



## 14 CFR PART 150 NOISE AND LAND USE COMPATIBILITY STUDY

Technical Committee Meeting #7  
October 23, 2019

### Agenda

- Introductions
- Review of the Role of the TC Meeting Facilitator
- Review of TC Meetings
- Summary of Noise Compatibility Program Measures at Other Airports, Years 2000 to 2016
- Recap of Suggested FLL Noise Compatibility Program Measures
- Recap of Noise Abatement Measure Evaluation
- Understanding Aircraft Noise Exposure with “What-If” Scenarios
- Altitudes of Aircraft Arriving from the West
- Future TC Meetings
- Questions from TC Members



## Welcome and Introductions

3



## Importance of TC Involvement During the Noise Compatibility Program (NCP) Phase

- TC members represent the interests of their organization and/or constituents
- TC involvement in the NCP phase is key for a successful NCP
  - Identify potential NCP measures
  - Provide subject matter expertise
  - Advise organization and/or constituents of NCP discussions
  - Solicit feedback from organization and/or constituents
- 14 CFR Part 150 requires consultation with the following stakeholders, and most are members of the TC:
  - FAA regional officials
  - Officials of the state and of any public agencies and planning agencies that have any area of jurisdiction within Day-Night Average Sound Level (DNL) 65
  - Other Federal officials having local responsibility of land uses in a Noise Exposure Map (NEM)
  - Aircraft operators using the airport
  - General public

4



## TC Members

- BCAD
- ANAC
- Southwest Airlines
- Delta Airlines
- JetBlue
- Spirit Airlines
- UPS
- NBAA
- Greater Fort Lauderdale Chamber of Commerce
- Greater Hollywood Chamber of Commerce
- Greater Fort Lauderdale Alliance
- Economic Development Agency
- Broward Workshop
- City of Dania Beach
- City of Fort Lauderdale
- City of Hollywood
- Town of Davie
- City of Plantation
- City of Cooper City
- Town of Southwest Ranches
- City of Weston
- Broward County School Board
- FAA - Orlando Airports District Office
- Miami Air Traffic Management/Terminal Radar Approach Control (TRACON)
- FLL Airport Traffic Control Tower (ATCT)
- South Florida Flight Standards Division (FSDO)

5



## Role of the TC Meeting Facilitator

- To ensure that the TC meetings are effective they will be facilitated by a professional meeting facilitator
- The meeting facilitator is responsible for ensuring that the TC meetings adhere to the published meeting agenda
- The meeting facilitator may extend or shorten the length of a discussion related to an agenda item at his or her sole discretion
- The meeting facilitator, or BCAD, may cancel or suspend a TC meeting due to disrespectful or disruptive behavior
- TC meetings will be open to the public, subject to space availability

6



## Prior Technical Committee Meeting

### TC #6 – May 23, 2019

- Review of January 2019 Noise Exposure Map Public Workshop
- Noise Compatibility Program Overview
  - Operational Suggestions
  - Land Use Suggestions
  - Programmatic Suggestions

7



## Activities Since last Technical Committee Meeting

### Since TC #6, we have:

- Submitted the final Noise Exposure Map (NEM) Report
  - Submitted June 24th
  - FAA acceptance issued October 3<sup>rd</sup> – published in the Federal Register at 84 Fed. Reg. 54942 on October 11, 2019
- Conducted a series of meetings related to FLL aircraft and airspace operation
  - FAA Air Traffic Control Tower and Miami TRACON
  - Airlines
- Conducted investigation and evaluation of NCP measures
  - Investigation and evaluation are ongoing

8



## Summary of Noise Compatibility Program Measures at Other Airports, Years 2000 – 2016



9

## Summary of NCP Measures at Other Airports, 2000 – 2016

- ESA reviewed noise abatement, land use, and programmatic measures recommended in NCPs for other airports between the years of 2000 and 2016
- ESA also reviewed FAA responses to those recommended NCP measures, as contained in FAA Records of Approval (ROAs)
  - FAA reviews all recommended NCP measures on an individual basis
  - Therefore, measures approved by FAA for one airport may not necessarily be approved by FAA if recommended for other airports
- Airports included:
  - Chandler Municipal Airport (CHD)
  - Flagstaff Pulliam Airport (FLG)
  - Juneau International Airport (JNU)
  - McCarran International Airport (LAS)
  - McClellan-Palomar Airport (CRQ)
  - Mobile Regional Airport (MOB)
  - Phoenix International Airport (PHX)
  - Piedmont Triad International Airport (PTI)
  - Ronald Reagan Washington National Airport (DCA)
  - Santa Barbara Airport (SBA)
  - Scottsdale Airport (SDL)
  - Seattle-Tacoma International Airport (SEA)
  - Southwest Florida International Airport (RSW)
  - Ted Stevens Anchorage International Airport (ANC)
  - Van Nuys Airport (VNY)

The information in this slide illustrates measures previously approved for other airports. A measure approved for one airport may not necessarily be approved for another airport.



10

## Noise Abatement Measures, 2000 – 2016: 82 Measures

- 47 measures (57%) approved by FAA. Common themes:
  - Revisions to air traffic control tower letters to airmen concerning noise abatement measures
  - Requests for flight procedure chart changes to show noise-sensitive areas; note that FAA may or may not make the change
  - Establishment or continuation of airport layout modifications and voluntary operational procedures that show noise benefits within DNL 65
  - Requests for studies of procedures that may show benefits within DNL 65
  - Auxiliary power unit usage restrictions
  - Voluntary restrictions on reverse thrust
- 2 required no FAA action
  - Legislative action (lobbying): Federal agencies are restricted from lobbying
  - Reduced-thrust awareness program: FAA action not needed until after a study of potential program impacts

11

The information in this slide illustrates measures previously approved for other airports. A measure approved for one airport may not necessarily be approved for another airport.



## Noise Abatement Measures, 2000 – 2016 (Continued)

- 32 measures (39%) disapproved by FAA. Common themes:
  - Local ordinances restricting aircraft flight paths, altitudes, or numbers of operations
  - Proposed operational procedures, airport layout modifications, or stakeholder working groups without sufficient noise benefit information
  - Proposed operational procedures that would negatively affect air traffic safety, efficiency, or capacity
  - Construction of noise barriers that would not reduce noise exposure of incompatible land uses
  - Actions subject to 14 CFR Part 161 (e.g. aircraft phase-outs, curfew expansions, expansions of fines), pending compliance with 14 CFR Part 161
- 1 approved and disapproved in part
  - Relocation of a ground run-up enclosure (GRE) was approved, but construction of a new GRE was disapproved because the land to be affected was already compatible with noise levels

12

The information in this slide illustrates measures previously approved for other airports. A measure approved for one airport may not necessarily be approved for another airport.



## Land Use Measures, 2000 – 2016: 74 Measures

- 66 measures (89%) approved by FAA. Common themes:
  - Sound insulation of residential properties in DNL 65 constructed before Oct 1, 1998
  - Prohibitions on noise-sensitive land uses in DNL 65
  - Acquisition of aviation easements for non-compatible land use in DNL 65; not a guarantee of federal funding
  - Adoption of noise overlay zoning, compatible land use zoning, or airport influence areas based on NEMs
  - Adoption of building code amendments and construction review guidelines
  - Disclosure of noise in advance of land use permitting and construction
  - Modification of land use plans
  - Local acquisition or annexation of land in DNL 65; not a guarantee of federal funding
  - Proposals to study aircraft ground noise using airport entitlement funds

13

The information in this slide illustrates measures previously approved for other airports. A measure approved for one airport may not necessarily be approved for another airport.



## Land Use Measures, 2000 – 2016 (Continued)

- 0 required no FAA action
- 3 measures (4%) disapproved by FAA. Common themes:
  - Airport hazard zoning: does not fall within the auspices of 14 CFR Part 150
  - Adoption of noise overlay/compatible land use zoning not based on NEMs; local jurisdictions can still adopt these outside the auspices of 14 CFR Part 150
  - Requests for noise barriers without study of noise benefits
- 5 approved and disapproved in part
  - Approved: Amendments to local building codes, application procedures, and zoning based on approved Noise Exposure Maps
  - Disapproved for purposes of 14 CFR Part 150: Airport Improvement Program (AIP) funding to mitigate noise outside DNL 65: prevented by Public Law 108-176, Vision 100-Century of Aviation Reauthorization Act (December 12, 2003)\*
  - Disapproved for purposes of 14 CFR Part 150: Use of unofficial Noise Exposure Maps

14

\* Prevented when there is no local adoption of a more-stringent standard than DNL 65

The information in this slide illustrates measures previously approved for other airports. A measure approved for one airport may not necessarily be approved for another airport.





## Programmatic Measures, 2000 – 2016: 31 Measures

- 31 measures (100%) approved by FAA. Common themes:
  - Airfield signs related to noise abatement; wording and placement subject to final review and approval by FAA
  - Broadcasts of noise abatement information on airport Automatic Terminal Information Service (ATIS)
  - Development or enhancement of noise complaint response systems
  - Establishment of voluntary airport "Fly Quiet" programs or encouragement of similar manufacturer/trade association programs
  - Jeppesen inserts on noise abatement measures for pilots
  - Staff positions for implementation of NCP or noise monitoring programs
  - Installation of systems to monitor compliance with noise abatement measures
  - Establishment or continuation of noise advisory committees

15

The information in this slide illustrates measures previously approved for other airports. A measure approved for one airport may not necessarily be approved for another airport.



## Programmatic Measures, 2000 – 2016 (Continued)

- 31 measures (100%) approved by FAA. Common themes (continued):
  - NEM, NCP, or airport noise program updates
  - NCP implementation and management
  - Regular discussions of noise concerns with FAA air traffic controllers
  - Establishment or maintenance of noise monitoring systems
  - Public and pilot information programs related to aircraft noise
- 0 disapproved

16

The information in this slide illustrates measures previously approved for other airports. A measure approved for one airport may not necessarily be approved for another airport.





## Recap of Suggested FLL Noise Compatibility Program Measures

17



## Stakeholder Noise Abatement Suggestions

### • Arrival and Departure Procedures

- Implement Noise Abatement Departure Procedure 1 (NADP1) (Dania Beach)
- Stagger flights from north and south runways to maintain use of heading 275 for departures - eliminate heading 290 completely, and maintain runway heading to 3 miles / 3,000 feet before turning (Public)
- Establish steep takeoff rules (Public)
- Use Area Navigation (RNAV) controlled descent approaches (Public)
- Implement idle-power 3:1 ratio glide landings (Public)
- Use steeper descents close to the airport (Public)
- Use of close-in noise abatement departure procedure to north and south runways (ANAC)
- Minimize low approaches (Public)

- Adhere to “RNAV to the Ground” principles in any Metroplex design (ANAC) – newly added
- Implement optimized profile descents (OPDs) (TC)

### • Flight Paths

- Flights departing to the west should follow Interstate 595 till the Everglades (Public)
- Aircraft should take off only over water unless for safety or wind conditions (Public)
- Takeoffs should fly runway heading 090 or 270 until 10,000 feet before turning north (Public)
- Restructure arrival and departure routes for North Runway to replicate arrival and departure routes from pre-2014 (ANAC)
- Establish and use a waypoint on runway heading west of the Turnpike for departures (Public)
- Reduce frequency of flights over Davie (Public)

18 The information in this presentation represents suggestions received from the Public and Stakeholders during the Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.



## Stakeholder Noise Abatement Suggestions

- **Preferential Runway Use**
  - Re-affirm and implement Voluntary Night Closure approved in Broward County/Dania Beach Interlocal Agreement (Dania Beach)
  - Dedicate north runway as preferential runway used exclusively and primarily until it reaches capacity (ANAC)
  - Prefer arrivals on north runway and departures on south runway (Public) – corrected from TC #6 presentation
  - Use north and south runways at the same utilization (Public)
  - Close south runway from 9pm to 9am (Public)
  - Assign all arrivals to 10L and all Departures to 10R (Public)
  - Prohibit arrivals to 10R from the west except for maintenance or emergencies (Public)
- **Use Restrictions**
  - Implement penalties to deter operational negligence (Dania Beach)
  - FAA Notices to Airmen (NOTAMs) and/or airport bulletins should be binding to all operations (Dania Beach)
  - Address and decrease frequency of flights (Public)
  - Establish airport curfews (Public)
  - Mandatory 10pm-7am south runway curfew (ANAC)
  - Nighttime south runway closure from 9pm-9am (Dania Beach, TC)
  - Impose fines on flights that turn north before I-75 and/or violate noise ordinances (Public)
  - Prohibit aircraft that have been recorded as being too loud (Public)

The information in this presentation represents suggestions received from the Public and Stakeholders during the  
19 Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.



## Stakeholder Land Use Suggestions

- **Sound Insulation**
  - Provide opportunity for new interior noise testing for Dania Beach homes located in the 2008 EIS DNL 65 contour and 2023 DNL 65 contour that were previously deemed compatible in the initial testing for the existing Sound Insulation Program (SIP)(Dania Beach)
  - Dania Beach homes within the 2023 DNL 65 contour that were eligible for the existing SIP and did not receive testing for the SIP should be provided a new opportunity for noise testing (Dania Beach)
  - Homes that are not mobile homes and are located in the Ocean Waterway MHP and also within the 2023 DNL 65 contour should be provided the opportunity to participate in a SIP and CAR (Dania Beach)
  - Retest interior noise levels to determine qualification for sound-insulating windows (Public)
  - Give proper noise insulation to residents (Public)
- **Avigation Easements**
  - Provide Conveyance and Release (CAR) program participation opportunity to Dania Beach homes included in 2023 DNL 65 contour (Dania Beach)
- **Land Acquisition**
  - Relocate residents (Public)
  - Purchase or compensate all homes north of Griffin and west of Ravenwood (Public)

The information in this presentation represents suggestions received from the Public and Stakeholders during the Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.



## Stakeholder Programmatic Suggestions

### • Monitoring

- Update monitoring system (ANAC)
- Install more noise monitors in Southeast Fort Lauderdale (Public)
- Put noise monitor in Plantation Harbor (Public)
- Install noise monitor in neighborhood (Public)
- Establish sufficient off-site noise sensors to monitor effectiveness and compliance of arrival and departure management (Dania Beach)

### • Other Types of Strategies

- Continued Voluntary Night Closure (Dania Beach Interlocal Agreement) (TC)

### • Reporting

- Improve website reporting (ANAC)
- Evaluate flight tracks of smaller turboprop and prop aircraft (TC)
- Document Runway 28L/28R simultaneous departures: how many times there were 0 degrees of separation (i.e. both planes on runways 28L and 28R depart with a 290 heading) and how many times there were 15 degrees of separation (one plane departs with a 275 heading and the other plane in the other runway departs with a 290 heading) (Public)
- Document how many simultaneous departures occur on 28L and 28R per day as an annual average for 2015, 2016, 2017, and 2018 (Public)

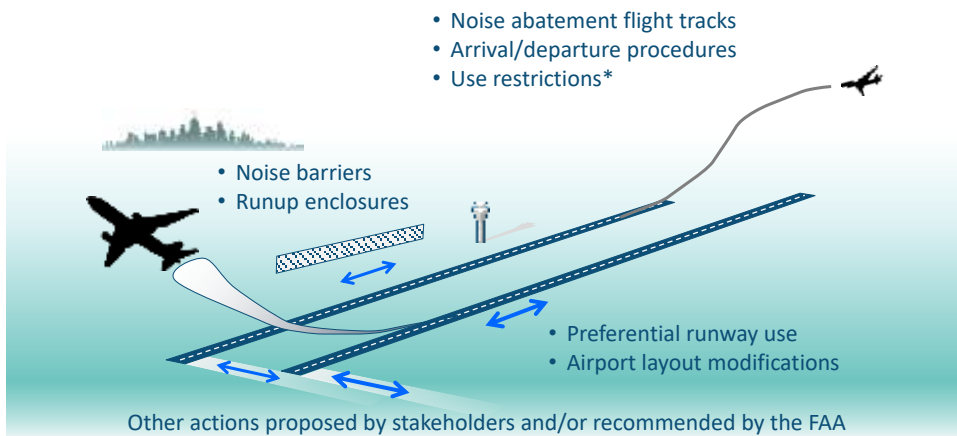
The information in this presentation represents suggestions received from the Public and Stakeholders during the  
21 Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.



## Recap of Noise Abatement Measure Evaluation



## Types of Noise Abatement Measures



\* Subject to further notice, review, and approval requirements in 14 CFR Part 161.

23

## Analysis of Each Measure

- Evaluate effectiveness of each measure in doing the following to the maximum extent practicable\*:
  - Confining the DNL 75 contour to be within the airport property boundary
  - Establishing / maintaining compatible land use between DNL 65 and DNL 75
- The FAA cannot approve NCP measures that do not reduce noise exposure within DNL 65 and higher
- Evaluate feasibility (operational, safety, economic, etc.)
- Select preferred measures
- Identify implementation schedule, responsibilities, budget, funding sources, etc.
- If not recommended, document reasons why

\* 14 CFR Part 150, Sec. B150.1(b)(3)

24

## Standard Evaluation Criteria for Noise Abatement Measures

- Level of noise reduction: must reduce noise within DNL 65
- Effects on airfield capacity and aircraft delay
- Effects on airspace/air traffic control procedures
- Consistency with FAA safety and other standards
- Other environmental effects
  - National Environmental Policy Act (NEPA) review required
- Operational effects and costs
- Financial feasibility
- Consistency with policies adopted by Airport Proprietor

25

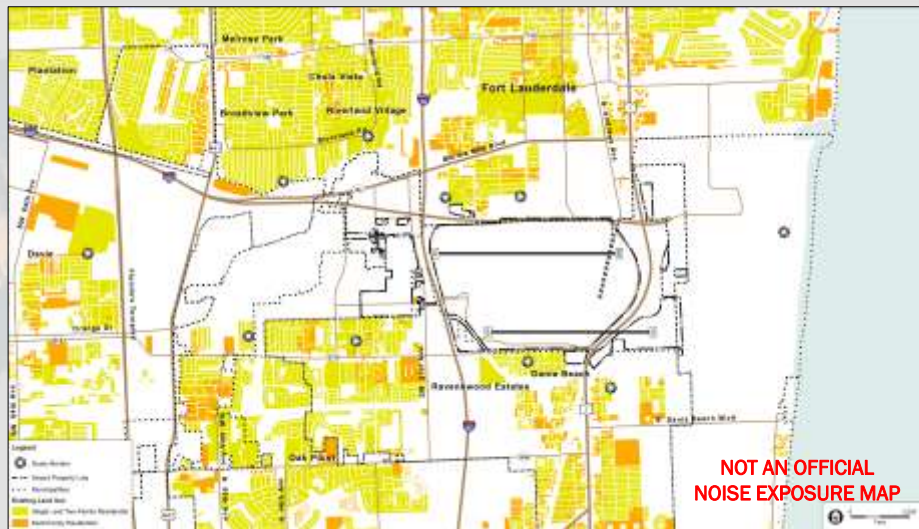


## Understanding Aircraft Noise Exposure with “What-If” Scenarios

26

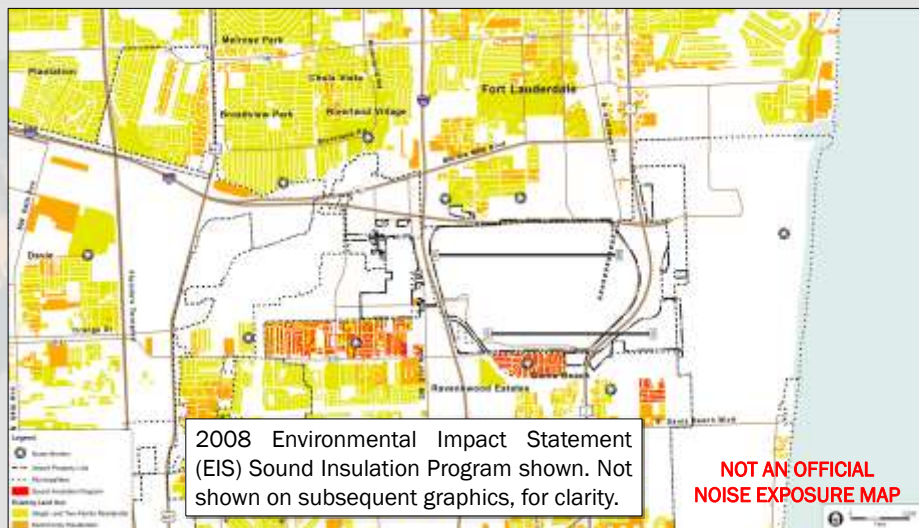


## Residential Land Uses in the Vicinity of FLL



27

## Residential Land Uses in the Vicinity of FLL



28



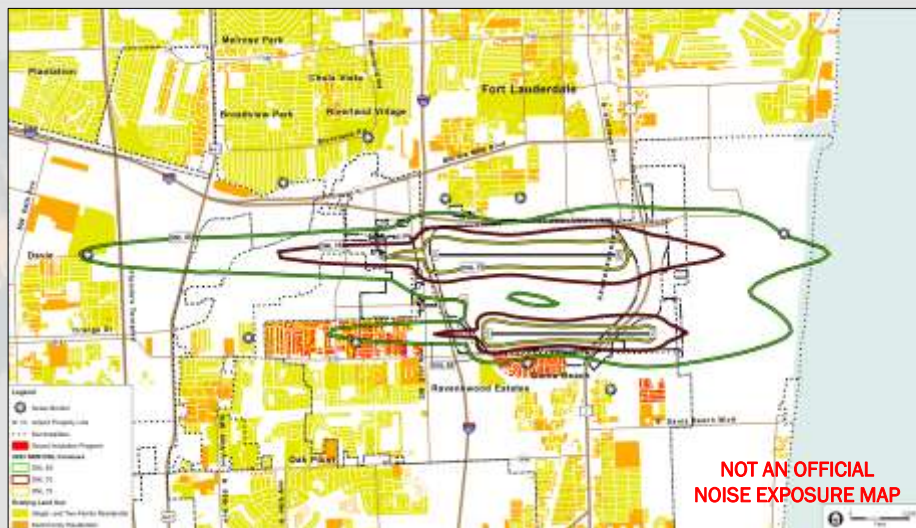
## Sound Insulation Program Statuses

- Residential Sound Insulation Program
  - Participating Units: 1,224
  - Invited to Participate: 1,858
  - Completed Construction: 1186
  - Under Construction: 3
  - On Hold: 35
  - Pending Bid/Award: 0
  - Deemed Compatible: 313
- Standard Sales Assistance (SSA) Program / Conveyance and Release (CAR) Program
  - Contracted to Date: 842
  - In Process: 92
  - In Process/Awaiting Response: 28
  - Ineligible: 151
  - Declined/Non-Responsive: 57
  - Payment Issued/Closed: 542

The information in this presentation represents suggestions received from the Public and Stakeholders during the Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.



## Residential Land Uses in the Vicinity of FLL and the 2023 DNL 65 – 75 Contours





## What if the South Runway Were Closed at Night?

- BCAD received multiple suggestions to reduce or eliminate use of the south runway at night (10:00 P.M. to 6:59:59 A.M.).
- To explore how noise contours would change if operations on the south runway were eliminated at night, the Study Team produced a hypothetical “what-if” scenario by moving all nighttime aircraft operations to the north runway.
- The next slide compares the 2023 Future Condition noise contours with the noise contours resulting from modeling this “what-if” scenario.

The information in this presentation represents suggestions received from the Public and Stakeholders during the  
31 Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.



## What if the South Runway Were Closed at Night?

### Contour Comparison: 2023 Future Condition vs. Hypothetical "What-If" Scenario



The information in this presentation represents suggestions received from the Public and Stakeholders during the  
32 Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.



## What if West Flow Departure Tracks Were Moved?

- BCAD received multiple suggestions for aircraft to maintain runway heading for longer time periods during departures and/or arrivals, avoiding turns close to FLL.
- To explore how noise contours would change if west flow departure turns close to FLL were modified, the Study Team and the FAA produced a notional departure procedure that may move northerly departure turns further away from FLL.
- The procedure was produced strictly for the purpose of exploring changes in noise exposure.
- Using this notional procedure, the Study Team produced a hypothetical “what-if” noise analysis scenario.
- The next two slides show the flight tracks used in this “what-if” scenario along with the resulting noise contours.

33 The information in this presentation represents suggestions received from the Public and Stakeholders during the Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.



## What if West Flow Departure Tracks Were Moved?

### West Flow Flight Tracks Used for the 2023 Future Condition NEM



34 The information in this presentation represents suggestions received from the Public and Stakeholders during the Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.



## What if West Flow Departure Tracks Were Moved?

### Contour Comparison: 2023 Future Condition vs. Hypothetical "What-If" Scenario, With Notional Procedure



35 The information in this presentation represents suggestions received from the Public and Stakeholders during the Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.

## What if All Turns Close to the Airport Were Eliminated?

- Based on the suggestions received for aircraft to maintain runway heading for longer time periods during departures and/or arrivals, the Study Team explored how noise contours would change if turns close to FLL were eliminated entirely.
- The Study Team produced a hypothetical “what-if” scenario by modeling all fixed-wing aircraft operations as maintaining runway heading during departures and arrivals.
- The purpose of the scenario is to explore the bounds of noise exposure changes. It is not feasible to eliminate all turns close to FLL in practice.
- The next several slides show the flight tracks used in this “what-if” scenario along with the resulting noise contours.

36 The information in this presentation represents suggestions received from the Public and Stakeholders during the Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.

## What if All Turns Close to the Airport Were Eliminated?

### Flight Tracks Used for the Hypothetical "What-If" Scenario



37 The information in this presentation represents suggestions received from the Public and Stakeholders during the Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.



## What if All Turns Close to the Airport Were Eliminated?

### Contour Comparison: 2023 Future Condition vs. Hypothetical "What-If" Scenario



38 The information in this presentation represents suggestions received from the Public and Stakeholders during the Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.





## What if Departing Aircraft Climbed More Quickly?

- BCAD received several suggestions for aircraft to climb more quickly when departing FLL.
- To explore how noise contours would change if departing aircraft climbed more quickly, the Study Team produced a hypothetical “what-if” scenario by modeling the top 5 most frequently-occurring aircraft types at FLL (representing 73 percent of all departures) as using Noise Abatement Departure Procedure 1 (NADP1).
  - Airbus A320-200 Series
  - Boeing 737-800 Series
  - Airbus A321-200 Series
  - Boeing 737-700 Series
  - Embraer ERJ190
- The next two slides give an overview of NADPs and compare the 2023 Future Condition noise contours with the noise contours resulting from modeling this “what-if” scenario.

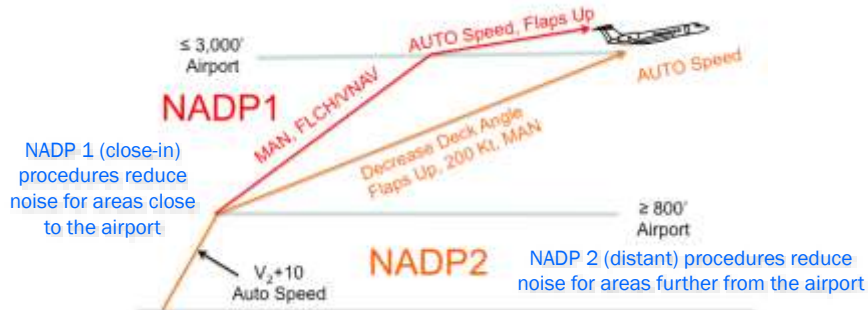
The information in this presentation represents suggestions received from the Public and Stakeholders during the Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.



39

## What if Departing Aircraft Climbed More Quickly?

### EXAMPLE: Noise Abatement Departure Procedures



Actual noise abatement departure procedures are aircraft- and operator-specific.

- SOURCE: Flight Operations, Supplement Number GAC-OMS-02: Noise Abatement Departure Procedures for JAA / EASA Operators. Gulfstream. June 25, 2008. Last Accessed: November 30, 2016. [http://code7700.com/pdfs/gac\\_oms\\_2.pdf](http://code7700.com/pdfs/gac_oms_2.pdf)
- Image from [http://code7700.com/noise\\_abatement.html](http://code7700.com/noise_abatement.html). Last Accessed: November 30, 2016.
- Blue annotations by ESA.

The information in this presentation represents suggestions received from the Public and Stakeholders during the Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.

40

## What if Departing Aircraft Climbed More Quickly?

### Contour Comparison: 2023 Future Condition vs. Hypothetical "What-If" Scenario



The information in this presentation represents suggestions received from the Public and Stakeholders during the  
41 Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.



## What if the Interlocal Agreement Voluntary Night Closure Were Not in Place?

The November 19, 2013 Interlocal Agreement between Broward County and Dania Beach contains a voluntary closure of the south runway between the hours of 10:00 P.M. and 5:00 A.M.:

- **Paragraph 2(a):** *“The County will implement a voluntary night closure of the Expanded South Runway pursuant to the following conditions (‘the Voluntary Night Closure’), by seeking an agreement with Airport users concerning a voluntary nighttime limitation on use of the Expanded South Runway. . . . The coordination and agreement requirement in the immediately preceding sentence shall be in effect only until the New Part 150 Study . . . is completed.”*

The information in this presentation represents suggestions received from the Public and Stakeholders during the  
42 Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.



## What if the Interlocal Agreement Voluntary Night Closure Were Not in Place?

- **Paragraph 2(a)(iii)(b):** *“The Voluntary Night Closure shall remain in effect until a new Part 150 noise study (“New Part 150 Study”) for the Airport is completed by the County and the FAA has made a determination based on the New Part 150 Study. The FAA’s determination as a result of the New Part 150 Study shall establish whether or not the Voluntary Night Closure of the Expanded South Runway will remain in effect and, if so, for what periods of time and under what conditions.”*
- **Paragraph 2(a)(iii)(c):** *“The County agrees that in the development of the New Part 150 Study, as described in subparagraph 2(a)(iii)(b), above, the County will include the Voluntary Night Closure as an abatement measure to be analyzed as part of such New Part 150 Study. The County further agrees that it will include continuation of the Voluntary Night Closure in its recommendations to the FAA in connection with such New Part 150 Study unless the City agrees in writing to the contrary.”*

43 The information in this presentation represents suggestions received from the Public and Stakeholders during the Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.



## What if the Interlocal Agreement Voluntary Night Closure Were Not in Place?

- The effects of the Voluntary Night Closure are captured in the 2018 and 2023 NEMs for FLL
- The Study Team produced a “what-if” scenario exploring how noise exposure might change if the Voluntary Night Closure were not in place
  - Nighttime runway use was assumed to be the same as daytime runway use
  - Using this assumption, “what-if” noise contours were produced

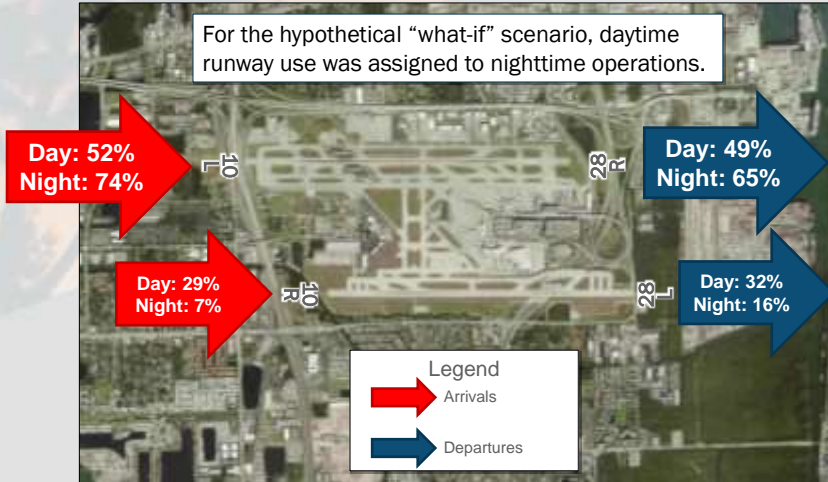
44 The information in this presentation represents suggestions received from the Public and Stakeholders during the Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.





## What if the Interlocal Agreement Voluntary Night Closure Were Not in Place?

### East Flow Runway Use

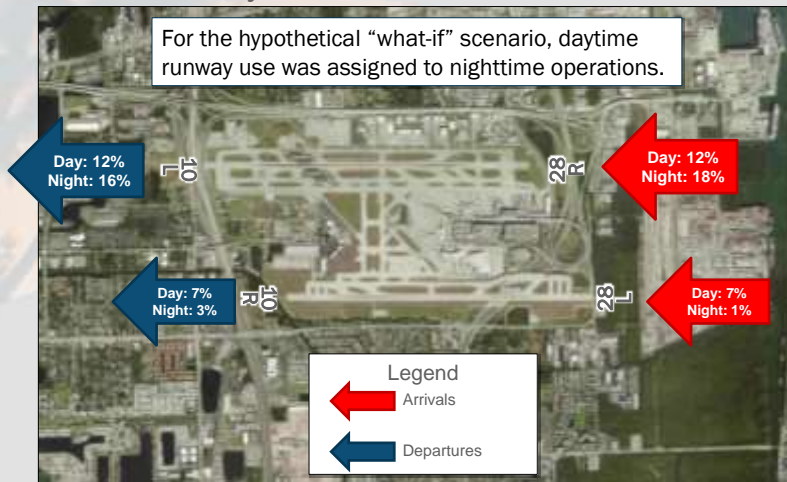


Source: Airport Noise Monitoring and Management System (ANOMS), 2016.



## What if the Interlocal Agreement Voluntary Night Closure Were Not in Place?

### West Flow Runway Use



Source: Airport Noise Monitoring and Management System (ANOMS), 2016.





## Altitudes of Aircraft Arriving from the West

- Questions have been raised regarding altitudes of aircraft arriving to FLL from the west (i.e. during east flow conditions)
- Optimized Profile Descent (OPD) or other strategies for keeping aircraft higher longer have been suggested
- The Study Team reviewed altitude data for aircraft arrivals
- The east flow peak day of March 19, 2019 is used as an example
- Aircraft altitude data are visualized on the next slide.

The information in this presentation represents suggestions received from the Public and Stakeholders during the  
49 Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.



## Altitudes of Aircraft Arriving from the West

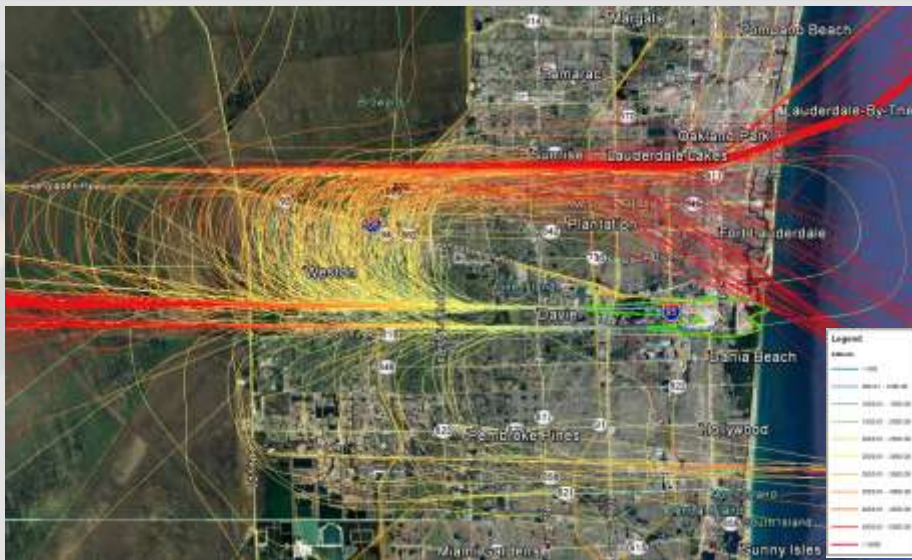


The information in this presentation represents suggestions received from the Public and Stakeholders during the  
50 Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.





## Altitudes of Aircraft Arriving from the West (all aircraft)



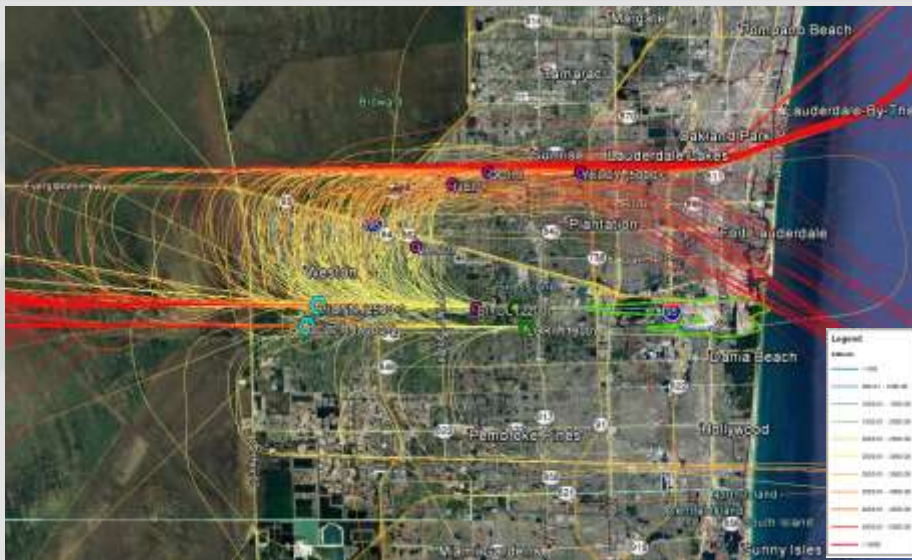
The information in this presentation represents suggestions received from the Public and Stakeholders during the  
51 Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.

## Altitudes of Aircraft Arriving from the West (commercial jet)



The information in this presentation represents suggestions received from the Public and Stakeholders during the  
52 Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.

## Altitudes of Aircraft Arriving from the West (existing RNP)



53 The information in this presentation represents suggestions received from the Public and Stakeholders during the Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.

## Altitudes of Aircraft Arriving from the West - view from WSW



54 The information in this presentation represents suggestions received from the Public and Stakeholders during the Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.

## Noise Monitoring System at FLL

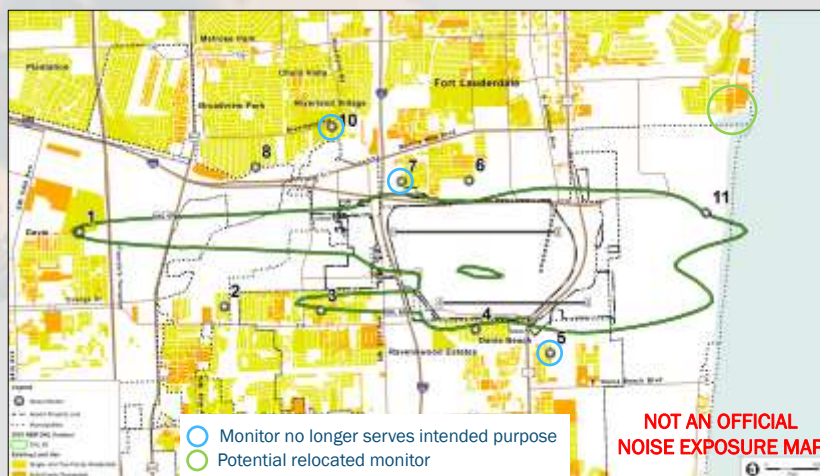
- BCAD received several suggestions to add, move, or upgrade noise monitors in the vicinity of FLL.
- Existing monitor locations are based on the previous FLL airfield configuration.
- While a number of large airports have noise monitoring systems, some airports (such as Tampa International Airport) do not use noise monitors and instead only use flight tracking systems for collecting information and communicating with the public about noise concerns.



55 The information in this presentation represents suggestions received from the Public and Stakeholders during the Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.



## Noise Monitoring System at FLL







### Future TC Meetings



### Future Meetings

#### Technical Committee

- TC Meeting #8 (Tentative)

December 2019/January 2020

TC materials will be available on the project website following each meeting  
[www.filpart150.com](http://www.filpart150.com)





## Next Steps

- Continue evaluating alternatives in support of the NCP
- Document all suggestions in support of the NCP Report
- Develop preliminary recommendations for consideration by the FAA

59



## Questions from TC Members



60





Adjourn