speed exit crossing a taxiway
6. Two runway thresholds in close proximity
7. Short taxiway (stubs) between runways
8. Direct taxiing access to runways from ramp areas
9. Aligned taxiway entering runway end
10. Non-standard marking and/or signage placement

# 19 RIM Geocodes (Causes of RI)

11. Greater than three-node taxiway intersection
12. Taxiway connection to V-shaped runways
13. Taxiway intersect runway at other than a right angle
14. Short taxi distance from ramp/apron to runway
15. High-speed exits leading directly onto another runway
16. Taxiway coinciding with the intersection of two runways
17. Using a runway as a taxiway
18. Unexpected holding position marking on parallel/entrance taxiway
19. Miscellaneous

# Frequency of RIs by Geocode



# Top 3 RI Geocodes

- **Short taxi distance from ramp/apron to RW**
- **Direct taxiing access from ramp/apron to RW**
- **TW intersects RW at other than 90 degrees**

# ASW's RIM Program Status

**<u>After Data Mining and ADO Validation:</u>**

- **ASW initially had 22 RIM points in 2014**
- **ASW has added 3 RIM points since program commencement**
- **ASW has mitigated 5 RIM points:** ACT-HS1, CRP-HS1, DAL-14, DAL-HS1, and NEW-01 ($57,547,082 in federal grant funds)
- **ASW currently has 20 RIM points remaining in our inventory**

# Mitigated RIM Point: ACT- HS1

- **Mitigation:** RWs 14/32 & 1/19 Decoupled with removal of pavement

# Mitigated RIM Point: CRP- HS1

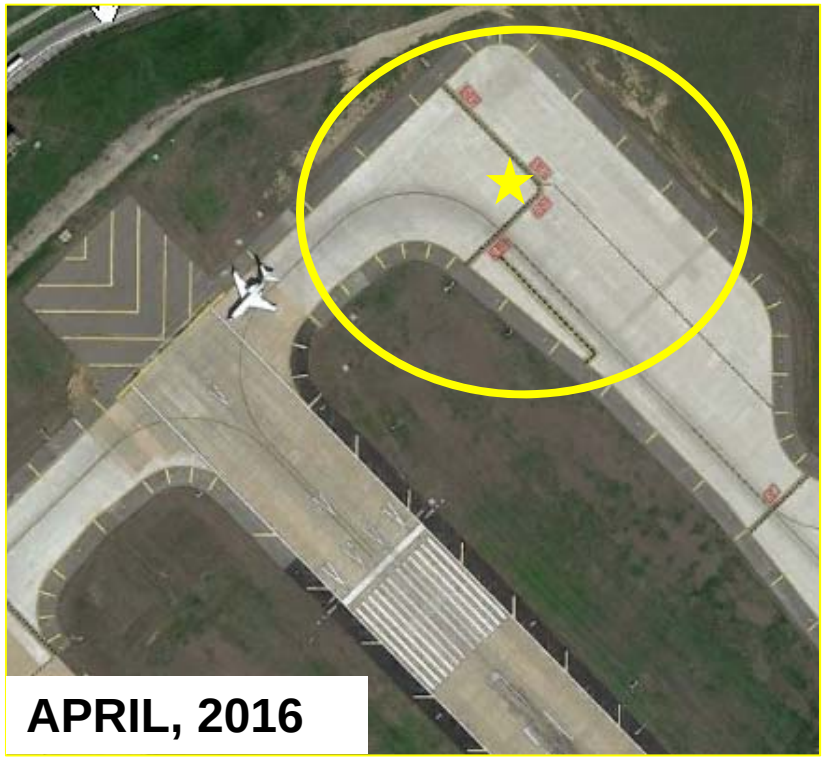
- **Mitigation:** TWs reconfigured to meet current standards and RW ends displaced

# Mitigated RIM Point: DAL-14

- **Mitigation:** Reconfigured TWs C & L by adding a no-taxi island

# Mitigated RIM Point: DAL-HS1

- **Mitigation:** Replaced irregular markings with new markings and installed in-pavement lights



# Mitigated RIM Point: NEW-01

- **Mitigation:** Added Enhanced TW Centerline Markings & Surface Painted Hold Signs

# ASW's 20 Current RIM Points

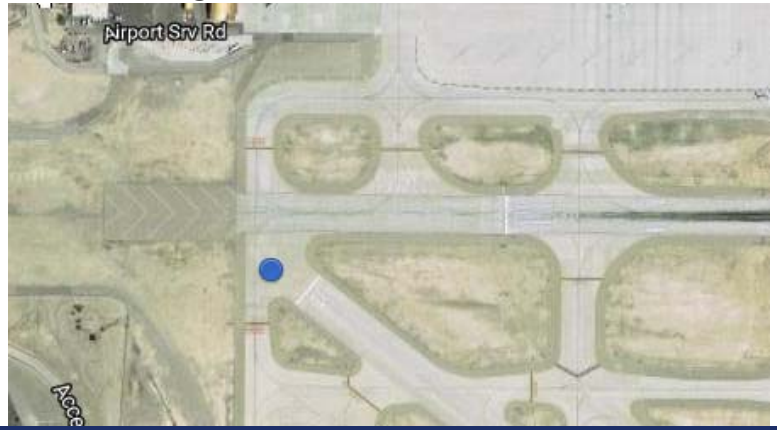
- **ABQ-HS1 –** Decouple RW 08 from RW 12
- **ADS-HS1, ADS-HS4, ADS-HS8 –** Sponsor doing pilot outreach
- **CXO-02 –** Installation of Enhanced Markings
- **DAL-33 –** Removal of "Y" TWs B5 & B6 from RW 13L/31R
- **DWH-HS1, DWH-HS2, DWH-HS3 –** non-obligated airport
- **GLS-04 –** Realign entrance TW to RW 18
- **HOU-01 –** Construct $90^0$ TW E entrance to RW 17
- **HOU-HS2 –** Construct $90^0$ TW E entrance to RW 13R

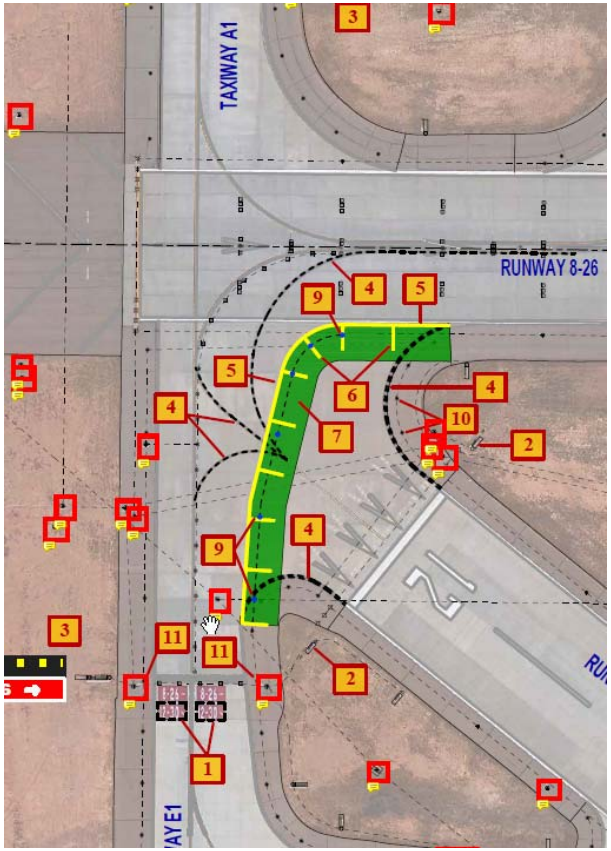
# ASW's 20 Current RIM Locations

- **LFT-HS2 –** Mitigation yet to be determined
- **MAF- HS1-** Construct $90^0$ TW A entrance to RW 10
- **MLU-HS1-** Demo TW A between RW 14 & RW 18
- **MSY-HS1 –** Construct $90^0$ TW F & demo high speed TW
- **NEW-HS3 –** Mitigation yet to be determined
- **SAT-HS1, SAT-HS3 –** Decouple RW 31L from RW 4/22
- **TUL-HS1 –** Demo TW K between TW C & RW 8/26

# RIM Construction in FY18

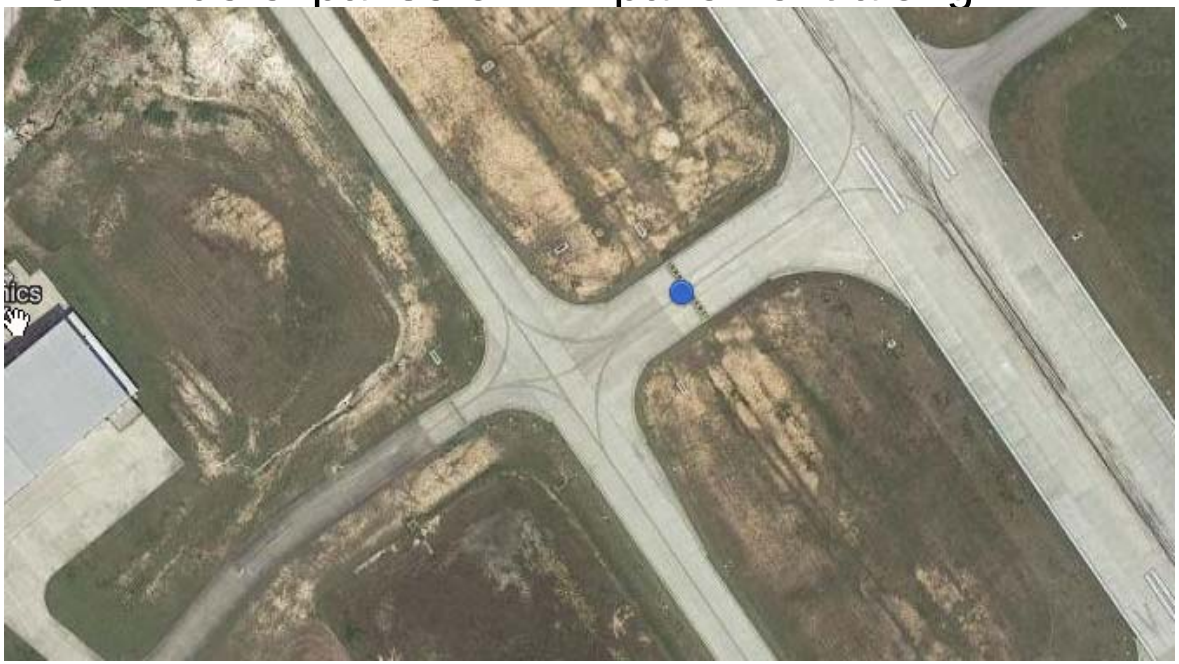
- **ABQ-HS1: Decoupling RW 08 from RW 12 (with marking, lighting & green paint)**
  - Geocoded as:
    - 9 – Aligned taxiway entering runway end
    - 6 – Two runway thresholds in close proximity
    - 12 - TW connection to V-shaped RWs
    - 14 - Short distance from ramp to runway
    - 2 - Wrong RW events



# RIM Construction in FY18

- **CXO-02: Installation of Surface Painted Hold Signs & Enhanced Centerline Markings**
  - Geocoded as:
    - 14 – Short distance from ramp to runway
    - 3 – Wide expanse of TW pavement along RW



# RIM Construction in FY18

- **TUL-HS1: Demolition of TW K (with future replacement at different location)**
  - Geocoded as:
    - 3 - Wide expanse of taxi pavements along runway
    - 8 - Direct taxiing access to runway from ramp
    - 13 - TW intersects RW at other than 90 degrees
    - 14 - Short distance from ramp to runway
    - 10 - Non-standard markings and/or signage placement

# RIM Mitigation Strategies:

- **Capital Improvements to**
  - Geometry
  - Signage, Marking & Lighting
- **Procedures (Operational and AT)**
- **Technology (ATO's RIPSA)**
- **Pilot Education**

# FAA RIM Point of Contacts

- **<u>Headquarters:</u>**
  - RIM National PM: Steve Debban
  - Tech Center Lead: Lauren Collins
- **<u>ASW Regional POC:</u>** Lana Logan
  - Disseminate information from HQ
  - Coordinate validation & mitigation efforts
  - Ensure Business Goals are met
  - Assist in mitigation solutions

# Questions?

Federal Aviation Administration