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Runway Incursion Mitigation Fiscal Year 2025 Annual Summary Report

August 2026

Final Report

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16. Abstract In fiscal year (FY) 2012, the Federal Aviation Administration (FAA) Office of Airports (ARP) initiated a research study to identify and geographically locate areas at airports with nonstandard taxiway geometry. This research was advanced because an earlier study had shown nonstandard taxiway geometries to be associated with a higher prevalence of runway incursions. The FAA defines a runway incursion (RI) as "any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for the landing and takeoff of aircraft." These occurrences include wrong runway landings and takeoffs. This research effort developed a geographic information system (GIS) database of approximately 520 airports with civilian air traffic control towers. For each airport, the location of nonstandard geometries, RIs, airfield hot spot areas, airport diagrams, and other airport-related information is identified. This research study identified 140 airfield locations with a high incidence of RIs using data from October 1, 2007, to September 30, 2013. As a result, a long-term improvement program, known as the Runway Incursion Mitigation (RIM) program, launched in FY2015. The goal of the program was to mitigate airfield locations with high incidents of RIs. A subset of the 140 locations identified was then validated for inclusion in the RIM program and prioritized for mitigation. The RIM program is updated annually using the GIS airport database to identify construction-related changes to airfield layout and their impacts on taxiway geometries, the airfield location of new RIs, and the status of airfield locations prioritized for mitigation. This report summarizes the status of the RIM program through FY2025. In FY2025, the program georeferenced 1,268 RIs, added 100 problematic taxiway geometry (PTG) locations, prioritized 11 locations for mitigation, and identified 7 locations as mitigated. Since program initiation, 19,207 RIs have been georeferenced at airports along with 7,526 nonstandard geometry locations. In addition, 248 airfield locations were prioritized for mitigation and 112 of these locations have been mitigated. As of calendar year 2024, the 98 locations that have contributed to the short-term and long-term reduction in RIM Inventory, on average, experience 77% fewer incursions per year after mitigation activity.					
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LIST OF ACRONYMS

AC	Advisory Circular
ADIP	Airport Data and Information Portal
ADO	Airports District Office
A.I.R.	Average Incursion Rate
ARP	Office of Airports
ATIS	Automated Traffic Information System
ATR	Airport Technology Research & Development Branch
CY	Calendar year
EB	Engineering Brief
FAA	Federal Aviation Administration
FRT	FAA RIM Team
FY	Fiscal year
GIS	Geographic information system
HS	Hot spot
HSR	Hot spot reassignment
ILS	Instrument Landing System
NOTAM	Notice to Airmen
PD	Pilot deviation
PTG	Problematic taxiway geometry
RDM	RIM Data Management
RI	Runway incursion
RIM	Runway incursion mitigation
V/PD	Vehicle/pedestrian deviation

LIST OF FEDERAL AVIATION ADMINISTRATION LOCATION IDENTIFIER AIRPORT CODES USED IN THIS REPORT

ABQ	Albuquerque International Sunport, Albuquerque, New Mexico
ACT	Waco Regional Airport, Waco, Texas
ADS	Addison Airport, Dallas, Texas
APA	Centennial Airport, Denver, Colorado
APC	Napa County Airport, Napa, California
ARR	Aurora Municipal Airport, Chicago/Aurora, Illinois
ASE	Aspen-Pitkin County Airport/Sardy Field Airport, Aspen, Colorado
ATL	Hartsfield-Jackson Atlanta International Airport, Atlanta, Georgia
AZO	Kalamazoo/Battle Creek International Airport, Kalamazoo, Michigan
BET	Bethel Airport, Bethel, Alaska
BFI	King County International Airport-Boeing Field, Seattle, Washington
BJC	Rocky Mountain Metropolitan Airport, Denver, Colorado
BOI	Boise Air Terminal/Gowen Field Airport, Boise, Idaho
BOS	General Edward Lawrence Logan International Airport, Boston, Massachusetts
BTV	Burlington International Airport, Burlington, Vermont
BUR	Bob Hope Airport, Burbank, California
CAK	Akron-Canton Regional Airport, Akron, Ohio
CCR	Buchanan Field Airport, Concord, California
CHD	Chandler Municipal Airport, Chandler, Arizona
CLE	Cleveland Hopkins International Airport, Cleveland, Ohio
CLL	Easterwood Field Airport, College Station, Texas
CLT	Charlotte Douglas International Airport, Charlotte, North Carolina
CMA	Camarillo Airport, Camarillo, California
CMI	University of Illinois-Willard Airport, Champaign-Urbana, Illinois
CNO	Chino Airport, Chino, California
CRG	Jacksonville Executive at Craig Airport, Jacksonville, Florida
CRP	Corpus Christi International Airport, Corpus Christi, Texas
CRQ	McClellan-Palomar Airport, Carlsbad, California
CSG	Columbus Airport, Columbus, Georgia
CXO	Conroe-North Houston Regional Airport, Houston, Texas
DAB	Daytona Beach International Airport, Daytona Beach, Florida
DAL	Dallas Love Field Airport, Dallas, Texas
DCA	Ronald Reagan Washington National Airport, Washington, DC
DEN	Denver International Airport, Denver, Colorado
DSM	Des Moines International Airport, Des Moines, Iowa
DVT	Phoenix Deer Valley Airport, Phoenix, Arizona
DWH	David Wayne Hooks Memorial Airport, Houston, Texas
EWR	Newark Liberty International Airport, Newark, New Jersey
FAI	Fairbanks International Airport, Fairbanks, Alaska
FAT	Fresno Yosemite International Airport, Fresno, California
FCM	Flying Cloud Airport, Minneapolis, Minnesota
FDK	Frederick Municipal Airport, Frederick, Maryland
FFZ	Falcon Field Airport, Mesa, Arizona
FRG	Republic Airport, Farmingdale, New York

FTY	Fulton County Airport-Brown Field, Atlanta, Georgia
FWA	Fort Wayne International Airport, Fort Wayne, Indiana
FXE	Fort Lauderdale Executive Airport, Fort Lauderdale, Florida
GCN	Grand Canyon National Park Airport, Grand Canyon, Arizona
GLS	Scholes International Airport, Galveston, Texas
HIO	Portland-Hillsboro Airport, Portland, Oregon
HLN	Helena Regional Airport, Helena, Montana
HND	Henderson Executive Airport, Las Vegas, Nevada
HNL	Daniel K. Inouye International Airport, Honolulu, Hawaii
HOU	William P. Hobby Airport, Houston, Texas
HUF	Terre Haute Regional Airport, Terre Haute, Indiana
HWD	Hayward Executive Airport, Hayward, California
IAG	Niagara Falls International Airport, Niagara Falls, New York
IDA	Idaho Falls Regional Airport, Idaho Falls, Idaho
ISM	Kissimmee Gateway Airport, Orlando, Florida
IWA	Phoenix-Mesa Gateway Airport, Phoenix, Arizona
JLN	Joplin Regional Airport, Joplin, Missouri
JNU	Juneau International Airport, Juneau, Alaska
LAF	Purdue University Airport, Lafayette, Indiana
LAS	Harry Reid International Airport, Las Vegas, Nevada
LAX	Los Angeles International Airport, Los Angeles, California
LGB	Long Beach Airport/Daugherty Field, Long Beach, California
LIT	Adams Field Airport, Little Rock, Arizona
LOU	Bowman Field Airport, Louisville, Kentucky
LVK	Livermore Municipal Airport, Livermore, California
MAF	Midland International Air and Space Port, Midland, Texas
MDW	Chicago Midway International Airport, Chicago, Illinois
MEM	Memphis International Airport, Memphis, Tennessee
MFE	McAllen Miller International Airport, McAllen, Texas
MHT	Manchester-Boston Regional Airport, Manchester, New Hampshire
MIA	Miami International Airport, Miami, Florida
MIC	Crystal Airport, Minneapolis, Minnesota
MKC	Charles B. Wheeler Downtown Airport, Kansas City, Missouri
MLI	Quad City Airport, Moline, Illinois
MLU	Monroe Regional Airport, Monroe, Louisiana
MQY	Smyrna Airport, Smyrna, Tennessee
MRI	Merrill Field Airport, Anchorage, Alaska
MRY	Monterey Regional Airport, Monterey, California
MYF	Montgomery-Gibbs Executive Airport, San Diego, California
NEW	Lakefront Airport, New Orleans, Louisiana
OAK	Albert J. Ellis Airport, Jacksonville, North Carolina
OPF	Miami-Opa Locka Executive Airport, Miami, Florida
ORD	Chicago O'Hare International Airport, Chicago, Illinois
ORL	Orlando Executive Airport, Orlando, Florida
PAO	Palo Alto Airport, Palo Alto, California
PBI	Palm Beach International Airport, West Palm Beach, Florida

PDK	DeKalb-Peachtree Airport, Atlanta, Georgia
PHL	Philadelphia International Airport, Philadelphia, Pennsylvania
PHX	Phoenix Sky Harbor International Airport, Phoenix, Arizona
PIE	St. Pete-Clearwater International Airport, St. Petersburg-Clearwater, Florida
PNS	Pensacola International Airport, Pensacola, Florida
POC	Brackett Field, LaVerne, California
PRC	Ernest A. Love Field Airport, Prescott, Arizona
PSP	Palm Springs International Airport, Palm Springs, California
PWM	Portland International Jetport, Portland, Maine
RHV	Reid-Hillview Airport of Santa Clara County, San Jose, California
RNO	Reno-Tahoe International Airport, Reno, Nevada
SAT	San Antonio International Airport, San Antonio, Texas
SBA	Santa Barbara Municipal Airport, Santa Barbara, California
SDL	Scottsdale Airport, Scottsdale, Arizona
SDM	Brown Field Municipal Airport, San Diego, California
SEA	Seattle-Tacoma International Airport, Seattle, Washington
SFB	Orlando Sanford International Airport, Orlando, Florida
SFO	San Francisco International Airport, San Francisco, California
SJC	Norman Y. Mineta San Jose International Airport, San Jose, California
SLC	Salt Lake City International Airport, Salt Lake City, Utah
SMO	Santa Monica Municipal Airport, Santa Monica, California
SNA	John Wayne-Orange County Airport, Santa Ana, California
SPI	Abraham Lincoln Capital Airport, Springfield, Illinois
SRQ	Sarasota Bradenton International Airport, Sarasota, Florida
STS	Charles M. Schulz-Sonoma County Airport, Santa Rosa, California
TEB	Teterboro Airport, Teterboro, New Jersey
TIW	Tacoma Narrows Airport, Tacoma, Washington
TMB	Miami Executive Airport, Miami, Florida
TOA	Zamperini Field, Torrance, California
TUL	Tulsa International Airport, Tulsa, Oklahoma
TUS	Tucson International Airport, Tucson, Arizona
TYR	Tyler Pounds Regional Airport, Tyler, Texas
UAO	Aurora State Airport, Aurora, Oregon
UES	Waukesha County Airport, Waukesha, Wisconsin
VGT	North Las Vegas Airport, Las Vegas, Nevada
VNY	Van Nuys Airport, Van Nuys, California

EXECUTIVE SUMMARY

In fiscal year (FY) 2012, the Federal Aviation Administration (FAA) Office of Airports (ARP) initiated a research study to identify and geographically locate areas at airports with nonstandard taxiway geometry (also known as problematic taxiway geometry (PTG) locations). This research was advanced because an earlier study had shown nonstandard taxiway geometries to be associated with a higher prevalence of runway incursions. The FAA defines a runway incursion (RI) as “any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for the landing and takeoff of aircraft.” These occurrences include wrong runway landings and takeoffs. This research effort developed a geographic information system (GIS) database of approximately 520 airports with civilian air traffic control towers. For each airport, the PTG locations, RIs, airfield hot spot areas, airport diagrams, and other airport-related information are identified. This research study identified 140 airfield locations with a high incidence of RIs using data from October 1, 2007, to September 30, 2013. As a result, a long-term improvement program, known as the Runway Incursion Mitigation (RIM) program, launched in FY2015. The goal of the program is to mitigate airfield locations with high incidences of runway incursions. A subset of the 140 locations identified was then validated for inclusion in the RIM program and prioritized for mitigation.

The RIM program, led by the FAA RIM Team (FRT) that includes representatives from the Airports Engineering Division (AAS-100), Airports Safety and Operations Division (AAS-300), Airports Planning and Environmental Division (APP-400), and the Airport Technology Research & Development Branch (ATR) and its contractors, is updated annually using the GIS airport database to identify construction-related changes to airfield layout and their impacts on taxiway geometries, the airfield location of new RIs, and the status of airfield locations prioritized for mitigation.

This report summarizes the status of the RIM program through FY2025. In 2025, the program:

- Georeferenced 1,286 runway incursions
- Added 100 PTG locations
- Prioritized 11 locations for mitigation
- Identified 10 locations as mitigated

Since the program’s initiation, the FRT georeferenced 19,207 RIs at airports along with more than 7,526 PTG locations. In addition, the FRT prioritized 248 airfield locations for mitigation, and 112 of these locations implemented mitigations. **As of calendar year 2024, the 98 locations that contributed to the short-term and long-term reduction in RIM Inventory experience, on average, 77% fewer incursions per year after mitigation activity.**

1. INTRODUCTION

The Federal Aviation Administration (FAA) defines a runway incursion (RI) as “any occurrence at an aerodrome involving the incorrect presence of an aircraft, vehicle, or person on the protected area of a surface designated for the landing and takeoff of aircraft” (FAA, 2015). These occurrences, including wrong runway landings and takeoffs, are a top airport safety concern for the FAA.

The FAA conducted an initial study of RIs from 1997 to 2003 resulting from a pilot deviation (PD) or vehicle/pedestrian deviation (V/PD). These incursions were then plotted on airport diagrams for analysis (Legarreta, 2012). The study of these incursions found that certain taxiway locations experienced far more RIs than other locations (Legarreta, 2012). Through additional research, the FAA identified taxiway geometry configurations associated with a higher incidence of RIs (Legarreta, 2012). This led the FAA Airport Engineering Division to publish Engineering Brief (EB) 75, *Incorporation of Runway Incursion Prevention into Taxiway and Apron Design*, in November 2007, which, although now cancelled, served as an important precursor to later design guidance. Many of the layout recommendations from EB 75 were later incorporated into the updated Advisory Circular (AC) 150/5300-13B, *Airport Design* (FAA, 2024). Both documents provide guidance for airports to design taxiways in a manner to reduce confusion and increase situational awareness. Airport layouts not conforming to these recommendations may lead to confusion and, ultimately, RIs.

In fiscal year (FY) 2012, the FAA Office of Airports (ARP) initiated a research study to identify and geographically locate areas at airports with nonstandard geometry (also known as problematic taxiway geometry (PTG) locations¹) and a high incidence of RIs. This effort, detailed in the FAA report *Problematic Taxiway Geometry Study Overview* (Vitagliano et al., 2018) (“PTG Report”), developed a geographic information system (GIS) database including:

- 6,704 PTG locations, including 603 airport locations that are related to FAA’s hot spot (HS) polygons that are depicted in the airport diagrams;
- all PD and V/PD deviation RIs, including wrong runway events and surface incidents;
- airport diagrams and information; and
- HS polygons.

The initial study and field validation process identified 140 locations with a high incidence of RIs using data from October 1, 2007, to September 30, 2013, after reviewing 5,099 RI reports. As a result, a long-term improvement program, known as the Runway Incursion Mitigation (RIM) program, launched in FY2015. The goal of the program is to mitigate airfield locations with high incidents of RIs. A subset of the 140 locations identified was then validated for inclusion in the RIM program and prioritized for mitigation. The FAA maintains a RIM program website at https://www.faa.gov/airports/special_programs/rim/ (FAA, 2025).

¹ The total count of PTG Locations reflects all active airfield geometry issues in the system. This includes Hot Spot locations—areas with a history or potential risk of runway incursions and, therefore, key indicators of nonstandard or unsafe geometry. It excludes RIM-Mitigated locations, where airports have implemented mitigation strategies to reduce pilot confusion and runway incursion risk.

2. ANNUAL DATABASE UPDATES

2.1 OVERVIEW

The FAA RIM Team (FRT), which consists of representatives from the Airports Engineering Division (AAS-100), Airports Safety and Operations Division (AAS-300), Airports Planning and Environmental Division (APP-400), and the Airport Technology Research & Development Branch (ATR) and its contractors, maintains the RIM database including all data relevant to the program from airports with civilian air traffic control towers (towered airports) and provides a history of database updates. The following data are maintained for each airport:

- Hub Category
- General Aviation Asset Category
- Annual Operations
- Enplanements
- Title 14 Code of Federal Regulations Part 139 status (Certification of Airports, 2004), herein referred to as Part 139.

The current FAA airport diagram can be displayed within the database along with Form 5010 Airport Master Record data. Additionally, HS polygons and their descriptions are updated every 28 days, when applicable.

The database includes all RIs and surface incidents categorized as V/PDs or PDs by the FAA Safety Services Group for each airport. This includes wrong runway landings and takeoffs. On a quarterly basis, the database incorporates new data. This update involves analysis of RIs from the previous quarter. Reviewing the narrative in the incursion report determines the RI location. Each incursion is then georeferenced in the database.

In addition to analyzing RIs, an annual review of the layout of each airport determines if locations with previously identified nonstandard geometry characteristics have changes and/or mitigations. Locations with new nonstandard geometry characteristics are identified as well. This update typically occurs during the second quarter of the FY. In the PTG Report, the FAA identified 19 nonstandard taxiway geometry characteristics that lead to pilot confusion. Locations having at least 1 of the following 19 nonstandard geometry characteristics are categorized as PTG locations, including HS locations that are related to HS polygons (FAA, 2013):

- Y-shaped taxiways crossing a runway
- Wrong runway events
- Wide expanses of taxi pavements entering or along a runway
- Convergence of numerous taxiway types entering a runway
- High-speed exit crossing a taxiway
- Two runway thresholds in close proximity
- Short taxiways (stubs) between runways
- Direct taxiing access to runways from ramp areas
- An aligned taxiway entering runway ends

- Nonstandard markings and/or signage placement
- Greater than three-path taxiway intersection
- Taxiway connection to V-shaped runways
- Taxiway intersects runway at other than a right angle
- Short taxi distance from ramp/apron area to a runway
- High-speed exits leading directly onto another runway
- Taxiway coinciding with the intersection of two runways
- Use of a runway as a taxiway
- Unexpected holding position marking on parallel/entrance taxiway
- Miscellaneous (e.g., nonsequential taxiway designation schemes, absence of full-length parallel taxiway, taxiway intersection along the middle third of a runway).

Also see Appendix J in AC 150/5300-13B *Airport Design* for additional information on non-standard taxiway geometries with higher risks of runway incursions.

Once all RIs from the previous calendar year (CY) are georeferenced, a review of annual and cumulative RI counts for each PTG/HS location determines which locations meet RIM program criteria. The criteria are:

- (1) three or more RIs in a single CY, or
- (2) an average of one or more RIs per year during the most recent 10 years.

The analysis is limited to the most recent 10-year period to consider changes in an airport operating environment over long periods of time (e.g., operational procedures, activity profiles, fleet mix, airfield redesign).

A review of the unique characteristics of each location further narrows the locations considered for field validation. For certain locations, interpretation of incursion narratives by the FRT is necessary to confirm RIM status. The FRT geo references all RIs categorized as V/PDs or PDs regardless of narrative description, but not all narratives provide evidence of a potential issue with taxiway geometry. For example, a lost airport vehicle may cross the same runway hold bar multiple times, generating multiple RIs for one incident. Such a location, which may technically meet RIM criteria, is not a RIM location based on the serial nature of the specific incursion incident. Short-term construction projects may cause temporary airfield HSs that no longer apply after construction is finished. Aircraft and vehicles operating on an airfield without tower clearance provide another example of an event not related to taxiway geometry. The FRT continues to monitor these locations.

The purpose of field validation, which occurs after each annual database update, is to obtain feedback from FAA regional and Airports District Office (ADO) personnel regarding locations considered for classification as RIM locations. The FRT then evaluates the information obtained from the field, such as extenuating circumstances surrounding RIs (e.g., construction activity, air shows, other special events) and whether mitigations are underway. The FRT personnel use this information to make a final determination regarding which locations to add to the RIM inventory. After final determinations, the FRT publishes the updated RIM inventory on the FAA

website (2025). Figure 1 provides a summary of the annual database update process, which typically begins in January and ends in September.

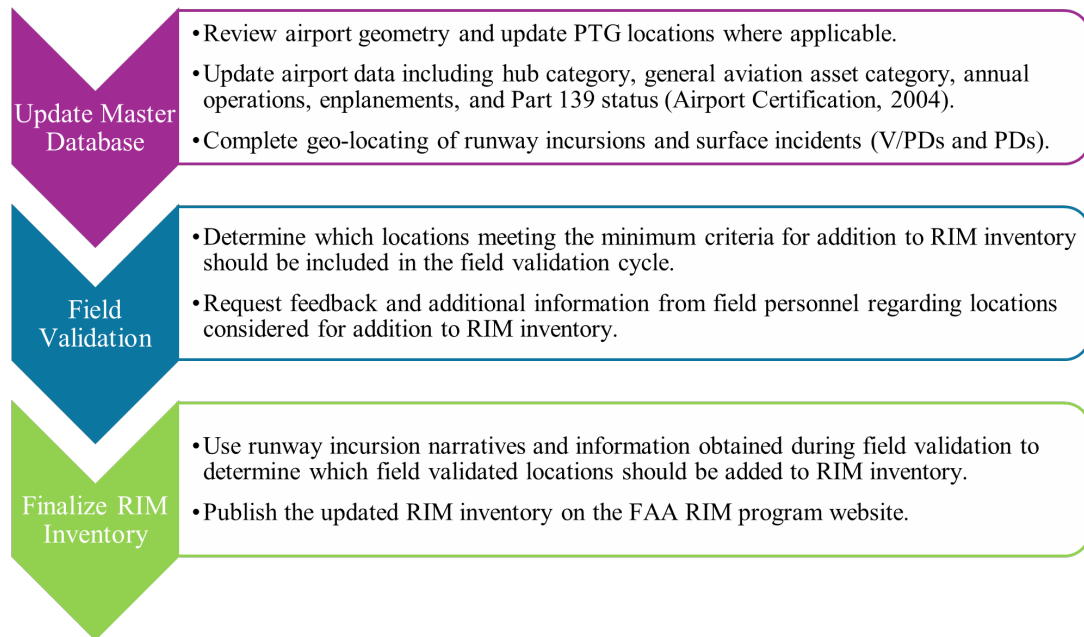


Figure 1. The RIM Database Update Process

The FRT maintains a GIS-based module, referred to as the RIM Data Management (RDM) tool, accessed through the FAA’s Airport Data and Information Portal (ADIP) (FAA, 2022). This tool enables ADO, regional, and FRT personnel to share information related to potential or active RIM locations, monitor the progress of mitigation for RIM locations, and track the success metrics of the program. Additionally, non-FAA users, such as state aviation officials, airport sponsors, and industry consultants, have limited, read-only access to the RDM tool. The RDM tool undergoes a major update annually reflecting the previous year’s data and updates RIM location details. HS polygons and related HS locations, and RI and Surface Incident data are updated on an intermittent basis throughout the year.

2.2 New Methodologies for Measuring Program Success

Through a series of workshops, the FRT assessed new options for measuring program success. The FRT determined that a reduction in risk is a key aspect of program success, and that reduction in risk is achieved through a decrease in RIM Inventory locations. As a result, a new metric has been defined to better measure the reduction of runway incursion risk due to the RIM Program. This will now be used as the primary metric to track the success of the RIM Program and will be reported as “Percent Change in RIM Inventory.” The existing metric, “Percent Change in Average Incursion Rate (A.I.R.),” will also continue to be used to track program success but with one modification.

Previously all mitigated locations were assessed equally when calculating the Percent Change in Average Incursion Rate. Starting from the 2023 mitigation analysis year, short- and long-term program successes have been tracked using two defined stages: Safety Enhancement and

Mitigation Complete. For a given RIM location, the relationship and flow between the different stages is shown in Figure 2. As locations move from the RIM Inventory stage to the Mitigation Complete stage throughout the RIM Program, the reduction in RIM Inventory is achieved.

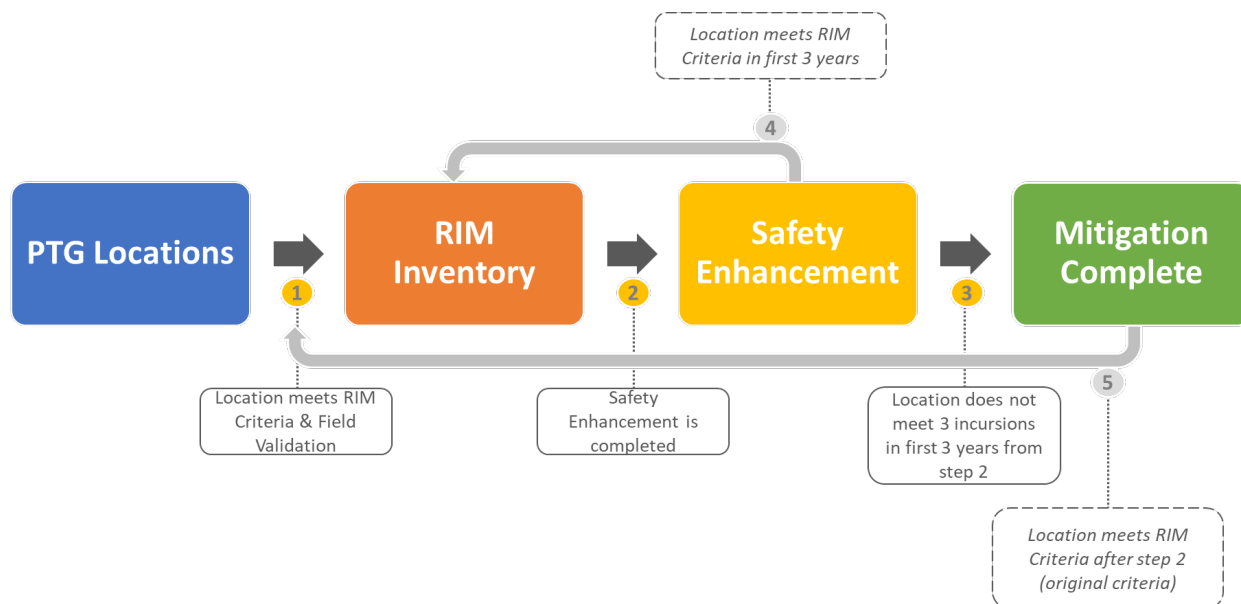


Figure 2. Process for RIM Locations

Note 1: RIM Criteria (Includes locations determined to be Problematic Taxiway Geometries):

1. Three (3) or more RIs in a single CY, or
2. An average of one (1) or more RIs per year during the latest 10 years

Note 2: Locations that have a Safety Enhancement project complete that results in the elimination of a Runway/Taxiway intersection will automatically move to the “Mitigation Complete” stage, bypassing the “Safety Enhancement” stage.

Once a location in the RIM Inventory has safety enhancement projects completed, it is moved into the Safety Enhancement stage where it is considered a short-term success for the program. The location remains in this stage for up to three years. If it meets the RIM criteria during this appraisal period, the location is returned to the RIM Inventory. If the location does not meet RIM criteria during the appraisal period, it is moved forward to the Mitigation Complete stage and is then considered a long-term success for the program. Mitigation Complete locations are still monitored to ensure long-term success.

The measurements of program success for CY2024 are as follows:

- As of CY2024, a key program wide observation is that there has been a 45% reduction in the RIM Inventory since program inception, due to mitigation activity. This includes the locations in the Safety Enhancement and Mitigation Complete stages. The expected trend for the Mitigation Complete group is that the reduction should continue to increase year-over-year by a few percentage points. Together with the constant reduction due to the added Safety Enhancement locations, the combined reduction in RIM Inventory is expected to continue to increase year-over-year.

- For the Percent Change in Average Incursion Rate metric, the 98 locations that have gone through some stage of mitigation through 2024 have a lower Post-Mitigation A.I.R. of 0.19 compared to its Pre-Mitigation A.I.R. of 0.83, resulting in a 77% reduction in incursions for combined Safety Enhancement and Mitigation Complete locations.

2.3 New Methodology for Assessing and Identifying HS Locations

In FY2024, the FRT created a new approach for assessing and identifying HS locations as part of the field validation cycle. Previously, all incursions that occurred within an HS polygon were assessed to determine whether a location met RIM Program criteria. The FRT modified the process to focus on incursion history at individual runway/taxiway hold line locations as opposed to the entire HS polygon limits. This allows mitigation efforts to focus more directly on the runway/taxiway intersection of the greatest concern. This approach is referred to as Hot Spot Reassignment, or HSR.

Some RIM locations changed because of these modifications. For example, an HS polygon meeting RIM criteria when all incursions within the HS polygon were associated collectively may no longer meet RIM criteria when assessed on an individual runway/taxiway hold line basis. On the other hand, some HS locations previously designated as a single RIM location may result in multiple RIM locations based on the runway/taxiway hold line analysis.

This HSR revised total PTG location and RIM location counts. Eight RIM locations were removed from the inventory as they no longer met the criteria for RIM. As incursions were re-associated with individual taxiway/runway intersections, five locations that were previously covered by other HS location points now met the RIM criteria individually and were designated as new RIM locations. Table 1 summarizes the changes at RIM locations affected by this approach.

Table 1. Runway Incursion Mitigation Location Changes Due to 2024 HSR

Airport Name	Airport Identifier	Location Description	Location Status
Akron-Canton Airport, OH	CAK	Eastbound holding position on Taxiway H for Runway 1/19	Removed as RIM
Ronald Reagan Washington International Airport, DC	DCA	Holding position on Taxiway M for Runway 1/19	Removed as RIM
Daniel K. Inouye International Airport, HI	HNL	Approach ends of Runways 4L and 4R	Removed as RIM
Daniel K. Inouye International Airport, HI	HNL	Northbound holding position on Taxiways E for Runways 8L/26R	Removed as RIM
Livermore Municipal Airport, CA	LVK	Northbound holding position on Taxiway C for Runway 7R/25L	Removed as RIM
Miami International Airport, FL	MIA	Holding position at intersection of Taxiways N, M, P, Q for Runways 8R/26L and 12/30	Removed as RIM

Airport Name	Airport Identifier	Location Description	Location Status
Oakland San Francisco Bay Airport, CA	OAK	Westbound holding position on Taxiway C for approach area of Runway 33	Removed as RIM
Pensacola International Airport, FL	PNS	Intersections of Runway 8/26 and 17/35	Removed as RIM
Hartsfield-Jackson Atlanta International Airport, GA	ATL	Southbound holding position on Taxiway C for Runway 8R/26L	Validated in FY2024 and became a new RIM
Chino Airport, CA	CNO	Northbound holding position on Taxiway D for Runway 8L/26R	Validated in FY2024 and became a new RIM
Niagara Falls International Airport, NY	IAG	Holding position on Taxiway D1 for Runway 10L/28R	Validated in FY2024 and became a new RIM
Sarasota Bradenton International Airport, FL	SRQ	Intersection of Runway 4/22 and Runway 14/32	Validated in FY2024 and became a new RIM
Sarasota Bradenton International Airport, FL	SRQ	Southbound holding position on Taxiway A for Runway 4/22	Validated in FY2024 and became a new RIM

2.4 The FY2015—FY2025 Program Summary

The RIM database has undergone 11 annual updates since the completion of the PTG study. These updates added a total of 14,108 RIs and 822 PTG locations to the database. Eleven field validation cycles coincided with these annual database updates. The FRT and FAA regional/ADO field personnel completed these cycles in July 2015, December 2016, and in July of every year from 2017 through 2025. **Figure 3** provides a breakdown of RIs added with each update.

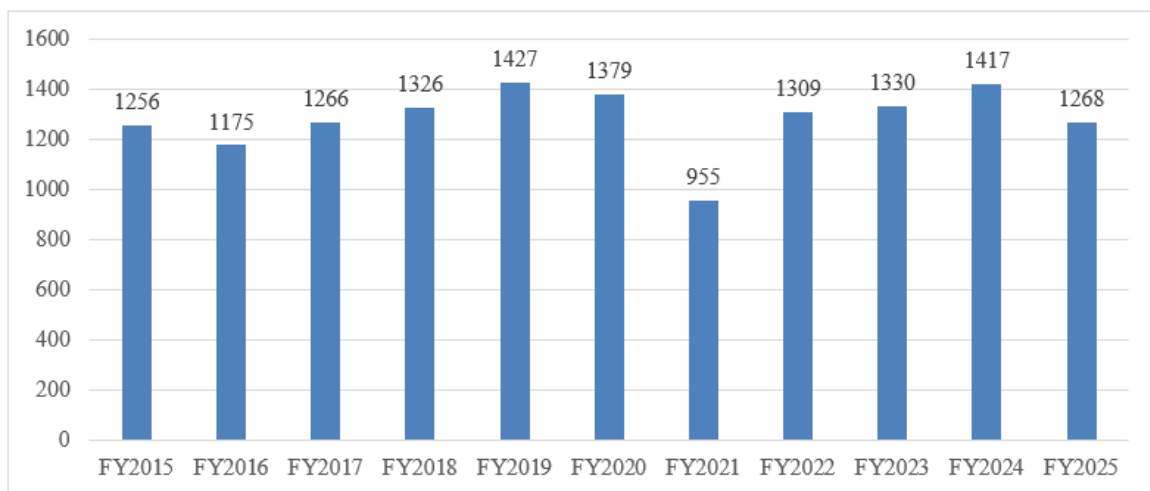


Figure 3. The RIs Added to RIM Database With Each Update

Figure 4 shows the number of PTG locations added with each update, which includes HS locations but excludes locations already mitigated.

- As shown, the number of PTG locations decreased by 62 in FY2019 due to the mitigation of nonstandard geometry characteristics, through other projects.
- The number of PTG locations increased by 247 in FY2021 due to the establishment of new numerical criteria for identifying Geocode 14, “Short taxi distance from ramp/apron area to a runway.” Analysis of data from Section 7.4 of the report Data Gap Assessment and Exploratory Data Analysis for Runway Incursion Mitigation Program (Baldwin & Harris, 2020) established this criterion (800 feet from non-movement area marking to runway hold line). This identified new PTG locations added to the RIM database.
- The number of PTG locations decreased by 33 in FY2024, due to a great number of PTG locations being mitigated by the closure of runways.
- The number of PTG locations increased by 240 after the HSR implemented in 2024 because many HS points were created. Previously, a single HS point was used to represent the entire HS area, regardless of the size of HS polygon and how many intersections it covered. However, the HSR task identified all runway/taxiway intersections described by an HS narrative by adding new HS points. After the HSR, many HS points were newly created, resulting in an increase in total PTG locations.

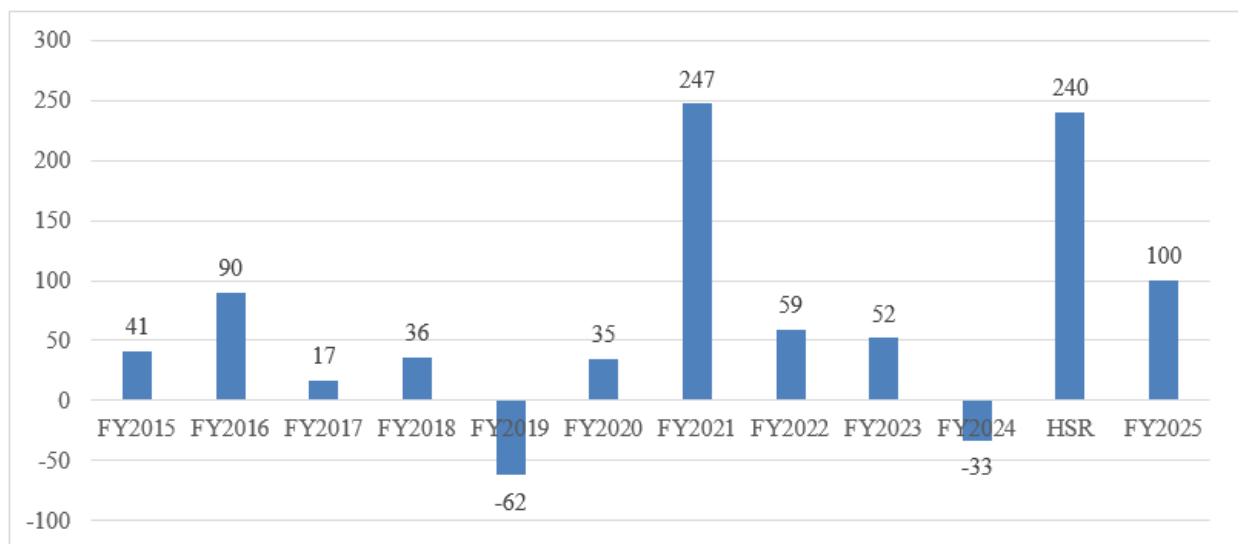


Figure 4. The PTG Locations Added to RIM Database With Each Update

Figure 5 shows the counts of locations that entered the RIM inventory after each validation cycle, as well as the counts of RIM locations mitigated per fiscal year. This figure represents additions since the initial FY2012 study and does not take into consideration differences in yearly values that result from adjustments made to individual RIM locations (because of reevaluation of runway incursion reports) to account for changes in RIM location status. Section

2.4 provides an in-depth discussion of the most recent database update and validation cycle, which took place in FY2025.

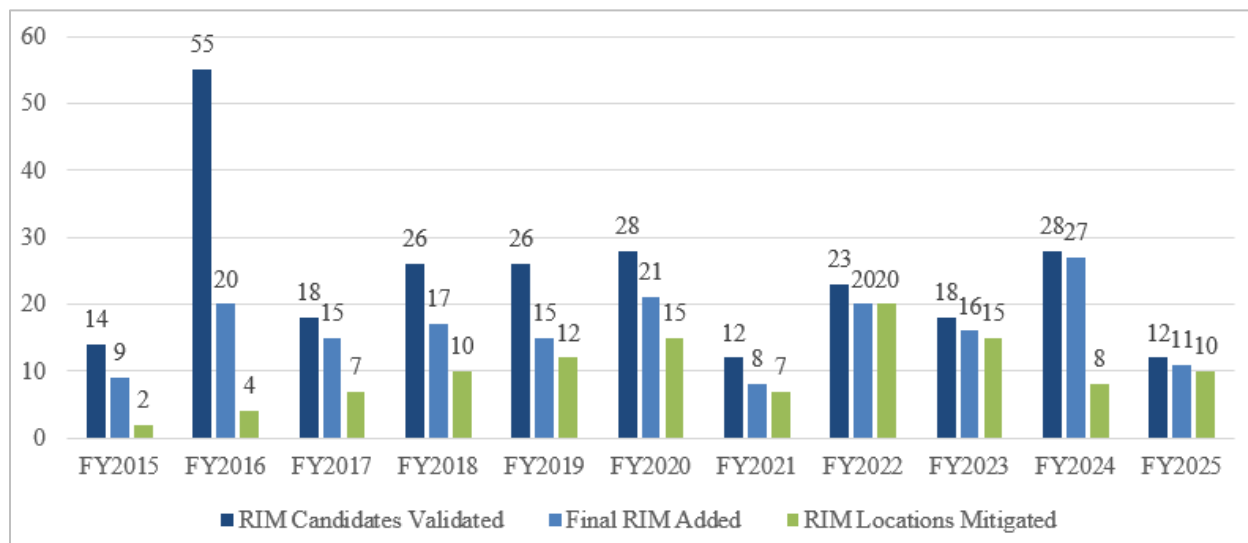


Figure 5. The RIM Locations Validated/Added/Mitigated Per FY

2.5 The FY2025 Program Update

The FY2025 RIM database update was completed in September 2025. This update analyzed and georeferenced 1,268 RIs from CY2024. This increased the overall number of RIs in the database to 19,207. These incursions occurred at 527 towered airports between FY2008 and the end of CY2024.

Analysis of RI counts identified 17 locations meeting the minimum criteria for entry into the RIM inventory. Of these 17 locations, 12 were ultimately included in the field validation/review cycle based on assessment of individual location characteristics and runway incursion history and type. Based on information obtained during field validation, 11 locations were added to the RIM inventory in FY2025. Table 2 lists these 11 locations and provides relevant details such as location, peak year RI counts, and cumulative RI counts during the past 10 years. Among these locations, one was a mitigated location (indicated by an asterisk in Table 2) that returned to the RIM inventory in FY2025 for additional mitigation action.

Table 2. The FY2025 New RIM Locations: Summary Data

Airport Name	Airport Identifier	Location Description	Peak CY/ Annual RI	Cumulative ¹ RI Count
Boeing Field/King County International Airport, WA	BFI	Holding positions on Taxiway A4 between Runways 14R and 14L	2024 / 5	12
Birmingham-Shuttlesworth International Airport, AL	BHM	Holding position on Taxiway A5 for Runway 6/24	2024 / 4	6

Airport Name	Airport Identifier	Location Description	Peak CY/ Annual RI	Cumulative ¹ RI Count
Phoenix Deer Valley Airport, AZ	DVT*	Holding position on Taxiway C3 for Runway 7R/25L	2021 / 9	19
Westchester County Airport, NY	HPN	Northbound holding position on Taxiway A for Runway 11/29	2024 / 3	7
Phoenix-Mesa Gateway Airport, AZ	IWA	Approach ends of Runway 30C, Runway 30L, and Runway 30R	2019 / 5	12
Los Angeles International Airport, CA	LAX	Holding positions on Taxiway V between Runways 6R and 6L	2024 / 3	3
Smyrna Airport, TN	MQY	Holding positions on Taxiway A between Runway 1/19 and Runway 14/32	2024 / 4	6
Monterey Regional Airport, CA	MRY	Northbound holding position on Taxiway K for Runway 10L/28R	2024 / 3	4
Chicago O'Hare International Airport, IL	ORD	Intersection of Runway 4L/22R and Runway 9R/27L	2023 / 4	10
Snohomish County (Paine Field) Airport, WA	PAE	Holding position on Taxiway A5 for Runway 16R/34L	2021 / 2	10
Trenton Mercer Airport, NJ	TTN	Intersection of Runway 6/24 and Runway 16/34	2024 / 6	6

* RIM locations mitigated previously but then returned to RIM inventory in FY2025 for additional mitigation.

¹ Incursion count to date from the previous 10 calendar years of available RI data (CY2015–CY2024).

2.6 The RIM Inventory

At the end of FY2025, the RIM inventory consisted of 136 active RIM locations at 79 airports across all FAA Regions. Several airports have more than one active RIM location. Airports with the most RIM locations are

- Chino Airport (CNO), Chino, California—6 RIM locations
- Daniel K. Inouye International Airport, Honolulu, Hawaii—5 RIM locations
- Montgomery-Gibbs Executive Airport (MYF), San Diego, California—5 RIM locations

The FAA categorizes airports with the greatest impact on system performance (having 1% of passenger enplanements or 0.75% or more of the total nonmilitary itinerant operations) as core airports. Table 3 lists the Core 30 airports with current RIM locations.

Table 3. Core 30 Airports With RIM Locations

Airport Name	Airport Identifier	Number of RIM Locations
Daniel K. Inouye International Airport, Honolulu, Hawaii	HNL	5
General Edward Lawrence Logan International Airport, Boston, Massachusetts	BOS	4
Hartsfield-Jackson Atlanta International Airport, Atlanta, Georgia	ATL	3
Ronald Reagan Washington National Airport, Washington, DC	DCA	2
Los Angeles International Airport, Los Angeles, California	LAX	2
Chicago O'Hare International Airport, Illinois	ORD	2
Salt Lake City International Airport, Salt Lake City, Utah	SLC	2
Denver International Airport, Denver, Colorado	DEN	1
Newark Liberty International Airport, Newark, New Jersey	EWR	1
Harry Reid International Airport, Las Vegas, Nevada	LAS	1
Memphis International Airport, Memphis, Tennessee	MEM	1
Miami International Airport, Miami, Florida	MIA	1
Seattle-Tacoma International Airport, Seattle, Washington	SEA	1

The complete RIM inventory as of the end of FY2025 is on the FAA RIM website, https://www.faa.gov/airports/engineering/incursions_excursions/rim.

3. MITIGATION ANALYSIS

Once the FRT adds a PTG location to the RIM inventory, relevant stakeholders (e.g., FAA personnel, local airport sponsor) coordinate to determine the most appropriate mitigation strategies for the location, as is typical for proper airport planning and design. Upon selecting mitigation strategies, the project progresses through the typical phases of planning, environmental assessment, design, and construction. The 136 active RIM locations are in various stages of mitigation. Figure 6 provides a breakdown of RIM locations by mitigation milestone; it shows 120 (88%) active RIM locations have initiated mitigation activities and are in the planning, design, or construction phases. Note that 5 of the 16 RIM locations with no project identified entered the RIM inventory in the fourth quarter of FY2025.

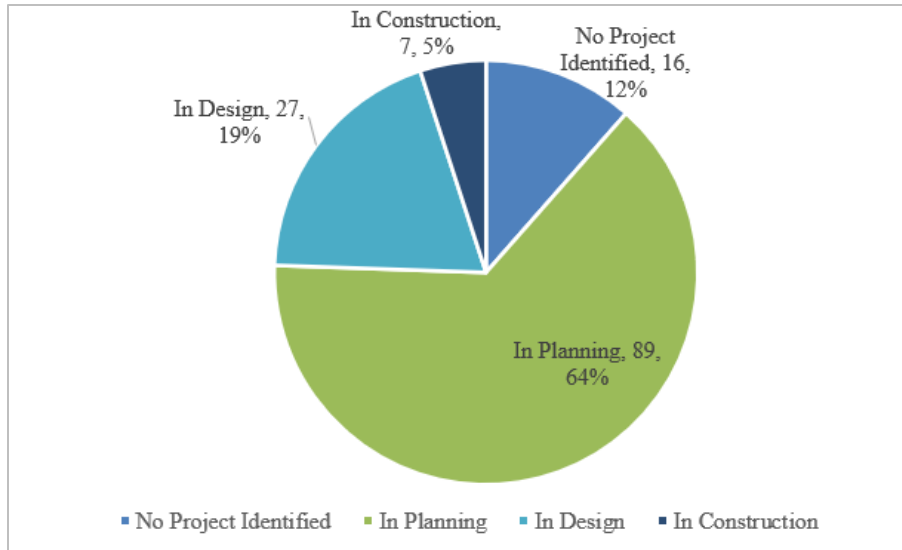


Figure 6. Status of Active RIM Locations

Airports use a variety of mitigation strategies to eliminate nonstandard geometry configurations and reduce the likelihood of pilot confusion and, ultimately, RIs. AC 150/5300-13 (FAA, 2022) provides airports with airport geometry strategies to reduce the risk of RIs. In addition to geometry improvements, airports often use a combination of mitigation strategies for RIM locations. Mitigation strategies include changes to airfield lighting, signage, markings, and/or operational procedures. **Table 4** provides examples of mitigation strategies.

Table 4. Mitigation Strategy Examples (FAA, 2022)

Mitigation Type	Mitigation Strategy Examples
Airport Geometry Changes	• Reconfigure taxiway to intersect runway at 90-degree angle • Relocate taxiway to eliminate direct access • Narrow the taxiway pavement entrance • Close a taxiway or runway
Lighting	• Install elevated or in-pavement runway guard lights • Install stop bars • Install color-coded taxiway centerline lights
Signage	• Relocate signs to meet FAA standards • Adjust hold position signs to align with incoming taxiway centerline
Markings	• Relocate markings to meet FAA standards • Install enhanced centerline markings • Collocate instrument landing system (ILS) and hold position markings • Install runway holding position markings at runway/runway intersections
Procedures/Operational	• Notify pilots of problems with correct runway selection through Automated Traffic Information System (ATIS), Notices to Airmen (NOTAMs), and airport diagram notations • Discontinue use of runways as taxiways

FAA personnel developed procedures to confirm mitigation of RIM locations and successful mitigation techniques.

By the end of FY2025, the RIM program mitigated 112 locations, including those in the Safety Enhancement or Mitigation Complete stages. Airports used a variety of mitigation strategies to eliminate the problematic geometry characteristics or reduce their effects at these locations. Refer to Appendix A for the location descriptions of each mitigated RIM location by FY.

The RIM-mitigated locations experienced 1,471 RIs prior to mitigation, compared to 146 RIs after mitigation. Because some of these locations were mitigated relatively recently, i.e., within the past 5 years, significant post-mitigation RI trending data do not yet exist. Monitoring these locations over time determines if mitigation efforts are successful. Appendix B provides summary data for all RIM-mitigated locations.

4. CONCLUSION

The goal of the RIM program is to identify locations at towered airports with nonstandard geometry characteristics and a high occurrence of RIs, mitigate the nonstandard geometry characteristics present at these locations, and ultimately reduce the number of RIs at these locations. This program continues to be one of the most successful safety programs in the FAA.

At the end of FY2025, the RIM Program reflects the following status:

- 136 active RIM locations
- 79 airports with at least 1 RIM location
- 123 locations with initiated mitigation activities (planning, design, or construction phases)
- 112 mitigated locations since the June 2015 inception
- As of CY2024, the 98 locations that contributed to the short-term and long-term reduction in RIM Inventory, on average, experience 77% fewer incursions per year after mitigation activity.
- Mitigations eliminated HS polygons from the airport diagrams at 36 of these locations

The FAA continues to monitor these locations to ensure the mitigations successfully reduce the number of RIs.

The FRT continues to monitor the progress of the program by visiting as many airports with RIM locations as feasible. Personnel from FAA Headquarters, the regions, and the Airports District Offices are available to provide advisory and financial assistance to airport sponsors with mitigation strategies, as the goal is to reduce RIs as much as possible, and eliminate RIM locations across all airports.

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APPENDIX A—LOCATION DESCRIPTIONS OF MITIGATED LOCATIONS

Table A-1 lists the RIM-Mitigated locations by fiscal year and their location descriptions.

Table A-1. The RIM-Mitigated Locations by Year

FY	Airport Identifier	Airport Name	Location Description
2015	CLT	Charlotte/Douglas International Airport, Charlotte, North Carolina	Holding position on Taxiway D for Runway 5/23
	FDK	Frederick Municipal Airport, Frederick, Maryland	Northbound holding position on Taxiway A for Runway 12/30
2016	APA	Centennial Airport, Denver, Colorado	Holding position on Taxiway A1 at approach end of Runway 17L
	CRP	Corpus Christi International Airport, Corpus Christi, Texas	Holding position on Taxiway A at approach ends of Runway 31 and Runway 36
	MDW	Chicago Midway International Airport, Chicago, Illinois	Holding position on Taxiways E1, E2, and E3 at approach end of Runway 31C
	RNO	Reno-Tahoe International Airport, Reno, Nevada	Holding position on Taxiway J for Runway 16L/34R
2017	ACT	Waco Regional Airport, Waco, Texas	Approach end of Runway 32
	DWH	David Wayne Hooks Memorial Airport, Houston, Texas	Westbound holding position of Taxiway E for Runway 17L/35R
	FXE	Fort Lauderdale Executive Airport, Fort Lauderdale, Florida	Holding position on Taxiway C (Current Taxiway A5) at approach end of Runway 26
	FXE	Fort Lauderdale Executive Airport, Fort Lauderdale, Florida	Holding position on Taxiway E (Current Taxiway A1) at approach end of Runway 8
	FXE	Fort Lauderdale Executive Airport, Fort Lauderdale, Florida	Eastbound holding position on Taxiway A for Runway 13/31
	PHL	Philadelphia International Airport, Philadelphia, Pennsylvania	Southbound holding position on Taxiway D for Runway 9L/27R
	PHL	Philadelphia International Airport, Philadelphia, Pennsylvania	Northbound holding position on Taxiway D at approach end of Runway 8
2018	ABQ	Albuquerque International Sunport, Albuquerque, New Mexico	Northbound holding position on Taxiway E1 for Runway 8 and Runway 12
	DAB	Daytona Beach International Airport, Daytona, Florida	Holding position on Taxiway P5 for Runway 7L/25R
	HUF	Terre Haute Regional Airport, Terre Haute, Indiana	Holding position on Taxiway D for Runway 18/36 and 14/32
	ISM	Kissimmee Gateway Airport, Orlando, Florida	Northbound holding position on Taxiway B for Runway 15/33
	MLU	Monroe Regional Airport, Monroe, Louisiana	Holding positions on Taxiway A between Runways 14/32 and 18/36
	PRC	Ernest A. Love Field Airport, Prescott, Arizona	Holding positions on Taxiways E and C2 for Runway 3R/21L
	SEA	Seattle-Tacoma International Airport, Seattle, Washington	Eastbound holding position on Taxiway F for Runway 16L/34R
	SEA	Seattle-Tacoma International Airport, Seattle, Washington	Westbound holding position on Taxiway Q for Runway 16L/34R

FY	Airport Identifier	Airport Name	Location Description
2019	SMO	Santa Monica Municipal Airport, Santa Monica, California	Holding position on Taxiway B at approach end of Runway 21
	TUL	Tulsa International Airport, Tulsa, Oklahoma	Northbound holding positions on Taxiways K and J for Runway 8/26
	DVT	Phoenix Deer Valley Airport, Phoenix, Arizona	Holding position on Taxiway A4 at approach end of Runway 7L
	FTY	Fulton County Airport-Brown Field, Atlanta, Georgia	Northbound holding position on Taxiway K for Runway 8/26
	LGB	Long Beach Airport/Daugherty Field, Long Beach, California	Northbound holding position on Taxiway D at approach end of Runway 25L
	LOU	Bowman Field Airport, Louisville, Kentucky	Holding positions on Taxiway J for Runway 6/24
	MAF	Midland International Air and Space Port Airport, Midland, Texas	Holding position on Taxiway A at the approach end of Runway 10
	MHT	Manchester-Boston Regional Airport, Manchester, New Hampshire	Holding positions on Taxiways P and U at approach end of Runway 35
	MIA	Miami International Airport, Miami, Florida	Holding position on Taxiway M5 for Runway 8R/26L
	MIA	Miami International Airport, Miami, Florida	Eastbound holding position on Taxiway T/T8 for Runway 12/30
	SFB	Orlando Sanford International Airport, Orlando, Florida	Northbound holding position on Runway 18/36 for Runway 9R/27L
	SFB	Orlando Sanford International Airport, Orlando, Florida	Northbound holding position on Taxiway R for Runway 9R approach area
	TMB	Miami Executive Airport, Miami, Florida	Holding position on Taxiway A at approach end of Runway 9L
	VNY	Van Nuys Airport	Northbound holding position on Taxiway B at approach end of Runway 16L
2020	ADS	Addison Airport, Dallas, Texas	Holding position on Taxiway G for Runway 16/34
	ADS	Addison Airport, Dallas, Texas	Holding position on Taxiway C for Runway 16/34
	ATL	Hartsfield-Jackson Atlanta International Airport, Atlanta, Georgia	Northbound holding position on Taxiway D for Runway 9L/27R
	CXO	Conroe-North Houston Regional Airport, Houston, Texas	Eastbound holding position on Taxiway J for Runway 14/32
	DAL	Dallas Love Field Airport, Dallas, Texas	Holding position on Taxiway B5 for Runway 13L/31R
	IWA	Phoenix-Mesa Gateway Airport, Phoenix, Arizona	Northbound holding position on Taxiway K for Runway 12/30
	JNU	Juneau International Airport, Juneau, Alaska	Holding positions on Taxiway D for Runway 8/26
	LGB	Long Beach Airport/Daugherty Field, Long Beach, California	Eastbound holding position on Taxiway J for Runway 12/30
	MIC	Crystal Airport, Minneapolis, Minnesota	Holding positions on Taxiway E4 between Runways 14L and 14R
	ORD	Chicago O'Hare International Airport, Chicago, Illinois	Holding positions on Taxiway T for Runway 9R/27L approach area
	ORL	Orlando Executive Airport, Orlando, Florida	Holding positions on Taxiway E4 at approach end of Runway 7
	PAO	Palo Alto Airport, Palo Alto, California	Holding positions on Taxiway A at approach end of Runway 31

FY	Airport Identifier	Airport Name	Location Description
	PDK	DeKalb-Peachtree Airport, Atlanta, Georgia	Eastbound holding position on Taxiway A at approach end of Runway 3L
	RNO	Reno-Tahoe International Airport, Reno, Nevada	Intersection of Taxiway C and Taxiway L
	TEB	Teterboro Airport, Teterboro, New Jersey	Holding positions on Taxiway B between Runways 1/19 and 6/24
2021	CLE	Cleveland Hopkins International Airport, Cleveland, Ohio	Westbound holding position on Taxiway R for Runway 6R/24L
	HNL	Honolulu International Airport, Honolulu, Hawaii	Northbound holding position on Taxiway F for Runway 4R/22L
	IDA	Idaho Falls Regional Airport, Idaho Falls, Idaho	Approach end of Runway 17
	LGB	Long Beach Airport/Daugherty Field, Long Beach, California	Eastbound holding position on Taxiway B/K for Runway 12/30
	MRI	Merrill Field Airport, Anchorage, Alaska	Northbound holding position on Taxiway C for Runway 7/25
	PHX	Phoenix Sky Harbor International Airport, Phoenix, Arizona	Approach end of Runway 25R
	TEB	Teterboro Airport, Teterboro, New York	Northbound holding position on Taxiway L for Runway 6/24
2022	ABQ	Albuquerque International Sunport, Albuquerque, New Mexico	Southbound holding position on Taxiway G for Runway 3/21
	APC	Napa County Airport, Napa, California	Approach end of Runway 19R
	BOI	Boise Air Terminal, Boise, Indiana	Holding positions on Taxiways B3 and F for Runway 10R/28L
	BTV	Burlington International Airport, Burlington, Vermont	Westbound holding position on Taxiway C for Runway 1/19
	CLE	Cleveland Hopkins International Airport, Cleveland, Ohio	Westbound holding position on Taxiway S for Runway 6R/24L
	CSG	Columbus Airport, Columbus, Georgia	Intersection of Taxiways A, C, and D
	DAL	Dallas Love Field, Dallas, Texas	Holding position on Taxiway L at approach end of Runway 13R
	DAL	Dallas Love Field, Dallas, Texas	Holding position on parallel Taxiway C at approach end of Runway 13R
	FAI	Fairbanks International Airport, Fairbanks, Alaska	Westbound holding position of Taxiway T for Runway 2R/20L
	HOU	William P. Hobby Airport, Houston, Texas	Holding positions on Taxiway E between Runway 17/35 and 12R/30L
	HOU	William P. Hobby Airport, Houston, Texas	Southbound holding position on Taxiway G at approach end of Runway 4
	HOU	William P. Hobby Airport, Houston, Texas	Northbound holding position on Taxiway G at approach end of Runway 13R
	MHT	Manchester Boston Regional Airport, Manchester, New Hampshire	Holding position on Taxiway H at approach end of Runway 17
	MYF	Montgomery-Gibbs Executive Airport, San Diego, California	Intersection of Runway 5/23 and Runway 10R/28L
	ORD	Chicago O'Hare International Airport, Chicago, Illinois	Westbound holding position on Taxiway G for Runway 4L/22R

FY	Airport Identifier	Airport Name	Location Description
	PDK	DeKalb Peachtree Airport, Atlanta, Georgia	Holding positions on Taxiways C and B between Runways 3L/21R, 3R/21L, and 16/34
	SJC	Norman Y. Mineta San Jose International Airport, San Jose, California	Approach end of Runway 30R
	SJC	Norman Y. Mineta San Jose International Airport, San Jose, California	Approach end of Runway 30L
	SPI	Abraham Lincoln Capital Airport, Springfield, Illinois	Intersections of Runways 18/36, 4/22, and 13/31
	TYR	Tyler Pounds Regional Airport, Tyler, Texas	Holding position on parallel Taxiway F at approach end of Runway 22
2023	ADS	Addison Airport, Dallas, Texas	Holding position on Taxiway A at approach end of Runway 16
	APA	Centennial Airport, Denver, Colorado	Holding position on Taxiway C1 at approach end of Runway 10
	APA	Centennial Airport, Denver, Colorado	Eastbound holding position on Taxiway B8 for Runway 17L/35R
	BOS	General Edward Lawrence Logan International Airport, Boston, Massachusetts	Intersection of Runways 4R/22L and 14/32
	FCM	Flying Cloud Airport, Minneapolis, Minnesota	Holding position on Taxiway C3 for Runway 7R/25L
	HIO	Portland-Hillsboro Airport, Portland, Oregon	Approach runway ends of Runway 10L and 10R
	HIO	Portland-Hillsboro Airport, Portland, Oregon	Holding position on Taxiway A9 for Runway 13R/31L
	HNL	Honolulu International Airport, Honolulu, Hawaii	Holding position on Taxiway T for Runway 8L/26R
	LAS	Harry Reid International Airport, Las Vegas, Nevada	Holding position on Taxiway A8 for Runway 13R/31L
	MLI	Quad Cities International Airport, Illinois	Intersection of Runways 8L/26R and 1L/19R
	PBI	Palm Beach International Airport, Florida	Holding position on Taxiway R1 at approach end of Runway 10R
	PRC	Ernest A. Love Field Airport, Prescott, Arizona	Holding position on Taxiway A1 at the approach end of Runway 3L
	PRC	Ernest A. Love Field Airport, Prescott, Arizona	Holding position on Taxiway C4 for Runway 3R/21L
	TMB	Miami Executive Airport, Miami, Florida	Holding positions on Taxiways E and H for Runway 13/31
2024	BET	Bethel Airport, Bethel, Alaska	Intersection of Runway 30 blast pad and Runway 1L/19R
	CMI	University of Illinois/Willard Airport, Champaign-Urbana, Illinois	Southbound holding position on Taxiway B for Runway 14L/32R
	FAI	Fairbanks International Airport, Fairbanks, Alaska	Holding position on Taxiway U for Runway 2/20 (ski strip)
	FRG	Republic Airport, New York	Eastbound holding position on Taxiway A for Runway 1/19
	LAF	Purdue University Airport, Lafayette, Indiana	Intersection of Runways 10/28 and 5/23
	LAX	Los Angeles International Airport, Los Angeles, California	Holding positions on Taxiway AA between Runways 6R/24L and 6L/24R

FY	Airport Identifier	Airport Name	Location Description
	PDK	Dekalb-Peachtree Airport, Georgia	Holding positions on Taxiway G between Runway 3R/21L and 3L/21R
	PDK	Dekalb-Peachtree Airport, Georgia	Eastbound holding position on Taxiway G at approach end of Runway 21R
	TUS	Tucson International Airport, Tucson, Arizona	Approach end of Runway 29R
	TUS	Tucson International Airport, Tucson, Arizona	Holding positions on Taxiway D between Runway 11L/29R and Runway 11R/29L
	SFO	San Francisco International Airport, San Francisco, California	Southbound holding position on Taxiway T for Runway 10R/28L
2025	ABQ	Albuquerque International Sunport Airport, New Mexico	Eastbound holding position on Taxiway E for Runway 3/21
	ARR	Aurora Municipal Airport, Illinois	Holding position on Taxiway A3 for Runway 9/27
	ATL	Hartsfield-Jackson Atlanta International Airport, Georgia	Southbound holding position on Taxiway D for Runway 8L/26R
	BFI	Boeing Field/King County International Airport, Washington	Holding positions on Taxiway A4 between Runways 14R and 14L
	BFI	Boeing Field/King County International Airport, Washington	Holding position on Taxiway A2 for Runway 14L/32R
	DAL	Dallas Love Field Airport, Texas	Holding position on parallel Taxiway A at approach end of Runway 13L
	FWA	Fort Wayne International Airport, Indiana	Holding position on Taxiway C2 for Runway 5/23
	GCN	Grand Canyon National Park Airport, Arizona	Holding position on Taxiways A at approach end of Runway 21
	RHV	Reid-Hillview Airport of Santa Clara County, California	Holding positions on Taxiway E between Runways 13L and 13R
	RHV	Reid-Hillview Airport of Santa Clara County, California	Westbound holding position on Taxiway A at approach end of Runway 31R

APPENDIX B—MITIGATED LOCATIONS

Table B-1 summarizes runway incursion mitigation (RIM)-Mitigated locations, including those in the Safety Enhancement or Mitigation Complete stages.

- The table lists runway incursion (RI) totals for pilot deviations (PDs) and vehicle/pedestrian deviations (V/PDs) from 2007 through 2024, along with RI totals before and after mitigation. Incursion totals included in this table reflect gross incursions and do not take into consideration analysis of incursion narratives.
- Locations mitigated in FY2025 are highlighted in the Date Complete column.
- In the RI Totals Per Year column, red indicates years before mitigation in place, yellow indicates the year of mitigation, and green indicates years following mitigation implementation.
- The “Average RI per year before/after mitigation” metric was removed from the table in FY2025 because it does not reflect mitigation performance accurately as it excludes narrative analysis and has been superseded by new program success metrics mentioned in Section 2.2 of the main document.

Table B-1. The RIM-Mitigated Locations Summary

Color Legend

Years Prior to Mitigation	Year Mitigation Was Completed	Years After Mitigation Was Completed

RIM-Mitigated Locations					Runway Incursion (PD & V/PD) Totals Per Year																		Runway Incursion (PD & V/PD) Totals	
Region	Airport Name	Identifier	Mitigation Type	Date Complete	2 0 0 7	2 0 0 8	2 0 0 9	2 0 0 0	2 0 0 1	2 0 0 2	2 0 0 3	2 0 0 4	2 0 0 5	2 0 0 6	2 0 0 7	2 0 0 8	2 0 0 9	2 0 0 0	2 0 0 1	2 0 0 2	2 0 0 3	2 0 0 4	Before Mitigation	After Mitigation
AAL	Bethel Airport	BET-16-HS	Signage, Marking, and/or Lighting	10/2/2023	0	0	0	0	0	0	0	0	0	0	0	0	1	5	2	0	0	0	8	0
AAL	Fairbanks International Airport	FAI-11	Taxiway/Runway Geometry Reconfiguration	9/4/2024	0	1	1	3	0	0	0	0	0	1	0	0	1	0	1	0	1	1	10	0
AAL	Fairbanks International Airport	FAI-27-HS	Taxiway/Runway Geometry Reconfiguration	10/29/2021	0	3	2	4	0	1	3	0	0	4	1	5	0	0	0	0	0	0	23	0
AAL	Juneau International Airport	JNU-01	Taxiway/Runway Geometry Reconfiguration	8/5/2020	0	0	1	0	0	3	1	2	2	0	0	1	0	1	1	0	0	0	11	1
AAL	Merrill Field Airport	MRI-13	Taxiway/Runway Geometry Reconfiguration	10/5/2020	0	2	1	4	0	0	0	4	1	2	0	0	0	1	0	0	0	1	15	1
AEA	Frederick Municipal Airport	FDK-10-HS	Signage, Marking, and/or Lighting	7/10/2015	0	0	0	0	0	0	0	1	4	0	0	0	0	1	0	0	0	0	5	1
AEA	Republic Airport	FRG-02-HS	Signage, Marking, and/or Lighting	5/31/2024	0	0	1	0	0	0	2	0	1	0	0	0	2	0	3	3	0	0	12	0
AEA	Philadelphia International Airport	PHL-01	Signage, Marking, and/or Lighting; Operational/Procedural	7/27/2017	0	0	2	0	2	1	1	0	0	0	1	0	0	0	0	1	0	1	6	3

RIM-Mitigated Locations					Runway Incursion (PD & V/PD) Totals Per Year																Runway Incursion (PD & V/PD) Totals				
Region	Airport Name	Identifier	Mitigation Type	Date Complete	2 0 0 7	2 0 0 8	2 0 0 9	2 0 0 0	2 0 0 1	2 0 0 2	2 0 0 3	2 0 0 4	2 0 0 5	2 0 0 6	2 0 0 7	2 0 0 8	2 0 0 9	2 0 0 0	2 0 0 1	2 0 0 2	2 0 0 3	2 0 0 4	Before Mitigation	After Mitigation	
AEA	Philadelphia International Airport	PHL-42-HS	Signage, Marking, and/or Lighting; Taxiway/runway geometry reconfiguration	8/24/2017	1	2	1	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0	0	8	0
AEA	Teterboro Airport	TEB-18-HS	Taxiway/Runway Geometry Reconfiguration	11/22/2019	0	0	0	0	1	3	1	1	0	0	1	1	0	0	0	0	0	0	0	8	0
AEA	Teterboro Airport	TEB-19-HS	Signage, Marking, and/or Lighting	6/1/2021	0	0	0	0	0	1	1	0	1	0	3	1	0	0	0	2	0	0	7	2	
AGL	Aurora Municipal Airport	ARR-03	Taxiway/Runway Geometry Reconfiguration	7/3/2025	0	0	0	0	0	0	0	0	0	0	0	1	3	0	2	0	1	0	7	N/A ¹	
AGL	Cleveland Hopkins International Airport	CLE-18-HS	Taxiway/Runway Geometry Reconfiguration	11/19/2021	0	0	4	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	6	0	
AGL	Cleveland Hopkins International Airport	CLE-19-HS	Taxiway/Runway Geometry Reconfiguration	11/2/2020	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	
AGL	University of Illinois/Willard Airport	CMI-08-HS	Taxiway/Runway Geometry Reconfiguration	9/1/2024	0	0	1	0	0	1	1	0	1	2	3	1	1	0	2	1	1	0	15	0	
AGL	Flying Cloud Airport	FCM-13	Taxiway/Runway Geometry Reconfiguration	5/19/2023	0	0	0	2	0	0	1	1	2	0	2	1	1	3	3	1	0	0	17	0	
AGL	Fort Wayne International Airport	FWA-19-HS	Taxiway/Runway Geometry Reconfiguration	7/3/2025	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	3	0	1	6	N/A ¹	

¹ Post-mitigation runway incursion data are not yet available for mitigations implemented in CY2025.

RIM-Mitigated Locations					Runway Incursion (PD & V/PD) Totals Per Year																		Runway Incursion (PD & V/PD) Totals	
Region	Airport Name	Identifier	Mitigation Type	Date Complete	2 0 7	2 0 8	2 0 9	2 0 0	2 0 1	2 0 2	2 0 3	2 0 4	2 0 5	2 0 6	2 0 7	2 0 8	2 0 9	2 1 0	2 1 1	2 1 2	2 1 3	2 1 4	Before Mitigation	After Mitigation
AGL	Terre Haute International Hulman Field	HUF-15-HS	Taxiway/Runway Geometry Reconfiguration	12/10/2017	0	0	0	0	0	0	2	0	1	8	0	0	0	1	0	0	0	0	11	1
AGL	Purdue University Airport	LAF-02	Taxiway/Runway Geometry Reconfiguration	6/15/2024	0	0	0	0	0	1	1	2	1	1	2	2	2	0	1	3	2	1	18	1
AGL	Chicago Midway International Airport	MDW-03	Signage, Marking, and/or Lighting	5/9/2016	0	0	1	0	0	3	0	1	0	0	0	0	0	1	0	1	1	1	5	4
AGL	Crystal Airport	MIC-16-HS	Taxiway/Runway Geometry Reconfiguration	8/25/2020	0	1	1	4	4	1	2	0	0	1	2	2	1	1	0	0	0	0	20	0
AGL	Quad Cities International Airport	MLI-20	Taxiway/Runway Geometry Reconfiguration	11/3/2022	0	0	2	0	0	0	8	2	0	0	1	0	0	0	0	1	1	0	13	2
AGL	Chicago O'Hare International Airport	ORD-31-HS	Taxiway/Runway Geometry Reconfiguration	11/1/2021	0	1	0	0	0	0	2	0	0	1	0	1	6	2	0	0	1	2	13	3
AGL	Chicago O'Hare International Airport	ORD-73	Taxiway/Runway Geometry Reconfiguration	6/1/2020	0	0	0	0	0	0	1	0	6	0	1	1	1	0	0	0	0	0	10	0
AGL	Abraham Lincoln Capital Airport	SPI-23-HS	Taxiway/Runway Geometry Reconfiguration	9/8/2022	0	2	3	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	8	0
ANE	General Edward Lawrence Logan International Airport	BOS-47	Operational/Procedural	8/29/2023	0	2	0	1	0	2	1	0	0	0	0	0	0	0	0	0	1	1	6	2
ANE	Burlington International Airport	BTV-12	Signage, Marking, and/or Lighting	10/29/2021	0	1	0	0	1	1	1	0	0	1	3	1	0	0	0	0	0	1	9	1
ANE	Manchester Boston Regional Airport	MHT-09-HS	Taxiway/Runway Geometry Reconfiguration	8/12/2022	2	10	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	15	0

RIM-Mitigated Locations					Runway Incursion (PD & V/PD) Totals Per Year																Runway Incursion (PD & V/PD) Totals			
Region	Airport Name	Identifier	Mitigation Type	Date Complete	2 0 0 7	2 0 0 8	2 0 0 9	2 0 1 0	2 0 1 1	2 0 1 2	2 0 1 3	2 0 1 4	2 0 1 5	2 0 1 6	2 0 1 7	2 0 1 8	2 0 2 9	2 0 2 0	2 0 2 1	2 0 2 2	2 0 2 3	2 0 2 4	Before Mitigation	After Mitigation
ANE	Manchester Boston Regional Airport	MHT-10-HS	Taxiway/Runway Geometry Reconfiguration	9/24/2019	2	1	1	0	1	1	0	0	0	0	0	0	2	0	0	0	0	0	6	2
ANM	Centennial Airport	APA-19-HS	Signage, Marking, and/or Lighting	8/30/2023	0	1	0	2	2	0	0	2	4	8	2	2	8	2	1	2	0	2	36	2
ANM	Centennial Airport	APA-20-HS	Taxiway/Runway Geometry Reconfiguration; Other	3/9/2016	0	3	2	2	3	1	2	1	5	0	1	1	2	1	2	1	1	2	19	11
ANM	Centennial Airport	APA-22-HS	Taxiway/runway geometry reconfiguration; Signage, Marking, and/or Lighting	8/30/2023	0	1	3	1	3	2	1	2	1	2	2	4	4	4	2	4	2	3	37	4
ANM	Boeing Field/King County International Airport	BFI-01	Taxiway/Runway Geometry Reconfiguration	8/29/2025	0	0	0	1	0	0	1	0	0	0	2	0	2	0	1	0	2	5	14	0
ANM	Boeing Field/King County International Airport	BFI-04	Taxiway/Runway Geometry Reconfiguration	8/15/2025	0	0	1	0	0	1	0	0	0	0	1	1	0	1	1	1	4	0	11	0
ANM	Boise Air Terminal	BOI-08	Taxiway/Runway Geometry Reconfiguration	12/4/2021	0	0	0	0	0	0	0	0	0	0	0	1	3	0	0	0	0	4	0	
ANM	Portland-Hillsboro Airport	HIO-01-HS	Signage, Marking, and/or Lighting	10/10/2022	0	0	0	1	1	0	2	4	0	2	2	1	1	3	3	4	1	1	23	3
ANM	Portland-Hillsboro Airport	HIO-05	Signage, Marking, and/or Lighting	10/31/2022	0	1	0	0	2	1	0	0	0	3	3	0	1	1	3	0	1	1	15	2
ANM	Idaho Falls Regional Airport	IDA-09-HS	Taxiway/Runway Geometry Reconfiguration	6/21/2021	1	0	1	0	0	4	1	0	0	1	0	1	2	0	2	2	0	0	13	2
ANM	Seattle-Tacoma International Airport	SEA-25-HS	Signage, Marking, and/or Lighting	4/29/2018	0	1	2	2	0	1	1	1	0	0	0	1	0	0	0	0	0	0	8	1

RIM-Mitigated Locations					Runway Incursion (PD & V/PD) Totals Per Year																Runway Incursion (PD & V/PD) Totals			
Region	Airport Name	Identifier	Mitigation Type	Date Complete	2 0 0 7	2 0 0 8	2 0 0 9	2 0 0 1	2 0 1 1	2 0 0 2	2 0 1 3	2 0 0 4	2 0 0 5	2 0 1 6	2 0 0 7	2 0 1 8	2 0 0 9	2 0 0 0	2 0 1 1	2 0 2 2	2 0 0 3	2 0 0 4	Before Mitigation	After Mitigation
ANM	Seattle-Tacoma International Airport	SEA-26	Operational/Procedural	8/10/2018	0	1	0	1	0	0	0	4	0	0	0	0	1	0	0	0	0	0	6	1
ASO	Hartsfield-Jackson Atlanta International Airport	ATL-18	Operational/Procedural	5/29/2020	0	1	0	1	0	3	0	0	0	0	0	2	0	0	2	0	0	0	7	2
ASO	Hartsfield-Jackson Atlanta International Airport	ATL-33-HS	Taxiway/Runway Geometry Reconfiguration	10/15/2024	0	0	1	4	2	2	0	0	0	0	0	0	0	0	0	1	0	0	10	0
ASO	Charlotte Douglas International Airport	CLT-06	Signage, Marking, and/or Lighting; Operational/Procedural	6/18/2015	0	0	0	0	4	0	1	0	0	0	0	0	0	0	0	0	0	0	5	0
ASO	Columbus Airport	CSG-08-HS	Signage, Marking, and/or Lighting	8/30/2022	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	3	0
ASO	Daytona Beach International Airport	DAB-02	Taxiway/Runway Geometry Reconfiguration	8/4/2018	0	0	1	0	0	0	3	1	0	0	0	0	0	0	0	0	0	0	5	0
ASO	Fulton County Airport Brown Field	FTY-04	Taxiway/Runway Geometry Reconfiguration	9/1/2019	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
ASO	Fort Lauderdale Executive Airport	FXE-08	Signage, Marking, and/or Lighting	2/16/2017	0	1	0	3	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4	2
ASO	Fort Lauderdale Executive Airport	FXE-19-HS	Signage, Marking, and/or Lighting	2/16/2017	0	0	1	0	0	1	1	2	1	0	0	1	4	0	2	1	0	0	6	8
ASO	Fort Lauderdale Executive Airport	FXE-21-HS	Signage, Marking, and/or Lighting	2/16/2017	0	0	0	0	2	0	5	1	0	2	0	0	0	0	0	0	0	1	10	1
ASO	Kissimmee Gateway Airport	ISM-02	Signage, Marking, and/or Lighting	7/31/2018	0	0	0	0	0	3	0	0	0	0	0	0	0	0	1	0	0	0	3	1
ASO	Bowman Field	LOU-01	Signage, Marking, and/or Lighting	5/1/2019	0	0	1	0	3	1	0	0	0	0	0	0	0	0	0	0	0	0	5	0

RIM-Mitigated Locations					Runway Incursion (PD & V/PD) Totals Per Year																Runway Incursion (PD & V/PD) Totals	
Region	Airport Name	Identifier	Mitigation Type	Date Complete	2 0 7	2 0 8	2 0 9	2 0 0	2 0 1	2 0 2	2 0 3	2 0 4	2 0 5	2 0 6	2 0 7	2 0 8	2 0 9	2 1 0	2 1 1	2 1 2	Before Mitigation	After Mitigation
ASO	Miami International Airport	MIA-02-HS	Taxiway/Runway Geometry Reconfiguration; Signage, Marking, and/or Lighting	11/16/2018	0	3	0	0	1	0	0	1	0	0	0	0	0	0	0	0	5	0
ASO	Miami International Airport	MIA-45-HS	Taxiway/Runway Geometry Reconfiguration	8/16/2019	0	0	0	4	2	0	0	2	0	0	0	1	0	0	1	0	9	4
ASO	Orlando Executive Airport	ORL-01	Taxiway/Runway Geometry Reconfiguration	5/6/2020	0	3	0	0	3	0	1	1	0	1	2	3	2	0	0	3	16	4
ASO	Palm Beach International Airport	PBI-02	Taxiway/Runway Geometry Reconfiguration; Signage, Marking, and/or Lighting	7/26/2023	0	0	3	0	0	0	0	0	0	0	0	0	3	2	0	1	10	0
ASO	DeKalb Peachtree Airport	PDK-11	Taxiway/Runway Geometry Reconfiguration	10/1/2021	0	1	0	0	1	0	1	2	3	4	0	0	1	0	0	0	13	0
ASO	DeKalb Peachtree Airport	PDK-16-HS	Operational/Procedural	9/25/2024	0	0	0	0	0	0	0	1	1	0	0	0	0	1	1	4	20	0
ASO	DeKalb Peachtree Airport	PDK-24	Operational/Procedural	9/25/2024	0	3	4	1	1	0	1	2	1	0	1	1	0	0	3	1	24	2
ASO	DeKalb Peachtree Airport	PDK-26-HS	Signage, Marking, and/or Lighting	12/31/2019	0	0	3	1	1	0	1	0	0	1	1	0	0	1	0	2	8	9
ASO	Orlando Sanford International Airport	SFB-05	Taxiway/Runway Geometry Reconfiguration	10/15/2018	0	0	1	0	1	1	1	0	1	0	1	0	0	0	0	0	6	0
ASO	Orlando Sanford International Airport	SFB-28-HS	Taxiway/Runway Geometry Reconfiguration	10/15/2018	0	3	1	0	1	3	0	2	5	2	0	0	0	0	0	0	17	0

RIM-Mitigated Locations					Runway Incursion (PD & V/PD) Totals Per Year																Runway Incursion (PD & V/PD) Totals			
Region	Airport Name	Identifier	Mitigation Type	Date Complete	2 0 0 7	2 0 0 8	2 0 0 9	2 0 1 0	2 0 1 1	2 0 1 2	2 0 1 3	2 0 1 4	2 0 1 5	2 0 1 6	2 0 1 7	2 0 1 8	2 0 1 9	2 1 2 0	2 1 2 1	2 1 2 2	2 1 2 3	2 1 2 4	Before Mitigation	After Mitigation
ASO	Miami Executive Airport	TMB-04	Taxiway/Runway Geometry Reconfiguration; Signage, Marking, and/or Lighting Change(s)	3/29/2019	0	0	0	1	0	3	2	2	4	3	2	4	0	0	0	0	1	0	21	1
ASO	Miami Executive Airport	TMB-14	Taxiway/Runway Geometry Reconfiguration	12/28/2022	1	0	1	2	0	1	2	3	1	1	1	0	1	1	0	0	0	0	15	0
ASW	Albuquerque International Sunport Airport	ABQ-09-HS	Signage, Marking, and/or Lighting	6/2/2025	0	0	1	1	1	0	2	0	0	0	1	0	0	1	4	2	1	4	18	0
ASW	Albuquerque International Sunport Airport	ABQ-34-HS	Taxiway/Runway Geometry Reconfiguration	5/11/2018	0	0	0	2	1	2	2	2	1	0	0	1	0	0	0	0	0	0	11	0
ASW	Albuquerque International Sunport Airport	ABQ-36-HS	Taxiway/Runway Geometry Reconfiguration	9/16/2022	0	1	0	0	0	0	0	1	0	0	0	3	1	4	3	0	2	1	13	3
ASW	Waco Regional Airport	ACT-04	Taxiway/Runway Geometry Reconfiguration; Operational/Procedural	10/10/2016	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
ASW	Addison Airport	ADS-05-HS	Signage, Marking, and/or Lighting	10/15/2022	0	3	5	4	5	2	3	0	2	2	2	5	1	1	2	1	2	0	37	3
ASW	Addison Airport	ADS-08-HS	Operational/Procedural	11/11/2019	0	0	0	0	1	0	9	0	0	0	0	0	0	0	0	0	0	0	10	0
ASW	Addison Airport	ADS-12-HS	Operational/Procedural	11/11/2019	1	1	0	1	2	1	0	0	1	0	0	0	0	0	0	0	0	0	7	0
ASW	Corpus Christi International Airport	CRP-08-HS	Taxiway/Runway Geometry Reconfiguration	5/26/2016	0	1	6	2	2	2	1	1	0	0	0	0	0	0	0	0	0	0	15	0

RIM-Mitigated Locations					Runway Incursion (PD & V/PD) Totals Per Year																		Runway Incursion (PD & V/PD) Totals	
Region	Airport Name	Identifier	Mitigation Type	Date Complete	2 0 0 7	2 0 0 8	2 0 0 9	2 0 1 0	2 0 1 1	2 0 1 2	2 0 0 3	2 0 0 4	2 0 0 5	2 0 0 6	2 0 0 7	2 0 0 8	2 0 0 9	2 0 1 0	2 0 1 1	2 0 1 2	2 0 2 3	2 0 2 4	Before Mitigation	After Mitigation
ASW	Conroe-North Houston Regional Airport	CXO-02	Signage, Marking, and/or Lighting	9/14/2020	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0	0	5	0
ASW	Dallas Love Field	DAL-14-HS	Signage, Marking, and/or Lighting	7/1/2022	0	1	6	3	1	0	3	5	3	5	3	0	3	0	2	0	0	0	35	0
ASW	Dallas Love Field	DAL-15	Signage, Marking, and/or Lighting	7/1/2022	0	0	0	0	0	1	0	0	0	0	2	7	2	0	0	0	0	0	12	0
ASW	Dallas Love Field	DAL-33	Taxiway/Runway Geometry Reconfiguration	10/31/2019	0	0	1	0	3	0	3	2	0	0	0	1	0	0	0	0	0	0	10	0
ASW	Dallas Love Field	DAL-45-HS	Other	11/14/2024	0	2	0	0	0	0	12	6	6	3	1	2	3	1	1	4	2	1	44	0
ASW	David Wayne Hooks Memorial Airport	DWH-10-HS	Signage, Marking, and/or Lighting, Operational/Procedural, and Taxiway/Runway Geometry Reconfiguration	12/31/2016	1	0	1	0	1	1	5	5	5	7	0	0	0	0	0	0	0	0	26	0
ASW	William P. Hobby Airport	HOU-01	Taxiway/Runway Geometry Reconfiguration	7/1/2022	0	0	1	3	0	0	1	0	0	2	1	3	0	2	1	1	0	0	15	0
ASW	William P. Hobby Airport	HOU-15	Taxiway/Runway Geometry Reconfiguration	7/1/2022	1	0	0	0	0	1	1	0	0	1	3	1	0	0	1	0	2	0	9	2
ASW	William P. Hobby Airport	HOU-27-HS	Taxiway/Runway Geometry Reconfiguration	7/1/2022	0	0	4	2	3	0	1	0	0	3	1	2	2	1	2	1	2	0	22	2
ASW	Midland International Air and Space Port	MAF-18-HS	Taxiway/Runway Geometry Reconfiguration	1/1/2019	0	1	0	0	6	1	1	0	1	2	1	0	0	1	0	0	0	1	13	2

RIM-Mitigated Locations					Runway Incursion (PD & V/PD) Totals Per Year																Runway Incursion (PD & V/PD) Totals				
Region	Airport Name	Identifier	Mitigation Type	Date Complete	2 0 0 7	2 0 0 8	2 0 0 9	2 0 1 0	2 0 1 1	2 0 1 2	2 0 0 3	2 0 0 4	2 0 0 5	2 0 0 6	2 0 0 7	2 0 0 8	2 0 0 9	2 0 0 0	2 0 0 1	2 0 0 2	2 0 0 3	2 0 0 4	Before Mitigation	After Mitigation	
ASW	Monroe Regional Airport	MLU-07-HS	Taxiway/Runway Geometry Reconfiguration	5/4/2018	1	0	0	4	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	6	1
ASW	Tulsa International Airport	TUL-32-HS	Taxiway/Runway Geometry Reconfiguration	8/1/2018	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3	0
ASW	Tyler Pounds Regional Airport	TYR-20-HS	Signage, Marking, and/or Lighting	8/4/2022	0	0	0	0	0	0	0	0	0	0	0	0	5	1	2	7	0	0	14	1	
AWP	Napa County Airport	APC-09	Other	11/23/2021	0	0	0	0	0	0	0	0	1	0	1	4	0	1	0	0	1	0	7	1	
AWP	Phoenix Deer Valley Airport	DVT-12	Taxiway/Runway Geometry Reconfiguration	5/7/2019	0	0	0	1	2	3	0	1	2	3	0	1	0	2	1	1	0	0	13	4	
AWP	Grand Canyon National Park Airport	GCN-01-HS	Taxiway/Runway Geometry Reconfiguration	8/11/2025	0	0	0	2	0	0	1	0	0	0	1	1	3	2	1	3	3	5	22	N/A ²	
AWP	Honolulu International Airport	HNL-33-HS	Taxiway/Runway Geometry Reconfiguration	8/23/2023	0	0	0	1	0	0	0	0	1	3	2	1	1	0	0	0	0	0	9	0	
AWP	Honolulu International Airport	HNL-36	Signage, Marking, and/or Lighting	7/2/2021	0	0	0	0	0	1	1	0	1	3	0	4	1	0	2	1	1	1	13	3	
AWP	Phoenix-Mesa- Gateway Airport	IWA-16	Taxiway/Runway Geometry Reconfiguration	7/16/2020	1	1	3	0	1	1	2	1	0	1	1	3	0	0	0	1	0	0	15	1	
AWP	Harry Reid International Airport	LAS-52-HS	Taxiway/Runway Geometry Reconfiguration	9/1/2023	0	0	0	0	0	0	1	0	0	1	2	1	2	1	2	3	0	0	13	0	
AWP	Los Angeles International Airport	LAX-43-HS	Signage, Marking, and/or Lighting	7/12/2024	0	0	0	1	4	0	2	1	4	3	3	5	6	0	1	0	1	2	31	2	

RIM-Mitigated Locations					Runway Incursion (PD & V/PD) Totals Per Year																Runway Incursion (PD & V/PD) Totals			
Region	Airport Name	Identifier	Mitigation Type	Date Complete	2 0 0 7	2 0 0 8	2 0 0 9	2 0 1 0	2 0 1 1	2 0 1 2	2 0 1 3	2 0 1 4	2 0 1 5	2 0 1 6	2 0 1 7	2 0 1 8	2 0 1 9	2 0 2 0	2 0 2 1	2 0 2 2	2 0 2 3	2 0 2 4	Before Mitigation	After Mitigation
AWP	Long Beach /Daugherty Field/ Airport	LGB-35	Taxiway/Runway Geometry Reconfiguration	10/11/2018	0	0	1	1	0	1	4	0	0	0	1	0	0	0	0	0	2	0	8	2
AWP	Long Beach /Daugherty Field/ Airport	LGB-38-HS	Taxiway/Runway Geometry Reconfiguration	12/29/2020	0	1	0	0	0	1	0	0	0	0	2	3	0	0	0	0	0	0	7	0
AWP	Long Beach /Daugherty Field/ Airport	LGB-40-HS	Taxiway/Runway Geometry Reconfiguration	9/15/2020	0	2	3	2	0	0	1	1	1	1	1	0	0	1	0	0	0	0	13	0
AWP	Montgomery-Gibbs Executive Airport	MYF-23-HS	Operational/Procedural	1/7/2022	0	0	0	0	0	0	0	0	0	0	2	0	1	5	3	2	1	3	11	6
AWP	Palo Alto Airport	PAO-01	Signage, Marking, and/or Lighting	12/31/2019	0	5	0	3	1	2	1	5	4	7	7	4	5	1	2	1	4	2	44	10
AWP	Phoenix Sky Harbor International Airport	PHX-02	Technological Enhancements	5/13/2021	0	2	0	1	0	1	1	0	0	0	0	1	0	0	0	0	0	0	6	0
AWP	Ernest A. Love Field	PRC-26-HS	Taxiway/Runway Geometry Reconfiguration	8/31/2018	0	0	2	0	0	3	2	1	2	1	0	0	0	0	0	0	0	0	11	0
AWP	Ernest A. Love Field	PRC-27-HS	Taxiway/Runway Geometry Reconfiguration	3/17/2023	0	1	4	0	1	1	2	3	1	4	1	0	2	3	1	0	0	0	24	0
AWP	Ernest A. Love Field	PRC-28-HS	Taxiway/Runway Geometry Reconfiguration	8/17/2023	0	1	4	1	0	1	0	1	0	0	1	3	0	1	0	2	2	0	17	0
AWP	Reid-Hillview Airport of Santa Clara County	RHV-01	Signage, Marking, and/or Lighting	12/9/2024	0	0	1	0	0	1	4	2	2	2	1	0	2	2	0	3	0	0	20	0
AWP	Reid-Hillview Airport of Santa Clara County	RHV-12-HS	Other	12/9/2024	0	0	0	1	0	2	2	3	1	3	1	1	2	1	1	1	0	0	19	0

RIM-Mitigated Locations					Runway Incursion (PD & V/PD) Totals Per Year																Runway Incursion (PD & V/PD) Totals			
Region	Airport Name	Identifier	Mitigation Type	Date Complete	2 0 0 7	2 0 0 8	2 0 0 9	2 0 1 0	2 0 1 1	2 0 1 2	2 0 1 3	2 0 1 4	2 0 1 5	2 0 1 6	2 0 1 7	2 0 1 8	2 0 1 9	2 0 2 0	2 0 2 1	2 0 2 2	2 0 2 3	2 0 2 4	Before Mitigation	After Mitigation
AWP	Reno-Tahoe International Airport	RNO-11	Taxiway/Runway Geometry Reconfiguration; Signage, Marking, and/or Lighting	5/31/2016	0	0	0	0	0	0	0	0	5	0	0	0	0	0	1	0	0	2	5	3
AWP	Reno-Tahoe International Airport	RNO-26-HS	Taxiway/Runway Geometry Reconfiguration	7/11/2020	0	0	0	1	0	0	0	2	4	5	3	0	2	0	0	0	0	1	17	1
AWP	San Francisco International Airport	SFO-45-HS	Taxiway/Runway Geometry Reconfiguration	6/21/2024	0	1	1	2	4	1	1	1	2	0	1	1	1	1	0	2	4	2	24	1
AWP	Norman Y. Mineta San Jose International Airport	SJC-28	Signage, Marking, and/or Lighting	9/8/2022	0	0	2	0	0	0	1	0	1	1	0	0	0	0	0	0	1	0	5	1
AWP	Norman Y. Mineta San Jose International Airport	SJC-29	Signage, Marking, and/or Lighting	6/6/2022	1	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	4	0
AWP	Santa Monica Municipal Airport	SMO-02	Taxiway/Runway Geometry Reconfiguration	12/22/2017	0	0	0	0	0	3	3	5	3	5	1	1	0	0	0	0	0	0	20	1
AWP	Tucson International Airport	TUS-03-HS	Taxiway/Runway Geometry Reconfiguration	11/30/2023	0	1	0	0	2	4	0	0	0	3	2	4	0	3	0	0	1	0	20	0
AWP	Tucson International Airport	TUS-35-HS	Taxiway/Runway Geometry Reconfiguration	11/30/2023	0	1	3	0	0	0	1	3	1	1	5	1	2	0	1	1	1	1	21	1
AWP	Van Nuys Airport	VNY-02	Signage, Marking, and/or Lighting	3/31/2019	0	1	0	0	0	1	2	4	1	0	2	0	0	0	1	1	0	0	11	2