JACKSON
MUNICIPAL AIRPORT
AUTHORITY

Jackson-Evers International Airport
14 CFR Part 150 Update
Noise Exposure Maps

Jackson, Mississippi

December 2010

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Jackson-Evers International Airport
14 CFR Part 150 Update
Noise Exposure Maps

December 2010

JACKSON MUNICIPAL AIRPORT AUTHORITY
100 International Dr., Suite 300
Jackson, MS 39208

Jackson Municipal Airport Authority

JACKSON-EVERS INTERNATIONAL AIRPORT
14 CFR PART 150 UPDATE NOISE EXPOSURE MAPS
SPONSOR'S CERTIFICATION

The Noise Exposure Maps (NEMs) for Jackson-Evers International Airport are hereby submitted in accordance with Title 14 CFR Part 150. The NEMs were prepared with the best available information and are certified as true and complete to the best of my knowledge and belief.

The existing condition NEM is based on the most recent complete calendar year of flight operations at the Airport. The assumptions and activity levels used to develop the existing condition NEM are based on data from April 2009 through March 2010. However, there has been no change in operation at the Airport that would create any substantial new noncompatible uses or significantly reduce noise exposure over noncompatible uses. The noise contours representing the existing condition are identified as the 2010 Noise Exposure Map.

The assumption and activity levels used to develop the forecast condition NEM are based on reasonable forecasts and other planning assumptions and derived from work completed for the Airport's Master Plan. The future condition NEM is based on data generated for a timeframe five years in the future from the year of submission. The noise contours representing the forecast condition are identified as the 2015 Noise Exposure Map.

The NEMs were prepared in consultation with local public and planning agencies whose area or any portion of whose area, of jurisdiction is within the DNL contour depicted on the NEMs. The consultation also included Federal and State officials having local oversight responsibility and regular aeronautic users of the Airport. It is further certified that adequate opportunity has been afforded interested persons to submit their views, data, and comments concerning the correctness and adequacy of the NEMs and the supporting documentation and forecasts.

12/2/10
Date of Signature

Dirk B. Vanderleest
Chief Executive Officer
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CHAPTER 1
INTRODUCTION

From a historical perspective, comprehensive aircraft noise compatibility planning started with the passing of the Airport Safety and Noise Abatement (ASNA) Act of 1979. This act gave the Federal Aviation Administration (FAA) the authority to issue regulations on noise compatibility planning and provide a means for federal funding for projects dedicated to improving the noise environment around an airport. These regulations became the impetus for publishing Title 14 of the Code of Federal Regulations (CFR) Part 150. In 1990, the passage of the Airport Noise and Capacity Act (ANCA) established a national policy on aircraft noise with an emphasis on a phase out of the noisier aircraft types. ANCA also instructed FAA to develop plans or programs that addressed reviewing any noise and access restrictions for different aircraft types.

As a result, Title 14 CFR Part 150 "Airport Noise Compatibility Planning"[1] sets forth standards for airport operators to use in documenting noise exposure in the airport environs and establishing programs to minimize noise-related land use incompatibilities. While participation in this program by an airport is strictly voluntary, over 250 airports have participated in this program which assists in standardizing noise analysis at a national level. Participation provides access to federal funding for implementing FAA-approved measures. A formal submission to the FAA under 14 CFR Part 150 includes two principal elements: (1) the Noise Exposure Maps (NEMs) and (2) the Noise Compatibility Program (NCP).

This volume presents the updated NEMs documentation for Jackson-Evers International Airport, as required by the specific provisions of 14 CFR Part 150 Subpart B, Section 150.21, and Appendix A. A separate volume, "Jackson-Evers International Airport 14 CFR Part 150 Update Noise Exposure Maps Appendices", includes the Appendices referenced in the NEMs documentation.

This chapter provides an historical perspective of the 14 CFR Part 150 at Jackson-Evers International Airport (the Airport) (Section 1.1), a brief summary of the location and setting (Section 1.2), an introduction to 14 CFR Part 150 (Section 1.3), an overview of noise and land use compatibility guidelines (Section 1.4), a summary of roles and responsibilities (Section 1.5), and a completed copy of the FAA NEM review checklist (Section 1.6).

1.1 HISTORICAL PERSPECTIVE

Aviation in Jackson began in 1928 with the dedication of Davis Field (now Hawkins Field). The introduction of jet service to Jackson in 1963 required finding a new location and building a new commercial and military service airport in nearby Rankin County. Construction of Allen C. Thompson Field, Jackson Municipal Airport began in that year with the development of the parallel runways. With the designation as an International Port of Entry by the U.S. Customs Service in 1989, the airport's name was changed to Jackson International Airport. Subsequently, the name was changed again to Jackson-Evers International Airport to honor civil rights advocate Medgar Wiley Evers.

The Jackson Municipal Airport Authority Board of Commissioners was created by the Jackson City Council in 1960. The Board consists of five commissioners appointed to five-year terms by the Mayor with the consent of City Council. The Board's mission is to govern and direct the development and approve policy for both Hawkins Field and Jackson-Evers International Airport.

[1] 14 CFR Part 150

The Jackson Municipal Airport Authority (JMAA) prepared its initial 14 CFR Part 150 study for the Airport in 1987/1988. As a formal part of this process, the FAA reviewed the initial NEMs and found them in compliance with 14 CFR Part 150 requirements, accepting them on November 22, 1989. The follow-on NCP included 11 measures, of which 9 were approved by the FAA on May 17, 1990 (see Appendix A).

In 1999, with the impending phase out of civilian Stage II aircraft over 75,000 pounds gross weight, JMAA determined an update to its 14 CFR Part 150 study should be conducted. The purpose of this update was to develop a long-range plan and program to accommodate the regional aviation demand while providing compatibility between the Airport and the surrounding communities. Thus, JMAA conducted an update to the initial study in 2003 (NEMs) and 2005 (NCP). The FAA issued a Record of Approval finding the updated NEMs in compliance with Part 150 requirements on September 21, 2004 (see Appendix B). The revised NCP portion of the study was submitted to the FAA in January 2005 but was later withdrawn.

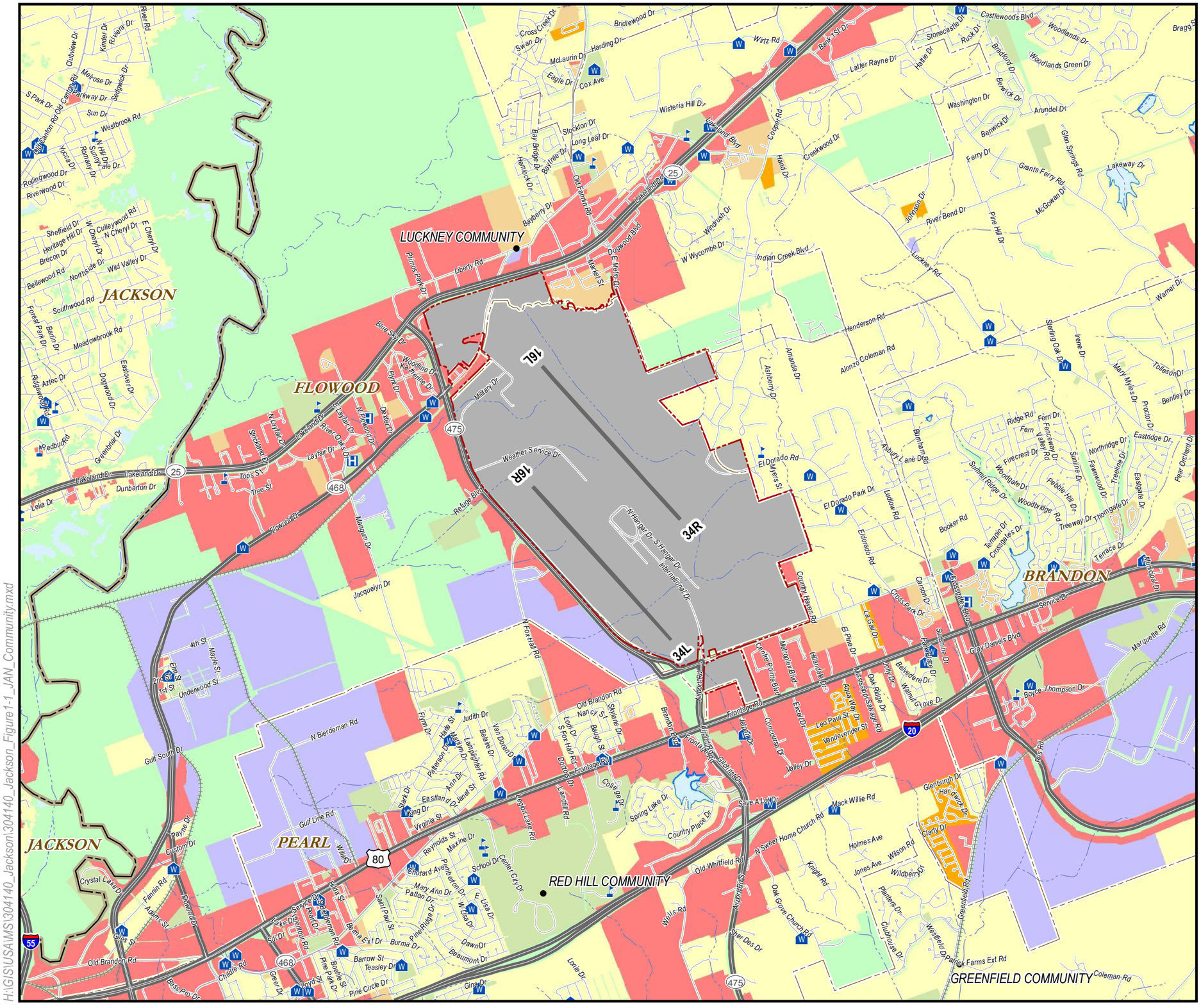
JMAA initiated the present 14 CFR Part 150 Noise Compatibility Study Update in conjunction with an Airport Master Plan in late 2009 to provide an updated depiction of the noise environment reflecting the existing and forecast conditions based on significant changes to air traffic levels at the Airport.

1.2 PROJECT LOCATION AND SETTING

Jackson-Evers International Airport has a set of parallel runways that support regional commercial air service and is home to the 172nd Airlift Wing of the Mississippi Air National Guard. In 2009, the Airport enplaned approximately 673,000 domestic and international passengers with approximately 65,000 aircraft operations.

The Airport is approximately six miles east of downtown Jackson and situated on approximately 3,338 acres of land. The cities of Flowood (to the northeast and northwest), Pearl (to the southwest) and Brandon (to the southeast) bound the Airport with a mix of residential, commercial, and industrial development. Immediately east and west of the Airport, the contiguous communities are sparsely populated and developed. Hawkins Field, a general aviation airport, is located in the City and is also managed by JMAA.

Figure 1-1 shows the Airport and its surrounding area for reference.



JACKSON MUNICIPAL AIRPORT AUTHORITY

Figure 1-1
Jackson-Evers International Airport and Surrounding Communities
14 CFR Part 150 Update

Data Sources: Mississippi Automated Resource Information System (MARIS), Central Mississippi Planning & Development District (CMPDD), United States Geological Survey (USGS), Geographic Names Information System (GNIS), Environmental Systems Research Institute (ESRI)

H:\GIS\USAMS\304140_Jackson\304140_Jackson_Figure1-1_JAN_Community.mxd

1.3 14 CFR PART 150 OVERVIEW

14 CFR Part 150 sets forth a process for airport proprietors to follow in developing and obtaining FAA approval of programs to reduce or eliminate incompatibilities between aircraft noise and surrounding land uses. 14 CFR Part 150 prescribes specific standards and systems for:

- Measuring noise
- Estimating cumulative noise exposure
- Describing noise exposure (including instantaneous, single event and cumulative levels)
- Coordinating NCP development with local land use officials and other interested parties
- Documenting the analytical process and development of the compatibility program
- Conducting public participation outreach
- Submitting documentation to the FAA for approval

1.3.1 Noise Exposure Maps

The NEMs describe the airport layout and operation, aircraft-related noise exposure, land uses in the airport environs, and the resulting noise/land use compatibility situation. The noise exposure is expressed in decibels (dB) in terms of the DNL[2]. Contours of equal DNL values, similar to terrain contours of equal elevation, form the basis for evaluating the noise exposure to the community. The NEMs must address two time frames: (1) data representing the year of submission (the existing conditions) and (2) the fifth calendar year or later following the year of submission (the forecast conditions).

14 CFR Part 150 requires more than a simple "map" to provide all the necessary information in an NEM. In addition to the graphics, requirements include extensive tabulated information and text discussion. At most airports, even the necessary graphic information is too extensive to present in a single figure. Therefore, the NEM documentation includes graphic depiction of existing and future noise exposure resulting from aircraft operations and of land uses in the airport environs. The NEM documentation must describe the data collection and analysis undertaken in its development. During the process the airport provides for the local airport community to be involved and to provide their perspective on the modeling inputs to the NEMs. After considering all inputs, the NEM documentation is submitted to the FAA and, subsequent to a thorough review, the FAA makes a determination of compliance with the 14 CFR Part 150 standards.

The year of submission for this update is 2010. Therefore, the existing conditions noise contours are for 2010 and the five-year forecast conditions noise contours are for 2015.

1.3.2 Noise Compatibility Program

The NCP describes the actions the airport proprietor proposes to undertake to minimize existing and future noise/land use incompatibilities. The NCP documentation must recount the development of the program, including a description of all measures considered, the reasons that individual measures were accepted or rejected, how measures will be implemented and funded, and the predicted effectiveness of individual measures and the overall program.

[2] Noise metrics and noise effects are discussed in detail in Appendix C.

There are certain measures that must be considered for applicability and feasibility:

- Acquisition of land which includes overflight, easement, and development rights to ensure property use is compatible with airport operations
- Construction of barriers or shielding through sound insulating buildings
- Implementation of a preferential runway use
- Utilization of flight procedures to reduce noise from the source (aircraft) through actions such as flight track changes or aircraft performance profile adjustments
- Restriction of use of the airport by specific aircraft types, nighttime operations, etc.

As in the case of the NEMs, public participation is a vital part of developing a program that will promote understanding, awareness, and an opportunity for involving the perspectives of the different jurisdictions and their constituents on the role of the airport and the community.

Official FAA acceptance of the 14 CFR Part 150 submission and approval of the NCP does not eliminate requirements for formal environmental assessment of any proposed actions pursuant to requirements of the National Environmental Policy Act (NEPA). However, acceptance of the submission is a prerequisite to application for federal funding of NCP implementation actions.

1.4 NOISE/LAND USE COMPATIBILITY GUIDELINES

The FAA, other federal agencies, and several states have developed guidelines for identifying which land uses are compatible with which noise exposure levels – the more noise-sensitive the land use, the lower the noise exposure should be in order to achieve compatibility. Thus, DNL estimates have two principal uses in a 14 CFR Part 150 study:

- To provide a basis for comparing existing noise conditions with the future effects of noise abatement procedures and/or forecast changes in airport activity
- To provide a quantitative basis for identifying potential noise impacts

Both of these functions require the application of objective criteria for evaluating noise impacts. 14 CFR Part 150, Appendix A, Table 1 (reproduced here as Table 1-1) provides the FAA's recommended guidelines for determining noise/land use compatibility.

According to these FAA guidelines, all identified land uses, even the more noise-sensitive ones, normally are compatible with aircraft noise at DNL levels below 65 dB. The DNL 65 dB limit is supported in a formal way by standards adopted by the U. S. Department of Housing and Urban Development (HUD). The HUD standards set forth in 24 CFR Part 51, “Environmental Criteria and Standards”, Section §103, define areas with exterior DNL exposure not exceeding 65 dB as acceptable. Areas exposed to noise levels between DNL 65 dB and 75 dB are "normally unacceptable," and require special abatement measures and review. Those at 75 dB and above are "unacceptable" except under very limited circumstances. HUD assistance, subsidy, or insurance “for the construction of new noise sensitive uses is prohibited generally for projects with unacceptable noise exposures and is discouraged for projects with normally unacceptable noise exposure”.[3]

14 CFR Part 150 permits airports and local land use control jurisdictions to adopt land use compatibility criteria that differ from the guidelines reproduced in Table 1-1. However, the FAA

[3] Title 24 CFR Part 51, “Environmental Criteria and Standards”, § 51.101, (a) (3). 44 FR 40861, July 12, 1979, as amended at 50 FR 9268, Mar. 7, 1985, 61 FR 13333, Mar. 26, 1996.

recommended guidelines were used to determine land use compatibility for purposes of Part 150 and this NEM documentation.

Table 1-1: Land Use Compatibility with Yearly Day-Night Average Sound Levels

	Yearly Day-Night Average Sound Level, DNL, in dB (Key and notes on following page)					
Land Use	**<65**	**65-70**	**70-75**	**75-80**	**80-85**	**>85**
Residential Use						
Residential other than mobile homes and transient lodgings	Y	N(1)	N(1)	N	N	N
Mobile home park	Y	N	N	N	N	N
Transient lodgings	Y	N(1)	N(1)	N(1)	N	N
Public Use						
Schools	Y	N(1)	N(1)	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Governmental services	Y	Y	25	30	N	N
Transportation	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
Parking	Y	Y	Y(2)	Y(3)	Y(4)	N
Commercial Use						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail--building materials, hardware and farm equipment	Y	Y	Y(2)	Y(3)	Y(4)	N
Retail trade--general	Y	Y	Y(2)	Y(3)	Y(4)	N
Utilities	Y	Y	Y(2)	Y(3)	Y(4)	N
Communication	Y	Y	25	30	N	N
Manufacturing and Production						
Manufacturing general	Y	Y	Y(2)	Y(3)	Y(4)	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
Livestock farming and breeding	Y	Y(6)	Y(7)	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
Recreational						
Outdoor sports arenas and spectator sports	Y	Y(5)	Y(5)	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts and camps	Y	Y	Y	N	N	N
Golf courses, riding stables, and water recreation	Y	Y	25	30	N	N

* The designations contained in this table do not constitute a Federal determination that any use of land covered by the program is acceptable or unacceptable under Federal, State, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

Key to Table 1

SLUCM:	Standard Land Use Coding Manual.
Y (Yes):	Land use and related structures compatible without restrictions.
N (No):	Land use and related structures are not compatible and should be prohibited.
NLR:	Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.
25, 30, or 35:	Land use and related structures generally compatible; measures to achieve NLR of 25, 30, or 35 dB must be incorporated into design and construction of structure.

Notes for Table 1

(1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often started as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.

(2) Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(3) Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(4) Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

(5) Land use compatible provided special sound reinforcement systems are installed.

(6) Residential buildings require an NLR of 25.

(7) Residential buildings require an NLR of 30

(8) Residential buildings not permitted.

Source: 14 CFR Part 150, Appendix A, Table 1

1.5 ROLES AND RESPONSIBILITY

Several groups had major roles in the development of the NEMs, including JMAA, Airport and community stakeholders, the FAA, and the consulting team.

1.5.1 Jackson Municipal Airport Authority

As the "airport operator", JMAA has authority over the 14 CFR Part 150 update, including ultimate responsibility for determining the elements to include in the NCP when it is submitted to the FAA for review. JMAA is responsible for pursuing implementation of adopted measures.

JMAA retained a team of consultants to conduct the technical work required to fulfill 14 CFR Part 150 analysis and documentation requirements. Section 1.5.4 describes the composition of the consulting team and the general assignment of responsibilities among its members.

1.5.2 Airport and Community Stakeholders

The Airport and community stakeholders were involved in the initial data gathering efforts to develop a true representation of the operation of the Airport. These entities include: representatives of the affected communities in the Airport's environs, government agencies with aviation and land use responsibilities; and private sector interests, particularly in the aviation industry.

Also important to the 14 CFR Part 150 process was providing an opportunity for the general public to review the process and provide any comments. A public workshop was held November 18, 2010 at which time the NEMs contours were displayed and any questions were answered on the development process.

Chapter 7 discusses the public consultation that took place during the development of the NEMs.

1.5.3 Federal Aviation Administration

For the NEMs update, FAA responsibility includes a review of the submission to determine that the technical work, consultation and documentation comply with 14 CFR Part 150 requirements. The FAA must also approve non-standard modeling requests. The final role of the FAA is to accept or not accept the NEMs.

For an NCP update, the FAA has ultimate review authority over the NCP submitted under 14 CFR Part 150. The FAA's review of the NCP encompasses the details of technical documentation as well as broader issues of safety and constitutionality of recommended noise abatement alternatives. The final role of the FAA is to approve or disapprove each measure proposed in the NCP.

FAA involvement includes participation by staff from at least three levels in the agency: (1) the Air Traffic Organization (ATO), (2) the Airports District Office (ADO), and (3) the Region.

- The Air Traffic Organization (ATO) includes the Air Traffic Controllers and support staff. The Airport's **Air Traffic Control Tower** (ATCT) provides significant input in several areas, including: operational data from their files, judgment regarding safety and capacity effects of alternative noise abatement measures, and input on implementation requirements. The **Jackson TRACON** (Terminal Radar Approach Control) also provides input on air traffic issues to the extent that they might affect procedures at the Airport and other nearby airports.

- The FAA's **Jackson Airports District Office** (ADO) is responsible for determining if the NCP satisfies all requirements.
- The FAA's **Southern Region** Airport Division Manager is responsible for final review of the NCP submission for adequacy in satisfying technical and legal requirements.

Prior to acceptance of the NEMs and approval of the NCP, the submitted documents will go through FAA Line-of-Business review, which includes Air Traffic, Flight Standards, Legal, Special Programs, Planning & Requirements, Flight Procedures and Regional Review.

1.5.4 Consultant Team

JMAA contracted with the consulting firm of Reynolds, Smith, and Hill, Inc. (RS&H) for the overall Airport Master Plan which included the 14 CFR Part 150 Study. RS&H sub-contracted to Harris Miller Miller & Hanson Inc. (HMMH) to complete the technical work required for the 14 CFR Part 150 update. HMMH has overall project management responsibility for the 14 CFR Part 150 update with RS&H assisting with land use data collection and related mitigation measures, as well as evaluating current and future land use incompatibilities.

1.6 FAA NOISE EXPOSURE MAP CHECKLIST

The FAA has developed checklists for their internal use in reviewing NEMs and NCP submissions. The FAA prefers that the documentation of the 14 CFR Part 150 includes copies of the checklists. Table 1-2 presents a completed copy of the NEMs checklist.

Table 1-2: Part 150 Noise Exposure Maps Checklist

14 CFR PART 150 NOISE EXPOSURE MAP CHECKLIST-PART I			
Airport Name: Jackson-Evers International Airport			
PROGRAM REQUIREMENT	**YES**	**NO**	**SUPPORTING PAGES/ REVIEW COMMENTS**
I. Submitting and Identifying The NEM:			
A. Submission is properly identified:			
1. 14 C.F.R. Part 150 NEM?	X		Cover page, Chapter 1, p. 1-1
2. NEM and NCP together?		X	
3. Revision to NEMs FAA previously determined to be in compliance with Part 150?	X		Chapter 1.1, p. 1-2
B. Airport and Airport Operator's name are identified?	X		Certification, p. iii
C. NCP is transmitted by airport operator's dated cover letter, describing it as a Part 150 submittal and requesting appropriate FAA determination?	X		Cover Letter
II. Consultation: [150.21(b), A150.105(a)]			
A. Is there a narrative description of the consultation accomplished, including opportunities for public review and comment during map development?	X		Chapter 7
B. Identification of consulted parties:			
1. Are the consulted parties identified?	X		Chapter 7
2. Do they include all those required by 150.21(b) and A150.105 (a)?	X		Chapter 7
3. Agencies in 2., above, correspond to those indicated on the NEM?	X		Chapter 7
C. Does the documentation include the airport operator's certification, and evidence to support it, that interested persons have been afforded adequate opportunity to submit their views, data, and comments during map development and in accordance with 150.21(b)?	X		Certification, p. iii and Chapter 7
D. Does the document indicate whether written comments were received during consultation and, if there were comments, that they are on file with the FAA regional airports division manager?	X		Chapter 7 and Appendix I
III. General Requirements: [150.21]			
A. Are there two maps, each clearly labeled on the face with year (existing condition year and one that is at least 5 years into the future)?	X		Chapter 6, Figures 6-1 and 6-2
B. Map currency:			
1. Does the year on the face of the existing condition map graphic match the year on the airport operator's NEM submittal letter?	X		Cover letter; Figure 6-1 is 2010 existing NEM
2. Is the forecast year map based on reasonable forecasts and other planning assumptions and is it for at least the fifth calendar year after the year of submission?	X		Cover letter; Figure 6-2 is 2015 existing NEM

14 CFR PART 150
NOISE EXPOSURE MAP CHECKLIST-PART I

Airport Name: Jackson-Evers International Airport

PROGRAM REQUIREMENT	YES	NO	SUPPORTING PAGES/ REVIEW COMMENTS
3. If the answer to 1 and 2 above is no, the airport operator must verify in writing that data in the documentation are representative of existing condition and at least 5 years' forecast conditions as of the date of submission?	N/A		
C. If the NEM and NCP are submitted together:	N/A		
1. Has the airport operator indicated whether the forecast year map is based on either forecast conditions without the program or forecast conditions if the program is implemented?	N/A		
2. If the forecast year map is based on program implementation:	N/A		
a. Are the specific program measures that are reflected on the map identified?	N/A		
b. Does the documentation specifically describe how these measures affect land use compatibilities depicted on the map?	N/A		
3. If the forecast year NEM does not model program implementation, the airport operator must either submit a revised forecast NEM showing program implementation conditions [B150.3 (b), 150.35 (f)] or the sponsor must demonstrate the adopted forecast year NEM with approved NCP measures would not change by plus/minus 1.5 DNL? [150.21(d)]	N/A		
IV. Map Scale, Graphics, and Data Requirements: [A150.101**,** A150.103, A150.105, 150.21(a)]			
A. Are the maps of sufficient scale to be clear and readable (they must be not be less than 1" to 2,000'), and is the scale indicated on the maps? *(Note (1) if the submittal uses separate graphics to depict flight tracks and/or noise monitoring sites, these must be of the same scale, because they are part of the documentation required for NEMs.) (Note (2) supplemental graphics that are not required by the regulation do not need to be at the 1" to 2,000' scale)*	X		Map figures are displayed on 11 x 17 in main document with 1"=2,000' scale maps of the NEMs, flight tracks, and noise monitoring sites included in pocket folders
B. Is the quality of the graphics such that required information is clear and readable? *(Refer to C. through G., below, for specific graphic depictions that must be clear and readable)*	X		All figures
C. Depiction of the airport and its environs.			
1. Is the following graphically depicted to scale on both the existing condition and forecast year maps:			Figure 6-1 (2010) and Figure 6-2 (2015) NEMs contain all this information
a. Airport boundaries	X		

14 CFR PART 150
NOISE EXPOSURE MAP CHECKLIST-PART I

Airport Name: Jackson-Evers International Airport

PROGRAM REQUIREMENT	YES	NO	SUPPORTING PAGES/ REVIEW COMMENTS
b. Runway configurations with runway end numbers	X		Every figure with geographic information delineates the boundaries and names of jurisdictions with planning and land use control authority in an area well beyond DNL 65 dB
2. Does the depiction of the off-airport data include?			
a. A land use base map depicting streets and other identifiable geographic features	X		
b. The area within the DNL 65 dB (or beyond, at local discretion)	X		
c. Clear delineation of geographic boundaries and the names of all jurisdictions with planning and land use control authority within the DNL 65 dB (or beyond, at local discretion)	X		
D. 1. Continuous contours for at least DNL 65, 70, and 75 dB?	X		All contour figures
2. Has the local land use jurisdiction(s) adopted a lower local standard and, if so, has the sponsor depicted this on the NEMs?		X	
3. Based on current airport and operational data for the existing condition year NEM, and forecast data representative of the selected year for the forecast NEM?	X		Certification letter, p.iii and Chapter 5 present current and forecast operational data and other modeling inputs
E. Flight tracks for the existing condition and forecast year timeframes (these may be on supplemental graphics which must use the same land use base map and scale as the existing condition and forecast year NEM), which are numbered to correspond to accompanying narrative?	X		Figures 5-2 through 5-6
F. Locations of any noise monitoring sites (these may be on supplemental graphics which must use the same land use base map and scale as the official NEMs)	X		Figure 3-1

14 CFR PART 150
NOISE EXPOSURE MAP CHECKLIST-PART I

Airport Name: Jackson-Evers International Airport

PROGRAM REQUIREMENT	YES	NO	SUPPORTING PAGES/ REVIEW COMMENTS
G. Noncompatible land use identification:			
1. Are noncompatible land uses within at least the DNL 65 dB noise contour depicted on the map graphics?	N/A		There are no noncompatible land uses within the DNL 65 dB noise contour
2. Are noise sensitive public buildings and historic properties identified? *(Note: If none are within the depicted NEM noise contours, this should be stated in the accompanying narrative text.)*	X		Depicted on Figure 6-1 (2010) and Figure 6-2 (2015) NEMs. None are within the DNL 65 dB noise contour
3. Are the noncompatible uses and noise sensitive public buildings readily identifiable and explained on the map legend?	X		All land use categories and noise sensitive public buildings are readily identified and explained
4. Are compatible land uses, which would normally be considered noncompatible, explained in the accompanying narrative?	N/A		
V. Narrative Support of Map Data: [150.21(a), A150.1, A150.101, A150.103]			
A. 1. Are the technical data and data sources on which the NEMs are based adequately described in the narrative?	X		Chapter 5 presents current and forecast data; the forecast methodology Appendix E
2. Are the underlying technical data and planning assumptions reasonable?	X		
B. Calculation of Noise Contours:			
1. Is the methodology indicated?	X		Chapter 5, p. 5-1
a. Is it FAA approved?	X		Chapter 5, p. 5-1: INM7.0b
b. Was the same model used for both maps? *(Note: The same model also must be used for NCP submittals associated with NEM determinations already issued by FAA where the NCP is submitted later, unless the airport sponsor submits a combined NEMs/NCP submittal as a replacement, in which case the model used must be the most recent version at the time the update was started.)*	X		
c. Has AEE approval been obtained for use of a model other than those that have previous blanket FAA approval?	N/A		Used INM 7.0b
2. Correct use of noise models:			

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NOISE EXPOSURE MAP CHECKLIST-PART I

Airport Name: Jackson-Evers International Airport

PROGRAM REQUIREMENT	YES	NO	SUPPORTING PAGES/ REVIEW COMMENTS
a. Does the documentation indicate, or is there evidence, the airport operator (or its consultant) has adjusted or calibrated FAA-approved noise models or substituted one aircraft type for another that was not included on the FAA's pre-approved list of aircraft substitutions?	X		Letters requesting FAA approval and FAA response for aircraft substitutes and user-defined profiles; See Appendices F and G
b. If so, does this have written approval from AEE, and is that written approval included in the submitted document?	X		Letters requesting FAA approval and FAA response for aircraft substitutes and user-defined profiles; See Appendices F and G
3. If noise monitoring was used, does the narrative indicate that Part 150 guidelines were followed?	X		Chapter 3, p. 3-1
4. For noise contours below DNL 65 dB, does the supporting documentation include an explanation of local reasons? *(Note: A narrative explanation, including evidence the local jurisdiction(s) have adopted a noise level less than DNL 65 dB as sensitive for the local community(ies), and including a table or other depiction of the differences from the Federal table, is highly desirable but not specifically required by the rule. However, if the airport sponsor submits NCP measures within the locally significant noise contour, an explanation must be included if it wants the FAA to consider the measure(s) for approval for purposes of eligibility for Federal aid.)*	N/A		
C. Noncompatible Land Use Information:			
1. Does the narrative (or map graphics) give estimates of the number of people residing in each of the contours (DNL 65, 70 and 75, at a minimum) for both the existing condition and forecast year maps?	X		Since there were no residences within the noise contours, the narrative so states
2. Does the documentation indicate whether the airport operator used Table 1 of Part 150?	X		Chapter 1, p. 1-7; Chapter 4, p. 4-1
a. If a local variation to table 1 was used:			
(1) Does the narrative clearly indicate which adjustments were made and the local reasons for doing so?	N/A		
(2) Does the narrative include the airport operator's complete substitution for table 1?	N/A		

14 CFR PART 150
NOISE EXPOSURE MAP CHECKLIST-PART I

Airport Name: Jackson-Evers International Airport

PROGRAM REQUIREMENT	YES	NO	SUPPORTING PAGES/ REVIEW COMMENTS
3. Does the narrative include information on self-generated or ambient noise where compatible or noncompatible land use identifications consider non-airport and non-aircraft noise sources?	N/A		
4. Where normally noncompatible land uses are not depicted as such on the NEMs, does the narrative satisfactorily explain why, with reference to the specific geographic areas?	N/A		
5. Does the narrative describe how forecast aircraft operations, forecast airport layout changes, and forecast land use changes will affect land use compatibility in the future?	X		Chapter 6, p. 6-1, 6-2
VI. Map Certifications: [150.21(b), 150.21(e)]			
A. Has the operator certified in writing that interested persons have been afforded adequate opportunity to submit views, data, and comments concerning the correctness and adequacy of the draft maps and forecasts?	X		Certification, p. iii
B. Has the operator certified in writing that each map and description of consultation and opportunity for public comment are true and complete under penalty of 18 U.S.C. Section 1001?	X		

Source: FAA/APP-600, Washington, DC, March 1989; revised June 2005; reviewed for currency 12/2007

CHAPTER 2
EXISTING NOISE COMPATIBILITY PROGRAM

JMAA initiated a Noise Compatibility Program (NCP) at Jackson-Evers International Airport through the initial 1989 Part 150 Study. The NCP recommended 11 elements, of which the FAA approved implementation of 9, in whole or in part. This approval (1990) includes a mix of noise abatement, land use, and program management elements. A summary of each measure from the Record of Approval is presented below in italics, followed by an evaluation of the measure to date and its current status. The runway designation nomenclature from the initial NCP references Runways 15L/15R and 33L/33R. These designations have subsequently been changed to Runways 16L/16R and 34L/34R and may be used interchangeably in the discussions of this chapter. A copy of the Record of Approval is presented as Appendix A.

2.1 EXISTING NOISE ABATEMENT MEASURES

Three noise abatement measures were recommended and two received approval in the FAA Record of Approval.

2.1.1 Runway 15R and 15L Noise Abatement Departure Flight Paths[4]

Turbojet aircraft and aircraft weighing more than 12,500 pounds maintain runway heading until crossing I-20.

The Airport Authority will request the Air Traffic Control Tower to issue a facility directive to keep departing turbojets and aircraft weighing more than 12,500 pounds on runway heading until reaching JAN 15 DME or 3,000 feet AMSL. A Letter to Airmen will be published advising of this noise abatement procedure. This measure will significantly reduce the single event noise level impact on a large number of affected residents. It will also result in a net reduction in the number of noise impacted residences.

FAA Action: Approved.

The original recommendation of the Advisory Committee was to amend the Standard Instrument Departure (SID) to reflect the Distance Measuring Equipment (DME) restriction on maintaining runway heading for all aircraft types. However, use of a facility directive rather than a SID was recommended by the Air Traffic Division because there is a current SID that states in part "climb on runway heading or as assigned for vectors to join filed route." They also recommended this procedure be applicable to only turbojets and aircraft weighing more than 12,500 pounds to prevent adverse effect on the capacity of the Airport.

Implementation Status: Implemented. The current Jackson ATC Tower Letter to Airmen No. 09-1, "Noise Abatement Procedures at Jackson-Evers International Airport", restates the procedures in effect. Radar data for a three-week period in both January and March 2010 were reviewed to evaluate general conformance with this procedure. The data indicated very high compliance by aircraft departing Runways 16L/16R. Discussions with ATC Tower personnel confirmed occasional noncompliance for aircraft departing Runway 16R making an early right-hand turn. Those

[4] These runways have the current designation of Runway 16R and Runway16L.

deviations are communicated to the operators to make them aware of the noise-sensitive areas in the vicinity of the Airport.

2.1.2 North Flow (33L/33R) Preferential Runway[5]

The Advisory Committee recommended changing the preferential runway from a south flow to a north flow. Analysis indicated this reduced the noise contour levels by 2-3 dB to the south where the majority of noncompatible land use was located. At the same time this initiative increased the noise levels to the north by the same approximate amount; however, this land is comprised of compatible land uses.

FAA Action: Disapproved.

Implementation Status: Not implemented. The sponsor elected not to implement this recommendation because of valid objections voiced by the Air Traffic Division. The most precise instrument approach (ILS CAT IIIa) is established to Runway 15L. Other instrument approaches and navigational aids have been established with Runway 15L/15R as the preferred runway. Establishing Runway 33L/33R as the preferred runway based only on wind conditions would adversely affect the advantage of the instrumentation to Runway 15L/15R.

2.1.3 Runway 15L/33R Noise Abatement Touch-and-Go Flight Paths

The downwind leg of all operations by turbojets and aircraft weighing more than 12,500 pounds east of the airport shall be made east of the Crossgates Lake area, and all turns from downwind to base leg for final approach to Runway 33R/33L shall be made after crossing I-20. A Letter to Airmen will be published advising of this noise abatement procedure.

FAA Action: Approved.

The original recommendation of the Advisory Committee included all aircraft types and stated that this measure would significantly reduce the single event noise level impact on a large number of affected residents. Also it would result in a net reduction in the number of noise affected residences. The Air Traffic Division recommended these procedures be applicable to only turbojets and aircraft weighing more than 12,500 pounds to prevent adverse effects on the capacity of the Airport.

Implementation Status: Implemented. The current Jackson ATC Tower Letter to Airmen No. 09-1, "Noise Abatement Procedures at Jackson-Evers International Airport", restates the procedures in effect. Radar data for a three-week period in both January and March 2010 were reviewed to evaluate effectiveness of this procedure. The data indicated general compliance and there is no history of complaints received for aircraft not following these procedures.

2.2 EXISTING LAND USE MEASURES

Seven land use measures were recommended and six received approval in the FAA Record of Approval. The other measure was disapproved pending submission of additional information. The implementation status of some of these measures is somewhat questionable based on the turnover in personnel and the lack of a knowledge base for actions initiated over 20 years ago.

[5] These runways have the current designation of Runway 34L and Runway 34R.

2.2.1 Land Acquisition

The Airport Authority will acquire fee simple title to the approximately 23 acres in approach to Runway 15R on which 8 mobile homes, 5 permanent homes, and 2 retail businesses are located. Acquisition will take place as federal funds become available.

FAA Action: Approved.

This area is directly under the flight path to Runway 15R and is situated 5,000 feet from the Runway 15R threshold and only 2,500 feet from the Runway 15L threshold. It is within the 70 Ldn[6] noise contour with a portion in the 65 Ldn, which is between the 70 Ldn contour for both runways.

Implementation Status: Not Implemented. JMAA reviewed this measure based on available data and the fact that the 23 acres referenced were not explicitly depicted on a map in the earlier study. Review of a City of Flowood Tax Map for 2008 provides a close approximation of the subject acreage that was never acquired. Therefore, it is the position of JMAA that the land acquisition was never consummated.

2.2.2 Sound Attenuation

The Airport Authority will establish a voluntary sound attenuation program to include 3 retail businesses in the 75 Ldn, 3 retail businesses and 1 church in the 70 Ldn, and 1 school and 1 church in the 65 Ldn. The program will be implemented as local and federal funds become available.

FAA Action: Approved.

Implementation Status: Not implemented. No records of FAA grants to fund this program could be located.

2.2.3 Acquisition of Avigation Easements

The Airport Authority will establish a voluntary program for acquisition of avigation easements for the 5 mobile and 27 permanent homes in the 70 Ldn. The program will be implemented as local and federal funds become available.

FAA Action: Approved.

Implementation Status: Not Implemented. JMAA was not able to find any records indicating this acquisition and therefore assumes it was not implemented.

2.2.4 Acquisition of Vacant Land and Avigation Easements

The Airport Authority will acquire fee simple title or an avigation easement in all vacant land in the 75 Ldn as local and federal funds become available.

FAA Action: Disapproved pending submission by the sponsor of evidence that the vacant land will be used for construction of residences or other noncompatible uses.

Implementation Status: Not Implemented.

[6] Ldn is equivalent to DNL and was the terminology used in the 1990-approved NCP.

2.2.5 Enactment of New Zoning and Changes to Existing Zoning

a. Acknowledge the City of Pearl's program to develop a comprehensive land-use plan and recommend use of the Noise Compatibility Program Report to insure compatible land use around the airport.

FAA Action: Approved.

Implementation Status: Implemented. A letter from the City of Pearl, dated August 17, 1989, is included in Appendix A. The City of Pearl zoning in the vicinity of the Airport is consistent with compatible land use objectives.

b. Acknowledge the City of Flowood's intent to utilize their existing zoning regulations to insure land-use compatibility in the vicinity of the airport and provide assistance as requested.

FAA Action: Approved.

Implementation Status: Implemented. A letter from the Town of Flowood, dated August 19, 1989, is included in Appendix A. The City of Flowood zoning in the vicinity of the Airport is consistent with compatible land use objectives.

c. Recommend that Rankin County utilize the Noise Compatibility Program to enact zoning in the vicinity of the airport.

FAA Action: Approved.

Implementation Status: Based on research and clarification with the Rankin County zoning officials, the County enacted new zoning in the County in 2004 but the Airport was not included. This is because the County has no jurisdiction on land adjacent to the Airport. Nevertheless, the new zoning ordinance designates the area around the Airport for land uses that are compatible with the operation of the Airport.

2.3 PROGRAM MEASURE

One program measure was recommended and approved in the FAA Record of Approval.

2.3.1 Provisions for Revisions to the Noise Exposure Maps (NEM) and Noise Compatibility Program (NCP)

The Airport Authority will evaluate the activity at the airport at the end of five years and update the NEM and NCP if necessary. They will be updated prior to this time if necessitated by physical changes in the airport layout, changes in activity, or any other circumstances that would affect the NEM or NCP. The Advisory Committee will continue as the Noise Abatement Committee and meet at least twice annually to review the adequacy of the NEM and NCP.

FAA Action: Approved.

Implementation Status: Implemented. An NEM Update was completed in 2003 and found in compliance by the FAA in September 2004. Presently, an airport master plan update is under development and JMAA chose to update the NEM and NCP concurrently with this effort. Implementation continues and is expected to be completed before the end of the calendar year 2010 for the NEM update.

CHAPTER 3
NOISE MEASUREMENTS

Noise measurements provide important input for understanding the noise environment around an airport. The FAA does not require noise monitoring for the development of the NEMs. However, the FAA does allow the airport to conduct noise measurements for the purposes of data acquisition and refinement in accordance with specific guidelines[7]. Ultimately though, Part 150 requires that the Integrated Noise Model (INM) be used for obtaining DNL contours for the following reasons: (a) measurements are practical only for obtaining DNL values for a limited numbers of points, (b) in the absence of a permanently installed monitoring system, noise measurements only cover relatively short time periods, and (c) noise measurements are snapshots of existing conditions and cannot be used to predict or evaluate future conditions.

The Airport does not have a permanent noise monitoring program. Thus, noise measurements were conducted using portable noise monitoring equipment in accordance with accepted acoustical measurement methodology and the guidelines provided in 14 CFR Part 150, Appendix A, Part A, Section A150.5. This chapter provides a description of the noise measurement program undertaken at the Airport.

3.1 NOISE MEASUREMENT OBJECTIVES

The portable noise measurement program was designed to determine significant non-aircraft noise sources and background noise levels in the community and to verify the aircraft modeling results. As such, there were two principle objectives:

- To obtain primary noise measurement samples of cumulative noise levels at a variety of noise-sensitive locations in order to obtain data to characterize ambient and aircraft noise levels. Cumulative exposure is important for land use planning purposes, for evaluating noise exposure trends in the long term, and for evaluating procedures that affect the distribution of noise levels over large areas.
- To obtain representative information on aircraft and non-aircraft single-event noise levels at a broad range of sites, primarily in residential areas. Single-event levels are important for responding to citizen concerns about specific operations, evaluating noise abatement flight tracks and comparing the relative noisiness of different aircraft types.

To accomplish these objectives, consultant staff conducted noise measurements June 14-18, 2010 at the eight locations identified in the following section. During visits to each site, trained observers calibrated the instrumentation; checked and changed batteries, as needed; and logged and reviewed activities occurring during the measurement periods to aid in identifying aircraft and community noise sources throughout the measurement period.

3.2 NOISE MEASUREMENT SITE SELECTION AND LOCATION

To accomplish the measurement objectives, site locations were selected from those identified within the noise-sensitive areas around the Airport and those determined to provide the best data based on the previous 2003 NEM contours. The consultants then identified potential noise

[7] 14 CFR Part 150 Appendix A, Part A, Section A150.5

measurement sites by conducting a "drive around" in order to familiarize themselves with the communities neighboring the Airport. Subsequently, the Airport obtained permission from the respective property owners to conduct the measurements at the selected locations.

Some factors that influenced site selection included:

- Location in residential areas or near other noise-sensitive land uses, to focus on the most noise-sensitive land use
- Near major flight corridors, to maximize the number of operations monitored
- Location at a variety of distances from the Airport, to assist in assessing variations in sound levels associated with aircraft altitude
- Reasonable isolation from unusual non-aircraft noise sources
- Security of equipment
- Access for measurement staff/observers
- Line-of-sight views from the microphone to the most common overflight paths to facilitate observing and logging aircraft activity

Overall, the group of sites was selected to provide representative data on the broadest range of aircraft operations and geographic areas surrounding the Airport.

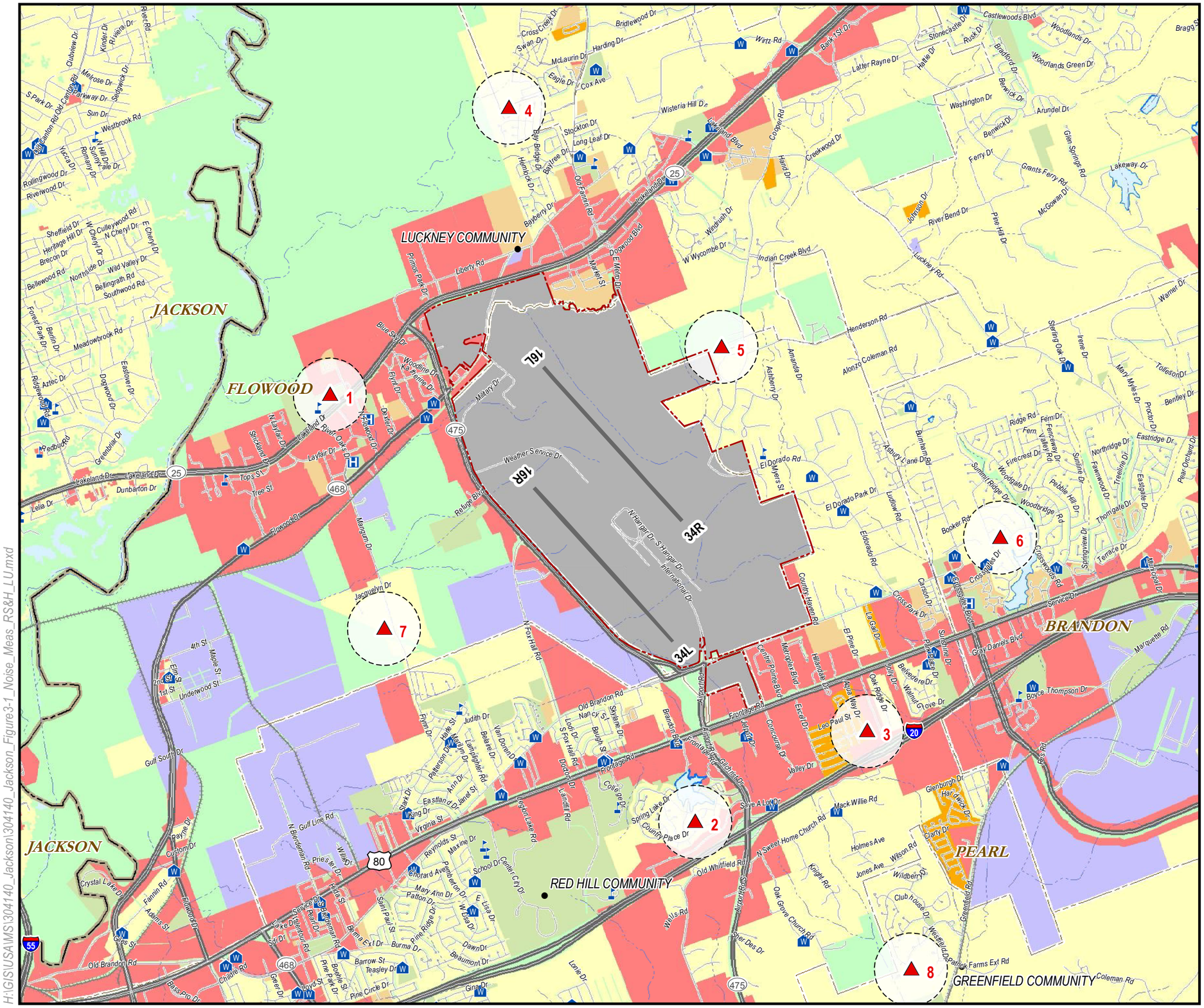
Figure 3-1 shows the locations at which portable noise measurements were conducted for this study. Table 3-1 lists the portable measurement location addresses and times/durations of measurements.

Table 3-1: Summary of Noise Measurement Sites

Site	Address	Start		End		Hours Monitored	Hours Observed
		Date	Time	Date	Time		
1	Jackson Prep School	6/14/10	1017	6/16/10	1548	54	2
2	106 Deer Run	6/14/10	1112	6/17/10	1213	53	3
3	232 Aqua Way	6/14/10	1200	6/17/10	1152	72	3
4	211 Woodgreen Cove	6/16/10	1624	6/18/10	1121	43	3
5	171 Trigg Circle	6/14/10	1402	6/15/10	1605	26	2
6	57 Terrapin	6/15/10	1640	6/16/10	1659	24	2
7	4017 Magnum Drive	6/16/10	1736	6/18/10	1220	42	1
8	503 Patrick Farm Drive	6/17/10	1614	6/18/10	1255	21	1

Notes: Hours monitored represents the total hours of usable data recorded and may not reflect the full duration from start to end

Source: HMMH



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JACKSON MUNICIPAL AIRPORT AUTHORITY

Figure 3-1
Noise Measurement Site Locations
June 2010
14 CFR Part 150 Update

- Noise Measurement Site Location
- Airport Property Boundary
- Airport Runway
- Residential
- High-Density Residential
- Commercial
- Agricultural / Vacant
- Airport Property
- Water
- Manufactured Homes
- Industrial
- Parks / Public Space
- County Boundary
- Municipal Boundary
- Highways
- Railroad
- Local Roads
- Stream
- National Register of Historic Places
- School
- College / University
- Place of Worship
- Health Care

Data Sources: Mississippi Automated Resource Information System (MARIS), Central Mississippi Planning & Development District (CMPDD), United States Geological Survey (USGS), Geographic Names Information System (GNIS), Environmental Systems Research Institute (ESRI)

0 4,000 8,000 Ft.

3.3 NOISE MEASUREMENT INSTRUMENTATION, STAFFING, AND PROCEDURES

Measurements were conducted with Larson-Davis Model 870 ("LD 870") noise monitors. These instruments meet the American National Standards Institute (ANSI) S1.4-1983 standards for a Type I "precision" sound level meter, and meet or exceed the accuracy requirements defined in 14 CFR Part 150 Section A150.5. The measurement staff calibrated the equipment in the field on a daily basis. The calibrations are traceable to the United States National Institute of Standards and Technology (NIST).

The LD 870's were programmed to record cumulative noise levels, such as hourly equivalent sound level (L_{eq}) and DNL, and single-event levels, such as Maximum Sound Level (L_{max}) and Sound Exposure Level (SEL). Appendix C provides definitions of these metrics and discusses all measurements being A-weighted.

The units operated on a 24-hour basis during the five-day measurement session, with breaks for battery changes, calibration, and basic maintenance requirements. Two observers or measurement staff members, accompanied on occasion by Airport staff, conducted the observations and measurements. The staff spent time at the monitoring locations to observe and log aircraft and non-aircraft noise-producing events, weather data, and other relevant information.

The clocks on the portable noise monitors were synchronized to local time using the NIST clock in Boulder, Colorado to facilitate the correlation of aircraft noise events measured at multiple sites. In addition, this "time stamp" coordination allowed the correlation of acquired FAA aircraft radar data with the measured noise levels.

3.4 NOISE MEASUREMENT RESULTS

3.4.1 Measurement Site DNL Results

Table 3-2 summarizes the daily and energy-average DNL measurement results for each of the measurement sites. For those days with less than 80% of the measurement period, the table indicates a partial day's measurements and the DNL was not calculated for that site and day. However, when determining the average DNL for the full measurement period, the partial data were used. The average DNL is an energy-averaged DNL since the dB unit is logarithmic. The displayed DNL measurement data include all noise sources not merely the DNL from aircraft sources that the modeling process provides.

Table 3-2: Summary of Day-Night Average Sound Level Measurements

Site #	Daily DNL (dB)					Average DNL (dB)
	Mon. 6/14/10	Tue. 6/15/10	Wed. 6/16/10	Thu. 6/17/10	Fri. 6/18/10	
1	P	69	P	-	-	68
2	P	61	P	P	-	60
3	P	64	64	P	-	64
4	-	-	P	61	P	62
5	P	P	-	-	-	61
6	-	P	57	-	-	59
7	-	-	P	67	P	66
8	-	-	-	P	P	58

Notes: DNL values are calculated from partial data. At least 80% of the daytime (7 AM to 10 PM) and 80% of the night time (10 PM to 7 AM) is required for this analysis.
P- Partial measurement for the day, but not enough data was collected for determining the daily DNL
Data from the Noise Monitors include all noise, not just aircraft noise.

Source: HMMH

As shown in Table 3-2, the highest levels were recorded for Sites 1 and 7. Since these data include all noise sources, the aircraft-only DNL is not shown separately for comparison to the INM modeled data. For example, Site 1 captured the higher noise levels associated with traffic along Lakeland Drive, which appeared to have a great influence on the 24-hour cumulative DNL. At Site 7 very few aircraft were observed or measured during the observation period but a few noise levels with extraordinarily long durations were recorded each night of measurements. These persisted from approximately 8:30 PM until 4:00 AM. The long durations contributed to the higher SEL values which are used in calculating the DNL. The source of these events is unknown (see Appendix E for more detail on each measurement location).

3.4.2 Summary of Single-Event Results

The number of noise events measured at each site depended on the site location, aircraft activity, and the length of time that the site actively collected data. Noise from all sources was captured by the noise monitoring equipment; however, each site had an event threshold set into the monitor which limited the identification of events to noise levels that had a greater effect on the noise environment. The set event noise threshold was not necessarily the same for every site. At the sites with higher ambient noise levels due to community sources (traffic, general neighborhood noise, etc.) the thresholds were generally set higher to screen those sources out while still capturing the target noise levels of the aircraft operations.

Appendix E provides a site-by-site description of the aircraft and non-aircraft sound levels measured in terms of the L_{max}. The sound levels actually "heard" during the different periods of the day and night may be from individual sound sources or combinations thereof. Through on-site observations and the matching and analysis of aircraft radar data associated with recorded noise event data, a general description of the contributions of the various noise sources can be derived. Some sites located under or nearly under flight tracks had a greater number of aircraft activity which provided a better predictor of aircraft noise levels to expect. Those to the sideline of the runways had fewer aircraft events detected and subsequently less contribution to determining the aircraft noise levels that were more normally experienced at a particular site.

The measured aircraft Sound Exposure Levels (SEL) at sites that had a good sample of aircraft flyovers were compared to aircraft modeled SEL as a cross-check of the input data for the INM. The comparison showed that the modeled aircraft SELs were generally within the range of the aircraft measured values thereby providing confidence in the INM's noise prediction.

CHAPTER 4
LAND USE

A review was made of the land use controls that are currently in effect within political jurisdictions surrounding and including the Airport property. An understanding of the existing methods of land use controls form the basis for evaluating the relationship of the existing and future DNL contours to existing land uses.

4.1 LAND USE IN THE VICINITY OF THE AIRPORT

The Airport is within the jurisdiction of the City of Jackson. The Jackson Comprehensive Plan has designated the area as a Regional Mixed-Use Center and recommended land uses and development guidelines are included in the Jackson Comprehensive Plan. All recommended land uses identified in the Jackson Comprehensive Plan are compatible with the continued operation of the Airport.

In addition, each of the cities in the vicinity of the Airport (e.g., Brandon, Flowood, and Pearl) have prepared general plans that identify the future land use patterns within their respective jurisdictions. Each of the general plans provide for compatible land uses in the Airport vicinity. Thus, noise-sensitive land uses are restricted in areas close to the Airport and off the centerlines of the runways.

In addition, Rankin County, which has jurisdiction over the unincorporated areas in the Airport vicinity, has designated the area around the Airport for land uses that are compatible with the operation of the Airport.

4.2 ZONING

The Airport is within the jurisdiction of the City of Jackson. The zoning ordinance designates the Airport as a Special Use District (SUD). The land uses allowed within this district are compatible with the continued operation of the Airport.

In addition, the following jurisdictions have the authority to zone property in the vicinity of the Airport: Rankin County, the City of Brandon, the City of Flowood, and the City of Pearl. The zoning maps for each of these cities restrict land uses in the Airport vicinity to those that are compatible with the continued operation of the Airport.

4.3 AIRCRAFT NOISE-RELATED LAND USE IMPACTS

The FAA has developed land use guidelines that relate the compatibility of aircraft activity to areas surrounding an Airport. Table 1 in 14 CFR Part 150, provided in Table 1-1, identifies land use activities that are acceptable within the DNL 65, 70 and 75 dB contours. FAA guidance indicates that virtually all land uses below the DNL 65 db are considered to be compatible with the effects of aircraft noise and therefore will not fund mitigation programs below DNL 65 dB. It is important to note that the FAA does allow local land use planning agencies to adopt a lower compatibility level that may be more stringent than FAA guidelines.

Attention is focused on areas within the DNL 65 dB contour because the FAA considers aircraft noise exposure levels of DNL 65 dB and greater to be noncompatible with noise sensitive uses. The DNL 65 dB contour also identifies the limits the FAA considers the most crucial for eligibility of funding of noise abatement measures. The DNL 65 dB contour was chosen by the FAA to represent the point of compatibility versus non-compatibility based on two factors: scientific social survey results regarding levels of community annoyance due to aircraft noise, and reasonable public policy investments (see Appendix A, Section A.3). When developing 14 CFR Part 150 regulations, the FAA had to strike a balance between aircraft noise levels where annoyance was minimal and the ability of the federal government to provide funding for noise mitigation programs within a defined area around each airport in the country. The so-called "Schultz Curve"[8] is based on scientific analysis of noise levels and people's associated annoyance level. The funding factor is related to the thousands of homes and noise sensitive sites across the country that would potentially be mitigated using federal funds. The balance was reached by selecting the DNL 65 dB.

Based on the Schultz Curve, approximately 14% of people are "highly annoyed" at DNL 65 dB. The DNL 65 dB contour provided a boundary where the annoyance level was reasonably low and the potential noise sensitive locations located within that contour level across the country was at a manageable level from a federal funding viewpoint.

The FAA recognizes, however, that noise does not stop at DNL 65 dB and is heard by people located in close proximity to approach, departure, and training corridors. The Airport sponsor can address noise concerns with possible modifications to flight procedures that are beyond the limits of the DNL 65 dB. These programs are evaluated in the noise compatibility portions of this Study.

[8] Federal Interagency Committee on Noise. *Federal Agency Review of Selected Airport Noise Analysis Issues*. August 1992

CHAPTER 5
DEVELOPMENT OF NOISE CONTOURS

The DNL contours for this study were prepared using the most recent release of the FAA's Integrated Noise Model (INM) that was available at the time the contours were prepared, Version 7.0b. The INM requires inputs such as a physical description of the airport layout, description of aircraft operations (including fleet mix and day-night split information), aircraft noise and performance characteristics, runway utilization rates, and flight track descriptions and utilization rates. This chapter presents this information for the existing conditions (2010) and forecast conditions (2015) noise contours.

5.1 AIRPORT PHYSICAL PARAMETERS

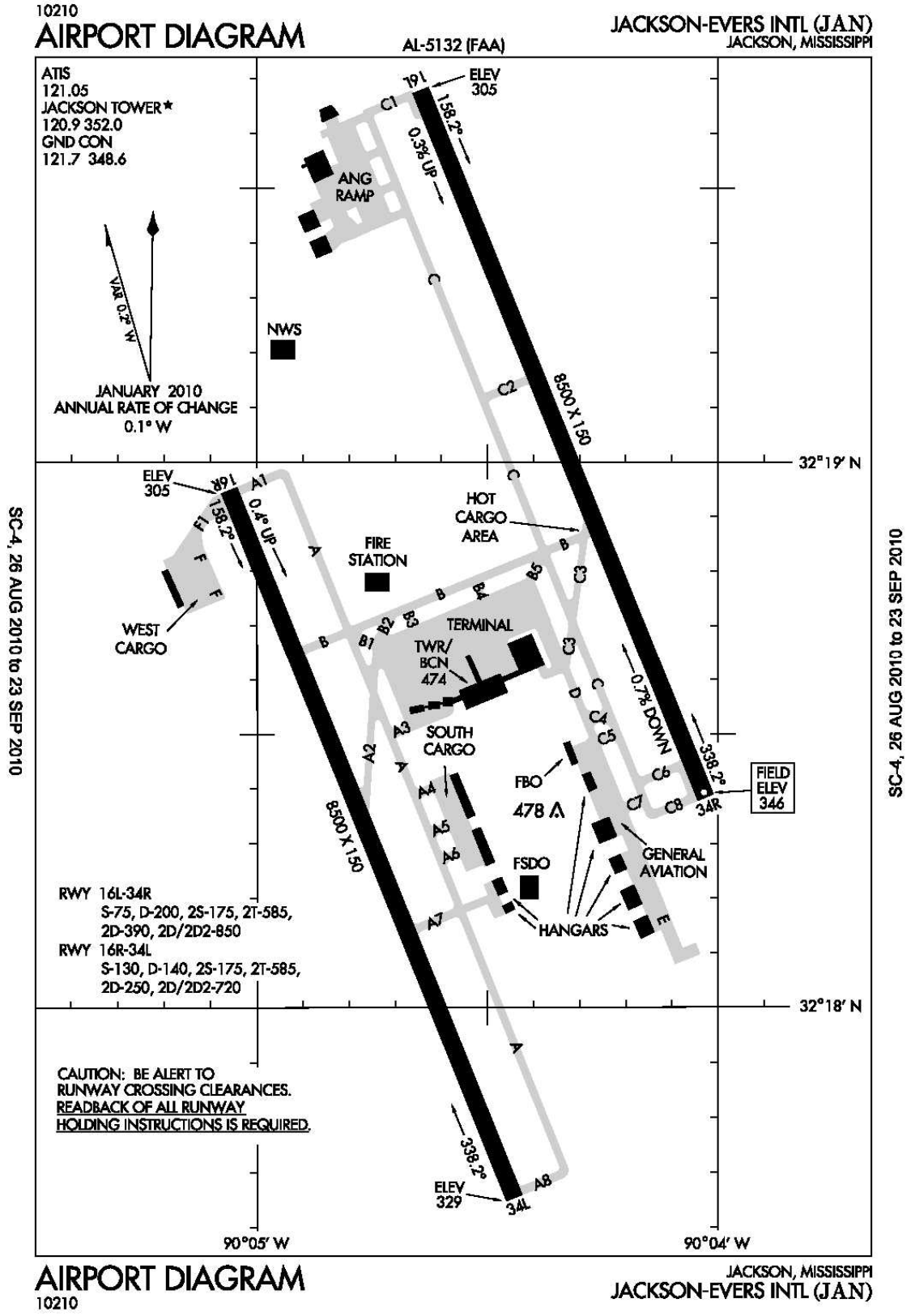
Jackson-Evers International Airport is located approximately six miles east of downtown Jackson on approximately 3,338 acres. It is adjacent to the jurisdictions of Rankin County, the City of Pearl, and the City of Flowood. The Airport has a set of two parallel runways. Each end of the runways is designated by a different number that, with the addition of a trailing "0," reflects the approximate magnetic heading of the runway to the nearest 10 degrees, as seen by the pilot. In addition, the parallel runways are distinguished from each other with letter endings "L", meaning left, and "R", meaning right, as seen by the pilot. The parallel runways at the Airport are designated 16L/34R and 16R/34L and have identical lengths and widths of 8,500 feet and 150 feet, respectively.

Based on meetings with the Fixed Base Operator (FBO) and FAA ATC Tower personnel, there is no formal helipad identification on the Airport. Helicopter operations are not restricted to any particular runway but do fly to a standard location on the general aviation (GA) ramp. Based on the location identified by the FBO on the Airport diagram, the helicopter position on the GA ramp is approximately opposite Taxiway C6. This translates into the following latitude and longitude coordinates: 32-18-26.996N, 90-04-13.836W; and an elevation of 335 ft above Mean Sea Level (MSL).

The INM also contains an internal airport layout database, including runway locations, orientation, start-of-takeoff roll points, runway end elevations, landing thresholds, approach angles, etc. The INM data was verified with the current Airport Layout Plan. The published Airport elevation is 346 feet MSL. These factors affect sound propagation and are used by the INM to adjust the rate at which sound decreases with increasing distance from the aircraft.

Figure 5-1 shows the Airport Diagram. There are no anticipated changes to the Airport configuration for the forecast conditions (2015). Table 5-1 displays the specific runway information, including latitude and longitude coordinates and elevation, which were used as input into the INM.

Figure 5-1: Existing Airport Diagram



Source: FAA Airport Diagram, SC-4 26 Aug 2010 to 23 Sep 2010

Table 5-1: Airport Runway Data

Runway	Location	Heading, degrees	Elevation, feet MSL	Approach Angle, degrees	Displaced Thresholds?
16L	32-19-41.4992N 90-04-39.7562W	158	305	3.0	No
34R	32-18-23.5247N 90-04-02.6275W	338	346	3.0	No
16R	32-18-56.9554N 90-05-03.7947W	158	305	3.0	No
34L	32-17-38.9830N 90-04-26.6712W	338	329	3.0	No

Source: National Flight Data Center, National Geodetic Survey

5.2 AIRCRAFT OPERATIONS

As a result of discussions with FAA and Airport staff, it was decided that the aircraft operations level data for the last nine months of 2009 and the first three months of 2010 would form the basis for the inventory of operations for the existing conditions (2010). The operations level data were obtained from the FAA Air Traffic Activity Data System (ATADS) for this period. ATADS data are presented in four categories[9]: Air Carrier, Air Taxi, General Aviation, and Military. All four types of operations are represented at the Airport. Therefore, the total number of operations modeled for the existing condition (2010) was 67,296. Radar data sampling for two periods in 2010 were used to identify the predominant fleet mix and snap-shot operations level which were then scaled to the reported ATADS levels for the 12-month period shown in Table 5-2. Flight schedules, identified city-pairs for scheduled operations, and discussions with Airport personnel were used in assigning the proper departure stage lengths where appropriate.

Table 5-2: Aircraft Operations

	Source	Itinerant				Local		Total
		AC	AT	GA	Mil	GA	Mil	
Existing 2010	FAA ATADS	8,279	21,052	9,630	8,116	1,474	18,745	67,296
Forecast 2015	Master Plan Forecast	8,887	25,272	10,883	7,392	1,666	17,072	71,172

Notes: AC denotes air carrier operations
AT denotes air taxi operations
GA denotes general aviation operations
Mil denote military operations

Source: Existing: ATADS: Airport Operations: Standard Report
Forecast: Jackson-Evers International Airport Master Plan – Draft, Chapter 4, Aviation Activity Forecasts

[9] Defined in FAA Order 7210.3

The forecast aircraft operations (2015) were developed in conjunction with the Airport Master Plan[10]. The major differences between the existing and forecast operations are in the air cargo category, based on the expected replacement of the United Parcel Service (UPS) 757 aircraft with the A300 and the addition of an air taxi cargo aircraft, the twin-engine turboprop ATR72 (INM type HS748A). For the Air Taxi category, there are fewer than three operations per day predicted for the non-scheduled aircraft types; thus, these operations were modeled using the three dominant air taxi aircraft and the helicopter from the aircraft listing for the existing conditions (2010). Military C-17 operations are expected to remain at the same level as the existing conditions with transient military operations decreasing slightly. The FAA found the 2015 forecast reasonable and acceptable (see Appendix F).

The INM requires information on day and night arrivals, departures, and pattern/touch-and-go operations (as appropriate) expressed in terms of an annual average day. The average annual day operations are determined by dividing the annual operations by 365 days.

Table 5-3 and Table 5-4 present the detailed average daily aircraft activity summaries that were developed for the existing conditions (year of submittal, 2010) and forecast conditions (five- year forecast year, 2015). The tables show the number of average annual daily aircraft arrivals and departures, as well as whether they occur during the day or nighttime period. The nighttime period is defined as 10 pm to 7 am, with all other hours being defined as the daytime period. The day/night breakdown is critical to the calculation of DNL, because the metric weights the nighttime operations by a factor of 10. This is mathematically equivalent to adding ten decibels to the noise level produced by aircraft operating at night to reflect the greater annoyance associated with a noisy nighttime disturbance. The aircraft are designated by the INM type with which they were modeled.

Table 5-3: Existing Conditions (2010) Modeled Average Daily Aircraft Operations

Aircraft Category	INM Aircraft Type	Arrivals		Departures		Patterns		Total
		Day	Night	Day	Night	Day	Night	
Air Carrier	737300	3.12	0.06	3.08	0.10	0.00	0.00	6.36
	737500	0.58	0.01	0.57	0.02	0.00	0.00	1.17
	737700	4.95	0.10	4.90	0.15	0.00	0.00	10.11
	757PW	0.00	0.71	0.00	0.71	0.00	0.00	1.42
	A300-622R	0.02	0.00	0.02	0.00	0.00	0.00	0.03
	CRJ9-ER	0.94	0.02	0.93	0.03	0.00	0.00	1.92
	CRJ9-LR	0.43	0.01	0.43	0.01	0.00	0.00	0.88
	EMB170	0.03	0.00	0.03	0.00	0.00	0.00	0.07
	MD83	0.35	0.01	0.35	0.01	0.00	0.00	0.72
Air Carrier Subtotal		**10.42**	**0.92**	**10.30**	**1.04**	**0.00**	**0.00**	**22.68**
Air Taxi	BEC58P	0.03	0.00	0.02	0.00	0.00	0.00	0.05
	CL600	0.03	0.00	0.02	0.00	0.00	0.00	0.05
	CL601	14.01	0.45	12.55	1.91	0.00	0.00	28.92
	CNA441	0.03	0.00	0.02	0.00	0.00	0.00	0.05
	CNA500	0.10	0.00	0.09	0.01	0.00	0.00	0.21
	CNA510	0.08	0.00	0.07	0.01	0.00	0.00	0.16
	CNA750	0.11	0.00	0.10	0.02	0.00	0.00	0.23
	CRJ9-ER	0.30	0.01	0.27	0.04	0.00	0.00	0.62

[10] Draft Jackson-Evers International Airport Master Plan, Chapter 4, Aviation Activity Forecast (included as Appendix F)

Aircraft Category	INM Aircraft Type	Arrivals		Departures		Patterns		Total
		Day	Night	Day	Night	Day	Night	
	DHC6	0.26	0.01	0.24	0.04	0.00	0.00	0.54
	EMB145	11.83	0.38	10.60	1.61	0.00	0.00	24.41
	EMB14L	0.43	0.01	0.38	0.06	0.00	0.00	0.88
	IA1125	0.03	0.00	0.02	0.00	0.00	0.00	0.05
	LEAR25	0.03	0.00	0.02	0.00	0.00	0.00	0.05
	LEAR35	0.13	0.00	0.11	0.02	0.00	0.00	0.26
	MU3001	0.55	0.02	0.49	0.08	0.00	0.00	1.14
	R44	0.03	0.00	0.02	0.00	0.00	0.00	0.05
Air Taxi Subtotal		**27.95**	**0.89**	**25.03**	**3.81**	**0.00**	**0.00**	**57.68**
General Aviation	1900D	0.19	0.00	0.19	0.01	0.00	0.00	0.40
	B212	0.02	0.00	0.02	0.00	0.00	0.00	0.04
	BEC58P	0.83	0.02	0.82	0.02	0.09	0.01	1.79
	CH47D	0.02	0.00	0.02	0.00	0.00	0.00	0.04
	CIT3	0.12	0.00	0.12	0.00	0.00	0.00	0.25
	CL600	0.32	0.01	0.31	0.01	0.00	0.00	0.65
	CNA172	0.48	0.01	0.47	0.01	0.68	0.10	1.75
	CNA182	0.49	0.01	0.49	0.01	0.00	0.00	1.01
	CNA206	0.18	0.00	0.17	0.01	0.00	0.00	0.36
	CNA441	0.79	0.02	0.79	0.02	0.00	0.00	1.62
	CNA500	0.95	0.02	0.94	0.03	0.00	0.00	1.94
	CNA750	0.04	0.00	0.03	0.00	0.00	0.00	0.07
	DHC6	1.45	0.03	1.43	0.04	0.00	0.00	2.95
	EC130	0.02	0.00	0.02	0.00	0.00	0.00	0.04
	EMB145	0.05	0.00	0.05	0.00	0.00	0.00	0.11
	FAL20	0.12	0.00	0.12	0.00	0.00	0.00	0.25
	FAL50	0.12	0.00	0.12	0.00	0.00	0.00	0.25
	FAL900	0.04	0.00	0.03	0.00	0.00	0.00	0.07
	GASEPF	0.12	0.00	0.12	0.00	0.00	0.00	0.25
	GASEPV	1.80	0.04	1.78	0.05	0.00	0.00	3.67
	GIIB	0.04	0.00	0.03	0.00	0.00	0.00	0.07
	GIV	0.35	0.01	0.35	0.01	0.00	0.00	0.72
	IA1125	0.11	0.00	0.10	0.00	0.00	0.00	0.22
	LEAR25	0.12	0.00	0.12	0.00	0.00	0.00	0.25
	LEAR35	1.92	0.04	1.90	0.06	0.00	0.00	3.92
	MU3001	1.69	0.03	1.68	0.05	2.78	0.39	6.62
	PA28	0.18	0.00	0.17	0.01	0.00	0.00	0.36
	PA31	0.07	0.00	0.07	0.00	0.00	0.00	0.14
	PA42	0.04	0.00	0.03	0.00	0.00	0.00	0.07
	R44	0.05	0.00	0.05	0.00	0.00	0.00	0.11
	SA365N	0.05	0.00	0.05	0.00	0.00	0.00	0.11
	SD330	0.16	0.00	0.16	0.00	0.00	0.00	0.32
General Aviation Subtotal		**12.94**	**0.25**	**12.81**	**0.38**	**3.54**	**0.49**	**30.42**
Military	757PW	0.00	0.00	0.00	0.00	0.57	0.00	0.57
	C130	0.21	0.00	0.21	0.00	3.46	0.00	3.88
	C17[3]	3.67	0.03	3.67	0.02	0.00	0.00	7.40
	CH47D	0.02	0.00	0.02	0.00	0.00	0.00	0.05
	DHC6	1.42	0.02	1.42	0.01	0.91	0.00	3.78
	GASEPV	1.28	0.01	1.28	0.01	4.67	0.00	7.26
	HAWK	1.14	0.01	1.14	0.01	4.25	0.00	6.56
	KC135R	0.05	0.00	0.05	0.00	1.98	0.00	2.07
	LEAR35	0.00	0.00	0.00	0.00	0.95	0.00	0.95

Aircraft Category	INM Aircraft Type	Arrivals		Departures		Patterns		Total
		Day	Night	Day	Night	Day	Night	
	MU3001	2.53	0.03	2.54	0.02	32.44	0.00	37.56
	SD330	0.09	0.00	0.09	0.00	0.00	0.00	0.19
	T-38A[3]	1.65	0.02	1.65	0.01	0.00	0.00	3.33
Military Subtotal		**12.06**	**0.13**	**12.08**	**0.10**	**49.23**	**0.00**	**73.59**
Total		**63.37**	**2.20**	**60.22**	**5.32**	**52.77**	**0.49**	**184.37**

Notes for Table 5-3:
1. Pattern operations count as two operations – one arrival and one departure
2. Any differences between the total number of operations from the average daily operations are due to rounding.
3. Circuit operations were modeled as an arrival and departure since no circuit profiles exist in INM for these aircraft.

Source: HMMH, Radar Data, ATCT and Operator Discussions

Table 5-4: Forecast Conditions (2015) Modeled Average Daily Aircraft Operations

Aircraft Category	INM Aircraft Type	Arrivals		Departures		Patterns		Total
		Day	Night	Day	Night	Day	Night	
Air Carrier	737300	2.98	0.26	2.95	0.30	0.00	0.00	6.48
	737500	0.37	0.03	0.37	0.04	0.00	0.00	0.81
	737700	4.46	0.40	4.42	0.44	0.00	0.00	9.72
	A300-622R	0.00	0.68	0.00	0.68	0.00	0.00	1.37
	CRJ9-ER	1.50	0.13	1.49	0.15	0.00	0.00	3.27
	CRJ9-LR	0.39	0.03	0.39	0.04	0.00	0.00	0.85
	MD83	0.85	0.08	0.84	0.08	0.00	0.00	1.84
Air Carrier Subtotal		**10.55**	**1.62**	**10.44**	**1.74**	**0.00**	**0.00**	**24.35**
Air Taxi	CL601	17.02	0.54	15.25	2.32	0.00	0.00	35.13
	CRJ9-ER	0.28	0.01	0.25	0.04	0.00	0.00	0.58
	EMB145	14.65	0.47	13.12	1.99	0.00	0.00	30.23
	EMB14L	0.40	0.01	0.36	0.05	0.00	0.00	0.82
	HS748A	0.66	0.02	0.59	0.09	0.00	0.00	1.37
	MU3001	0.51	0.02	0.46	0.07	0.00	0.00	1.06
	R44	0.02	0.00	0.02	0.00	0.00	0.00	0.05
Air Taxi Subtotal		**33.55**	**1.07**	**30.05**	**4.57**	**0.00**	**0.00**	**69.24**
General Aviation	1900D	0.22	0.00	0.22	0.01	0.00	0.00	0.45
	B212	0.02	0.00	0.02	0.00	0.00	0.00	0.04
	BEC58P	0.94	0.02	0.93	0.03	0.10	0.01	2.02
	CH47D	0.02	0.00	0.02	0.00	0.00	0.00	0.04
	CIT3	0.14	0.00	0.14	0.00	0.00	0.00	0.28
	CL600	0.36	0.01	0.36	0.01	0.00	0.00	0.73
	CNA172	0.54	0.01	0.53	0.02	0.77	0.11	1.98
	CNA182	0.56	0.01	0.55	0.02	0.00	0.00	1.14
	CNA206	0.20	0.00	0.20	0.01	0.00	0.00	0.41
	CNA441	0.90	0.02	0.89	0.03	0.00	0.00	1.83
	CNA500	1.08	0.02	1.07	0.03	0.00	0.00	2.20
	CNA750	0.04	0.00	0.04	0.00	0.00	0.00	0.08
	DHC6	1.64	0.03	1.62	0.05	0.00	0.00	3.34
	EC130	0.02	0.00	0.02	0.00	0.00	0.00	0.04
	EMB145	0.06	0.00	0.06	0.00	0.00	0.00	0.12
	FAL20	0.14	0.00	0.14	0.00	0.00	0.00	0.28
	FAL50	0.14	0.00	0.14	0.00	0.00	0.00	0.28
	FAL900	0.04	0.00	0.04	0.00	0.00	0.00	0.08

Aircraft Category	INM Aircraft Type	Arrivals		Departures		Patterns		Total
		Day	Night	Day	Night	Day	Night	
	GASEPF	0.14	0.00	0.14	0.00	0.00	0.00	0.28
	GASEPV	2.03	0.04	2.01	0.06	0.00	0.00	4.15
	GIIB	0.04	0.00	0.04	0.00	0.00	0.00	0.08
	GIV	0.40	0.01	0.39	0.01	0.00	0.00	0.81
	IA1125	0.12	0.00	0.12	0.00	0.00	0.00	0.24
	LEAR25	0.14	0.00	0.14	0.00	0.00	0.00	0.28
	LEAR35	2.17	0.04	2.15	0.06	0.00	0.00	4.43
	MU3001	1.92	0.04	1.90	0.06	3.14	0.44	7.48
	PA28	0.20	0.00	0.20	0.01	0.00	0.00	0.41
	PA31	0.08	0.00	0.08	0.00	0.00	0.00	0.16
	PA42	0.04	0.00	0.04	0.00	0.00	0.00	0.08
	R44	0.06	0.00	0.06	0.00	0.00	0.00	0.12
	SA365N	0.06	0.00	0.06	0.00	0.00	0.00	0.12
	SD330	0.18	0.00	0.18	0.01	0.00	0.00	0.37
General Aviation Subtotal		**14.62**	**0.29**	**14.48**	**0.43**	**4.00**	**0.56**	**34.38**
Military	757PW	0.00	0.00	0.00	0.00	0.52	0.00	0.52
	C130	0.18	0.00	0.18	0.01	3.14	0.00	3.51
	C17[3]	3.67	0.03	3.67	0.02	0.00	0.00	7.40
	CH47D	0.02	0.00	0.02	0.00	0.00	0.00	0.04
	DHC6	1.24	0.02	1.23	0.04	0.83	0.00	3.35
	GASEPV	1.12	0.02	1.10	0.03	4.24	0.00	6.52
	HAWK	0.99	0.02	0.98	0.03	3.86	0.00	5.89
	KC135R	0.04	0.00	0.04	0.00	1.79	0.00	1.88
	LEAR35	0.00	0.00	0.00	0.00	0.86	0.00	0.86
	MU3001	2.21	0.04	2.19	0.07	29.45	0.00	33.95
	SD330	0.08	0.00	0.08	0.00	0.00	0.00	0.17
	T-38A[3]	1.45	0.02	1.44	0.04	0.00	0.00	2.94
Military Subtotal		**11.00**	**0.17**	**10.93**	**0.24**	**44.68**	**0.00**	**67.02**
Total		**69.72**	**3.15**	**65.90**	**6.97**	**48.69**	**0.56**	**194.99**

Notes for table 5-4:
1. Pattern operations count as two operations – one arrival and one departure
2. Any discrepancies between the total number of operations from the average daily operations are due to rounding.
3. Circuit operations were modeled as an arrival and departure since no circuit profiles exist in INM for these aircraft.

Source: Master Plan Draft Chapter 4, HMMH, Radar Data, ATCT and Operator Discussions

5.3 AIRCRAFT NOISE AND PERFORMANCE CHARACTERISTICS

Specific noise and performance data must be entered into the INM for each aircraft type operating at the airport. Noise data are included in the form of Sound Exposure Level (SEL) (see Appendix C) at a range of distances (from 200 feet to 25,000 feet) from a particular aircraft with engines at a specific thrust level. Performance data includes thrust, speed and altitude profiles for takeoff and landing operations. The INM database contains standard noise and performance data for over one hundred different fixed-wing aircraft types, most of which are civilian aircraft. The INM automatically accesses the noise and performance data for takeoff and landing operations by those aircraft.

As shown in Table 5-3 and Table 5-4, this study included many different aircraft types. While many aircraft could be modeled by direct assignments from the standard INM database, some were not in the INM database. For those aircraft types not in the INM standard database, FAA-approved

substitutions were used to model the aircraft with a similar type that was in the database. If no sufficiently similar aircraft could be found, a user-defined aircraft was created for that specific aircraft type along with a request for FAA approval. For example, the C-17 profiles did not emulate those flown by the Air National Guard unit at Jackson and the T45 or HAWK aircraft did not have any profiles in the INM. FAA approved substitutions came from the following sources:

- INM Version 7.0b current list of standard FAA substitutions
- Specific request to FAA for non-standard substitutions and user-defined aircraft (see Appendices G and H)
- INM 5.0 User's Guide for pre-approved user-defined aircraft (3-engine business jets)

5.4 RUNWAY UTILIZATION

Runway utilization is based on a number of factors: the prevailing wind direction, calm wind procedures, informal preferential runway for departures and arrivals, seasonal variations, and accommodation of traffic. An analysis of six years of wind data determined that the runway use would approximate a 56% south flow on Runways 16L/16R and a 44% north flow on Runways 34L/34R. The derived runway use from the wind data analysis was further substantiated in a consensus among stakeholders that the approximate runway use was 60%/40% south flow and north flow, respectively. Jackson ATC Tower indicated that they occasionally conduct "opposite direction landings and departures" and circling approaches east and west of the Airport to land on the active runways. Based on all sources of information, it was determined for the Part 150 study to assume the wind-analysis derived runway use split of 56%/44% for overall south and north flows, respectively.

Discussions also indicated that for north flow, Runway 34L is generally the arrival runway and 34R the departure runway except for the 172 AW C-17s which will land and depart on Runway 34R, weather and visibility permitting. For south flow, Runway 16L is generally the arrival runway and Runway 16R the departure runway, except for the C-17s departing on Runway 16L. A review of a snapshot of radar data for January and March 2010 correlated this perception of the split between the left and right runways. Table 5-5 details the overall runway use by all aircraft.

Table 5-5: Modeled Runway Use

Runway	Arrivals		Departures	
	Day	Night	Day	Night
Runway 16L	53.3%	52.5%	6.6%	1.8%
Runway 16R	2.3%	3.1%	49.0%	53.8%
Runway 34L	32.3%	38.9%	5.1%	8.4%
Runway 34R	12.1%	5.5%	39.3%	36.0%
Total	100%	100%	100%	100%

Source: Radar Data, HMMH

5.5 FLIGHT TRACK GEOMETRY AND UTILIZATION

In addition to runway usage, radar data provided an ideal source of information for identifying where aircraft fly and how often they use different flight corridors in the vicinity of the Airport. Figure 5-2 through Figure 5-6, which follow, show the actual arrival and departure paths flown by aircraft in and out of the Airport for two periods – January 1-21, 2010 and March 8-28, 2010. Figure 5-2 depicts the flight paths of departing and arriving aircraft when the Airport is in a "south flow" configuration, meaning that aircraft are flying into the southerly wind. Figure 5-3 portrays the flight paths of departing and arriving aircraft when the Airport is in a "north flow" configuration,

meaning that aircraft are flying into the northerly wind. Figure 5-4 depicts the flight paths of aircraft flying "circuit" patterns around the Airport, when the Airport is in a south flow configuration. Figure 5-5 depicts the flight paths of aircraft flying circuit patterns when the Airport is in a north flow configuration. And finally, Figure 5-6 depicts helicopters arriving and departing from the Airport.

From these data sets, prototypical flight tracks were developed for noise modeling. Known as "backbones," these tracks follow the central tendency of more dispersed paths flown by aircraft along each major flight corridor. Additional tracks are created to either side of the backbones to account for the dispersion within each corridor, and traffic is distributed normally onto each track to reflect the spreading of noise along the corridor. Figure 5-2 through Figure 5-6 depict all of the modeled flight tracks overlaid on top of the radar data they are modeling.

Aircraft are "assigned" to a specific track based on historical averages determined through analysis of the radar data. Knowledge of destinations for departures from the Airport or points of origin for arrivals to the Airport also is taken into account. Table 5-6 through Table 5-9 display the model track utilization percentages for the model tracks presented in the figures described above. Each arrival or departure track is designated as J for jet aircraft, P for propeller aircraft (both piston and turbo), and H for helicopters. This designation is followed by an area navigational point or fix in the vicinity of the backbone track's flight path. Since some flights arrive from and depart to the same location, some track IDs are used for both arrival and departure tracks. However, the shape of the model track is dependent on whether it is an arrival or departure. A number following some designations distinguish tracks that have a similar destination but take a slightly different route to get there. For example for Runway 16L, P_AYMAN is a departure track that departs in the vicinity of the navigational fix, AYMAN. There is also an arrival track P_AYMAN that arrives from the vicinity of AYMAN. Both of these tracks are used by turbo propeller and piston propeller aircraft only.

Model track utilization percentages for local pattern operations depicted in Figure 5-4 and Figure 5-5 are presented in Table 5-9. These model tracks are designated with a "C" for circuit. This designation is generally followed by the word "BIG" or "SMAL". This refers to the size of the track based on the downwind leg. "BIG" is normally for the larger aircraft types.

Table 5-6: Jet Aircraft Model Track Utilization

Flow Direction	Runway	Departures		Arrivals	
		Track ID	**Percent Use**	**Track ID**	**Percent Use**
South	16L	J_AYMAN	11.5%	J_ARZUG	9.4%
		J_BANDO	8.0%	J_BAETT	12.7%
		J_RAKIN	20.7%	J_BERRA	17.6%
		J_RAKIN2	47.1%	J_BRENZ	10.6%
		J_VAHNS	12.6%	J_CONEE	19.5%
				J_FANEN	12.0%
				J_JAN	7.3%
				J_TALPY	10.9%
		Total	**100%**	**Total**	**100%**
	16R	J_AYMAN	21.4%	J_BAETT	18.4%
		J_BANDO	20.5%	J_BERRA	34.2%
		J_RAKIN	33.4%	J_CONEE	5.3%
		J_SIFSI	6.4%	J_FANEN	7.9%
		J_VAHNS	18.3%	J_JAN	10.5%
				J_TALPY	23.7%
		Total	**100%**	**Total**	**100%**
North	34L	J_BRENZ	12.5%	J_AYMAN	7.8%
		J_FANEN	61.1%	J_BAING	6.9%
		J_HARON	22.2%	J_BERRA	11.0%
		J_TALPY	4.2%	J_BOLTS	17.0%
				J_CONEE	10.7%
				J_CONEE1	22.3%
				J_CONEE2	5.7%
				J_TALPY	18.7%
		Total	**100%**	**Total**	**100%**
	34R	J_BERRA	21.8%	J_AYMAN	6.5%
		J_BRENZ	24.8%	J_BAING	15.2%
		J_FANEN	31.6%	J_BERRA	10.1%
		J_TALPY	21.8%	J_BOLTS	12.3%
				J_CONEE	13.8%
				J_CONEE1	13.8%
				J_CONEE2	10.1%
				J_TALPY	18.1%
		Total	**100%**	**Total**	**100%**

Note: Totals may not add exactly to 100% due to rounding

Source: HMMH, Radar Data, ATCT and Operator Discussions

Table 5-7: Propeller Aircraft Model Track Utilization

Flow Direction	Runway	Departures		Arrivals	
		Track ID	**Percent Use**	**Track ID**	**Percent Use**
South	16L	P_AYMAN	31.8%	P_AYMAN	29.9%
		P_ENSIY	18.2%	P_BAING	10.3%
		P_MIZZE	13.6%	P_BERRA	9.4%
		P_VANHNS	36.4%	P_CONEE	17.9%
				P_HARON	12.8%
				P_TALPY	12.8%
				P_WIKZO	6.8%
		Total	**100%**	**Total**	**100%**
	16R	P_BANDO	21.1%	P_BERRA	60.0%
		P_ENSIY	6.6%	P_CONEE	20.0%
		P_MIZZE	19.7%	P_HARON	20.0%
		P_PECKS	23.7%		
		P_VANHNS	28.9%		
		Total	**100%**	**Total**	**100%**
North	34L	P_JELMI	25.0%	P_AYMAN	15.4%
		P_RAKIN	25.0%	P_BERRA	61.5%
		P_TALPY	50.0%	P_TALPY	23.1%
		Total	**100%**	**Total**	**100%**
	34R	P_BERRA	14.6%	P_AYMAN	17.0%
		P_FANEN	18.1%	P_BERRA	15.2%
		P_MIZZE	18.1%	P_BRENZ	8.0%
		P_OCARA	12.5%	P_MIE	14.3%
		P_ROMAR	16.7%	P_MIZZE	21.4%
		P_TALPY	13.9%	P_TALPY	10.7%
		P_WIKZO	6.3%	P_WIKZO	13.4%
		Total	**100%**	**Total**	**100%**

Note: Totals may not add exactly to 100% due to rounding

Source: HMMH, Radar Data, ATCT and Operator Discussions

Table 5-8: Helicopter Model Track Utilization

Departure Track ID	Percent Use	Arrival Track ID	Percent Use
H_NORTH	60.0%	H_NORTH	50.0%
H_SOUTH	20.0%	H_SOUTH	50.0%
H_EAST	20.0%		
Total	**100%**	**Total**	**100%**

Source: HMMH, Radar Data, ATCT and Operator Discussions

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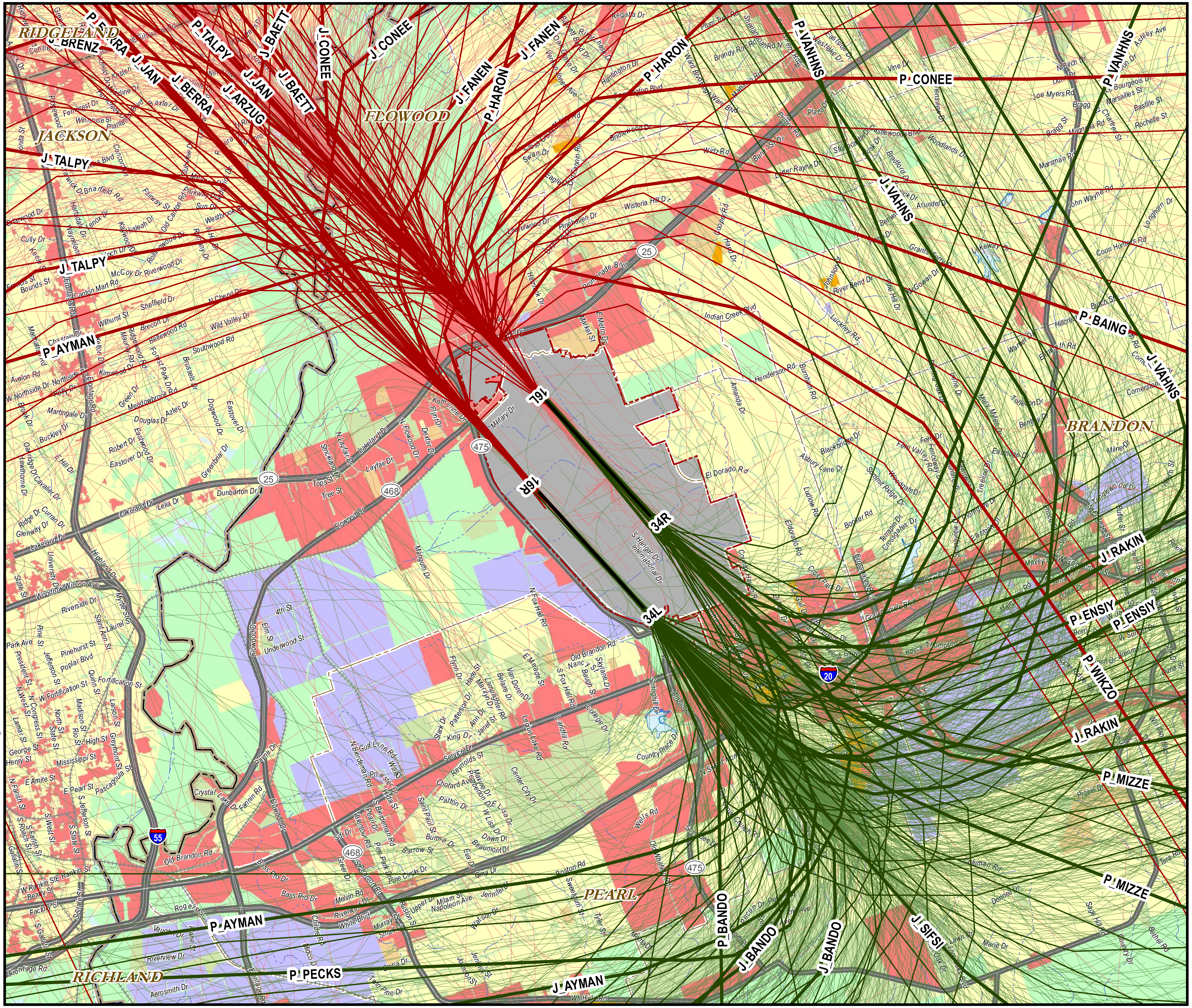

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Figure 5-2
Runway 16L/16R Radar and Modeled Flight Tracks for Departures and Arrivals
14 CFR Part 150 Update

- Modeled Backbone Arrival Track
- Modeled Backbone Departure Track
- Modeled Arrival Track
- Modeled Departure Track
- Radar Arrival Track
- Radar Departure Track
- Airport Property Boundary
- Airport Runway
- Residential
- Manufactured Homes
- High-Density Residential
- Commercial
- Industrial
- Agricultural / Vacant
- Parks / Public Space
- Airport Property
- Water
- County Boundary
- Municipal Boundary
- Highways
- Local Roads
- Railroad
- Stream

Data Sources: Mississippi Automated Resource Information System (MARIS), Central Mississippi Planning & Development District (CMPDD), United States Geological Survey (USGS), Geographic Names Information System (GNIS), Environmental Systems Research Institute (ESRI)

0 1 2 Miles

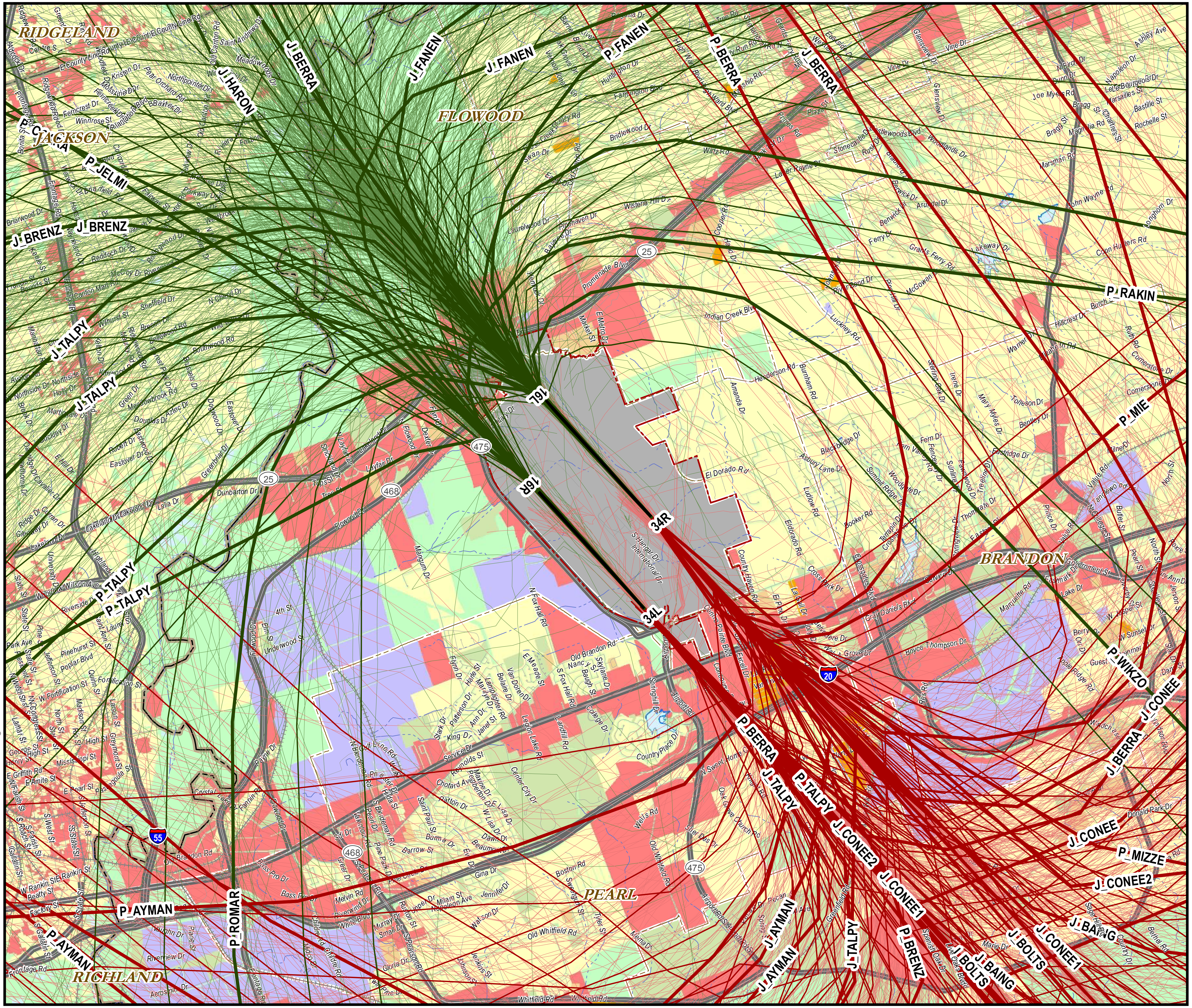

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Figure 5-3
Runway 34L/34R Radar and Modeled Flight Tracks for Departures and Arrivals
14 CFR Part 150 Update

- Modeled Backbone Arrival Track
- Modeled Backbone Departure Track
- Modeled Arrival Track
- Modeled Departure Track
- Radar Arrival Track
- Radar Departure Track
- Airport Property Boundary
- Airport Runway
- Residential
- Manufactured Homes
- High-Density Residential
- Commercial
- Industrial
- Agricultural / Vacant
- Parks / Public Space
- Airport Property
- Water
- County Boundary
- Municipal Boundary
- Highways
- Local Roads
- Railroad
- Stream

Data Sources: Mississippi Automated Resource Information System (MARIS), Central Mississippi Planning & Development District (CMPDD), United States Geological Survey (USGS), Geographic Names Information System (GNIS), Environmental Systems Research Institute (ESRI)

0 1 2 Miles

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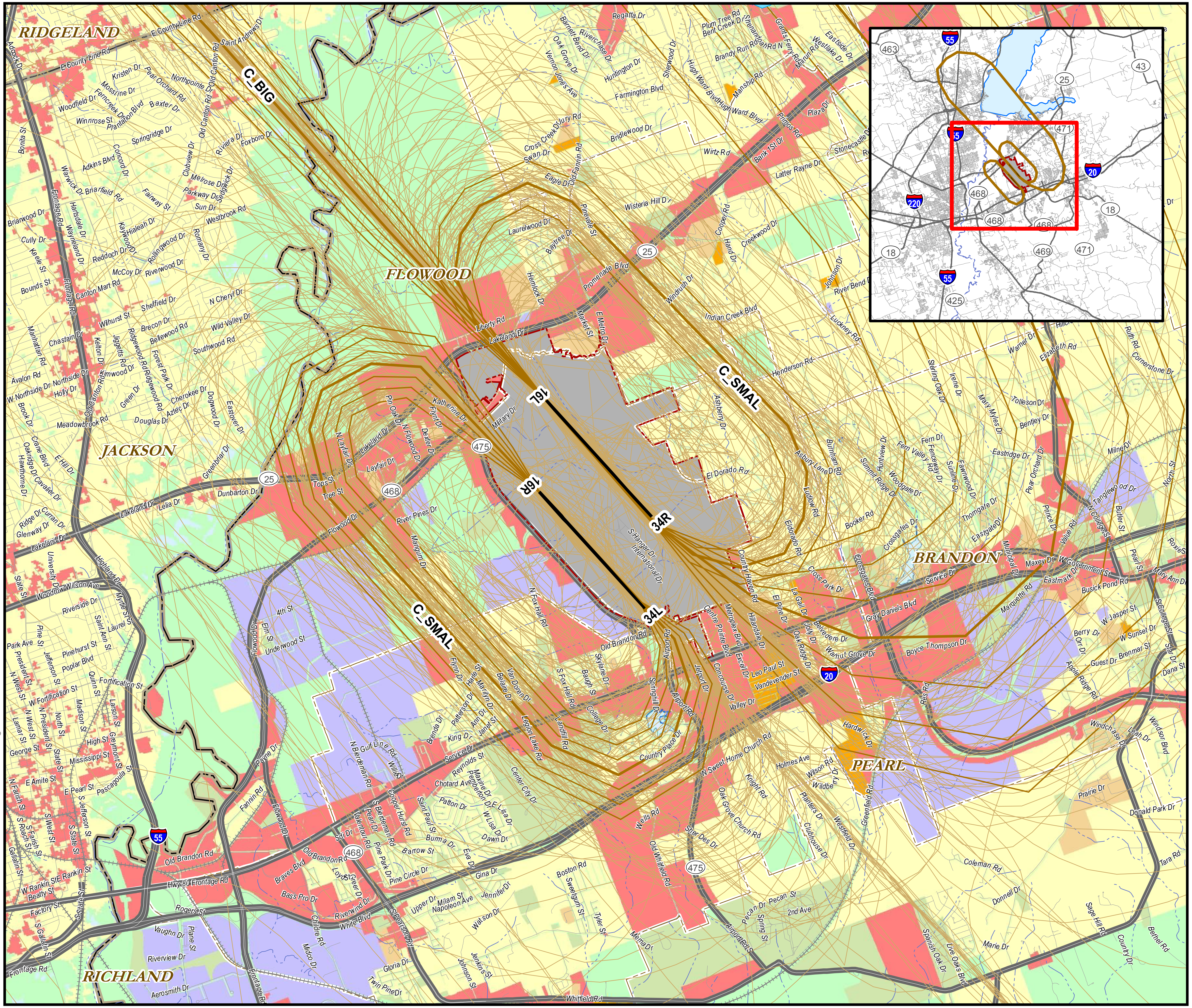

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Figure 5-4
Runway 16L/16R Radar and Modeled Flight Tracks for Flight Patterns
14 CFR Part 150 Update

Modeled Backbone Touch and Go Track
Modeled Touch and Go Track
Radar Touch and Go Track

Airport Property Boundary
Airport Runway

Residential
High-Density Residential
Commercial
Agricultural / Vacant
Airport Property
Water
Manufactured Homes
Industrial
Parks / Public Space

County Boundary
Municipal Boundary

Highways
Railroad
Local Roads
Stream

Data Sources: Mississippi Automated Resource Information System (MARIS), Central Mississippi Planning & Development District (CMPDD), United States Geological Survey (USGS), Geographic Names Information System (GNIS), Environmental Systems Research Institute (ESRI)

0 1 2 Miles

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Figure 5-5
Runway 34L/34R Radar and Modeled Flight Tracks for Flight Patterns
14 CFR Part 150 Update

- Modeled Backbone Touch and Go Track
- Modeled Touch and Go Track
- Radar Touch and Go Track
- Airport Property Boundary
- Airport Runway
- Residential
- High-Density Residential
- Commercial
- Agricultural / Vacant
- Airport Property
- Water
- Manufactured Homes
- Industrial
- Parks / Public Space
- County Boundary
- Municipal Boundary
- Highways
- Railroad
- Local Roads
- Stream

Data Sources: Mississippi Automated Resource Information System (MARIS), Central Mississippi Planning & Development District (CMPDD), United States Geological Survey (USGS), Geographic Names Information System (GNIS), Environmental Systems Research Institute (ESRI)

0 1 2 Miles

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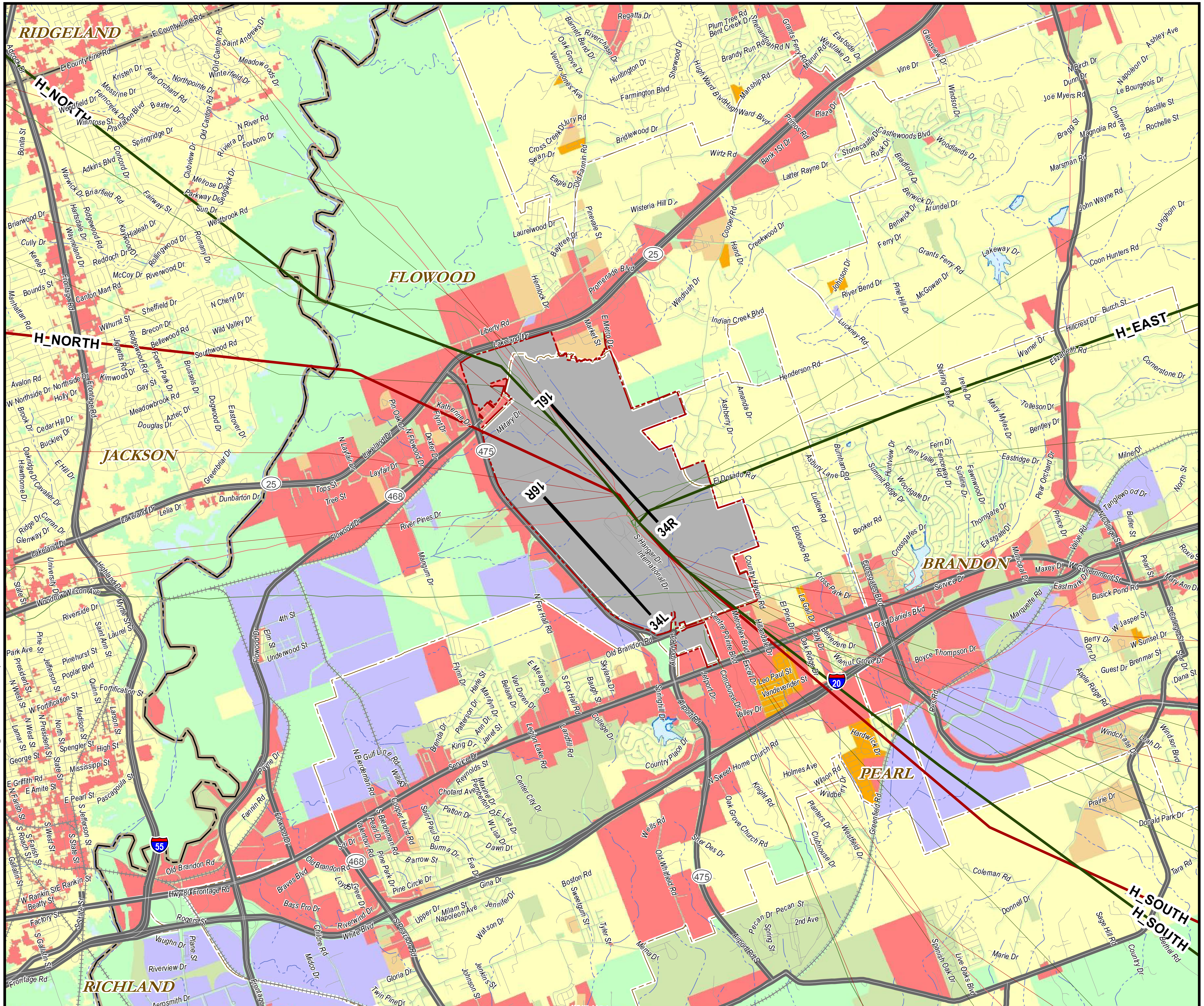

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Figure 5-6
Helicopter Radar and Modeled Flight Tracks for Arrivals and Departures
14 CFR Part 150 Update

- Modeled Helicopter Backbone Arrival Track
- Modeled Helicopter Backbone Departure Track
- Modeled Helicopter Arrival Track
- Modeled Helicopter Departure Track
- Radar Helicopter Arrival Track
- Radar Helicopter Departure Track
- Airport Property Boundary
- Airport Runway
- Residential
- Manufactured Homes
- High-Density Residential
- Commercial
- Industrial
- Agricultural / Vacant
- Parks / Public Space
- Airport Property
- Water
- County Boundary
- Municipal Boundary
- Highways
- Local Roads
- Railroad
- Stream

Data Sources: Mississippi Automated Resource Information System (MARIS), Central Mississippi Planning & Development District (CMPDD), United States Geological Survey (USGS), Geographic Names Information System (GNIS), Environmental Systems Research Institute (ESRI)

0 1 2 Miles

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Table 5-9: Pattern Model Track Utilization

Flow Direction	Runway	Track ID	Percentage
South	16L	C_BIG	32.0%
		C_SMAL	68.0%
		Total	**100%**
	16R	C_SMAL	100.0%
		Total	**100%**
North	34L	C_BIG	18.8%
		C_SMAL	81.2%
		Total	**100%**
	34R	C_BIG	22.4%
		C_SMAL	77.6%
		Total	**100%**

Source: HMMH, Radar Data, ATCT and Operator Discussions

5.6 METEOROLOGICAL CONDITIONS

The INM has several settings that affect aircraft performance profiles and sound propagation based on meteorological data. Meteorological settings include average annual temperature (degrees Fahrenheit), barometric sea-level pressure (inches of mercury), relative humidity (percent) at the airport, and average headwind speed (knots). To obtain average settings, weather data were reviewed for the years 2001 through 2009 from the National Climatic Data Center (NCDC)[11] for the Airport (WBAN # 03940). Based on this analysis of the NCDC data, the average annual conditions for the Airport were determined to be a temperature of 65.4°F, a sea level pressure in inches of mercury (in-Hg) of 30.05, and a relative humidity of 70.2 percent. The headwind speed was set to the INM default of 8.0 knots.

5.7 TERRAIN

Terrain data describe the elevation of the ground surrounding the airport and on airport property. The INM uses terrain data to adjust the ground level under the flight paths. The terrain data do not affect the aircraft's performance or noise levels, but do affect the vertical distance between the aircraft and a "receiver" on the ground. This in turn affects noise propagation assumptions about how noise propagates over the ground. The terrain data were obtained from the United States Geological Survey (USGS).[12]

[11] http://www.ncdc.noaa.gov

[12] Data downloaded from http://gisdata.usgs.gov/website/seamless/viewer.htm on 04/21/2010 in 1/3 arc-second resolution Gridfloat format. Gridfloat is a data format of the National Elevation Dataset (NED).

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CHAPTER 6
EXISTING AND FORECAST NOISE EXPOSURE MAPS

The development of NEMs requires the use of an FAA-approved methodology or computer program, which for this project is Version 7.0b of the Integrated Noise Model (INM). Measurements are used for comparison purposes and not to determine the noise exposure contours. The fundamental noise elements of NEMs are DNL contours for existing conditions (2010) and forecast conditions (2015). Figure 6-1 and Figure 6-2 present the contours for existing conditions (2010) and forecast conditions (2015), respectively. Figure 6-3 depicts the existing and forecast conditions contours together for ease of visual comparison.

6.1 COMPARISON OF 2010 EXISTING AND 2015 FORECAST CONTOURS

The assumptions for aircraft operations that were used in developing these two sets of contours are presented in Section 5.2. They differ only in terms of the level and mix of aircraft activity. The runway use for the existing and forecast conditions is presented in Section 5.4. The modeling assumptions related to Airport layout and flight tracks are unchanged from 2010 to 2015. The comparison shows little to no change to the noise exposure to the sideline of the runways, and a slight increase to the runway extents of the contours on the primary arrival and departure runways. The increase in overall area within the DNL 65 dB contour was approximately 3.7% from 2010 to 2015.

6.2 COMPATIBLE LAND USE ANALYSIS

The objective of airport noise compatibility planning is to promote the compatible growth and development of airports with their surrounding communities. The Airport uses the FAA's land-use compatibility guidelines, as set forth in Table 1 of 14 CFR Part 150, Appendix A, which is reproduced as Table 1-1, Section 1.4 of this document. As the table indicates, the FAA considers all land uses to be compatible with aircraft-related DNL below 65 dB. Residential, hotels, retirement homes, intermediate care facilities, hospitals, nursing homes, schools, preschools, places of worship, and libraries are subject to the same criteria.

6.2.1 Existing Land Use

Figure 6-1 and Figure 6-2 show the DNL contours for the existing conditions (2010) and forecast conditions (2015), respectively. The base map for both figures uses recent aerial photography that depicts the existing land uses in the vicinity of the Airport. As can be seen, residential land use occurs to the east, south, and west of the Airport. The residential land use in these areas consists of both single-family and multi-family residences. To the immediate north of the Airport is commercial land use, with single-family residential farther north. The area around the Airport is mature from a development standpoint with little vacant space available for future noncompatible land use development.

6.2.2 DNL Contour Relationships to Existing Land Use Maps

Figure 6-1 shows the 2010 DNL contours over the generalized land use base. The land use base was compiled from mapping provided by the Central Mississippi Planning and Development District

(CMPDD). It should be noted that Figure 6-1 is a generalized map showing the predominant land uses within the study area and is not intended to represent land uses at the parcel level of detail.

With the exception of a small area of the DNL 65 dB contour near the approach ends of Runways 16L and 34L, Figure 6-1 indicates that the DNL 65 dB contour is contained entirely on Airport property. The land uses in this area off-Airport property within the DNL 65 dB contour are commercial and are considered compatible with Airport operations.

6.2.3 DNL Contour Relationships to Forecast Land Use Maps

Figure 6-2 shows the 2015 DNL contours over the generalized land use base. As with the existing conditions (2010), Figure 6-2 indicates that, with the exception of a small area of the DNL 65 dB contour near the approach ends of Runways 16L and 34L, the DNL 65 dB contour is primarily on Airport property. The land uses in this area off-Airport property within the DNL 65 dB contour are commercial and are considered compatible with Airport operations.

6.2.4 Existing Population Within DNL Contour Areas

As shown in Figure 6-1 and Figure 6-2, no residential uses are within the existing or forecast DNL 65 dB contours. Therefore, the population within the DNL 65 dB contours is zero.

6.2.5 Noise Sensitive Sites

The FAA defines noise sensitive sites as uses within the DNL 65 dB contour that would be noncompatible with aircraft noise. In addition to residential, such sites would include schools, places of worship, hospitals, passive parks and other uses that could be adversely affected by aircraft noise. Figure 6-1 and Figure 6-2 indicate that there are no noise sensitive land uses within the existing and future DNL 65 dB contours.

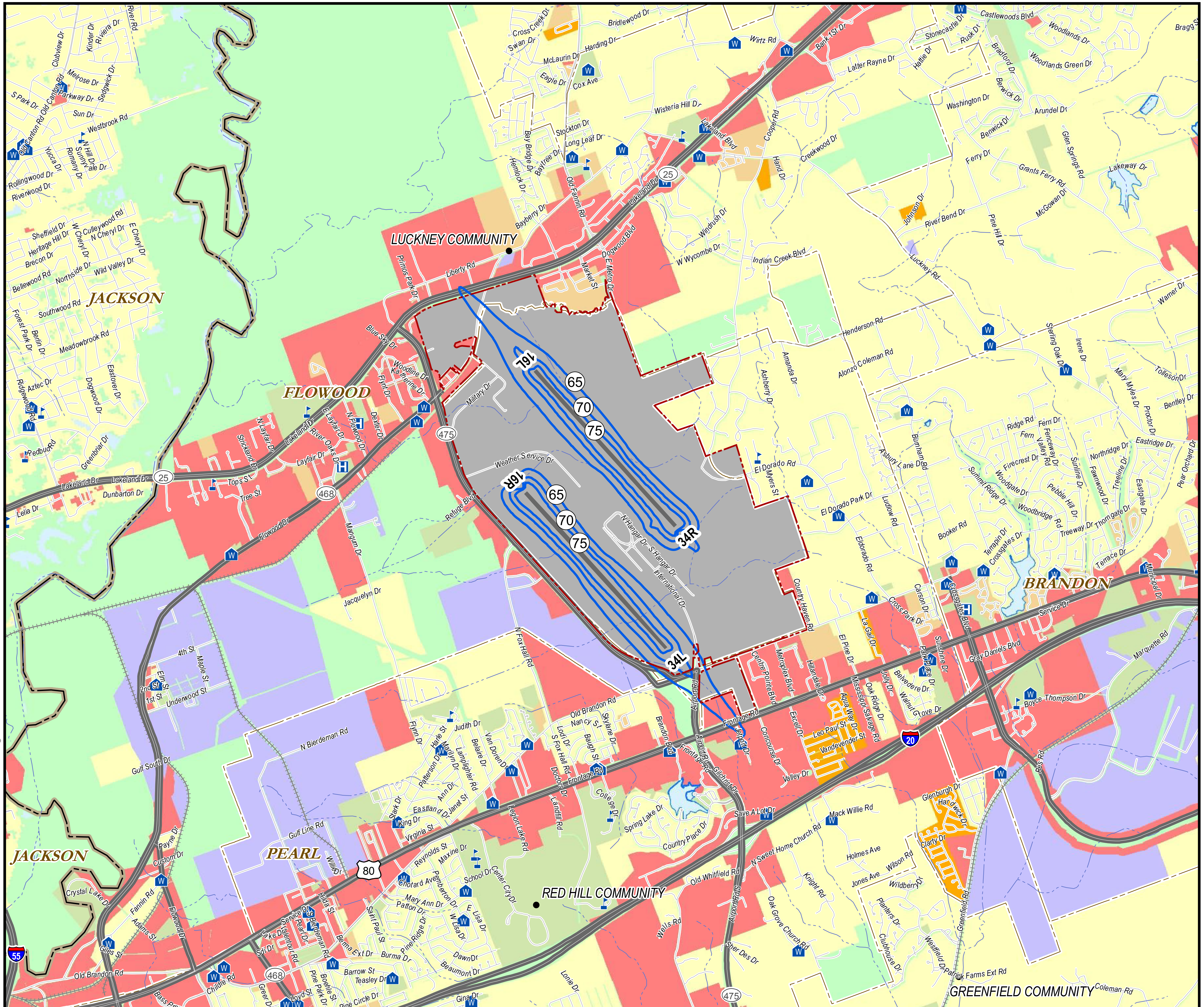

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Figure 6-1
Existing Condition (2010) Noise Exposure Map
14 CFR Part 150 Update

- Existing Condition (2010) NEM Contour
- Airport Property Boundary
- Airport Runway
- Residential
- Manufactured Homes
- High-Density Residential
- Commercial
- Industrial
- Agricultural / Vacant
- Parks / Public Space
- Airport Property
- Water
- County Boundary
- Municipal Boundary
- Highways
- Local Roads
- Railroad
- Stream
- National Register of Historic Places
- School
- College / University
- Place of Worship
- Health Care

Data Sources: Mississippi Automated Resource Information System (MARIS), Central Mississippi Planning & Development District (CMPDD), United States Geological Survey (USGS), Geographic Names Information System (GNIS), Environmental Systems Research Institute (ESRI)

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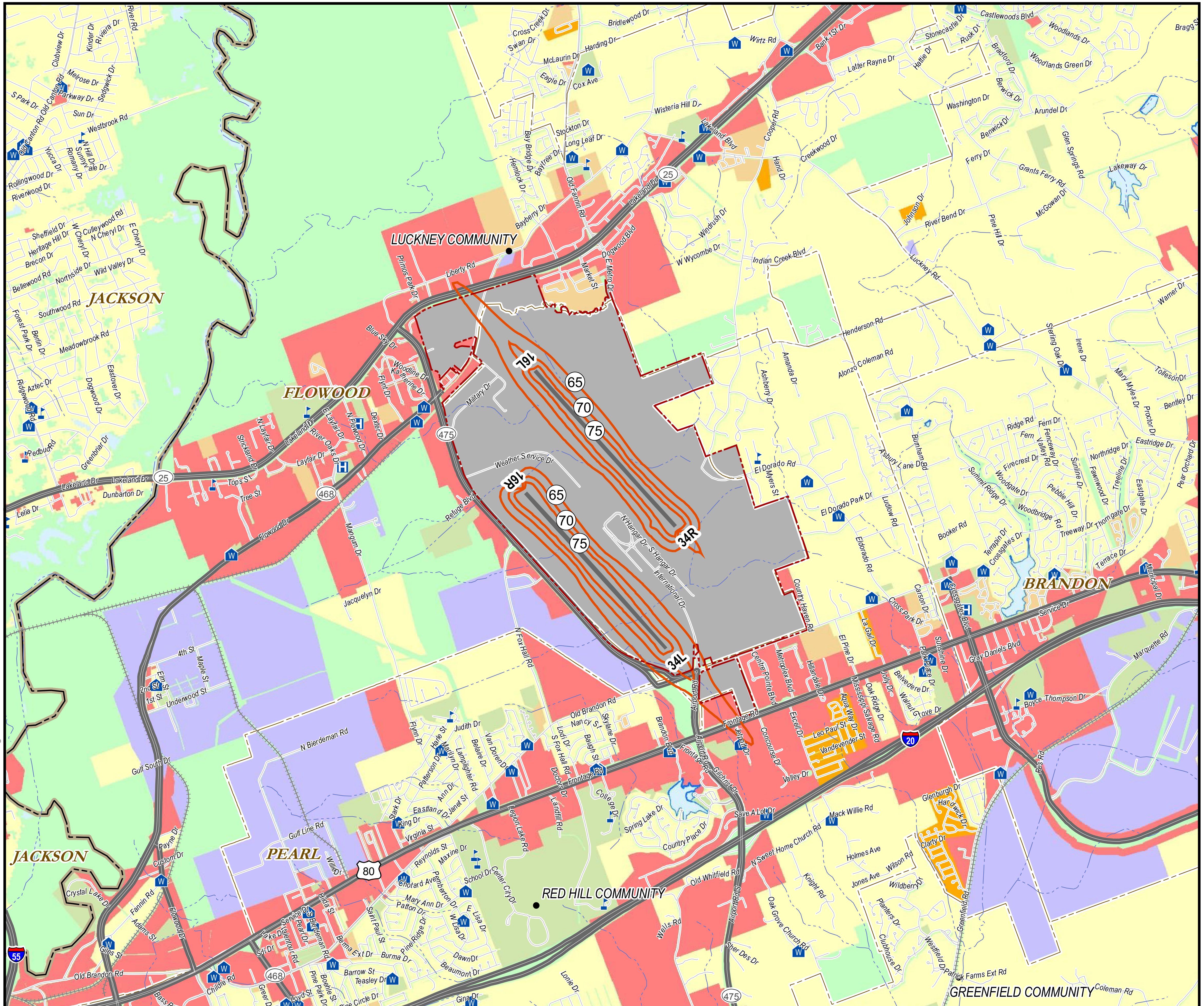

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Figure 6-2
Forecast Condition (2015) Noise Exposure Map
14 CFR Part 150 Update

- Forecast Condition (2015) NEM Contour
- Airport Property Boundary
- Airport Runway
- Residential
- Manufactured Homes
- High-Density Residential
- Commercial
- Industrial
- Agricultural / Vacant
- Parks / Public Space
- Airport Property
- Water
- County Boundary
- Municipal Boundary
- Highways
- Local Roads
- Railroad
- Stream
- National Register of Historic Places
- School
- College / University
- Place of Worship
- Health Care

Data Sources: Mississippi Automated Resource Information System (MARIS), Central Mississippi Planning & Development District (CMPDD), United States Geological Survey (USGS), Geographic Names Information System (GNIS), Environmental Systems Research Institute (ESRI)

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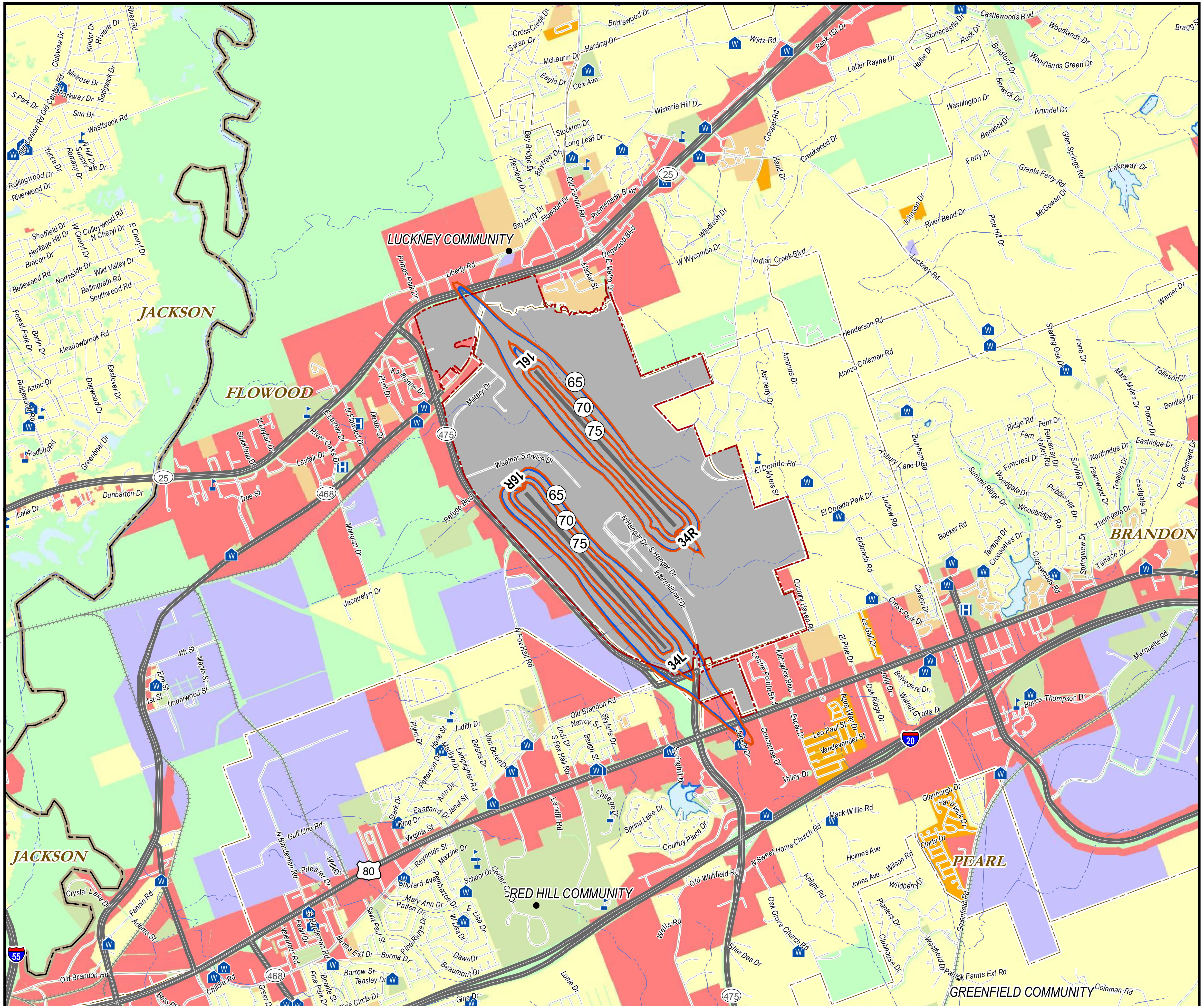
Figure 6-3
Comparison of Existing (2010) and Forecast (2015) Noise Exposure Map
14 CFR Part 150 Update



- Existing Condition (2010) NEM Contour
- Forecast Condition (2015) NEM Contour
- Airport Property Boundary
- Airport Runway
- Residential
- Manufactured Homes
- High-Density Residential
- Commercial
- Industrial
- Agricultural / Vacant
- Parks / Public Space
- Airport Property
- Water
- County Boundary
- Municipal Boundary
- Highways
- Local Roads
- Railroad
- Stream
- National Register of Historic Places
- School
- College / University
- Place of Worship
- Health Care

Data Sources: Mississippi Automated Resource Information System (MARIS), Central Mississippi Planning & Development District (CMPDD), United States Geological Survey (USGS), Geographic Names Information System (GNIS), Environmental Systems Research Institute (ESRI)

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CHAPTER 7
PUBLIC CONSULTATION

JMAA is conducting this 14 CFR Part 150 update in conjunction with an Airport Master Plan. Included in this process is consultation with all members of the Airport public, including Airport users, fixed-based operators, pilots, potentially affected residents of the Airport environs, and local, state, and federal officials. The public consultation process meets 14 CFR Part 150 requirements.

7.1 TECHNICAL ADVISORY COMMITTEE AND CITIZEN ADVISORY COMMITTEE

In conjunction with the Airport Master Plan a Technical Advisory Committee (TAC) and a Citizen Advisory Committee (CAC) were formed and comprised of interested stakeholders and representatives of the neighboring communities. The major tasks for the TAC were to provide technical review, evaluation, and feedback on the study to the Airport manager. Similarly, the tasks of the CAC were to raise community awareness of the NEM results and to encourage community feedback and support. Consultation and presentation of the NEM development and results on November 17 and 18, 2010 provided an opportunity for any inputs and comments. Resulting discussion and comments were used in the preparation of the final NEM documents. Appendix I includes the NEM portion of the overall Master Plan presentation to these two groups as well as committee sign-in sheets.

7.2 PUBLIC INFORMATION WORKSHOP AND OPPORTUNITIES TO COMMENT

A Public Information Workshop was held in conjunction with the Airport Master Plan Public Information Workshop on November 18, 2010. A work station was set aside specifically for the Draft NEMs update with personnel available to discuss any findings with workshop attendees. Two handouts were available to attendees consisting of 14 CFR Part 150 frequently asked questions and an executive summary of the NEM documentation. Citizens were encouraged to provide written comments that would become part of the workshop permanent record. Documentation of the Workshop can be found in Appendix I.

7.3 PUBLIC AND PLANNING AGENCY CONSULTATION

Land use jurisdiction within the DNL 65 dB contours falls under the following agencies: City of Pearl and City of Flowood.

The planning staffs of those jurisdictions were consulted during this update as required under 14 CFR Part 150, Subpart B.§150.21(b).

7.4 OPPORTUNITY FOR PUBLIC REVIEW AND COMMENT

To provide a wider opportunity for review of the information in the NEM documents, a hard copy of the draft documentation was located at each of three local public libraries in the vicinity of the Airport as well as at the Airport Administration Office for a 30-day review period beginning November 1, 2010. In addition, an electronic version of the draft NEM documentation was placed

on the JMAA website[13] and was available for download by any interested party. Notifications of the opportunity for review were published in the local newspaper. Procedures for presenting any comments accompanied the documents and offered options to submit information either by email or through regular U.S. mail prior to the end of the 30-day review period (November 30, 2010). Documentation of the public review opportunity, to include newspaper announcements, review locations, and comment submittal procedures, is included in Appendix I.

There were no additional comments received as a result of the 30-day public review period.

[13] http://www.jmaa.com/DocDownloads.htm