

# Stakeholder Engagement Team (SET)

Spring 2024 General Session



# CDM

Collaborative  
Decision Making

The background of the image is a dark stage with several spotlights. Two bright spotlights are positioned in the lower center, casting beams of light upwards. To the left, a vertical line of blue spotlights is visible. The overall atmosphere is that of a theatrical or formal event.

SET

General  
Session

Five hundred, twenty five thousand,  
six hundred minutes

Five hundred, twenty five thousand moments  
so ~~dear~~ weird

Five hundred, twenty five thousand,  
six hundred minutes

How do you measure, measure a year?

In data, in reviews

In meetings, in cups of coffee

In surveys, in spreadsheets

In write ups and in taskings

Five hundred, twenty five thousand,  
six hundred minutes

How do you measure a year with SET?

How about actions?

How about lessons learned?

How about closeouts?

Measuring NAS

Seasons of SET

Seasons of SET



**Directors:** Renee Fields (FAA),  
Erin Cobbett (DAL)

**Starring:**

Marc Meekma (FAA)  
Orion Barker (FAA)  
Lauren Faith (FAA)  
Jeremy Styles (FAA)  
Timothy Henderson (FAA)  
Brian Gonzalez (A4A)  
Eric Silverman (AAL)  
Mike Marticek (AAL)  
Rachel Banning (AAY)  
Jim McClay (AOPA)  
Sascha Hollingsworth (DAL)  
Will Steinberg (JBU)  
Janice Planten (NBAA)  
Tim Matuszewski (NKS)  
Erin Hogan (SWA)  
Edwin Solley (SWA)  
Roberta Zimmerman (UAL)  
Ricardo Escalante Villalta (UAL)





## Task 116: Reroute Planning & Impacts

Purpose:

- Define most frequently used reroutes
- Identify most impactful reroutes to industry members
- Identify minimum advanced notification time for effective acceptance
- Better planning via Critical Decision Windows (CDW)

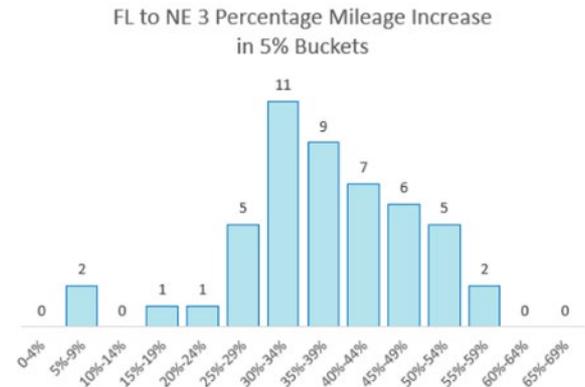
Closed : 11/2/2023



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# Task 116: Overview

- SET determined the most frequently required reroutes from 2019 and 2022 and surveyed participants on reroutes which were impactful
- Mileage was chosen as the measurement of choice as it was consistent across different fleets and speeds unlike excess flight time
- Mileage and fuel burn/burn time data was collected for top impactful reroutes from operators on SET
- SET evaluated the opportunity for integrating reroute CDW into the Advanced Plan (PERTI)
  - Reroute CDW would only provide a benefit for transcon reroutes



# Task 116: Recommendations

- Share reroute notification windows with the Command Center to assist the planners and Severe Weather unit in making the reroute process as seamless as possible for these particular routes
- Increase notification time as much as possible on all reroutes, and when available park routes being considered for flight operators to view



# Task 119: Common Metrics for Space Operations

Purpose:

- Establish a common set of metrics to measure both space operations and aviation operations in areas where the two activities overlap
- Discover ways to improve efficiency

Closed : 3/31/2024



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# Task 119: Overview

## **Collaborate to establish a common set of metrics to measure both space operation and aviation operation in areas where the two activities overlap**

- The joint team has held monthly meetings since November with a shared goal to optimize airspace for all users
- Space organizations represented
  - Blue Origin
  - Commercial Spaceflight Federation (CSF)
  - NASA
  - Sierra Space
  - SpaceX

# Task 119: Overview

- Meetings focused on cross industry education and establishing shared situational awareness
  - National System Review (NSR) daily metrics overview – how airline/FAA performance/constraints are measured
  - Airline 101 – operational constraints, DOT requirements/mandates
  - Block 101 – impacts to airline performance and future planning
  - How Flight Operators prepare for a launch (dispatch focus)
  - Launch Window 101 – Launch date and time determinations, constraints
  - Debris Response Areas 101
  - SpaceX and FAA Space Ops Metrics



# Task 119: Recommendations\*

- Follow-on tasking to develop a long-term planning calendar of known dates impactful to the aviation industry
- Further exploration of information sharing between all stakeholders
  - Potential inclusion in standard review processes such as NSR and NCF
  - Measurement ideas:
    - # of airways closed in AHA
    - # of flights that get back on econ routes after successful launch
- Size of AHA
- % of launches scrubbed before or after 4-hour CDW
- Improvements to Launch/ re-entry flight operator briefings.
  - More detail to impact timeline
  - “Ideal” time windows
  - DRA time window and location (Added to PERTI Advanced Plan during course of this tasking)



# National System Review (NSR)

**Purpose:** Continuously improve the quality of the NSR by evolving the call process and reporting mechanism

Ongoing Process



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# NSR Overview & Survey

SET conducted a survey to evaluate the current NSR process and determine what change, if any, should be made to enhance review discussion

- Community had not been surveyed since the NSR pre-call report deck was introduced in June 2021
- Survey was open from 1/15/24 – 1/31/24
- Received 48 responses
- Survey captured the appropriate audience
  - Equal responses from FAA & Flight Operators
  - Half of the respondents participate in the NSR daily

# NSR Survey Preliminary Findings

## Common themes from survey respondents

- Focus on the “Why” of the decision-making/strategy process behind the TMI choice
- Focus on public follow-up of concerns expressed
- Focus on unexpected results/impacted facilities
- More participation from other players, e.g. Space, Military, Airport Authorities
- Develop an NSR dashboard
- Continue to expand coverage of constraint variables

*SET will develop a recommended path forward based on these results*



## Event Reviews

**Purpose:** SET developed an event review process that functions as a wrap-around to the Traffic Management Review (TMR) and/or a stand-alone review on industry related topics

- Review events determined by the SET team and/or CDM Leadership
- Share lessons learned & proposed actions with the CDM community

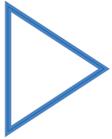
Ongoing Process



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# 5 Event Reviews Completed

Proposed Action	Review	Status
Develop a roadmap for future use of similar strategy, similar to roll-out of FL segmented AFPs	Multiple Central US AFP	Not Started
Exclude airports near boundary, particularly those in a terminal program {from AFPs}	Multiple Central US AFP	TBD
Stakeholders define “high” & “low” confidence with action triggers for moving between scenarios	Multiple Central US AFP	Not Started
Better communication needed between airport authorities; include airport operators on hotlines/telcons	South Central Florida	Not Started
Better standardization of SWAP event strategies	South Central Florida	Not Started
Need South Florida strategy guide	South Central Florida	Not Started
Explore low level escape route option out of Central/South Florida	South Central Florida	Completed (SE DDSO)
Develop new Expected KPI Score	Summer Performance	In Progress (SET)
Create Ad-hoc CDM team to address FL issues	Holiday Performance	Not Started
Review data from dual AFPs/Develop plan(s) for PBI	Holiday Performance	Not Started
Prevent technology issues where possible	Holiday Performance	TBD
Evaluate strategies for Ski Country	Holiday Performance	Not Started
Understand why flights get rerouted off WATRS	Holiday Performance	Not Started
***More tomorrow from NCF	Snowbird	TBD



# Task 133: Expected KPI Score

Purpose:

- Develop a robust statistical model which will assist in answering the question, “How did we perform given the hand we were dealt?” by producing a KPI that would be expected given the constraints
- Design a visual mechanism for representing the actual/expected performance
- Incorporate the Expected KPI into the daily NSR deck

ECD: 9/30/2024



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# Task 134: Scheduled & Unscheduled Traffic Volume

Purpose:

- Capture shifts in traffic patterns by using the recently developed Industry Class specification developed by AJR-G to break traffic volume into scheduled and unscheduled components
- Add this to the daily NSR reporting document

ECD: 9/30/2024



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# QUESTIONS?



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**Co- Leads:** Renee Fields (FAA), Erin Cobbett (DAL)

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# Appendix



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# Task 116: Top Required Routes

2022 Top 15 Required Reroutes

Rank	Reroute	Occurrences
1	NO_AR_ROUTE_TO_SOUTHFL	173
2	OHIO_VALLEY_TO_FLORIDA_1	146
3	SOUTHWEST_TO_NYSATGA	105
4	SOUTHWEST_TO_HPN	87
5	ZDC_NORTH_ZJX_TO_NYSATGA	84
6	PHL_GA_SATS_TO_DC3	82
7	DC3_TO_ZBW	81
8	PHL_NO_PAATS	80
9	PHX_NO_J92	80
10	SERMN_SOUTH	80
11	MIDWEST_TO_FLORIDA	79
12	DC3_TO_ZEU	76
13	ZBW_TO_CHICAGO	74
14	DFW_VKTRY	72
15	SKI_COUNTRY_1	68

2019 Top 15 Required Reroutes

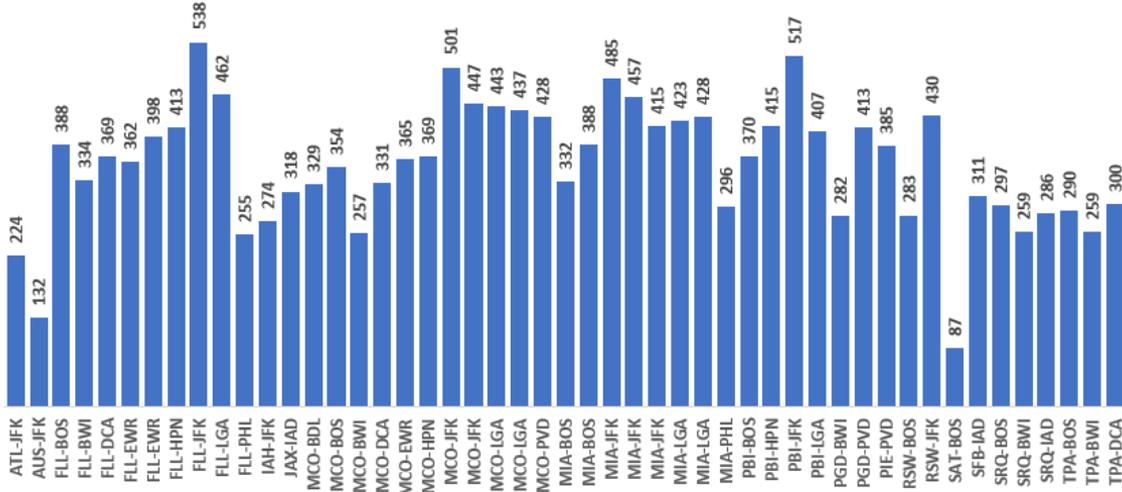
Rank	Reroute	Occurrences
1	WIND_ROUTE_NY3	352
2	NY3_MID_ROUTE	340
3	WIND_ROUTE_EWR	340
4	WIND_ROUTE_JFK	336
5	SERMN_SOUTH	119
6	NO_AR_ROUTE_TO_SOUTHFL	118
7	VUZ	97
8	OHIO_VALLEY_TO_FLORIDA_1	77
9	MIDWEST_TO_FLORIDA	74
10	DFW_VKTRY	67
11	WEST_TO_CHICAGO	64
12	WEST_TO_HOUSTON	64
13	DEN_GC_2	61
14	MGM_3	57
15	EAST_TO_DALLAS	56





# Task 116: Florida to NE3 Mileage Impacts

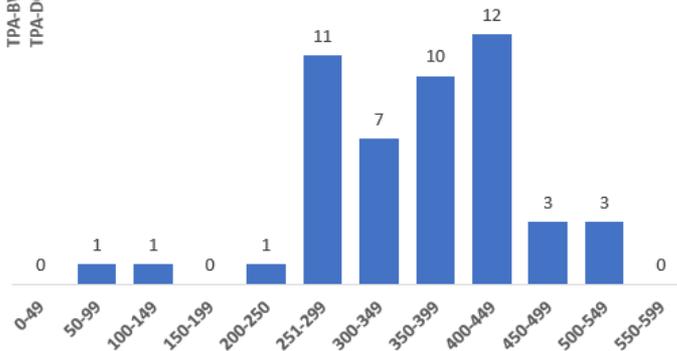
Florida to NE 3 Reroute Mileage Increase by Market



- 46 city pairs impacted
- Average Increase in Mileage over Pref Route is 358 miles
- 82% of markets have an increase in the 250 to 450-mile range

- Market with smallest change is SAT-BOS with an 87-mile increase
- FLL-JFK is the market with the largest increase at 538 miles

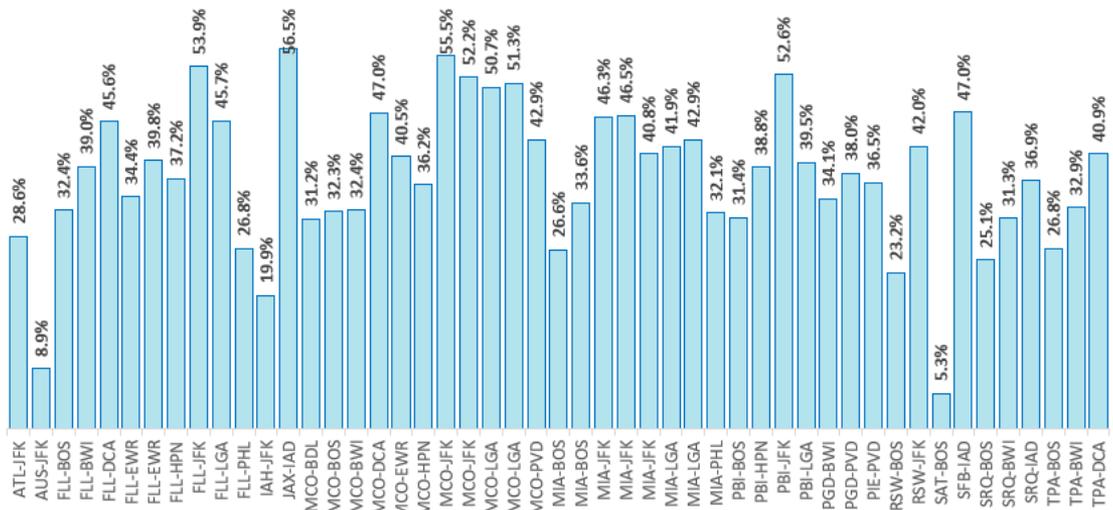
FL to NE 3 Extra Mileage Distribution in 50 Mile Buckets





# Task 116: FL to NE3 Percent Mileage Impacts

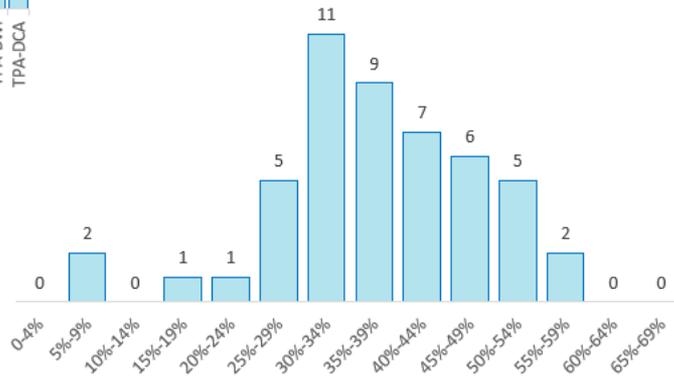
Florida to NE 3 Reroute Percentage Mileage Increase by Market



- Average increase in mileage percentage over Pref route is 37.4%
- 41% of the markets have an increase of mileage between 30 and 39%

- Market with the smallest percentage change is SAT-BOS at 5.3%
- JAX-IAD market has the largest percentage increase at 56.5%

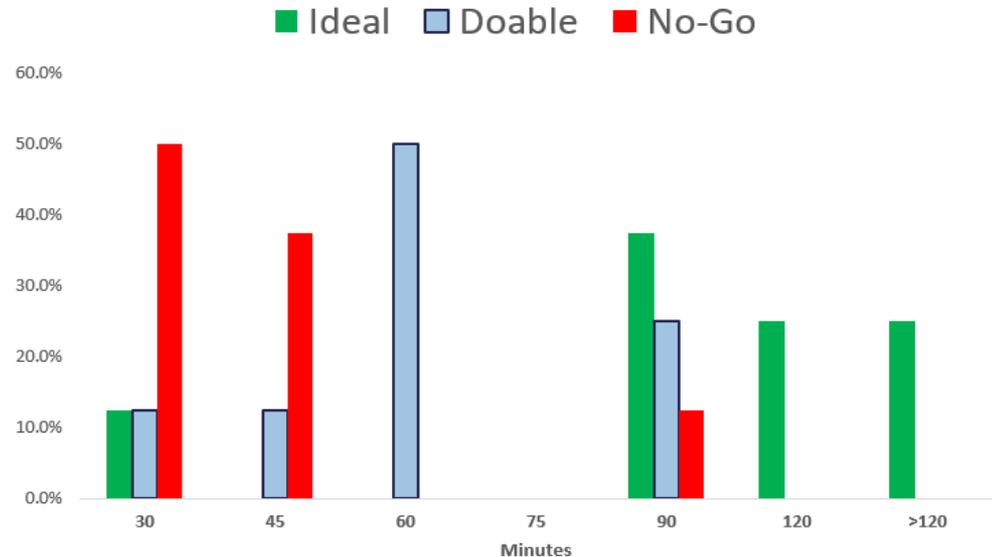
FL to NE 3 Percentage Mileage Increase in 5% Buckets



# Task 116: Florida to NE3 Reroute Operator Notification Times

- 50% of operators prefer at least a 2-hour advance notice to accept this reroute
  - 37.5% find at least a 90-minute notification ideal
- 75% of carriers would be able to accept the reroute with at least a 60-minute notification, though would prefer more time
  - The remaining 25% could make do with a 90-minute notification window
- A 30-minute reroute notification is a No-Go for all operators for the FL to NE<sub>3</sub>
  - A 45-minute notification works for only 50% of operators

Carrier Notification Time Distribution for  
Accepting FL to NE 3 Reroute



# Multiple Central US AFP Review

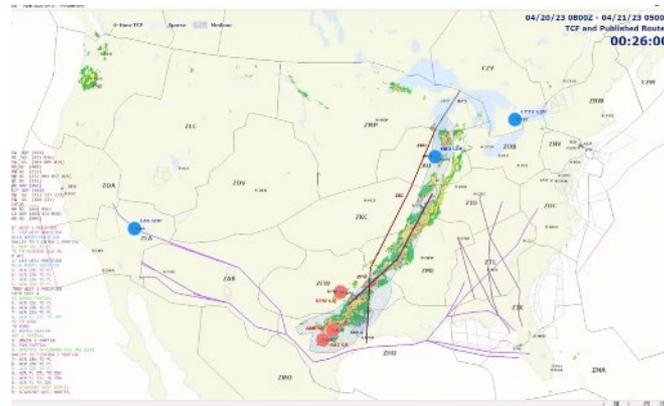
Date: April 20, 2023 Presented: March 2024 NCF, skipped

## Lessons Learned/Takeaways:

- Need clear explicit advisories
- Review rates vs permeability for opportunities to move flights
- Lower ceiling cap to move capable flights above the constrained area opening up program slot

## Actions proposed:

- Develop a roadmap for future use of similar strategy, similar to roll-out of FL segmented AFPs
- Exclude airports near boundary, particularly those in a terminal program
- Stakeholders define “high” & “low” confidence with action triggers for moving between scenarios



Industry Participants: AAL, AAY, DAL, JBU, NKS, SWA, UAL

	Thursday 4/20	# of Carriers Reporting
Cancelled Flights	710	6
Cancelled Customers	54,773	5
Delayed Flights	5,466	6
Delayed Customers	467,251	5
Combined Delayed & Cancelled Customers	6,088	1
Gate Returns	149	6
Diversions	69	1

# South Central Florida Review

Date: June 19, 2023 Presented: September 2023 NCF

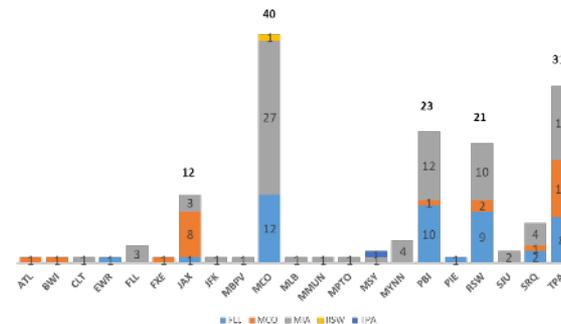
## Lessons Learned/Takeaways:

- Northbound traffic suffered without options
- Include smaller satellite airports
- Prioritize diverted aircraft vs Ground Stopped aircraft to minimize surface congestion

## Actions proposed:

- Better communication needed between airport authorities; include airport operators on hotlines/telcons
- Better standardization of SWAP event strategies
- Need South Florida strategy guide
- Explore low level escape route option out of Central/South Florida

South Florida Diversion Scatter  
By Planned Destination  
June 19, 2023



# Summer Performance Review

Date: June 1 through August 31, 2023

Analysis of Summer performance using NSR summary statistics

Presented: NAS Performance Review November 2023

## Lessons Learned/Takeaways:

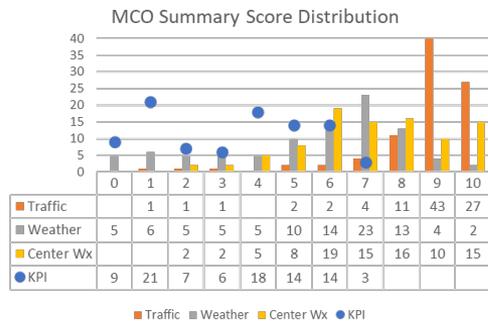
- Center Weather scores were important in assessing performance
  - MCO had only 6 days with a high weather score while ZJX had 25 days (27%) with a center weather score of 9 or 10
  - ZNY had 20 days (22%) with a High Weather score (9 or 10)
- High Traffic scores were common among the 3 lowest KPI stations
- 54 occurrences of KPI=0, an increase of 391% from Summer 2022
- 44% of traffic scores were in the 3 to 5 range
- There were 40 occurrences of a weather score of 10 (1%)

## Actions proposed:

- Develop new Predicted KPI Score

**MCO KPI Performance**

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	
June	KPI: 7 Traffic: 8 WX: 4 ARTCC WX: 4	KPI: 7 Traffic: 8 WX: 4 ARTCC WX: 4	KPI: 6 Traffic: 9 WX: 3 ARTCC WX: 3	KPI: 6 Traffic: 9 WX: 3 ARTCC WX: 3	KPI: 7 Traffic: 8 WX: 4 ARTCC WX: 4	KPI: 5 Traffic: 9 WX: 3 ARTCC WX: 3	KPI: 5 Traffic: 9 WX: 3 ARTCC WX: 3	KPI: 1 Traffic: 10 WX: 2 ARTCC WX: 2
	KPI: 5 Traffic: 10 WX: 4 ARTCC WX: 4	KPI: 5 Traffic: 9 WX: 3 ARTCC WX: 3						
	KPI: 5 Traffic: 10 WX: 4 ARTCC WX: 4	KPI: 5 Traffic: 9 WX: 3 ARTCC WX: 3						
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	KPI: 5 Traffic: 10 WX: 4 ARTCC WX: 4	KPI: 5 Traffic: 9 WX: 3 ARTCC WX: 3						



# Holiday Performance Review

Date: November 1, 2023 through January 15, 2024

Presented: February 2024 NCF

## Lessons Learned/Takeaways:

- ZJX/ZMA had some of the highest operations count days for Snowbird since 2017
- Regional planning calls & overall communication was good
- Numerous IT issues
- Continued Staffing Challenges

## Actions proposed:

- Create Ad-hoc CDM team to address FL issues
- Review data from dual AFPs/Develop plan(s) for PBI
- Prevent technology issues where possible
- Evaluate strategies for Ski Country
- Understand why flights get rerouted off WATRS

### Top 25 ZMA Highest Ops Count Days (2018 – 2024)

2017-18 Snowbird	1
2018 Not Snowbird	1
2019-20 Snowbird	3
2021-22 Snowbird	5
2022 Spring Break	3
2022-23 Snowbird	1
<b>2023-24 Snowbird</b>	<b>11</b>





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# Snowbird Review

Date: November 1, 2023 through March 24, 2024

Presented: April 2024 NCF

Lessons Learned/Takeaways:

Actions proposed:

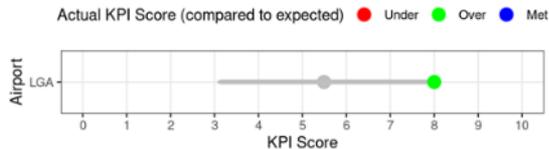
*Can't spoil the surprise! Will be in tomorrow's NCF*

# Task 133: Overview

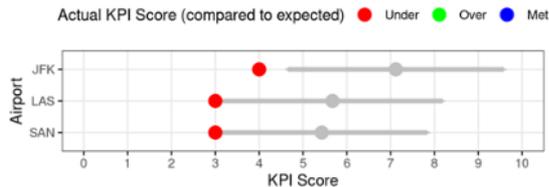
- Calculate an expected KPI at a single airport for a single day, by constructing a linear regression model that uses the last year's worth of demand and capacity data from that airport
- Capacity Measures
  - Daily Capacity (Efficiency)
  - AvMet Airport Weather Score
  - AvMet Center Weather Score
- Demand Measures
  - Scheduled Demand
  - Actual Throughput

# Task 133: Visualization Tests

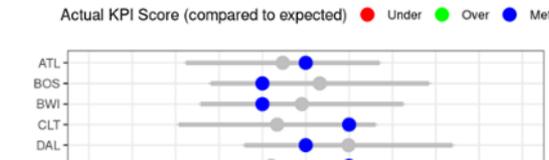
## Airports Exceeding Expectations



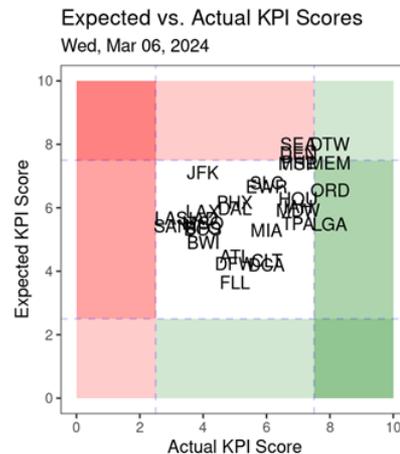
## Airports Below Expectations



## Airports Meeting Expectations



- Comparison of regression expected KPI to the actual KPI are shown at the left
  - The gray points represent the expected KPI and the gray line the confidence interval set at 0.95
- In the diagram below, airports falling in the colored border boxes are performance that is very unexpected





# Task 134: Overview

- Capture daily scheduled/unscheduled traffic volume
  - Scheduled traffic = Air Carrier and Freight
  - Unscheduled traffic includes general aviation, business aviation and all other non-scheduled operations
- Incorporate into daily NSR reporting

Location	Traffic Cnt			Flight Operator Based Metrics						FAA Based Metrics						Summary		
	Skd	Unskd	Total	Completion	D0*	A0	Avg Taxi-Out	Taxi-Outs >120*	Avg Taxi-In	TMI Delays*	TMI Minutes	Dpt Delays*	AH Delays	AH Minutes*	Dvrts	Traffic	WX	KPI
East-North	10,000	572	10,572	99.62%	70.9%	67.0%	20.1	0	8.4	72	2,283	35	11	164	6	4	2	6
BOS	1,000	116	1,116	99.61%	76.5%	75.0%	19.3	0	7.3	0	0	0	0	0	0	4	5	8
BWI	500	112	612	99.64%	50.0%	58.1%	12.8	0	7.9	0	0	0	0	0	1	1	0	6
DCA	800	97	897	100.00%	75.8%	66.4%	22.8	0	7.0	1	15	2	4	45	0	7	0	5
EWR	1,000	166	1,166	99.35%	68.9%	71.6%	23.6	0	12.7	2	101	33	0	0	0	3	5	7
IAD	600	127	727	99.83%	70.4%	65.5%	18.7	0	6.6	0	0	0	2	30	0	2	0	6
JFK	1,000	306	1,306	99.73%	72.7%	69.4%	22.5	0	10.9	0	0	0	0	0	0	7	1	8
LGA	1,000	159	1,159	99.65%	74.9%	68.9%	23.6	0	8.6	69	2,167	0	5	89	1	7	0	5
PHL	600	159	759	98.97%	83.0%	74.6%	17.6	0	5.8	0	0	0	0	0	0	0	0	9
TEB	0	547	547	NA	NA	NA	13.9	0	5.0	0	0	0	0	0	1	7	0	NA
Other-EN			2,283	99.66%	68.6%	58.8%	15.9	0	6.4	0	0	0	0	0	3	6	NA	6