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# FAA Runway Safety Program

Presented to: ICAO Asia/Pacific Aerodrome Assistance Working Group

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Office of Airport Safety and Standards

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# FAA Runway Safety Program Order



U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

**ORDER  
7050.1B**

Effective Date:  
11/07/13

**SUBJ:** Runway Safety Program

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1. This order prescribes the Federal Aviation Administration (FAA) Runway Safety Program. This directive establishes policy, assigns responsibility, and delegates authority for ensuring compliance with this order within each organization.



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# Collaboration



## FAA's safety partners include:

- Commercial Pilots
- General Aviation Pilots
- Air Traffic Controllers
- Airport Managers,
- Air Carriers
- Fix-based operators
- Other aviation industry groups.



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# FAA Organizational Responsibilities

Runway  
Safety Group

Air Traffic  
Organization

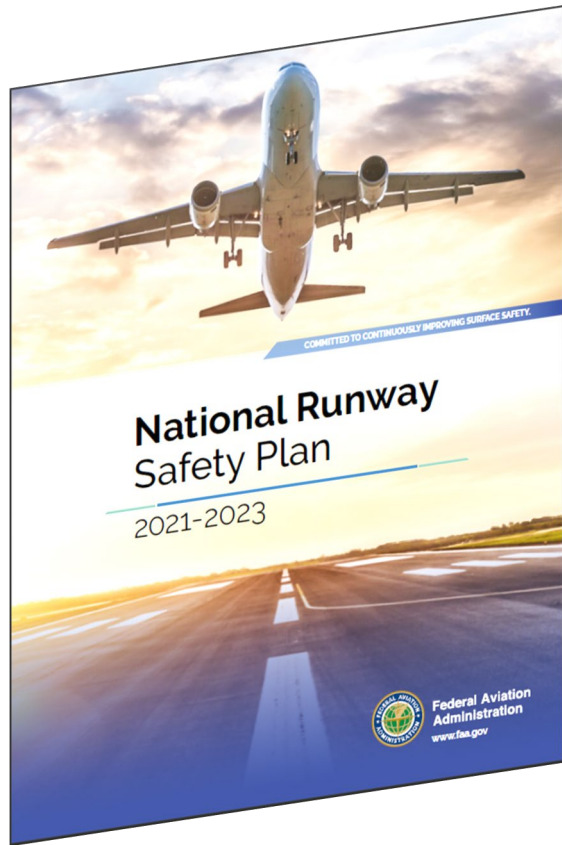
Office of  
Airports

Flight  
Standards



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# National Runway Safety Plan (NRSP)



- Sets strategic and tactical initiatives for the next 3-years
- Includes focused activities to enhance and research technology
- Works to develop next generation of surface surveillance technology
- Education and outreach to all stakeholders (internal and external)



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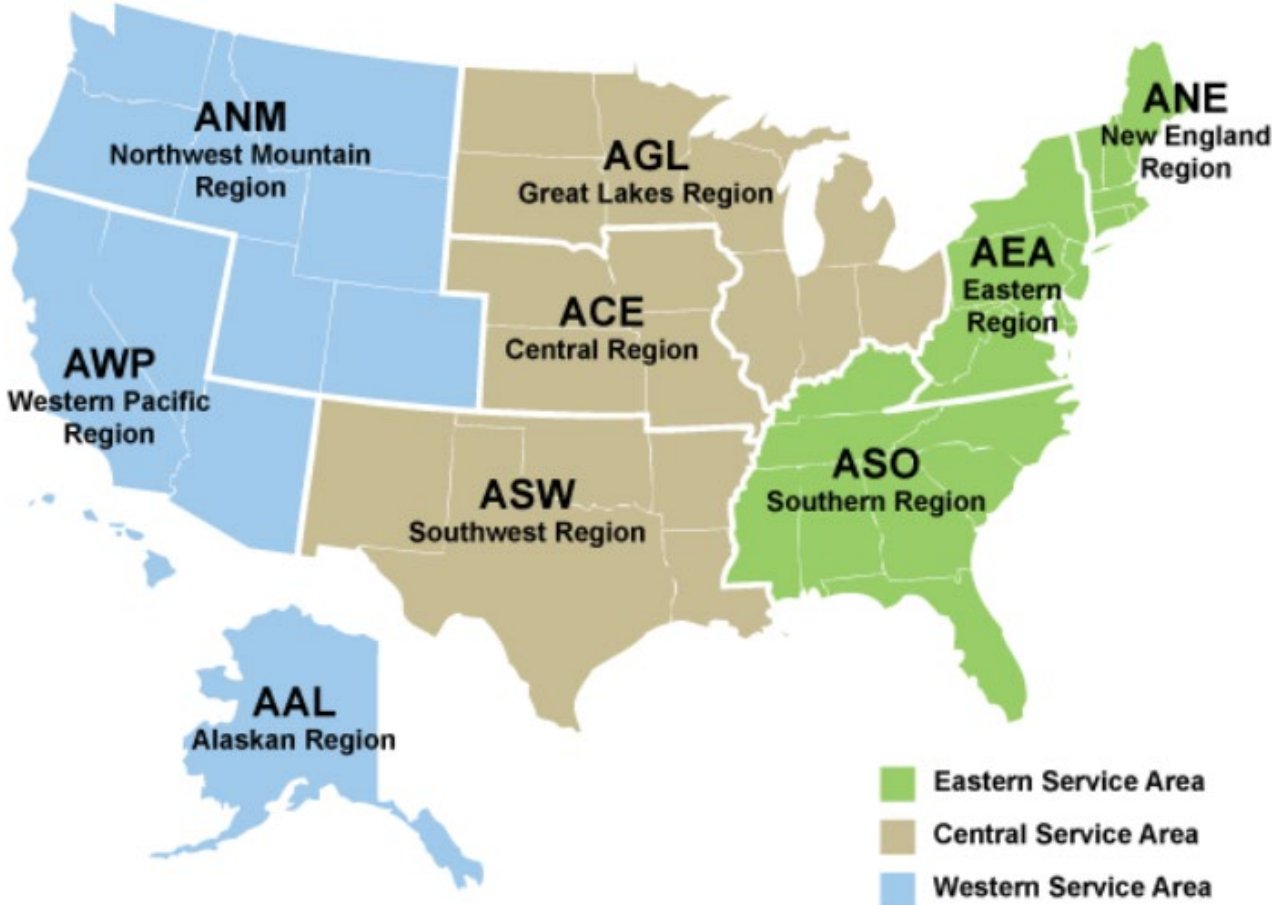
# Regional Runway Safety Plans (RRSP)

- Roadmap with emphasis on regional efforts
- Supports the NRSP initiatives.
- RRSP action items are developed locally at quarterly Regional Runway Safety Team (RRST) meetings.



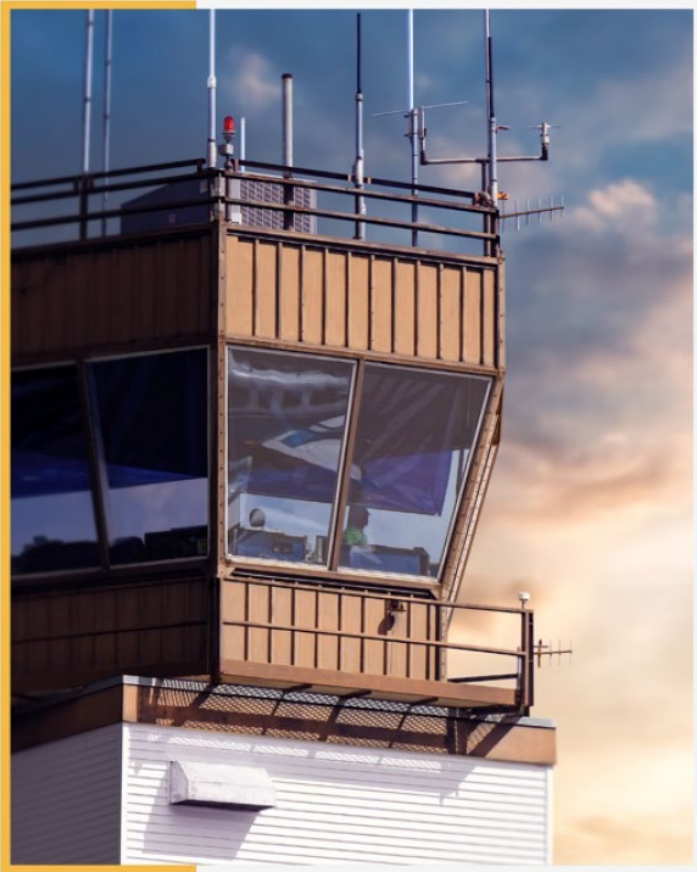
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# Runway Safety Regions and Service Areas



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# Runway Safety Action Team (RSAT)



Runway Safety Action Teams bring local airport stakeholders together at least once a year to identify risks to surface safety at that airport and develop plans to mitigate or eliminate those risks.



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# Types of RSAT Meeting

- 1) Local RSAT
- 2) Regional RSAT
- 3) Special Focus RSAT



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# RSAT MEETING

## PURPOSE

- Open Discussion
- Surface risks
- Risk mitigations
- Best practices
- Safety resources

## TAKEAWAYS

- Local safety trend awareness
- Safety resource availability
- Action Item identification
- Runway Safety Action Plan
- (RSAP) update



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# Resources



## Hot Spots

Reducing the potential for runway confusion through standardizing hot spot symbology and verbiage.

[Hot Spot Standardized Symbology](#)



## Video Series

Videos from the cockpit to assist pilots and self-guided videos for flight instructors to help students.

[From the Flight Deck](#)  
[Surface Safety Symposium](#)  
[Runway Safety Pilot Simulator](#)



## Arrival Alert Notices

Addressing wrong surface events by releasing Arrival Alert Notices (AAN) at several airports with a history of risk.

[Arrival Alert Notices](#)



## Statistics

Reporting national and regional runway incursions statistics on both a yearly and quarterly basis.

[Runway Safety Statistics](#)  
[Search Runway Incursions](#)



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# More Resources

## Runway Safety Resources



### AIRPORT DIAGRAMS

Search and get access to hundreds of airport diagrams by identifier, state, or airport name.

- ▶ [Search Airport Diagrams](#)



### AIRPORT USERS

Check out surface safety tips for pilots, airfield drivers, controllers, or airport managers.

- ▶ [Airfield Drivers](#)
- ▶ [Controllers](#)
- ▶ [Pilots](#)
- ▶ [Runway Construction](#)



### PLANS & GUIDANCE

Review numerous Runway Safety documents to help you better understand our goals and stay safe.

- ▶ [Runway Safety Plans](#)
- ▶ [Runway Safety Publications](#)



### EXTERNAL RESOURCES

Search for surface safety events & training in your area or review and submit incident reports.

- ▶ [FAAST Events](#)
- ▶ [Aviation Safety Reporting System \(ASRS\)](#)



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# Runway Safety Program

- Runway Safety Program Resources  
[https://www.faa.gov/airports/runway\\_safety](https://www.faa.gov/airports/runway_safety)



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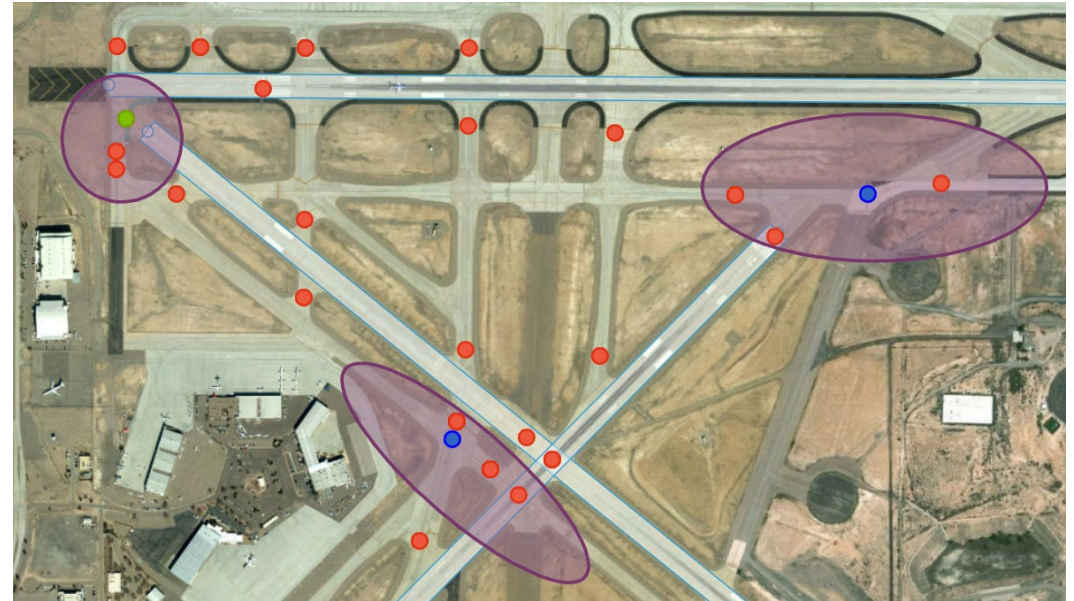


# Mitigating Runway Incursions and Excursions

# Runway Incursion Mitigation (RIM) Program

RIM is a data-driven program identifying runway/taxiway intersections with increased risks of Runway Incursions (RIs).

- The RIM program uses:
  - Runway Incursion data
  - GIS geo-referencing
  - Risk-based Decision Making
- Locations Determined by:
  - 3 or more RIs in a Calendar Year
  - Avg of 1+ RIs/year over prev. 10 years
  - Validation of locations, RIs, & geometry

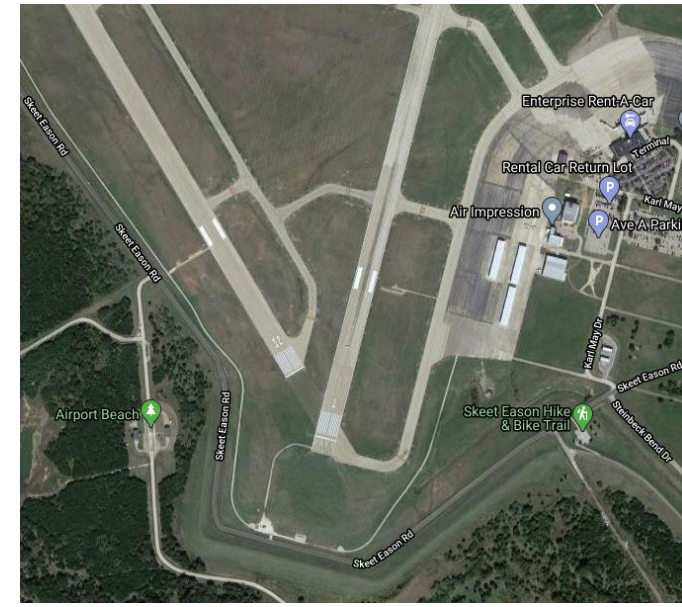
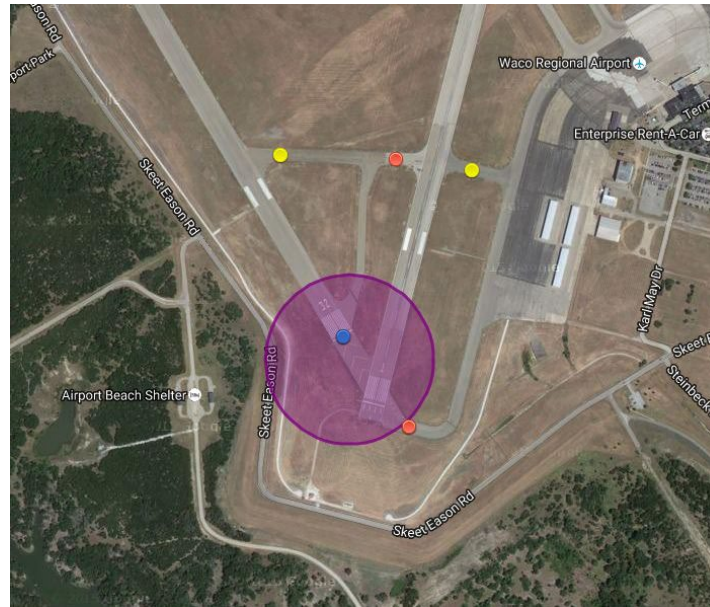


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# Runway Incursion Mitigation (RIM) Program

## RIM focuses on airport improvement Mitigation Strategies

- Airport Geometry Improvements – Airport Design Standards
- Airport Visual Aids Improvements
  - Signing
  - Pavement Marking
  - Lighting
- Procedure Revisions
- Technology
  - NEXTGEN RIPSA
  - ASDE-X ATAP

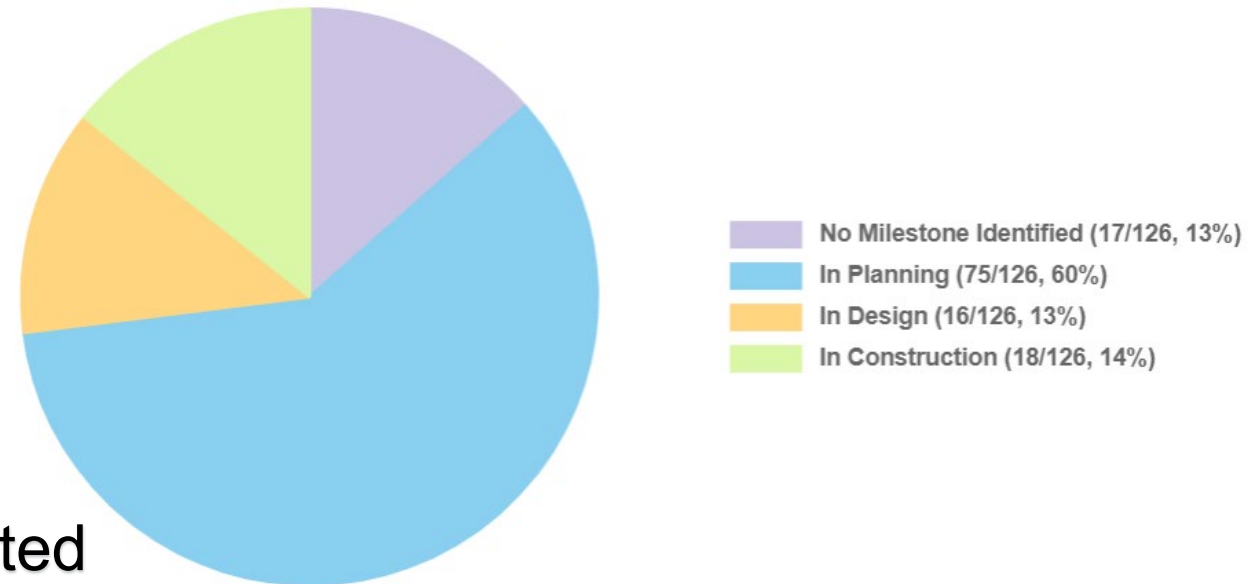


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# RIM - Statistics (as of 03/07/2023)

- 522 towered airports
- 16000+ RIs analyzed
- 126 RIM locations - current inventory
  - 91 RIM *mitigations complete*
- 80 airports w/ at least 1 RIM location
- 109 locations tied to new project
  - 18 currently in construction
- FY23 – 3 mitigation locations completed
  - ADS-HS1, MLI-20, PRC-HS2

Total Active RIM Locations by Current Status



\* Phased Projects Identified as "In Planning"

Mitigations reduced RIs an average of 78%

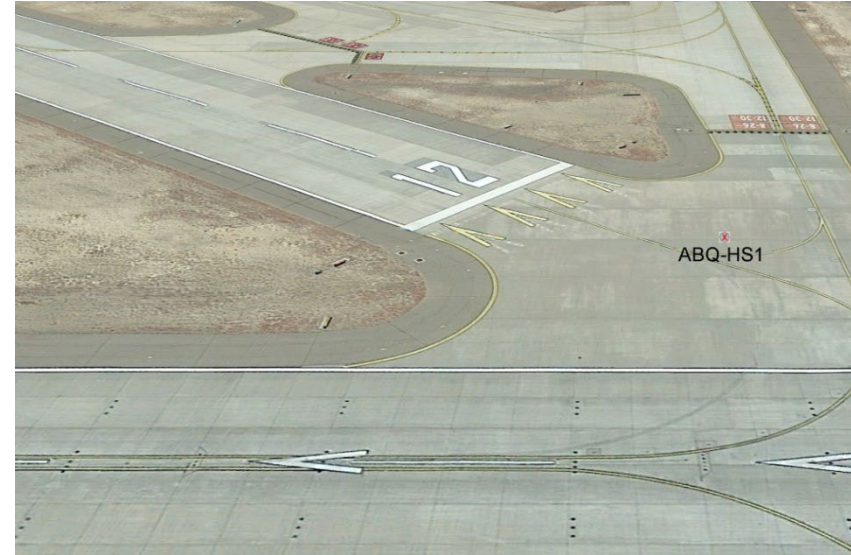
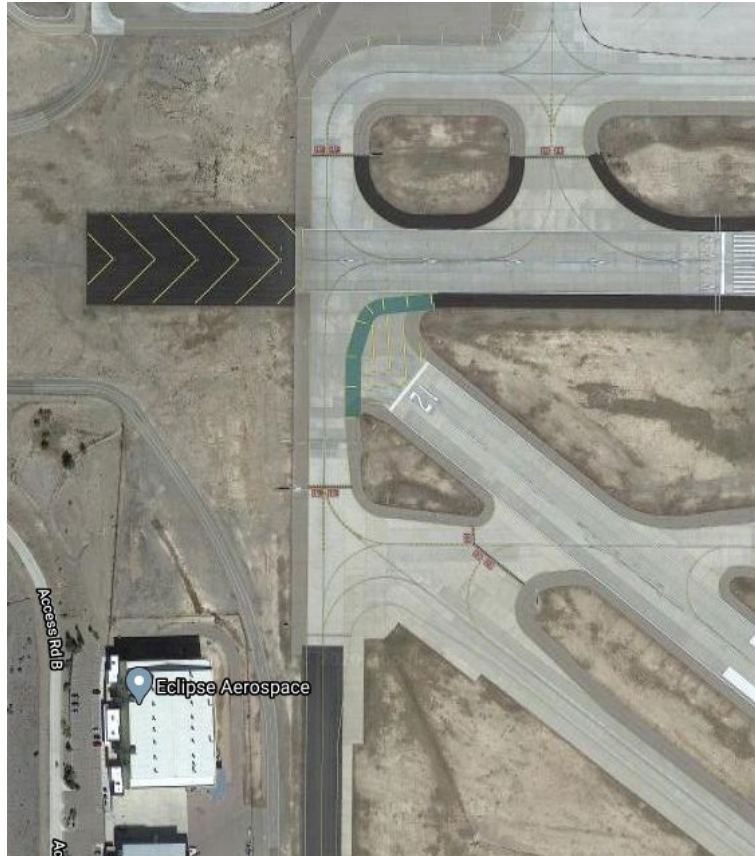


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# Successes

## Albuquerque International

- 11 RIs from 2010 – 2015
- Wrong Runway Events



## FY 2018 Mitigated

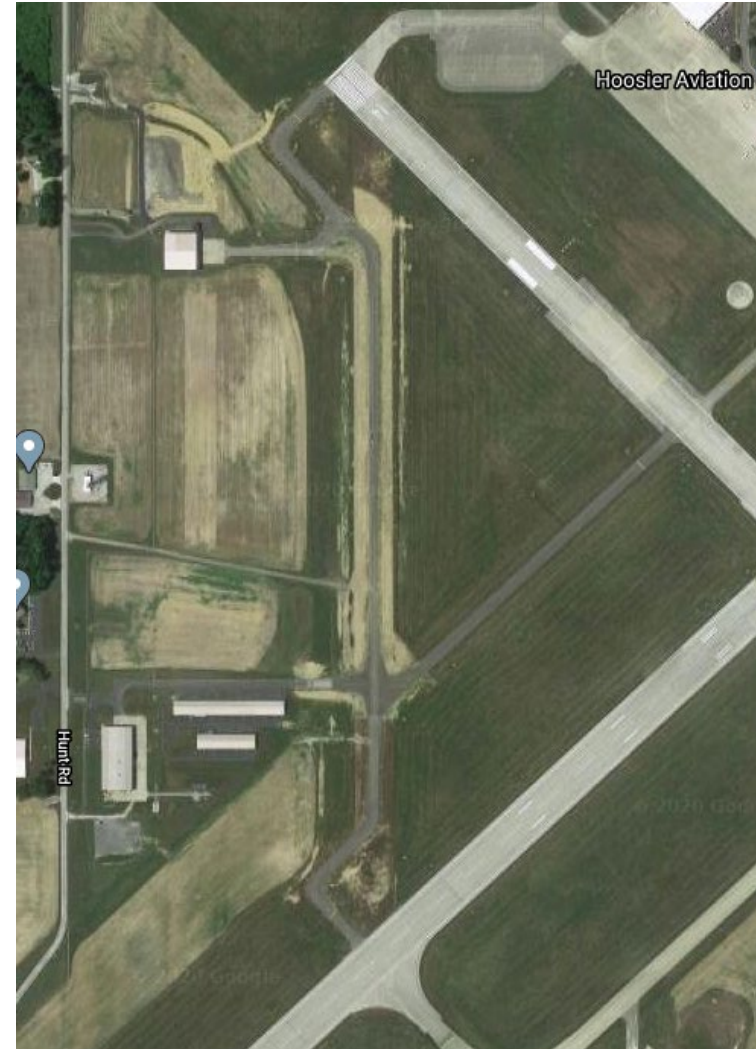
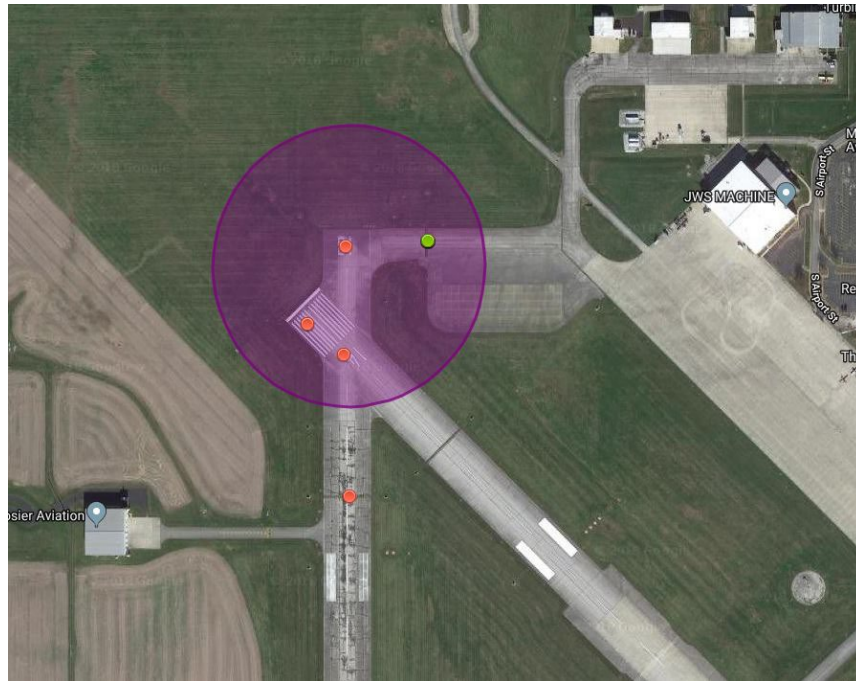
- Decoupled Runway Ends
- Cont'd monitoring
- 1 Runway Incursion since, but no wrong runway events



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# Successes

- **Terre Haute International**
  - 8 RIs in 2016, 11 Total



## •FY 2018 Mitigated

- Realigned taxiways
- Cont'd monitoring
- 0 Incursions post-mitigation

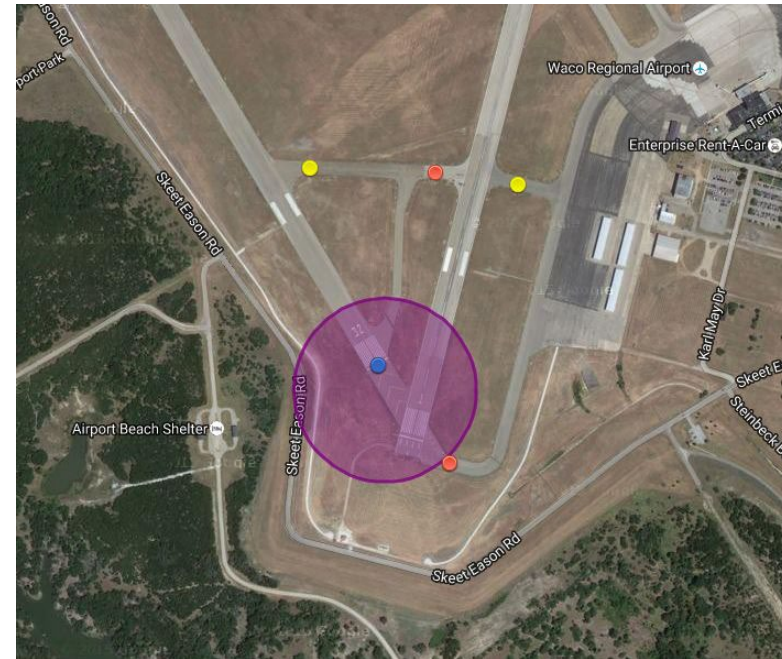
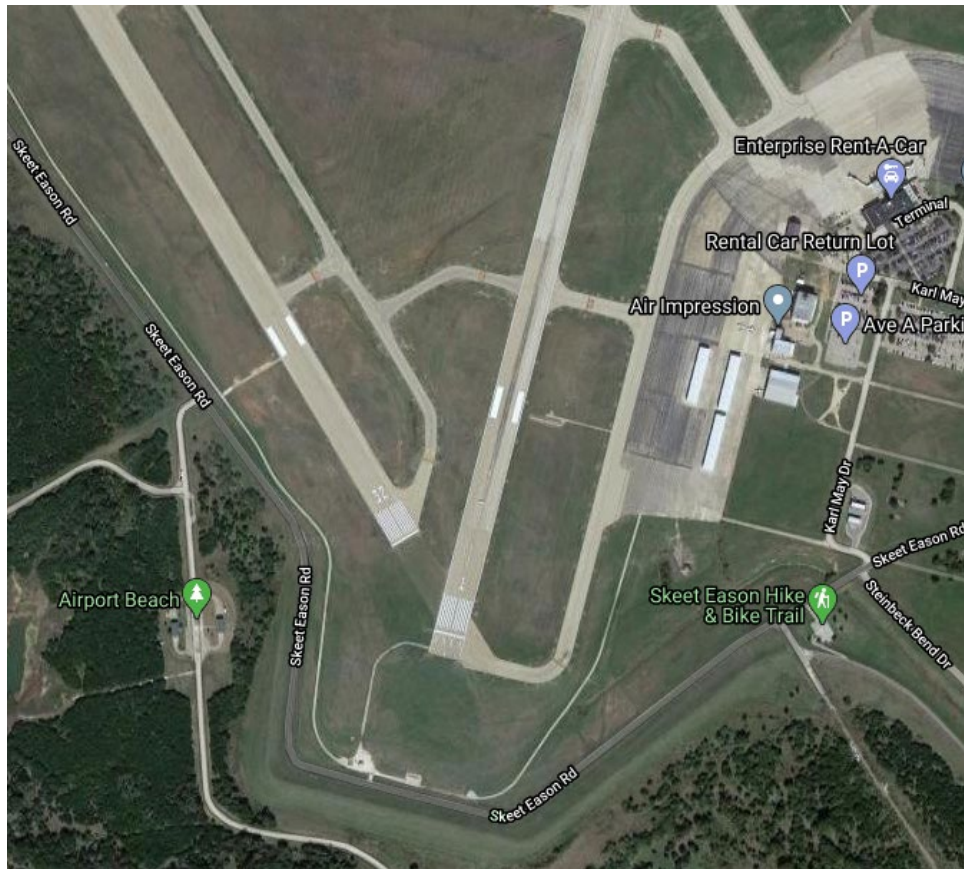


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# Successes

## Waco Regional, ACT-HS1

– 3 RIs in 2015



### FY 2016 Mitigated

- Realigned taxiways
- Cont'd monitoring
- 0 Incursions post-mitigation



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# Runway Incursion Mitigation (RIM) Program

## Public RIM Inventory:

- [https://www.faa.gov/airports/engineering/incursions\\_excursions/rim](https://www.faa.gov/airports/engineering/incursions_excursions/rim)



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# Runway Excursions

**A veer off or overrun from the runway surface during take-off or landing.**

Contributing factors may include:

- Unstable Approaches
- Cross Wind Component
- Tailwind
- Mechanical
- Meteorological Conditions
- **Runway Environment**



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# Engineered Material Arresting System (EMAS)



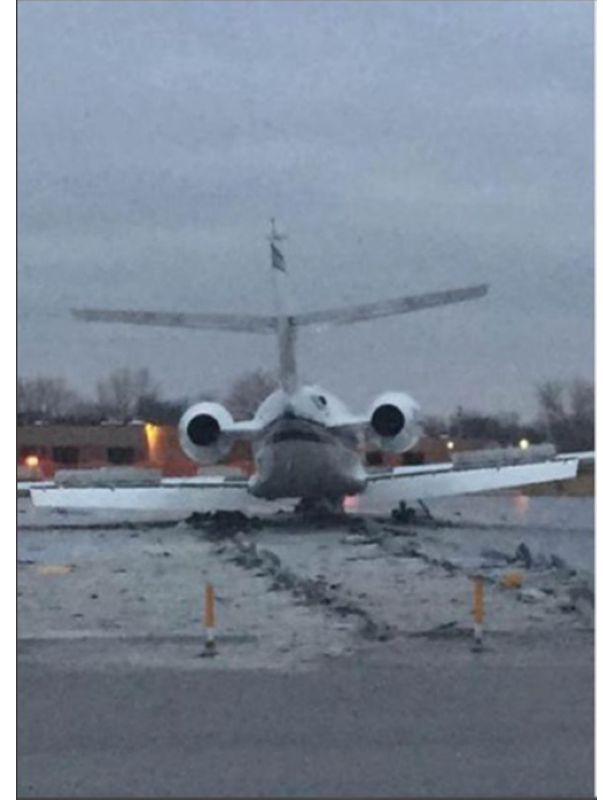
The purpose of an EMAS is to stop an aircraft overrun with no human injury and minimal aircraft damage. The aircraft is slowed by the loss of energy required to crush the EMAS material.



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# Engineered Material Arresting System (EMAS)

- The EMAS technology improves safety benefits in cases where land is not available, or where it is not possible to have the standard safety area off of the end a runways.



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# EMAS (Engineered Material Arresting System)

SINCE 1996 | BY THE NUMBERS

**19** runway excursions have been stopped safely by EMAS, protecting **421** crew and passengers

**122** Runway ends have EMAS installed at **70** airports across U.S.

**70 knots or less**

The speed at which standard EMAS is designed to stop the most demanding, regular-use aircraft

**118** are EMASMAX model beds

**4** are greenEMAS model beds



EMAS Info



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# Engineered Material Arresting System (EMAS)

- Overview and list of installations.

<https://www.faa.gov/newsroom/engineered-material-arresting-system-emas-0>



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**THANK YOU.**