14 CFR PART 150 NOISE AND LAND USE COMPATIBILITY STUDY

Study Coordination Committee
Meeting #1
August 23, 2017
Part 1

- Study Overview
- Introduction to Aircraft Noise, Modeling, and Compatibility
- Airport Overview
- Public Outreach
- Technical Committee
- Frequently Asked Questions
- Project Schedule
- Questions from the SCC
Part 150 Study Overview

Issued in response to provisions contained in the *Aviation Safety and Noise Abatement Act of 1979*

Establishes the methodology to be followed when preparing aircraft noise exposure maps and developing airport/airport environs land use compatibility programs.

Part 150 studies are *voluntary, but...*

Part 150 studies must adhere to 14 CFR Part 150 guidelines to be considered and accepted and approved by FAA.
The 14 CFR Part 150 process is the Airport Sponsor’s mechanism to improve the compatibility between the Airport and surrounding communities.

FLL’s Part 150 Efforts Span 3 Decades

- **1987**: Initial FLL Part 150 Study
- **1994**: FLL Part 150 Update
- **2007**: FLL Part 150 Initiated; Later Suspended
Key Issues

- Operational Concerns
  - Opening of New Runway
  - Change in Operation of North Runway
  - Potential Changes Related to NextGen/Metroplex
- Ongoing Residential Sound Insulation Program
- Community Education
- Expectation Management
Regulatory Framework

- **Federal law** sets aircraft noise standards, prescribes operating rules, establishes the compatibility planning process, and limits airport proprietor’s ability to restrict aircraft operations.
- **State law** sets forth compatibility planning guidelines and noise standards but aircraft are exempt.
- **Local noise ordinances** set noise standards and provide for compatible land use planning but aircraft are exempt.

Who Can Regulate Airport Noise?

- **Federal Aviation Administration**: (1) Controls aircraft while in flight; (2) Responsible for controlling noise at its source (i.e., aircraft engines); (3) Certifies aircraft and pilots.
- **Airport Proprietors/BCAD**: (1) Very limited authority to adopt local restrictions; (2) Responsible for capital improvement projects and infrastructure.
- **Local Governments and States**: (1) Promote compatible land use through zoning; (2) Require real estate disclosure; (3) Mandate sound-insulating building materials.
Analyze, Evaluate, Educate

- Determine existing and future noise conditions in the vicinity of an airport
- Identify incompatible uses
- Identify measures to improve compatibility
  - Evaluate the feasibility of possible flight procedure/land use changes
  - Submit locally-endorsed recommendations to the FAA regarding noise reduction measures
  - Approved measures may be eligible for Federal grant funding
- Educate communities on the Federal process and what can and cannot be done to address aircraft noise concerns

Part 150 Studies Must Adhere to 14 CFR Part 150 Guidelines to be Accepted and Approved by FAA
Part 150 Study Overview

**Noise Exposure Map Report (NEM)**
- Develop a comprehensive database of current conditions
- Noise contour development and impact analysis
- Prepare and submit Noise Exposure Map (NEM) Report

**Noise Compatibility Program (NCP)**
- Identify and evaluate noise abatement alternatives
- Identify and evaluate compatible land use alternatives
- Identify and evaluate administrative measures
- Prepare and submit Noise Compatibility Program (NCP) Report

**Stakeholder Outreach Program**
- Local Jurisdictions/Agencies
- FAA
- Public
Part 150 Study Overview – General Study Process

Other Milestones:
- BCAD Initiation of a Study Coordination Committee in Fall 2016
- FAA Approval of the FLL Part 150 Study Forecast on April 10, 2017
- Website launched on May 3, 2017
Noise, Modeling and Compatibility
Day-Night Average Sound Level (DNL)

- 24-hour time weighted energy average noise level based on A-weighted decibels (dBA)
- Noise occurring between 10 p.m. to 7 a.m. is penalized by 10 dB to account for the higher sensitivity to noise during nighttime hours and for the expected further decrease in background levels that typically occur in the nighttime
- FAA requires the use of DNL for airport noise assessments
- Average Annual Day aircraft noise exposure is calculated over a broad area and then depicted using contour lines of equal noise levels
Introduction to Aircraft Noise - DNL

**Single Event Sound Level**
- L_{max} = 70 dBA
- Duration = 5 secs

**One Hour of Events (Hourly LEQ)**
- Aircraft Flyovers
- LEQ Noise Level

**Twenty-Four Hours of Events (DNL)**

**IDENTICAL DNL LEVELS**
- 1 Event/Day SEL 114.4 dBA = DNL 65
- 10 Events/Day SEL 104.4 dBA = DNL 65
- 100 Events/Day SEL 94.4 dBA = DNL 65
Noise Modeling

• Aircraft noise modeling allows:
  — Calculation of noise exposure at any point
  — Depicting annual average aircraft noise exposure
  — Predicting future aircraft noise exposure
  — Assessing changes in noise impacts resulting from runway configuration changes or new runways
  — Assessing changes in fleet mix and/or number of operations
  — Evaluating operational procedures

• Aviation Environmental Design Tool (AEDT) replaced the Integrated Noise Model (INM) when it was released in 2015. The current version, AEDT 2C, will be used for the FLL Part 150 Study.
Model Inputs

• The Amount of Noise Exposure is determined by:
  – Aircraft types
  – Stage length
  – Number of average annual day operations
  – Nighttime weighting (1 nighttime operation = 10 daytime operations)

• The Noise Exposure Distribution is determined by:
  – Runway configuration and use
  – Flight track locations
  – Flight track use

• Other Factors
  – Meteorological Conditions
  – Terrain
Land Uses

- Existing and Future Land Use
- Land parcel data
- Zoning
- Jurisdictional boundaries and neighborhoods

Noise Sensitives Uses

- Residential
- Places of worship
- Schools, colleges and universities
- Libraries/cultural institutions
- Hospitals and residential healthcare facilities
- Daycare and assisted living facilities
- Historic properties
Land Use Compatibility

- Table 1 in Appendix A of 14 CFR Part 150 provides noise and land use compatibility guidelines
- Deems levels below 65 dB DNL to be compatible with all land uses
- Allows for the adoption of appropriate local land use standards for land use compatibility planning purposes

The 14 CFR Part 150 process is the Airport Sponsor’s mechanism to improve the compatibility between the Airport and surrounding communities.
Airport Overview
FLL Overview
FLL Overview

- FLL is 21st in the U.S. in total passenger traffic and 13th in domestic origin and destination passengers.
- Each day an average of 80,000 travelers pass through FLL.
- The new South Runway opened in September 2014.
- Nonstop flights to over 100 U.S. and international cities.
- 139,920 total jobs (direct, indirect, and induced).
<table>
<thead>
<tr>
<th>Date</th>
<th>Air Carrier</th>
<th>Air Taxi</th>
<th>General Aviation</th>
<th>Military</th>
<th>Total</th>
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<tr>
<td>January 2016</td>
<td>19,945</td>
<td>2,849</td>
<td>3,377</td>
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<td>26,210</td>
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<td>2,711</td>
<td>3,188</td>
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<td>24,974</td>
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<td>25,460</td>
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<td>2,884</td>
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<td>23,828</td>
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<td>June 2016</td>
<td>17,461</td>
<td>2,704</td>
<td>2,672</td>
<td>47</td>
<td>22,884</td>
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<td>July 2016</td>
<td>17,853</td>
<td>2,818</td>
<td>2,781</td>
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<td>23,494</td>
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<td>August 2016</td>
<td>17,382</td>
<td>2,586</td>
<td>2,551</td>
<td>73</td>
<td>22,592</td>
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<td>September 2016</td>
<td>15,224</td>
<td>2,203</td>
<td>2,267</td>
<td>55</td>
<td>19,749</td>
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<td>October 2016</td>
<td>15,498</td>
<td>2,182</td>
<td>2,622</td>
<td>45</td>
<td>20,347</td>
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<td>2,599</td>
<td>3,450</td>
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<td>24,477</td>
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<td>December 2016</td>
<td>21,455</td>
<td>2,832</td>
<td>3,437</td>
<td>34</td>
<td>27,758</td>
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<td><strong>Total</strong></td>
<td><strong>220,020</strong></td>
<td><strong>33,061</strong></td>
<td><strong>36,511</strong></td>
<td><strong>647</strong></td>
<td><strong>290,239</strong></td>
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Source: FAA Air Traffic Activity Data System (ATADS), 2016.
Aircraft Activity Forecast

FAA Forecast Approval:

- FAA approved use of Master Plan Update (MPU) Accelerated Baseline Forecast for the FLL 14 CFR Part 150 Study

<table>
<thead>
<tr>
<th>Fiscal Year</th>
<th>FAA TAF</th>
<th>MPU Accelerated Baseline Forecasts</th>
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<tr>
<td>2017</td>
<td>304,590</td>
<td>329,300</td>
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<td>2018</td>
<td>311,559</td>
<td>335,000</td>
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<td>2023</td>
<td>343,194</td>
<td>364,765</td>
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</table>

Runway Use – East Flow

Legend

Arrivals

Departures

Day: 52%
Night: 74%

Day: 29%
Night: 7%

Day: 49%
Night: 65%

Day: 32%
Night: 16%

Source: Airport Noise Monitoring and Management System (ANOMS), 2016.
Runway Use – West Flow

Legend

Arrivals

Day: 12%
Night: 16%

Day: 7%
Night: 3%

Day: 12%
Night: 18%

Day: 7%
Night: 1%

Source: Airport Noise Monitoring and Management System (ANOMS), 2016.
### Daytime and Nighttime Operations

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<th>Operation Type</th>
<th>Day</th>
<th>Night</th>
<th>Grand Total</th>
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<tbody>
<tr>
<td>Arrivals</td>
<td>84%</td>
<td>16%</td>
<td>100%</td>
</tr>
<tr>
<td>Departures</td>
<td>90%</td>
<td>10%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td>87%</td>
<td>13%</td>
<td>100%</td>
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</table>

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

### Runway Usage

<table>
<thead>
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<th>Operation Type</th>
<th>Runway</th>
<th>Day</th>
<th>Night</th>
<th>Grand Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arrivals</td>
<td>North Runway</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10L</td>
<td>52%</td>
<td>74%</td>
<td>55%</td>
</tr>
<tr>
<td></td>
<td>28R</td>
<td>12%</td>
<td>18%</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>64%</strong></td>
<td><strong>92%</strong></td>
<td><strong>68%</strong></td>
</tr>
<tr>
<td></td>
<td>South Runway</td>
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<td></td>
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<tr>
<td></td>
<td>10R</td>
<td>29%</td>
<td>7%</td>
<td>26%</td>
</tr>
<tr>
<td></td>
<td>28L</td>
<td>7%</td>
<td>1%</td>
<td>6%</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>36%</strong></td>
<td><strong>8%</strong></td>
<td><strong>32%</strong></td>
</tr>
<tr>
<td>Departures</td>
<td>North Runway</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td>10L</td>
<td>49%</td>
<td>65%</td>
<td>51%</td>
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<td></td>
<td>28R</td>
<td>12%</td>
<td>16%</td>
<td>13%</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>61%</strong></td>
<td><strong>81%</strong></td>
<td><strong>64%</strong></td>
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<td>South Runway</td>
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<tr>
<td></td>
<td>10R</td>
<td>32%</td>
<td>16%</td>
<td>30%</td>
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<td>28L</td>
<td>7%</td>
<td>3%</td>
<td>6%</td>
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<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>39%</strong></td>
<td><strong>19%</strong></td>
<td><strong>36%</strong></td>
</tr>
</tbody>
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Public Outreach
Public Outreach Plan Development and Initial Workshops

Public Outreach

• Initial Coordination with Nearby Jurisdictions
  – 8 meetings to present project and solicit TC members
• Initial Kickoff Public Workshops
  – 5 informal workshops over 4-5 consecutive days
• NEM Public Workshop
  – Single large venue informal workshop
• Newsletter (6)
• NCP Public Workshop/Hearing
  – Single large venue informal workshop followed by formal hearing
Study Website

Project Website – www.fllpart150.com

- Project information
- Notification of upcoming meetings
- Comment mechanism
- Links to other websites
Technical Committee
TC Members

- BCAD
- ANAC
- Southwest Airlines
- Delta Airlines
- JetBlue
- Spirit Airlines
- FedEx*
- UPS
- NBAA
- Greater Fort Lauderdale Chamber of Commerce
- Greater Hollywood Chamber of Commerce
- Greater Dania Beach 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 Planning and Development Management Division*
- Broward County School Board
- FAA - Orlando Airports District Office
- Miami Air Traffic Management/TRACON
- FLL Airport Traffic Control Tower
- South Florida Flight Standards Division (FSDO)

*Participation in the Technical Committee not yet confirmed.
Purpose and Objectives of the TC

• TC members represent the interests of their organization and/or constituents

• The TC’s role is to support the FLL Part 150 Study
  – Review study assumptions
  – Provide technical feedback within the context of the Part 150 Study (noise exposure maps and noise compatibility program)
  – TC members are encouraged to express their opinions and expected to respect the range of opinions expressed by their fellow TC members

• TC members are also expected to advise their organization and/or constituents of the TC’s discussions

• BCAD will respect and consider the TC’s technical input, but retains responsibility for, and decision making authority on, the FLL Part 150 Study

• TC meetings will be open to the public, subject to space availability
Frequently Asked Questions
Frequently Asked Questions

- Will the study “fix” all the noise issues around the airport?
  - No, overflights of residential areas are unavoidable and sensitivity to noise varies by person
- What type of noise monitoring will be conducted as part of the study?
  - None, all analysis is modeling based which allows consistency, prediction of noise levels where there are no monitors and evaluation of future conditions
- Will the Study address concerns about safety, soot, or other concerns related to aircraft operation?
  - The Part 150 process focuses exclusively on noise and land use compatibility

Additional Frequently Asked Questions are available on www.fllpart150.com/faq
Preliminary Study Schedule

Noise Exposure Maps
- Data Collection
- Public Outreach
- Noise Modeling
- NEM Report/FAA Acceptance

Noise Compatibility Program
- Alternatives Analysis
- NCP Report
- Public Hearing
- FAA 180 Day Review/ROA

- Summer 2016-Winter 2017
- Fall 2017
- Fall-Winter 2017
- Summer-Winter 2018
- Summer-Winter 2018
- Spring-Summer 2019
- Summer 2019
- Winter 2019-Summer 2020
Future Meetings

Technical Committee

• TC Meeting #3 (Tentative)  
  November 2017

• TC Meeting #4 (Tentative)  
  January/February 2018

Public Workshops

• Overview of Part 150 Process  
  TBD

TC and Public Workshop materials will be available on the project website immediately following each meeting  
www.fllpart150.com
Questions from SCC Representatives