

APPENDIX G

Technical Committee Meetings

This Appendix includes details of Technical Committee (TC) meetings associated with the Fort Lauderdale-Hollywood International Airport (FLL) Part 150 Study. Documentation in this Appendix includes copies of TC meeting notices, agendas, attendance sheets, presentation materials, and summaries. TC meetings one through four were complete primarily during development of the Noise Exposure Map (NEM), while meetings five through eight were focused on development of the Noise Compatibility Program (NCP).

- Appendix G-1 TC Meeting #1 – May 26, 2017
 - Meeting Notice and Attendance Roster
 - Materials Presented at Meeting
 - Meeting Summary
- Appendix G-2 TC Meeting #2 – August 23, 2017
 - Meeting Notice and Attendance Roster
 - Materials Presented at Meeting
 - Meeting Summary
- Appendix G-3 TC Meeting #3 – March 7, 2018
 - Meeting Notice and Attendance Roster
 - Materials Presented at Meeting
 - Meeting Summary
- Appendix G-4 TC Meeting #4 – November 7, 2018
 - Meeting Notice and Attendance Roster
 - Materials Presented at Meeting
 - Meeting Summary
- Appendix G-5 TC Meeting #5 – January 16, 2019
 - Meeting Notice and Attendance Roster
 - Materials Presented at Meeting

- Meeting Summary
- Appendix G-6 TC Meeting #6 – May 23, 2019
 - Meeting Notice and Attendance Roster
 - Materials Presented at Meeting
 - Meeting Summary
- Appendix G-7 TC Meeting #7 – October 23, 2019
 - Meeting Notice and Attendance Roster
 - Materials Presented at Meeting
 - Meeting Summary
- Appendix G-8 TC Meeting #8 – February 5, 2020
 - Meeting Notice and Attendance Roster
 - Materials Presented at Meeting
 - Meeting Summary

Appendix G-1
Technical Committee
Meeting #1
May 26, 2017

Technical Committee

Meeting #1

Meeting Notice and

Attendance Roster



AVIATION DEPARTMENT - Fort Lauderdale-Hollywood International Airport

2200 SW 45th Street, Suite 101 • Dania Beach, Florida 33312 • 954-359-6100

**NOTICE OF TECHNICAL COMMITTEE MEETING
14 CODE OF FEDERAL REGULATION (CFR) PART 150 AIRPORT NOISE AND
LAND USE COMPATIBILITY STUDY
FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT**

The Broward County Aviation Department (BCAD) formed a Technical Committee (TC) to support the Fort Lauderdale-Hollywood International Airport (FLL) 14 Code of Federal Regulations (CFR) Part 150 Study. TC membership includes appointed representation from all affected airport stakeholders (experts in land use, airport operations, air traffic control, etc.).

FLL Technical Committee Meeting

Date: Friday, May 26, 2017

Time: 10:00AM - 12:00PM

Location: Aviation | Maintenance Division; 3400 SW 2nd Avenue; Fort Lauderdale, FL 33315

The Part 150 Study will quantify existing and future aircraft noise exposure levels, assess land use impacts according to federal standards, and seek ways to minimize those impacts to the greatest extent practical within 14 CFR Part 150 guidelines. Space for the TC meetings will be limited. However, they are open to the public, provided space is available. In order to promote efficient, balanced and constructive interaction among the TC members, discussions will be limited to TC members. There will be no public comment period. The public can provide comments at the upcoming public workshops and through the study website at www.fllpart150.com.



AVIATION DEPARTMENT - Fort Lauderdale-Hollywood International Airport
2200 SW 45th Street, Suite 101 • Dania Beach, Florida 33312 • 954-359-6100

MEETING LOCATION CHANGE

**NOTICE OF TECHNICAL COMMITTEE MEETING
14 CODE OF FEDERAL REGULATION (CFR) PART 150 AIRPORT NOISE AND
LAND USE COMPATIBILITY STUDY
FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT**

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FLL Technical Committee Meeting

Date: Friday, May 26, 2017

Time: 10:00AM - 12:00PM

Location: Secret Woods Nature Center – Julia Hall; 2701 W. SR 84; Dania Beach, FL 33312

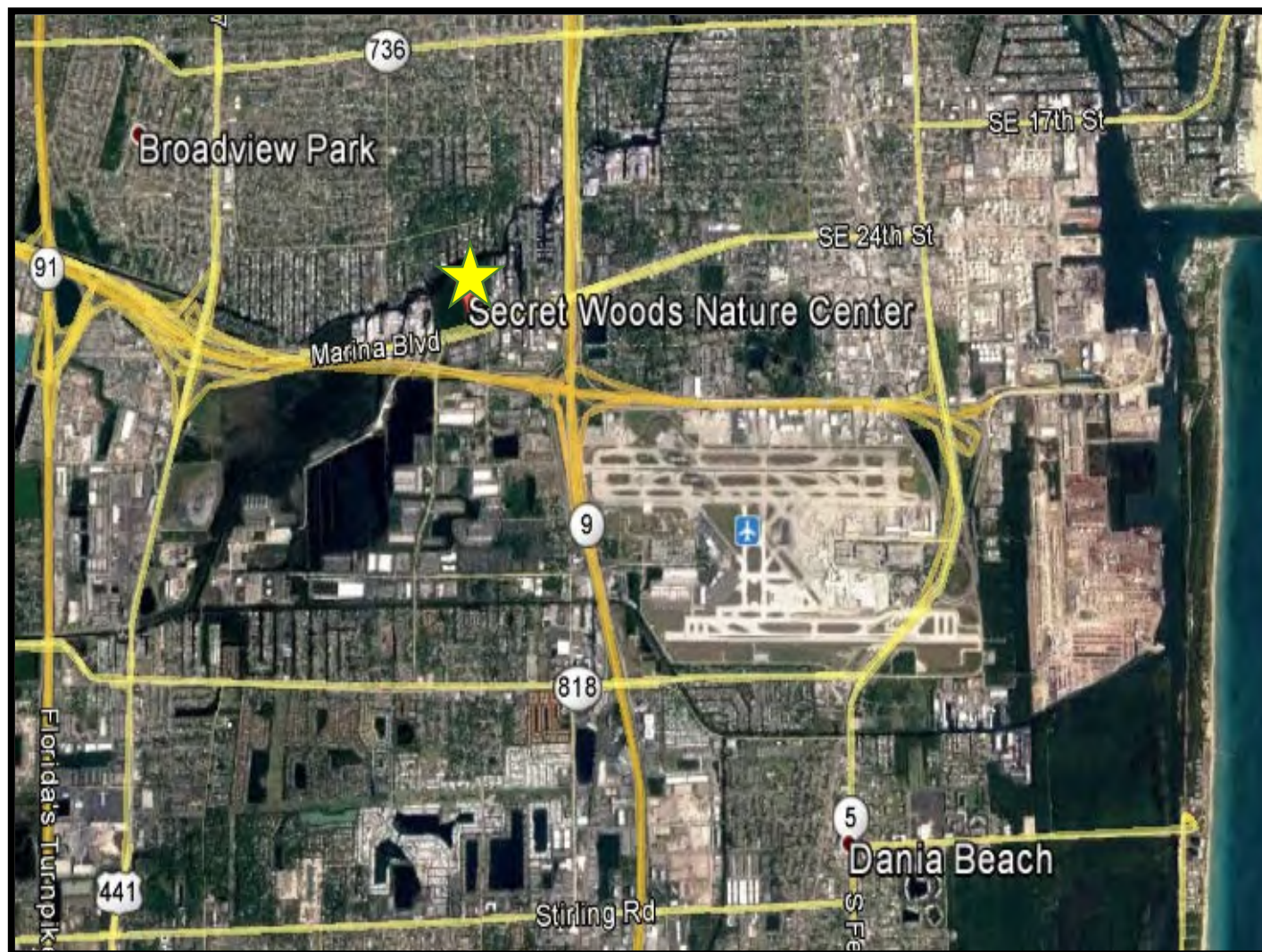
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Secret Woods Nature Center

Julia Hall

2701 W. SR 84

Dania Beach, FL 33312



From the East: Take FL-84 / Marina Mile Blvd. and turn right into the Secret Woods Nature Center.

From the West: Take FL-84 / Marina Mile Blvd. and make a U-turn after SW 26th Terrace. Turn right into the Secret Woods Nature Center.

From the North via I-95: Follow I-95 to South to Exit 25, FL-84 / Marina Mile Blvd. Head west on FL-84 / Marina Mile Blvd. and turn right into the Secret Woods Nature Center.

From the South via I-95: Follow I-95 North to Exit 25, FL-84 / Marina Mile Blvd. Head west on FL-84 / Marina Mile Blvd. and turn right into the Secret Woods Nature Center.

From the North via US-441: Follow US-441 South to FL-84 / Marina Mile Blvd. and make a U-turn after SW 26th Terrace. Turn right into the Secret Woods Nature Center.

From the South via US-441: Follow US-441 North to FL-84 / Marina Mile Blvd. and make a U-turn after SW 26th Terrace. Turn right into the Secret Woods Nature Center.



Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee

Date / Time: Friday, May 26, 2017 10:00 AM - 12:00 PM

Location: Secret Wood Nature Center

First & Last Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Debra Van Valkenburgh (A)		ANAC			perhelion@hotmail.com	
Gary Luedtke		ANAC	954-966-8013		gluedtke@gmail.com	
Allan Siegel (A)	Public Informations Officer	Broward County Aviation Department	954-359-6978		Asiegel@broward.org	
Brad Ostendorf		Broward County Aviation Department	9-359 2395		bostendorf@broward.org	
Gregory Meyer	Public Information Officer	Broward County Aviation Department - PIO	954-359-6116		GMeyer@broward.org	
John Pokryfke	Asst. Director of Operations, Aviation	Broward County Aviation Department - Airport Operations	954-359-6475		JPOKRYFKE@broward.org	
Michael Nonnemacher (A)	Acting Assistant Executive Director	Broward County Aviation Department - Airport Operations			mnonnemacher@broward.org	
Mike Pacitto (A)	Director of Planning	Broward County Aviation Department - Airport Manager's Office	954-560-0766		mpacitto@broward.org	
Tom Nazzaro	Airport Manager, Aviation	Broward County Aviation Department - Airport Business	954-359-6821		TNAZZARO@broward.org	
Will Castillo (A)	Airport Planning Manager	Broward County Aviation Department - Airport Noise Office	954-359-2291		wcastillo@broward.org	
Winston Cannicle	Noise & Environmental Officer	Broward County Aviation Department - Airport Noise Office	954-359-6181		WCANNICLE@broward.org	
Chris Akagbosu	Director, Facility of Planning & Real Estate Dept.	Broward County School Board	754-321-2162		chris.akagbosu@browardschools.com	
Karen Boudros	Executive Director	Broward Workshop	954-462-9112		kareen@browardworkshop.com	
Matt Wood	Growth Management Director	City of Cooper City	954-434-4300		MWood@coopercityfl.org	
Brad Kaine (A)		City of Dania Beach			bkaine@daniabeachfl.gov	
Marc LeFerrier		City of Dania Beach	954-924-6805 x3643		mleferrier@ci.dania-beach.fl.us	
Angelina Pluzhnyk Evans	Chief Civic Affairs Officer	City of Fort Lauderdale	561-715-9112 - C		lina@chyden.net	
Edward Rebholz	Edward Rebholz	City of Fort Lauderdale	973-476-5609		ed@edrebholz.com	
Geoff Rames (A)	U.P. LAND ISLES CIVIC DEPT.	City of Fort Lauderdale	954-327-9095		GRAMES.LICIA@GMAIL.COM	
Lorie Mertens-Black		City of Hollywood	954-921-3599		lmertens-black@hollywoodfl.org	
Peter Dokuchitz	Principal Planner / City of Plantation	City of Plantation	954-797-2265		pdokuchitz@plantation.org	



Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee

Date / Time: Friday, May 26, 2017 10:00 AM - 12:00 PM

Location: Secret Wood Nature Center

First & Last Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
John R. Flint	City Manager / CEO	City of Weston	954-385-2000		jflint@westonfl.org	
Julia Lundrigan	Delta Flight Ops	Delta Airlines	404-773-2882	678 427 1350	Julia.Lundrigan@delta.com	
Allan Nagy	Environmental Program Specialist	FAA - Orlando Airports District Office	407-812-6331 x130		Allan.Nagy@faa.gov	
Mary Morrissey	Senior Manager	FedEx	954-359-7432		mmmorrissey@fedex.com	
Sid Cooley (A)		FLL Airport Traffic Control Tower	954-921-9200		sidney.cooley-jr@faa.gov	
Theodore (TJ) DellNegri	Tower Manager	FLL Airport Traffic Control Tower	954-921-9201		theodore.delnegri@faa.gov	
Randie Shane	CEO/Executive Director	Greater Dania Beach Chamber of Commerce	954-926-2323		rshane@daniabeachchamber.org	
Bob Swindell	President and CEO	Greater Fort Lauderdale Alliance Economic Development Agency	954-524-3113		bswindell@gflalliance.org	
Dan Lindblade, CAE	CAE - President and CEO	Greater Fort Lauderdale Chamber of Commerce	954-462-4911		dan@ftlchamber.com	
Anne Hotte	CEO/Executive Director	Greater Hollywood Chamber of Commerce	954-923-4000		anne@hollywoodchamber.org	
Jason Annunziata	Station Manager	JetBlue	954 233-4722	646 912-2775	Jason.Annunziata@jetblue.com	
Bob Hildebidle	Air Traffic Manager A	Miami Air Traffic Management/TRACON	305-869-5402	954-292-6515 206 378 6684	Bob.Hildebidle@faa.gov	
Alex Gertson (A)	Director of Airports and Ground Infrastructure	NBAA			gvoos@NBAA.org	
Gregory Voos		NBAA				
Mark Hemmerle	Front Line Manager	South Florida Flight Standards Division (FSDO)	954-641-6015		Mark.W.Hemmerle@faa.gov	
Edwin Solley	Manager ATC Systems	Southwest Airlines	407-850-1563		Edwin.solley@wnco.com	
Michael Shiver	General Manager	Spirit Airlines	954-359-0933		michael.shiver@spirit.com	
Charles Taylor	Intergovernmental Affairs Manager	Town of Davie	954-797-1034		Charles_Taylor@davie-fl.gov	
Phillip Holste (A)	Assistant Town Administration	Town of Davie			Phillip_Holste@davie-fl.gov	
Richard Lemack	Town Administrator	Town of Davie	954-797-1034		Richard_Lemack@davie-fl.gov	
John Eastman	John Eastman	Town of Southwest Ranches	954-465-8383		john426@bellsouth.net	



Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee

Date / Time: Friday, May 26, 2017 10:00 AM - 12:00 PM

Location: Secret Wood Nature Center

First & Last Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Mark Modrich (A)	AA Pilot/Resident	Town of Southwest Ranches	954-540-4854	954-252-5040	MMODRICH@AOL.COM	
Kevin Hoffman - Corporate Contact	Corporate Contact	UPS	502-329-3913		khoffmann@ups.com	

SAM Robbin	CEO	NATIONAL JETS/Broward Workshop	954 868 2166	3AMRobbin@nationaljets.com	
Kevin Wu Kevin Coutant, Jr	Airport Manager Airport Planner	BCAD - OPS BCAD - P/D	954 359 1216 954 359 1599	954. 279. 4740	kwu@broward.org kcoutejr@broward.org



Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee

Date / Time: Friday, May 26, 2017 10:00 AM - 12:00 PM

Location: Secret Wood Nature Center

Public/Residents

Please Print Clearly

First & Last Name	Title	Company Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Richard Penninger				954-591-1241	RCP37c Juno. com	
Michelle CARTER	Planning	BCAD	379-2581		micarter@broward.org	
Rufus A. James	Airport Manager	City of Fort Lauderdale	9-828-4968		rjames@fortlauderdale.gov	
Roy Liddicott	Capt.	BSO		ON FILE		
Rob Furman	LT.	BSO		ON FILE		
Dave Rickerson	Sr. Director	KHVA		407-404-0735	dave.rickerson@kimberlykorn.com	
Bob Leonard	conceded citizen			(954) 232-7141	leonard bob@att.net	
Jim Andre	Public - Level B			9/24/662	GHOHNO@BellSouth.com	
GERIE RAMES	V. P.	LAUDERDALE CIVIC CENTER ASSOC	954-327-9045		GRAMES.LICIA@BELL.COM	
Deen Harley	Vice Chair DBAAC	Broward College		513-652-5140	dharley@broward.edu	
Linda Armstrong	HDA - Pres - VHI Chairman Griffin Leck CDD		847-757-1073		windycitylindie@gmail.com	
DR. JUSTIN GRUBSICH	Senior Associate	Pew Charitable Trust	347-205-7601	SAME	justinrg@gmail.com	
DAVE REICH			954-871-7363		reichd@bellsouth.net	
ICHALIL NASSER	Direc	GBP Energy	703-231-8332	703-231-8332	kmnasser@yahoo.com	



Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee

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Public/Residents

Please Print Clearly

First & Last Name	Title	Company Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
LIZ FORDRED			954 260 6419		LIZ FORDRED@gmail.com	<i>[Signature]</i>
PETE FORDRED			954 651 4819		PFORDRED@GMAIL.COM	<i>[Signature]</i>

Technical Committee

Meeting #1

Materials Presented at Meeting



AVIATION DEPARTMENT - Fort Lauderdale-Hollywood International Airport
2200 SW 45th Street, Suite 101 • Dania Beach, Florida 33312 • 954-359-6100

Meeting Agenda
Technical Committee Meeting No. 1
14 CFR Part 150 Study
Fort Lauderdale-Hollywood International Airport
May 26, 2017 – 10AM to 12PM EDT

1. Welcome and Introductions
2. Purpose and Objectives of the Technical Committee (TC)
3. Role of the TC Meeting Facilitator
4. TC Charter and Participation Agreement
5. Fort Lauderdale-Hollywood International Airport Overview
6. 14 CFR Part 150 Overview
7. Data Collection Process and Status
8. Future TC Meetings
9. Questions from TC Members
10. Adjourn



14 CFR PART 150 NOISE AND LAND USE COMPATIBILITY STUDY

Technical Committee Meeting #1
May 26, 2017



1

Agenda

- Introductions and Opening Remarks
- Technical Committee (TC)
 - Purpose and Objectives of the Technical Committee
 - Role of the TC Meeting Facilitator
 - TC Charter and Participation Agreement
- Airport Overview
- Part 150 Study Overview
- Introduction to Aircraft Noise, Modeling, and Compatibility
- Initial Data Collection
- Project Schedule
- TC Questions



Welcome and Introductions



Welcome and Introductions – Consultant Team



Environmental Science Associates (ESA)

- 500+ person environmental consulting firm
- Experience at more than 150 airports nationally
- Highly complex projects
 - LaGuardia Part 150
 - John F. Kennedy International Part 150
 - Los Angeles International Part 150
 - San Francisco International Part 150
 - Hartsfield-Jackson Atlanta International Part 150
 - O'Hare Modernization Program EIS
- More than 100 airport noise-related studies in Florida



Welcome and Introductions – Consultant Team



Welcome and Introductions – Consultant Team



Garth Solutions, Inc. (GSI)
Public Outreach/Facilitation/Communications



Kimley-Horn and Associates, Inc. (KHA)
Land Use Planning/Public Outreach Support



Vanasse Hangen Brustlin, Inc. (VHB)
Technical Support/Public Outreach Support



American Infrastructure Development, Inc. (AID)
Strategic Planning/Public Outreach Support



Lewis, Longman, & Walker, P.A. (LLW)
Land Use Planning Legal Support



Planning Technology, Inc. (PTI)
Website Design



Arora Engineers (Arora)
Geographic Information Systems/Mapping



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

- Broward County Aviation Department (BCAD) has formed a Technical Committee (TC) for the Part 150 Study for Fort Lauderdale-Hollywood International Airport (FLL)
- BCAD has invited a cross section of key stakeholders to serve on the TC
- The TC is composed of primary and alternate members who are authorized to represent their organization and/or constituents for the duration of the FLL Part 150 Study, which is estimated at three years
- TC meetings will be conducted in a professional and respectful manner
- TC meetings will be open to the public, subject to space availability



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



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 Charter and Participation Agreement

- The TC Charter and Participation Agreement are included in today's handout materials
- The Charter describes the role of the TC and describes the conduct of the TC meetings
- Please return the signed Participation Agreement to BCAD today
- BCAD anticipates there will be 8 TC meetings during the Study's duration
- TC meetings will be held quarterly, on average
- Every effort will be made to schedule TC meeting dates and times that will be convenient to the majority of TC members
- TC membership is voluntary and TC members will not be compensated for their time

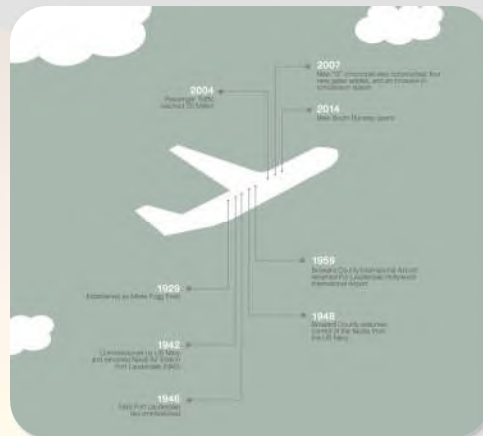


Airport Overview



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)



FLL Overview



FLL Overview - Roles and Responsibilities

Three core organizations are involved in aircraft operations at FLL:

- Federal Aviation Administration (FAA)
 - Directs the safe movement of aircraft in the air and on the ground
- BCAD
 - Manages the airport(s), improves and maintains airport facilities
 - No control over where aircraft fly
- Pilots
 - The pilot in command has ultimate responsibility for the safe operation of his/her aircraft

Part 150 Study Overview



14 CFR Part 150 Overview

- Interim Rule on Federal Aviation Regulations (FAR) Part 150, *Airport Noise Compatibility Planning* issued in 1981 and finalized in 1985, later recodified as Title 14 Code of Federal Regulations (CFR) Part 150
- 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



Part 150 Study Overview

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



Part 150 Study Overview

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



Part 150 Study Overview

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.

FEDERAL LAW PREEMPTS STATE AND LOCAL REGULATIONS



Part 150 Study Overview

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)

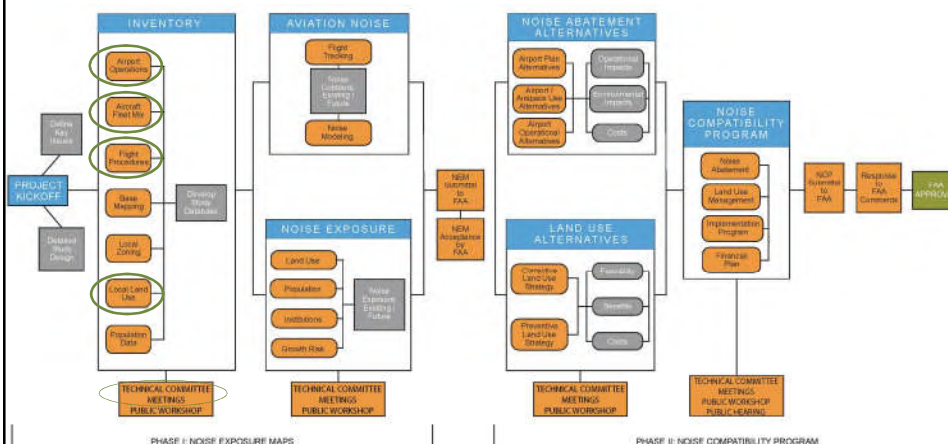
- Identify and evaluate noise abatement alternatives
- Identify and evaluate compatible land use alternatives
- Identify and evaluate administrative measures
- Prepare and submit Noise Compatibility Program (NCP) Report

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



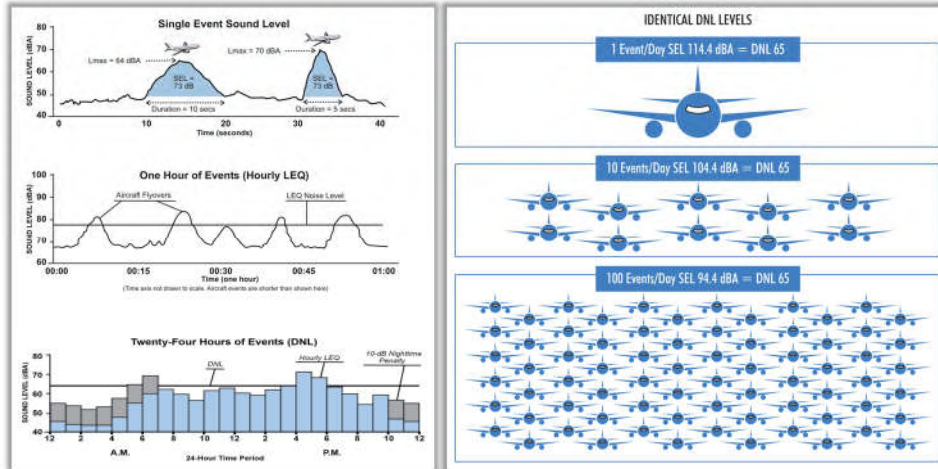
Introduction to Aircraft Noise - DNL

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



Part 150 Study Overview – Modeling

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.

Part 150 Study Overview – Modeling

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



**Aviation Environmental
Design Tool (AEDT)
Version 2C**



Part 150 Study Overview – Land Use Compatibility

Land Uses

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

Noise Sensitive Uses

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



Part 150 Study Overview - Land Use Compatibility

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

Land Use	Yearly Day-Night Noise Level (DNL) in decibels					
	Below 55	55-59	60-64	65-69	70-74	Over 75
Residential						
Residential other than mobile homes and transient housing	Y	100	100	10	10	10
Mobile home park	Y	10	10	10	10	10
Transient housing	Y	100	100	100	10	10
Public Use						
Schools	Y	100	100	10	10	10
Hospitals and nursing homes	Y	100	100	10	10	10
Churches, auditoriums and concert halls	Y	100	100	10	10	10
Governmental offices	Y	100	100	10	10	10
Transportation	Y	100	100	100	100	100
Hotels	Y	100	100	100	100	10
Commercial Use						
Offices, business and professional	Y	Y	100	100	10	10
Wholesale and retail stores	Y	Y	100	100	10	10
Restaurants and food service	Y	Y	100	100	10	10
Hotels and transient housing	Y	Y	100	100	10	10
Amusement and recreation	Y	Y	100	100	10	10
Manufacturing and Production						
Manufacturing, general	Y	Y	100	100	10	10
Photographic and similar	Y	Y	100	100	10	10
Alcohol and beverage production and bottling	Y	100	100	100	100	100
Automotive testing and assembly	Y	100	100	100	100	100
Printing and publishing	Y	Y	100	100	10	10
Recreation						
Amusement and recreation	Y	100	100	10	10	10
Casinos, gaming, and entertainment	Y	Y	10	10	10	10
Amusement parks, resorts and camps	Y	Y	Y	10	10	10
Golf courses, riding stables and water recreation	Y	Y	100	100	10	10



Part 150 Study Overview – Land Use Compatibility



Part 150 Overview - FAQs

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?
 - None, all analysis is modeling based which allows consistency and evaluation of future conditions
- Will the Study address concerns about safety, soot, or other concerns related to aircraft operation?
 - The Part 150 process focusses exclusively on noise and land use compatibility



Initial Data Collection



Part 150 Study Overview - Years of Analysis

Noise Exposure Maps – Baseline Conditions

- Base year and a future year which is at least 5 years into the future
- Basis of comparison for effectiveness of potential noise abatement measures
- Year of submittal must be consistent with base year
 - Existing Condition: 2017
 - Future Condition: 2022
- Existing Condition based on recent 12 months of operational data applied to 2017 projected activity level



Data Collection – Operational Information

- CY 2016 data from the BCAD's Airport Noise and Operations Management System (ANOMS):
 - Airport Operations
 - Aircraft Fleet Mix
 - Time of Day of Operation
 - Arrival and Departure Flight Tracks
 - Flight Profiles
 - Stage Length
- 2016 FAA Air Traffic Activity Data System (ATADS)
- BCAD Master Plan Update Forecasts



Data Collection - 2016 Operational Information

Annual Aircraft Operations

Date	Air Carrier	Air Taxi	General Aviation	Military	Total
January 2016	19,945	2,849	3,377	39	26,210
February 2016	19,026	2,711	3,188	49	24,974
March 2016	21,120	3,343	3,948	55	28,466
April 2016	18,871	3,203	3,334	52	25,460
May 2016	17,807	3,031	2,884	106	23,828
June 2016	17,461	2,704	2,672	47	22,884
July 2016	17,853	2,818	2,781	42	23,494
August 2016	17,382	2,586	2,551	73	22,592
September 2016	15,224	2,203	2,267	55	19,749
October 2016	15,498	2,182	2,622	45	20,347
November 2016	18,378	2,599	3,450	50	24,477
December 2016	21,455	2,832	3,437	34	27,758
Total	220,020	33,061	36,511	647	290,239

Source: FAA Air Traffic Activity Data System (ATADS), 2016.

Data Collection - 2016 Operational Information

Daytime and Nighttime Operations

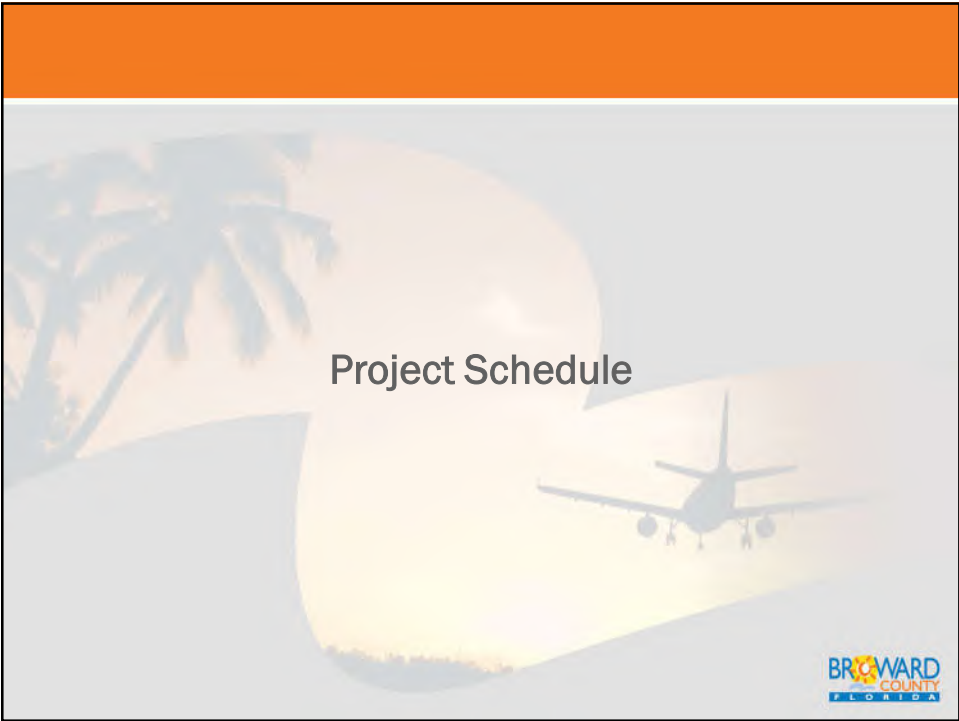
Operation Type	Day	Night	Grand Total
Arrivals	84%	16%	100%
Departures	90%	10%	100%
Grand Total	87%	13%	100%

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

Runway Usage

Operation Type	Runway	Day	Night	Grand Total
Arrivals	10L	52%	74%	55%
	10R	29%	7%	26%
	28L	7%	1%	6%
	28R	12%	18%	13%
Arrivals Total		100%	100%	100%
Departures	10L	49%	65%	51%
	10R	32%	16%	30%
	28L	7%	3%	6%
	28R	12%	16%	13%
Departures Total		100%	100%	100%

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



Preliminary Study Schedule

Noise Exposure Maps

- Data Collection Summer 2016-Fall 2017
- Public Outreach Fall-Winter 2017
- Noise Modeling Fall-Winter 2017*
- NEM Report/FAA Acceptance Summer 2018*

Noise Compatibility Program

- Alternatives Analysis Spring-Fall 2018
- NCP Report Fall-Winter 2018
- Public Hearing Spring 2019
- FAA 180 Day Review/ROA Fall-Winter 2019

* Schedule may shift depending on availability of FAA's Metroplex flight path data.

BROWARD COUNTY FLORIDA

Future Meetings

Technical Committee

- TC Meeting #2
- TC Meeting #3 (Tentative)

Tentatively August 2017

Fall 2017

Public Workshops

- Overview of Part 150 Process

TBD*

* Date for public involvement is dependent on the Study Coordination Committee.

TC and Public Workshop materials will be available on the project website immediately following each meeting
www.flpart150.com



Study Website

Project Website – www.flpart150.com

- Project information
- Notification of upcoming meetings
- Comment mechanism
- Links to other websites



Questions from TC Members



Technical Committee

Meeting #1

Meeting Summary

Fort Lauderdale-Hollywood International Airport
14 CFR Part 150 Noise and Land Use Compatibility Study
Technical Committee Meeting #1

May 26, 2017

Meeting Notes

Agenda and Key Topics:

- Welcome and Introductions
- Technical Committee Roles and Responsibilities
- Fort Lauderdale-Hollywood International Airport (FLL) Airport Overview
- 14 CFR Part 150 Overview
- Noise, Modeling, and Land Use Compatibility
- Initial Data Collection
- Project Schedule

Meeting Summary:

As the inaugural meeting, the primary focus was to establish a clear understanding of the roles, responsibilities, and expectations of the Technical Committee (TC) members. The TC's role is to support the FLL Part 150 Study, review study assumptions, and provide technical feedback within the context of the 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 responsible for advising their organization and/or constituents of the TC's discussions.

- The Technical Committee convened for its first meeting at 10:00 AM on May 26, 2017 at the Secret Woods Nature Center in the Julia Hall.
- The meeting began with introductions of participants and was followed by opening remarks from Mark Gale, Aviation Director for FLL.
- The meeting facilitator established ground rules for the TC members. Since the meeting format did not allow for public participating, attending members of the public were advised of ways in which they could submit comments which included the project website (www.flpart150.com) and at future public meeting (dates TBD).
- Michael Arnold, Part 150 Study Project Director representing the ESA consulting team presented Study information to TC members. The presentation provided an overview of FLL, the purpose and process of a Part 150 Study, data collection, anticipated timeline, and next steps related to the FLL Part 150 Study.

Questions & comments from TC members:

Q: Does the committee have access to the accelerated forecast approved on April 10?

A: Yes. It will be presented at a future TC meeting and will be available on the FLL Master Plan Update website (<http://www.broward.org/Airport/Community/MasterPlan>).

Q: Where is the funding for the study coming from?

A: The Federal Aviation Administration (FAA) is providing 75% and the Broward County Aviation Department (BCAD) is funding the remaining 25%.

Q: How will the Part 150 Study and the Airport Master Plan Update work together?

A: The main information developed in the Master Plan that will be used in the noise study is the forecasted aircraft activity levels. If there are any changes to the airfield in the Master Plan Update those changes would need to be incorporated in the future noise analysis. In this case, any airfield changes prior to 2022 would be included in the Part 150 Study future condition, which will also model the accelerated baseline forecast operational levels.

Q: Are we strictly talking about aircraft noise and not car traffic around the airport?

A: That is correct. The study is limited to aircraft noise. The Master Plan Update will study vehicle traffic around the airport.

Q: FLL operates to the east 80% of the time and the west the remaining 20%. Aircraft flows vary depending on the season. How is the difference in operations weighed in the noise study using DNL?

A: Day-Night Average Sound Level (DNL) is the only metric approved by FAA for compatibility purposes. It reflects annual average day sound exposure. This metric doesn't depict the specific fluctuations of noise based on season or peak times, even though the model includes those periods.

Q: Noise occurring between 10pm and 7am is penalized by 10 decibels to account for higher sensitivity?

A: With the DNL metric, any aircraft activity occurring within that time frame is adjusted by 10 decibels to account for the increased sensitivity to noise at night. One nighttime aircraft operation has the same effect on the noise contours as 10 daytime aircraft operations.

Q: Do you have an existing land use compatibility map for FLL?

A: We will be developing an existing land use map as part of the study. Compatibility will be determined once we have modeled existing and future conditions.

Q: Is compatibility tied to aircraft's distance to the airport and the height above the residences?

A: We look at the altitude and location of flight tracks in three dimensions when setting up the model. We also include specific engine types when we model aircraft operations.

C: The contours are wider where planes take off and narrower where planes land.

Q: Can you add equestrian areas in categories of noise sensitivities for the Town of Davie?

A: Equestrian is not a separate category in land use data; however, we can look at those types of uses and where they are located. Humans are the priority when it comes to land use impacts.

When we look at making changes that result in flight path changes, we will consider whether there is an impact on the community, as well as the equestrians to the extent possible.

Q: Will the study recommend the installation of more noise monitors in highly impacted areas around FLL?

A: We will look at the existing noise monitors when determining the necessary adjustments to recommend in the Study, which may include relocating or installing additional monitors.

Q: Are you looking at 2014 in the noise study comparison? Are you just looking at 2015 and 2016?

A: 2017 is the existing condition year; we will not be modeling 2014, 2015, or 2016 aircraft operations. Actual aircraft operational data from 2016 will be applied to 2017 aircraft operations (counts) in order to accurately model the existing conditions. We will look at the existing (2017) and future (2022) conditions to determine how to improve noise impacts in the future.

Q: How are stage lengths analyzed and will you be getting actual weights?

A: We will use destination and aircraft profile (altitude) information from FLL's Airport Noise Monitoring and Management System (ANOMS). We will use actual weight information if it is available.

Q: In your modeling, how do you account for flight operations with the various pilot flight patterns?

A: We will use 2016 flight operations data from ANOMS to develop flight tracks.

Q: What is included in Air Taxi column? Does it include charter operators or just commuters?

A: Air Taxi operations include small commercial aircraft operations, such as charter and commuter aircraft.

Q: How do you account for the explosion in population growth?

A: Census population estimates will be included in the data collection effort.

Q: Are we able to get a brief update on the Master Plan at each of these meetings?

A: The Master Plan Update has recurring Technical Advisory Committee meetings that provide an update at the beginning of each of those meetings.

Q: Do you have expectations for the next meeting?

A: We will post on the website a copy of 14 CFR Part 150 for you to review for next meeting. Please fill out the Participation Agreement and return it to us before that meeting.

Q: Are military aircraft included in this Study?

A: Yes.

Actionable Next Steps:

As agreed upon by the TC members, the next meeting will be held at the Secret Woods Nature Center - Julia Hall, in August 2017, on a Wednesday morning.

Meeting Adjourned at 12:00 PM

Appendix G-2
Technical Committee
Meeting #2
August 23, 2017

Technical Committee

Meeting #2

Meeting Notice and

Attendance Roster



AVIATION DEPARTMENT - Fort Lauderdale-Hollywood International Airport
2200 SW 45th Street, Suite 101 • Dania Beach, Florida 33312 • 954-359-6100

**Subject: Fort Lauderdale-Hollywood International Airport
14 CFR Part 150 Study - Technical Committee Meeting #2**

Please save the date for the next Technical Committee meeting to support the Fort Lauderdale-Hollywood International Airport Part 150 Study.

Date: Wednesday, August 23, 2017

Time: 10:00AM - 12:00PM

Location: Secret Woods Nature Center | Julia Hall; 2701 W. SR 84; Dania Beach, FL 33312

Please arrive 10 minutes early to allow time to check in prior to the start of the meeting.

Broward County Board of County Commissioners

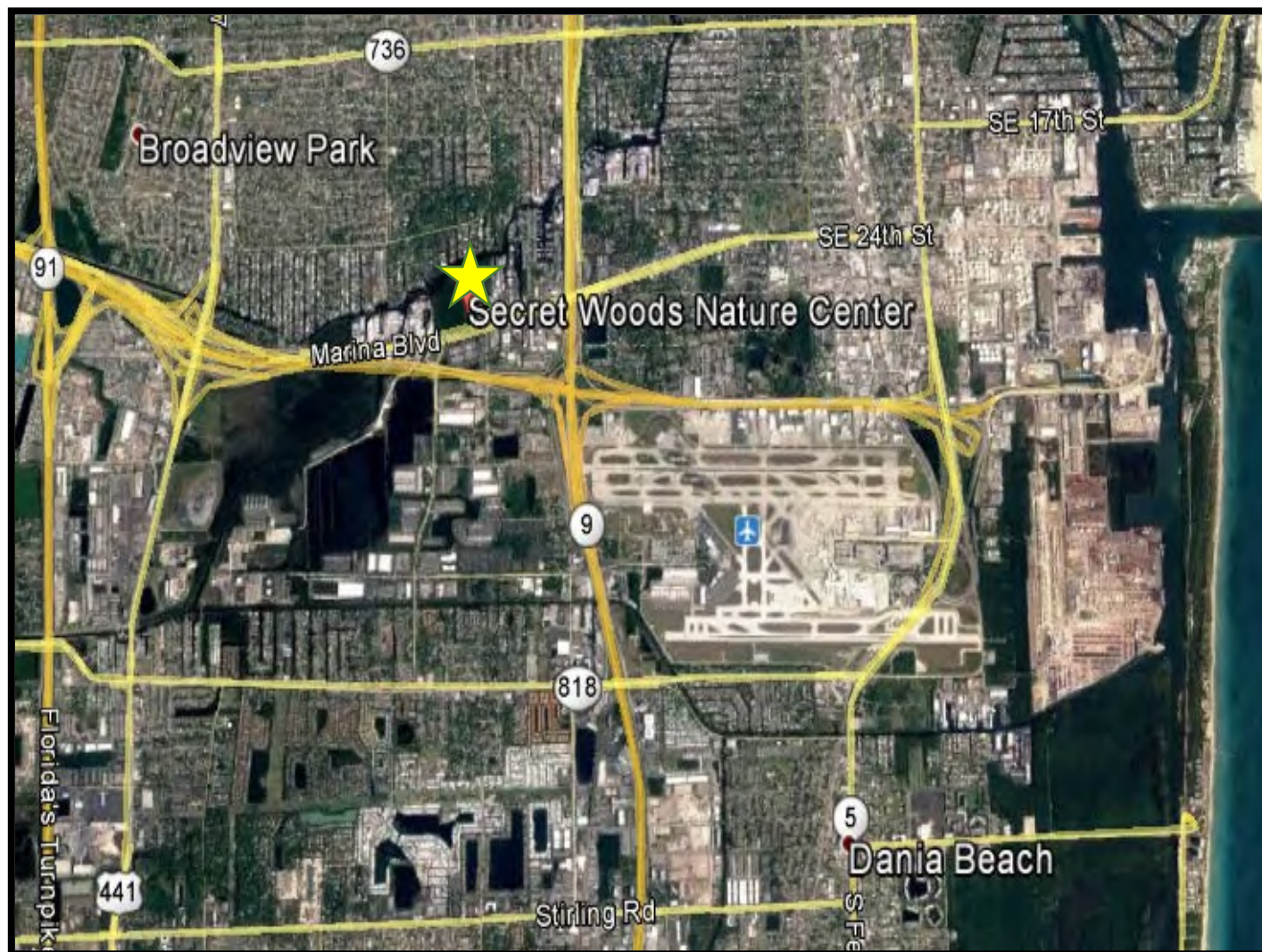
Mark D. Bogen • Beam Furr • Steve Geller • Dale V.C. Holness • Chip LaMarca • Nan H. Rich • Tim Ryan • Barbara Sharief • Michael Udine
www.broward.org/www.fl.net

Secret Woods Nature Center

Julia Hall

2701 W. SR 84

Dania Beach, FL 33312



From the East: Take FL-84 / Marina Mile Blvd. and turn right into the Secret Woods Nature Center.

From the West: Take FL-84 / Marina Mile Blvd. and make a U-turn after SW 26th Terrace. Turn right into the Secret Woods Nature Center.

From the North via I-95: Follow I-95 to South to Exit 25, FL-84 / Marina Mile Blvd. Head west on FL-84 / Marina Mile Blvd. and turn right into the Secret Woods Nature Center.

From the South via I-95: Follow I-95 North to Exit 25, FL-84 / Marina Mile Blvd. Head west on FL-84 / Marina Mile Blvd. and turn right into the Secret Woods Nature Center.

From the North via US-441: Follow US-441 South to FL-84 / Marina Mile Blvd. and make a U-turn after SW 26th Terrace. Turn right into the Secret Woods Nature Center.

From the South via US-441: Follow US-441 North to FL-84 / Marina Mile Blvd. and make a U-turn after SW 26th Terrace. Turn right into the Secret Woods Nature Center.


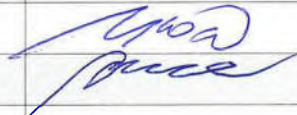

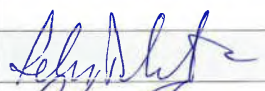
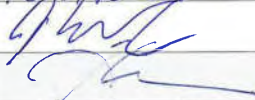
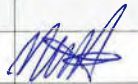


Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee 2

Date / Time: Wednesday, August 23, 2017 10:00 AM - 12:00 PM

Location: Secret Wood Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Akagbosu	Chris	Director, Facility of Planning & Real Estate Dept.	Broward County School Board	754-321-2162		chris.akagbosu@browardschools.com	
Annunziata	Jason	Station Manager	JetBlue	954 233-4722	646-942-2775	Jason.Annunziata@jetblue.com	
Boutros	Kareen	Executive Director	Broward Workshop	954-462-9112		kareen@browardworkshop.com	
Cannicle	Winston	Noise & Environmental Officer	Broward County Aviation Department - Airport Noise Office	954-359-6181		WCANNICLE@broward.org	
Castillo (A)	Will	Airport Planning Manager	Broward County Aviation Department - Airport Noise Office	954-359-2291		wcastillo@broward.org	
Cooley (A)	Sid		FLL Airport Traffic Control Tower	954-921-9200		sidney.cooley-jr@faa.gov	
Coutain, Jr.	Ken	Airport Planner	Broward County Aviation Department - P/D	954-359-1599		kcoutain@broward.org	
DelNegri	Theodore (TJ)	Tower Manager	FLL Airport Traffic Control Tower	954-921-9201		theodore.delnegri@faa.gov	
Dokuchitz	Peter	Principal Planner / City of Plantation	City of Plantation	954-797-2265		pdokuchitz@plantation.org	
Eastman	John	John Eastman	Town of Southwest Ranches	954-465-8383		john426@bellsouth.net	
Flint	John R.	City Manager / CEO	City of Weston	954-385-2000		jflint@westonfl.org	
Gaenicke	Sierra		VHB			sgaenicke@vhb.com	
Gale	Mark	Director of Aviation	Broward County Aviation Department			mgale@broward.org	
Gertsen (A)	Alex	Director of Airports and Ground Infrastructure	NBAA	202-737-4477		Associationagertsen@nbaa.org	
Govin	Yasmin		Broward County Aviation Department - Airport Business	954-359-6145		ygovin@broward.org	
Hemmerle	Mark	Front Line Manager	South Florida Flight Standards Division (FSDO)	954-641-6015		Mark.W.Hemmerle@faa.gov	
Hildebidle	Bob	Air Traffic Manager A	Miami Air Traffic Management/TRACON	305-869-5402	954-292-6515	Bob.Hildebidle@faa.gov	
Hoffman	Kevin	Corporate Contact	UPS	502-329-3913		khoffmann@ups.com	
Holste (A)	Phillip	Assistant Town Administration	Town of Davie	954-797-1034		Phillip_Holste@davie-fl.gov	
Hotte	Anne	CEO/Executive Director	Greater Hollywood Chamber of Commerce	954-923-4000		anne@hollywoodchamber.org	
Kaine (A)	Brad	Director of Public Services	City of Dania Beach	954-924-6808		bkaine@daniabeachfl.gov	



Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee

Date / Time: Wednesday, August 23, 2017 10:00 AM - 12:00 PM

Location: Secret Wood Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
LaFerrier	Marc	Director, Community Development	City of Dania Beach	954-924-6805 x3643		mferrier@ci.dania-beach.fl.us	
Lemack	Richard	Town Administrator	Town of Davie	954-797-1034		Richard_Lemack@davie-fl.gov	
Lindblade, CAE	Dan	CAE - President and CEO	Greater Fort Lauderdale Chamber of Commerce	954-462-4911		dan@ftlchamber.com	
	Gary		ANAC	954-966-8013		gluedtke@gmail.com	
	Julia	Delta Flight Ops	Delta Airlines	404-773-2882	678-427-1350	Julia.Lundrigan@delta.com	
Mertens-Black	Lorie	Chief Civic Affairs Officer	City of Hollywood	954-921-3599		lmertens-black@hollywoodfl.org	
Meyer	Gregory	Public Information Officer	Broward County Aviation Department - PIO	954-359-6116		GMeyer@broward.org	
Modrich (A)	Mark	AA Pilot/Resident	Town of Southwest Ranches	954-540-4854	954-252-5040	mmodrich@aol.com	
Morrissey	Mary	Senior Manager	FedEx	954-359-7432		mmmorrissey@fedex.com	
Nagy	Allan	Environmental Program Specialist	FAA - Orlando Airports District Office	407-812-6331 x130		Allan.Nagy@faa.gov	on phone
Nazzaro	Tom	Airport Manager, Aviation	Broward County Aviation Department - Airport Business	954-359-6821		tnazzaro@broward.org	
Nonnemacher (A)	Michael	Acting Assistant Executive Director	Broward County Aviation Department - Airport Operations			mnonnemacher@broward.org	
Ostendorf	Brad	Environmental Manager	Broward County Aviation Department	954-359-2395	954 829 0857	bostendorf@broward.org	
Pacitto (A)	Mike	Director of Planning	Broward County Aviation Department - Airport Manager's Office	954-560-0766		mppacitto@broward.org	
Pluzhnyk Evans	Angelina	Chief Civic Affairs Officer	City of Fort Lauderdale	561-715-9112 -C	same	lina@chyden.net	
Pokryfke	John	Asst. Director of Operations, Aviation	Broward County Aviation Department - Airport Operations	954-359-6475		jpokryfke@broward.org	
Rames (A)	Geoff	Lauderdale Isles Water Management District	City of Fort Lauderdale	954-327-9095		grames.lcia@gmail.com	
Rebholz	Edward		City of Fort Lauderdale	973-476-5609		ed@edrebholz.com	
Robbin	Sam	CEO	National Jets/Broward Workshop	954-868-2166		samrobbin@nationaljets.com	
Shane	Randie	CEO/Executive Director	Greater Dania Beach Chamber of Commerce	954-926-2323		rshane@daniabeachchamber.org	
Shiver	Michael	General Manager	Spirit Airlines	954-359-0933		michael.shiver@spirit.com	



Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee

Date / Time: Wednesday, August 23, 2017 10:00 AM - 12:00 PM

Location: Secret Wood Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Siegel (A)	Allan	Public Informations Officer	Broward County Aviation Department	954-359-6978		Asiegel@broward.org	
Solley	Edwin	Manager ATC Systems	Southwest Airlines	407-850-1563		Edwin.solley@wnco.com	
Swindell	Bob	President and CEO	Greater Fort Lauderdale Alliance Economic Development Agency	954-524-3113		bswindell@gflalliance.org	
Taylor	Charles	Intergovernmental Affairs Manager	Town of Davie	954-797-1034		Charles_Taylor@davie-fl.gov	
Van Valkenburgh (A)	Debra		ANAC			perhelion@hotmail.com	
Voos	Gregory	South Regional Representative	NBAA	202-737-4475		gvoos@nbaa.org	
Wood	Matt	Growth Management Director	City of Cooper City	954-434-4300		MWood@coopercityfl.org	
Wu	Kevin	Airport Manager	Broward County Aviation Department - OPS	954-359-1216	954-279-4740	kwu@broward.org	



Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #2

Date / Time: Wednesday, August 23, 2017 10:00 AM - 12:00 PM

Location: Secret Wood Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Akagbosu	Chris	Director, Facility of Planning & Real Estate Dept.	Broward County School Board	754-321-2162		chris.akagbosu@browardschools.com	
Annunziata	Jason	Station Manager	JetBlue	954 233-4722	646-942-2775	Jason.Annunziata@jetblue.com	
Boutros	Kareen	Executive Director	Broward Workshop	954-462-9112		kareen@browardworkshop.com	
Cannicle	Winston	Noise & Environmental Officer	Broward County Aviation Department - Airport Noise Office	954-359-6181		WCANNICLE@broward.org	
Castillo (A)	Will	Airport Planning Manager	Broward County Aviation Department - Airport Noise Office	954-359-2291		wcastillo@broward.org	
Cooley (A)	Sid		FLL Airport Traffic Control Tower	954-921-9200		sidney.cooley-jr@faa.gov	
Coutain, Jr.	Ken	Airport Planner	Broward County Aviation Department - P/D	954-359-1599		kcoutain@broward.org	
DelNegri	Theodore (TJ)	Tower Manager	FLL Airport Traffic Control Tower	954-921-9201		theodore.delnegri@faa.gov	
Dokuchitz	Peter	Principal Planner / City of Plantation	City of Plantation	954-797-2265		pdokuchitz@plantation.org	
Eastman	John	John Eastman	Town of Southwest Ranches	954-465-8383		john426@bellsouth.net	
Flint	John R.	City Manager / CEO	City of Weston	954-385-2000		jflint@westonfl.org	
Gaenicke	Sierra		VHB			sgaenicke@vhb.com	
Gale	Mark	Director of Aviation	Broward County Aviation Department			mgale@broward.org	
Gertsen (A)	Alex	Director of Airports and Ground Infrastructure	NBAA	202-737-4477		Associationagertsen@nbaa.org	
Govin	Yasmin		Broward County Aviation Department - Airport Business	954-359-6145		ygovin@broward.org	
Hemmerle	Mark	Front Line Manager	South Florida Flight Standards Division (FSDO)	954-641-6015		Mark.W.Hemmerle@faa.gov	
Hildebidle	Bob	Air Traffic Manager A	Miami Air Traffic Management/TRACON	305-869-5402	954-292-6515	Bob.Hildebidle@faa.gov	
Hoffman	Kevin	Corporate Contact	UPS	502-329-3913		khoffmann@ups.com	
Holste (A)	Phillip	Assistant Town Administration	Town of Davie	954-797-1034		Phillip_Holste@davie-fl.gov	
Hotte	Anne	CEO/Executive Director	Greater Hollywood Chamber of Commerce	954-923-4000		anne@hollywoodchamber.org	
Kaine (A)	Brad	Director of Public Services	City of Dania Beach	954-924-6808		bkaine@daniabeachfl.gov	




Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #2

Date / Time: Wednesday, August 23, 2017 10:00 AM - 12:00 PM

Location: Secret Wood Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
LaFerrier	Marc	Director, Community Development	City of Dania Beach	954-924-6805 x3643		mferrier@ci.dania-beach.fl.us	
Lemack	Richard	Town Administrator	Town of Davie	954-797-1034		Richard_Lemack@davie-fl.gov	
Lindblade, CAE	Dan	CAE - President and CEO	Greater Fort Lauderdale Chamber of Commerce	954-462-4911		dan@ftlchamber.com	
Luedtke	Gary		ANAC	954-966-8013		gluedtke@gmail.com	
Lundrigan	Julia	Delta Flight Ops	Delta Airlines	404-773-2882	678-427-1350	Julia.lundrigan@delta.com	
Mertens-Black	Lorie	Chief Civic Affairs Officer	City of Hollywood	954-921-3599		lmertens-black@hollywoodfl.org	
Meyer	Gregory	Public Information Officer	Broward County Aviation Department - PIO	954-359-6116		GMeyer@broward.org	
Modrich (A)	Mark	AA Pilot/Resident	Town of Southwest Ranches	954-540-4854	954-252-5040	mmodrich@aol.com	
Morrissey	Mary	Senior Manager	FedEx	954-359-7432		mmmorrissey@fedex.com	
Nagy	Allan	Environmental Program Specialist	FAA - Orlando Airports District Office	407-812-6331 x130		Allan.Nagy@faa.gov	
Nazzaro	Tom	Airport Manager, Aviation	Broward County Aviation Department - Airport Business	954-359-6821		tnazzaro@broward.org	
Nonnemacher (A)	Michael	Acting Assistant Executive Director	Broward County Aviation Department - Airport Operations			mnonnemacher@broward.org	
Ostendorf	Brad		Broward County Aviation Department	954-359-2395		bostendorf@broward.org	
Pacitto (A)	Mike	Director of Planning	Broward County Aviation Department - Airport Manager's Office	954-560-0766		mppacitto@broward.org	
Pluzhnyk Evans	Angelina	Chief Civic Affairs Officer	City of Fort Lauderdale	561-715-9112 - C		lina@chyden.net	
Pokryfke	John	Asst. Director of Operations, Aviation	Broward County Aviation Department - Airport Operations	954-359-6475		jpokryfke@broward.org	
Rames (A)	Geoff	Lauderdale Isles Water Management District	City of Fort Lauderdale	954-327-9095		grames.lucia@gmail.com	
Rebholz	Edward		City of Fort Lauderdale	973-476-5609		ed@edrebholz.com	
Robbin	Sam	CEO	National Jets/Broward Workshop	954-868-2166		samrobbin@nationaljets.com	
Shane	Randie	CEO/Executive Director	Greater Dania Beach Chamber of Commerce	954-926-2323		rshane@daniabeachchamber.org	
Shiver	Michael	General Manager	Spirit Airlines	954-359-0933		michael.shiver@spirit.com	




Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #2

Date / Time: Wednesday, August 23, 2017 10:00 AM - 12:00 PM

Location: Secret Wood Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Siegel (A)	Allan	Public Informations Officer	Broward County Aviation Department	954-359-6978		Asiegel@broward.org	
Solley	Edwin	Manager ATC Systems	Southwest Airlines	407-850-1563		Edwin.solley@wnco.com	
Swindell	Bob	President and CEO	Greater Fort Lauderdale Alliance Economic Development Agency	954-524-3113		bswindell@gfalliance.org	
Taylor	Charles	Intergovernmental Affairs Manager	Town of Davie	954-797-1034		Charles_Taylor@davie-fl.gov	
Van Valkenburgh (A)	Debra		ANAC			perhelion@hotmail.com	
Voos	Gregory	South Regional Representative	NBAA	202-737-4475		gvoos@nbaa.org	
Wood	Matt	Growth Management Director	City of Cooper City	954-434-4300		MWood@coopercityfl.org	
Wu	Kevin	Airport Manager	Broward County Aviation Department - OPS	954-359-1216	954-279-4740	kwu@broward.org	

Technical Committee

Meeting #2

Materials Presented at Meeting



AVIATION DEPARTMENT - Fort Lauderdale-Hollywood International Airport
2200 SW 45th Street, Suite 101 • Dania Beach, Florida 33312 • 954-359-6100

Meeting Agenda
Technical Committee Meeting No. 2
14 CFR Part 150 Study
Fort Lauderdale-Hollywood International Airport
August 23, 2017 – 10AM to 12PM EDT

1. Introductions
2. Review of the Role of the TC Meeting Facilitator
3. Review of TC Meeting No.1
4. Data Collection Process and Status
5. AEDT Model Inputs
6. Aircraft Activity Forecast
7. Runway Use
8. Flight Track Analysis (Examples)
9. Future TC Meetings
10. Questions from TC Members
11. Adjourn



14 CFR PART 150 NOISE AND LAND USE COMPATIBILITY STUDY

Technical Committee Meeting #2
August 23, 2017



1

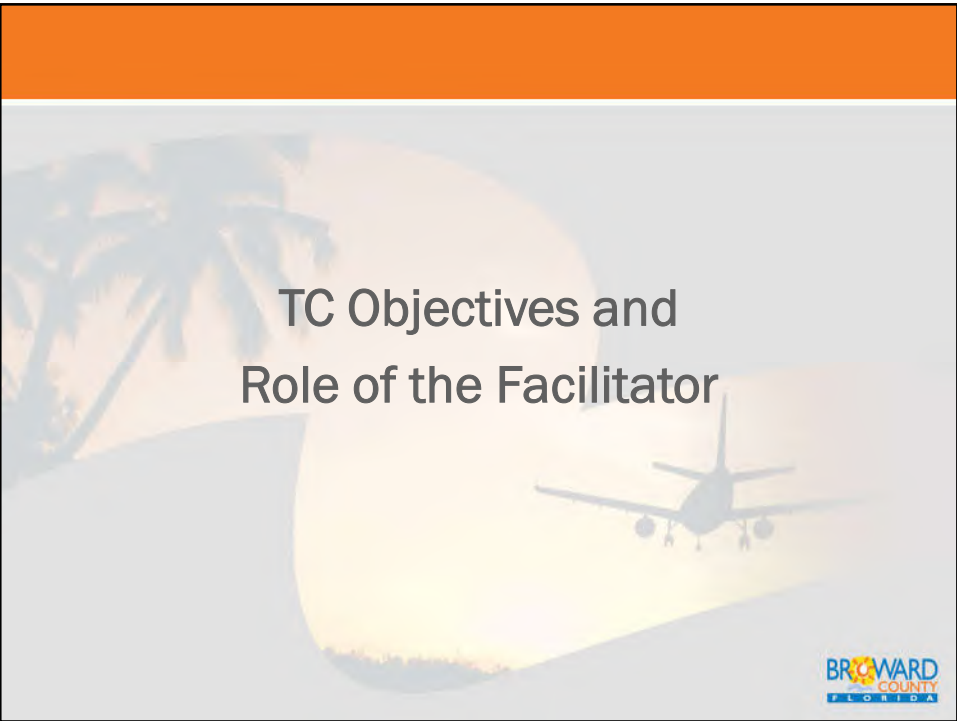
Agenda

- Introductions
- Review of the Role of the TC Meeting Facilitator
- Review of TC Meeting No.1
- Data Collection Process and Status
- AEDT Model Inputs
- Aircraft Activity Forecast
- Runway Use
- Flight Track Analysis (Examples)
- Questions from TC Members
- Future TC Meetings
- Adjourn





Welcome and Introductions



TC Objectives and Role of the Facilitator



Purpose and Objectives of the TC

- Broward County Aviation Department (BCAD) has formed a Technical Committee (TC) for the Part 150 Study for Fort Lauderdale-Hollywood International Airport (FLL)
- BCAD has invited a cross section of key stakeholders to serve on the TC
- The TC is composed of primary and alternate members who are authorized to represent their organization and/or constituents for the duration of the FLL Part 150 Study, which is estimated at three years
- TC meetings will be conducted in a professional and respectful manner
- TC meetings will be open to the public, subject to space availability



TC Members

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

*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



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

Reminder - Please sign and return the TC Participation Agreement if you haven't done so already



Summary of TC #1



Summary of TC #1

- Technical Committee (TC)
 - Purpose and Objectives of the Technical Committee
 - Role of the TC Meeting Facilitator
 - TC Charter and Participation Agreement
- Airport Overview
- Part 150 Study Overview
- Introduction to Aircraft Noise, Modeling, and Compatibility
- Initial Data Collection
- Project Schedule



Summary of TC #1

14 CFR Part 150

- 14 Code of Federal Regulations (CFR) Part 150 establishes the parameters of the Airport Noise and Land Use Compatibility Planning process
- 14 CFR Part 150 also establishes the methods and metrics to be used in aircraft noise analyses for other types of federal and state aircraft noise analyses
- Voluntary program established to allow airports to explore opportunities for improving compatibility surrounding communities
- Sets forth the methodology and procedures to be followed when preparing aircraft noise exposure maps and developing airport land use compatibility programs



Summary of TC #1

14 CFR Part 150

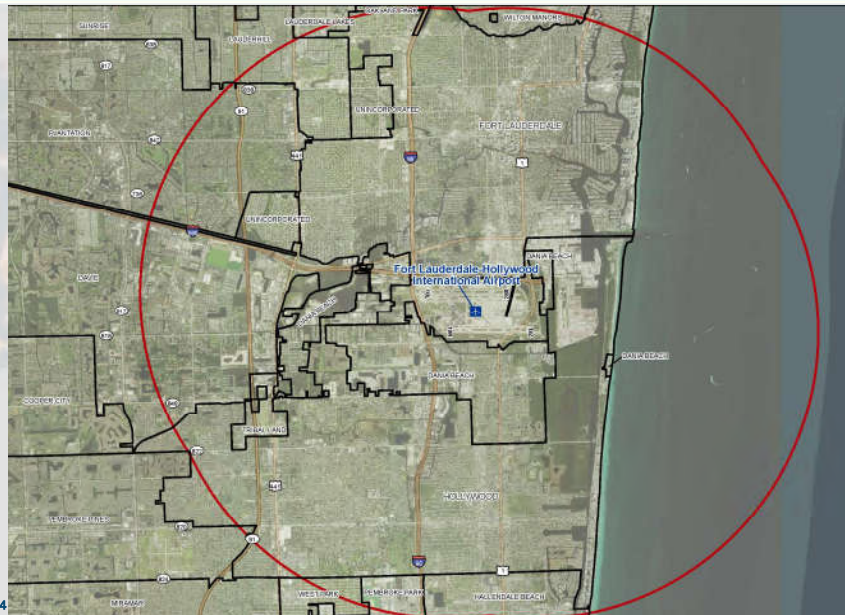
- Assesses the impacts of aircraft noise on the area surrounding an airport
- Deems noise levels below 65 dB Day-Night Average Sound Level (DNL) to be compatible with all land uses
- Identifies measures to reduce aircraft noise (noise abatement) and limit its impacts (noise mitigation)
- Outlines a program for implementation of noise abatement and mitigation measures
- Allows FAA-approved measures to be eligible for FAA funding



Data Collection Process and Status



Data Collection – Minimum NEM Area



Initial Data Collection – Land Use Compatibility

- City of Fort Lauderdale Zoning Ordinances
- City of Fort Lauderdale Zoning Map
- City of Fort Lauderdale General Land Use Maps
- City of Fort Lauderdale Mapped Historic Sites
- Fort Lauderdale Comprehensive Plan Elements
 - Future Land Use Element
 - Parks and Recreation Element
 - Schools Element
 - Transportation Element
 - Comp Plan Evaluation Report
- City of Davie Zoning and Noise Ordinances
- City of Dania Beach Zoning Ordinance



Initial Data Collection – Land Use Compatibility

- City of Dania Beach Zoning Ordinance
- Dania Beach Land Use Map
- Dania Beach Zoning Map
- Dania Beach Future Land Use Plan Element
- City of Hollywood Noise Ordinance
- Cooper City Zoning and Noise Ordinance
- Cooper City Public Schools Comprehensive Plan Element
- Cooper City Future Land Use Element
- Cooper City Future Land Use Element
- Weston Zoning Ordinance
- Plantation Zoning and Noise Ordinance



Initial Data Collection – Land Use Compatibility

Future Coordination Meetings:

- 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



AEDT Model Inputs



AEDT Model Inputs

Aviation Environmental Design Tool (AEDT)

- Among other things, the AEDT calculates the cumulative 24-hour noise exposure for the annual average day at an airport
- Primary area of focus is the 65 dB DNL contour
- Annual-average day DNL contours will not always match short-term measured values due variables such as:
 - Runway use
 - Fleet mix
 - Wind and weather conditions
 - Pilot/controller techniques



AEDT Model Inputs

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

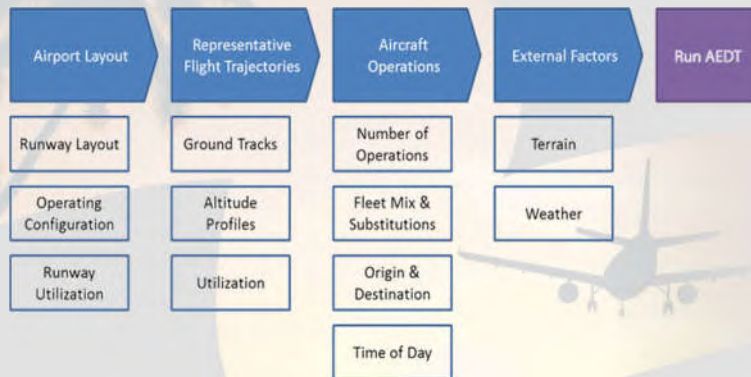


**Aviation Environmental
Design Tool (AEDT)
Version 2C SP2**



AEDT Model Inputs

AEDT Inputs



Aircraft Activity Forecast

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

Fiscal Year	FAA TAF	MPU Accelerated Baseline Forecasts
2017	304,590	329,300
2018	311,559	335,000
2023	343,194	364,765

Sources: FAA, Terminal Area Forecasts, 2017,
Ricondo & Associates, Inc., 2016



ORLANDO AIRPORTS DISTRICT OFFICE
5950 Hazeltine National Drive
Suite 400
Orlando, FL 32822
Phone: (407) 812-6331 Fax: (407) 812-6978

April 10, 2017

Mr. William Castillo
Airport Planning Manager
Broward County Aviation Department
2200 SW 45th Street, Suite 101
Dania Beach, Florida 33312

Dear Mr. Castillo:

RE: Fort Lauderdale-Hollywood International Airport, Fort Lauderdale, FL
Approval of Forecast for use in the 14 CFR Part 150 Study

This letter responds to your request for approval to use the Accelerated Baseline Forecasts for the purposes of the 14 Code of Federal Regulations (CFR) Part 150 Study for the Fort Lauderdale-Hollywood International Airport (FLL).

On January 13, 2017, the Federal Aviation Administration (FAA) approved the Baseline Forecast for FLL and accepted the Accelerated Baseline Forecast prepared in the Master Plan Update for sensitivity purposes and for the purpose of establishing facility requirements.

The FAA notes that the Accelerated Baseline Forecast varies less than 10 percent in the 5 year period and 15 percent in the 10 year period from the FAA's 2016 Terminal Area Forecast (TAF) published in January, 2017.

The FAA has determined that the Accelerated Baseline Forecast is consistent with the FAA's most recent TAF for FLL, and therefore, we approve the use of the Accelerated Baseline Forecast for the ongoing FLL Part 150 Study.

If you have any questions, please feel free to contact me at (407) 812-6331, ext. 130.

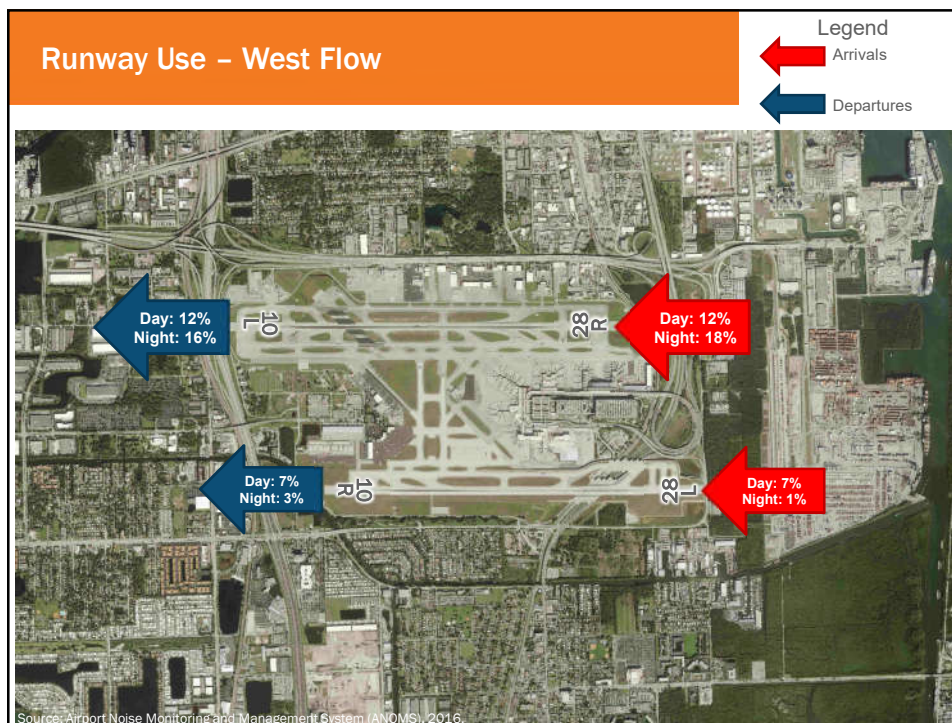
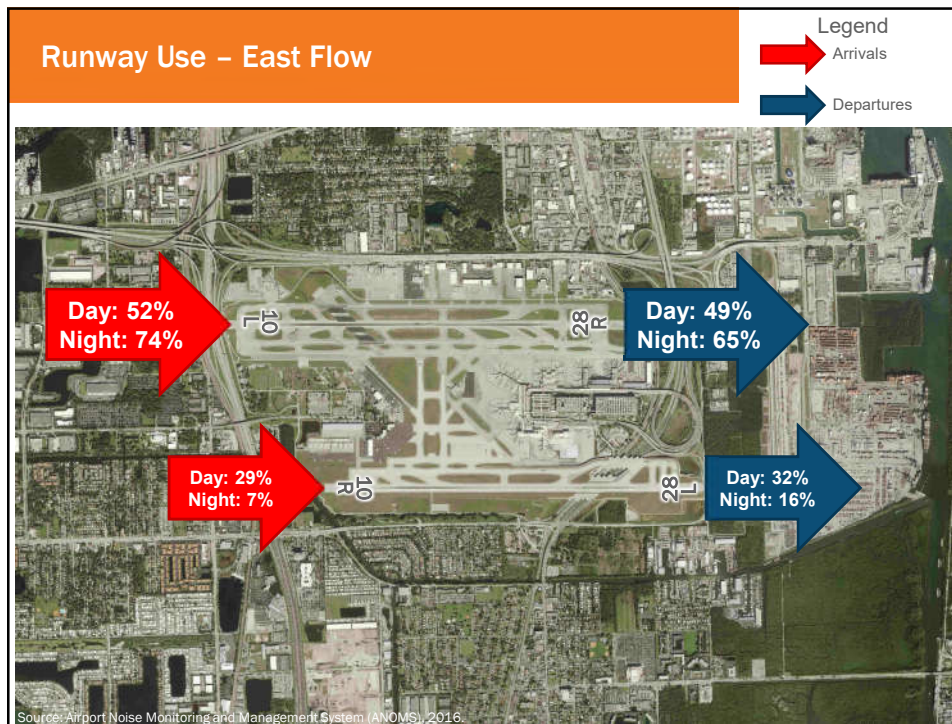
Sincerely,

Alan M. Nagy
FAA Orlando ADO Environmental Program Specialist



Runway Use





Runway Use

Daytime and Nighttime Operations

Operation Type	Day	Night	Grand Total
Arrivals	84%	16%	100%
Departures	90%	10%	100%
Grand Total	87%	13%	100%

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

Runway Usage

Operation Type	Runway	Day	Night	Grand Total
Arrivals	North Runway			
	10L	52%	74%	55%
	28R	12%	18%	13%
	Total	64%	92%	68%
	South Runway			
	10R	29%	7%	26%
	28L	7%	1%	6%
	Total	36%	8%	32%
Departures	North Runway			
	10L	49%	65%	51%
	28R	12%	16%	13%
	Total	61%	81%	64%
	South Runway			
	10R	32%	16%	30%
	28L	7%	3%	6%
	Total	39%	19%	36%

Flight Track Analysis

ANOMS System

Airport Noise and Operations Monitoring System (ANOMS)

- Operational data collected for calendar year 2016
- Flight and aircraft radar data originate from the Passive Surveillance Secondary Radar (PASSUR) system that collects both the flight track and flight identification
- Data collected by PASSUR is downloaded and processed by Bruel & Kjaer and incorporated into BCAD's ANOMS



Noise Monitoring Sites/Limitations



Noise Monitoring Sites/Limitations

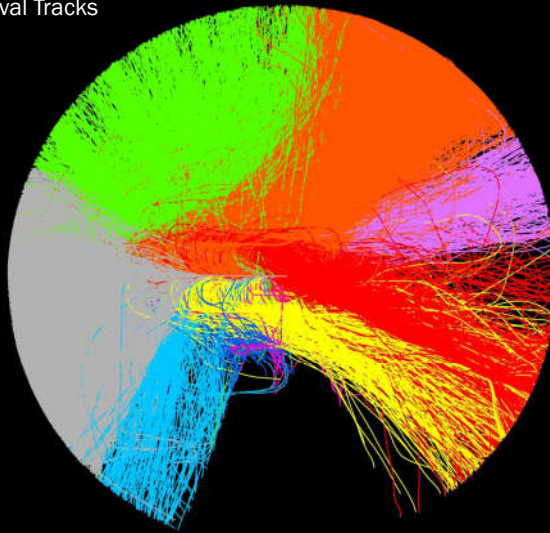
Noise Monitoring Sites

1. 3640 Southwest 55th Avenue, Davie
2. 4548 Southwest 37th Avenue, Dania Beach
3. 4609 Southwest 28th Avenue, Dania Beach
4. 805-B Northwest 13th Avenue, Dania Beach
5. 325 Northeast 3rd Avenue, Dania Beach
6. 1021 Southwest 32nd Court, Fort Lauderdale
7. 1750 Southwest 32nd Street, Fort Lauderdale
8. 3411 Southwest 27th Street, Fort Lauderdale
9. 3900 Southwest 100th Avenue, Davie
10. 2343 Southwest 27th Avenue, Fort Lauderdale
11. 6503 N Ocean Dr., Hollywood FL 33019
(Von D. Mizell and Eula Johnson State Park, formerly John U Lloyd State Park)



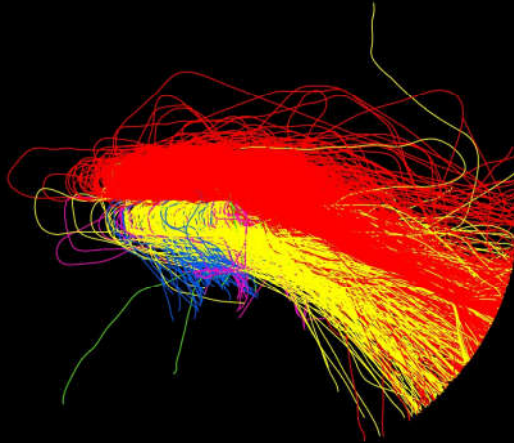
Flight Track Analysis

Runway 10L Arrival Tracks



Flight Track Analysis

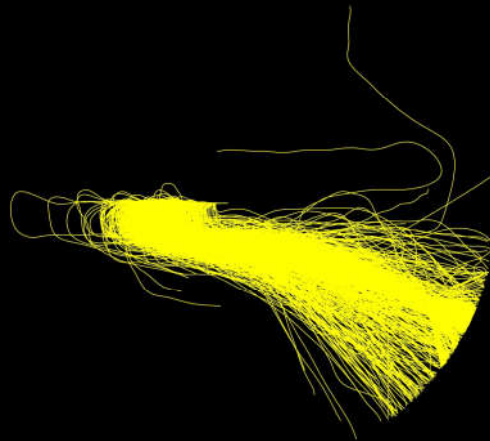
Runway 10L Arrival Tracks
from Southeast



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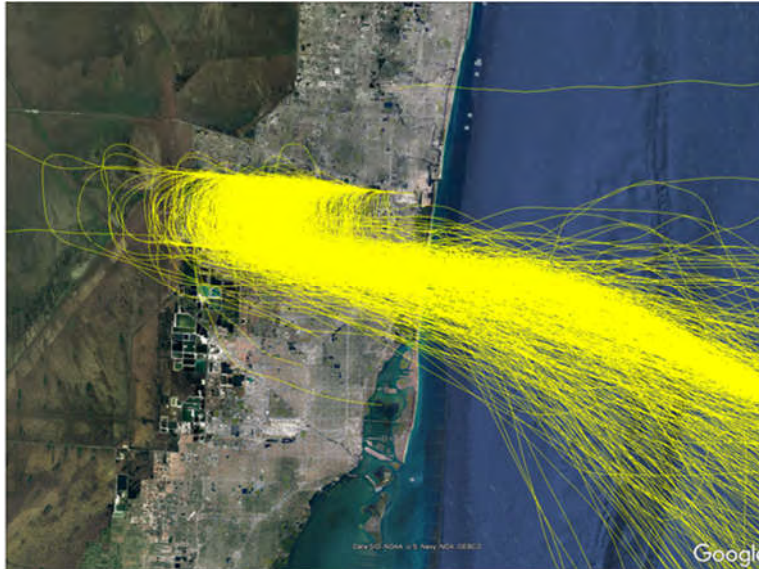
Flight Track Analysis

Runway 10L Arrival Tracks from
Southeast – South Downwind



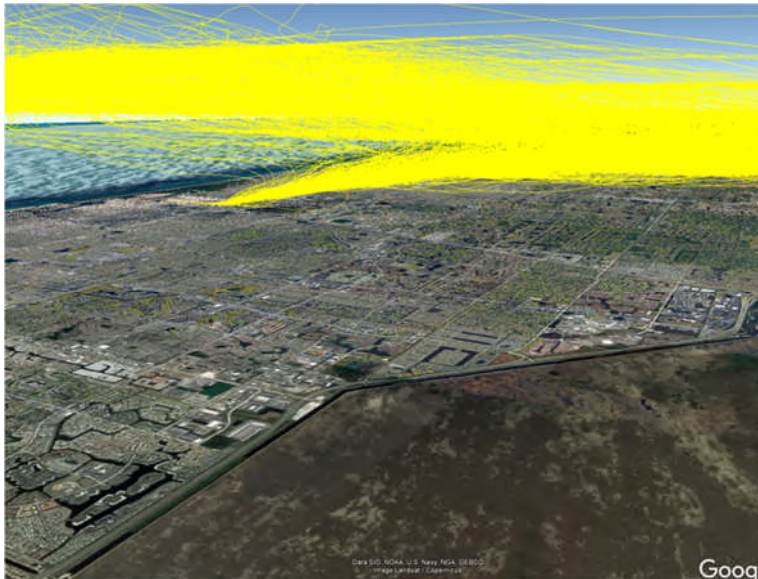
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Flight Track Analysis



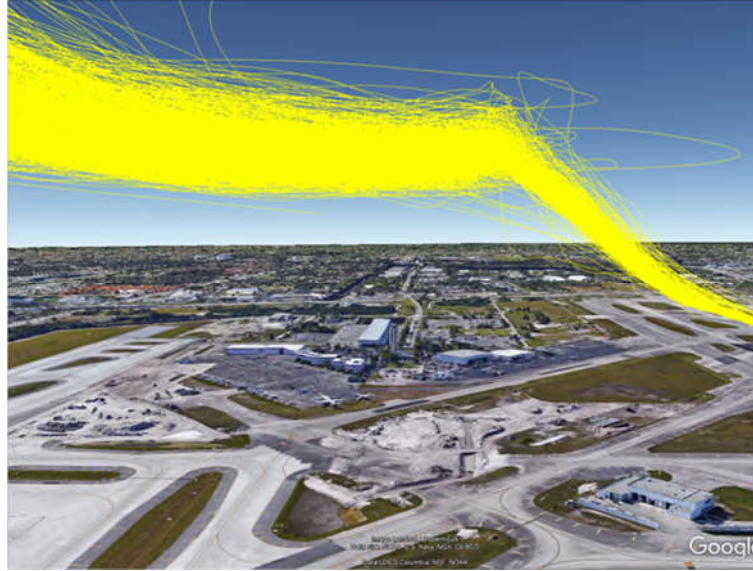
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Flight Track Analysis



36

Flight Track Analysis



37

Questions from TC Members

Future TC Meetings



Future Meetings

Technical Committee

- TC Meeting #3 (Tentative)
- TC Meeting #4 (Tentative)

November 2017

January/February 2018

Public Workshops

- Overview of Part 150 Process

October/November 2017

TC and Public Workshop materials will be available on the project website immediately following each meeting
www.flpart150.com



Adjourn



Technical Committee

Meeting #2

Meeting Summary

Fort Lauderdale-Hollywood International Airport
14 CFR Part 150 Noise and Land Use Compatibility Study
Technical Committee Meeting #2
August 23, 2017

Meeting Minutes

Committee Members in Attendance

Chris Akagbosu – BCPS	Julia Lundrigan – Delta Airlines
Peter Dokuchitz – City of Plantation	Allan Nagy – FAA (remote attendee)
John Eastman – Town of Southwest Ranches	Angelina Pluzhnyk Evans – City of Fort Lauderdale
John R. Flint – City of Weston	Geoff Rames – City of Fort Lauderdale
Mark Hemmerle – FSDO	Edward Rebholz – City of Fort Lauderdale
Marc LaFerrier – City of Dania Beach	Edwin Solley – Southwest Airlines
Richard Lemack – Town of Davie	Charles Taylor – Town of Davie
Dan Lindblade – Greater Fort Lauderdale Chamber of Commerce	Gregory Voos – NBAA
Gary Luedtke – ANAC	Matt Wood – City of Cooper City

Others Present

Winston Cannicle – BCAD	Brad Ostendorf – BCAD
Will Castillo – BCAD	Mike Pacitto – BCAD
Ken Coutain, Jr. – BCAD	Allan Siegel – BCAD

Agenda and Key Topics:

- Welcome
- Technical Committee Roles and Responsibilities
- Review of Technical Committee (TC) Meeting #1
- Data Collection Process and Status
- Aviation Environmental Design Tool (AEDT) Model Inputs
- Aircraft Activity Forecast
- Runway Use
- Flight Track Analysis
- Future Technical Committee Meetings

Meeting Summary:

- The Technical Committee convened for its second meeting at 10:00 AM on August 23, 2017 at the Secret Woods Nature Center in the Julia Hall.
- The meeting began with re-introductions of participants.
- Ground rules for the TC members were reviewed by the facilitator. Attending members of the public were advised of ways in which they could submit comments including the project website (www.fllpart150.com) and at future public meeting (dates TBD).
- The role of TC members as well as content presented at the inaugural meeting were reviewed. This included TC's role in supporting the FLL Part 150 Study, review of study assumptions, and providing technical feedback within the context of the study (Noise Exposure Maps and Noise Compatibility Program). TC members were encouraged to express their opinions and expected to respect the range of opinions expressed by their fellow TC members. TC members were also expected to advise their organization and/or constituents of the TC's discussions.
- A presentation of key topics was given by Michael Arnold, Part 150 Project Director representing the ESA consulting team. The presentation included the following information:
 - A review of the material presented in TC #1.
 - Overview of the data collection process and status
 - An introduction to AEDT and modeling inputs
 - The Aircraft Activity Forecast – The FAA's approval of the Master Plan accelerated baseline forecast for use in the Part 150 study and the use of 2018 and 2023 activity levels for the baseline noise conditions
 - Runway usage – Individual runway use in CY 2016 and flows including the heavily weighted east flow operation
 - Daytime/Nighttime operations (10:00 pm – 6:59:59 AM) - Use in overall terms as well as how it relates to the CY 2016 activity on the individual runways by operation type (arrival or departure). Potential for greater annoyance and 10 dB weighting of nighttime activities (each nighttime operation is equal to 10 daytime operations)
 - A review of the flight track analysis process and presentation of example radar and flight tracks as well as the existing noise monitoring locations. Discussion of flight track locations and densities and limitations of an 11 site noise monitoring system when evaluating noise conditions in broad areas around the airport.
 - Upcoming schedule

Questions & Comments from Technical Committee (TC) members:

Q: Will we be receiving minutes of this meeting?

A: A meeting summary will be prepared.

Q: Is there a process in place to reset the membership list of the Technical Committee? Will there be outreach to the TC members that have not attended either meeting?

A: The goal is to get active participation, so we will be contacting TC members that are not in attendance, after this meeting, to see if they are able to provide the input, feedback and resources needed throughout the course of the project.

Q: Does the minimum NEM area represent aircraft altitudes to 30,000 feet?

A: No, the NEM area represents at least 30,000 feet in horizontal ground distance from runway ends. It doesn't indicate height or elevation. 14 CFR Part 150 requires that flight tracks be reflected on the official noise exposure maps for a distance of at least 30,000ft from the runway ends. That is how the jurisdictions involved in this study were identified.

Q: Will the schools and future locations be considered for evaluation of zone of impact?

A: Yes, we are collecting that type of information as part of our process, and we will likely reach out to BCPS for additional information. There is a large GIS data collection component to the study. It's not only related to schools, but places of worship, hospitals and noise sensitive areas. It is important to know when a new school is being constructed so that when we are evaluating potential changes in flight tracks, we aren't moving a track over a future school location. We will also be conducting land use meetings with each of the jurisdictions identified to review the information we have collected. We want to make sure that we have the most recent information that is available and determine what might not be reflected in that data. We will be using the TC as a resource to determine the best contact for each of the jurisdictions.

Q: How does a person interpret the 65 DNL?

A: It is difficult to determine, because each person responds differently to sound exposure and the DNL metric is an annual, average day cumulative noise exposure that reflects the combination of sound exposure levels, frequency of overflights and the increased potential for annoyance based on time of day. In the last meeting we introduced this metric and explained how it is calculated. Single events are combined into hourly activity, and each nighttime operation (arrivals or departures between 10PM and 7AM) is weighted with a ten decibel penalty. That overall average for the average annual day establishes the 65 decibel contour. You can't actually measure it on a single event basis with a sound level meter because it is a cumulative average of all the aircraft activity that is occurring.

Q: That level (DNL 65 dB) is equated to what in our area?

A: The FAA uses the DNL metric to determine compatibility of various land uses with aircraft noise. Based on this metric, they identify the types of uses that would be compatible and not compatible within a given area. The DNL 65 dB metric is the level below which most noise sensitive land uses are considered compatible with aircraft noise. Because it is cumulative, the DNL metric factors in frequency of occurrence, sound level and time of day

as factors which influence compatibility. The Part 150 study will define where the DNL 65 dB contour falls relative to the communities around FLL.

Q: Does the aircraft activity forecast consider the runway reconstruction?

A: Yes. It is assumed the runway reconstruction would be completed by 2023, and the existing conditions analysis will be conducted based on the 2018 forecast. As a result, the contours will not be affected by the temporary change in operation resulting from the runway reconstruction.

Q: Where is the forecast from, and is there information about how it was developed?

A: The forecast was developed by the Broward County Aviation Department as part of its on-going Master Plan. The forecast scenario that we are using for the purpose of evaluating aircraft noise is the accelerated baseline forecast. The Master Plan website is www.fll.net/masterplan.

Q: How do the forecast numbers compare to the actual numbers reported by the airport?

A: The operations are very similar to, and within 10 percent of, the FAA's Terminal Area Forecast (TAF). If you reviewed the data from last year, the airport is right around what the FAA had projected in the TAF. The FAA does factor in some growth, but the accelerated baseline developed for the purpose of the Master Plan considers what happens if that growth occurs faster.

Q: Where can we also see the accelerated baseline forecast and what is the methodology for forecasting?

A: The methodology and accelerated baseline forecast is part of the Master Plan and there is a Master Plan public workshop coming up in October (Note – this has been rescheduled for early 2018).

Q: Will the study take into account all types of aircraft?

A: Yes, it considers all departures and arrivals. In addition to air carrier aircraft, there are smaller commuter aircraft, and other types of aircraft. The study includes not only all of the commercial service, and fixed-wing aircraft, but also helicopter activity at the airport.

Q: What hours are defined as daytime?

A: Daytime is from 7am to 10pm and nighttime is 10pm to 7am.

Q: What is the reason why the north runway has a higher use than the other runways?

A: The north runway is longer, there are more gates on the north side of the airport, and there is an interlocal agreement with surrounding jurisdictions to voluntarily maximize use the north runway as the preferred runway. The Consultant Team will review runway use in more detail in the NCP phase.

Q: May we use 2017 in the analysis because 2016 was an unusual year that was really warm? 2015 should also be included.

A: 2016 is used to establish the baseline operational conditions because there was a taxiway connector that hadn't been completed until late 2015. The 2016 runway and flight track use

is then applied to the 2018 and 2023 activity levels and adjustments are made based on expected changes. The modeling effort will use average weather data from the past 30 years.

Q: Any plan or concerns about reactivating the NW to SE runway or the cross-wind runway?

A: There are currently no plans to reactivate that runway. In fact, some of the pavement has even been removed from that former runway.

Q: Can existing runways handle larger aircraft like A380s?

A: No the airport cannot handle A380 aircraft. The airport is designed for Group V aircraft, and A380s, 747-800, and other large planes are Group VI aircraft. However, larger aircraft are still allowed to land for emergencies at the airport, such as being diverted from another airport due to weather. At this moment, the airport does not have the infrastructure to accommodate very large aircraft for scheduled service so we are not planning for Group VI aircraft.

Q: What is the geographic area captured by noise monitors?

A: Noise monitors represent individual points, so they capture noise related to overflights of that that specific point. That is why FAA requires noise modeling for the Part 150 Study - because monitors only capture noise at their specific points. It's not possible to set up monitors in a large enough volume to develop noise contours. There are also a variety of outside factors that affect noise measurements that may not be related to aircraft, such as wind and community noise sources.

Q: What is the significance of the colors in the flight track analysis?

A: In order to model the aircraft operations, we've started to separate the flights into groups of tracks coming from or heading to various locations. It could be flights coming from the southwest, west, or flights using a certain type of procedure coming into the airport. We separate those groups of tracks to analyze them individually. In this case, the colors are used to represent the variety of locations reflected; where they are coming from.

Q: Do you have any data for the North/Northeast runway?

A: We are analyzing all arrival and departure operations for all of the runways at FLL as part of the study.

Q: What is the mileage from the center to outer ring?

A: The overall area reflected on the sample radar track graphic is estimated to be approximately 30 miles; the ring that is depicted is approximately 30,000 feet from each runway end.

Q: It may be helpful to overlay the arrival procedures to help give a frame of reference.

A: The backbone of many of the tracks, where the heaviest concentrations are, are typically the published procedures that aircraft are flying as they leave the airport.

Q: What is the altitude difference as you span the length of the track analysis?

A: It varies. On the downwind near the airport, aircraft are around 5,000 feet. We are analyzing altitudes as part of the modeling effort.

Q: How come none of the flights arrive through the south runway?

A: The images and data presented are a sample that is representative of arrivals on the north runway. This is the approach that is the most heavily used at the airport and these tracks reflect just a portion of those that aircraft use when arriving to FLL. All runways and arrival/departure operations will be modeled, but the graphics have not yet been developed.

Q: When will departure analysis be available?

A: We are in the process of analyzing all of that information and the study will include all of the flight tracks that are used in the modeling. They will be presented with the percentages of use and aircraft information. We anticipate there will be approximately 300 tracks modeled for this study.

Q: How do you determine flight track dispersal?

A: We look at track density in GIS, then do dispersion based on that information. We are overlaying all of the radar data to create tracks and setting up dispersion so it is reflective of current conditions as possible.

Q: Would you consider changing procedures so that planes are required to stay above 5,000ft until descent?

A: New procedures are being implemented by the FAA (optimized profile descent) reduce fuel burn and noise while keeping aircraft higher longer. Recommendations in the NCP could include pursuing these types of procedures.

Q: There are very few noise monitors in the NW/NE surrounding areas of the airport. Why is that?

A: Because the aircraft used to depart straight out and now they are turning at a 15-degree diversion heading due to the south runway. In the NCP phase of the study, we will be evaluating an upgrade to the monitoring system and will consider recommending relocating the monitors so they are more reflective of current aircraft operations.

Q: How did the current monitors arrive at their locations?

A: Monitors have been at their locations for 20 years or more for various reasons generally associated with the historic configuration of the airfield.

Q: How long does the education portion of the study take and when will we get to the discussion and input portion?

A: The goal is to have draft noise contours by the time we reach the Technical Committee meeting #4, so we know what areas are incompatible. At that point, we will present material on noise compatibility and start the discussion and collection of ideas. We will look at noise mitigation, land use controls, and a variety of other measures.

Q: What would be a valuable use of time for TC members to help the process and bring some value to the conversation?

A: It would be helpful if TC members would relay feedback, input, or concerns from the local and business community about airport operations and noise implications. We will be holding the first round of public workshops at five separate venues around the airport soon to solicit input from the community.

Actionable Next Steps:

As agreed upon by the TC members, the following meeting will be held at the Secret Woods Nature Center - Julia Hall, in November 2017.

Meeting Adorned at 12:00 PM

Appendix G-3
Technical Committee
Meeting #3
March 7, 2018

Technical Committee

Meeting #3

Meeting Notice and

Attendance Roster

REMINDER FOR UPCOMING MEETING

NOTICE OF TECHNICAL COMMITTEE MEETING 14 CODE OF FEDERAL REGULATION (CFR) PART 150 AIRPORT NOISE AND LAND USE COMPATIBILITY STUDY FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT

The Broward County Aviation Department (BCAD) formed a Technical Committee (TC) to support the Fort Lauderdale-Hollywood International Airport (FLL) 14 Code of Federal Regulations (CFR) Part 150 Study. TC membership includes appointed representation from all affected airport stakeholders (experts in land use, airport operations, air traffic control, etc.).

FLL Technical Committee Meeting

Date: Wednesday, March 7, 2018

Time: 10:00AM - 12:00PM

Location: Secret Woods Nature Center – Julia Hall; 2701 W. SR 84; Dania Beach, FL 33312

The Part 150 Study will quantify existing and future aircraft noise exposure levels, assess land use impacts according to federal standards, and seek ways to minimize those impacts to the greatest extent practical within 14 CFR Part 150 guidelines. Space for the TC meetings will be limited. However, they are open to the public, provided space is available. In order to promote efficient, balanced and constructive interaction among the TC members, discussions will be limited to TC members. There will be no public comment period. The public can provide comments at the upcoming public workshops and through the study website at www.fllpart150.com.



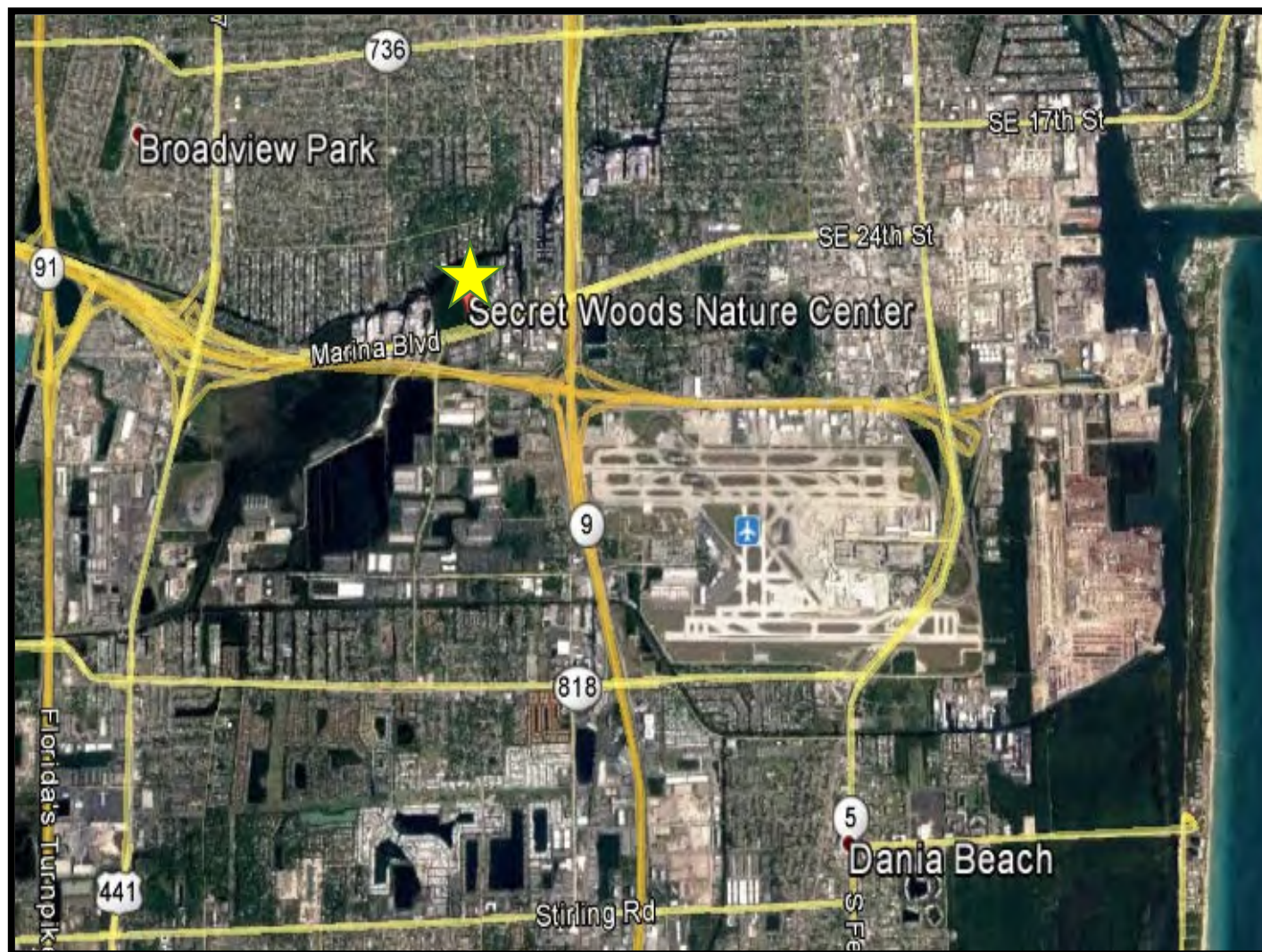
AVIATION DEPARTMENT - Fort Lauderdale-Hollywood International Airport
2200 SW 45th Street, Suite 101 • Dania Beach, Florida 33312 • 954-359-6100

Secret Woods Nature Center

Julia Hall

2701 W. SR 84

Dania Beach, FL 33312



From the East: Take FL-84 / Marina Mile Blvd. and turn right into the Secret Woods Nature Center.

From the West: Take FL-84 / Marina Mile Blvd. and make a U-turn after SW 26th Terrace. Turn right into the Secret Woods Nature Center.

From the North via I-95: Follow I-95 to South to Exit 25, FL-84 / Marina Mile Blvd. Head west on FL-84 / Marina Mile Blvd. and turn right into the Secret Woods Nature Center.

From the South via I-95: Follow I-95 North to Exit 25, FL-84 / Marina Mile Blvd. Head west on FL-84 / Marina Mile Blvd. and turn right into the Secret Woods Nature Center.

From the North via US-441: Follow US-441 South to FL-84 / Marina Mile Blvd. and make a U-turn after SW 26th Terrace. Turn right into the Secret Woods Nature Center.

From the South via US-441: Follow US-441 North to FL-84 / Marina Mile Blvd. and make a U-turn after SW 26th Terrace. Turn right into the Secret Woods Nature Center.



Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #3

Date / Time: Wednesday, March 7, 2018 10:00 AM - 12:00 PM

Location: Secret Woods Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Akagbosu	Chris	Director, Facility of Planning & Real Estate Dept.	Broward County School Board	754-321-2162		chris.akagbosu@browardschools.com	
Annunziata	Jason	Station Manager	JetBlue	954 233-4722	646-942-2775	Jason.Annunziata@jetblue.com	
Anton	Mitch	Leadership Hollywood XLI	Hollywood Chamber of Commerce	954-646-3639	954-646-3639	scpanther3@aol.com	
Boutros	Kareen	Executive Director	Broward Workshop	954-462-9112		kareen@browardworkshop.com	
Cannicle	Winston	Noise & Environmental Officer	Broward County Aviation Department - Airport Noise Office	954-359-6181		WCANNICLE@broward.org	
Castillo (A)	Will	Airport Planning Manager	Broward County Aviation Department - Airport Noise Office	954-359-2291		wcastillo@broward.org	
Anne	Castro		Study Coordination Committee			annecastro@msn.com	
Cooley (A)	Sid		FLL Airport Traffic Control Tower	954-921-9200		sidney.cooley-jr@faa.gov	
Coutain, Jr.	Ken	Airport Planner	Broward County Aviation Department - P/D	954-359-1599		kcoutain@broward.org	
DelNegri	Theodore (TJ)	Tower Manager	FLL Airport Traffic Control Tower	954-921-9201	9-870-1674	theodore.delnegri@faa.gov	
Dokuchitz	Peter	Principal Planner / City of Plantation	City of Plantation	954-797-2265		pdokuchitz@plantation.org	
Eastman	John	John Eastman	Town of Southwest Ranches	954-465-8383		john426@bellsouth.net	
Flint	John R.	City Manager / CEO	City of Weston	954-385-2000		jflint@westonfl.org	
Gaenicke	Sierra		VHB			sgaenicke@vhb.com	
Gale	Mark	Director of Aviation	Broward County Aviation Department			mgale@broward.org	
Gertsen (A)	Alex	Director of Airports and Ground Infrastructure	NBAA	202-737-4477		Agertsen@nbaa.org	
Govin	Yasmin		Broward County Aviation Department - Airport Business	954-359-6145		ygovin@broward.org	
Hemmerle	Mark	Front Line Manager	South Florida Flight Standards Division (FSDO)	954-641-6015		Mark.W.Hemmerle@faa.gov	
Henry	Rebecca	Assistant Manager	Federal Aviation Administration Orlando Airports District Office	407-4184-4225		Rebecca.Henry@faa.gov	
Hildebidle	Bob	Air Traffic Manager A	Miami Air Traffic Management/TRACON	305-869-5402	954-292-6515	Bob.Hildebidle@faa.gov	
Hoffman	Kevin	Corporate Contact	UPS	502-329-3913		khoffmann@ups.com	

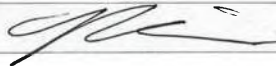
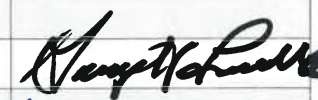

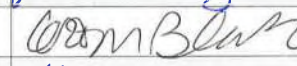
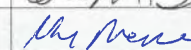


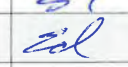


Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #3

Date / Time: Wednesday, March 7, 2018 10:00 AM - 12:00 PM

Location: Secret Woods Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Holste (A)	Phillip	Assistant Town Administration	Town of Davie	954-797-1034		Phillip_Holste@davie-fl.gov	
Hotte	Anne	CEO/Executive Director	Greater Hollywood Chamber of Commerce	954-923-4000		anne@hollywoodchamber.org	
Kaine (A)	Brad	Director of Public Services	City of Dania Beach	954-924-6808		bkaine@daniabeachfl.gov	
LaFerrier	Marc	Director, Community Development	City of Dania Beach	954-924-6805 x3643		mferrier@ci.dania-beach.fl.us	
Lemack	Richard	Town Administrator	Town of Davie	954-797-1034		Richard_Lemack@davie-fl.gov	
Lindblade, CAE	Dan	CAE - President and CEO	Greater Fort Lauderdale Chamber of Commerce	954-462-4911		dan@ftlchamber.com	
Luedtke	Gary		ANAC	954-966-8013		gluedtke@gmail.com	
Lundrigan	Julia	Delta Flight Ops	Delta Airlines	404-773-2882	678-427-1350	Julia.lundrigan@delta.com	
Mertens-Black	Lorie	Chief Civic Affairs Officer	City of Hollywood	954-921-3599		lmertens-black@hollywoodfl.org	
Meyer	Gregory	Public Information Officer	Broward County Aviation Department - PIO	954-359-6116		GMeyer@broward.org	
Modrich (A)	Mark	AA Pilot/Resident	Town of Southwest Ranches	954-540-4854	954-252-5040	mmodrich@aol.com	
Morrissey	Mary	Senior Manager	FedEx	954-359-7432		mmmorrissey@fedex.com	
Nazzaro	Tom	Airport Manager, Aviation	Broward County Aviation Department - Airport Business	954-359-6821		tnazzaro@broward.org	
Nonnemacher (A)	Michael	Acting Assistant Executive Director	Broward County Aviation Department - Airport Operations			mnonnemacher@broward.org	
Ostendorf	Brad	Environmental Compliance Manager	Broward County Aviation Department	954-359-2395	954-829-0867	bostendorf@broward.org	
Pacitto (A)	Mike	Director of Planning	Broward County Aviation Department - Airport Manager's Office	954-560-0766		MPPACITTO@broward.org	
Pluzhnyk Evans	Angelina	Chief Civic Affairs Officer	City of Fort Lauderdale	561-715-9112 - C	561-715-9112 - C	lina@chyden.net	
Pokryfke	John	Asst. Director of Operations, Aviation	Broward County Aviation Department - Airport Operations	954-359-6475		jpokryfke@broward.org	
Rames (A)	Geoff	Lauderdale Isles Water Management District	City of Fort Lauderdale	954-327-9095		grames.lucia@gmail.com	
Rebholz	Edward		City of Fort Lauderdale	973-476-5609		ed@edrebholz.com	
Robbin	Sam	CEO	National Jets/Broward Workshop	954-868-2166		samrobbin@nationaljets.com	



Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #3

Date / Time: Wednesday, March 7, 2018 10:00 AM - 12:00 PM

Location: Secret Woods Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Shane	Randle	CEO/Executive Director	Greater Dania Beach Chamber of Commerce	954-926-2323		rshane@daniabeachchamber.org	
Shiver	Michael	General Manager	Spirit Airlines	954-359-0933		michael.shiver@spirit.com	
Siegel (A)	Allan	Public Informations Officer	Broward County Aviation Department	954-359-6978		Asiegel@broward.org	
Siwinski	Ben	<i>Sr. Planner</i>	<i>VHB</i>		<i>727 6311860</i>	BSiwinski@VHB.com	<i>[Signature]</i>
Solley	Edwin	Manager ATC Systems	Southwest Airlines	407-850-1563	<i>407 3998109</i>	Edwin.solley@wnco.com	<i>[Signature]</i>
Swindell	Bob	President and CEO	Greater Fort Lauderdale Alliance Economic Development Agency	954-524-3113		bswindell@gflalliance.org	
Taylor	Charles	Intergovernmental Affairs Manager	Town of Davie	954-797-1034	<i>(9) 599-1813</i>	Charles_Taylor@davie-fl.gov	<i>[Signature]</i>
Van Valkenburgh (A)	Debra		ANAC			perhelion@hotmail.com	
Voos	Gregory	South Regional Representative	NBAA	202-737-4475		gvoos@nbaa.org	
Wood	Matt	Growth Management Director	City of Cooper City	954-434-4300		MWood@coopercityfl.org	
Wu	Kevin	Airport Manager	Broward County Aviation Department - OPS	954-359-1216	954-279-4740	kwu@broward.org	



Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee

Date / Time: Wednesday March 7, 2018 10:00 AM - 12:00 PM

Location: Secret Woods Nature Center

First & Last Name	Title	Company Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Will O'Neil		BCAD	x2291			
Ryan Goldman		BCAD	x6216		rgoldman@broward.org	
BRAD O'STEWART	ENVIRONMENTAL	BCAD	x2395			
Winston Cannick	Env. Emp.	BCAD	x6181		wcannick@broward.org	
Richard C. Peanigan			954-591-1741		RCP 37eJuno. com	
Robert Mentzer	Principal Cons	HMMH	281-852-3156		rmentzer@hmmh.com	
Alex Michaels	Airport Planner	McFarland Johnson			amichaels@mja.com	
Ken Costan Jr	Airport Planner	BCAD	x1599	954 248 6447	kcostan@broward.org	
Necia Montgomery	Resident			954 249-6060		
ERIC RAY	ANAC	ANAC				

Technical Committee

Meeting #3

Materials Presented at Meeting



AVIATION DEPARTMENT - Fort Lauderdale-Hollywood International Airport
2200 SW 45th Street, Suite 101 • Dania Beach, Florida 33312 • 954-359-6100

Meeting Agenda
Technical Committee Meeting No. 3
14 CFR Part 150 Study
Fort Lauderdale-Hollywood International Airport
March 7, 2018 – 10AM to 12PM EDT

1. Introductions
2. Review of the Role of the TC Meeting Facilitator
3. Review of Prior TC Meetings
4. Public Workshop Summary
5. Land Use Data Collection
6. Aircraft Activity
7. Runway Use
8. Flight Track Analysis
9. Future TC Meetings
10. Questions from TC Members
11. Adjourn



14 CFR PART 150 NOISE AND LAND USE COMPATIBILITY STUDY

Technical Committee Meeting #3
March 7, 2018



1

Agenda

- Introductions
- Review of the Role of the TC Meeting Facilitator
- Review of Prior TC Meetings
- Public Workshop Summary
- Land Use Data Collection
- Aircraft Activity
- Runway Use
- Flight Track Analysis
- Future TC Meetings
- Questions from TC Members
- Adjourn



2

Welcome and Introductions



3

TC Objectives and Role of the Facilitator



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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



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TC Members

- | | |
|---|--|
| <ul style="list-style-type: none">• BCAD• ANAC• Southwest Airlines• Delta Airlines• JetBlue• Spirit Airlines• 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 | <ul style="list-style-type: none">• 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/TRACON• FLL Airport Traffic Control Tower• South Florida Flight Standards Division (FSDO) |
|---|--|



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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



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Prior Technical Committee Meetings

TC #1 – May 26, 2017

- Purpose and Objectives of the Technical Committee
- Airport Overview
- Part 150 Study Overview
- Introduction to Aircraft Noise, Modeling, and Compatibility
- Initial Data Collection
- Project Schedule

TC #2 – August 23, 2017

- Data collection process and status
- AEDT Model inputs
- Aircraft Activity Forecast
- Runway Use
- Flight Track Methodology



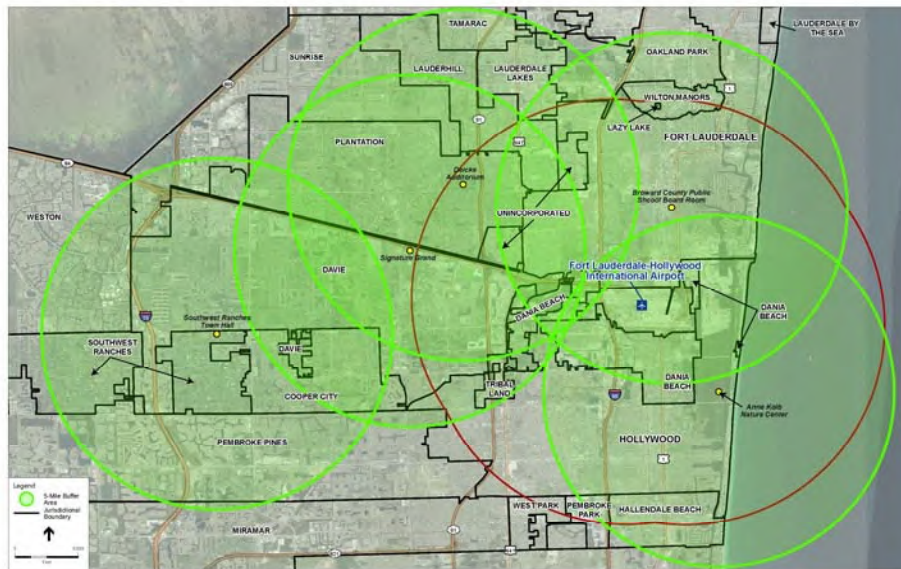
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Public Workshop Summary



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Public Workshop Locations



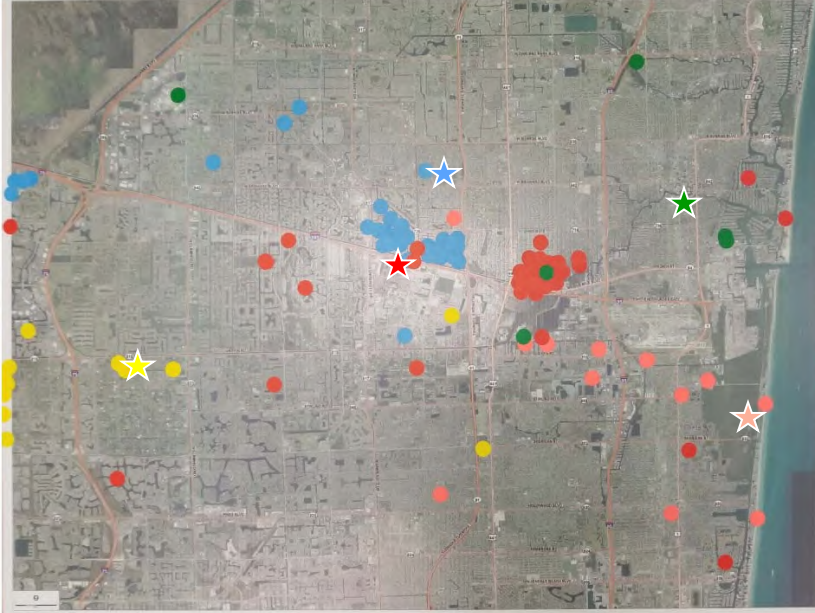
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Public Workshop Attendees

- ★ Southwest Ranches Town Hall (15 attendees)
- ★ Anne Kolb Nature Center (15 attendees)
- ★ Deicke Auditorium (48 attendees)
- ★ Signature Grand (54 attendees)
- ★ Broward County Public School Board Room (8 attendees)

In total, approximately 140 members of the community attended the public workshops.

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Public Workshop Summary

Newspaper Advertisements

- Save the Date Notices (Sun Sentinel—Sunday 10/22, and Wednesday through Saturday 10/25 – 10/28)
- Full Announcement English (Sun Sentinel—Sunday 10/29, Sunday 11/5 and Sunday 11/12)
- Full Announcement Spanish (El Sentinel—Thursday 11/2 and Thursday 11/9)

Other Media

- FLL BCAD Website (Meetings Tab)
- Broward County Electronic Bulletin Board
- Broward County October 27th Newsletter
- FLL BCAD Twitter Site
- FLL BCAD Facebook Site
- Project Website (www.flpart150.com)
- Various Jurisdiction Websites

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Public Workshop Summary

Locations

- **Monday, November 13, 2017 – Southwest Ranches Town Hall** - Selected for its proximity to Weston, Southwest Ranches and Cooper City.
 - 8 comment letters and 2 verbal comments were received.
- **Tuesday, November 14, 2017 – Anne Kolb Nature Center** - Selected for its proximity to Dania Beach and Hollywood.
 - 4 comment letters and 4 verbal comments were received.
- **Wednesday, November 15, 2017 – Deicke Auditorium** - Selected for its proximity to Plantation.
 - 16 comment letters and 5 verbal comments were received.
- **Thursday, November 16, 2017 – Signature Grand** - Selected for its easy access from greater Fort Lauderdale including Dania Beach, Davie, Plantation Fort Lauderdale and Weston.
 - 50 comment letters and 6 verbal comments were received.
- **Friday, November 17, 2017 – Broward County Public School Board Room** - Selected for its easy access from Fort Lauderdale.
 - 4 comment letters and no verbal comments were received.



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Public Workshop Summary

Comments

- 82 written and 17 verbal comments received at the public workshops.
- 25 comments were received via the website between the start of the public workshops through the end of the comment period.
- Two comment letters received via mail.

Concerns

- Early morning and late night flights
- Changes in aircraft flight paths occurring after opening of the new runway
- Nighttime use of south runway
- Low altitude of overflights
- High frequency of overflights
- Overflight impacts on horses



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Land Use Data Collection



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Initial Data Collection – Land Use Compatibility

- Coordination Meetings:
 - City of Fort Lauderdale
 - Town of Davie
 - City of Plantation
 - City of Cooper City
 - Town of Southwest Ranches
 - City of Weston
- Follow-up Meetings:
 - City of Dania Beach
 - City of Hollywood
 - Broward County School Board



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Existing Land Use

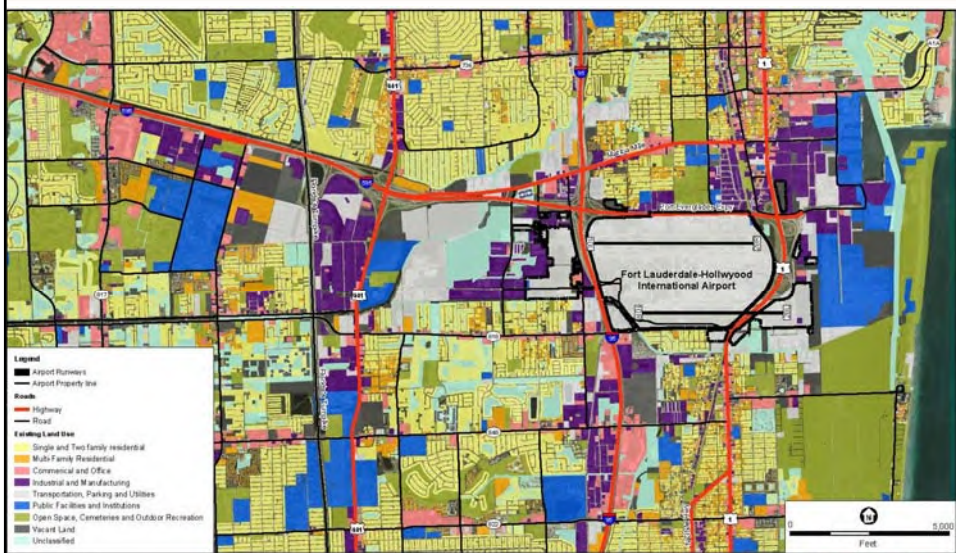


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Existing Land Use (30,000')

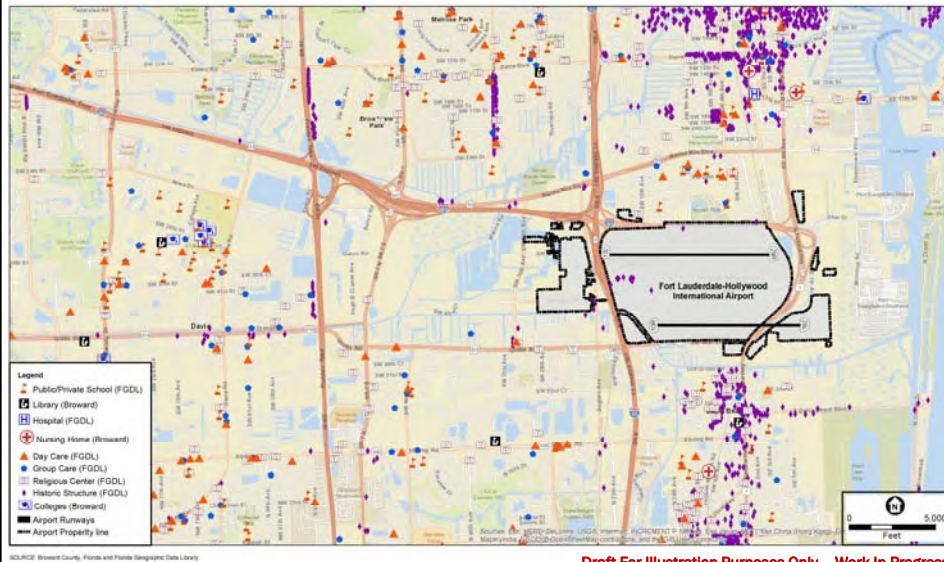


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Noise Sensitive Sites



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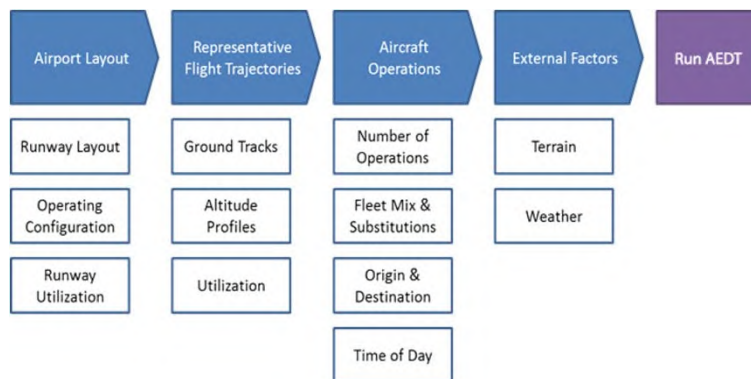
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Review Preliminary AEDT Inputs

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AEDT Model Inputs

AEDT Inputs



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General Data

- 10-Year Average Meteorological Data (AEDT, NOAA NCDC)
 - Temperature – 75 F
 - Relative Humidity – 73.3%
 - Mean Sea Level Atmospheric Pressure (millibars) – 1,017.1
 - Dew Point (F) - 67.79
 - Wind Speed (Knots) – 7.94 (AEDT default is an 8-knot headwind)
- National Elevation Dataset (NED) terrain data (USGS)

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Aircraft Activity



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Baseline Condition Aircraft Operations (2018)

Aircraft Operations by Category and Time of Day

Category	Arrivals			Departures		
	Day	Night	Total	Day	Night	Total
Wide-Body Aircraft	72.38%	27.62%	100.00%	80.83%	19.17%	100.00%
Narrow-Body Aircraft	82.47%	17.53%	100.00%	88.38%	11.62%	100.00%
Turboprop Aircraft	97.87%	2.13%	100.00%	97.15%	2.85%	100.00%
Propeller Aircraft	96.74%	3.26%	100.00%	94.58%	5.42%	100.00%
GA Jet	86.54%	13.46%	100.00%	91.91%	8.09%	100.00%
Helicopter	92.45%	7.55%	100.00%	96.30%	3.70%	100.00%
All Aircraft	84.50%	15.50%	100.00%	89.52%	10.48%	100.00%

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

2018 Aircraft Operations by Category

Category	Total Operations
Wide-Body Aircraft	6,295
Narrow-Body Aircraft	262,449
Turboprop Aircraft	34,120
Propeller Aircraft	7,454
GA Jet	24,520
Helicopter	162
Grand Total	335,000

Source: ANOMS, 2016 and Ricondo & Associates, 2017.

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2018 Baseline Condition Aircraft Fleet Mix

Aircraft	Total Ops	Aircraft	Total Ops	Aircraft	Total Ops	Aircraft	Total Ops
A320-232	71,448.9	757RR	1,453.9	CNA560E	196.7	B430	13.3
737800	37,955.4	EMB145	1,334.5	GIIB	168.9	B206L	12.1
737700	35,317.8	GV	1,282.6	DC1030	154.4	DHC8	10.9
A321-232	29,233.0	757300	1,043.7	767JT9	136.3	777200	10.9
A319-131	20,690.5	7878R	966.5	ECLIPSE500	125.5	B407	9.7
EMB190	20,320.0	CRJ9-ER	925.4	CNA20T	124.3	R22	9.7
SF340	18,045.6	A300-622R	923.0	MD11PW	120.7	737N17	8.4
A320-211	13,359.3	COMSEP	860.3	FAL20	107.4	CL601	8.4
CNA208	8,000.8	DC1010	841.0	PA30	96.5	DC93LW	8.4
LEAR35	7,694.4	MU3001	789.1	737400	92.9	SA350D	8.4
757PW	6,980.1	CNA560U	756.5	MD82	91.7	SA355F	8.4
737300	6,382.8	CNA680	703.4	A310-304	65.2	747400	7.2
MD83	4,706.9	IA1125	701.0	1900D	55.5	767CF6	7.2
DHC6	4,040.8	BD-700-1A11	629.8	777300	39.8	EMB120	7.2
CL600	3,985.3	GASEPV	623.8	727EM1	38.6	7773ER	6.0
BEC58P	3,844.2	CNA172	617.8	A300B4-203	36.2	PA28	6.0
CNA750	2,568.8	GASEPF	576.7	PA31	27.8	B212	6.0
737500	2,338.4	A330-343	547.8	767400	25.3	B206B3	3.6
GIV	2,332.3	EMB14L	486.3	A109	25.3	H500D	3.6
717200	2,206.8	EMB170	471.8	SD330	22.9	7478	2.4
CNA55B	2,179.1	CNA206	435.6	EC130	22.9	CNA182FLT	2.4
767300	2,153.7	BD-700-1A10	419.9	R44	20.5	DHC-2FLT	2.4
PA42	1,877.4	CNA510	395.8	727EM2	19.3	EMB175	2.4
DHC830	1,710.9	CNA441	348.7	LEAR25	16.9	T-38A	2.4
CNA500	1,592.7	CIT3	279.9	S76	16.9		
CNA560XL	1,578.2	MD11GE	249.8	DC3	15.7		
MD9028	1,523.9	CNA182	220.8	MD81	14.5		

Source: ANOMS, 2016 and Ricondo & Associates, 2017.

Numbers may not add up to 335,000 due to rounding.

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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

Fiscal Year	FAA TAF	MPU Accelerated Baseline Forecasts
2017	304,590	329,300
2018	311,559	335,000
2023	343,194	364,765

Sources: FAA, Terminal Area Forecasts, 2017, Ricondo & Associates, Inc., 2016



ORLANDO AIRPORTS DISTRICT OFFICE
5950 Hazeltine National Drive
Suite 400
Orlando, FL 32822
Phone: (407) 812-6331 Fax: (407) 812-6978

April 10, 2017

Mr. William Castillo
Airport Planning Manager
Broward County Aviation Department
2200 SW 45th Street, Suite 101
Dania Beach, Florida 33312

Dear Mr. Castillo:

RE: Fort Lauderdale-Hollywood International Airport, Fort Lauderdale, FL
Approval of Forecast for use in the 14 CFR Part 150 Study

This letter responds to your request for approval to use the Accelerated Baseline Forecasts for the purposes of the 14 Code of Federal Regulations (CFR) Part 150 Study for the Fort Lauderdale-Hollywood International Airport (FLL).

On January 13, 2017, the Federal Aviation Administration (FAA) approved the Baseline Forecast for FLL and accepted the Accelerated Baseline Forecast prepared in the Master Plan Update for sensitivity purposes and for the purpose of establishing facility requirements.

The FAA notes that the Accelerated Baseline Forecast varies less than 10 percent in the 5 year period and 15 percent in the 10 year period from the FAA's 2016 Terminal Area Forecast (TAF) published in January, 2017.

The FAA has determined that the Accelerated Baseline Forecast is consistent with the FAA's most recent TAF for FLL, and therefore, we approve the use of the Accelerated Baseline Forecast for the ongoing FLL Part 150 Study.

If you have any questions, please feel free to contact me at (407) 812-6331, ext. 130.

Sincerely,

Alan M. Nagy
FAA Orlando ADO Environmental Program Specialist



Runway Use



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Baseline Condition Arrival Runway Use

Daytime Arrivals

Aircraft Category	10L	10R	28L	28R	Total
Wide-Body Aircraft	74.63%	4.18%	1.27%	19.93%	100.00%
Narrow-Body Aircraft	55.21%	25.43%	6.32%	13.03%	100.00%
GA Jet	50.23%	29.82%	8.59%	11.37%	100.00%
Turboprop Aircraft	40.56%	40.31%	8.94%	10.18%	100.00%
Propeller Aircraft	21.66%	59.68%	13.28%	5.39%	100.00%
Helicopter	35.42%	18.75%	29.17%	16.67%	100.00%

Nighttime Arrivals

Aircraft Category	10L	10R	28L	28R	Total
Wide-Body Aircraft	81.16%	3.05%	0.28%	15.51%	100.00%
Narrow-Body Aircraft	73.75%	7.38%	1.24%	17.64%	100.00%
GA Jet	71.19%	8.20%	1.96%	18.65%	100.00%
Turboprop Aircraft	71.38%	8.88%	0.99%	18.75%	100.00%
Propeller Aircraft	59.26%	21.30%	3.70%	15.74%	100.00%
Helicopter	25.00%	50.00%	0.00%	25.00%	100.00%

Source: ANOMS, 2016.

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Baseline Condition Departure Runway Use

Daytime Departures

Aircraft Category	10L	10R	28L	28R	Total
Wide-Body Aircraft	77.85%	1.52%	0.14%	20.48%	100.00%
Narrow-Body Aircraft	47.82%	32.96%	7.10%	12.13%	100.00%
GA Jet	56.98%	23.55%	5.87%	13.60%	100.00%
Turboprop Aircraft	53.13%	28.06%	5.00%	13.80%	100.00%
Propeller Aircraft	34.57%	46.95%	10.06%	8.43%	100.00%
Helicopter	40.79%	42.11%	10.53%	6.58%	100.00%

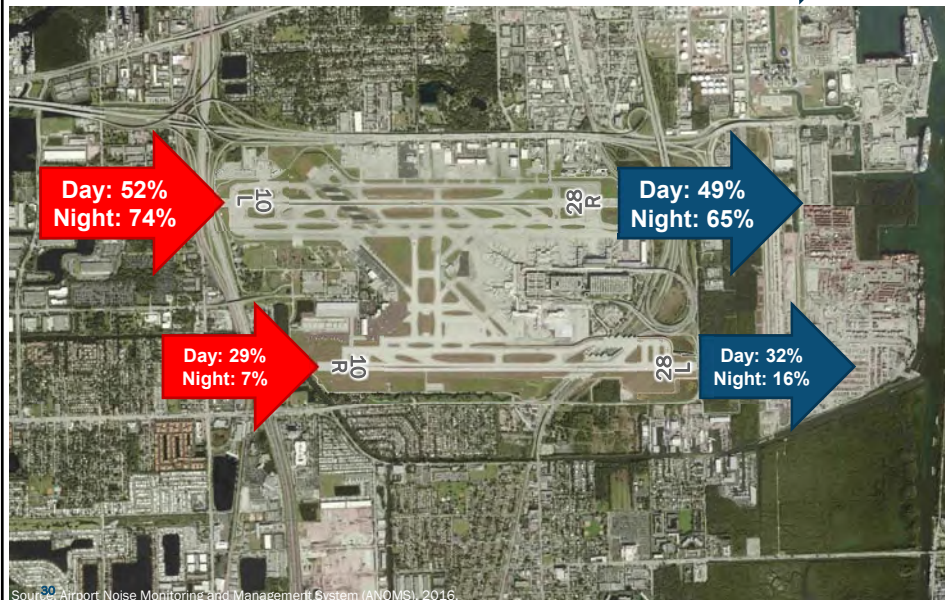
Nighttime Departures

Aircraft Category	10L	10R	28L	28R	Total
Wide-Body Aircraft	78.16%	2.00%	0.00%	19.84%	100.00%
Narrow-Body Aircraft	63.67%	16.37%	3.72%	16.23%	100.00%
GA Jet	66.54%	14.34%	2.33%	16.79%	100.00%
Turboprop Aircraft	61.90%	15.29%	2.51%	20.30%	100.00%
Propeller Aircraft	69.03%	18.06%	2.58%	10.32%	100.00%
Helicopter	100.00%	0.00%	0.00%	0.00%	100.00%

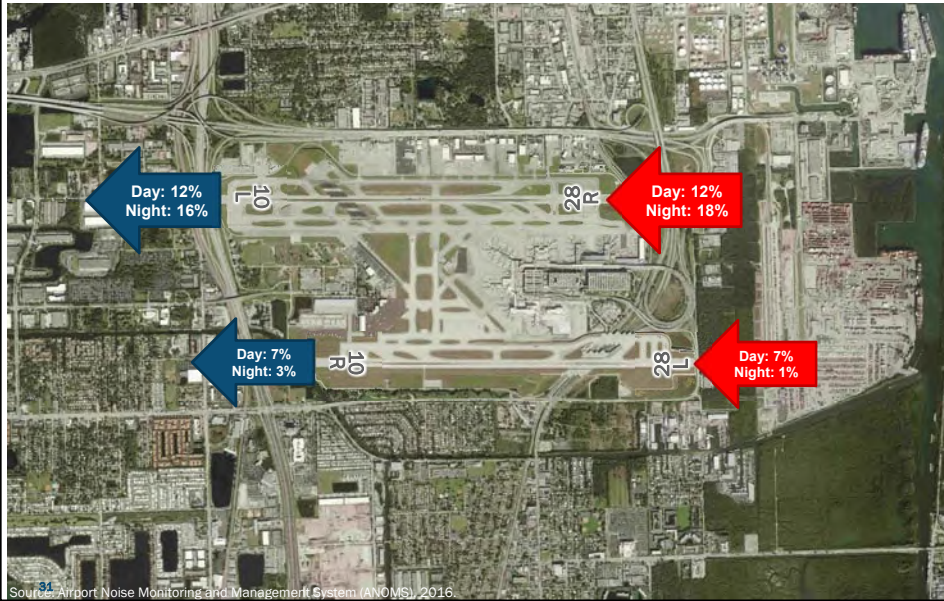
Source: ANOMS, 2016.

29

Runway Use – East Flow



Runway Use – West Flow



Baseline Condition Runway Use

Runway Usage

Operation Type	Runway	Day	Night	Grand Total
Arrivals	North Runway			
	10L	52%	74%	55%
	28R	12%	18%	13%
	Total	64%	92%	68%
	South Runway			
	10R	29%	7%	26%
Departures	28L	7%	1%	6%
	Total	36%	8%	32%
	North Runway			
	10L	49%	65%	51%
	28R	12%	16%	13%
	Total	61%	81%	64%
	South Runway			
	10R	32%	16%	30%
	28L	7%	3%	6%
	Total	39%	19%	36%

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

Future Condition Runway Use Methodology

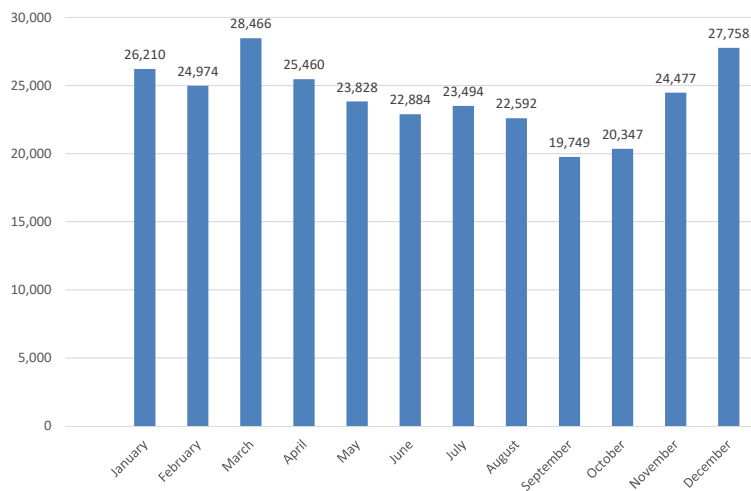
- Coordinating with MPU team to identify anticipated use for Runway 10L/28R (at capacity during peaks) and 10R/28L



33

Data Collection - 2016 Operational Profile

Total Monthly Aircraft Operations



Source: FAA Air Traffic Activity Data System (ATADS), 2016.

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Flight Track Analysis



35

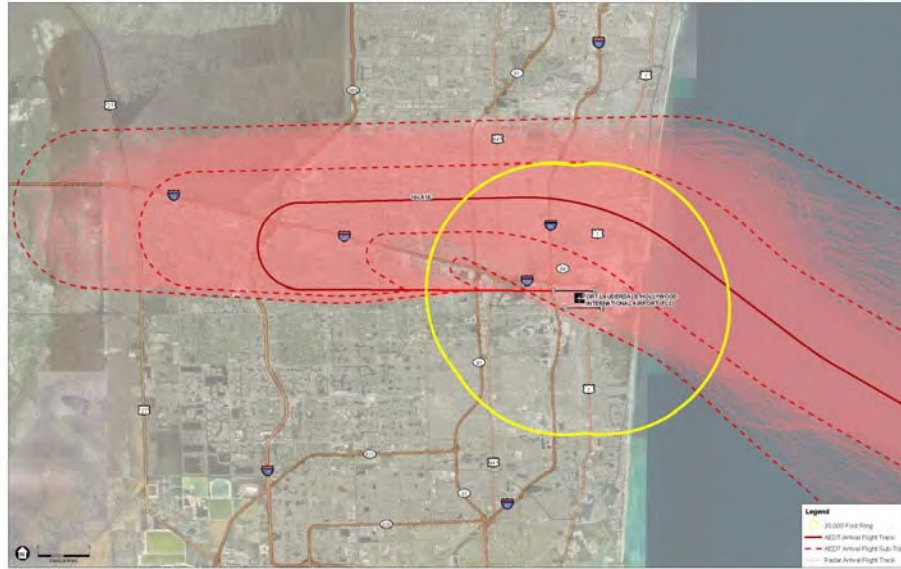
Flight Track Development Methodology

- Reviewed radar data from ANOMS
- Separated data by arrival/departure and runway end
- Analyzed primary corridors and separated data by these corridors to develop “backbone” AEDT flight tracks
- Reviewed the corridors and backbone flight tracks and developed up to 8 sub-tracks for each backbone flight track
- Utilized radar data to assign dispersion for sub-tracks
- Utilized radar data to assign flight track utilization by aircraft category (commercial jet, GA jet, turboprop, and piston/prop, and helicopters)



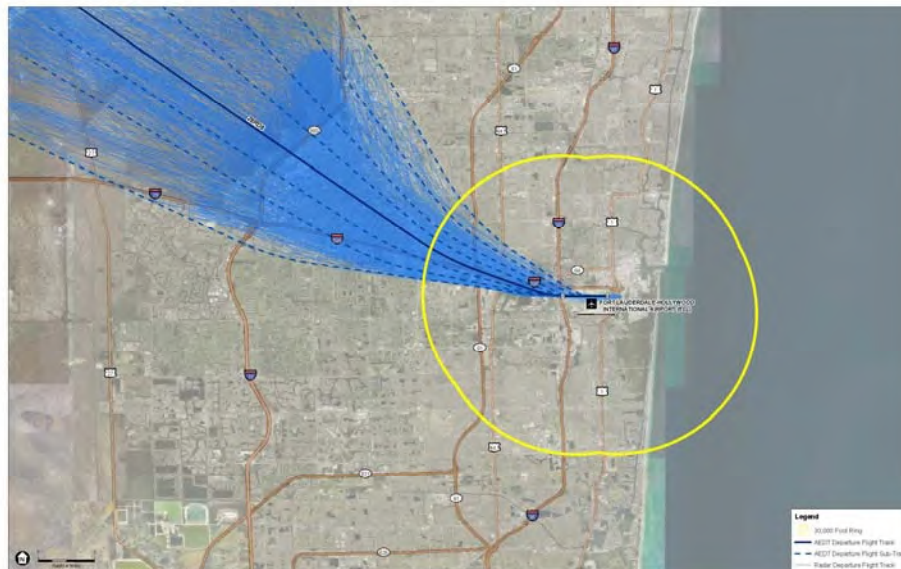
36

Example Arrival Flight Track



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Example Departure Flight Track



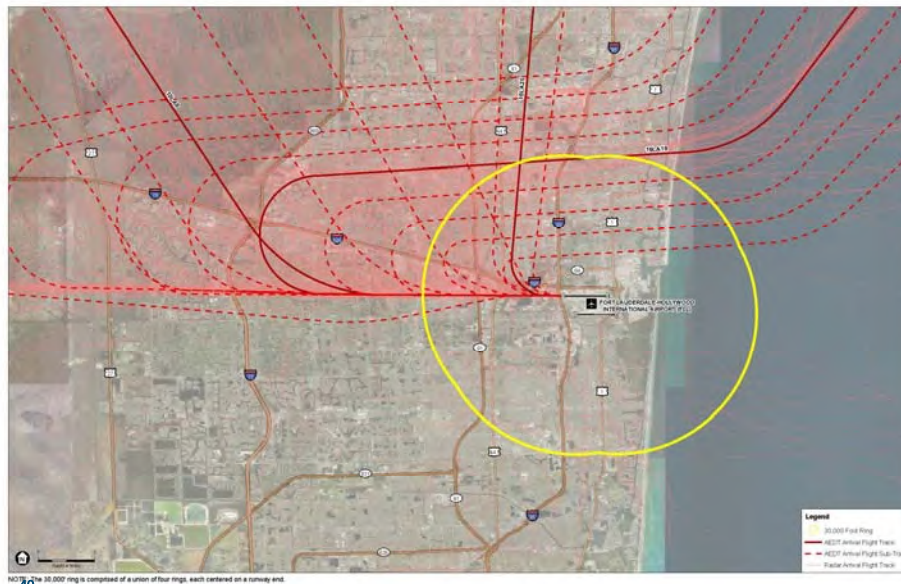
Draft For Deliberative Purposes Only

Example Helicopter 10L Arrival Flight Tracks



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Example Piston/Prop 10L Arrival Flight Tracks



Draft For Deliberative Purposes Only

Example Turboprop 10L Arrival Flight Tracks



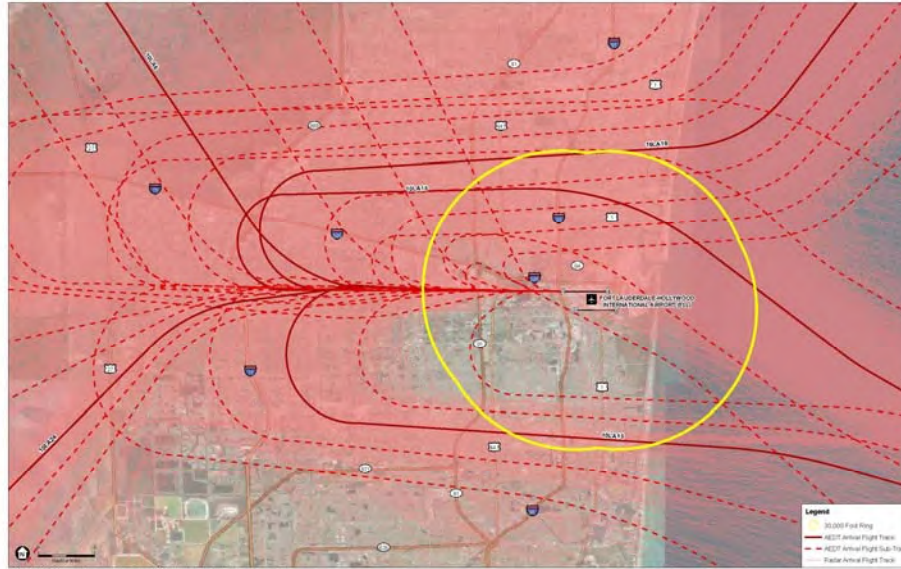
Draft For Deliberative Purposes Only

Example Business Jet 10L Arrival Flight Tracks



Draft For Deliberative Purposes Only

Example Commercial Jet 10L Arrival Flight Tracks



Draft For Deliberative Purposes Only

Flight Tracks

Arrival Tracks

Runway	Backbone Tracks	Sub-Tracks	Total
10L	25	102	127
10R	29	103	132
28L	15	50	65
28R	10	41	51
Total	79	296	375

Departure Tracks

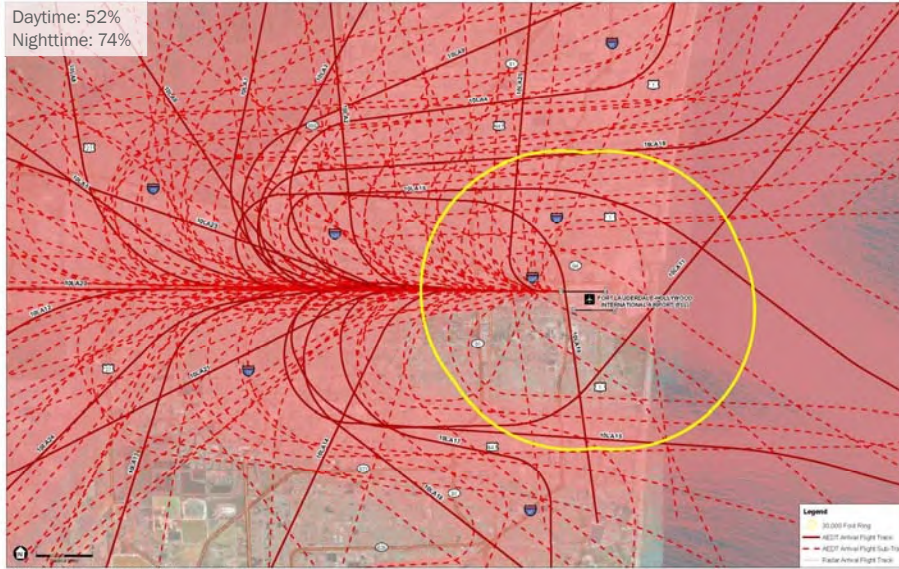
Runway	Backbone Tracks	Sub-Tracks	Total
10L	31	128	159
10R	24	95	119
28L	25	87	112
28R	23	81	104
Total	103	391	494

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10L Arrival Flight Tracks: 55% of All Arrivals

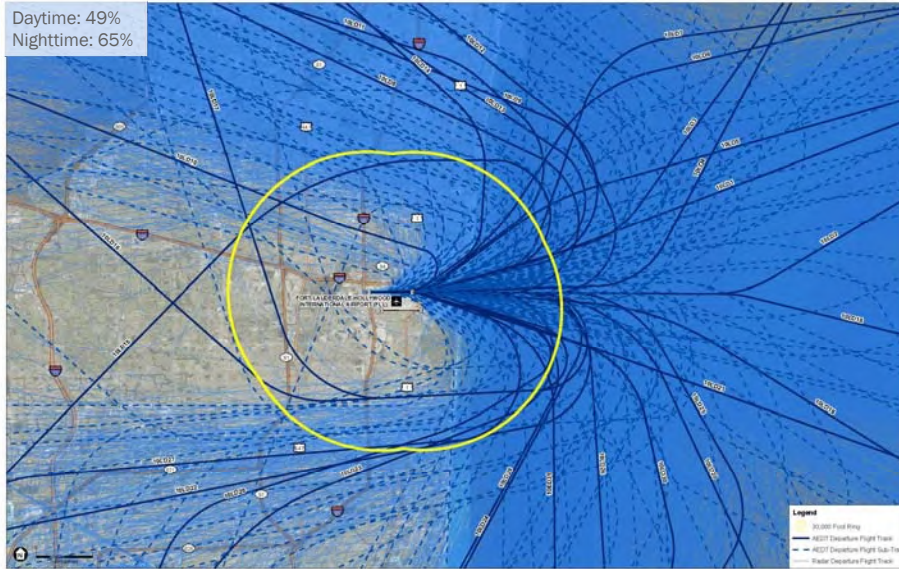
Daytime: 52%
Nighttime: 74%



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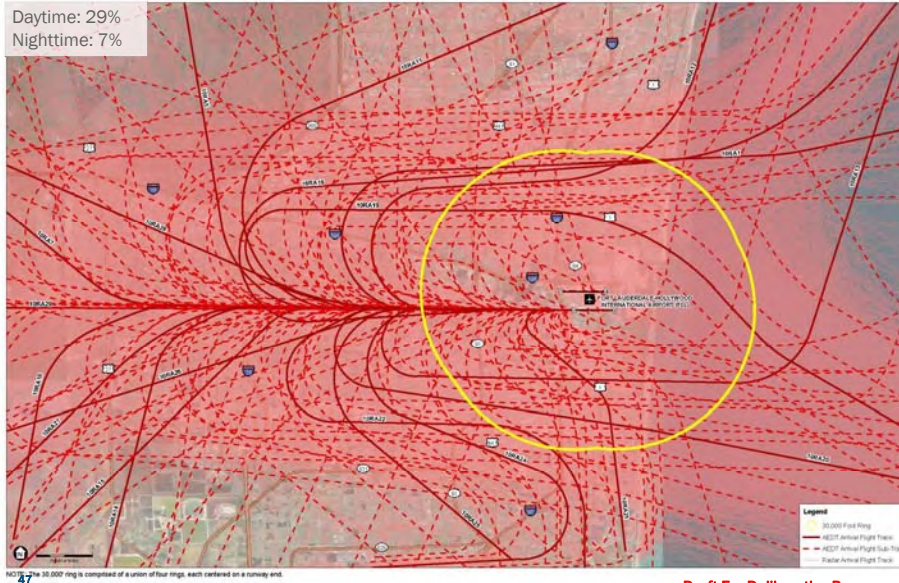
10L Departure Flight Tracks: 51% of All Departures

Daytime: 49%
Nighttime: 65%



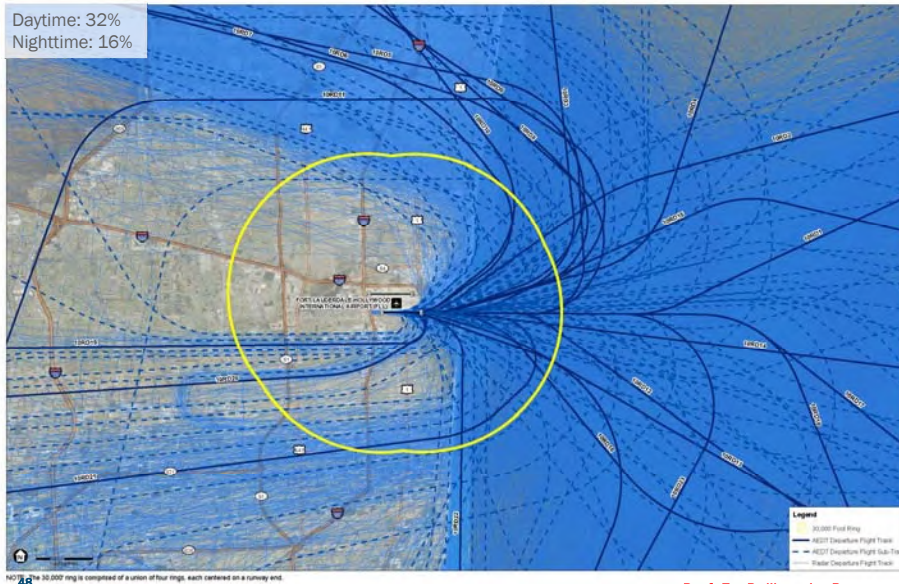
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10R Arrival Flight Tracks: 26% of All Arrivals



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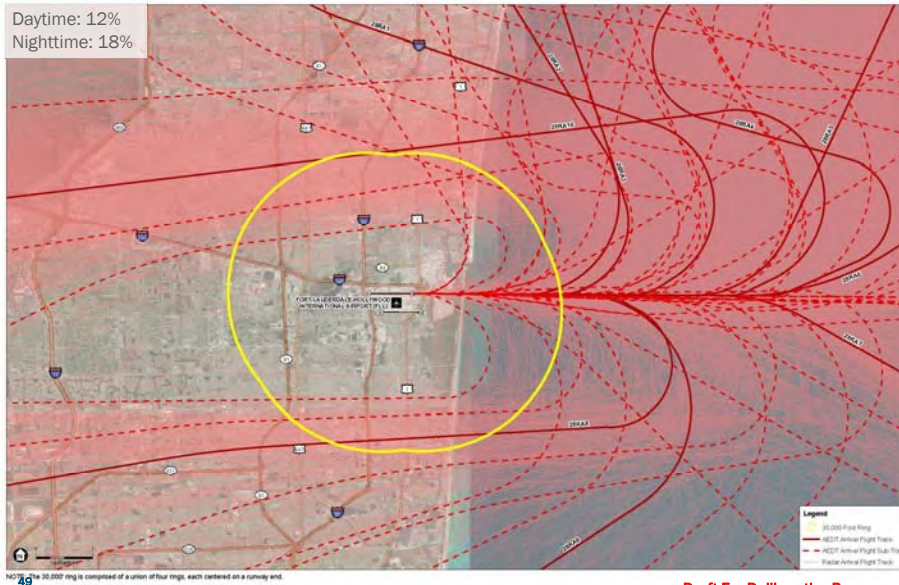
10R Departure Flight Tracks: 30% of All Departures



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28R Arrival Flight Tracks: 13% of All Arrivals

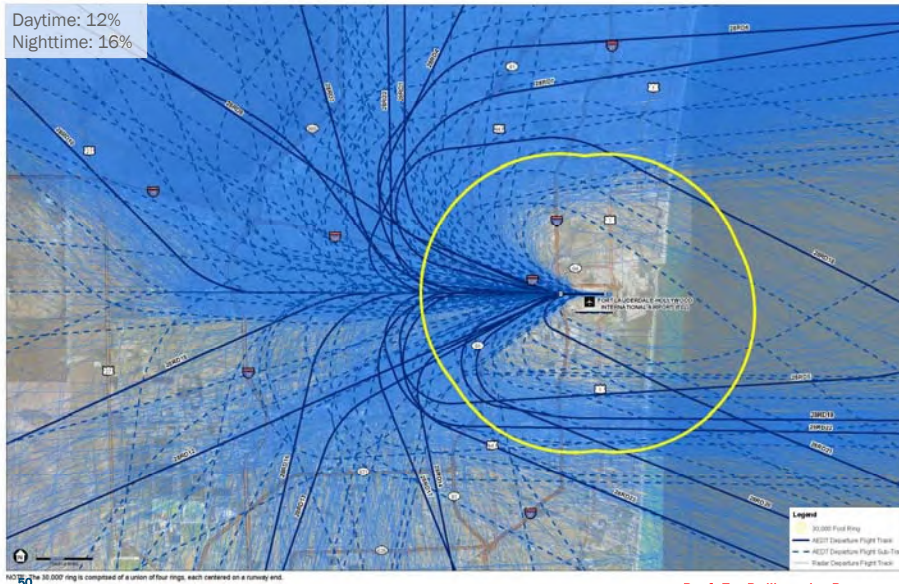
Daytime: 12%
Nighttime: 18%



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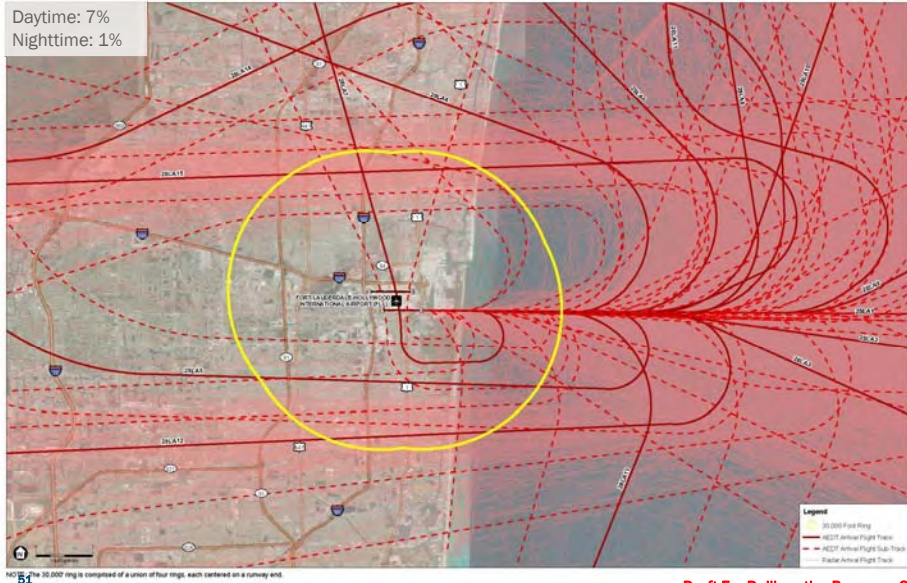
28R Departure Flight Tracks: 13% of All Departures

Daytime: 12%
Nighttime: 16%



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28L Arrival Flight Tracks: 6% of All Arrivals



28L Departure Flight Tracks: 6% of All Departures



Future TC Meetings



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Future Meetings

Technical Committee

- TC Meeting #4 (Tentative)

May 2018

Public Workshop

- NEM Report Public Workshop

Fall 2018

TC and Public Workshop materials will be available on the project website immediately following each meeting
www.flipart150.com



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Questions from TC Members



Adjourn

Technical Committee

Meeting #3

Meeting Summary

**Fort Lauderdale-Hollywood International Airport
14 CFR Part 150 Noise and Land Use Compatibility Study
Technical Committee Meeting #3
March 7, 2018**

Meeting Notes

Committee Members in Attendance

Chris Akagbosu – Broward County Public Schools (BCPS)	Gary Luedtke – Airport Noise Advisory Committee (ANAC)
Mitch Anton – Hollywood Chamber of Commerce	Julia Lundrigan – Delta Airlines
TJ DelNegri – FLL Air Traffic Control Tower	Lorie Mertens-Black – City of Hollywood
Peter Dokuchitz – City of Plantation	Geoff Rames – City of Fort Lauderdale
John Eastman – Town of Southwest Ranches	Edward Rebholz – City of Fort Lauderdale
John R. Flint – City of Weston	Edwin Solley – Southwest Airlines
Rebecca Henry – Federal Aviation Administration	Charles Taylor – Town of Davie
Marc LaFerrier – City of Dania Beach	

Other Members in Attendance

Winston Cannicle – BCAD	Ryan Goldman – BCAD
Will Castillo – BCAD	Gregory Meyer – BCAD
Ken Coutain, Jr. – BCAD	Brad Ostendorf – BCAD
Karen Friedman – BCAD	Mike Pacitto – BCAD
Kallie Glover – Delta Airlines	

Agenda and Key Topics:

- Welcome
- Review of the Role of the Technical Committee (TC) Meeting Facilitator
- Review of Prior TC Meetings
- Public Workshop Summary
- Land Use Data Collection
- Aircraft Activity
- Runway Use
- Flight Track Analysis
- Future TC Meetings

Meeting Summary:

- The Technical Committee convened for its third meeting shortly after 10:00 AM on March 7, 2018 at the Secret Woods Nature Center in the Julia Hall.
- The meeting began with re-introductions of participants.
- Ground rules for the TC members were reviewed by the facilitator. TC members were encouraged to express their opinions and expected to respect the range of opinions expressed by their fellow TC members. TC members were also expected to advise their organization and/or constituents of the TC's discussions.
- Attending members of the public were advised of ways in which they could submit comments including the project website (www.flpart150.com) and at future public meeting (dates TBD).
- A presentation of key topics was given by Michael Arnold, Part 150 Project Director representing the ESA consulting team. The presentation included the following information:
 - A review of the material presented in the prior TC meetings.
 - A summary of the five public workshops held in November 2017.
 - Overview of the land use data collection process, including presentation of draft existing land use graphics.
 - A review of FAA's noise model, AEDT, and modeling inputs:
 - 2018 and 2023 aircraft activity levels and forecast, including the 2018 aircraft fleet mix.
 - Individual runway use in CY 2016 and flows including the heavily weighted east flow operation, which will be used for 2018.
 - Daytime/Nighttime operations (10:00 pm – 7:00am) usage by individual runways, operation type (arrival or departure), and aircraft type. Potential for greater annoyance and 10 dB weighting of nighttime activities (each nighttime operation is equal to 10 daytime operations) to account for the increased annoyance.
 - A review of the flight track analysis process and presentation of radar and flight track graphics for all aircraft operations.
 - Future meetings

Questions & Comments from Technical Committee (TC) members:

Q: *Gary Luedtke (ANAC):* The City of Dania Beach receives about 90% of the Airport noise. No meeting was held in Dania Beach, however there are facilities available to use; in general, residents chose not go to alternative locations.

A: *Mike Arnold (ESA):* Locations in Dania Beach were not available at that time; however, four of the five meeting locations were within 5 miles of Dania Beach. We will consider Dania Beach locations for future meetings.

Q: *Gary Luedtke (ANAC):* What are the designated nighttime hours?

A: *Mike Arnold (ESA):* Nighttime operations are from 10pm to 7am.

Q: *Gary Luedtke (ANAC):* In 2013, there was only one runway in operation (the North runway) which had capacity for 255,000 annual operations.

A: *Mike Arnold (ESA):* Aircraft may be able to operate, but they are at risk for higher delay.

Q: *Julie Lundrigan (Delta Airlines):* How many aircraft/number of operations could use the runways (with/without penalty)? And which aircraft need the North runway/how many could move to the South runway?

A: *Mike Arnold (ESA):* The next step in the Part 150 evaluation will determine estimated future runway use based on the factors mentioned.

Q: *Edward Rebholz (City of Fort Lauderdale):* Can you clarify the backbone track and dispersed/sub tracks? Are the sub tracks standard deviations?

A: *Mike Arnold (ESA):* The solid lines are the backbone, and dotted lines are sub tracks.

A: *Autumn Ward (ESA):* It is not weighted the same as standard deviation, each track may be weighted differently

Q: *Edward Rebholz (City of Fort Lauderdale):* How do you get more departure tracks than arrival tracks? Are arrivals more constrained?

A: *Mike Arnold (ESA):* It is based on distributions, more tracks, not operations

Q: *Edward Rebholz (City of Fort Lauderdale):* Do the tracks also consider altitude of aircraft/elevation?

A: *Mike Arnold (ESA):* ANOMS data provides x, y, and z coordinates (flight track location and elevation).

Q: *Chris Akagbosu (BCPS):* The Nova school system is concerned about direct overflights of schools; can you tell what the aircraft altitudes and noise levels are/would be at Nova schools? Will you need feedback from the school administration to determine potential noise impacts/mitigation measures?

Which of the aircraft fly over Nova schools, do you know the height and sound levels at these schools? My daughter attends the Nova School and I'm concerned about the noise levels.

A: *Winston Cannicle:* approximately 3 miles due west about 900-1000 ft. in altitude

Q: *Chris Akagbosu (BCPS):* Are you looking to modify noise levels as part of study?

A: *Mike Arnold (ESA):* Yes.

Q: *Chris Akagbosu (BCPS):* You may need feedback from principals to understand their concerns during next meeting.

A: *Mike Arnold (ESA):* Okay, this may be important once we know the impacts as we transition to the next phase of the study.

Q: *Lorie Mertens-Black (City of Hollywood):* As part of Part 150, will you identify the need for different noise monitors, and agreements with the public. What specific operational measures are being considered? What happens in the future when the airport cannot accommodate any more operations?

A: *Mike Arnold (ESA):* The next phase of the study will identify and evaluate a range of operational noise mitigation and noise abatement measures as well as (1) Noise monitors will be evaluated, and they could be eligible for federal funding; (2) jurisdictional land use agreements will be evaluated in the next phase of study; the NCP phase will be discussed at the next TC meeting.

Q: *Lorie Mertens-Black (City of Hollywood):* At what level does the airport say they cannot accommodate anymore aircraft or operations?

C: *Gary Luedtke (ANAC):* There is a possibility for another parallel runway.

A: *Mike Arnold (ESA):* The airport does not have a set limit of aircraft operations. When the delay becomes too long, which is subjective to airlines and operators, these carriers would likely reduce their operations at FLL.

Q: *Geoff Rames (City of Fort Lauderdale):* What about right turn departures off the South runway in west flow? It does not look safe? What happened to 15 degrees of separation (for the 28L departure track)?

A: *Mike Arnold (ESA):* This is a question for air traffic; however, the Study will look at flight tracks / procedures that could reduce the noise impacts for non-compatible land uses.

Q: *John Eastman (Southwest Ranches):* We are getting notice of these meetings too late (9 days' notice for this meeting). The Team needs to determine the May timeframe now.

A: *Mike Arnold (ESA):* The meeting announcement was sent one month ahead of this meeting (February 9th), and reminders were sent one week before (February 28th) and one day before (March 6th) this meeting. We will continue to send Save the Date emails a month prior to the scheduled meetings.¹

Q: *Edward Rebholz (City of Fort Lauderdale):* When are recommendations coming out?

A: *Mike Arnold (ESA):* It will be part of the Noise Compatibility Plan (NCP) coming out in 2019.

Q: *Gary Luedtke (ANAC):* Last meeting, someone asked if the largest 4-engine aircraft could come into FLL; there is proof (Gary handed out image of 4-engine Russian cargo aircraft)

A: *Mike Arnold (ESA):* At the last meeting, the question was specifically about the A380, which cannot be accommodated at FLL. As stated previously, other 4-engine aircraft do occasionally operate at FLL, such as the Boeing 747.

Q: *Gary Luedtke (ANAC):* I've seen recreational drones being used within 5 miles of the airport.

A: *Rebecca Henry (FAA):* If you see drones being operated within 5 miles of the airport, please call the Sheriff's department.

¹ Save the dates and reminders are sent from RSVP@garthsolutions.com; please make sure this email address is marked as a safe sender to avoid notifications going to your spam folder.

Q: *Gary Luedtke (ANAC):* Operational data from 2017 reflects there were 137,000 flights, which is less than what was previously forecasted. The FAA's Terminal Area Forecast reflects that the airport can accommodate a lot more.

A: *Mike Arnold (ESA):* The forecast Gary is referencing was from 2006. The FAA updates the Terminal Area Forecast each year and the 2006 forecast is not being used in the Master Plan Update or the Part 150 Study. The Part 150 Study is using the Accelerated Baseline Forecast from the Master Plan Update.

Actionable Next Steps:

The next meeting will be held at the Secret Woods Nature Center - Julia Hall, likely in May 2018.

Meeting Adjourned at 11:30 AM

Appendix G-4
Technical Committee
Meeting #4
November 7, 2018

Technical Committee

Meeting #4

Meeting Notice and

Attendance Roster



AVIATION DEPARTMENT - Fort Lauderdale-Hollywood International Airport
2200 SW 45th Street, Suite 101 • Dania Beach, Florida 33312 • 954-359-6100

**Subject: Fort Lauderdale-Hollywood International Airport
14 CFR Part 150 Study - Technical Committee Meeting #4**

Please save the date for the next Technical Committee meeting to support the Fort Lauderdale-Hollywood International Airport Part 150 Study.

Date: Thursday, October 25, 2018

Time: 10:00AM - 12:00PM

Location: Secret Woods Nature Center | Julia Hall; 2701 W. SR 84; Dania Beach, FL 33312

Please arrive 10 minutes early to allow time to check in prior to the start of the meeting.

Broward County Board of County Commissioners
Mark D. Bogen • Beam Furr • Steve Geller • Dale V.C. Holness • Chip LaMarca • Nan H. Rich • Tim Ryan • Barbara Sharief • Michael Udine
www.broward.org/www.fli.net



Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #4

Date / Time: Wednesday, November 7, 2018 10:00 AM - 12:00 PM

Location: Secret Woods Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Akagbosu	Chris	Director, Facility of Planning & Real Estate Dept.	Broward County School Board	754-321-2162		chris.akagbosu@browardschools.com	
Annunziata	Jason	Station Manager	JetBlue	954 233-4722	646-942-2775	Jason.Annunziata@jetblue.com	
Anton	Mitch	Leadership Hollywood XLI	Hollywood Chamber of Commerce	954-646-3639		scpanther3@aol.com	
Boutros	Kareen	Executive Director	Broward Workshop	954-462-9112		kareen@browardworkshop.com	
Cannicle	Winston	Noise & Environmental Officer	Broward County Aviation Department - Airport Noise Office	954-359-6181		WCANNICLE@broward.org	
Castillo (A)	Will	Airport Planning Manager	Broward County Aviation Department - Airport Noise Office	954-359-2291		wcastillo@broward.org	
Barbara	Blake Boy		Study Coordination Committee			BBLAKEBOY@broward.org	
Cooley (A)	Sid		FLL Airport Traffic Control Tower	954-921-9200		sidney.cooley-jr@faa.gov	
Coutain, Jr.	Ken	Airport Planner	Broward County Aviation Department - P/D	954-359-1599		kcoutain@broward.org	
DelNegri	Theodore (TJ)	Tower Manager	FLL Airport Traffic Control Tower	954-921-9201		theodore.delnegri@faa.gov	
Dokuchitz	Peter	Principal Planner / City of Plantation	City of Plantation	954-797-2265		pdokuchitz@plantation.org	
Eastman	John	John Eastman	Town of Southwest Ranches	954-465-8383		john426@bellsouth.net	
Flint	John R.	City Manager / CEO	City of Weston	954-385-2000		jflint@westonfl.org	
Gaenicke	Sierra		VHB			sgaenicke@vhb.com	
Gale	Mark	Director of Aviation	Broward County Aviation Department			mgale@broward.org	
Gertsen (A)	Alex	Director of Airports and Ground Infrastructure	NBAA	202-737-4477		Agertsen@nbaa.org	
Glover	Kalena		Delta Airlines			kalena.glover@delta.com	
Govin	Yasmin		Broward County Aviation Department - Airport Business	954-359-6145		ygovin@broward.org	
Grandolfo	Joe		FEDEX			jgrandolfo@fedex.com	
Hemmerle	Mark	Front Line Manager	South Florida Flight Standards Division (FSDO)	954-641-6015		Mark.W.Hemmerle@faa.gov	
Henry	Rebecca	Assistant Manager	Federal Aviation Administration Orlando Airports District Office			Rebecca.Henry@faa.gov	







Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #4

Date / Time: Wednesday, November 7, 2018 10:00 AM - 12:00 PM

Location: Secret Woods Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Hildebidle	Bob	Air Traffic Manager A	Miami Air Traffic Management/TRACON	305-869-5402	954-292-6515	Bob.Hildebidle@faa.gov	
Holste (A)	Phillip	Assistant Town Administration	Town of Davie	954-797-1034		Phillip_Holste@davie-fl.gov	
Hotte	Anne	CEO/Executive Director	Greater Hollywood Chamber of Commerce	954-923-4000		anne@hollywoodchamber.org	
Kaine (A)	Brad	Director of Public Services	City of Dania Beach	954-924-6808		bkaine@daniabeachfl.gov	
LaFerrier	Marc	Director, Community Development	City of Dania Beach	954-924-6805 x3643		mferrier@ci.dania-beach.fl.us	
Lemack	Richard	Town Administrator	Town of Davie	954-797-1034		Richard_Lemack@davie-fl.gov	
Lindblade, CAE	Dan	CAE - President and CEO	Greater Fort Lauderdale Chamber of Commerce	954-462-4911		dan@ftlchamber.com	
Luedtke	Gary		ANAC	954-966-8013		gluedtke@gmail.com	
Lundrigan	Julia	Delta Flight Ops	Delta Airlines	404-773-2882	678-427-1350	Julia.lundrigan@delta.com	
Matz	Jeff	Corporate Contact	UPS	502-329-3913		jmatz@ups.com	
Mertens-Black	Lorie	Chief Civic Affairs Officer	City of Hollywood	954-921-3599		lmertens-black@hollywoodfl.org	
Meyer	Gregory	Public Information Officer	Broward County Aviation Department - PIO	954-359-6116		GMeyer@broward.org	
Modrich (A)	Mark	AA Pilot/Resident	Town of Southwest Ranches	954-540-4854	954-252-5040	mmodrich@aol.com	
Morrissey	Mary	Senior Manager	FedEx	954-359-7432		mmmorrissey@fedex.com	
Nazzaro	Tom	Airport Manager, Aviation	Broward County Aviation Department - Airport Business	954-359-6821		tnazzaro@broward.org	
Nonnemacher (A)	Michael	Acting Assistant Executive Director	Broward County Aviation Department - Airport Operations			mnonnemacher@broward.org	
Ostendorf	Brad	Environmental Compliance Manager	Broward County Aviation Department	954-359-2395	954-829-0867	bostendorf@broward.org	
Pacitto (A)	Mike	Director of Planning	Broward County Aviation Department - Airport Manager's Office	954-560-0766		MPPACITTO@broward.org	
James	Rufus	Airport Manager	City of Fort Lauderdale			RJames@fortlauderdale.gov	
Pokryfke	John	Asst. Director of Operations, Aviation	Broward County Aviation Department - Airport Operations	954-359-6475		jpokryfke@broward.org	
Rames (A)	Geoff	Lauderdale Isles Water Management District	City of Fort Lauderdale	954-327-9095		grames.lucia@gmail.com	






Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #4

Date / Time: Wednesday, November 7, 2018 10:00 AM - 12:00 PM

Location: Secret Woods Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Rebholz	Edward		City of Fort Lauderdale	973-476-5609		ed@edrebholz.com	
Robbin	Sam	CEO	National Jets/Broward Workshop	954-868-2166		samrobbin@nationaljets.com	
Shiver	Michael	General Manager	Spirit Airlines	954-359-0933		michael.shiver@spirit.com	
Siegel (A)	Allan	Public Informations Officer	Broward County Aviation Department	954-359-6978		Asiegel@broward.org	
Siwinski	Ben		VBH			BSiwinski@VHB.com	
Solley	Edwin	Manager ATC Systems	Southwest Airlines	407-850-1563		Edwin.solley@wnco.com	
Swindell	Bob	President and CEO	Greater Fort Lauderdale Alliance Economic Development Agency	954-524-3113		bswindell@gflalliance.org	
Taylor	Charles	Intergovernmental Affairs Manager	Town of Davie	954-797-1034		Charles_Taylor@davie-fl.gov	
Van Valkenburgh (A)	Debra		ANAC			perhelion@hotmail.com	
Voos	Gregory	South Regional Representative	NBAA	202-737-4475		gvoos@nbaa.org	
Wood	Matt	Growth Management Director	City of Cooper City	954-434-4300		MWood@coopercityfl.org	
Wu	Kevin	Airport Manager	Broward County Aviation Department - OPS	954-359-1216	954-279-4740	kwu@broward.org	

Technical Committee

Meeting #4

Materials Presented at Meeting



AVIATION DEPARTMENT - Fort Lauderdale-Hollywood International Airport
2200 SW 45th Street, Suite 101 • Dania Beach, Florida 33312 • 954-359-6100

Meeting Agenda
Technical Committee Meeting No. 4
14 CFR Part 150 Study
Fort Lauderdale-Hollywood International Airport
November 7, 2018 – 10AM to 12PM EDT

1. Introductions
2. Review of the Role of the TC Meeting Facilitator
3. Review of Prior TC Meetings
4. 2018 Noise Exposure Assumptions and Contours
5. 2023 Noise Exposure Assumptions and Contours
6. Noncompatible Land Use Analysis
7. Noise Compatibility Program Overview
8. Future TC Meetings
9. Questions from TC Members
10. Adjourn



14 CFR PART 150 NOISE AND LAND USE COMPATIBILITY STUDY


Technical Committee Meeting #4
November 7, 2018



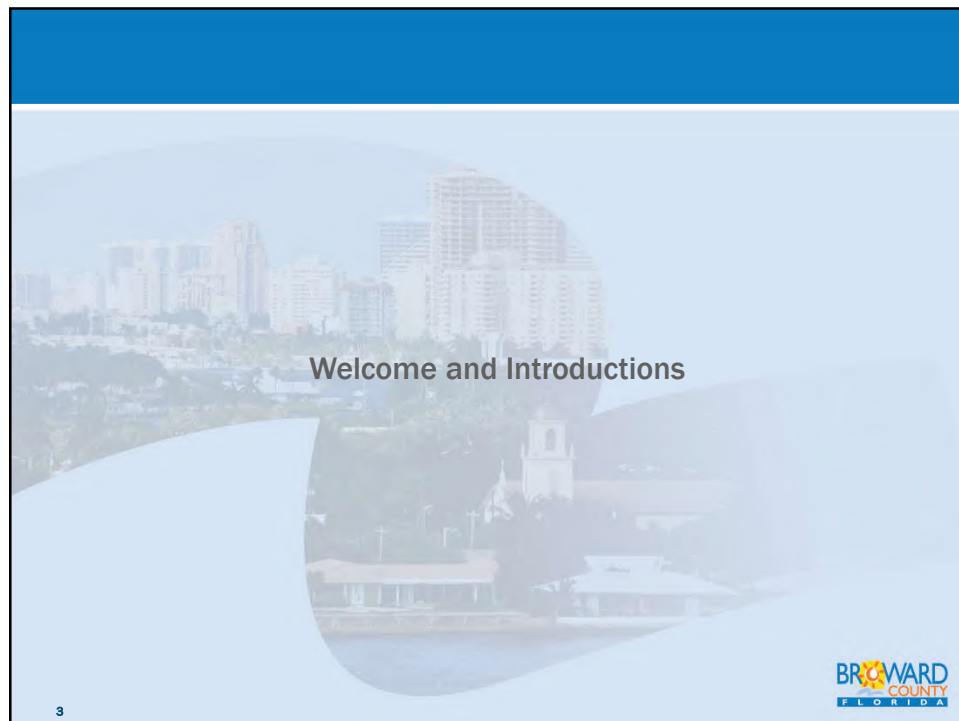
1

Agenda

- Introductions
- Review of the Role of the TC Meeting Facilitator
- Review of Prior TC Meetings
- 2018 Noise Exposure Assumptions and Contours
- 2023 Noise Exposure Assumptions and Contours
- Noncompatible Land Use Analysis
- Noise Compatibility Program Overview
- Future TC Meetings
- Questions from TC Members



2



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

4

BROWARD COUNTY FLORIDA

This slide has an orange header bar with the title 'Purpose and Objectives of the TC'. The background is a light gray with a large, semi-transparent image of an airplane. The content is a bulleted list of five items. The number '4' is in the bottom left corner, and the Broward County Florida logo is in the bottom right corner.

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/TRACON
- FLL Airport Traffic Control Tower
- South Florida Flight Standards Division (FSDO)

5



Role of the Meeting Facilitator

6



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



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Prior Technical Committee Meetings

TC #1 – May 26, 2017

- Purpose and Objectives of the Technical Committee
- Airport Overview
- Part 150 Study Overview
- Introduction to Aircraft Noise, Modeling, and Compatibility
- Initial Data Collection
- Project Schedule

TC #2 – August 23, 2017

- Data collection process and status
- AEDT Model inputs
- Aircraft Activity Forecast
- Runway Use
- Flight Track Methodology



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Prior Technical Committee Meetings

TC #3 – March 7, 2018

- Public Workshop Summary
- Land Use Data Collection
- Aircraft Activity
- Runway Use
- Flight Track Analysis
- Modeling Assumptions

9



2018 ASSUMPTIONS AND RESULTS

10



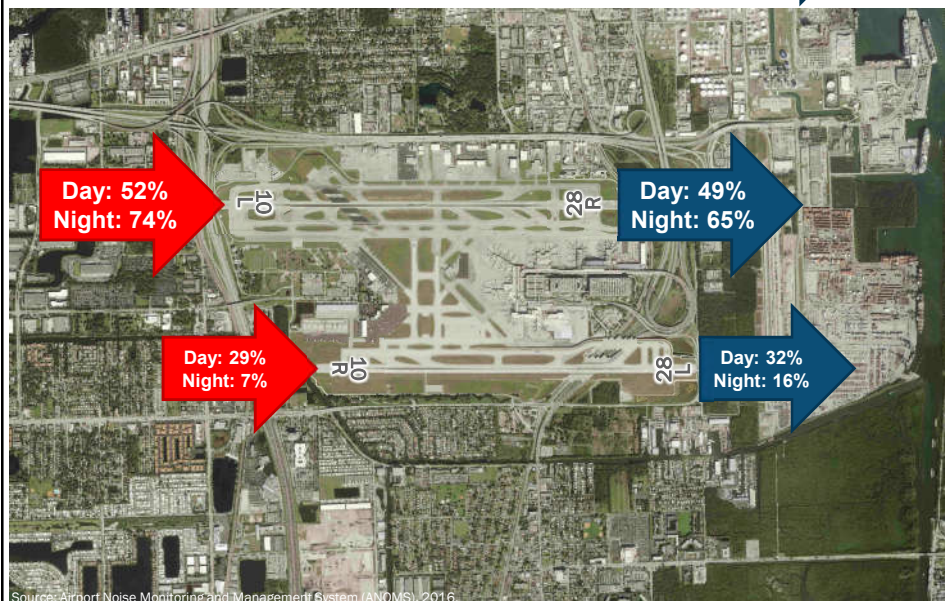
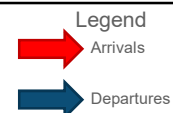
2018 Baseline Contour Assumptions

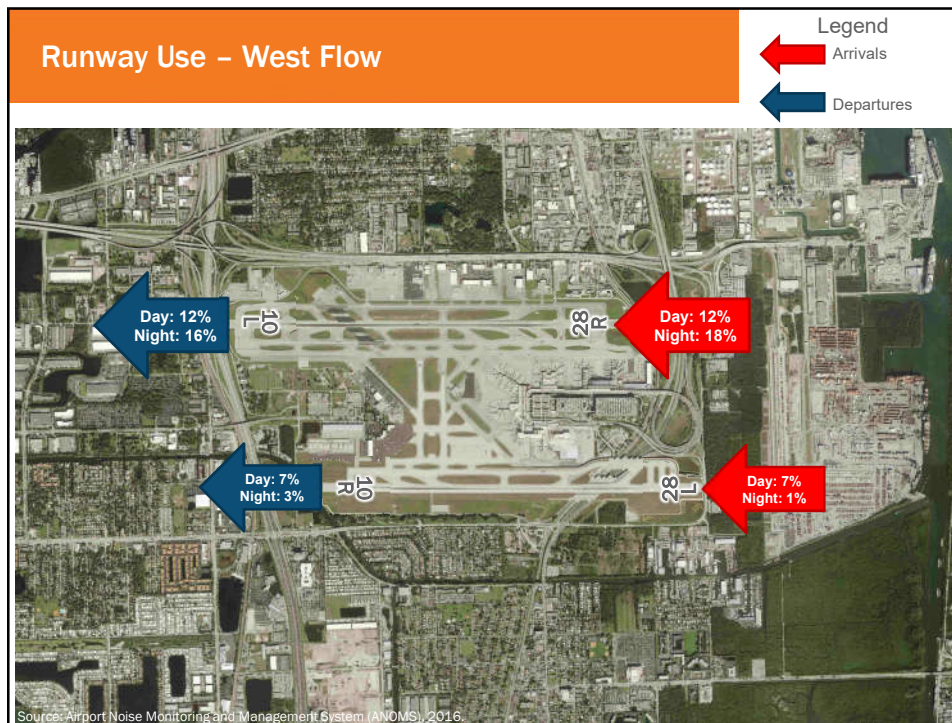
- 2018 Total Aircraft Operations: 335,000 (Master Plan Update)
- 2016 Airport Noise and Operations Monitoring System (ANOMS) data for fleet mix, runway utilization, and day / night
- 2016 ANOMS Radar data used to develop flight tracks and assign flight track utilization by aircraft category
- 10-Year Average Meteorological Data (AEDT, NOAA NCDC)
- National Elevation Dataset (NED) terrain data (USGS)

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Runway Use – East Flow



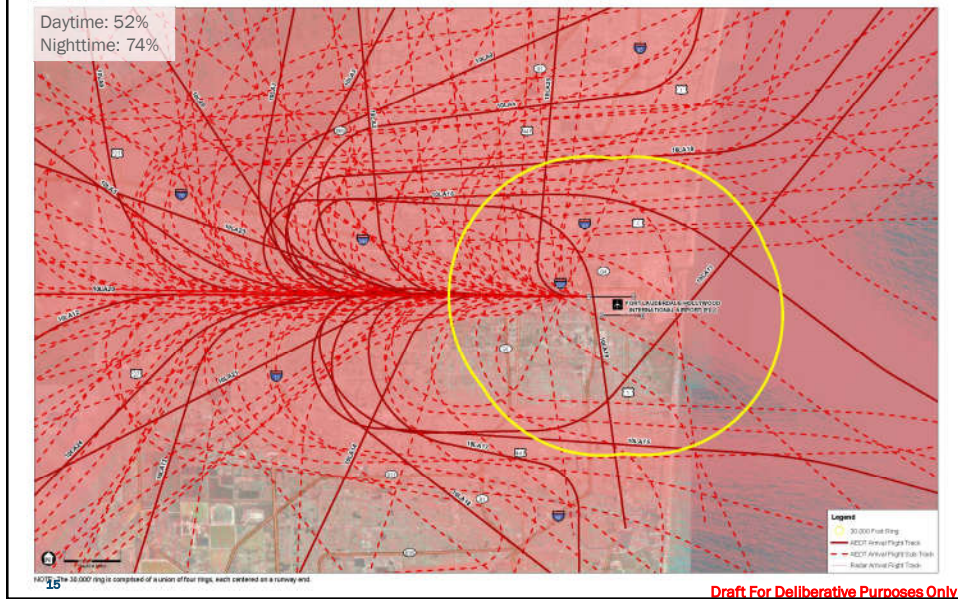


Baseline Condition Runway Use

Runway Usage				
Operation Type	Runway	Day	Night	Grand Total
Arrivals	North Runway			
	10L	52%	74%	55%
	28R	12%	18%	13%
	Total	64%	92%	68%
	South Runway			
	10R	29%	7%	26%
Departures	28L	7%	1%	6%
	Total	36%	8%	32%
	North Runway			
	10L	49%	65%	51%
	28R	12%	16%	13%
	Total	61%	81%	64%
	South Runway			
	10R	32%	16%	30%
	28L	7%	3%	6%
	Total	39%	19%	36%

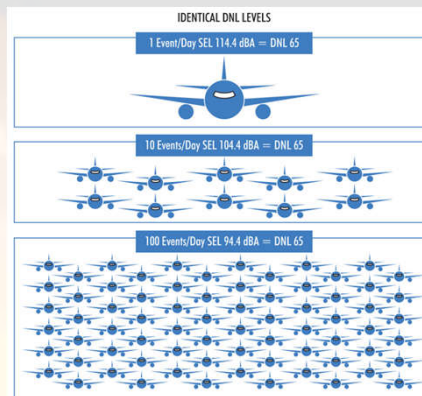
Source: Airport Noise Monitoring and Management System (ANOMS), 2016.

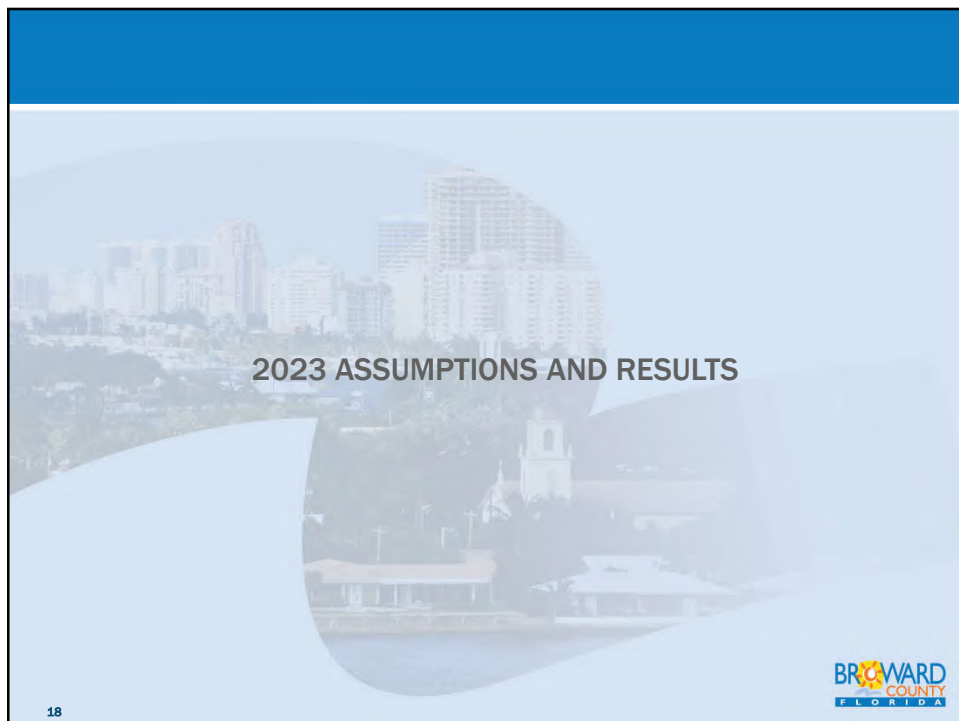
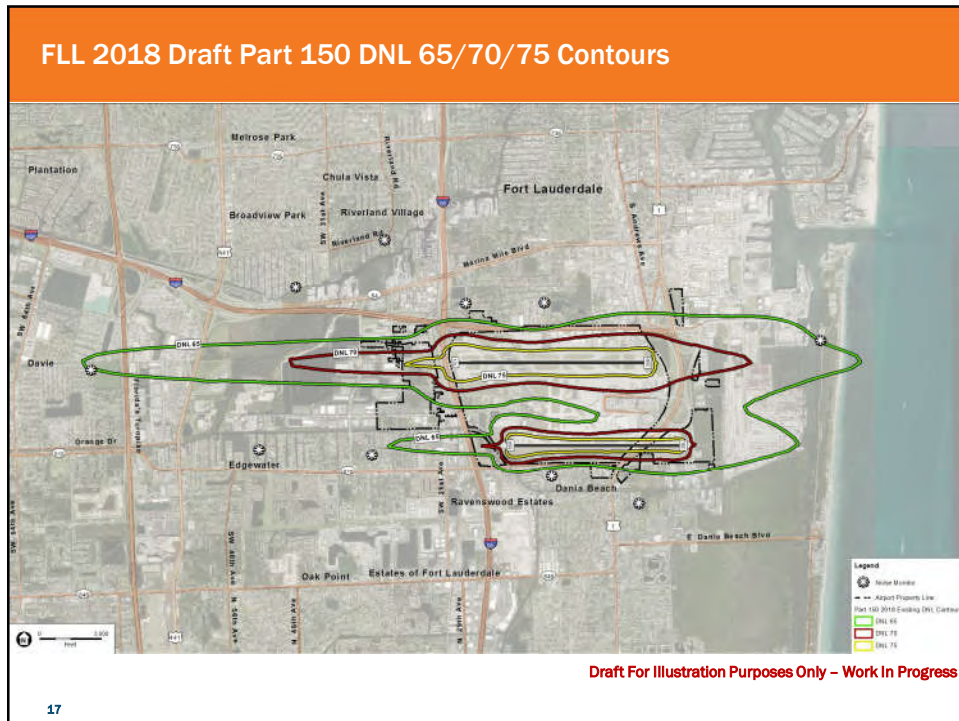
10L Arrival Flight Tracks: 55% of All Arrivals (SAMPLE)



Aircraft Noise - 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





2023 Future Condition Contour Assumptions

- 2023 Total Aircraft Operations: 364,765 (Master Plan Update)
- 2016 ANOMS Radar data used to develop flight tracks and assign flight track utilization by aircraft category and day/night utilization
- Master Plan Update used for fleet mix and operations
- Runway utilization used information from the Master Plan Update, Air Traffic Control Tower meetings, future airline/gate assignments, and internal analysis
- 10-Year Average Meteorological Data (AEDT, NOAA NCDC)
- National Elevation Dataset (NED) terrain data (USGS)



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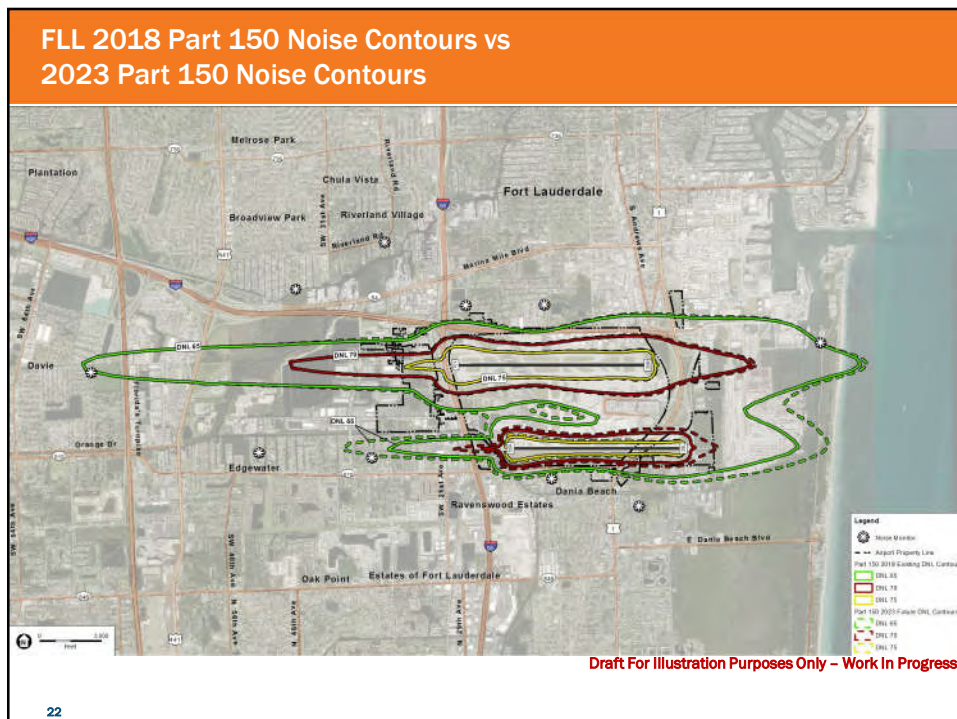
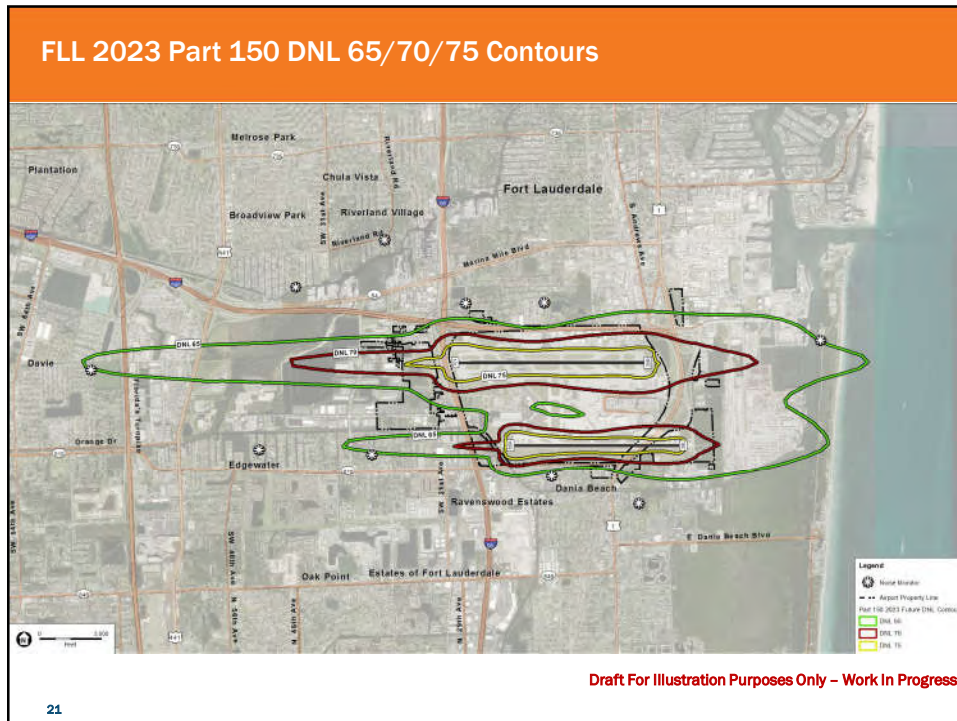
2023 Part 150 Runway Use

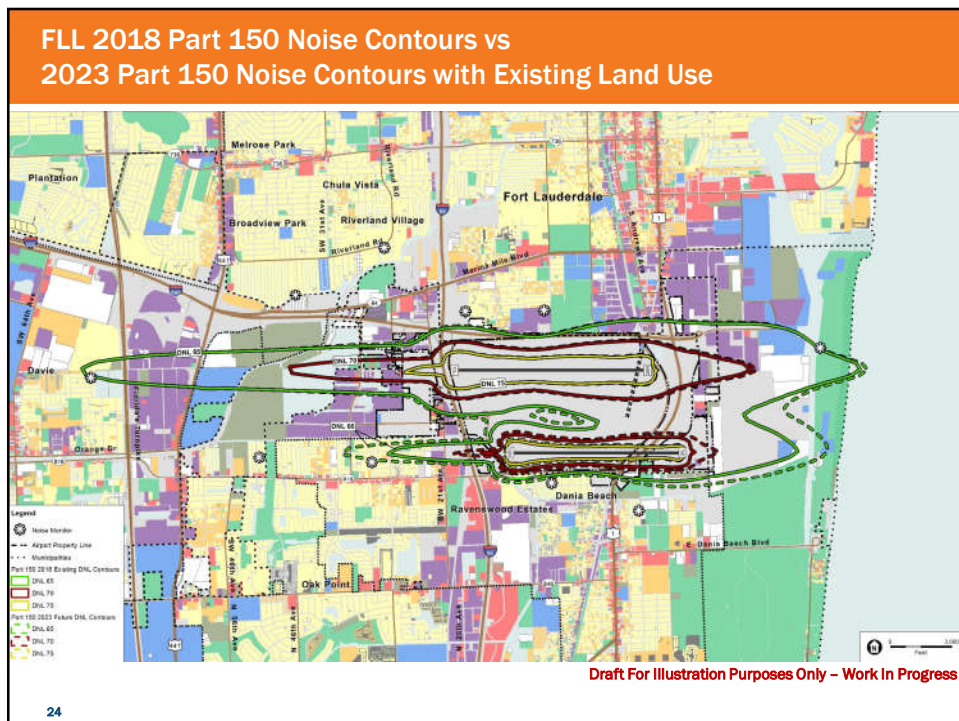
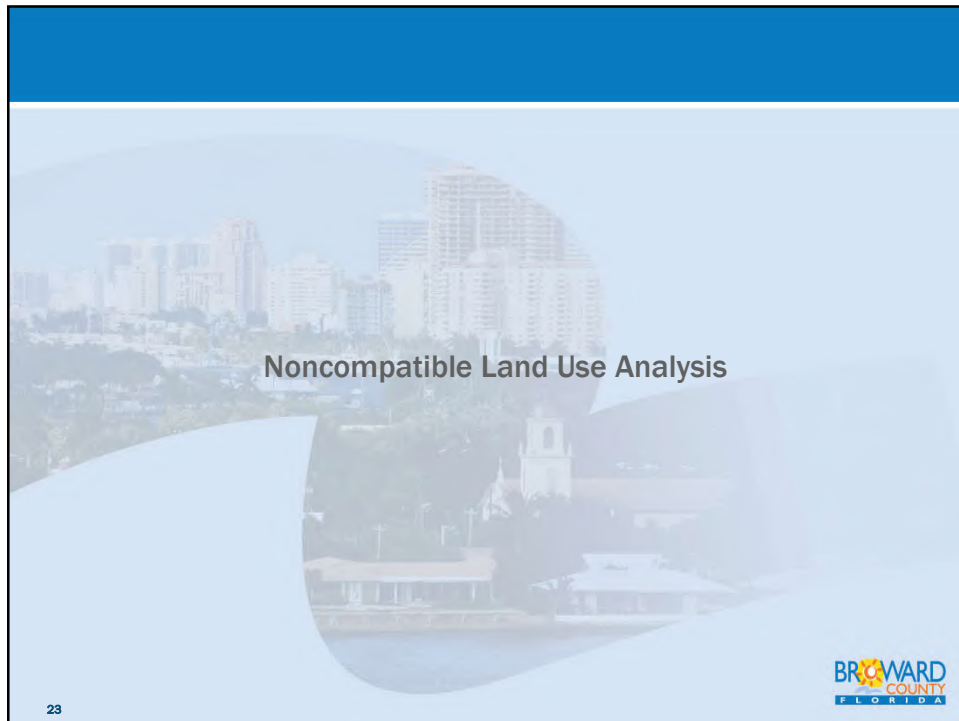
Runway Usage

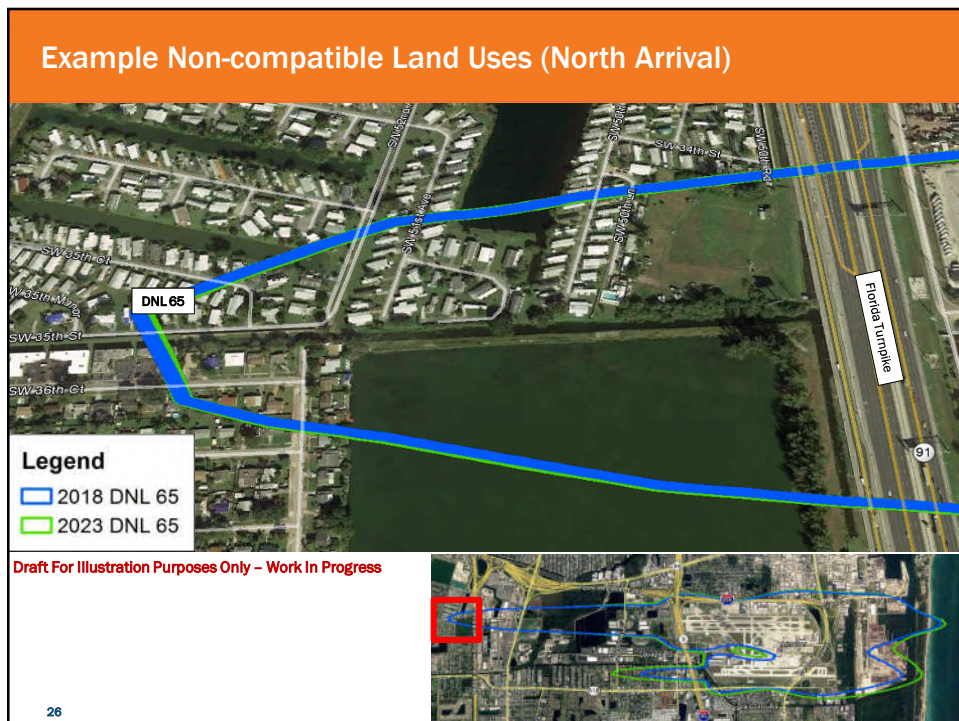
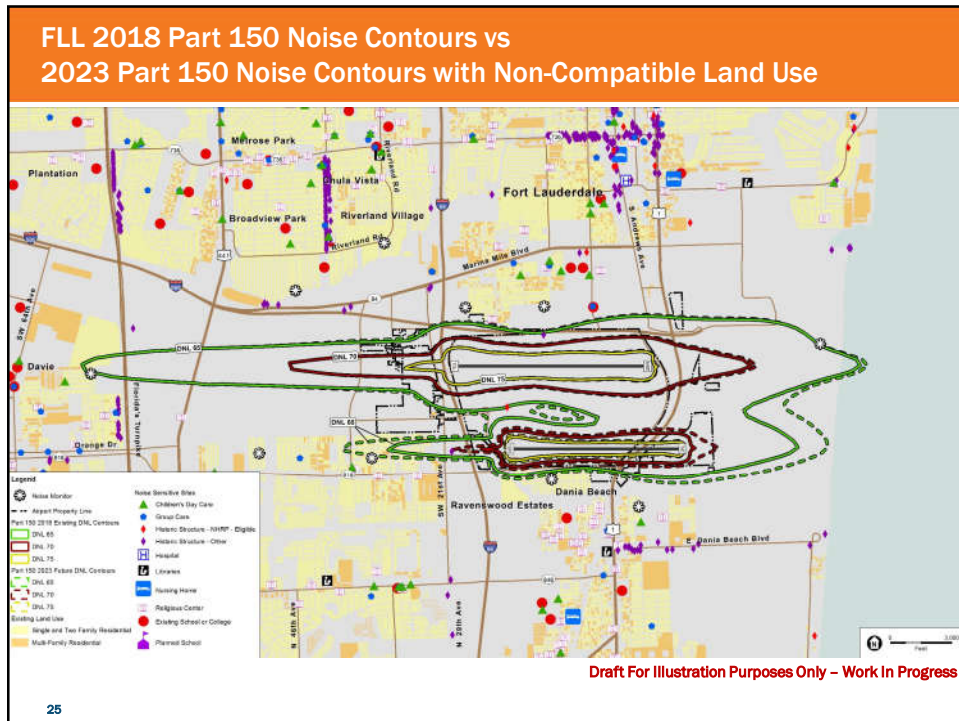
Operation Type	Runway	Day	Night	Grand Total
Arrivals	North Runway			
	10L	49%	66%	52%
	28R	12%	12%	13%
	Total	62%	84%	65%
	South Runway			
	10R	31%	15%	29%
	28L	7%	1%	6%
	Total	38%	16%	35%
Departures	North Runway			
	10L	44%	59%	46%
	28R	14%	18%	14%
	Total	58%	77%	60%
	South Runway			
	10R	37%	21%	35%
	28L	5%	3%	5%
	Total	42%	23%	40%

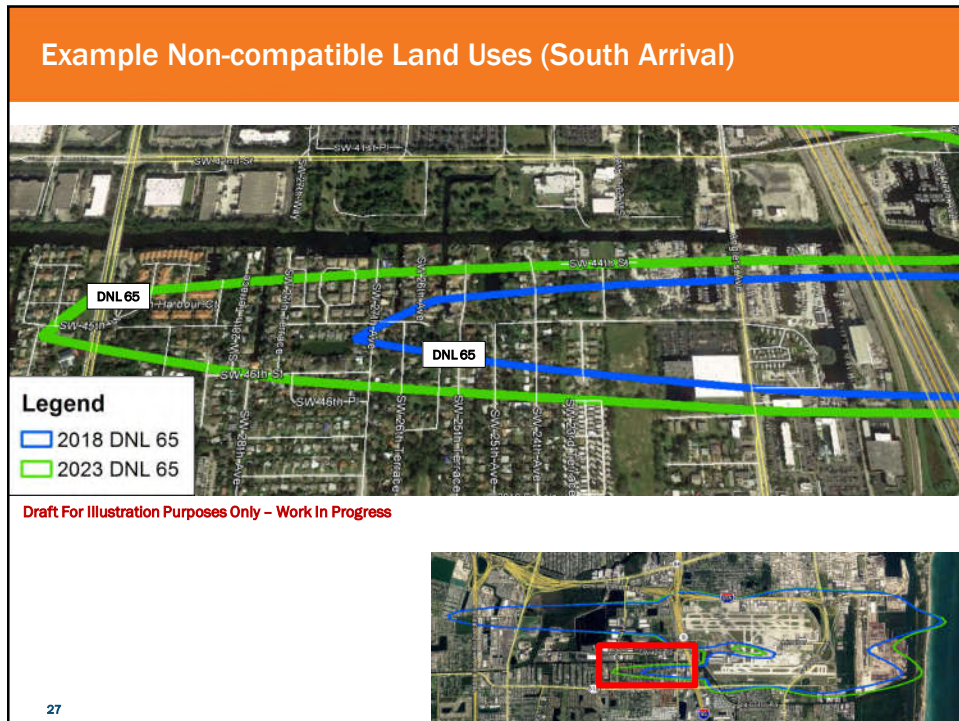
Draft Analysis For Internal Review Only – Work In Progress

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2018 and 2023 Summary of Noise Sensitive Uses

Noise Sensitive Sites Exposed to DNL 65 and Higher				
Noise Level ¹	Total Area (Acres)	Housing Units ²	Population ²	Historic Resources
2018				
DNL 65-70	2,276.00	203	430	3
DNL 70-75	710.1	0	0	0
DNL 75+	459.6	0	0	0
Total	3,445.70	203	430	3
2023				
DNL 65-70	2,579.00	492	1,073	3
DNL 70-75	805.7	0	0	0
DNL 75+	503.3	0	0	0
Total	3,888.00	492	1,073	3

No Other Noise Sensitive Sites within DNL 65:

- Schools
- Hospitals
- Religious Facilities
- Day Cares
- Nursing Homes/ Group Care
- Libraries

SOURCES:

¹ Noise contours from Environmental Science Associates (ESA)

² Housing units and population estimates derived from 2010 Census block-level data.

³ Public school data from Broward County Public Schools; private schools from Florida Geographic Data Library (FGDL).

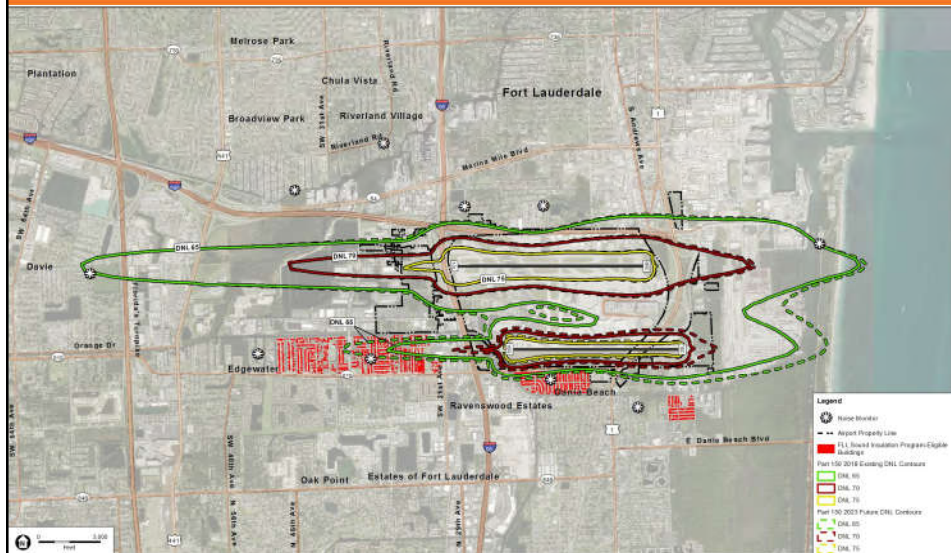
⁴ All other noise sensitive site data from Florida Geographic Data Library (FGDL).

Draft Analysis For Internal Review Only – Work In Progress

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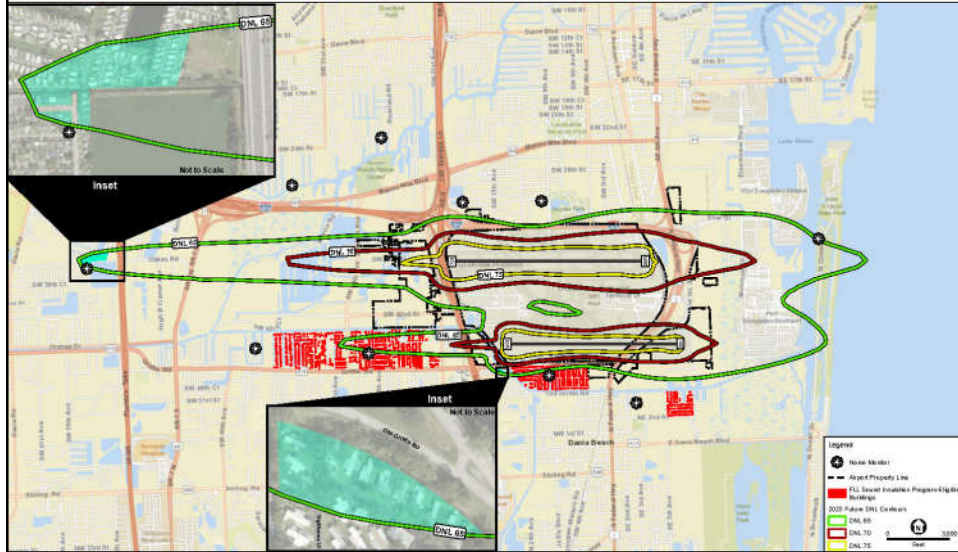
FLL 2018 & 2023 Part 150 Noise Contours with Sound Insulation Program



Draft For Illustration Purposes Only – Work In Progress

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FLL 2018 & 2023 Part 150 Noise Contours with Sound Insulation Program



Draft For Illustration Purposes Only – Work In Progress

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2018 and 2023 Non-Mitigated Residential Land Uses

HOUSING UNITS NOT IN CURRENT FLL SOUND INSULATION PROGRAM ¹		
Noise Level ²	Housing Units Outside SIP ³	Housing Units within SIP ¹
2018		
DNL 65-70	89	114
DNL 70+	0	0
TOTAL:	89	114
2023		
DNL 65-70	105	387
DNL 70+	0	0
TOTAL:	105	387

SOURCES:

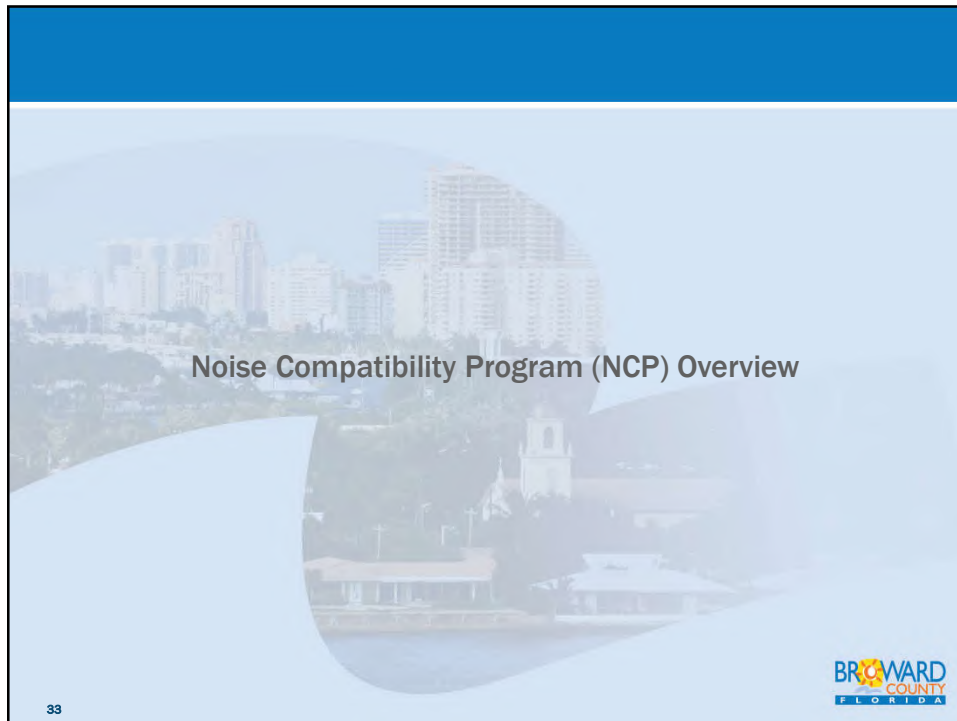
¹ FLL Sound Insulation Program housing unit data from Broward County Aviation Department

² Noise contours from Environmental Science Associates (ESA)

³ Housing units derived from 2010 Census block-level data.

Draft Analysis For Internal Review Only – Work In Progress

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Required Elements of an NCP

- The NCP explores operational, land use, and administrative measures to minimize aircraft noise exposure
- The FAA reviews entire NCP for completeness
 - Technical, policy, effectiveness review
- The NCP Report must include a provision for revising the NCP if made necessary by a revision of the Noise Exposure Map
- FAA has 180 days to review the NCP
- During its review, the FAA will respond as follows for each measure:
 - Approved
 - Disapproved
 - Approved or disapproved in part
 - No action (only relevant for NCP measures involving flight procedures)

Major NCP Strategy Options

Noise Abatement

- Noise abatement flight tracks
- Preferential runway use
- Arrival/departure procedures
- Airport layout modifications
- Run-up enclosures
- Use restrictions*
- Other actions proposed by stakeholders

Land Use

- Remedial Mitigation
 - Land acquisition
 - Sound insulation
 - Avigation easements
- Preventative Mitigation
 - Land use controls
 - Zoning
 - Building codes
 - Comprehensive plans
 - Real estate disclosures
- Other actions proposed by stakeholders

Programmatic

- Implementation tools
- Promotion, education, signage, etc.
- Monitoring
- Reporting
- NEM update
- NCP revision
- Other actions proposed by stakeholders

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

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Distinction Between Noise Abatement and Noise Mitigation

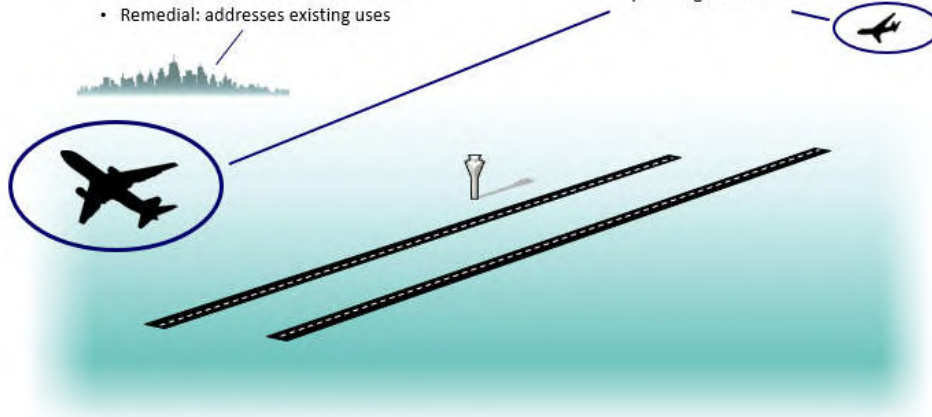
Noise Mitigation

Addresses non-compatible land uses

- Preventative: addresses future uses
- Remedial: addresses existing uses

Noise Abatement

Reduces noise exposure by moving the source



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Review of NCP Measures

All NCP Measures Must Consider:

- Reduction of existing incompatible land use and prevention / reduction of future incompatible land use
 - The FAA will not approve NCP measures that do not reduce exposure to noise of DNL 65 and higher
- Safety and efficiency
- Consistency with the powers and duties of the FAA
- Avoidance of unjust discrimination against certain aircraft types
- Interstate commerce
 - Measures cannot impose an undue burden on interstate commerce (requires balancing of interests)
- The ability to meet both local needs and national air transportation system needs

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Importance of TC Involvement During the 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 the DNL 65
 - Other Federal officials having local responsibility of land uses in an NEM
 - Aircraft operators using the airport
 - General Public

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Future Meetings

Technical Committee

- TC Meeting #5 (Tentative) January 2019

Public Workshop

- NEM Report Public Workshop January 2019

TC and Public Workshop materials will be available on the project website following each meeting
www.flpart150.com

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BROWARD COUNTY FLORIDA

Next Steps

- Study Coordination Committee Meeting (11-7-18)
- Publish Draft NEM Report
- NEM Public Workshop (January 2019)
- Incorporate NEM Comments and Submit to FAA for Acceptance
- Solicit Alternatives to be Evaluated in Noise Compatibility Program (NCP)

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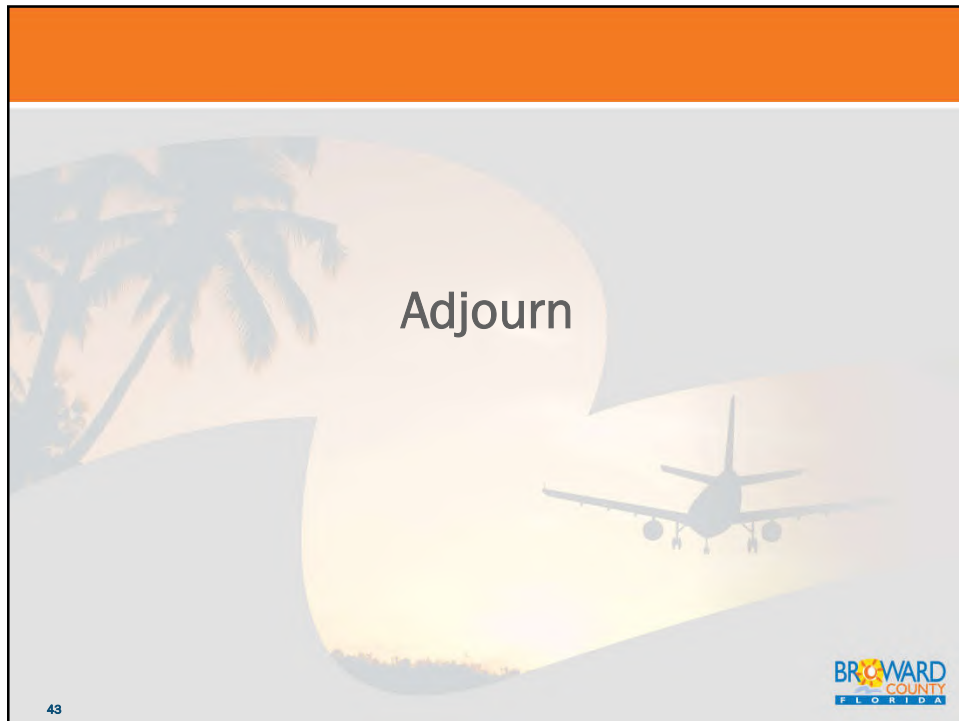


Questions from TC Members



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Technical Committee

Meeting #4

Meeting Summary

14 CFR Part 150 Noise and Land Use Compatibility Study
Technical Committee Meeting #4
November 7, 2018
Meeting Minutes

Location: Secret Woods Nature Center, Julia Hall
2701 W State Rd 84
Fort Lauderdale, FL 33312

Committee Members in Attendance

BCPS Alternate	Richard Lemack – Town of Davie
Peter Dokuchitz – City of Plantation	Bob Swindell – GFL Alliance
John Eastman – Town of Southwest Ranches	Charles Taylor – Town of Davie
Gary Luedtke – ANAC	Blake Boy Barbara – Study Coordination Committee
Lorie Mertens-Black – City of Hollywood	Joe Grandolfo – FedEx
Geoff Rames – City of Fort Lauderdale	Barbara Blake Boy – Broward County Planning Council
Edwin Solley – Southwest Airlines	

Others Present

Eric Ram – ANAC	Peter Green – FAA
Winston Cannicle – BCAD	Jill Capelli – Kimley-Horn
Will Castillo – BCAD	Sierra LePore – VHB
Ken Coutain, Jr. – BCAD	Barbara Magill – LHIA
Karen Friedman – BCAD	Richard Cahoon – Resident
Ryan Goldman – BCAD	Robert Franks – Resident
Mike Pacitto – BCAD	Joanna Norris – Resident
Arlene Satchell – BCAD	Richard Pfenniger – Resident
Ryan Goldman - BCAD	Paula Riveros – Resident
Marc Gambrill – BCAD	

Agenda and Key Topics:

- Review of the Role of the TC Meeting Facilitator
- Review of Prior TC Meetings
- 2018 Noise Exposure Assumptions and Contours
- 2023 Noise Exposure Assumptions and Contours
- Noncompatibility Land Use Analysis
- Noise Compatibility Program Overview
- Future TC Meetings

Meeting Summary:

- The Technical Committee convened for its fourth meeting at 10:00 AM on November 7, 2018 at the Secret Woods Nature Center in the Julia Hall.
- The meeting began with re-introductions of participants.
- Ground rules for the TC members were established by the facilitator. TC members were encouraged to express their opinions and expected to respect the range of opinions expressed by their fellow TC members. TC members were also expected to advise their organization and/or constituents of the TC's discussion.
- Attending members of the public were advised of ways in which they could submit comments including through the project website (www.flpart150.com) and at future public meetings (dates TBD).
- A presentation of key topics was presented by Michael Arnold, Part 150 Project Director representing the ESA consulting team. The presentation included the following information:
 - A review of the material presented in the prior TC meetings
 - 2018 Noise Exposure Assumptions and Contours
 - 2023 Noise Exposure Assumptions and Contours
 - Noncompatible Land Use Analysis
 - Noise Compatibility Program Overview

Questions & comments from TC members:

Q: *Richard Lemack (Town of Davie)* – What kind of sound insulation is the Team considering for mobile homes?

A: The next phase of the study will get into evaluating noise abatement and mitigation strategies.

Q: *Geoff Rames (City of Fort Lauderdale)* – Why are there more attendees at the public workshops in Lauderdale Isles, but the 65DNL contour is not shown over this area?

A: The DNL contour is an average day noise exposure relative to an entire year. This measure is used to determine overall compatibility of a use, not annoyance related to an individual or series of overflights that may occur on a relatively infrequent basis.

Q: *Geoff Rames (City of Fort Lauderdale)* – Can you confirm if the modeling does not model short term but rather models long term noise? Is the metric changing from 65DNL?

A: The model determines noise exposure based on an annual average day. The FAA is evaluating and has gone through litigation related to use of the DNL 65 dB contour and it has withstood a number of legal challenges over the past 30 plus years. When the metric was adopted there were an estimated seven million people within the contour nationally and now there are just a few hundred thousand. The FAA is evaluating whether the DNL 65 dB contour should remain the level or metric used for

determining significance for noise sensitive uses, but it will likely be a number of years before we see the results of that effort.

Q: *Charles Taylor (Town of Davie)* – How high are the aircraft in the 65DNL contour by Florida Turnpike?

A: The aircraft are at about 900-feet to 1,000-feet at this location on arrivals.

Q: *John Eastman (Southwest Ranches)* – Since the contours are cumulative, could the Team specify and look at only a specific aircraft (i.e. Airbus)? The sound of the engine blades goes right through people's homes.

A: There are actually modification that can be done to certain aircraft types to reduce the noise generated. An example is the vortex generators that can be installed on Airbus A320 to reduce the noise created by wind passing over the fuel ports on the wings. A number of airlines have retrofitted their aircraft and new aircraft typically have these when they come off the assembly line. This is an example of the measures that could be considered in the next phase of the study.

Q: *Geoff Rames (City of Fort Lauderdale)* – Is the information from remote monitors used in developing the contours?

A: The noise monitors are not used to develop the contours, but they are looked at when evaluating the results of the contour. There are only 11 locations around the airport, which does not provide a complete calculation of the noise surrounding the airport.

Q: *Geoff Rames (City of Fort Lauderdale)* – Are the noise monitors used to verify calculations?

A: We look at the levels that the monitors take in on a relative basis, but the noise monitors record a single event, while the contours account for an average annual day of noise exposure. The noise model uses a combination of real world assumptions applied to projected operational levels to predict noise. This does not allow for an apples-to-apples comparison of noise during a past period.

Q: *Lorie Mertens-Black (City of Hollywood)* – When will issues be addressed and measures created? It was also noted that the contours are great if the aircraft stay within contours. People outside of the contours have experienced issues, even if it is only 1 or 2 flights in the morning or night

A: The next slide discusses the next phase (mitigation and abatement). The study also looks at why certain overflights have occurred.

Q: *Lorie Mertens-Black (City of Hollywood)* – Can you confirm that the FAA will not approve formal restrictions, but could approve a voluntary program?

A: Voluntary measures could be approved as a programmatic approach, but not a formal noise abatement approach. It is a matter of description and type of submission to FAA.

Q: *Geoff Rames (City of Fort Lauderdale)* – Are noise mitigation measures for land use only for those within the 65 DNL?

A: Yes, mitigation measures (except for administrative measures) are for those within the 65 DNL, however local governments can go beyond the 65 DNL in establishing land use measure such as notification areas.

Q: *Gary Luedtke (ANAC)* – When the airport closes the south runway at night, was that a local order (tower order)? Is that the type of local regulation that may occur?

A: Any type of runway closures of that nature must be approved by FAA.

Q: *Geoff Rames (City of Fort Lauderdale)* – Will the local government ever come to fruition? If a city went to the FAA, could they make a recommendation on a restriction for something outside of 65DNL? Can you provide an example of a place that has done this successfully?

A: A number of noise abatement programs have gone through some type of collaborative process with air traffic control (ATC) and FAA where everyone is on board with measures that could not necessarily be otherwise approved under a Part 150 program. There are a number of airports with voluntary noise abatement measures and fly friendly programs that have never conducted a Part 150.

Q: *John Eastman (Southwest Ranches)* – Can you include Miami TRACON in the next Technical Committee meeting?

A: The Team will send an invitation to Miami TRACON.

Q: *Lorie Mertens-Black (City of Hollywood)* – Is the Part 150 study is conducted in coordination with Metroplex and if not, how can it be?

A: One of the challenges with Metroplex is that it has many starts and stops, so it is not clear what is happening with the Metroplex. The Team and BCAD had determined to keep the Part 150 project moving rather than wait for Metroplex, although the Team tries to consider as much as possible. Additionally, there may be outcomes from Metroplex that can be used in the future after the Part 150 study.

Q: *Geoff Rames (City of Fort Lauderdale)* – Can we get an update on the Master Plan? What is the coordination between the Master Plan and the Part 150 study?

A: Key coordination areas are land use and fleet mix projections/flight tracks related to airfield changes. The Team needed to ensure that the Master Plan schedule was far enough r along, so the Part 150 study uses the correct values (operations, etc.).

Q: *Geoff Rames (City of Fort Lauderdale)* – Will the Team provide an update on the Master Plan at the Technical Committee meeting in January 2019?

A: Yes, the Team will provide an update on the Master Plan process.

Actionable Next Steps:

Schedule Technical Committee Meeting #5

Meeting Adjourned at 11:30 AM

Appendix G-5
Technical Committee
Meeting #5
January 16, 2019

Technical Committee

Meeting #5

Meeting Notice and

Attendance Roster



AVIATION DEPARTMENT - Fort Lauderdale-Hollywood International Airport

2200 SW 45th Street, Suite 101 • Dania Beach, Florida 33312 • 954-359-6100

**Subject: Fort Lauderdale-Hollywood International Airport
14 CFR Part 150 Study - Technical Committee Meeting #5**

Please save the date for the next Technical Committee meeting to support the Fort Lauderdale-Hollywood International Airport Part 150 Study.

Date: Wednesday January 16, 2019

Time: 10:00AM - 12:00PM

Location: Secret Woods Nature Center | Julia Hall; 2701 W. SR 84; Dania Beach, FL 33312

Please arrive 10 minutes early to allow time to check in prior to the start of the meeting.

Broward County Board of County Commissioners

Mark D. Bogen • Beam Furr • Steve Geller • Dale V.C. Holness • Chip LaMarca • Nan H. Rich • Tim Ryan • Barbara Sharief • Michael Udine
www.broward.org/www.fll.net



Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #5

Date / Time: Wednesday, January 16, 2019 10:00 AM - 12:00 PM

Location: Secret Woods Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Akagbosu	Chris	Director, Facility of Planning & Real Estate Dept.	Broward County School Board	754-321-2162		chris.akagbosu@browardschools.com	
Annunziata	Jason	Station Manager	JetBlue	954 233-4722	646-942-2775	Jason.Annunziata@jetblue.com	
Anton	Mitch	Leadership Hollywood XLI	Hollywood Chamber of Commerce	954-646-3639		scpanther3@aol.com	
Boutros	Kareen	Executive Director	Broward Workshop	954-462-9112		kareen@browardworkshop.com	
Cannicle	Winston	Noise & Environmental Officer	Broward County Aviation Department - Airport Noise Office	954-359-6181		WCANNICLE@broward.org	
Castillo (A)	Will	Airport Planning Manager	Broward County Aviation Department - Airport Noise Office	954-359-2291		wcastillo@broward.org	
Blake Boy	Barbara		Study Coordination Committee			BBLAKEBOY@broward.org	
Cooley (A)	Sid		FLL Airport Traffic Control Tower	954-921-9200		sidney.cooley-jr@faa.gov	
Coutain, Jr.	Ken	Airport Planner	Broward County Aviation Department - P/D	954-359-1599		kcoutain@broward.org	
DelNegri	Theodore (TJ)	Tower Manager	FLL Airport Traffic Control Tower	954-921-9201		theodore.delnegri@faa.gov	
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Eastman	John	Rep. SWR	Town of Southwest Ranches	954-465-8383	954-465-8383	john426@bellsouth.net	
Flint	John R.	City Manager / CEO	City of Weston	954-385-2000		jflint@westonfl.org	
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Gale	Mark	Director of Aviation	Broward County Aviation Department			mgale@broward.org	
Gambrill	Marc	Aviation Chief Development Officer (CDO)	Broward County Aviation Department			mgambrill@broward.org	
Gertsen (A)	Alex	Director of Airports and Ground Infrastructure	NBAA	202-737-4477		Agertsen@nbaa.org	
Glover	Kalena	Performance Engineer	Delta Airlines			kalena.glover@delta.com	
Govin	Yasmin		Broward County Aviation Department - Airport Business	954-359-6145		ygovin@broward.org	
Grandolfo	Joe		FEDEX			jgrandolfo@fedex.com	
Green	Peter		FAA			peter.m.green@faa.gov	



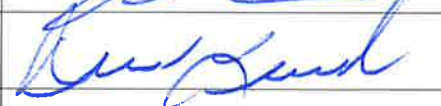





Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #5

Date / Time: Wednesday, January 16, 2019 10:00 AM - 12:00 PM

Location: Secret Woods Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Hemmerle	Mark	Front Line Manager	South Florida Flight Standards Division (FSDO)	954-641-6015		Mark.W.Hemmerle@faa.gov	
Henry	Rebecca	Assistant Manager	Federal Aviation Administration Orlando Airports District Office			Rebecca.Henry@faa.gov	
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Holste (A)	Phillip	Assistant Town Administration	Town of Davie	954-797-1034		Phillip_Holste@davie-fl.gov	
Hotte	Anne	CEO/Executive Director	Greater Hollywood Chamber of Commerce	954-923-4000		anne@hollywoodchamber.org	
James	Rufus	Airport Manager	City of Fort Lauderdale			RJames@fortlauderdale.gov	
Kaine (A)	Brad	Director of Public Services	City of Dania Beach	954-924-6808		bkaine@daniabeachfl.gov	
LaFerrier	Marc	Director, Community Development	City of Dania Beach	954-924-6805 x3643		miaferrier@ci.dania-beach.fl.us	
Lemack	Richard	Town Administrator	Town of Davie	954-797-1034		Richard_Lemack@davie-fl.gov	
Lindblade, CAE	Dan	CAE - President and CEO	Greater Fort Lauderdale Chamber of Commerce	954-462-4911		dan@ftlchamber.com	
Luedtke	Gary		ANAC	954-966-8013		gluedtke@gmail.com	
Lundrigan	Julia	Delta Flight Ops	Delta Airlines	404-773-2882	678-427-1350	Julia.lundrigan@delta.com	
Matz	Jeff	Corporate Contact	UPS	502-329-3913		jmatz@ups.com	
Mertens-Black	Lorie	Chief Civic Affairs Officer	City of Hollywood	954-921-3599		lmertens-black@hollywoodfl.org	
Meyer	Gregory	Public Information Officer	Broward County Aviation Department - PIO	954-359-6116		GMeyer@broward.org	
Modrich (A)	Mark	AA Pilot/Resident	Town of Southwest Ranches	954-540-4854	954-252-5040	mmodrich@aol.com	
Morrissey	Mary	Senior Manager	FedEx	954-359-7432		mmmorrissey@fedex.com	
Nazzaro	Tom	Airport Manager, Aviation	Broward County Aviation Department - Airport Business	954-359-6821		tnazzaro@broward.org	
Nonnemacher (A)	Michael	Acting Assistant Executive Director	Broward County Aviation Department - Airport Operations			mnonnemacher@broward.org	
Pacitto (A)	Mike	Director of Planning	Broward County Aviation Department - Airport Manager's Office	954-560-0766		MPPACITTO@broward.org	
James	Rufus	Airport Manager	City of Fort Lauderdale			RJames@fortlauderdale.gov	



Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #5

Date / Time: Wednesday, January 16, 2019 10:00 AM - 12:00 PM





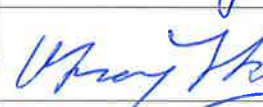


Location: Secret Woods Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Pokryfke	John	Asst. Director of Operations, Aviation	Broward County Aviation Department - Airport Operations	954-359-6475		jpokryfke@broward.org	
Rames (A)	Geoff	^{CIVIC ASSOC} Lauderdale Isles Water Management District	City of Fort Lauderdale	954-327-9095		grames.licia@gmail.com	
Rebholz	Edward		City of Fort Lauderdale	973-476-5609		ed@edrebholz.com	
Robbin	Sam	CEO	National Jets/Broward Workshop	954-868-2166		samrobbin@nationaljets.com	
Sack	Richard	Air Traffic Manager	FLL Airport Traffic Control Tower			Richard.T.Sack@faa.gov	
Shiver	Michael	General Manager	Spirit Airlines	954-359-0933		michael.shiver@spirit.com	
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Solley	Edwin	Manager ATC Systems	Southwest Airlines	407-850-1563		Edwin.solley@wnco.com	
Sorenson	Ben	Vice Mayor	City of Fort Lauderdale		954 802 3311	BSorensen@fortlauderdale.gov	
Swindell	Bob	President and CEO	Greater Fort Lauderdale Alliance Economic Development Agency	954-524-3113 954/627-0131		bswindell@gflalliance.org	
Taylor	Charles	Intergovernmental Affairs Manager	Town of Davie	954-797-1034		Charles_Taylor@davie-fl.gov	
Van Valkenburgh (A)	Debra		ANAC			perhelion@hotmail.com	
Voos	Gregory	South Regional Representative	NBAA	202-737-4475		gvoos@nbaa.org	
Wood	Matt	Growth Management Director	City of Cooper City	954-434-4300		MWood@coopercityfl.org	
Wu	Kevin	Airport Manager	Broward County Aviation Department - OPS	954-359-1216	954-279-4740	kww@broward.org	

PEPLIN DONNA

City of Davie 954-610-2845

donna@ty2studios.com

First & Last Name	Title	Company Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Richard C. Pfenniger Felicia Reeve		FAA		84-541-1741	PCP37C Juno. Com	
Ryan Thomas Karen Friedman	Senior Planner	City of FTL BCAD		321-216-5494	- kfriedman@broward	
Ryan Goldman	Env. Compliance	BCAD			rgoldman@broward.org	
Sean Burlingame Ken Centaur Jr.	Senior Associate	ESA	813-207-7200		sburlingame@ESASSOC.COM	
LEONA HENRY GA	PUBLIC RELATIONS COOR.	TOWN OF DAVIE	954 797 1035	954 732 0019	lhenry@davie-fl.gov	d. Henry
CAROLE HARVEY	Home owner.		954-962-7278	441-880-3746 AT HOME		Carole Harvey
TROY THOMASSEN ERIC RAM	owner ANAC	ANAC		954-873-9731	TroyThomassen@gmail.com	
Stephen Goetzinger	Managing Associate	ESA	202-344-7350		sgoetzinger@esassoc.com	
Irina Sugarliu	Sr. Eng.	Delta	404-36-0286		irina.sugarliu@delta.com	Irina S
Khalil Nasser	Lauderdale Isles Airport Committee		703 231 8332	703 231 8332	knasser@yahoo.com	

Technical Committee

Meeting #5

Materials Presented at Meeting



AVIATION DEPARTMENT - Fort Lauderdale-Hollywood International Airport
2200 SW 45th Street, Suite 101 • Dania Beach, Florida 33312 • 954-359-6100

Meeting Agenda
Technical Committee Meeting No. 5
14 CFR Part 150 Study
Fort Lauderdale-Hollywood International Airport
January 16, 2019 – 10AM to 12PM EDT

1. Introductions
2. Review of the Role of the TC Meeting Facilitator
3. Review of Prior TC Meetings
4. Noncompatible Land Use Analysis
5. Noise Compatibility Program
6. Future TC Meetings
7. Questions from TC Members
8. Adjourn




14 CFR PART 150 NOISE AND LAND USE COMPATIBILITY STUDY

Technical Committee Meeting #5
January 16, 2019

Agenda

- Introductions
- Review of the Role of the TC Meeting Facilitator
- Review of TC Meetings
- Noncompatible Land Use Analysis
- Noise Compatibility Program
- Future TC Meetings
- Questions from TC Members





Welcome and Introductions



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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



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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/TRACON
- FLL Airport Traffic Control Tower
- South Florida Flight Standards Division (FSDO)

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Role of the Meeting Facilitator

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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

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Prior Technical Committee Meetings

TC #1 – May 26, 2017

- Purpose and Objectives of the Technical Committee
- Airport Overview
- Part 150 Study Overview
- Introduction to Aircraft Noise, Modeling, and Compatibility
- Initial Data Collection
- Project Schedule

TC #2 – August 23, 2017

- Data collection process and status
- AEDT Model inputs
- Aircraft Activity Forecast
- Runway Use
- Flight Track Methodology

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Prior Technical Committee Meetings

TC #3 – March 7, 2018

- Public Workshop Summary
- Land Use Data Collection
- Aircraft Activity
- Runway Use
- Flight Track Analysis
- Modeling Assumptions

TC #4 – November 7, 2018

- 2018 Noise Exposure Assumptions and Contours
- 2023 Noise Exposure Assumptions and Contours
- Noncompatible Land Use Analysis
- Noise Compatibility Program Overview

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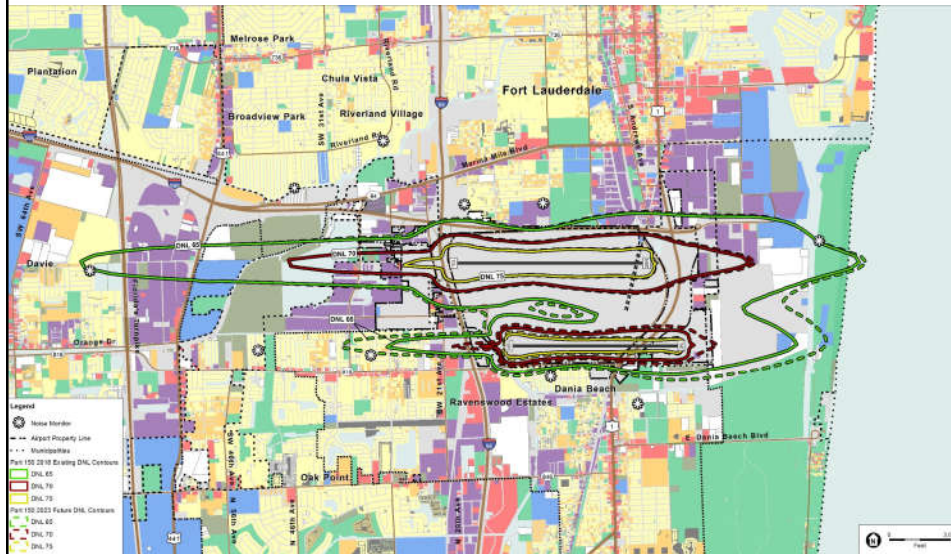


Noncompatible Land Use Analysis

10



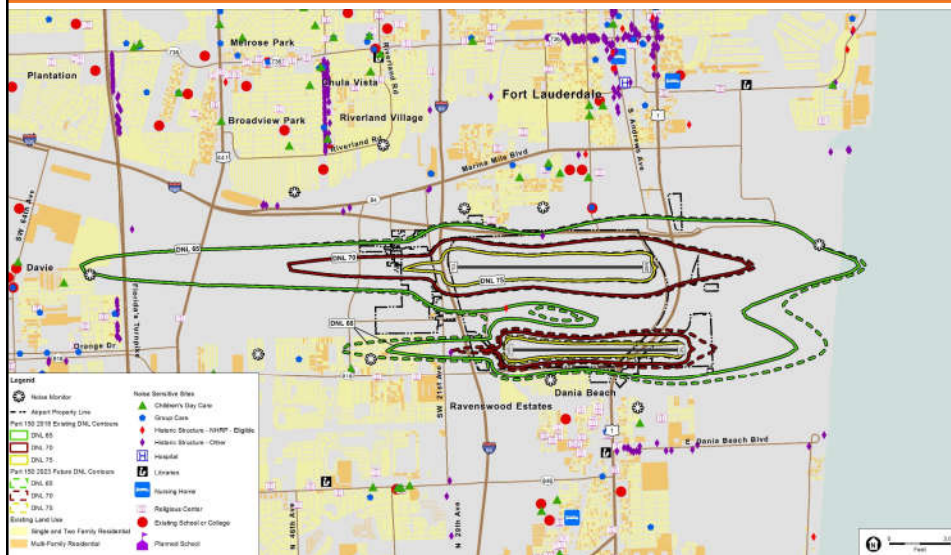
FLL 2018 Part 150 Noise Contours vs 2023 Part 150 Noise Contours with Existing Land Use



Draft For Illustration Purposes Only – Work In Progress

11

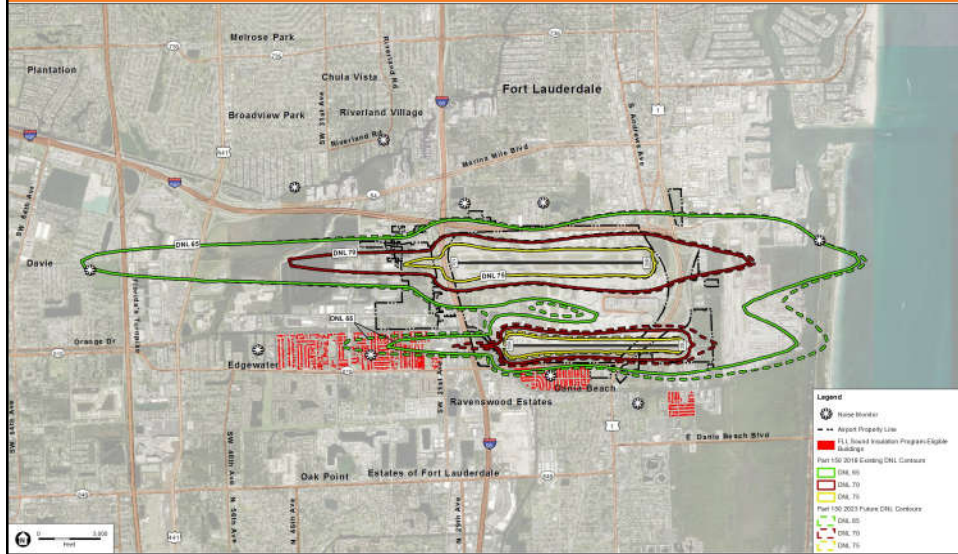
FLL 2018 Part 150 Noise Contours vs 2023 Part 150 Noise Contours with Non-Compatible Land Use



Draft For Illustration Purposes Only – Work In Progress

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FLL 2018 & 2023 Part 150 Noise Contours with EIS Sound Insulation Program Limits



Draft For Illustration Purposes Only – Work In Progress

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2018 and 2023 Non-Mitigated Residential Land Uses

HOUSING UNITS NOT IN CURRENT FLL SOUND INSULATION PROGRAM ¹		
Noise Level ²	Housing Units Outside SIP ³	Housing Units within SIP ¹
2018		
DNL 65-70	89	114
DNL 70+	0	0
TOTAL:	89	114
2023		
DNL 65-70	105	387
DNL 70+	0	0
TOTAL:	105	387

SOURCES:

¹ FLL Sound Insulation Program housing unit data from Broward County Aviation Department

² Noise contours from Environmental Science Associates (ESA)

³ Housing units derived from 2010 Census block-level data.

Draft Analysis For Internal Review Only – Work In Progress

14



Noise Compatibility Program (NCP) Overview

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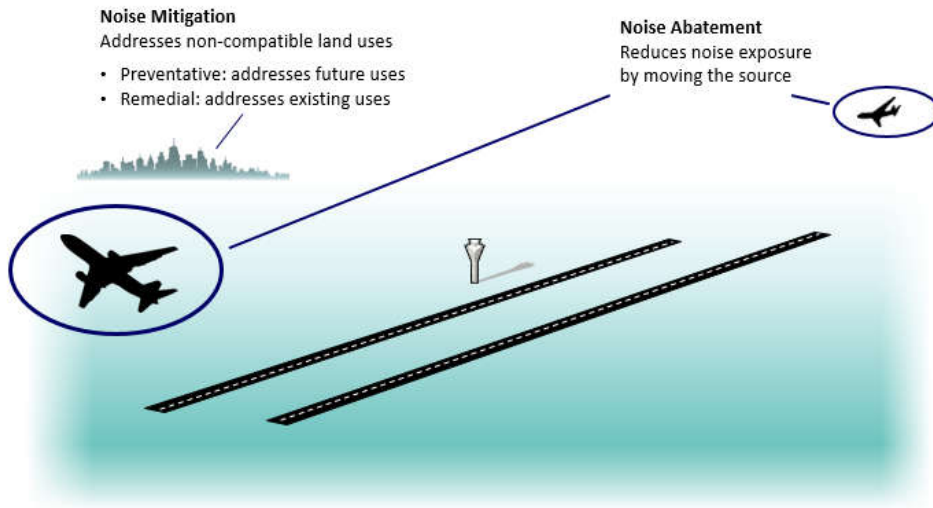
Required Elements of an NCP

- The NCP explores operational, land use, and administrative measures to minimize aircraft noise exposure
- The FAA reviews entire NCP for completeness
 - Technical, policy, effectiveness review
- The NCP Report must include a provision for revising the NCP if made necessary by a revision of the Noise Exposure Map
- FAA has 180 days to review the NCP
- During its review, the FAA will respond as follows for each measure:
 - Approved
 - Disapproved
 - Approved or disapproved in part
 - No action (only relevant for NCP measures involving flight procedures)

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Distinction Between Noise Abatement and Noise Mitigation



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Major NCP Strategy Options

Noise Abatement

- Noise abatement flight tracks
- Preferential runway use
- Arrival/departure procedures
- Airport layout modifications
- Run-up enclosures
- Use restrictions*
- Other actions proposed by stakeholders

Land Use

- Remedial Mitigation
 - Land acquisition
 - Sound insulation
 - Aviation easements
- Preventative Mitigation
 - Land use controls
 - Zoning
 - Building codes
 - Comprehensive plans
 - Real estate disclosures
- Other actions proposed by stakeholders

Programmatic

- Implementation tools
- Promotion, education, signage, etc.
- Monitoring
- Reporting
- NEM update
- NCP revision
- Other actions proposed by stakeholders

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

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Review of NCP Measures

All NCP Measures Must Consider:

- Reduction of existing incompatible land use and prevention / reduction of future incompatible land use
 - The FAA will not approve NCP measures that do not reduce exposure to noise of DNL 65 and higher
- Safety and efficiency
- Consistency with the powers and duties of the FAA
- Avoidance of unjust discrimination against certain aircraft types
- Interstate commerce
 - Measures cannot impose an undue burden on interstate commerce (requires balancing of interests)
- The ability to meet both local needs and national air transportation system needs

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Importance of TC Involvement During the 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 the DNL 65
 - Other Federal officials having local responsibility of land uses in an NEM
 - Aircraft operators using the airport
 - General Public

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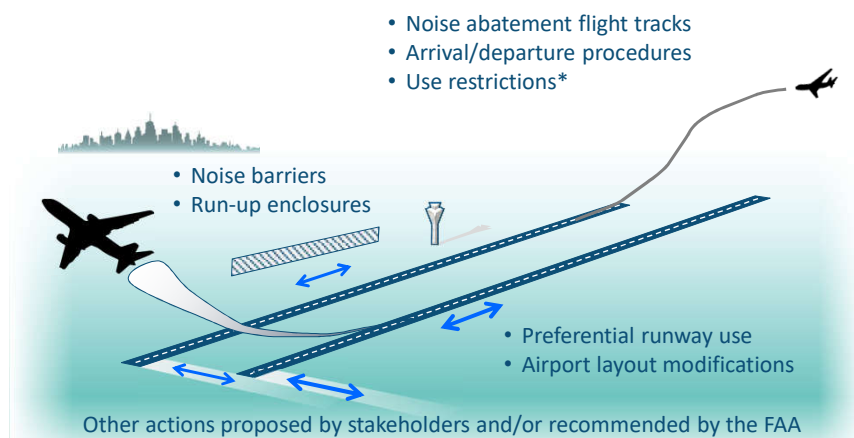


Working Session

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Types of Noise Abatement Strategies



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

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Types of Land Use Strategies

Remedial Mitigation

- Land acquisition
- Sound insulation
- Avigation easements

Preventative Mitigation

- Land use controls
- Zoning
- Building codes
- Comprehensive plans
- Real estate disclosures



Other actions proposed by stakeholders and/or recommended by the FAA

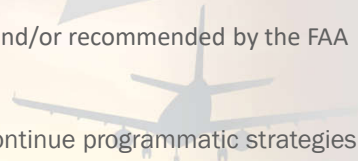
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Types of Programmatic Strategies

- Reporting
- NEM update
- NCP revision
- Implementation tools
- Promotion, education, signage
- Monitoring
- Other actions proposed by stakeholders and/or recommended by the FAA

General Challenges for Airports:

- Funding is required to implement and continue programmatic strategies
- Programs must be effectively staffed
- These challenges are not unique to FLL



BROWARD
COUNTY
FLORIDA

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Future Meetings

Technical Committee

- TC Meeting #6 (tentative) April 2019

Public Workshop

- NEM Report Public Workshop January 2019

TC and Public Workshop materials will be available on the project website following each meeting
www.flpart150.com

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BROWARD COUNTY FLORIDA

Next Steps

- NEM Public Workshop (January 16, 2019)
- Incorporate NEM Comments and Submit to FAA for Acceptance
- Solicit Alternatives to be Evaluated in Noise Compatibility Program (NCP)
- Categorize and Evaluate Measures

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Questions from TC Members



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Technical Committee

Meeting #5

Meeting Summary

14 CFR Part 150 Noise and Land Use compatibility study
Technical Committee Meeting #5
January 16, 2019

Meeting Minutes

Location: Secret Woods Nature Center, Julia Hall
2701 W State Rd 84
Fort Lauderdale, FL 33312

Committee Members in Attendance

Gary Luedtke – ANAC	Mark Hemmerle – South Florida Flight Standards Division (FSDO)
Chris Akagbosu – Broward County School Board	Bob Hildebidle – Miami Air Traffic Management/TRACON
Matt Wood – City of Cooper City	Richard Lemack – Town of Davie
Peter Dokuchitz – City of Plantation	Bob Swindell – GFL Alliance
Lorie Mertens-Black – City of Hollywood	Phillip Holste – Town of Davie
Ben Sorenson – City of Fort Lauderdale	Blake Boy Barbara – Study Coordination Committee
Geoff Rames – City of Fort Lauderdale	Donna Peplin – City of Dania
Rufus James – City of Fort Lauderdale	Marc LeFerrier – City of Dania Beach
Edward Rebholz – City of Fort Lauderdale	
John Flint – City of Weston	
Kallie Glover – Delta Airlines	
Michael Shiver – Spirit Airlines	

Others Present

Winston Cannicle – BCAD	Eric Ram – ANAC
Will Castillo – BCAD	Irina Sugarliev – Delta Airlines
Gregory Meyer – BCAD	Leona Henry – Town of Davie
Ryan Thomas – City of Fort Lauderdale	Peter Green – FAA
Ken Coutain, Jr. – BCAD	Felicia Reeves – FAA
Karen Friedman – BCAD	Khalil Nasser – Lauderdale Isles Airport Committee
Ryan Goldman – BCAD	Carole Harvey – Resident
Mike Pacitto – BCAD	Troy Thomassen – Resident
Richard Pfenniger	

Agenda and Key Topics:

- Review of the Role of the TC Meeting Facilitator
- Review of Prior TC Meetings
- Noncompatible Land Use Analysis
- Noise Compatibility Program
- Future TC Meetings
- Questions from TC Members

Meeting Summary:

- The Technical Committee convened for its fifth meeting at 10:00 AM on January 16, 2019 at the Secret Woods Nature Center in the Julia Hall.
- The meeting began with re-introductions of participants.
- Ground rules for the TC members were established by the facilitator. TC members were encouraged to express their opinions and expected to respect the range of opinions expressed by their fellow TC members. TC members were also expected to advise their organization and/or constituents of the TC's discussion.
- Attending members of the public were advised of ways in which they could submit comments including through the project website (www.flpart150.com) and at the evening (January 16, 2019) Public Information Workshop, and future public meetings.
- A presentation of key topics was presented by Michael Arnold, Part 150 Project Director representing the ESA consulting team. The presentation included the following information:
 - A review of the material presented in the prior TC meetings
 - 2018 and 2023 Noise Exposure Maps
 - Noncompatible Land Use Analysis
 - Noise Compatibility Program (NCP) Overview
- After the Noise Compatibility Program overview, there was a working session in which the Technical Committee was encouraged to participate by offering noise abatement and land use strategy suggestions.

Questions & comments from TC members:

Q: *Laurie Mertens-Black (City of Hollywood)* – Is the presentation tonight and can the public provide written or verbal comments at the meeting?

A: The Public Information Workshop will be conducted in an “open house” format, so there will be no formal presentation given during the workshop. The public can provide written or verbal comments at the meeting.

Q: *Gary Luedtke (ANAC)* – Which street in the insulation program is furthest west?

A: The Team will review the sound insulation boundary and provide a response.

Q: *Rufus James (City of Fort Lauderdale)* – Are the buildings identified in red offered sound insulation or has sound insulation been implemented?

A: The areas in red are eligible for sound insulation. Testing was conducted to determine which homes are eligible.

Q: *Chris Akagbosu (Broward County School Board)* – Broward County Schools previously provided GIS shape files to the Project Team to help determine where schools may be located within the 65 DNL noise contour. Where can we see the overlay to see where schools are located in relation to the contours? Is the 65 DNL acceptable?

A: The Noise Exposure Maps show the noise sensitive sites and land use. The official maps are on the website in Appendix K. The 65 DNL is considered incompatible. It is a cumulative noise exposure over one year (not a single noise event).

Q: *Chris Akagbosu (Broward County School Board)* – By looking at the map in the PowerPoint slide, it looks like there are schools in the 65 DNL. If they are in the 65 DNL, can they receive sound insulation?

A: The next phase looks at areas that qualify for sound insulation. Sound insulation can be a recommended abatement measure.

Q: *Laurie Mertens-Black (City of Hollywood)* – Does each dot equate to one complaint or multiple? Will the updated slides be available online?

A: Each dot is one complaint. All materials from the Technical Committee meeting will be posted online.

Q: *Donna Peplin (City of Dania)* – Are there homes (residential) included in the north runway contours?

A: Yes, there are residential units in the 65 DNL contour west of the airport.

Q: *Lorie Mertens-Black (City of Hollywood)* – Does the term “approved” mean that it is approved to be implemented?

A: The term “approved” means that they are approved by the FAA to be implemented and they are eligible for funding. Other measures can be implemented separately from the FAA process and funding.

A: *Peter Green (FAA)* – Some measures may be determined as eligible for funding, but there is a process for the county to apply and obtain the funds. The funding cycle through the FAA is a year-long cycle. The County would need to go into the planning process for the next funding cycle.

Q: *Rufus James (City of Fort Lauderdale)* – When do you expect to submit recommendations to the FAA? When do you expect FAA to start the 180-day process?

A: Recommendations are submitted with the Noise Compatibility Plan. There will be another phase of soliciting public comments on the NCP and a review of the recommendations before submitting to the FAA. The 180-day process will probably start late 2019 or early 2020.

Q: *Laurie Mertens-Black (City of Hollywood)* – If a measure is disapproved by the FAA, does that mean it cannot be implemented at all or can the County still implement the measure?

A: *Peter Green (FAA)* - There are some things the airport could be prohibited from doing; however, there may be other measures that are not determined eligible but could be addressed locally.

Q: *Ben Sorenson (City of Fort Lauderdale)* – If/when Metroplex is implemented, could this have a negative or positive impact on Fort Lauderdale?

A: It is important to be aware of what the FAA is proposing for Metroplex. However, since the timeline for Metroplex is uncertain, the Part 150 is moving forward with what is known as of today.

Q: *Ben Sorenson (City of Fort Lauderdale)* – What do we know about Metroplex for the purposes of the Part 150 project? Measures for mitigation or abatement could be affected by Metroplex positively or negatively and new measures may be needed due to Metroplex.

A: The FAA is in the process of developing arrival and departure procedures throughout the state of Florida. The program focuses on key commercial service airports including, MIA, PBI, FLL, MCO, TPA, etc. The FAA was planning on holding public outreach in February 2019; however, it may be put on hold due to the government shutdown. The Project Team will ensure that the Technical Committee receives the notice from FAA regarding Metroplex. It is important to ensure the public understands it is a separate process that we may learn more about later on.

Q: *Laurie Mertens-Black (City of Hollywood)* – What happens when it (Metroplex) has been implemented? Will there be a “re-look”?

A: Yes, once the procedures are published by FAA, they are refined over time. FLL could conduct an NEM update if needed.

A. *Peter Green (FAA)* – Metroplex is being conducted by another part of the FAA (not the Airport District Office), but Metroplex is subject to NEPA (National Environmental Policy Act), which means the measures proposed by Metroplex will be evaluated in an environmental study. This will hopefully be in review by FAA end of 2019.

Q: *Rufus James (City of Fort Lauderdale)* – What is the schedule for the repaving of the north runway?

A: The repaving of the north runway is not a consideration for the Part 150 because it is temporary for only 4 months. BCAD responded that the airport is in the bid process now and will go to the board in mid-February. Work will begin June 5, 2019 for 120 days.

Q: *Ben Sorenson (City of Fort Lauderdale)* – Will the FAA be helping the Project Team through the process to ensure the recommendations that are submitted are adequate/reasonable?

A: Yes, the Project Team is working with the FAA extensively throughout the process.

Comment: *Gary Luedtke (ANAC)* – The airport had two objectives in 2013: 1) reduce the number of delays; and, 2) enhance safety margins by enhancing aircraft separations. The second goal has not yet been met.

Q: *Chris Akagbosu (Broward County School Board)* – Is the sound insulation process for residential only or can schools receive sound insulation?

A: If there are land uses in the area that are eligible that are non-residential, they can be included for sound insulation.

A: *Peter Green (FAA)* – The DOT updated Florida Statutes regarding compatibility with land use around airports. There is guidance for areas such as schools. The Project Team should look at this as a resource for consideration.

Q: *Rufus James (City of Fort Lauderdale)* – Northeast of the airport there seems to be smaller, turboprop aircraft that fly over the beach at very low altitudes.

A: It is likely the General Aviation aircraft separated from the larger jet aircraft by ATC procedures.

Q: *Geoff Rames (City of Fort Lauderdale)* – I have been involved in this process since the south runway opened. When it opened, the airport instituted a 290-degree heading on the north runway for “safety” purposes. Noise complaints north of I-595 are because of the new 290-degree heading procedure. There were 25,000 complaints from this neighborhood in 2018. The problem with the contours is that it is an average, which results in contours that show that this neighborhood does not have unacceptable noise. The noise contours do not accurately reflect the noise issues in Broward County. Is the annual average contour the only contour developed in the Part 150 study?

A: Yes, it is the only contour developed that the FAA will accept.

Q: *Geoff Rames (City of Fort Lauderdale)* – Why can’t the County tell the FAA that the results of the noise contours are not what is actually happening in our area? The way FAA does it is not right. Contours need to be developed on a short-term basis.

A: The airport is required to follow 14 CFR Part 150 requirements.

Q: *Gary Luedtke (ANAC)* – What was the panel that took place after the last Technical Meeting in November?

A: The meeting was for the Study Coordination Committee, whose purpose is to distribute information about the study to the community and sure the members of the community know about the project and associated meetings.

Comment: *Donna Peplin (City of Dania)* – Our neighbors have given up. I applaud Geoff’s community for speaking up.

Appendix G-6
Technical Committee
Meeting #6
May 23, 2019

Technical Committee

Meeting #6

Meeting Notice and

Attendance Roster



AVIATION DEPARTMENT - Fort Lauderdale-Hollywood International Airport
2200 SW 45th Street, Suite 101 • Dania Beach, Florida 33312 • 954-359-6100

**Subject: Fort Lauderdale-Hollywood International Airport
14 CFR Part 150 Study - Technical Committee Meeting #6**

Please save the date for the next Technical Committee meeting to support the Fort Lauderdale-Hollywood International Airport Part 150 Study.

Date: Thursday, May 23, 2019

Time: 10:00AM - 12:00PM

Location: Secret Woods Nature Center | Julia Hall; 2701 W. SR 84; Dania Beach, FL 33312

Please arrive 10 minutes early to allow time to check in prior to the start of the meeting.







Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #6

Date / Time: Thursday, May 23, 2019 10:00 AM - 12:00 PM

Location: Secret Woods Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Akagbosu	Chris	Director, Facility of Planning & Real Estate Dept.	Broward County School Board	754-321-2162		chris.akagbosu@browardschools.com	
Annunziata	Jason	Station Manager	JetBlue	954 233-4722	646-942-2775	Jason.Annunziata@jetblue.com	
Anton	Mitch	Leadership Hollywood XLI	Hollywood Chamber of Commerce	954-646-3639		spanther3@aol.com	
Blake Boy	Barbara		Study Coordination Committee			BBLAKEBOY@broward.org	
Boutros	Kareen	Executive Director	Broward Workshop	954-462-9112		kareen@browardworkshop.com	
Cannicle	Winston	Noise & Environmental Officer	Broward County Aviation Department - Airport Noise Office	954-359-6181		WCANNICLE@broward.org	
Castillo (A)	Will	Airport Planning Manager	Broward County Aviation Department - Airport Noise Office	954-359-2291		wcastillo@broward.org	
Cooley (A)	Sid		FLL Airport Traffic Control Tower	954-921-9200		sidney.cooley-jr@faa.gov	
Coutain, Jr.	Ken	Airport Planner	Broward County Aviation Department - P/D	954-359-1599	154 298 6447	kcoutain@broward.org	
DelNegri	Theodore (TJ)	Tower Manager	FLL Airport Traffic Control Tower	954-921-9201		theodore.delnegri@faa.gov	
Dokuchitz	Peter	Principal Planner / City of Plantation	City of Plantation	954-797-2265		pdokuchitz@plantation.org	
Eastman	John		Town of Southwest Ranches	954-465-8383		john426@bellsouth.net	
Flint	John R.	City Manager / CEO	City of Weston	954-385-2000		jflint@westonfl.org	
Gaenicke	Sierra		VHB			sgaenicke@vhb.com	
Gale	Mark	Director of Aviation	Broward County Aviation Department			mgale@broward.org	
Gambrill	Marc	Aviation Chief Development Officer (CDO)	Broward County Aviation Department			mgambrill@broward.org	
Gertsen (A)	Alex	Director of Airports and Ground Infrastructure	NBAA	202-737-4477		Agertsen@nbaa.org	
Glover	Kalena	Performance Engineer	Delta Airlines	470 528 9160		kalena.glover@delta.com	
Govin	Yasmin		Broward County Aviation Department - Airport Business	954-359-6145		ygovin@broward.org	
Grandolfo	Joe		FEDF			jgrandolfo@fedex.com	
Green	Peter		FAA			peter.m.green@faa.gov	

Friedman Karen Senior Planner BCAD A - G

KBF


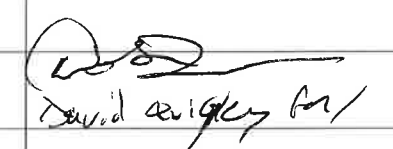


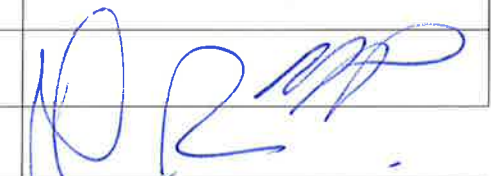


Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #6

Date / Time: Thursday, May 23, 2019 10:00 AM - 12:00 PM

Location: Secret Woods Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Hemmerle	Mark	Front Line Manager	South Florida Flight Standards Division (FSDO)	954-641-6015		Mark.W.Hemmerle@faa.gov	
Henry	Rebecca	Assistant Manager	Federal Aviation Administration Orlando Airports District Office			Rebecca.Henry@faa.gov	
Hildebidle	Bob	Air Traffic Manager A	Miami Air Traffic Management/TRACON	305-869-5402	954-292-6515	Bob.Hildebidle@faa.gov	
Holste (A)	Phillip	Assistant Town Administration	Town of Davie	954-797-1034		Phillip_Holste@davie-fl.gov	
Hotte	Anne	CEO/Executive Director	Greater Hollywood Chamber of Commerce	954-923-4000		anne@hollywoodchamber.org	
James	Rufus	Airport Manager	City of Fort Lauderdale	954-828-4963		RJames@fortlauderdale.gov	
Kaine (A)	Brad	Director of Public Services	City of Dania Beach	954-924-6808		bkaine@daniabeachfl.gov	
LaFerrier	Marc	Director, Community Development	City of Dania Beach	954-924-6805 x3643		mferrier@ci.dania-beach.fl.us	
Lemack	Richard	Town Administrator	Town of Davie	954-797-1034	David D. Quigley & Davie - FL, Inc.	Richard_Lemack@davie-fl.gov	
Lindblade, CAE	Dan	CAE - President and CEO	Greater Fort Lauderdale Chamber of Commerce	954-462-4911		dan@ftlchamber.com	
Luedtke	Gary		ANAC	954-966-8013		gluedtke@gmail.com	
Lundrigan	Julia	Delta Flight Ops	Delta Airlines	404-773-2882	678-427-1350	Julia.lundrigan@delta.com	
Matz	Jeff	Corporate Contact	UPS	502-329-3913		jmatz@ups.com	
Mertens-Black	Lorie	Chief Civic Affairs Officer	City of Hollywood	954-921-3599		lmertens-black@hollywoodfl.org	
Meyer	Gregory	Public Information Officer	Broward County Aviation Department - PIO	954-359-6116		GMeyer@broward.org	
Modrich (A)	Mark	AA Pilot/Resident	Town of Southwest Ranches	954-540-4854	954-252-5040	mmodrich@aol.com	
Morrissey	Mary	Senior Manager	FedEx	954-359-7432		mmmorrissey@fedex.com	
Nazzaro	Tom	Airport Manager, Aviation	Broward County Aviation Department - Airport Business	954-359-6821		tnazzaro@broward.org	
Nonnemacher (A)	Michael	Acting Assistant Executive Director	Broward County Aviation Department - Airport Operations			mnonnemacher@broward.org	
Pacitto (A)	Mike	Director of Planning	Broward County Aviation Department - Airport Manager's Office	954-560-0766		MPPACITTO@broward.org	
Peplin	Donna		City of Dania	954-610-2845		donna@tyestudios.com	

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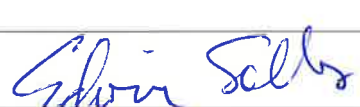


Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #6

Date / Time: Thursday, May 23, 2019 10:00 AM - 12:00 PM

Location: Secret Woods Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Pokryfke	John	Asst. Director of Operations, Aviation	Broward County Aviation Department - Airport Operations	954-359-6475		jpokryfke@broward.org	
Rames (A)	Geoff	Lauderdale Isles Civic Association	City of Fort Lauderdale	954-327-9095		grames.lucia@gmail.com	
Rebholz	Edward		City of Fort Lauderdale	973-476-5609		ed@edrebholz.com	
Robbin	Sam	CEO	National Jets/Broward Workshop	954-868-2166		samrobbin@nationaljets.com	
Sack	Richard	Air Traffic Manager	FLL Airport Traffic Control Tower			Richard.T.Sack@faa.gov	
Shiver	Michael	General Manager	Spirit Airlines	954-359-0933		michael.shiver@spirit.com	
Siegel (A)	Allan	Public Informations Officer	Broward County Aviation Department	954-359-6978		Asiegel@broward.org	
Siwinski	Ben		VBH			BSiwinski@VHB.com	
Solley	Edwin	Manager ATC Systems	Southwest Airlines	407-850-1563		Edwin.solley@wnco.com	
Sorenson	Ben	Vice Mayor	City of Fort Lauderdale	954-802-3311		BSorensen@fortlauderdale.gov	
Swindell	Bob	President and CEO	Greater Fort Lauderdale Alliance Economic Development Agency	954-524-3113	954-627-0131	bswindell@gfalliance.org	
Taylor	Charles	Intergovernmental Affairs Manager	Town of Davie	954-797-1034		Charles_Taylor@davie-fl.gov	
Van Valkenburgh (A)	Debra		ANAC			perhelion@hotmail.com	
Voos	Gregory	South Regional Representative	NBAA	202-737-4475		gvoos@nbaa.org	
Wood	Matt	Growth Management Director	City of Cooper City	954-434-4300		MWood@coopercityfl.org	
Wu	Kevin	Airport Manager	Broward County Aviation Department - OPS	954-359-1216	954-279-4740	kwu@broward.org	

PO - W
①

Date / Time: Thursday, May 23, 2019 10:00 AM - 12:00 PM

Location: Secret Woods Nature Center

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Technical Committee

Meeting #6

Materials Presented at Meeting



AVIATION DEPARTMENT - Fort Lauderdale-Hollywood International Airport
2200 SW 45th Street, Suite 101 • Dania Beach, Florida 33312 • 954-359-6100

Meeting Agenda
Technical Committee Meeting No. 6
14 CFR Part 150 Study
Fort Lauderdale-Hollywood International Airport
May 23, 2019 – 10AM to 12PM EDT

1. Introductions
2. Review of the Role of the TC Meeting Facilitator
3. Review of Prior TC Meetings
4. Review of January 2019 Noise Exposure Map Public Workshop
5. Noise Compatibility Program Overview
 - a. Operational Suggestions
 - b. Land Use Suggestions
 - c. Programmatic Suggestions
6. Future TC Meetings
7. Questions from TC Members
8. Adjourn

Broward County Board of County Commissioners
Mark D. Bogen • Beam Furr • Steve Geller • Lamar P. Fisher • Dale V.C. Holness • Nan H. Rich • Tim Ryan • Barbara Sharief • Michael Udine



www.broward.org/www.fll.net



14 CFR PART 150 NOISE AND LAND USE COMPATIBILITY STUDY

Technical Committee Meeting #6
May 23, 2019

Agenda

- Introductions
- Review of the Role of the TC Meeting Facilitator
- Review of TC Meetings
- Review of January 2019 Noise Exposure Map Public Workshop
- Noise Compatibility Program Overview
 - Operational Suggestions
 - Land Use Suggestions
 - Programmatic Suggestions
- Future TC Meetings
- Questions from TC Members





Welcome and Introductions

3



Importance of TC Involvement During the 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 the DNL 65
 - Other Federal officials having local responsibility of land uses in an 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/TRACON
- FLL Airport Traffic Control Tower
- 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 #5 – January 16, 2019

- Review of Noncompatible Land Use
- Noise Compatibility Program Introduction

7



January 2019 Noise Exposure Map Public Workshop

8



NEM Public Workshop

January 16, 2019, 6:00PM – 8:30PM

Signature Grand, Davie, FL

- Attendance:
 - Three elected officials
 - One media representative
 - Approximately 166 residents/members of the community
- Public Comment Period:
 - Approximately a dozen letters
 - Approximately 150 website comment submittals
 - Approximately 100 comment forms (including appx. 75 comment cards / petitions)

9



Workshop Attendees




10

All Comments

- 536 Comment Letters/Emails/Forms
- 2,011 Individual Comments
- Sources:
 - General public and elected officials
 - First round of Public Workshops (November 2016)
 - Website comments
 - NEM Public Workshop (January 2019)
 - Mailed letters

Fort Lauderdale-
Hollywood
International Airport
Part 150 Study


STATUS
In-Review


SUBMISSIONS
536


COMMENTS
2011



Noise Compatibility Program (NCP) Overview



NCP Stakeholder Suggestions

- Approximately 150 individual NCP suggestions (includes duplicates)
 - Noise Abatement Suggestions: 128
 - Land Use Suggestions: 9
 - Programmatic Suggestions: 10
- Sources:
 - ANAC
 - Technical Committee
 - Dania Beach
 - NEM Workshop
 - Website Comments

13



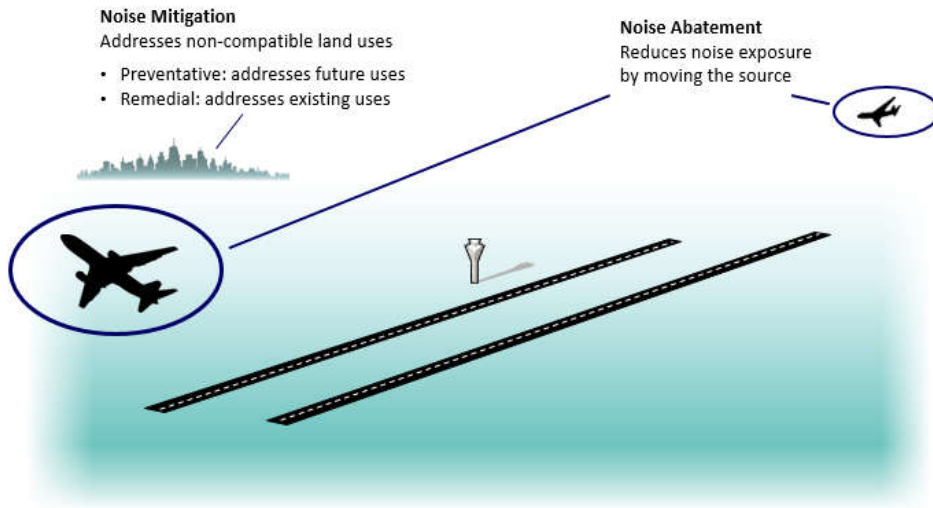
Required Elements of an NCP

- The NCP explores operational, land use, and administrative measures to minimize aircraft noise exposure
- The FAA reviews entire NCP for completeness
 - Technical, policy, effectiveness review
- The NCP Report must include a provision for revising the NCP if made necessary by a revision of the Noise Exposure Map
- FAA has 180 days to review the NCP
- During its review, the FAA will respond as follows for each measure:
 - Approved
 - Disapproved
 - Approved or disapproved in part
 - No action (only relevant for NCP measures involving flight procedures)

14



Distinction Between Noise Abatement and Noise Mitigation



15

Major NCP Strategy Options

Noise Abatement

- Noise abatement flight tracks
- Preferential runway use
- Arrival/departure procedures
- Airport layout modifications
- Run-up enclosures
- Use restrictions*
- Other actions proposed by stakeholders

Land Use

- Remedial Mitigation
 - Land acquisition
 - Sound insulation
 - Avigation easements
- Preventative Mitigation
 - Land use controls
 - Zoning
 - Building codes
 - Comprehensive plans
 - Real estate disclosures
- Other actions proposed by stakeholders

Programmatic

- Implementation tools
- Promotion, education, signage, etc.
- Monitoring
- Reporting
- NEM update
- NCP revision
- Other actions proposed by stakeholders

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

16

Review of NCP Measures

All NCP Measures Must Consider:

- Reduction of existing incompatible land use and prevention / reduction of future incompatible land use
 - The FAA will not approve NCP measures that do not reduce exposure to noise of DNL 65 and higher
- Safety and efficiency
- Consistency with the powers and duties of the FAA
- Avoidance of unjust discrimination against certain aircraft types
- Interstate commerce
 - Measures cannot impose an undue burden on interstate commerce (requires balancing of interests)
- The ability to meet both local needs and national air transportation system needs



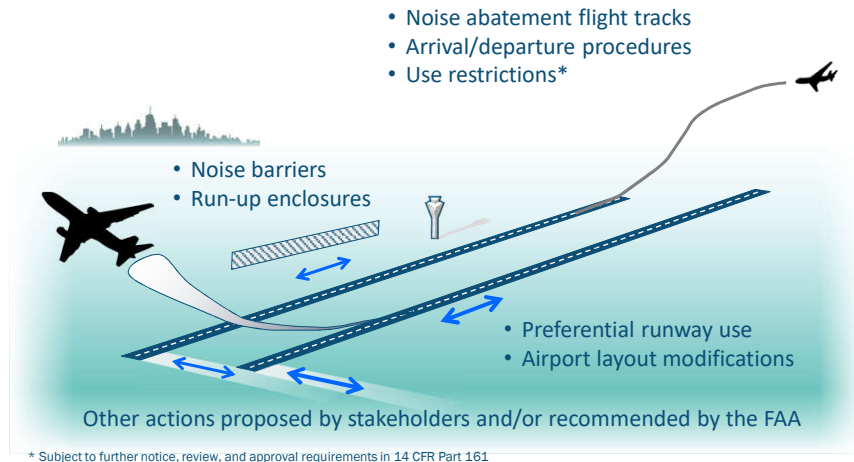
17

Operational Measures



18

Types of Noise Abatement Strategies



19

Stakeholder Operational Suggestions

- 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)

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

Stakeholder Operational Suggestions

• Arrivals and Departure Procedures

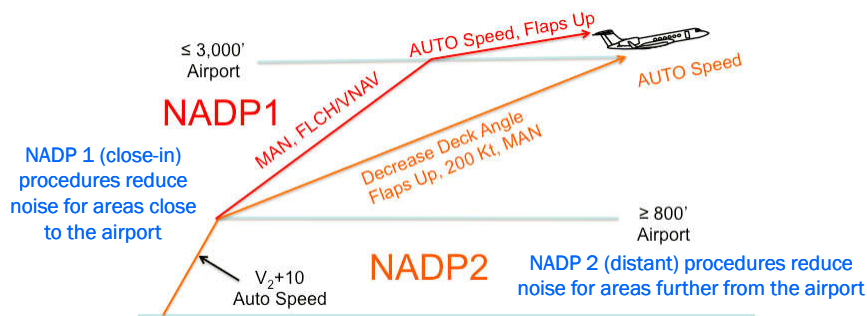
- Implement NADP1 (Dania Beach)
- Minimize low approaches (Public)
- Stagger flights from north and south runways to maintain use of heading 275 for departures - eliminate heading 290 completely, and maintain runway heading to 3 miles / 3,000 feet before turning (Public)
- Establish steep takeoff rules (Public)
- Use 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)
- Implement optimized profile descents (OPD) (TC)

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



Noise Abatement Departure Procedures

EXAMPLE: Noise Abatement Departure Procedures (NADPs)



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
- Image from http://code7700.com/noise_abatement.html. Last Accessed: November 30, 2016.
- Blue annotations by ESA.

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

Stakeholder Operational 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 (ANAC)
- 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)

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



Stakeholder Operational Suggestions

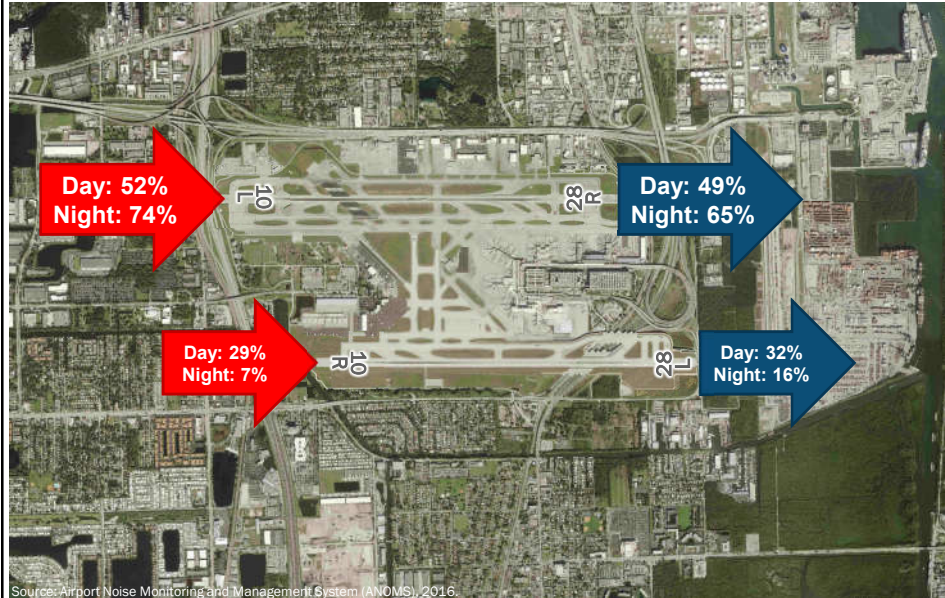
- Use Restrictions

- Implement penalties to deter operational negligence (Dania Beach)
- FAA 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)

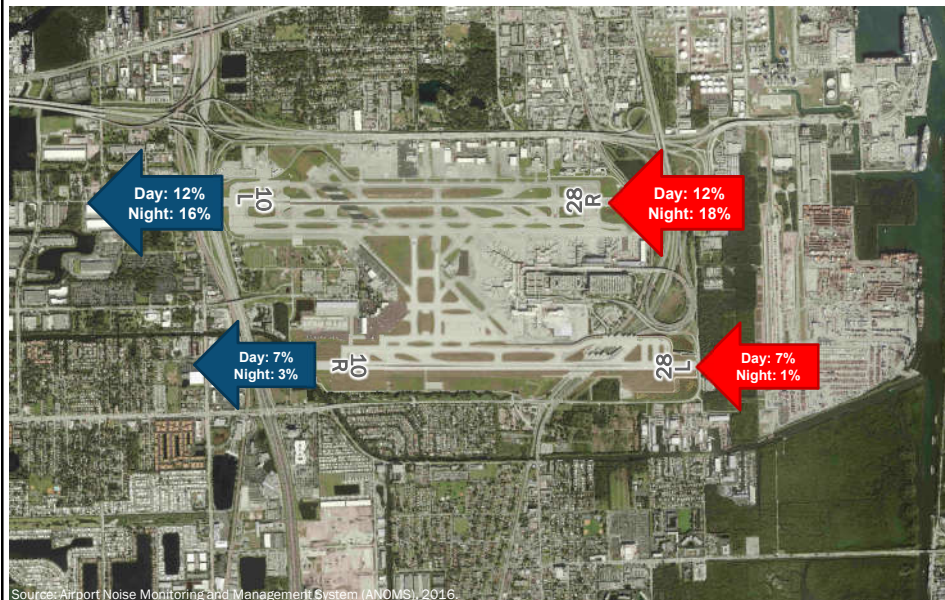
The information in this presentation represent suggestions received from the Public and Stakeholders during the Public
24 Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.



Runway Use – East Flow



Runway Use – West Flow



Baseline Condition Runway Use

Runway Usage

Operation Type	Runway	Day	Night	Grand Total
Arrivals	North Runway			
	10L	52%	74%	55%
	28R	12%	18%	13%
	Total	64%	92%	68%
	South Runway			
	10R	29%	7%	26%
Departures	28L	7%	1%	6%
	Total	36%	8%	32%
	North Runway			
	10L	49%	65%	51%
	28R	12%	16%	13%
	Total	61%	81%	64%
	South Runway			
	10R	32%	16%	30%
	28L	7%	3%	6%
	Total	39%	19%	36%

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

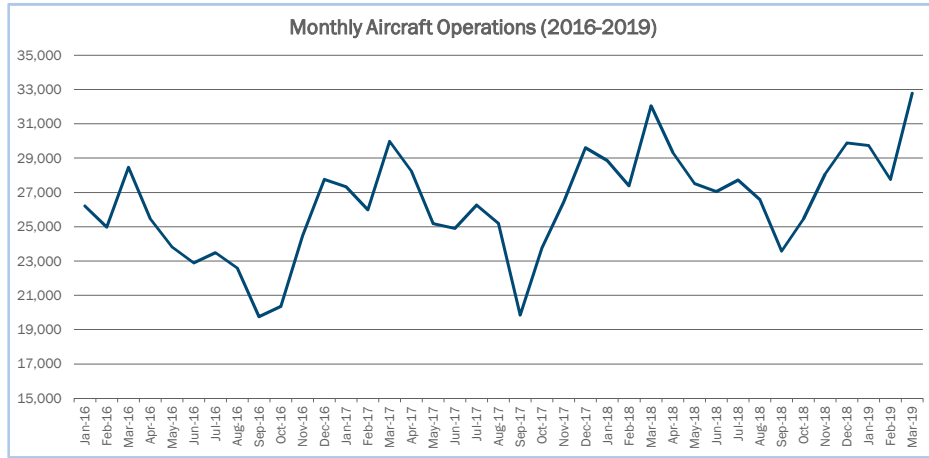
2023 Part 150 Runway Use

Runway Usage

Operation Type	Runway	Day	Night	Grand Total
Arrivals	North Runway			
	10L	49%	66%	52%
	28R	12%	12%	13%
	Total	62%	84%	65%
	South Runway			
	10R	31%	15%	29%
Departures	28L	7%	1%	6%
	Total	38%	16%	35%
	North Runway			
	10L	44%	59%	46%
	28R	14%	18%	14%
	Total	58%	77%	60%
	South Runway			
	10R	37%	21%	35%
	28L	5%	3%	5%
	Total	42%	23%	40%

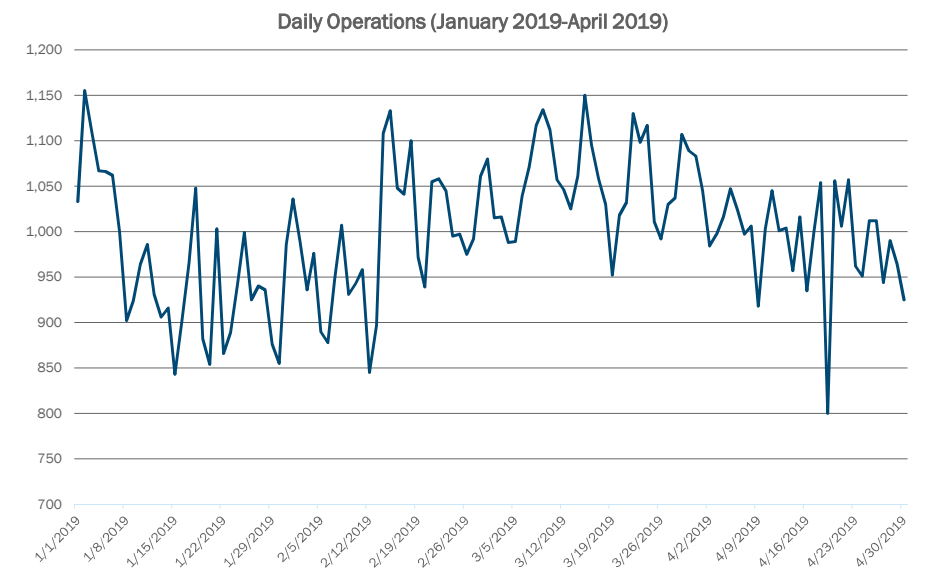
Source: Airport Noise Monitoring and Management System (ANOMS), 2016; adapted by ESA, 2018.

Seasonality of Aircraft Operations



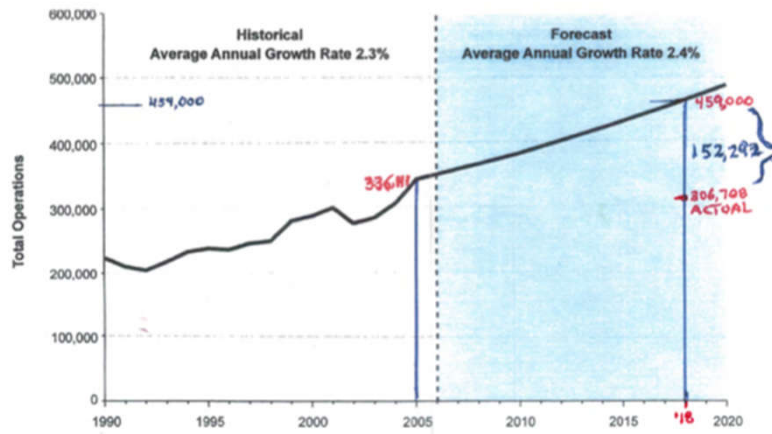
Source: FAA Air Traffic Activity System (ATADS), 2019.

Daily Change in Aircraft Operations



Source: FAA ATADS, 2019.

2005 Forecast Data (ANAC)



Source: Forecast Data Federal Aviation Administration, Terminal Area Forecast, January 2005.

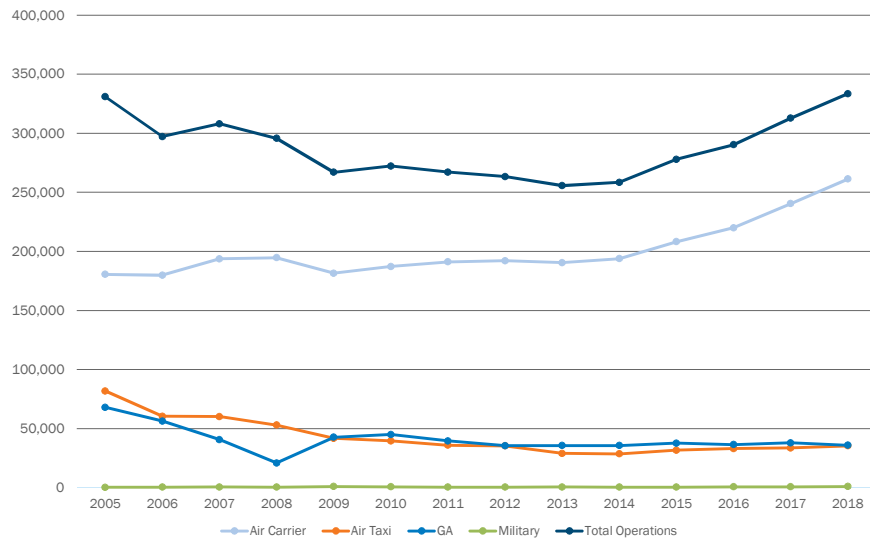
Month:	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
17 VS 18	5.6%	5.4%	6.8%	3.9%	9.2%	8.6%	-96.3%	5.5%	18.8%	7.0%	8.2%	0.9%	-1.9%
2018	28,861	27,379	32,041	29,333	27,508	27,045	967	26,567	23,582	25,440	28,084	29,881	306,708
16 VS 17	4.3%	4.1%	5.3%	10.9%	5.7%	8.8%	11.8%	11.5%	0.5%	16.8%	8.0%	6.7%	7.8%
2017	27,336	25,985	29,988	26,242	25,188	24,901	26,263	25,198	19,847	23,774	26,436	29,604	312,763

31.

Source: Gary Luedtke, ANAC Representative, email dated May 5, 2019.

Historic Growth in Aircraft Operations

FLL Operations 2005-2018



32.

Source: FAA ATADS, 2019.

Land Use Measures

Types of Land Use Strategies

Remedial Mitigation

- Land acquisition
- Sound insulation
- Avigation easements

Preventative Mitigation

- Land use controls
- Zoning
- Building codes
- Comprehensive plans
- Real estate disclosures

Other actions proposed by stakeholders and/or recommended by the FAA

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

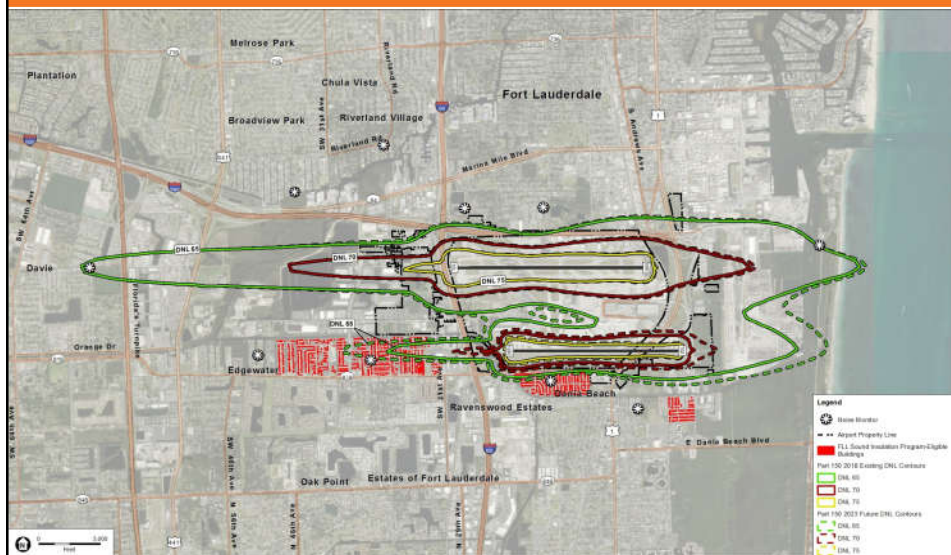
- Relocate residents (Public)
- Purchase or compensate all homes north of Griffin and west of Ravenwood (Public)

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



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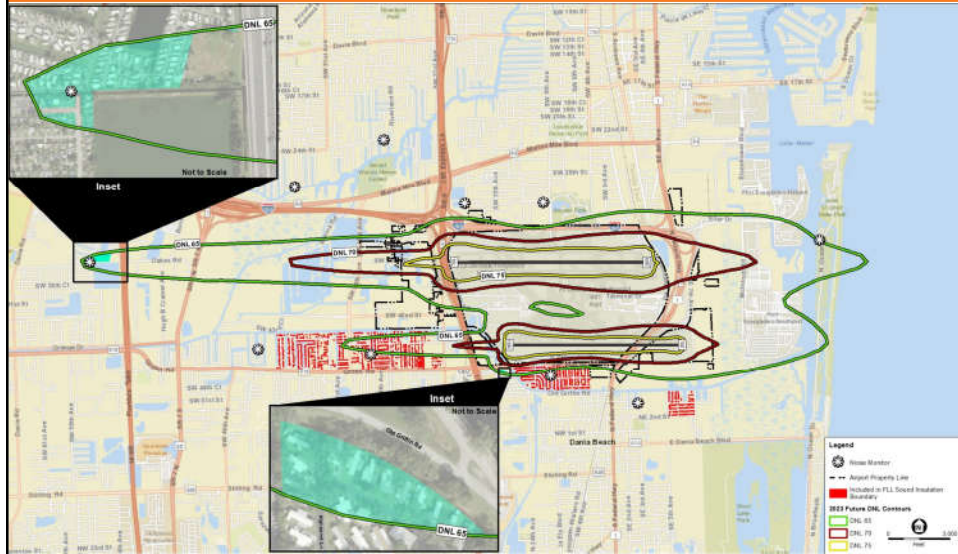
FLL 2018 & 2023 Part 150 Noise Contours with EIS Sound Insulation Program Limits



For Illustration Purposes Only

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FLL 2023 Part 150 Noise Contours with Sound Insulation Program



For Illustration Purposes Only

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Programmatic Measures

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Types of Programmatic Measures

- Reporting
- NEM update
- NCP revision
- Implementation tools
- Promotion, education, signage
- Monitoring
- Other actions proposed by stakeholders and/or recommended by the FAA

General Challenges for Airports:

- Funding is required to implement and continue programmatic strategies
- Programs must be effectively staffed
- These challenges are not unique to FLL

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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 was 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 represent suggestions received from the Public and Stakeholders during the Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.

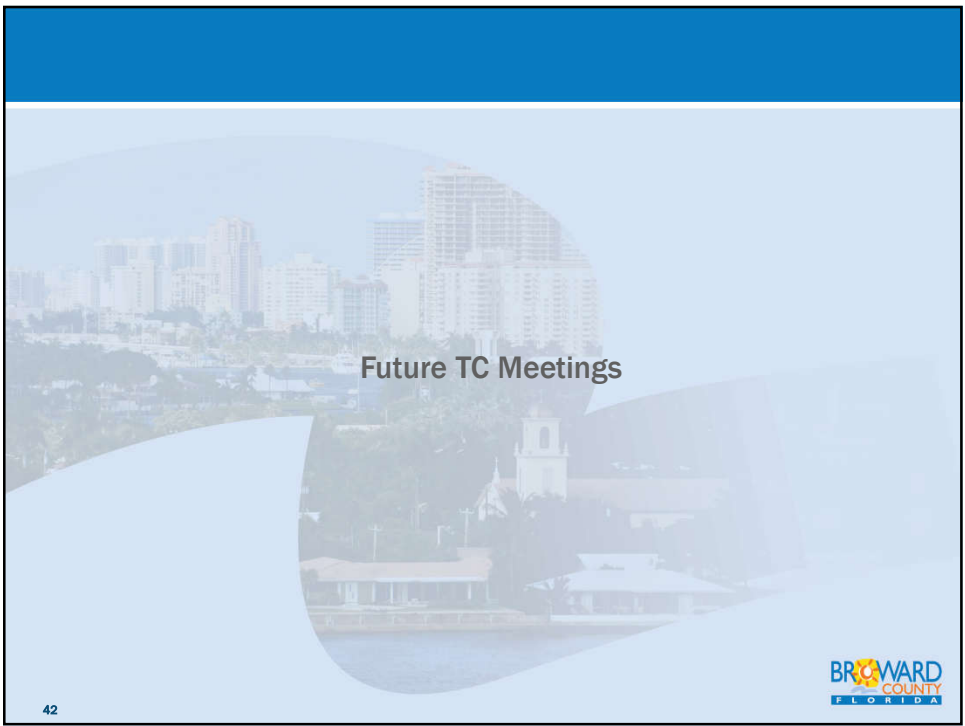
40



Current Noise Monitoring Locations with 2023 DNL 65 dB

This map displays the current noise monitoring locations around the Fort Lauderdale-Hollywood International Airport. The map includes the following features:

- Monitoring Locations:** 11 numbered locations (1-11) are marked with black dots and numbers, indicating where noise levels are being monitored.
- 2023 DNL 65 dB Contour:** A green line outlines the area where the predicted noise level is 65 dB or higher during the day-night-night (DNL) period in 2023.
- Geographic Labels:** The map includes labels for Plantation, Fort Lauderdale, Davie, Cooper City, Dania Beach, and Hollywood.
- Highways:** Major highways are shown, including I-95, I-76, I-595, I-5, I-4, I-3, I-2, I-1, I-405, I-404, I-403, I-402, I-401, I-400, I-399, I-398, I-397, I-396, I-395, I-394, I-393, I-392, I-391, I-390, I-389, I-388, I-387, I-386, I-385, I-384, I-383, I-382, I-381, I-380, I-379, I-378, I-377, I-376, I-375, I-374, I-373, I-372, I-371, I-370, I-369, I-368, I-367, I-366, I-365, I-364, I-363, I-362, I-361, I-360, I-359, I-358, I-357, I-356, I-355, I-354, I-353, I-352, I-351, I-350, I-349, I-348, I-347, I-346, I-345, I-344, I-343, I-342, I-341, I-340, I-339, I-338, I-337, I-336, I-335, I-334, I-333, I-332, I-331, I-330, I-329, I-328, I-327, I-326, I-325, I-324, I-323, I-322, I-321, I-320, I-319, I-318, I-317, I-316, I-315, I-314, I-313, I-312, I-311, I-310, I-309, I-308, I-307, I-306, I-305, I-304, I-303, I-302, I-301, I-300, I-299, I-298, I-297, I-296, I-295, I-294, I-293, I-292, I-291, I-290, I-289, I-288, I-287, I-286, I-285, I-284, I-283, I-282, I-281, I-280, I-279, I-278, I-277, I-276, I-275, I-274, I-273, I-272, I-271, I-270, I-269, I-268, I-267, I-266, I-265, I-264, I-263, I-262, I-261, I-260, I-259, I-258, I-257, I-256, I-255, I-254, I-253, I-252, I-251, I-250, I-249, I-248, I-247, I-246, I-245, I-244, I-243, I-242, I-241, I-240, I-239, I-238, I-237, I-236, I-235, I-234, I-233, I-232, I-231, I-230, I-229, I-228, I-227, I-226, I-225, I-224, I-223, I-222, I-221, I-220, I-219, I-218, I-217, I-216, I-215, I-214, I-213, I-212, I-211, I-210, I-209, I-208, I-207, I-206, I-205, I-204, I-203, I-202, I-201, I-200, I-199, I-198, I-197, I-196, I-195, I-194, I-193, I-192, I-191, I-190, I-189, I-188, I-187, I-186, I-185, I-184, I-183, I-182, I-181, I-180, I-179, I-178, I-177, I-176, I-175, I-174, I-173, I-172, I-171, I-170, I-169, I-168, I-167, I-166, I-165, I-164, I-163, I-162, I-161, I-160, I-159, I-158, I-157, I-156, I-155, I-154, I-153, I-152, I-151, I-150, I-149, I-148, I-147, I-146, I-145, I-144, I-143, I-142, I-141, I-140, I-139, I-138, I-137, I-136, I-135, I-134, I-133, I-132, I-131, I-130, I-129, I-128, I-127, I-126, I-125, I-124, I-123, I-122, I-121, I-120, I-119, I-118, I-117, I-116, I-115, I-114, I-113, I-112, I-111, I-110, I-109, I-108, I-107, I-106, I-105, I-104, I-103, I-102, I-101, I-100, I-99, I-98, I-97, I-96, I-95, I-94, I-93, I-92, I-91, I-90, I-89, I-88, I-87, I-86, I-85, I-84, I-83, I-82, I-81, I-80, I-79, I-78, I-77, I-76, I-75, I-74, I-73, I-72, I-71, I-70, I-69, I-68, I-67, I-66, I-65, I-64, I-63, I-62, I-61, I-60, I-59, I-58, I-57, I-56, I-55, I-54, I-53, I-52, I-51, I-50, I-49, I-48, I-47, I-46, I-45, I-44, I-43, I-42, I-41, I-40, I-39, I-38, I-37, I-36, I-35, I-34, I-33, I-32, I-31, I-30, I-29, I-28, I-27, I-26, I-25, I-24, I-23, I-22, I-21, I-20, I-19, I-18, I-17, I-16, I-15, I-14, I-13, I-12, I-11, I-10, I-9, I-8, I-7, I-6, I-5, I-4, I-3, I-2, I-1, I-0.



Future Meetings

Technical Committee

- TC Meeting #7 (Tentative)
- TC Meeting #8 (Tentative)

September 25, 2019

December 4, 2019

TC materials will be available on the project
website following each meeting
www.flpart150.com

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Next Steps

- Submit Final NEM Report to FAA for acceptance
- Begin evaluating alternatives in support of the NCP
- Document all suggestions in support of the NCP Report

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Questions from TC Members



Adjourn

Technical Committee

Meeting #6

Meeting Summary

14 CFR Part 150 Noise and Land Use Compatibility Study
Technical Committee Meeting #6
May 23, 2019

Meeting Minutes

Location: Secret Woods Nature Center, Julia Hall
2701 W State Rd 84
Fort Lauderdale, FL 33312

Committee Members in Attendance

Gary Luedtke – ANAC	John Flint – City of Weston
Donna Peplin – City of Dania	Kalena Glover – Delta Airlines
Rufus James – City of Fort Lauderdale	Same Robbin – National Jets/Broward Workshop
Geoff Rames – City of Fort Lauderdale	Edwin Solley – Southwest Airlines
Edward Rebholz – City of Fort Lauderdale	John Eastman – Town of Southwest Ranches
Lorie Mertens-Black – City of Hollywood	

Others Present

Winston Cannicle – BCAD	Mohammed Rasheduzzaman – Broward County Public Schools
Will Castillo – BCAD	
Ken Coutain – BCAD	Chris Sequeira – ESA
Karen Friedman – BCAD	David Quigley – Town of Davie
Arlene Satchell – BCAD	Frank Daguino
	Sean Burlingame - ESA

Agenda and Key Topics:

- Introductions
- Review of the Role of the TC Meeting Facilitator
- Review of Prior TC Meetings
- Review of January 2019 Noise Exposure Map Public Workshop
- Noise Compatibility Program Overview
 - Operational suggestions
 - Land Use Suggestions
 - Programmatic Suggestions
- Future TC Meetings
- Questions from TC Members

Meeting Summary:

- The Technical Committee convened for its sixth meeting at 10:00 AM on May 23, 2019 at the Secret Woods Nature Center in the Julia Hall.
- The meeting began with re-introductions of participants.
- Ground rules for the TC members were established by the facilitator. TC members were encouraged to express their opinions and expected to respect the range of opinions expressed by their fellow TC members. TC members were also expected to advise their organization and/or constituents of the TC's discussion.
- Attending members of the public were advised of ways in which they could submit comments including through the project website (www.flpart150.com) and at future public meetings.
- A presentation of key topics was presented by Michael Arnold, Part 150 Project Director representing the ESA consulting team. The presentation included the following information:
 - A review of the material presented in the prior TC meetings
 - Review of Prior TC Meetings
 - Review of January 2019 Noise Exposure Map Public Workshop
 - Noise Compatibility Program Overview
 - Operational suggestions
 - Land Use Suggestions
 - Programmatic Suggestions

Questions & comments from TC members:

Q. *Geoff Rames (City of Fort Lauderdale):* You said that you received 75 unofficial comment cards. What comments are considered official comments?

A. At the public meeting, there were comment forms provided by the Part 150 Study Team. In addition to these forms, there were approximately 75 community members who submitted their own comment forms at this meeting. Every comment is considered equally.

Q. *Gary Luedtke (ANAC):* Does the FAA limit themselves to consideration of 65 DNL areas?

A. Yes. One could propose a flight path option that may address noise outside of DNL 65, but if that option does not also address noise inside of DNL 65 it will likely not be approved by the FAA.

Q. *Edward Rebholz (City of Fort Lauderdale):* Will both runways be directed to fly over 595?

A. The suggestion of "Flights departing to the west should follow Interstate 595 till the Everglades" is primarily focused on the North runway. Please note that this measure is a suggestion provided by stakeholders, it is not an official recommendation.

Q. Edward Rebholz (City of Fort Lauderdale): Is the current standard procedure currently 5,000 feet before turning north? The suggestion offered will change this procedure from 5,000 to 10,000, correct?

A. Based on FLL's informal runway use program, departures from the airport to the east or to the west fly three miles or 3,000 feet before making their turns based. Yes, the stakeholder suggestion of "Takeoffs should fly runway heading 090 or 270 until 10,000 feet before turning north" is to change the turning altitude to 10,000 feet instead of 5,000 feet.

Q. Gary Luedtke (ANAC): 95 decibels is not quiet.

A. 95 decibels is quiet in comparison to previous aircraft noise. At this point in time, airframe and airplane gear noise is often exceeding engine noise. This is another challenge the industry is struggling with.

Q. Gary Luedtke (ANAC): 10PM to 7AM are the nighttime hours referenced, correct?

A. Yes. Any activity during these hours have higher potential for annoyance. When looking at noise contours, noise from any activity occurring during nighttime hours is weighted 10 times more than daytime noise.

Q. Gary Luedtke (ANAC): We have found out the average arrival to final approach altitude is over 600 feet. There are some flights at 100 feet, 129 feet and recently 135 feet above neighborhoods. Is there anything FLL can do about flight operations like this?

A. This is something that needs further exploring. The goal is for aircraft to depart as high and safely as possible, as quickly as they can. When aircraft are arriving, they want to make sure they are coming in on a stabilized approach. All airlines have specific operating procedures. This may be resolved through communications with airlines.

Q. Geoff Rames (City of Fort Lauderdale): We have previously discussed the map that shows noise complaints versus the noise contours. A majority of noise complaints come from areas outside of the contours. Is it possible to develop contours for a short timeframe of western departures? Can we get a more accurate look at that? At the public workshop you said if Marc Gambrill requested this you would do it, but you don't have anything here about that at all.

A. We have had a discussion related to that suggestion in particular. The challenge is that seasonal contours involve looking at contours for a window of time that is smaller than annual. There is no formal definition of a seasonal contour, and discussions with stakeholders showed that there are very different expectations as to what should be modeled for a seasonal contour. Due to this and the fact that the FAA will only consider the results produced using an annual average day of operations it's been recommended that BCAD not proceed with generating a seasonal contour at this time.

Q. Geoff Rames (City of Fort Lauderdale): It would exemplify to the FAA that the average daily DNL process does not show accurate information. The way the study is conducted does not show real-world noise activity.

A. It would give an idea of the particular day, but not annual operations. This is why the FAA is particular about the data used in the study. Please note that this presentation does not represent all comments received; it addresses comments suggesting NCP measures.

Q. *Gary Luedtke (ANAC):* Average separations of operations at FLL is 2 minutes. Time Magazine published an article that states there are 969 operations a day in Mumbai.

A. One reason for the high volume of operation in Mumbai is that it is a 24-hour operation.

Q. *John Eastman (Town of Southwest Ranches):* This question is regarding East operations, after runway construction in October. Assuming they do the voluntary nighttime South runway closure, is it possible the North runway arrivals have a higher minimum altitude starting in or October so flights will descend at 4,000 feet instead of 2,500 feet over Weston, Davie, Southwest Ranches area?

A. Yes, this is something that can brought up to the FAA for consideration.

Q. *Gary Luedtke (ANAC):* When is the next meeting and what will the topics of discussion be?

A. The next meeting will be about the results of our analysis. We won't necessarily have recommendations at that point, but we will present what we have found after evaluating each of these measures, issues, challenges and any concerns the FAA has had. By December, we'll have reviewed the suggestions and should have the recommendations. The Noise Compatibility Program will be circulated for public review early 2020. At the end of this period, there will be a public workshop where the public will be able to provide input specific to recommendations outlined in the study.

Q. *Edward Rebholz (City of Fort Lauderdale):* When will the formal review of the recommendations be complete?

A. Once the FAA formally accepts the NCP, it has 180 days to review the NCP (except for noise abatement measures, where the FAA has longer due to the complexity involved). By the end of next year, we would expect the final FAA recommendations to be complete.

Actionable Next Steps:

Schedule Technical Committee Meeting #7

Meeting Adjourned at 11:45 AM

Appendix G-7
Technical Committee
Meeting #7
October 23, 2019

Technical Committee

Meeting #7

Meeting Notice and

Attendance Roster



AVIATION DEPARTMENT - Fort Lauderdale-Hollywood International Airport

2200 SW 45th Street, Suite 101 • Dania Beach, Florida 33312 • 954-359-6100

**Subject: Fort Lauderdale-Hollywood International Airport
14 CFR Part 150 Study - Technical Committee Meeting #7**

Please save the date for the next Technical Committee meeting to support the Fort Lauderdale-Hollywood International Airport Part 150 Study.

Date: Wednesday, October 23, 2019

Time: 10:00AM - 12:00PM

Location: Secret Woods Nature Center | Julia Hall; 2701 W. SR 84; Dania Beach, FL 33312

Please arrive 10 minutes early to allow time to check in prior to the start of the meeting.

Broward County Board of County Commissioners

Mark D. Bogen • Beam Furr • Steve Geller • Lamar P. Fisher • Dale V.C. Holness • Nan H. Rich • Tim Ryan • Barbara Sharief • Michael Udine

www.broward.org/www.fll.net



Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #7

Date / Time: Wednesday, October 23, 2019 10:00 AM - 12:00 PM

Location: Secret Woods Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Adams	Bryan		Garth Solutions, Inc.			bryan@garthsolutions.com	
Akagbosu	Chris	Director, Facility of Planning & Real Estate Dept.	Broward County School Board	754-321-2162		chris.akagbosu@browardschools.com	
Annunziata	Jason	Station Manager	JetBlue	954 233-4722	646-942-2775	Jason.Annunziata@jetblue.com	
Anton	Mitch	Leadership Hollywood XLI	Hollywood Chamber of Commerce	954-646-3639		spanther3@aol.com	
Arnold	Mike	Senior Vice President	ESA	407-312-1294		MArnold@ESASSOC.com	
Barnett	Melissa	Account Manager	Garth Solutions, Inc.	954-727-3001		melissa@garthsolutions.com	
Boutros	Kareen	Executive Director	Broward Workshop	954-462-9112		kareen@browardworkshop.com	
Boy	Barbara Blake		Study Coordination Committee			BBLAKEBOY@broward.org	
Burlingame	Sean		ESA			SBurlingame@esassoc.com	
Cannicle	Winston	Noise & Environmental Officer	Broward County Aviation Department - Airport Noise Office	954-359-6181		WCANNICLE@broward.org	
Carter	Timeka	Planner	AID	321-273-8504		tcarter@aidinc.us	
Castillo	Will	Airport Planning Manager	Broward County Aviation Department - Airport Noise Office	954-359-2291		wcastillo@broward.org	
Cooley (A)	Sid		FLL Airport Traffic Control Tower	954-921-9200		sidney.cooley-jr@faa.gov	
Coutain, Jr.	Ken	Airport Planner	Broward County Aviation Department - P/D	954-359-1599	954-298-6497	kcoutain@broward.org	
Decker	Don	City Manager / CEO	City of Weston	954-385-2000	954-868-8871	DDecker@westonfl.org	
DelNegri	Theodore (TJ)	Tower Manager	FLL Airport Traffic Control Tower	954-921-9201		theodore.delnegri@faa.gov	
De Reuver	Brandon	Lead Creative Consultant	Garth Solutions, Inc.	954-727-3001		brandon@garthsolutions.com	
Dokuchitz	Peter	Principal Planner / City of Plantation	City of Plantation	954-797-2265		pdokuchitz@plantation.org	
Eastman	John		Town of Southwest Ranches	954-465-8383		john426@bellsouth.net	
Fitzpatrick	LaCheryl	Vice President	Garth Solutions, Inc.	954-727-3001		lacheryl@garthsolutions.com	
Friedman	Karen	Senior Planner	Broward County Aviation Department			KFRIEDMAN@broward.org	



Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #7

Date / Time: Wednesday, October 23, 2019 10:00 AM - 12:00 PM

Location: Secret Woods Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Gale	Mark	Director of Aviation	Broward County Aviation Department			mgale@broward.org	
Gambrill	Marc	Aviation Chief Development Officer (CDO)	Broward County Aviation Department			mgambrill@broward.org	
Garth	Yvonne	President and CEO	Garth Solutions, Inc.	954-727-3001		yvonne@garthsolutions.com	
Gertsen (A)	Alex	Director of Airports and Ground Infrastructure	NBAA	202-737-4477		Agertsen@nbaa.org	
Glover	Kalena	Performance Engineer	Delta Airlines	470-528-9160		kalena.glover@delta.com	Kali
Grandolfo	Joe		FEDEX			jgrandolfo@fedex.com	
Green	Peter		FAA			peter.m.green@faa.gov	Peter Green
Hemmerle	Mark	Front Line Manager	South Florida Flight Standards Division (FSDO)	954-641-6015		Mark.W.Hemmerle@faa.gov	
Henry	Rebecca	Assistant Manager	Federal Aviation Administration Orlando Airports District Office			Rebecca.Henry@faa.gov	
Hildebidle	Bob	Air Traffic Manager A	Miami Air Traffic Management/TRACON	305-869-5402	954-292-6515	Bob.Hildebidle@faa.gov	
Holste (A)	Phillip	Assistant Town Administration	Town of Davie	954-797-1034		Phillip_Holste@davie-fl.gov	
Hotte	Anne	CEO/Executive Director	Greater Hollywood Chamber of Commerce	954-923-4000		anne@hollywoodchamber.org	
James	Rufus	Airport Manager	City of Fort Lauderdale	954-828-4963		RJames@fortlauderdale.gov	Rufus James
Kaine (A)	Brad	Director of Public Services	City of Dania Beach	954-924-6808		bkaine@daniabeachfl.gov	
LaFerrier	Marc	Director, Community Development	City of Dania Beach	954-924-6805 x3643		mferrier@ci.dania-beach.fl.us	
Lemack	Richard	Town Administrator	Town of Davie	954-797-1034		Richard_Lemack@davie-fl.gov	Richard Lemack
LePore	Sierra		VHB			slepore@vhb.com	Sierra LePore
Lindblade	Dan	CAE - President and CEO	Greater Fort Lauderdale Chamber of Commerce	954-462-4911		dan@ftlchamber.com	Dan Lindblade
Luedtke	Gary		ANAC	954-966-8013		gluedtke@gmail.com	Gary Luedtke
Lundrigan	Julia	Delta Flight Ops	Delta Airlines	404-773-2882	678-427-1350	Julia.lundrigan@delta.com	
Matz	Jeff	Corporate Contact	UPS	502-329-3913		jmatz@ups.com	

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Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #7

Date / Time: Wednesday, October 23, 2019 10:00 AM - 12:00 PM

Location: Secret Woods Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Mertens-Black	Lorie	Chief Civic Affairs Officer	City of Hollywood	954-921-3599		lmertens-black@hollywoodfl.org	
Meyer	Gregory	Public Information Officer	Broward County Aviation Department - PIO	954-359-6116		GMeyer@broward.org	
Modrich (A)	Mark	AA Pilot/Resident	Town of Southwest Ranches	954-540-4854	954-252-5040	mmodrich@aol.com	
Morrissey	Mary	Senior Manager	FedEx	954-359-7432		mmmorrissey@fedex.com	
Nonnemacher (A)	Michael	Acting Assistant Executive Director	Broward County Aviation Department - Airport Operations			mnonnemacher@broward.org	
Pacitto	Mike	Director of Planning	Broward County Aviation Department - Airport Manager's Office	954-560-0766		MPPACITTO@broward.org	
Palomino	Natalie	Assistant Account Manager	Garth Solutions, Inc.	954-210-9736		natalie@garthsolutions.com	
Peplin	Donna		Greater Dania Beach Chamber of Commerce	954-610-2845		donna@tyestudios.com	
Pokryfke	John	Asst. Director of Operations, Aviation	Broward County Aviation Department - Airport Operations	954-359-6475		jpokryfke@broward.org	
Rames (A)	Geoff	Lauderdale Isles Civic Association	City of Fort Lauderdale	954-327-9095		grames.licia@gmail.com	
Rebholz	Edward		City of Fort Lauderdale	973-476-5609		ed@edrebholz.com	
Robbin	Sam	CEO	National Jets/Broward Workshop	954-868-2166		samrobbin@nationaljets.com	
Sack	Richard	Air Traffic Manager	FLL Airport Traffic Control Tower			Richard.T.Sack@faa.gov	
Satchell	Arlene	Assistant PIO	Broward County Aviation Department			asatchell@broward.org	
Sequeira	Chris		ESA			CSequeira@esassoc.com	
Shiver	Michael	General Manager	Spirit Airlines	954-359-0933		michael.shiver@spirit.com	
Siwinski	Ben		VHB			BSiwinski@VHB.com	
Solley	Edwin	Manager ATC Systems	Southwest Airlines	407-850-1563		Edwin.solley@wnco.com	
Sorenson	Ben	Vice Mayor	City of Fort Lauderdale	954-802-3311		BSorensen@fortlauderdale.gov	
Swindell	Bob	President and CEO	Greater Fort Lauderdale Alliance Economic Development Agency	954-524-3113	954-627-0131	bswindell@gflliance.org	
		Intergovernmental Affairs Manager	Town of Davie	954-797-1034	1035	leona-henry@davie-fl.gov	



Broward County Aviation Department - Airport Development

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Date / Time: Wednesday, October 23, 2019 10:00 AM - 12:00 PM

Location: Secret Woods Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Thomas	Darrel	Assistant City Manager	City of Weston			DThomas@westonfl.org	
Van Valkenburgh (A)	Debra		ANAC			perhelion@hotmail.com	
Voos	Gregory	South Regional Representative	NBAA	202-737-4475		gvoos@nbaa.org	
Ward	Autumn	Senior Managing Associate	ESA	813-207-7212		AWard@esassoc.com	
Wood	Matt	Growth Management Director	City of Cooper City	954-434-4300		MWood@coopercityfl.org	

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AE

Technical Committee

Meeting #7

Materials Presented at Meeting



AVIATION DEPARTMENT - Fort Lauderdale-Hollywood International Airport
2200 SW 45th Street, Suite 101 • Dania Beach, Florida 33312 • 954-359-6100

Meeting Agenda
Technical Committee Meeting No. 7
14 CFR Part 150 Study
Fort Lauderdale-Hollywood International Airport
October 23, 2019 – 10AM to 12PM EDT

1. Introductions
2. Review of the Role of the TC Meeting Facilitator
3. Review of TC Meetings
4. Summary of Noise Compatibility Program Measures at Other Airports,
Years 2000 to 2016
5. Recap of Suggested FLL Noise Compatibility Program Measures
6. Recap of Noise Abatement Measure Evaluation
7. Understanding Aircraft Noise Exposure with “What-If” Scenarios
8. Altitudes of Aircraft Arriving from the West
9. Future TC Meetings
10. Questions from TC Members
11. Adjourn

Broward County Board of County Commissioners
Mark D. Bogen • Beam Furr • Steve Geller • Lamar P. Fisher • Dale V.C. Holness • Nan H. Rich • Tim Ryan • Barbara Sharief • Michael Udine



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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 3rd – 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)



10

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: 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

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

14

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)

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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)

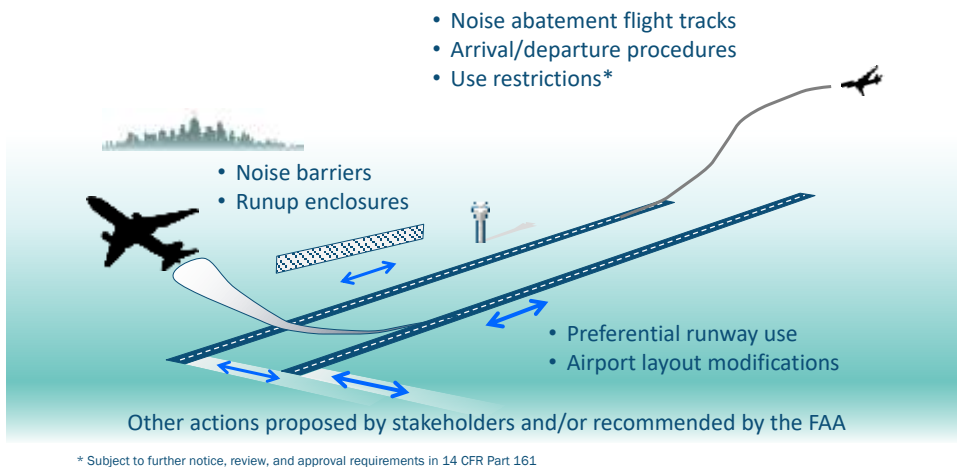
21 The information in this presentation represents suggestions received from the Public and Stakeholders during the Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.



Recap of Noise Abatement Measure Evaluation



Types of Noise Abatement Measures



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

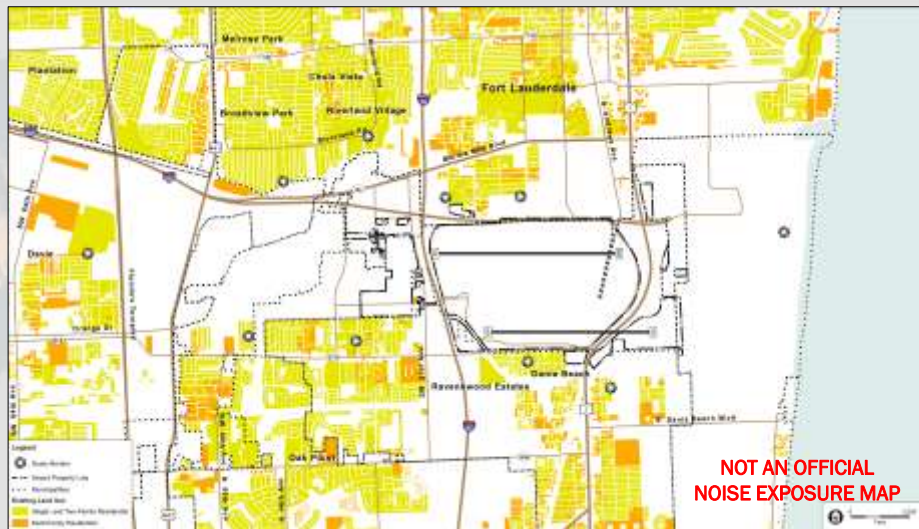


Understanding Aircraft Noise Exposure with “What-If” Scenarios

26

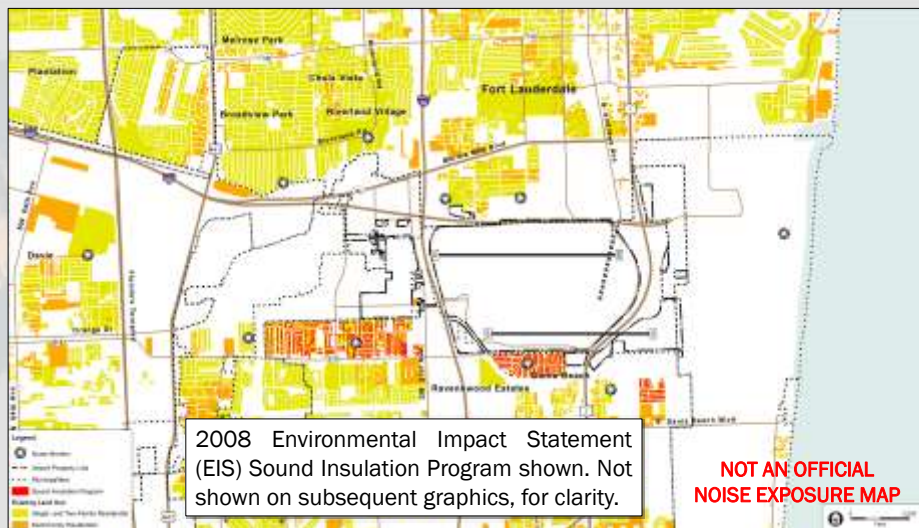


Residential Land Uses in the Vicinity of FLL



27

Residential Land Uses in the Vicinity of FLL



28

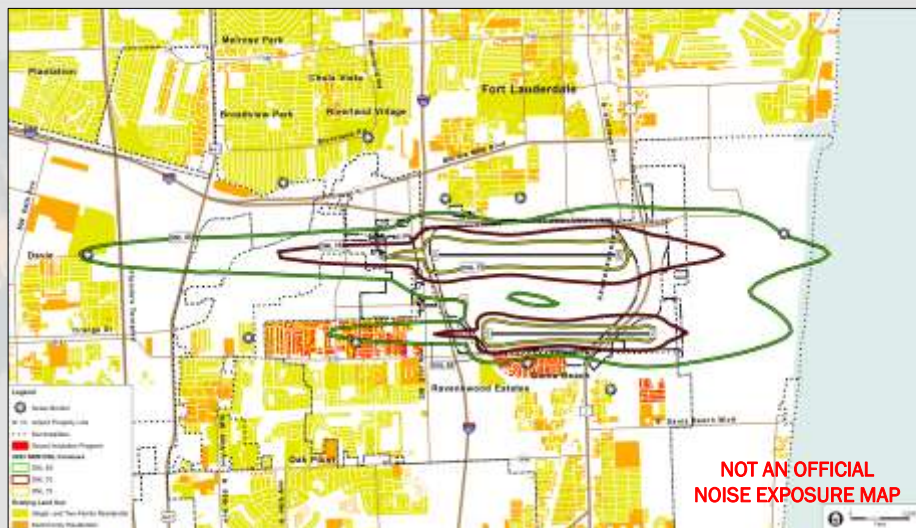
Sound Insulation Program Statuses

- 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

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 29 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.

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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.

The information in this presentation represents suggestions received from the Public and Stakeholders during the
33 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

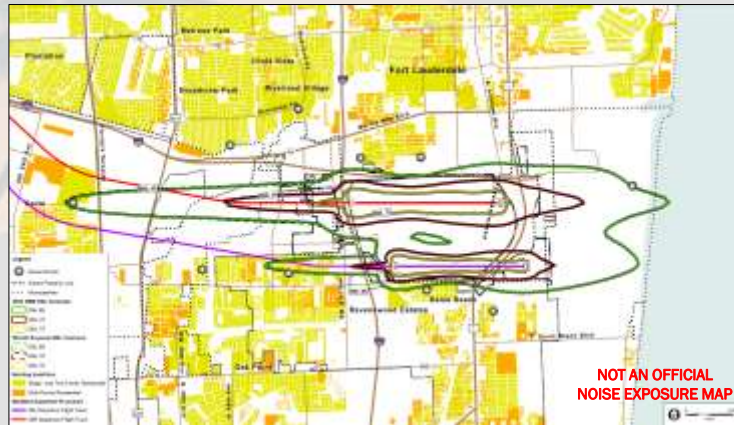


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What if West Flow Departure Tracks Were Moved?

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



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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.

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What if All Turns Close to the Airport Were Eliminated?

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



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What if All Turns Close to the Airport Were Eliminated?

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



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38



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.

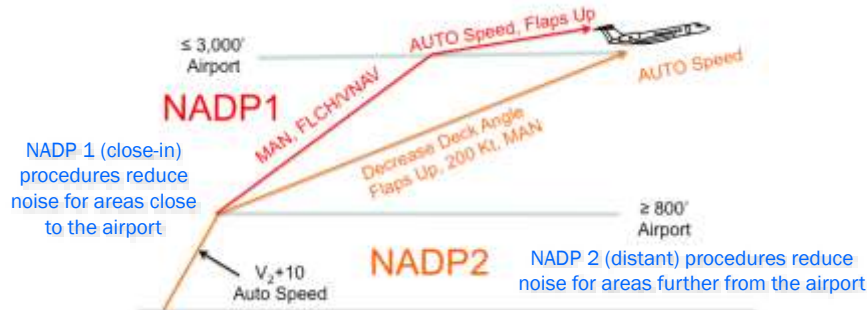
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39

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
- Image from http://code7700.com/noise_abatement.html. Last Accessed: November 30, 2016.
- Blue annotations by ESA.

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40

What if Departing Aircraft Climbed More Quickly?

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



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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.”*

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

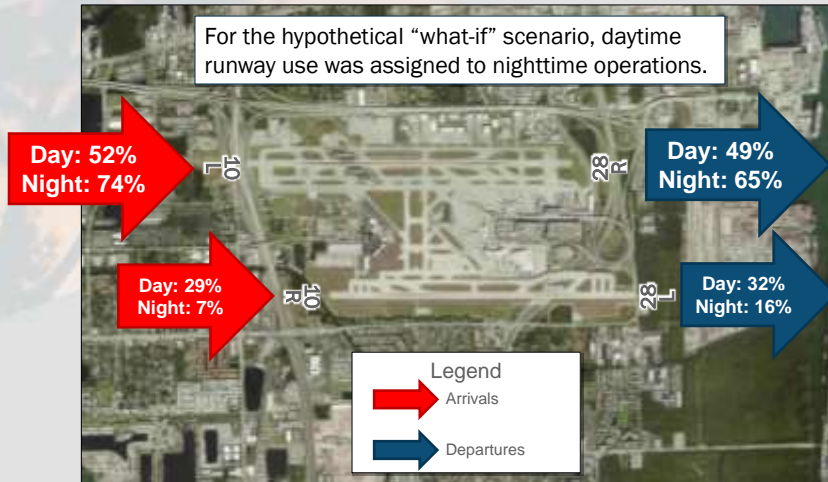
- The effects of the Voluntary Night Closure are captured in the 2018 and 2023 NEMs for FLL
- The Study Team produced a “what-if” scenario exploring how noise exposure might change if the Voluntary Night Closure were not in place
 - Nighttime runway use was assumed to be the same as daytime runway use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



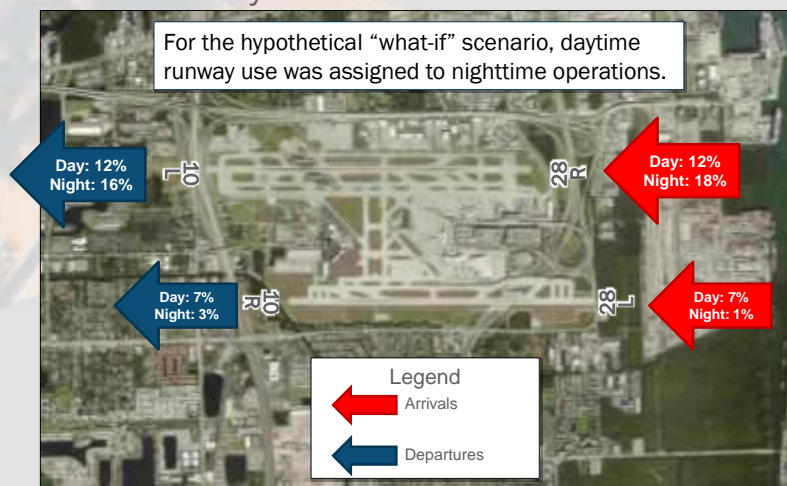
Source: Airport Noise Monitoring and Management System (ANOMS), 2016.

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BROWARD
COUNTY
FLORIDA

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.

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FLORIDA

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



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



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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.



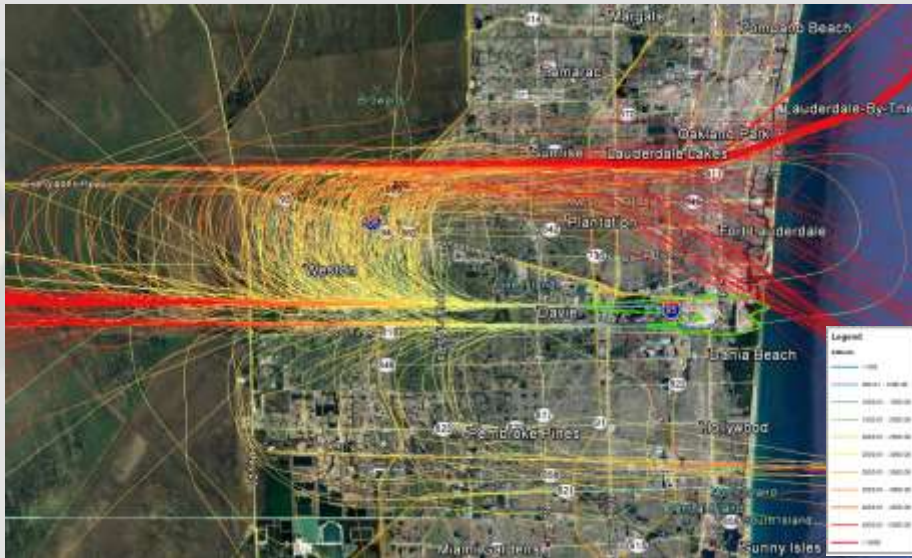
Altitudes of Aircraft Arriving from the West



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)



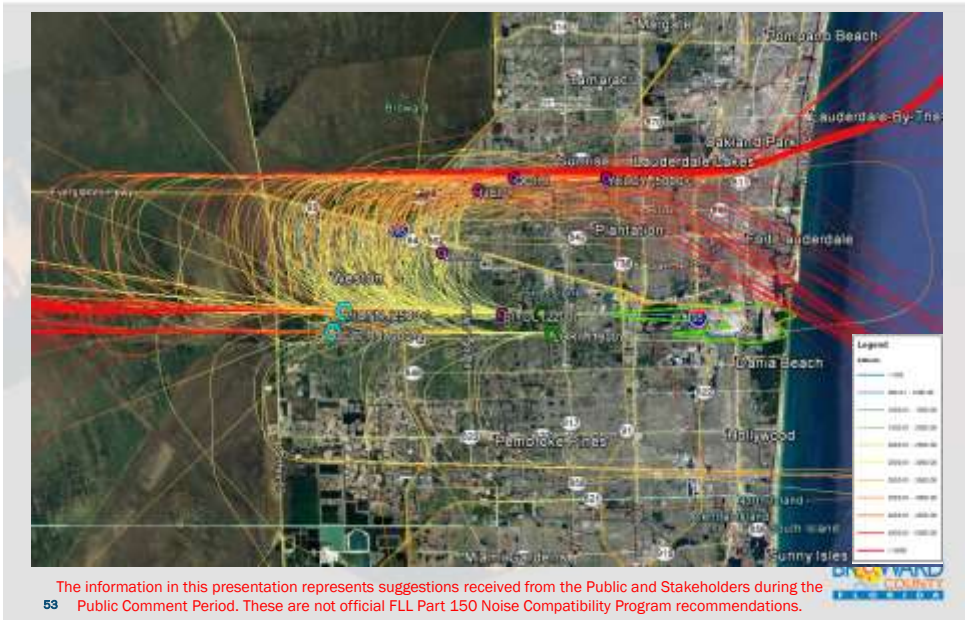
The information in this presentation represents suggestions received from the Public and Stakeholders during the Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.

Altitudes of Aircraft Arriving from the West (commercial jet)



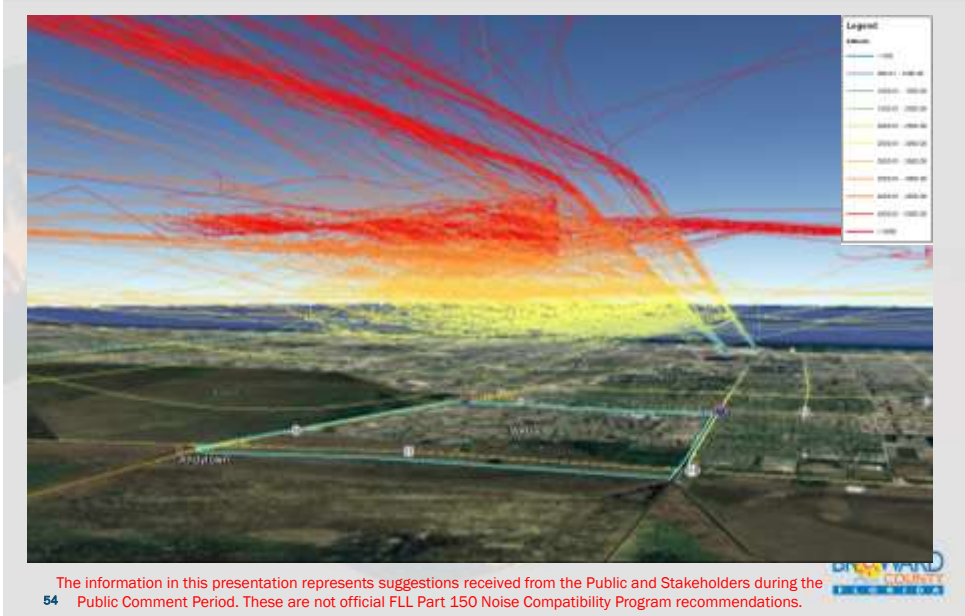
The information in this presentation represents suggestions received from the Public and Stakeholders during the Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.

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

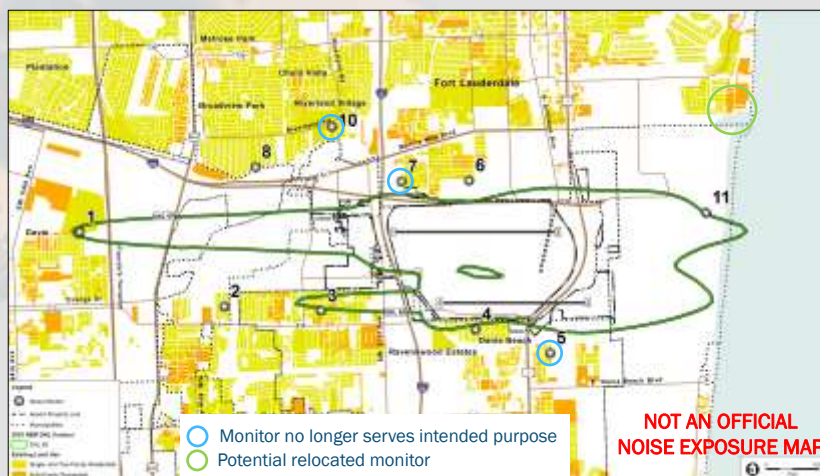
- BCAD received several suggestions to add, move, or upgrade noise monitors in the vicinity of FLL.
- Existing monitor locations are based on the previous FLL airfield configuration.
- While a number of large airports have noise monitoring systems, some airports (such as Tampa International Airport)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



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



Noise Monitoring System at FLL





Future TC Meetings

57




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.flpart150.com

58



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

Technical Committee

Meeting #7

Meeting Summary

14 CFR Part 150 Noise and Land Use compatibility study
Technical Committee Meeting #7
October 23, 2019

Meeting Minutes

Location: Secret Woods Nature Center, Julia Hall
2701 W State Rd 84
Fort Lauderdale, FL 33312

Committee Members in Attendance

Gary Luedtke – ANAC	Peter Green – FAA
Chris Akagbosu – Broward County School Board	Donna Peplin – Greater Dania Chamber of Commerce
Peter Dokuchitz – City of Plantation	Dan Lindblade – Greater Fort Lauderdale Chamber of Commerce
Rufus James – City of Fort Lauderdale	Edwin Solley – Southwest Airlines
Geoff Rames – City of Fort Lauderdale	Barbra Blake Boy – Study Coordination Committee
Edward Rebholz – City of Fort Lauderdale	Leona Henry – Town of Davie
Lorie Mertens-Black – City of Hollywood	Richard Lemack – Town of Davie
Don Decker – City of Weston	John Eastman – Town of Southwest Ranches
Darrel Thomas – City of Weston	
Kalena Glover – Delta Airlines	

Others Present

Timeka Carter – AID	Bryan Adams - GSI
Mishka Binns – BCAD	Melissa Barnett - GSI
Winston Cannicle – BCAD	LaCheryl Fitzpatrick - GSI
Sharlene Cooper – BCAD	Yvonne Garth – GSI
Will Castillo – BCAD	Natalie Palomino - GSI
Alejandro Cuevas – BCAD	Mike Carey – Kimley-Horn
Gasser Douge – BCAD	Sierra LePore – VHB
Gregory Meyer – BCAD	Ben Siwinski – VHB
Mike Pacitto – BCAD	Byron Jaffe – City of Weston
Kym Trice – BCAD	Vasily Borovsky
Mike Arnorld – ESA	Marty Goldenberg
Chris Sequeira – ESA	Henry Mead
Autumn Ward – ESA	Cathy David
	Carolyn Larke

Agenda and Key Topics:

- 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

Meeting Summary:

- The Technical Committee convened for its seventh meeting at 10:00 AM on October 23, 2019 at the Secret Woods Nature Center in the Julia Hall.
- The meeting began with an introduction of participants.
- Ground rules for the TC members were established by the facilitator, Yvonne Garth. TC members were reminded that their role is to represent their constituencies by bringing forth their thoughts and opinions to the Part 150 process. TC members are also expected to advise their organization and/or constituents of the TC’s discussion.
- Attending members of the public were advised of ways in which they could submit comments including through the project website (www.flpart150.com) and at future public meetings.
- A presentation of key topics was presented by Michael Arnold, Part 150 Project Director representing the ESA consulting team, and Chris Sequeira, Senior Managing Associate at ESA. The presentation included the following information:
 - Review of Past 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 & comments from TC members:

Q. Edward Rebholz (*City of Fort Lauderdale*) – What is DNL 65?

A. DNL is an annual average day noise exposure metric that incorporates every operating condition at the airport. DNL is the metric required by the FAA for Noise Exposure Maps (NEMs). It utilizes a full year of aircraft operations, aircraft types, aircraft flight paths, and

runway use to represent a footprint of noise exposure specific to the FLL airport. It also accounts for the times of day in which aircraft operate; flights occurring at night (10:00 P.M. to 6:59:59 A.M.) are weighted in the metric as equivalent to 10 flights occurring in the daytime (7:00 A.M. to 9:59:59 P.M.). 65 DNL represents the FAA's threshold of significant noise exposure.

Q. Geoff Rames (*City of Fort Lauderdale*) – There were a series of meetings related to FLL aircraft and airspace operations with the FAA. Were these meetings public?

A. Yes, meetings were conducted with the FAA in order to better understand the factors that influence airspace operation at FLL and to assist in understanding compatibility considerations related to various measures. No, these were one-on-one discussions. The meetings were in a closed forum and not advertised to the public.

Q. Donna Peplin (*Greater Dania Chamber of Commerce*) – You mentioned that one aircraft operating at night is weighted to be equivalent to ten aircraft during the day?

A. Yes, that is correct.

Q. Edward Rebholz (*City of Fort Lauderdale*) - What is the distance between V2 + 10 to auto-speed? Are you talking about five miles, ten?

A. In the context of noise abatement departure procedures, the distance between the start and the end of the procedure depends on aircraft type and aircraft operator. It also depends on how quickly the aircraft can reach 3,000 feet of altitude. FAA Advisory Circular (AC) 91-53A specifies 800 feet as a minimum altitude for commencement of a noise abatement departure procedure safety reasons. Each noise abatement departure procedure is different, so the distance will vary.

Q. Edward Rebholz (*City of Fort Lauderdale*) – What is the average distance from the airport that aircraft will reach 3,000 feet?

A. Approximately three miles.

Q. Lorie Mertens-Black (*City of Hollywood*) – Do you know where on the map West Lake Park is? It would be helpful to have a map that shows a distinction between conservation areas, industrial areas, etc. in the future.

A. The maps shown in this presentation were created to focus on residences. The official NEMs, available on the FLL 14 CFR Part 150 Study website, show the areas that you are asking about.

Q. Donna Peplin (*Greater Dania Chamber of Commerce*) – The voluntary nighttime closure of the southbound runway is not from 10:00 PM to 5 AM, it is from 10:30 PM to 6 AM.

A. The language being used is from the original interlocal agreement between Dania Beach and Broward County. The presentation's "what-if" scenario related to the voluntary nighttime closure is not affected by the difference.

Q. Geoff Rames (*City of Fort Lauderdale*) – On slide 36, one of the bullets says, "It is not feasible to eliminate all turns close to the FLL in practice". How did you come up with that?

A. This came from an operational standpoint. Discussions with the airport control tower determined that this is not possible.

Q. Byron Jaffe (*Commissioner, City of Weston*) – The City of Weston, Southwest Ranches and Davie are all concerned about future and current airport noise. The data collected and being used is from 2016-2017, correct?

A. The data used for the presentation's analysis of east flow aircraft arrival altitudes is actually from 2019.

Q. Byron Jaffe (*Commissioner, City of Weston*) – In 2016, there were 290,000 flight operations and in 2017 there were 312,000. In 2018 there were 333,000 flight operations, which is a 40,000 increase from 2016. 100% of arrivals are coming over west Broward for 75% of the day. We would like to implement noise abatement procedures that are already in place and working at other airports. 65 DNL is different depending on the environment you are in.

A. Yes, that is one of the downfalls with the DNL measurement and the Part 150 process. Measures that do not demonstrate a benefit within the 65 DNL contour cannot be approved by the FAA under the Part 150 process. However, we have leveraged the process to bring stakeholders to the table to discuss the community concerns and potential measures to reduce noise impacts outside the 65 DNL contour. We agree that it is important to use every opportunity to reduce impacts on the community given the projections for continued growth.

Q. Don Decker (*City of Weston*) – Has anyone looked at different levels of noise when aircraft turn? Is this factored into the study?

A. Yes, there are a number of operations changes that occur when an aircraft turns that can increase noise exposure. Changes like these are factored into the aircraft noise profiles and in the modeling of noise.

Q. Lorie Mertens-Black (*City of Hollywood*) – Did you look at departures or did you only look at arrivals? Pages 51-54 only show information on arrivals.

A. We modeled departures for some other what if scenarios. We didn't include departures for the altitude analysis because the primary concerns of these specific communities relate to arrivals.

Q. Lorie Mertens-Black (*City of Hollywood*) – What is the cost of the monitor system?

A. When calculating the cost, you also need to factor in the lease for property. It is generally about \$450,000 for the system as a whole, but depends on the number of monitors.

Q. Donna Peplin (*Greater Dania Chamber of Commerce*) – How much does an individual monitor cost? Noise measurements in our community postponed for four months because monitor three, which receives the most noise, was not working. There were 4,784 flights in the past 15 days on the south runway with noise through the roof. This is something we need to discuss with the FAA and do something about the 20-year-old computers.

A. An individual monitor is about \$35,000. We are considering options for FLL's noise monitoring system in the NCP phase of the 14 CFR Part 150 Study.

Q. Gary Luedtke (*ANAC*) – Who pays for that [in reference to Donna Peplin's comment above]?

A. Typically, the FAA would help pay for noise monitors if they are located within the 65 DNL contour. Right now 85% of the monitors are located outside of the 65 DNL contour and would not be eligible for federally funded upgrades.

Q. Geoff Rames (*City of Fort Lauderdale*) – Why are there green circles around some monitors?

- A. The blue circles on presentation slide 56 are monitors that can be moved or relocated because they are not serving the originally intended purpose. Green circles identify areas where a monitor could potentially be located.
- Q. Geoff Rames (*City of Fort Lauderdale*) – Is data from the monitors considered in the Part 150 study?
- A. No, it is not.
- Q. Edward Rebholz (*City of Fort Lauderdale*) – In the third to last slide, it says there will be recommendations and considerations by the FAA. Will we see that?
- A. Yes, in TC meeting #8 we will go over preliminary recommendation. TC meeting #8 may be in the December or January timeframe.
- Q. Geoff Rames (*City of Fort Lauderdale*) - There was a slide up there that shows the noise contours. 95% of airport noise complaints come from areas outside of the contours. Suggestions by the public and members of this committee were to change the departure headings to the west and the north. In the hypothetical scenarios, this was shown. You said that if it is not within the DNL 65 contour, the FAA won't do it.
- A. The FAA can't approve it for purposes of the Part 150 Study. What presenting the scenario does is open up the conversation with the FAA. It brings the FAA to the table and tells a story about the areas of concern. The graphics depicting the noise complaint locations or discussion of those specific areas of concern have been included in virtually every discussion that we've had with the FAA.
- Q. Geoff Rames (*City of Fort Lauderdale*) – In the past, there have been several discussions about approvals and disapprovals of short-term contours that have been developed, specifically for west departures. Some time ago, BCAD said that it would do them but they weren't done. Where are we with that?
- A. There have been conversations about this with BCAD and a decision has not been made yet. We are limited to annual 65 DNL contours for the purposes of FAA approval of the NCP.
- Q. Gary Luedtke (*ANAC*) – How many operations are expected this year at this airport (FLL)? Also, aren't they the same as they were in 2005?
- A. Last year it was approximately 334,000, I believe. It is somewhere in that realm this year, although the south runway closure may have inhibited some activity at the airport. (The change in operation profile of the airport relative to total historic operations was discussed in some detail in TC #6.)

Actionable Next Steps:

Schedule Technical Committee Meeting #8

Meeting Adjourned at 11:50 AM

Appendix G-8
Technical Committee
Meeting #8
February 5, 2020

Technical Committee

Meeting #8

Meeting Notice and

Attendance Roster



AVIATION DEPARTMENT - Fort Lauderdale-Hollywood International Airport

2200 SW 45th Street, Suite 101 • Dania Beach, Florida 33312 • 954-359-6100

**Subject: Fort Lauderdale-Hollywood International Airport
14 CFR Part 150 Study - Technical Committee Meeting #8**

Please save the date for the next Technical Committee meeting to support the Fort Lauderdale-Hollywood International Airport Part 150 Study.

Date: Wednesday, February 5, 2020

Time: 10:00AM - 12:00PM

Location: Secret Woods Nature Center | Julia Hall; 2701 W. SR 84; Dania Beach, FL 33312

Please arrive 10 minutes early to allow time to check in prior to the start of the meeting.

Broward County Board of County Commissioners

Mark D. Bogen • Beam Furr • Steve Geller • Lamar P. Fisher • Dale V.C. Holness • Nan H. Rich • Tim Ryan • Barbara Sharief • Michael Udine

www.broward.org/www.fll.net



Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #8

Date / Time: Wednesday, February 5, 2020 10:00 AM - 12:00 PM

Location: Secret Woods Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Adams	Bryan		Garth Solutions, Inc.			bryan@garthsolutions.com	
Akagbosu	Chris	Director, Facility of Planning & Real Estate Dept.	Broward County School Board	754-321-2162		chris.akagbosu@browardschools.com	
Annunziata	Jason	Station Manager	JetBlue	954 233-4722	646-942-2775	Jason.Annunziata@jetblue.com	
Anton	Mitch	Leadership Hollywood XLI	Hollywood Chamber of Commerce	954-646-3639		scpanther3@aol.com	
Arnold	Mike	Senior Vice President	ESA	407-312-1294		MArnold@ESASSOC.com	
Barnett	Melissa	Account Manager	Garth Solutions, Inc.	954-727-3001		melissa@garthsolutions.com	
Boutros	Kareen	Executive Director	Broward Workshop	954-462-9112		kareen@browardworkshop.com	
Boy	Barbara Blake		Study Coordination Committee			BBLAKEBOY@broward.org	
Burlingame	Sean		ESA			SBurlingame@esassoc.com	
Cannicle	Winston	Noise & Environmental Officer	Broward County Aviation Department - Airport Noise Office	954-359-6181		WCANNICLE@broward.org	
Carter	Timeka	Planner	AID	321-223-8304		tcarter@aidinc.us	
Castillo	Will	Airport Planning Manager	Broward County Aviation Department - Airport Noise Office	954-359-2291		wcastillo@broward.org	
Cooley (A)	Sid		FLL Airport Traffic Control Tower	954-921-9200		sidney.cooley-jr@faa.gov	
Coutain, Jr.	Ken	Airport Planner	Broward County Aviation Department - P/D	954-359-1599	954-298-6497	kcoutain@broward.org	
Cuevas	Alejandro	EPA	Broward County Aviation Department			acuevas@broward.org	
Decker	Don	City Manager / CEO	City of Weston	954-385-2000	954-868-8871	DDecker@westonfl.org	
DelNegri	Theodore (TJ)	Tower Manager	FLL Airport Traffic Control Tower	954-921-9201		theodore.delnegri@faa.gov	
De Reuver	Brandon	Lead Creative Consultant	Garth Solutions, Inc.	954-727-3001		brandon@garthsolutions.com	
Dokuchitz	Peter	Principal Planner / City of Plantation	City of Plantation	954-797-2265		pdokuchitz@plantation.org	
Eastman	John		Town of Southwest Ranches	954-465-8383		john426@bellsouth.net	
Fitzpatrick	LaCheryl	Vice President	Garth Solutions, Inc.	954-727-3001		lacheryl@garthsolutions.com	











Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #8

Date / Time: Wednesday, February 5, 2020 10:00 AM - 12:00 PM

Location: Secret Woods Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Friedman	Karen	Senior Planner	Broward County Aviation Department			KFRIEDMAN@broward.org	
Gale	Mark	Director of Aviation	Broward County Aviation Department			mgale@broward.org	
Gambrill	Marc	Aviation Chief Development Officer (CDO)	Broward County Aviation Department			mgambrill@broward.org	
Garth	Yvonne	President and CEO	Garth Solutions, Inc.	954-727-3001		yvonne@garthsolutions.com	
Gertsen (A)	Alex	Director of Airports and Ground Infrastructure	NBAA	202-737-4477		Agertsen@nbaa.org	
Glover	Kalena	Performance Engineer	Delta Airlines	470-528-9160		kalena.glover@delta.com	
Grandolfo	Joe		FEDEX			jgrandolfo@fedex.com	
Green	Peter		FAA	407-487-7296		peter.m.green@faa.gov	
Hemmerle	Mark	Front Line Manager	South Florida Flight Standards Division (FSDO)	954-641-6015		Mark.W.Hemmerle@faa.gov	
Henry	Leona		Town of Davie	954-797-1035		leona.henry@davie.fl.gov	
Henry	Rebecca	Assistant Manager	Federal Aviation Administration Orlando Airports District Office			Rebecca.Henry@faa.gov	
Hildebidle	Bob	Air Traffic Manager A	Miami Air Traffic Management/TRACON	305-869-5402	954-292-6515	Bob.Hildebidle@faa.gov	
Holste (A)	Phillip	Assistant Town Administration	Town of Davie	954-797-1034		Phillip_Holste@davie-fl.gov	
Hotte	Anne	CEO/Executive Director	Greater Hollywood Chamber of Commerce	954-923-4000		anne@hollywoodchamber.org	
James	Rufus	Airport Manager	City of Fort Lauderdale	954-828-4963		RJames@fortlauderdale.gov	
Kaine (A)	Brad	Director of Public Services	City of Dania Beach	954-924-6808		bkaine@daniabeachfl.gov	
LaFerrier	Marc	Director, Community Development	City of Dania Beach	954-924-6805 x3643		mferrier@ci.dania-beach.fl.us	
Lemack	Richard	Town Administrator	Town of Davie	954-797-1034		Richard_Lemack@davie-fl.gov	
LePore	Sierra	Aviation Planner	VHB			slepore@vhb.com	
Lindblade	Dan	CAE - President and CEO	Greater Fort Lauderdale Chamber of Commerce	954-462-4911		dan@ftlchamber.com	
Luedtke	Gary		ANAC	954-966-8013		gluedtke@gmail.com	



Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #8

Date / Time: Wednesday, February 5, 2020 10:00 AM - 12:00 PM

Location: Secret Woods Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Lundrigan	Julia	Delta Flight Ops	Delta Airlines	404-773-2882	678-427-1350	Julia.lundrigan@delta.com	
Matz	Jeff	Corporate Contact	UPS	502-329-3913		jmatz@ups.com	
Mertens-Black	Lorie	Chief Civic Affairs Officer	City of Hollywood	954-921-3599		lmertens-black@hollywoodfl.org	
Meyer	Gregory	Public Information Officer	Broward County Aviation Department - PIO	954-359-6116		GMeyer@broward.org	
Modrich (A)	Mark	AA Pilot/Resident	Town of Southwest Ranches	954-540-4854	954-252-5040	mmodrich@aol.com	
Morrissey	Mary	Senior Manager	FedEx	954-359-7432		mmmorrissey@fedex.com	
Nonnemacher (A)	Michael	Acting Assistant Executive Director	Broward County Aviation Department - Airport Operations			mnonnemacher@broward.org	
Pacitto	Mike	Director of Planning	Broward County Aviation Department - Airport Manager's Office	954-560-0766		MPPACITTO@broward.org	
Palomino	Natalie	Assistant Account Manager	Garth Solutions, Inc.	954-210-9736		natalie@garthsolutions.com	
Peplin	Donna		Greater Dania Beach Chamber of Commerce	954-610-2845	/	donna@tyestudios.com	
Pokryfke	John	Asst. Director of Operations, Aviation	Broward County Aviation Department - Airport Operations	954-359-6475		jpokryfke@broward.org	
Rames (A)	Geoff	Lauderdale Isles Civic Association	City of Fort Lauderdale	954-327-9095		grames.lucia@gmail.com	
Rebholz	Edward		City of Fort Lauderdale	973-476-5609		ed@edrebholz.com	
Robbin	Sam	CEO	National Jets/Broward Workshop	954-868-2166		samrobbin@nationaljets.com	
Sack	Richard	Air Traffic Manager	FLL Airport Traffic Control Tower			Richard.T.Sack@faa.gov	
Satchell	Arlene	Assistant PIO	Broward County Aviation Department			asatchell@broward.org	
Sequeira	Chris		ESA			CSequeira@esassoc.com	
Shiver	Michael	General Manager	Spirit Airlines	954-359-0933		michael.shiver@spirit.com	
Siwinski	Ben		VHB			BSiwinski@VHB.com	
Solley	Edwin	Manager ATC Systems	Southwest Airlines	407-850-1563	/	Edwin.solley@wnco.com	
Sorenson	Ben	Vice Mayor	City of Fort Lauderdale	954-802-3311		BSorensen@fortlauderdale.gov	




Broward County Aviation Department - Airport Development

Meeting: Fort Lauderdale - Hollywood International Airport --- Part 150 Study - Technical Committee Meeting #8

Date / Time: Wednesday, February 5, 2020 10:00 AM - 12:00 PM

Location: Secret Woods Nature Center

Last Name	First Name	Title	Organization Name	Work Phone #	Cell Phone #	E-Mail Address	Signature
Swindell	Bob	President and CEO	Greater Fort Lauderdale Alliance Economic Development Agency	954-524-3113	954-627-0131	bswindell@gflalliance.org	
Thomas	Darrel	Assistant City Manager	City of Weston			DThomas@westonfl.org	
Van Valkenburgh (A)	Debra		ANAC			perhelion@hotmail.com	
Voos	Gregory	South Regional Representative	NBAA	202-737-4475		gvoos@nbaa.org	
Ward	Autumn	Senior Managing Associate	ESA	813-207-7212		AWard@esassoc.com	
Wood	Matt	Growth Management Director	City of Cooper City	954-434-4300		MWood@coopercityfl.org	

[illegible]

Technical Committee

Meeting #8

Materials Presented at Meeting



AVIATION DEPARTMENT - Fort Lauderdale-Hollywood International Airport
2200 SW 45th Street, Suite 101 • Dania Beach, Florida 33312 • 954-359-6100

Meeting Agenda
Technical Committee Meeting No. 8
14 CFR Part 150 Study
Fort Lauderdale-Hollywood International Airport
February 5, 2020 – 10AM to 12PM EST

1. Introductions
2. Review of the Role of the TC Meeting Facilitator
3. Review of TC Meetings
4. Recaps
 - a. Suggested NCP Measures
 - b. Noise Abatement Measure Evaluation
 - c. Understanding Aircraft Noise Exposure with “What-If” Scenarios
5. Noise Abatement, Land Use, and Programmatic Measures That May Be Recommended or Are Not Being Recommended in the FLL NCP
6. Next Steps
7. Questions from TC Members
8. Adjourn

Broward County Board of County Commissioners
Mark D. Bogen • Beam Furr • Steve Geller • Lamar P. Fisher • Dale V.C. Holness • Nan H. Rich • Tim Ryan • Barbara Sharief • Michael Udine



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14 CFR PART 150 NOISE AND LAND USE COMPATIBILITY STUDY

Technical Committee Meeting #8
February 5, 2020

Agenda

- Introductions
- Review of the Role of the TC Meeting Facilitator
- Review of TC Meetings
- Recaps
 - Suggested NCP Measures
 - Noise Abatement Measure Evaluation
 - Understanding Aircraft Noise Exposure with “What-If” Scenarios
- FLL NCP Measures
 - Noise Abatement Measures That May Be Recommended in the FLL NCP
 - Noise Abatement Measures Considered but Not Being Recommended
 - Land Use Measures That May Be Recommended in the FLL NCP
 - Land Use Measures Considered but Not Being Recommended
 - Program Management Measures That May Be Recommended in the FLL NCP
 - Program Management Measures Considered but Not Being Recommended
- Next Steps
- 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 #7 – October 23, 2019

- 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

7



Activities Since last Technical Committee Meeting

Since TC #7, we have:

- Selected noise abatement, land use, and programmatic measures that may be forwarded for recommendation in the NCP
- Determined which suggested NCP measures will likely not be forwarded for recommendation in the NCP
- Begun assembling the preliminary draft NCP document
 - No measures have been submitted to the FAA for formal review
 - After the draft NCP is released, a public comment period will open. During the comment period, a public workshop and public hearing will be held.
- Continued discussions with FAA's Orlando Airports District Office (ADO) about carrying forward certain measures that:
 - Do not reduce noncompatible land uses within the DNL 65 contour
 - Do not increase noncompatible land uses within the DNL 65 contour
 - Have the potential to reduce annoyance

8



Recap: Suggested FLL Noise Compatibility Program Measures



9

Summary of Stakeholder Noise Abatement Suggestions

• Arrival and Departure Procedures

- Keep aircraft higher during arrival
- Use a modified aircraft departure profile
- Use a modified aircraft arrival profile

• Flight Paths

- Route west-flow aircraft departures over compatible uses south of Interstate 595
- Route east-flow aircraft departures over water before turning north

• Preferential Runway Use

- Use the north runway as the preferred runway
- Use both runways at the same utilization
- Close the south runway at night
- Prefer arrivals on north runway and departures on south runway

• Use Restrictions

- Decrease frequency of flights
- Establish operational curfews
- Impose penalties or bans on aircraft operations



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

Summary of Stakeholder Land Use and Programmatic Suggestions

Land Use

- Sound Insulation
 - Provide sound insulation to residents
 - Provide more opportunities for inclusion in existing 2008 Environmental Impact Statement (EIS) Sound Insulation Program (SIP) and Conveyance and Release (CAR) program
- Avigation Easements
 - Provide Conveyance and Release (CAR) program participation opportunity to Dania Beach homes included in 2023 DNL 65 contour
- Land Acquisition
 - Relocate residents
 - Compensate residents / purchase property

Programmatic

- Monitoring
 - Update monitoring system
 - Install more noise monitors
- Reporting
 - Improve website reporting
 - Evaluate flight tracks of smaller turboprop and prop aircraft
 - Document simultaneous departures

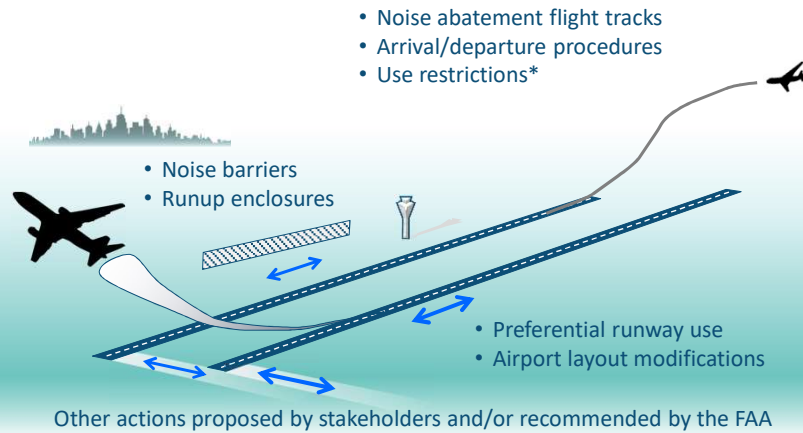
The information in this presentation represents suggestions received from the Public and Stakeholders during the
11. Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.



Recap: Noise Abatement Measure Evaluation



Types of Noise Abatement Measures



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

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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)

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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

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Recap: Understanding How Aircraft Noise Exposure Changes with “What-If” Scenarios

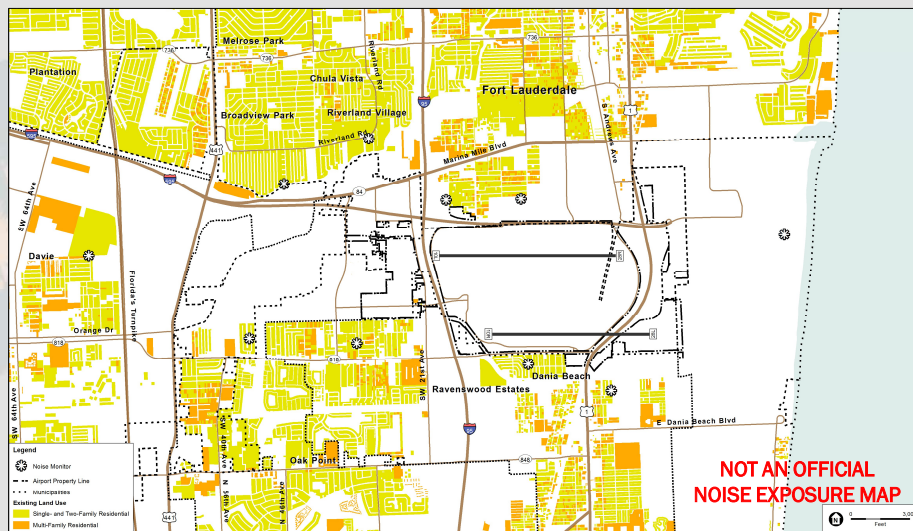
16



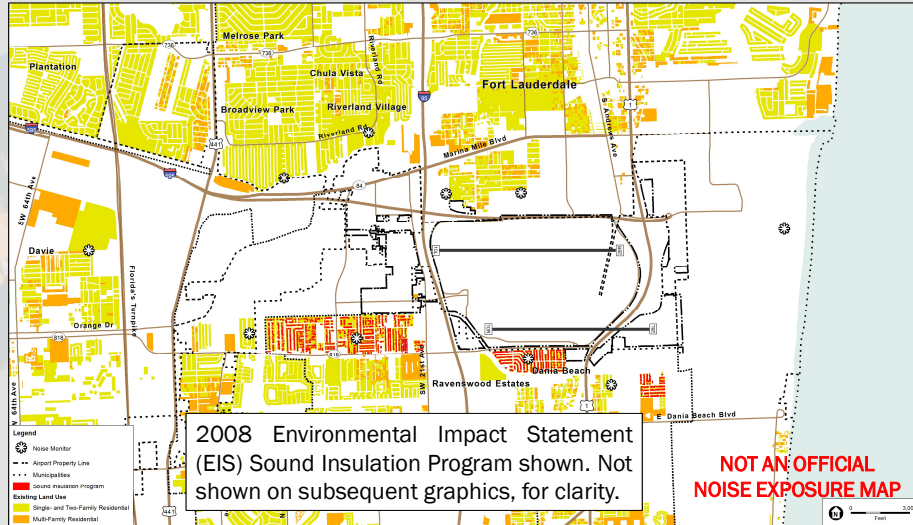
Purpose of “What-If” Scenarios

- BCAD received a large number of noise abatement measure suggestions from multiple stakeholders.
- Many suggested noise abatement measures were similar; they were therefore grouped into a smaller number of “what-if” scenarios to determine whether the suggested measures may reduce noncompatible uses within the 65 DNL contour in the vicinity of FLL.
- The next several slides illustrate the residential land uses in the vicinity of FLL, which was used to analyze effects of scenarios.
 - Residential land uses are normally considered noncompatible within the 65 DNL contour.
 - However, housing units that have been sound-insulated as an outcome of the 2008 EIS Sound Insulation Program are compatible with aircraft noise.

Residential Land Uses in the Vicinity of FLL



Residential Land Uses in the Vicinity of FLL



19

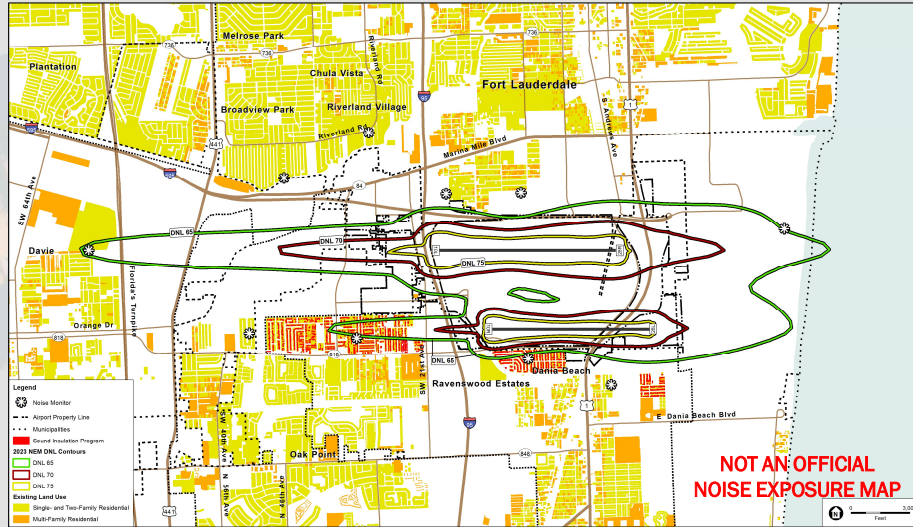
Sound Insulation Program Statuses

- Residential Sound Insulation Program
 - Participating Units: 1,224
 - Invited to Participate: 1,858
 - Completed Construction: 1,189
 - Under Construction: 3
 - On Hold: 35
 - Pending Bid/Award: 0
 - Deemed Compatible: 313
- Standard Sales Assistance (SSA) Program / Conveyance and Release (CAR) Program
 - Parcels Contacted to Date: 843 (100 percent of eligible parcels)
 - Participating: 68
 - Awaiting Response: 3
 - Ineligible: 152
 - Declined/Non-Responsive: 57
 - Payment Issued/Closed: 563

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.

20

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



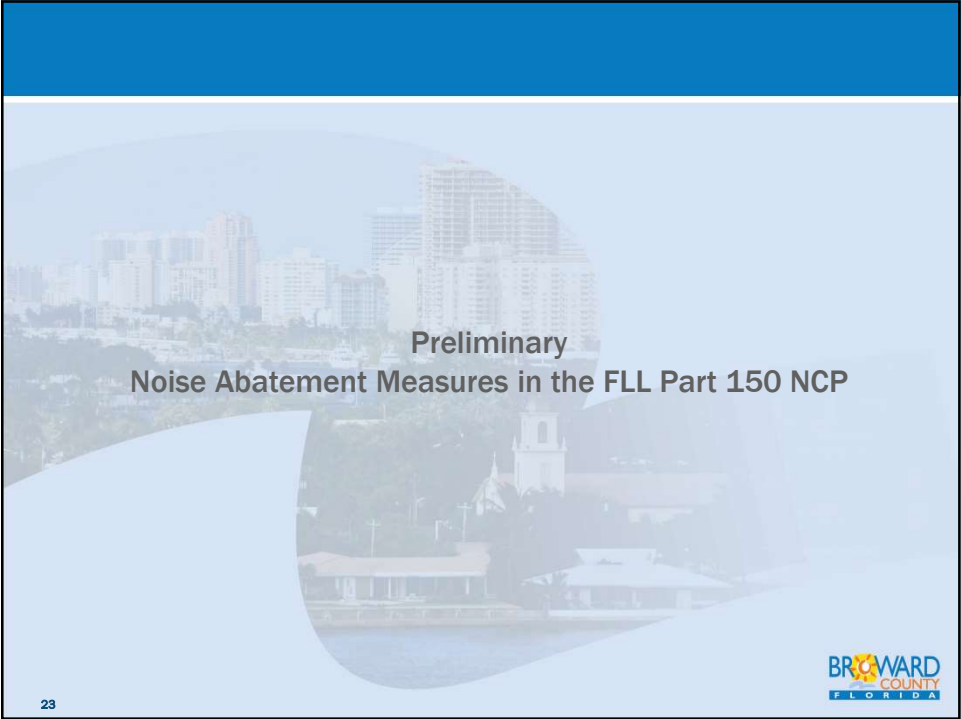
21

Summary of Stakeholder Suggested Noise Abatement “What-If” Scenario Analysis

Potential Measure	Findings
What if the south runway were completely closed at night (10 PM – 7 AM)?	The number of noncompatible uses within the 65 DNL contour would <u>increase</u> .
What if west flow departure tracks were moved so that aircraft turn north later than they currently do?	The number of noncompatible uses within the 65 DNL contour would <u>not decrease</u> .
What if all turns close to the airport were eliminated?	The number of noncompatible uses within the 65 DNL contour would <u>not decrease</u> .
What if departing aircraft climbed more quickly?	Implementation of NADP1 may cause the number of noncompatible uses within the 65 DNL contour to <u>increase</u> .
What if the Interlocal Agreement Voluntary Night Closure were <u>not</u> in place?	The number of noncompatible uses within the 65 DNL contour would <u>decrease</u> .

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.

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Preliminary Noise Abatement Measures in the FLL Part 150 NCP



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Noise Abatement Measures That May Be Recommended

Reduce West-Flow Aircraft Departure Turns Near FLL

- Description: Work with the FAA to reduce early northward turns that place west-flow departures over residential areas at low altitudes. This may involve new flight paths, such as an Equivalent Lateral Spacing Operations (ELSO)-like procedure, and/or flight track dispersion.
- Rationale: This program could reduce overflights of residential areas immediately to the northwest of FLL, reducing annoyance.
- Any proposed changes are contingent upon FAA safety and airport capacity analysis.
- BCAD and the FAA have held several conversations related to community concerns over early northward turns of aircraft departing FLL.



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Noise Abatement Measures That May Be Recommended

Reduce East-Flow Aircraft Departure Turns Near FLL

- Description: Work with the FAA to reduce early northward turns that place east-flow aircraft departures over residential areas at low altitudes. This may involve new flight paths, such as an ELSO-like procedure, and/or flight track dispersion.
- Rationale: This program could reduce overflights of residential areas to the north of Dr. Von D. Mizell-Eula Johnson State Park by reducing the frequency of northward turns that occur before reaching the Atlantic Ocean. This could reduce community annoyance.
- Any proposed changes are contingent upon FAA safety and airport capacity analysis.
- BCAD and the FAA have held several conversations related to community concerns over early northward turns of aircraft departing FLL.

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Noise Abatement Measures That May Be Recommended

Modify Aircraft Arrival Profiles to the West of FLL

- Description: Work with the FAA to modify altitude profiles of arriving aircraft and raise altitudes outside of the 65 DNL contour to the west of FLL. This may involve new procedures and/or increased use of the existing Required Navigation Performance (RNP) approach.
- Rationale: This program could reduce noise levels in residential areas to the west of FLL outside of the 65 DNL contour, reducing annoyance.
- This measure would primarily focus on increasing the altitude of aircraft as they transition from the downwind to final approach.
- Any proposed changes are contingent upon FAA safety and airport capacity analysis.
- BCAD and the FAA have held several conversations related to community concerns over aircraft arrival altitudes to the west of FLL.

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Noise Abatement Measures That May Be Recommended

Continue Voluntary Nighttime Runway Use Program

- Description: Continue the current program that recommends the preferred runway for aircraft operations at night.
- Rationale: This program would largely represent a continuation of the existing Voluntary Use Program for Runway 10R-28L that has been reflected in the operational conditions at FLL since the opening of Runway 10L-28R. This program would continue to promote use of Runway 10L-28R instead of Runway 10R-28L during evening hours as specified by the program.
- A Voluntary Nighttime Runway Use program could provide additional operational flexibility such as the use of Runway 28L for arrivals at night during west flow conditions.

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Noise Abatement Measures That May Be Recommended

Review the “Engine Run Up Restriction” Policy

- Description: Review the November 15, 1996 “Engine Run Up Restriction Policy” and evaluate its effectiveness. This policy was implemented as an outcome of the 1994 NCP Update.
- Rationale: The Policy would be reviewed to determine its effectiveness in limiting exposure of noise-sensitive uses to engine run-up noise while also meeting aircraft maintenance needs.
- The existing Engine Run Up Restriction Policy restricts engine maintenance run-ups to specific times and locations and also dictates when run-up activity must be coordinated with FLL airport management.

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Noise Abatement Measures Considered but Not Recommended

Measures Considered but Not Recommended	Comments
Reduce or eliminate nighttime operations	BCAD does not have authority to establish and enforce reductions in aircraft flight operations.
Close the south runway at night	Moving all operations to the north runway at night would increase noncompatible uses in the 65 DNL contour. BCAD is instead recommending a preferential nighttime runway use program.
Operate north runway until it reaches max capacity regardless of time before using south runway	Any shift in arrivals from the south runway to the north runway would increase noncompatible uses in the 65 DNL contour.
Use north runway for arrivals and south runway for departures	Any shift in arrivals from the south runway to the north runway would increase non compatible uses in the 65 DNL contour.
Implement financial penalties for certain operations	BCAD does not have authority to establish and enforce noise-based operational penalties.

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Noise Abatement Measures Considered but Not Recommended (Cont.)

Measures Considered but Not Recommended	Comments
Reduce frequency of operations in general	BCAD does not have authority to control the schedules of aircraft operations.
Implement NADP1	This may increase noncompatible land uses in the 65 DNL contour.
Construct noise barriers in residential areas	Noise barriers do not reduce noise from aircraft overflights.

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Land Use Measures in the FLL Part 150 NCP

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Land Use Measures That May Be Recommended

Consider a Sound Insulation Program for Eligible Residential Structures

- Description: This corrective measure involves insulating eligible noncompatible housing units to reduce interior noise to 45 DNL and provide at least a 5 dB improvement to the structures' noise level reduction.
- Rationale: This measure may reduce noncompatible land use within the 65 DNL contour. **Implementation would be contingent upon availability of federal funds.**
- **Any proposed Sound Insulation Program would be separate from and additional to the 2008 Environmental Impact Statement (EIS) Residential Sound Insulation Program.**
- The 2023 Noise Exposure Map (NEM) 65 DNL contour includes 106 housing units that are not a part of the 2008 EIS Residential Sound Insulation Program. Mobile homes or certain pre-manufactured homes would not qualify for this program.

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Land Use Measures That May Be Recommended

Consider a Sound Insulation Program for Eligible Residential Structures (Cont.)

- To be eligible for federal funding, the FAA requires that the housing unit be within the 65 DNL contour and that the average interior noise level of habitable rooms with windows closed be at or above 45 DNL.¹ Other factors that influence eligibility may include, but are not limited to¹:
 - Previous sound reduction treatments
 - Ambient and self-generated noise levels
 - Whether a given use is considered temporary or permanent
 - Time frame within which the structure was constructed: Properties constructed after October 1, 1998 may be ineligible for federally funded noise mitigation.²
 - Compliance with the local building code³
- An aviation easement would be required in exchange for sound insulation.

¹ FAA Order 5100.38D Airport Improvement Program Handbook (AIP Handbook), Appendix R.

² Final Policy on Part 150 Approval of Noise Mitigation Measures: Effect on the Use of Federal Grants for Noise Mitigation Projects. 63 FR 16409.

³ Areas within a structure that do not meet the local building code are not "habitable" under FAA requirements and therefore are not eligible for sound insulation under the AIP. Example: "A resident has converted part of a basement to a bedroom and the bedroom conversion does not meet the building code requirements to be categorized as a bedroom. The converted bedroom is not considered habitable space."

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Land Use Measures That May Be Recommended

Purchase Eligible Property Used for Mobile Homes

- Description: This corrective measure involves purchasing property used for mobile homes within the 65 DNL contour.
- Rationale: Mobile homes cannot be sound-insulated using federal funds, as it is generally infeasible to reduce interior noise levels to 45 DNL in mobile homes.
- There are 82 mobile homes included in the 2023 NEM 65 DNL contour.
- Purchase of property used for mobile homes, removal of the mobile homes, and rezoning of the property would remove noncompatible land uses.
- Implementation of this program would be contingent upon the availability of federal funds.

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Land Use Measures That May Be Recommended

Promote and Support Local Government Notification and Disclosure Efforts

- Description: This preventative measure involves supporting local governments in their efforts with notification and disclosure related to aircraft noise exposure.
- Rationale: This measure may help inform potential property buyers about aircraft noise in the vicinity of FLL.
- BCAD does not have authority over local land use or notification and disclosure laws. If local governments wish to evaluate this preventative measure, BCAD would be available to provide assistance.

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Land Use Measures Considered but Not Recommended

Measures Considered but Not Recommended	Comments
Provide opportunity for additional homes to participate in the Sound Insulation Program and Conveyance and Release program	The 2008 EIS Residential Sound Insulation Program and Conveyance and Release (CAR) Program are distinct and separate from any program established as an outcome of the FLL NCP.
Relocate residents per the 1995 Interlocal Agreement	The 1995 Interlocal agreement is no longer in effect. Not all homes are eligible for federally funded compensation or purchase.
Purchase or compensate all homes west of Griffin Road and north of Ravenwood Road	

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Programmatic Measures in the FLL Part 150 NCP

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Programmatic Measures That May Be Recommended

Establish and Manage a Voluntary Fly Quiet Program

- Description: This voluntary measure involves developing a program that would help the FAA, BCAD, and aircraft operators collaborate to minimize aircraft noise exposure where possible. The voluntary program may include:
 - Promotion of higher aircraft altitudes on arrival and departure. Example: higher altitudes east and west of FLL
 - Promotion of keeping aircraft away from noise-sensitive uses: Example: reduction of early northward turns of aircraft departures to the east and west
 - Periodic discussions with the FAA and aircraft operators regarding aircraft noise
 - Promotion of delaying the point at which landing gear are lowered
 - Integration of noise abatement considerations into aircraft operator materials
- Rationale: This measure would enable BCAD to work with the FAA and aircraft operators to minimize, where possible, aircraft noise exposure to noise-sensitive uses within as well as outside of the 65 DNL contour.

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Programmatic Measures That May Be Recommended

Maintain the Existing Noise Office and Website

- Description: This measure involves continuing to operate the existing Noise Office and FLL aircraft noise website, which connects BCAD with communities and other FLL stakeholders.
- Rationale: This measure would enable maintenance of the principal BCAD office and portal for interacting with stakeholders on aircraft noise.

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Programmatic Measures That May Be Recommended

Review Effectiveness of Noise Monitoring System

- Description: This measure involves reviewing the effectiveness of the existing noise monitoring system, which provides information about noise levels in the vicinity of FLL.
- Rationale: Most of the existing noise monitors were established when FLL was operating in a different runway configuration. This measure would enable BCAD to determine how best to continue providing information to communities and other FLL stakeholders about noise levels in the vicinity of the Airport.

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Programmatic Measures That May Be Recommended

Maintain and Upgrade Flight Tracking System

- Description: This measure involves continuing to operate and upgrade the existing flight tracking system, which provides information about FLL aircraft operations.
- Rationale: This measure would enable BCAD to continue providing information to communities and other FLL stakeholders about aircraft operations at FLL.

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Programmatic Measures That May Be Recommended

Maintain Noise Complaint Management System

- Description: This measure involves continuing to operate the existing noise complaint management system, which BCAD uses to collect and manage noise complaints regarding FLL operations.
- Rationale: This measure would enable BCAD to continue efficient collection, analysis, reporting, and communication associated with aircraft noise complaints regarding FLL operations.

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Programmatic Measures That May Be Recommended

Continue Community Outreach Activities

- Description: This measure involves BCAD continuing to participate in community outreach activities, which include the Airport Noise Abatement Committee (ANAC).
- Rationale: This measure would enable BCAD to continue in-person communication with communities and other stakeholders regarding aircraft noise associated with operations at FLL.

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Programmatic Measures That May Be Recommended

Install Runway Reminder Signs

- Description: This measure involves installing signs at runway ends to remind aircraft operators of FLL noise abatement measures.
- Rationale: This measure may help to reduce noise exposure from FLL aircraft operations by encouraging aircraft operators to use FLL noise abatement measures.

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Programmatic Measures That May Be Recommended

Evaluate the Composition of ANAC

- Description: This measure involves an evaluation of ANAC's composition relative to the 2023 noise contours.
- Rationale: This measure would enable BCAD to consider and evaluate how to improve the effectiveness of its engagement with communities in the vicinity of FLL.
- Current ANAC representation is based on the locations of noise monitors. These monitor locations were established when the runways were in a different configuration.

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Programmatic Measures That May Be Recommended

Update the Noise Exposure Maps

- Description: This measure involves updating the FLL NEMs in the future if any change in the operation of the airport creates one or both of the following (14 CFR Part 150, Section 150.21(d)):
 - A "substantial, new noncompatible use" (increase of 1.5 dB that creates a new noncompatible use)
 - A "significant reduction in noise over existing noncompatible uses" (reduction of 1.5 dB that changes a noncompatible use into a compatible use)
- Rationale: This measure is required by 14 CFR Part 150, Section 150.21(d).

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Programmatic Measures That May Be Recommended

Update the Noise Compatibility Program

- Description: This measure involves updating the NCP if a revised NEM deems it necessary. Examples of changes that may require an NCP update include:
 - Large additions of noncompatible land uses
 - New NCP elements required to achieve land use compatibility
- Rationale: This measure is required by 14 CFR Part 150, Section 150.23(e)(9).

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Programmatic Measures Considered but Not Recommended

Measures Considered but Not Recommended	Comments
Install additional noise monitors outside of the 65 DNL contour	Noise monitors located outside of the 65 DNL contour are not eligible for federal funds. BCAD is reviewing the current locations of noise monitors and may relocate existing monitors.
Evaluate flight tracks of smaller turboprop and prop aircraft	BCAD will continue to operate the existing flight tracking system, which monitors operations of propeller aircraft. BCAD does not have authority to assign specific flight tracks to aircraft. A voluntary Fly Quiet program may encourage keeping aircraft away from noise-sensitive uses.
Document simultaneous departures and associated headings	There is no current efficient means of tracking specific occurrences of simultaneous departures using historical data.

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Preliminary NCP Summary

Summary of Preliminary Recommendations

Preliminary Recommendation	Type	Comments
Reduce west-flow aircraft departure turns near FLL	Voluntary Noise Abatement	Could reduce overflights of neighborhoods northwest of FLL, reducing noise beyond the 65 DNL contour
Reduce east-flow aircraft departure turns near FLL	Voluntary Noise Abatement	Could reduce overflights of neighborhoods northeast of FLL, reducing noise beyond the 65 DNL contour
Modify aircraft arrival profiles to the west of FLL	Voluntary Noise Abatement	Could raise altitudes of arriving aircraft in east flow, reducing noise beyond the 65 DNL contour
Continue voluntary nighttime runway use program	Noise Abatement	Reflects a continuation of the current Interlocal Agreement voluntary runway use program while providing improved operational flexibility in certain conditions
Review the "Engine Run Up Restriction" Policy	Noise Abatement	Would review effectiveness of existing Policy in reduce exposure of nearby communities to ground noise while supporting aircraft maintenance

Summary of Preliminary Recommendations (Cont.)

Preliminary Recommendation	Type	Comments
Consider a sound insulation program for eligible residential structures	Land Use – Corrective	Could reduce noncompatible land uses within the 65 DNL contour by reducing interior noise levels, subject to availability of federal funds
Purchase of eligible property used for mobile homes	Land Use - Corrective	Could reduce noncompatible land uses within the 65 DNL contour by purchasing property used for mobile homes and rezoning the property, subject to availability of federal funds
Promote and support local government notification and disclosure efforts	Land Use – Preventive	Could help inform potential property buyers about aircraft noise in the vicinity of FLL

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Summary of Preliminary Recommendations (Cont.)

Preliminary Recommendation	Type	Comments
Establish and manage a voluntary Fly Quiet Program	Programmatic	Could provide a forum for collaborating to reduce noise exposure where possible within and outside of the 65 DNL contour
Maintain the existing Noise Office and website	Programmatic	Would enable maintenance of the principal BCAD office and portal for interacting with stakeholders on aircraft noise
Review noise monitoring system	Programmatic	Would enable BCAD to effectively continue providing information about noise levels in the vicinity of FLL
Maintain and upgrade flight tracking system	Programmatic	Would enable BCAD to continue providing information about aircraft operations in the vicinity of FLL
Maintain noise complaint management system	Programmatic	Would enable BCAD to continue collection and reporting of aircraft noise complaints regarding FLL operations

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Summary of Preliminary Recommendations (Cont.)

Preliminary Recommendation	Type	Comments
Continue community outreach activities	Programmatic	Would enable BCAD to continue in-person communication regarding aircraft noise associated with operations at FLL
Install runway reminder signs	Programmatic	May help to reduce noise exposure from FLL by encouraging operators to use FLL noise abatement measures
Evaluate composition of ANAC	Programmatic	Would enable BCAD to evaluate how to improve community engagement on FLL aircraft noise
Update the Noise Exposure Maps	Programmatic	Required by 14 CFR Part 150, Sec. 150.21(d)
Update the Noise Compatibility Program	Programmatic	Required by 14 CFR Part 150, Sec. 150.23(e)(9)

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Next Steps

- Assemble the preliminary draft and public draft FLL NCPs
- Release the public draft FLL NCP and open the public comment period
- Hold a public workshop and hearing regarding the public draft FLL NCP
- Address public comments and submit the final FLL NCP to the FAA for formal review
 - Once the FAA chooses to begin reviewing the FLL NCP, the FAA has 180 days to formally respond to each recommended NCP measure except for NCP measures recommending flight procedures, where the FAA has more than 180 days to formally respond.

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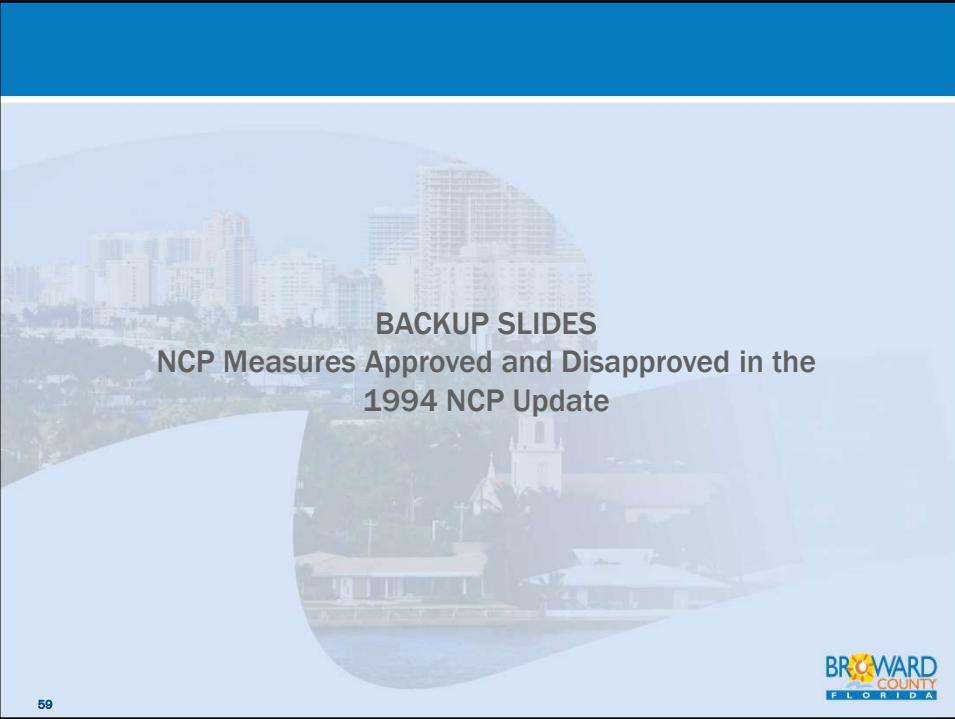
Thank You!!

Questions from TC Members



Adjourn

BACKUP SLIDES



BACKUP SLIDES

NCP Measures Approved and Disapproved in the 1994 NCP Update

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NCP Measures Approved and Disapproved in the 1994 NCP Update

- The first Part 150 Study for FLL was completed in 1987
- In 1994, BCAD submitted an update of the 1987 NCP to the FAA
- The FAA produced its Record of Approval (ROA) for the 1994 NCP Update on December 12, 1995. 10 measures were approved in full; two were partially approved.
- Noise abatement:
 - Two noise abatement measures were approved in full
 - Three noise abatement measures were approved as voluntary in full
 - No noise abatement measures were disapproved
- Land use:
 - Four land use measures were approved in full
 - Two land use measures were partially approved
 - No land use measures were disapproved in full
- Programmatic:
 - One programmatic measure was approved in full

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The information in this slide illustrates measures previously approved in the 1994 NCP Update. A measure previously approved by the FAA may not necessarily be approved again.



Noise Abatement Measures in the 1994 NCP Update

NCP Recommendation	FAA Action	Outcome
Continue 1987 NCP measure: Runway 13-31 preferential flight tracks.	Approved as voluntary	Included in an "Informal Runway Use Program" revised on March 15, 1998. No longer relevant due to decommissioning of Runway 13-31.
Continue 1987 NCP measure: Runway 9L/9R/27L/27R departures to remain on runway heading until 3,000 feet above Mean Sea Level (MSL) or 3.0 miles.*	Approved as voluntary	Included in an "Informal Runway Use Program" revised on March 15, 1998. No longer relevant due to south runway extension.
Continue 1987 NCP measure: Minimize use of Runway 9R-27L by Stage 2 aircraft; maximize east flow; concentrate cargo and nighttime operations on Runway 9L-27R*	Approved as voluntary	Included in an "Informal Runway Use Program" revised on March 15, 1998. Stage 2 aircraft no longer operate in the continental United States.

* Runways 9L, 9R, 27L, and 27R have since been renamed to Runways 10L, 10R, 28L, and 28R, respectively.

61

The information in this slide illustrates measures previously approved in the 1994 NCP Update. A measure previously approved by the FAA may not necessarily be approved again.



Noise Abatement Measures in the 1994 NCP Update (Cont.)

NCP Recommendation	FAA Action	Outcome
Analyze "close-in" and "distant" noise abatement departure procedures (NADPs) to determine whether they may have benefit.	Approved in concept	BCAD completed analysis and requested that airlines use the "distant" NADP (also known as NADP2).
Relocate engine maintenance run-up facility to east end of Runway 9L-27R.*	Approved	"Engine Run Up Restriction" Policy implemented on November 15, 1996.

* Runways 9L, 9R, 27L, and 27R have since been renamed to Runways 10L, 10R, 28L, and 28R, respectively.

62

The information in this slide illustrates measures previously approved in the 1994 NCP Update. A measure previously approved by the FAA may not necessarily be approved again.



Land Use Measures in the 1994 NCP Update

NCP Recommendation	FAA Action	Outcome
Acquire property in the 75 DNL contour.	Approved	BCAD received funding from FAA and Florida Department of Transportation (FDOT) for acquisitions.
Provide sound insulation for institutions in the 65 DNL contour.	Approved	Wesley Chapel United Methodist Church was sound-insulated in 1994 for \$190,000 and provided an avigation easement to BCAD.
Acquire avigation easements for residential areas in the 65-70 DNL contour.	Approved in part	A total of 28 eligible property owners were compensated \$2,400. FAA disapproved payments to mobile home owner occupants.
Implement relocation payments for areas in the 65-70 DNL contour.	Approved in part	Four property owners requested sales assistance. The amount expended was approximately \$66,000.

63

The information in this slide illustrates measures previously approved in the 1994 NCP Update. A measure previously approved by the FAA may not necessarily be approved again.



Programmatic Measures in the 1994 NCP Update

NCP Recommendation	FAA Action	Outcome
Continue runup monitoring program from 1987 NCP and request retroactive FAA approval and funding for an Airport Noise and Operations Management System (ANOMS).	Approved	BCAD received funding from FAA for the ANOMS.

64

The information in this slide illustrates measures previously approved in the 1994 NCP Update. A measure previously approved by the FAA may not necessarily be approved again.



BACKUP SLIDES

Stakeholder Noise Abatement Suggestions



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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)

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.

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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)

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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)

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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)

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BACKUP SLIDES

Understanding Aircraft Noise Exposure With “What-If” Scenarios



What if the South Runway Were Closed at Night?

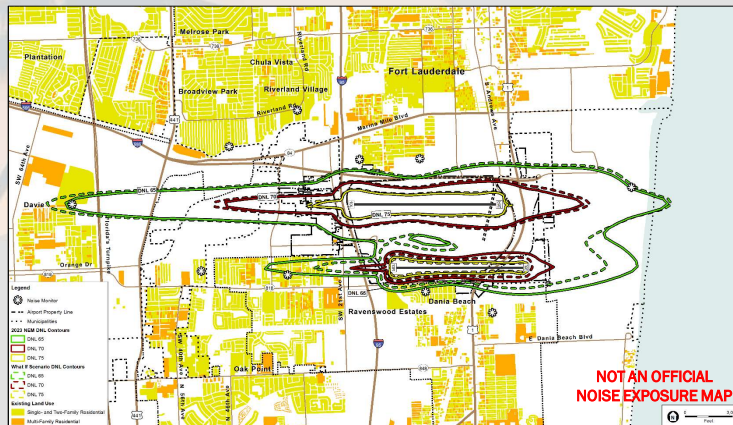
- BCAD received multiple suggestions to reduce or eliminate use of the south runway at night (10:00 P.M. to 6:59:59 A.M.).
- To explore how noise contours would change if operations on the south runway were eliminated at night, the Study Team produced a hypothetical “what-if” scenario by moving all nighttime 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.

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71. 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



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72. Public Comment Period. These are not official FLL Part 150 Noise Compatibility Program recommendations.



What if West Flow Departure Tracks Were Moved?

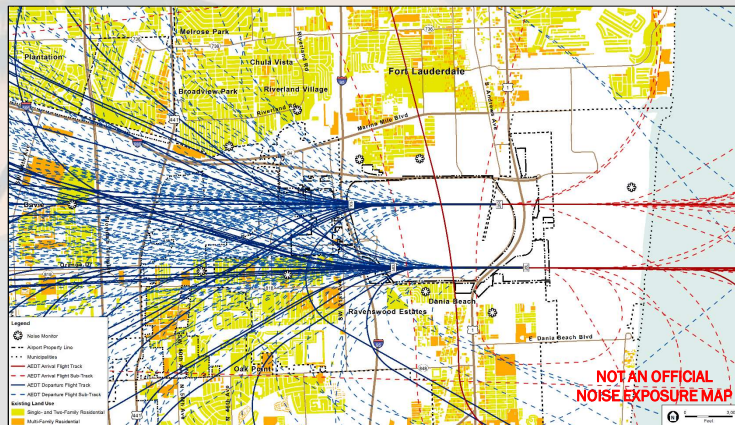
- BCAD received multiple suggestions for aircraft to maintain runway heading for longer time periods during departures and/or arrivals, avoiding turns close to FLL.
- To explore how noise contours would change if west flow departure turns close to FLL were modified, the Study Team and the FAA produced 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.

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What if West Flow Departure Tracks Were Moved?

West Flow Flight Tracks Used for the 2023 Future Condition NEM

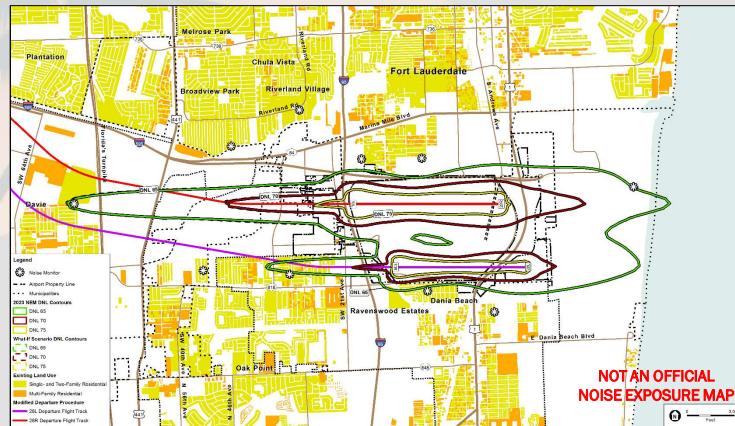


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What if West Flow Departure Tracks Were Moved?

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



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75

What if All Turns Close to the Airport Were Eliminated?

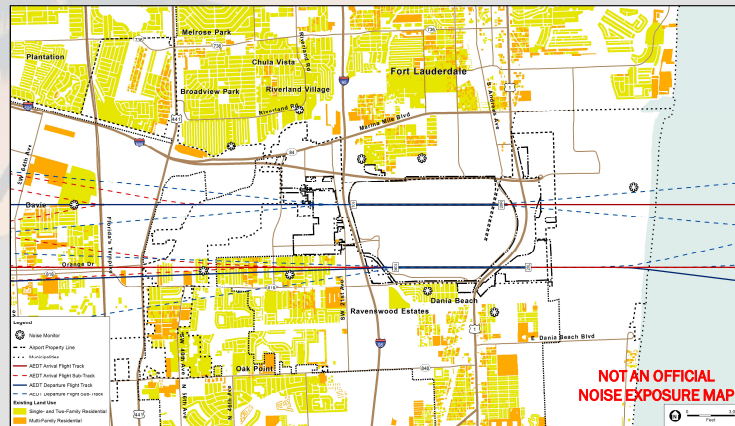
- Based on the suggestions received for aircraft to maintain runway heading for longer time periods during departures and/or arrivals, the Study Team explored how noise contours would change if turns close to FLL were eliminated entirely.
- The Study Team produced a hypothetical "what-if" scenario by 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.

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What if All Turns Close to the Airport Were Eliminated?

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

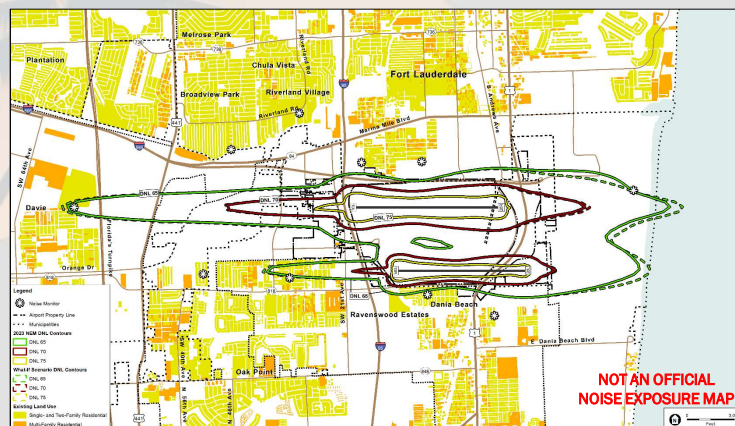


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What if All Turns Close to the Airport Were Eliminated?

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



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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.

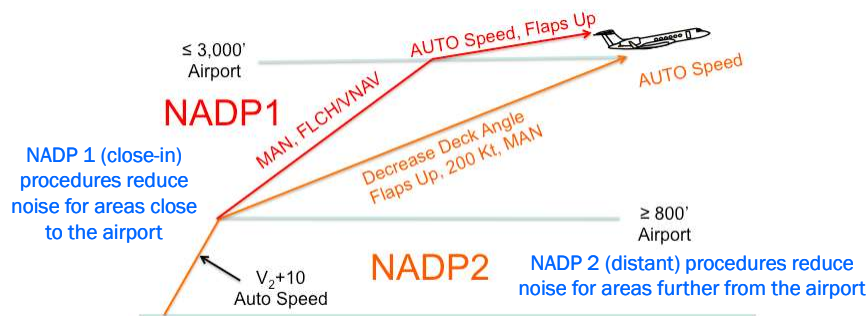
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What if Departing Aircraft Climbed More Quickly?

EXAMPLE: Noise Abatement Departure Procedures



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

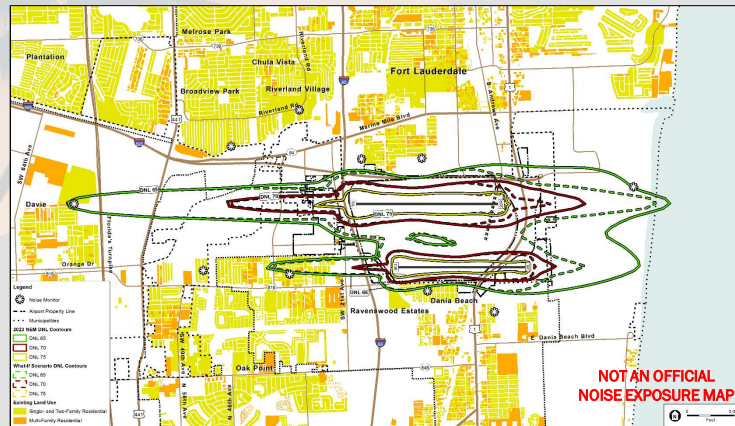
- SOURCE: Flight Operations, Supplement Number GAC-OMS-02: Noise Abatement Departure Procedures for JAA / EASA Operators. Gulfstream. June 25, 2008. Last Accessed: November 30, 2016. http://code7700.com/pdfs/gac_oms_2.pdf
- Image from http://code7700.com/noise_abatement.html. Last Accessed: November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

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What if Departing Aircraft Climbed More Quickly?

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



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 81. 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."

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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.”*

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

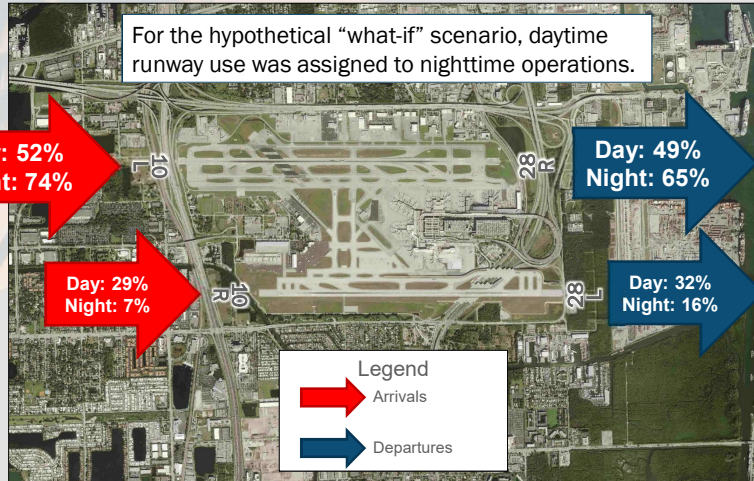
- The effects of the Voluntary Night Closure are captured in the 2018 and 2023 NEMs for FLL
- The Study Team produced a “what-if” scenario exploring how noise exposure might change if the Voluntary Night Closure were not in place
 - Nighttime runway use was assumed to be the same as daytime runway use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

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

East Flow Runway Use



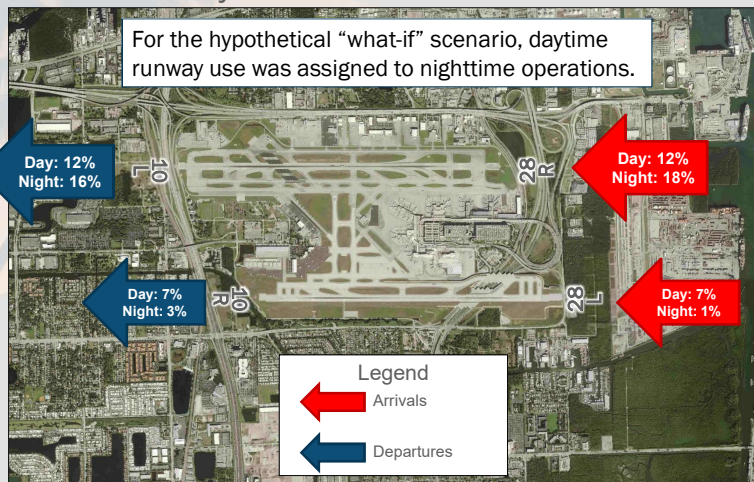
Source: Airport Noise Monitoring and Management System (ANOMS), 2016.

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

West Flow Runway Use



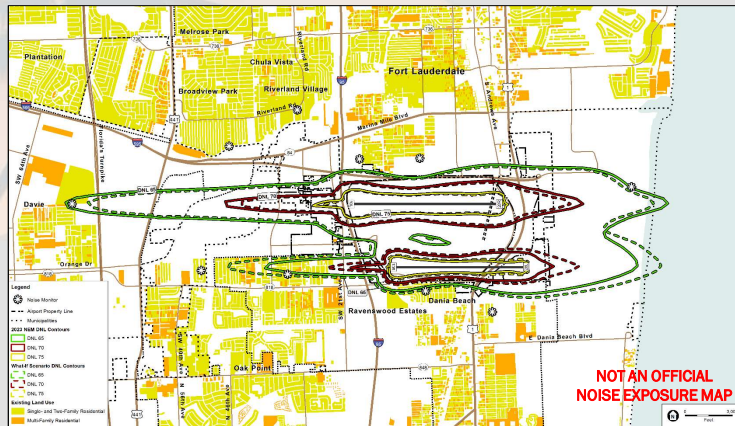
Source: Airport Noise Monitoring and Management System (ANOMS), 2016.

86



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

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



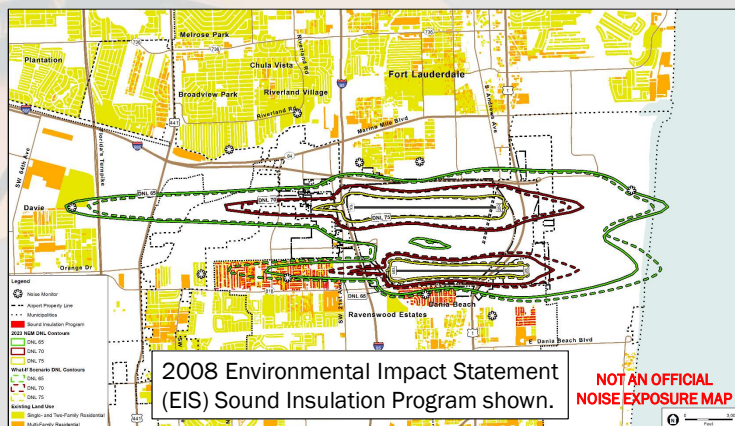
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What if the Interlocal Agreement Voluntary Night Closure Were Not in Place?

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



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Technical Committee

Meeting #8

Meeting Summary

14 CFR Part 150 Noise and Land Use Compatibility Study
Technical Committee Meeting #8
February 5, 2020

Meeting Minutes

Location: Secret Woods Nature Center, Julia Hall
2701 W State Rd 84
Fort Lauderdale, FL 33312

Committee Members in Attendance

Gary Luedtke – ANAC	Rebecca Henry-Harper – FAA
Chris Akagbosu – Broward County School Board	Richard Sack – FLL Airport Traffic Control Tower
Matt Wood – City of Cooper City	Donna Peplin (Greater Dania Beach Chamber of Commerce) – Greater Dania Chamber of Commerce
Rufus James – City of Fort Lauderdale	
Ben Sorenson – City of Fort Lauderdale	
Geoff Rames (City of Fort Lauderdale) – City of Fort Lauderdale	Sam Robbin – National Jets/ Broward Workshop
Edward Rebholz – City of Fort Lauderdale	Edwin Solley – Southwest Airlines
Lorie Mertens-Black – City of Hollywood	Barbara Blake Boy – Study Coordination Committee
Don Decker – City of Weston	
Kalena Glover – Delta Airlines	Leona Henry – Town of Davie
Peter Green – FAA	John Eastman – Town of Southwest Ranches

Others Present

Walis Alfonso – BCAD	Autumn Ward – ESA
Winston Cannicle – BCAD	Bryan Adams - GSI
Will Castillo – BCAD	Melissa Barnett - GSI
Alejandro Cuevas – BCAD	LaCheryl Fitzpatrick - GSI
Karen Friedman - BCAD	Yvonne Garth – GSI
Gregory Meyer – BCAD	Natalie Palomino - GSI
Mike Pacitto – BCAD	David Rickerson – Kimley-Horn
Bill Harris – City of Dania Beach	Sierra LePore – VHB
Lori Lewellen – City of Dania Beach	Ben Siwinski – VHB
Eleanor Norena – City of Dania Beach	Fred Bunton
Byron Jaffe – City of Weston	Beth Cohn
Mary Molina-Macfie – City of Weston	Marty Goldenberg
Mike Arnold – ESA	Henry Mead
Chris Sequeira – ESA	

Agenda and Key Topics:

- Introductions
- Review of the Role of the TC Meeting Facilitator
- Review of TC Meetings
- Recaps of:
 - Suggested Noise Compatibility Program (NCP) Measures
 - Noise Abatement Measure Evaluation
 - Understanding Aircraft Noise Exposure with “What-if” scenarios
- FLL NCP Measures
 - Noise Abatement Measures That May Be Recommended in the FLL NCP
 - Noise Abatement Measures Considered but Not Being Recommended
 - Land Use Measures That May Be Recommended in the FLL NCP
 - Land Use Measures Considered but Not Being Recommended
 - Program Management Measures That May Be Recommended in the FLL NCP
 - Program Management Measures Considered but Not Being Recommended
- Next Steps
- Questions from TC Members

Meeting Summary:

- The Technical Committee convened for its eighth meeting at 10:00 AM on February 5, 2020 at the Secret Woods Nature Center in the Julia Hall.
- The meeting began with an introduction by Michael Arnold, who thanked everyone for his or her participation in the FLL Part 150 Study Process.
- During introductions, Michael Pacitto, BCAD Director of Planning and Environmental, on behalf of BCAD, acknowledged and thanked all TC members for their time, commitment, and continued input throughout the lengthy FLL 14 CFR Part 150 process. The continued input from the TC related to concerns and recommendations is crucial to the success of the FLL Part 150 process.
- Ground rules for the TC members were established by the facilitator, Yvonne Garth. TC members were reminded that their role is to represent their constituencies by bringing forth their thoughts and opinions to the Part 150 process. TC members are also expected to advise their organization and/or constituents of the TC’s discussion. She also explained that the TC meeting is for TC member participation only and members of the public are encouraged to submit comments or ask questions once the meeting is complete.
- Attending members of the public were advised of ways in which they could submit comments, including through the project website (www.fllpart150.com).
- A presentation of key topics was given by Michael Arnold, Part 150 Project Director representing the ESA consulting team, and Chris Sequeira, Senior Managing Associate at ESA. The presentation included the following information:

- Review of TC Meetings
- A recap of suggested noise compatibility program measures, noise abatement measure evaluations, and understanding aircraft noise exposure with “what-if” scenarios.
- FLL NCP Measures
 - Noise Abatement Measures That May Be Recommended in the FLL NCP
 - Noise Abatement Measures Considered but Not Being Recommended
 - Land Use Measures That May Be Recommended in the FLL NCP
 - Land Use Measures Considered but Not Being Recommended
 - Program Management Measures That May Be Recommended in the FLL NCP
 - Program Management Measures Considered but Not Being Recommended
- Next Steps

Questions & comments from TC members:

Q. *Donna Peplin (Greater Dania Beach Chamber of Commerce)* – Are the Public Hearing and the Workshop on the same day?

A. Yes, the workshop will likely occur for a specific period of time, and a formal public hearing would be held after the workshop on the same day.

Q. *Ben Sorenson (City of Fort Lauderdale)* – People to the north of the airport are impacted by airplane noise. Impacts are not inside of the contours. If planes turned north farther west, it wouldn’t decrease impacts within contours but it would decrease the number of overflights outside of the contours. Is this accurate.

A. Yes. Based on the analysis, a reduction of overflights to the north of FLL would not change the amount of noncompatible land uses within the contours, but may reduce annoyance.

Q. *Donna Peplin (Greater Dania Beach Chamber of Commerce)* – You mentioned the south runway closing from 10 PM to 7 AM and the north runway Day-Night Average Sound Level (DNL) 65 contour extending further west in this scenario; is this captured in these recommendations?

A. BCAD analyzed a “what-if” scenario involving a complete closure of Runway 10R/28L (the south runway) in order to determine if the amount of noncompatible land uses would be affected. This scenario was based on stakeholder suggestions. Information on the scenario is included at the back of the presentation. BCAD is not recommending a mandatory nighttime closure of the south runway, which would cause noncompatible land uses to be added to the 65 DNL contour to the west of Runway 10L/28R (the north runway). Instead, BCAD may recommend continuing the use of the north runway as a preferential runway at night, with additional flexibility such as the use of Runway 28L for nighttime arrivals.

Q. *Lori Lewellen (Mayor of Dania Beach)* – I live in the area west of the south runway. The noise mitigation that you are mentioning does not actually reduce noise in a noticeable way for us. The issue is related to the use of the north runway. I understand that the 65 DNL contour might extend out further from the north runway if you close the south runway at night but can you instead have flights over compatible land to the east of FLL? This would reduce impacts on homes.

A. BCAD may recommend continuing the use of the north runway as a preferential runway at night, with additional flexibility such as the use of Runway 28L for nighttime arrivals. Flights arriving to Runway 28L arrive from the east over compatible land uses.

Q. *Ben Sorenson (City of Fort Lauderdale)* – We are all going to be impacted by the FAA’s South Central Florida Metroplex project. It will probably have a bigger impact to all of us than the Part 150 Study. Who is heading the Metroplex effort?

A. The FAA is heading the Metroplex effort. There is coordination and an open line of dialogue between BCAD and the FAA as we continue our efforts.

Q. *Donna Peplin (Greater Dania Beach Chamber of Commerce)* – Do you have a timeframe for the “engine run up policy”? There are some community members from Harbor Bay Isles that have called about noise.

A. There is a restriction on engine run-ups from 11 PM until 7 AM. There can be aircraft heard during this time, but such aircraft are not involved in engine run-up activity.

Q. *Donna Peplin (Greater Dania Beach Chamber of Commerce)* – How many residents will be impacted by a closure of the south runway, as seen on page 72 in the handout? I would like to know the numbers.

A. We don’t have this exact number on hand. However, a small extension of the 65 DNL contour to the west of the north runway can add a large number of noncompatible land uses, due to the density of properties in that area.

Q. *Gary Luedtke (ANAC)* – You didn’t go through the use of the north runway for arrivals and the south runway for departures. If the main runway (the north runway) was used primarily for landings, it would cut noise. I would like to hear more about having all of the landings on the main runway.

A. The 14 CFR Part 150 Study is all about reducing noncompatible land use, so we are looking at noise abatement and mitigation from that perspective. The north runway already accommodates over 2/3rds of overall activity. A further shift in operations to the north runway would add noncompatible land uses to the 65 DNL contour, which is contrary to the goal of 14 CFR Part 150.

Q. *Geoff Rames (City of Fort Lauderdale)* – We had one runway closed for four months this summer. FLL seemed to manage this pretty well. There did not seem to be any reports of backups.

A. The runway closure was scheduled to take place during the lowest operational period of the year for this reason.

Michael Arnold reminded everyone in the room that all of the previous slides are available on the project website. Everyone is encouraged to check the website for reference.

Q. *Donna Peplin (Greater Dania Beach Chamber of Commerce)* – Why wouldn't the homes to the west of the north runway be sound insulated? If they are insulated, will they be considered compatible? It's a small percentage on the west that needs to be insulated.

A. We will be looking into addressing compatibility of homes in the 65 DNL contour west of the north runway through sound insulation. Yes, if they are insulated they would be considered compatible. However, the FAA would likely disapprove measures that further increase the number of homes needing sound insulation, since this would increase the FAA's cost burden.

Q. *Don Decker (City of Weston)* – Is FLL's north runway at 100% capacity? If work is continuing on the north runway, when will it be at full capacity?

A. *Richard Sack (FLL Airport Traffic Control Tower)* – There is still construction on the taxiway south of the north runway. East operations are normal, west operations we are landing more on the south runway. We are still landing on the north runway during this time.

It was noted that elected officials will be allowed to ask questions related to their municipalities during the meeting as well.

Q. *Mary Molina-Macfie (City of Weston)* – The 65 DNL contour does not include Davie, Southwest Ranches, or Weston. The residents that moved west, did so because they want a certain lifestyle. I am concerned about our property values out west. Are we being considered for noise abatement as well?

A. BCAD may recommend a noise abatement measure that addresses this – Modify aircraft arrival profiles to the west of FLL. We realize that sound does not stop at the 65 DNL contour, but 65 DNL is what the FAA uses as its threshold of significant noise exposure. The "Modify aircraft arrival profiles to the west of FLL" measure was created with the western residential areas farther outside of the 65 DNL contour in mind.

Q. *Geoff Rames (City of Fort Lauderdale)* – What do you suggest we do with the data that comes from the noise monitors?

A. Great question. These are not something that are used in the study; they help demonstrate trends in the noise environment around the Airport. It can help us investigate certain aircraft activities.

Q. *Geoff Rames (City of Fort Lauderdale)* – What do airports do with data from the flight tracking system?

A. The flight tracking system is being used as a tool to gather data on aircraft operations. If there is a particular operation BCAD is interested in, the system allows BCAD to focus in on the operation and understand what is going on with it.

Q. *Geoff Rames (City of Fort Lauderdale)* – If someone could prove that the flight tracks used in the Part 150 study are not accurate, what would happen to the Part 150 Study?

A. It depends on how the tracks are not accurate. It takes a lot of change to shift the contours. The closer to the airport, the more accurate the tracking system is.

Q. Gary Luedtke (ANAC) – Let me answer Geoff on the noise monitor usage. Noise Monitor Two, just outside of the 65 DNL contour west of the south runway, had 9,941 events. The main runway opened up and the next month the monitor registered 9,898 events. It dropped 50 events after main runway opened up, which is the kind of information that can be put to use with the noise monitors.

Q. Ed Rebholz (City of Fort Lauderdale) – Will you be making recommendations on re-positioning monitors?

A. We will identify what we believe could be relocated. We have two new noise monitors coming online, so there will be 13 noise monitors (there are currently 11). Winston Cannicle confirmed this.

Comment from City Official. Byron Jaffe (City of Weston) – As it relates to north runway operations vs south runway operations late at night, before the opening of the south runway six years ago - 100% of the operations were landing on the north runway. All the houses within 65 DNL were experiencing “x” number of arrivals. If the operation on the north runway is under capacity, it might be a possibility to sequence the south arrivals onto the north runway. This may provide some comfort to the community west of the south runway.

Additionally, landing to the west on the south runway might also be something to look into. Even if you’re located outside of the 65 DNL contours, you are still impacted.

Comment from City Official. Lori Lewellen (Mayor of Dania Beach) – I think that we should look at a combination of fixes. We realize that there will be airport impacts, we are just asking for help. Personally, I live one mile west of the south runway and can see that the aircraft noise is changing the neighborhood. People buy houses here, but don’t stay very long. It is just one more thing that adds to the overall problem we are having. We want to work with you, but it feels like it is all falling on deaf ears. Homes are losing value. The noise monitors show that even after the north runway was reopened, noise hasn’t decreased.

Q. Geoff Rames (City of Fort Lauderdale) – At the last meeting, we were shown measures approved by the FAA between 2000 and 2016 at other airports. Were all of the recommendations that were approved by the FAA within the 65 DNL contours? Realistically, will recommendations outside of the 65 DNL be approved?

A. For Part 150 Study purposes, recommended measures outside of the 65 DNL won’t be approved. But it will be well-documented and the issue will be raised. This is an opportunity to get the issues out there and get documentation of feedback. Just because the FAA does not approve a measure, does not mean that it will never be pursued. It will have to be pursued voluntarily.

Q. Donna Peplin (Greater Dania Beach Chamber of Commerce) – When will we know the final recommendations? Will the Technical Committee members be notified before the document is released to the public?

A. We don’t have an exact release date for the NCP, but it will likely be this spring. The current Study Protocol states that the document must be released to the public for review, not TC members specifically in advance. The Technical Committee meetings serve as a method of sharing the preliminary recommendations.

Q. Donna Peplin (Greater Dania Beach Chamber of Commerce) – When will we know when the FAA has approved the recommendations?

A. There is a 180-day review period that the FAA initiates once the NCP has been submitted to the FAA. The FAA may take longer than 180 days to review noise abatement measures, however. (Winston Cannicle added that a public hearing would take place between release of the draft NCP and submission of the final NCP to the FAA for their 180-day review.)

Q. Mary Molina-Macfie (City of Weston) – Who's responsible for logging and tracking noise complaints? Where are they stored and who are they given to? Is the noise complaint log public record?

A. Noise complaints are received by the BCAD noise office. Noise complaint data are sent to executive staff, upper management, and the Airport Noise Abatement Committee (ANAC). If there is a public request for noise complaint data, we provide that information. Yes, the complaint data are public record.

Q. Gary Luedtke (ANAC) – When the main runway was closed for five nights recently, I counted all the flights. There was an average of 66, 71, 70ish flights between 10 PM and 7 AM.

Q. Geoff Rames (City of Fort Lauderdale) – For 2019, there were 52,413 noise complaints. The interesting thing is that 44,541 of those were from southwest Ft Lauderdale, including my neighborhood. I would like to ask a question about the FAA Reauthorization Act of 2018. The FAA had given themselves a year to reevaluate the 65 DNL metric and I haven't heard anything as of December about this. The 14 CFR Part 150 process was created in the 1980s and 65 DNL has not been changed since then. The way we experience noise does not accurately get reflected in the study.

A. Peter Green (FAA) – The FAA is addressing various noise-related measures, and these efforts are still ongoing. Please note that the agency is working on those items you have mentioned. There is a lot of effort going toward responding to legislation in the Reauthorization Act. There are 21 or 22 noise-related items in the Reauthorization Act, involving completing ongoing studies, initiating new studies, and evaluating DNL as a metric. I believe information is imminent.

Q. Donna Peplin (Greater Dania Beach Chamber of Commerce) – Who is the FAA contact?

A. Peter Green (FAA) – For the FLL 14 CFR Part 150 Study, I am.

Q. Donna Peplin (Greater Dania Beach Chamber of Commerce) – How will cities know about the upcoming workshop?

A. There is a Study Coordination Committee that has representatives from all jurisdictions that sit on the TC, we have an email distribution list, there will be a post on the study website, and it will be advertised in the newspaper.

Actionable Next Steps:

Advise TC members of the upcoming workshop, which is projected to take place during May.

Meeting Adjourned at 12 PM