U.S. DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration
Southern Region
Atlanta, Georgia

RECORD OF DECISION

THE DEVELOPMENT AND EXPANSION OF RUNWAY 9R/27L AND OTHER ASSOCIATED AIRPORT PROJECTS AT FORT LAUDERDALE-HOLLYWOOD INTERNATIONAL AIRPORT BROWARD COUNTY, FLORIDA

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INTRODUCTION

This Record of Decision (ROD) provides final agency determination and approvals for certain federal actions by the Federal Aviation Administration (FAA) necessary for the implementation of proposed airport development at the Fort Lauderdale-Hollywood International Airport (FLL) in Broward County, Florida. Broward County, the Airport Sponsor, has proposed airport development at FLL to address existing and forecast aviation demand. A description of the Airport Sponsor's Proposed Action is provided in **Section 1** ***Description of Airport Sponsor's Proposed Action and Purpose and Need***.

The FAA through independent analyses provided in the *Final Environmental Impact Statement For the Development and Expansion of Runway 9R/27L and Other Associated Airport Projects at Fort Lauderdale-Hollywood International Airport Broward County, Florida*, June 2008, (Final EIS), confirmed that the existing airfield infrastructure at FLL lacks sufficient capacity to accommodate existing and forecast air carrier demand at a level of delay established for FLL.[1,2]

The FAA identified Alternative B1b[3] as its preferred alternative in the Final EIS (*see* this ROD, **Exhibit 1** ***FAA's Preferred Alternative (B1b)***). Alternative B1b includes the expansion of existing Runway 9R/27L to an 8,000-foot by 150-foot with Engineered Materials Arresting System (EMAS).[4] The expanded runway extends to the east and would be elevated to 45 feet MSL over the Florida East Coast (FEC) Railway and U.S. Highway 1. In this ROD, the FAA selects its Preferred Alternative (B1b) for approval and implementation at FLL.

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1 The acceptable delay threshold used in the EIS is six minutes per operation. *See* the Final EIS, Chapter Three *Purpose and Need*, Section 3.3.1.3, *Level of Delay*.

2 The most recent FAA Aviation System Performance Metrics (ASPM) data for FLL indicates that although average annual delay decreased between 2005 and 2006 (from 7.25 to 5.33), it increased in 2007 to 5.80 minutes per operation. In 2007, delays exceeded six minutes per operation in February through April, June through July, and December. During these six months average delay was nearly seven minutes per operation.

3 Alternative B1b, the FAA's Preferred Alternative (B1b), has the same physical alignment, design and configuration as Alternative B1c, the Airport Sponsor's Proposed Action. However, Alternative B1c considers the implementation of the operational noise abatement actions described in the *County's Airfield Development Program Objective Statement* (October 26, 2004), which would limit the use of Runway 9R/27L in 2012. The FAA will not consider the approval of a runway development project with noise abatement runway use procedures that would limit its capacity in the opening year without a study of alternative noise abatement measures such as required under 14 CFR Part 150. The FAA's Preferred Alternative (B1b) does not include any operational noise abatement actions that would limit the use of Runway 9R/27L.

4 Engineered Material Arresting System (EMAS) is a "soft ground arresting system" consisting of a crushable cellular cement material installed on the runway overrun in a predetermined bed layout. EMAS provides a reliable and predictable capability to stop an aircraft by crushing under the weight of an aircraft providing deceleration and a safe stop. *See* FAA Order 5200.9, *Financial Feasibility and Equivalency of Runway Safety Area Improvements and Engineered Material Arresting Systems.*

The FAA's Preferred Alternative (B1b) consists of the following key development actions:

- Expand and elevate Runway 9R/27L to an overall length of 8,000 feet and width of 150 feet with an Engineered Materials Arresting System (EMAS) at both runway ends.
- Construct a new full-length parallel taxiway 75 feet wide on the north side of Runway 9R/27L with separation of 400 feet from Runway 9R/27L.
- Construct an outer dual parallel taxiway that would be separated from the proposed north side parallel taxiway by 276 feet.
- Construct connecting taxiways from the proposed full-length parallel taxiway to existing taxiways.
- Construct an Instrument Landing System (ILS) for landings on Runways 9R and 27L. Runway ends 9R and 27L would have a Category I ILS, which includes a Medium Intensity Approach Light System with runway alignment indicator lights (MALSR), localizer, and glideslope.
- Decommission and permanently close Runway 13/31, the crosswind runway.
- Terminal redevelopment envelope, which would accommodate a 67-77 gate complex and the potential redevelopment of Terminals 2, 3, and 4.

The connected actions associated with the development of the FAA's Preferred Alternative (B1b) are:

- Close Airport Perimeter Road located within the approach to Runway 9R.
- Relocate ASR-9.
- Acquire all, or a portion, of the Hilton Fort Lauderdale Airport Hotel (formerly the Wyndham Fort Lauderdale Airport Hotel).
- Acquire all, or a portion, of the Dania Boat Sales.

The federal actions requested of the FAA are described in detail in **Section 2** ***Requested Federal Actions and Approvals***. The FAA's reasons for identifying Alternative B1b as its preferred alternative in the Final EIS, required by 40 CFR 1505.2, are summarized in **Section 3. 3** ***FAA's Preferred Alternative (B1b)***. The FAA is selecting and granting approval of an Airport Layout Plan (ALP) for the FAA's Preferred Alternative (B1b). The FAA's reasons for selecting the Preferred Alternative (B1b) are discussed in Section **3.4** ***The Selected Alternative***. The mitigation for the Selected Alternative is discussed in **Section 4** ***Summary of Mitigation Measures***. A summary of the substantive comments received on the Final EIS is provided in **Section 5** ***Comments on the Final EIS***. The FAA's findings, determinations, and certifications for the selected alternative are described in **Section 6** ***Findings, Determinations, and Certifications***.

The public and federal, state, and local agencies were provided opportunities to participate in the EIS process and to provide input for FAA consideration in the development of the EIS. Those opportunities for public involvement and agency coordination are described in **Section 7** ***Public Involvement and Agency Coordination***. The FAA's specific conditions to be followed by the Airport Sponsor

in the development of the FAA's Preferred Alternative (B1b) are located in **Section 8** ***Conditions of Approval***. The FAA's decision and order approving FAA's federal actions for the project is located in **Section 9** ***Decision and Order***. Finally, information pertaining to any party seeking to stay the implementation of this ROD is located in **Section 10** ***Right of Appeal***.

Information in support of the FAA's decision and the EIS analysis and findings is provided in four appendices to this ROD. The comments received on the Final EIS and the FAA's responses to all substantive comments are provided in **Appendix A** ***Comments Received and FAA Responses on the Final EIS***. Copies of the pertinent agency correspondence can be reviewed in **Appendix B** ***Agency Letters: Concurrence, Certifications, Correspondence***.

Typographical errors in the Final EIS have been corrected. The corrected text is provided in **Appendix C** ***Final EIS Errata Documents***. Information that was inadvertently omitted from the Final EIS is provided in **Appendix D** ***Final EIS Addendum Documents***. This consisted of letters from Broward County to the FAA. These letters were listed in the introduction to Appendix C of the Final EIS but inadvertently omitted during printing. The letters were posted on Broward County's web site within one week of publication of the Final EIS, and in addition, the letters were available from the FAA upon request after the EIS was issued.

This ROD completes the FAA's environmental decision-making process, including disclosure and review by the public and the FAA decision maker of the analysis of alternatives and environmental impacts described in the Final EIS. This ROD has been prepared and issued by the FAA in compliance with the National Environmental Policy Act of 1969 (NEPA) [42 U.S.C. Section 4321, et seq.], the implementing regulations of the Council on Environmental Quality (CEQ) [40 CFR Parts 1500-1508] and FAA directives [Order 1050.1E and Order 5050.4B].

The ROD is also used to demonstrate and document the FAA's compliance with the procedural and substantive requirements of environmental, programmatic, and related statutes and regulations that apply to FAA decisions and actions on proposed airport projects.

It is the policy of the United States to undertake projects to increase airport capacity to the maximum feasible extent and further for major projects to protect and enhance natural resources and the quality of the environment.[5] In *Vision 100 Century of Aviation Reauthorization Act Public Law 108-176,* the U.S. Congress stressed the importance of airports to the economy and the priority of capacity projects to ease congestion, and the need to assess environmental impacts associated with these projects.[6] Congress directs the FAA as part of its overall air commerce missions to encourage the construction of capacity projects at congested airports. Vision 100 required the Secretary of Transportation to implement a process for expedited and coordinated environmental reviews for airport capacity enhancement projects at congested airports and for safety and security projects.

[5] 49 U.S.C. §47101(a)(6), (7), Policies.
[6] 49 U.S.C. §47171 et seq.

FLL is a congested airport and therefore this EIS is subject to the environmental streamlining provisions of the *Vision 100 Act*.[7]

The FAA coordinated with Federal, state, local, and tribal entities throughout the EIS process, including the U.S. Environmental Protection Agency (EPA), U.S. Army Corps of Engineers (USACE), U.S. Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), the Advisory Council on Historic Preservation (ACHP), the Florida Department of Environmental Protection (FDEP), the Florida Division of Historic Resources, the Florida Department of Transportation (FDOT), Broward County (Airport Sponsor), and local municipalities. The FAA also coordinated with the general public to identify and evaluate key issues associated with the proposed action. Section 7 *Public Involvement and Agency Coordination* describes in detail the FAA's coordination with the public and federal, state, and local agencies.

Federal, state, local agencies, public individuals, and public organizations, submitted comments on the Draft Environmental Impact Statement (Draft EIS) published in March 2007. The FAA provided responses to those comments in the Final EIS, published in June 2008. The FAA solicited comments on the Final EIS which identified a preferred alternative differing from the Airport Sponsor's Proposed Action.[8] FAA responses to comments on the Final EIS are included in this ROD in Appendix A, *Comments Received and FAA Responses on the Final EIS.*

The FAA is responsible for the preparation and content of the Draft and Final EIS and this ROD. In developing the EIS, the FAA relied on certain information prepared by outside sources as permitted by 40 CFR §1506.5. In keeping with its oversight responsibility, the FAA consistently exercised control over the scope, content, and development of the EIS. The FAA selected a Third Party Contractor (TPC) to assist in the preparation of the EIS per the guidance contained in 40 CFR § 1506.5(c).

The FAA used its own resources, as well as the resources of the TPC, to independently evaluate any environmental information and other submissions provided by Broward County (the Airport Sponsor) or other entities.

The degree of supervision that the FAA exercised over the TPC, and its participation in the preparation of the EIS, fully maintained the integrity and objectivity of the EIS and ROD.

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[7] FAA interprets the definition of congested airport in 49 U.S.C. §47175(2) to include airports like FLL that are listed in FAA's Airport Capacity Benchmark Report of 2004.

[8] The Airport Sponsor's Proposed Action, Alternative B1c, has the same physical alignment, design and configuration as the FAA's Preferred Alternative (B1b). However, Alternative B1c considers the implementation of the operational noise abatement actions referenced in the *County's Airfield Development Program Objective Statement (*October 26, 2004) and specifically described in a memorandum to the FAA in August 2006. These operational noise abatement actions would limit the capacity of Runway 9R/27L in 2012. Broward County has interpreted that the operational noise abatement actions would no longer be in place by 2020.

BACKGROUND

On January 19, 2005 the FAA issued a Notice of Intent to prepare an Environmental Impact Statement for proposed improvements at the Fort Lauderdale-Hollywood International Airport.[9] In accordance with FAA Orders 1050.1E and 5050.4B, and CEQ Regulations 40 CFR 1501.7, agency and public scoping meetings were conducted on February 23, 2005.

A public information workshop was conducted as part of the process of completing the Draft EIS to receive comments from the public, review agencies, and other interested parties on February 2, 2006.

In addition to the public information workshop, other public venues were offered at key project milestones for the general public to meet with the FAA to discuss issues important to them. These venues included Project Focus Group meetings and District-Wide Briefings. The Project Focus Groups consisted of small meetings with representatives of community and homeowner association's surrounding the airport. The Broward County Board of County Commissioners asked the FAA to replace the third round of Focus Group Meetings with three District-wide Briefings to provide a larger venue for public participation.

The FAA issued the Draft EIS for public review and comment on March 30, 2007. The agency held a public information workshop and hearing on May 1, 2007 at the Fort Lauderdale Hollywood Convention Center. In addition to notices in the *Federal Register (FR)* of the availability of the Draft EIS and public information workshop and hearing, notices were also published in the Sun Sentinel on April 15, 22, and 29, (2007); Broward Herald on April 15, 22, and 29, (2007); and El Heraldo on April 16, 2007. Over 600 people combined attended the public information workshop and hearing.

[9] The Airport Sponsor's proposed redevelopment of Runway 9R/27L was originally proposed in the *FLL 1994 Airport Master Plan Update.* The Federal environmental process, under the National Environmental Policy Act of 1969 (NEPA), was originally initiated by the FAA for this project in 1996. Since that time, three NEPA documents were published. All FAA NEPA processes ceased in 2003 to allow Broward County to conduct additional planning studies for the expansion of the runway and associated projects. These additional studies resulted in a new proposal by the Sponsor for runway expansion at FLL. All previous EIS documents were terminated and the associated processes were discontinued when the EIS process was reinitiated by the issuance, in January 2005, of the FAA Notice of Intent (NOI) to prepare an EIS and to conduct agency and public scoping. The Draft EIS published in March 2007 and the Final EIS published June 2008 are the result of the FAA NEPA process begun in January 2005.

On June 5, 2007, the Broward County Board of County Commissioners sponsored a separate public hearing on the Draft EIS. More than 1,300 people attended. The Mayor of Broward County, on behalf of the Broward County Board of County Commissioners notified the FAA that Alternative B1c was the County's Preferred Alternative.[10]

Comments were received on the Draft EIS from federal, state, and local agencies as well as members of the public. The FAA reviewed and prepared responses to all substantive comments received on the Draft EIS.

The FAA published the Notice of Availability for the Final EIS in the *FR* on June 27, 2008. The Final EIS identified the FAA's Preferred Alternative and proposed mitigation for noise and land use, which had not previously been disclosed in the Draft EIS. A 30-day comment period on the Final EIS closed on July 28, 2008. Late-filed comments were considered by the FAA to the extent practicable. The FAA reviewed and prepared responses to all substantive comments received on the Final EIS, which are included with this ROD (*see* Appendix A, *Comments Received and FAA Responses on the Final EIS*). No comments were received on the Final EIS that warranted further evaluation or analysis of the proposed action or alternatives.

ROD AVAILABILITY

Paper copies and CD copies of this ROD are available for review at various libraries in Broward County, the FAA Headquarters Office in Washington, D.C. and its Southern Regional Office in College Park, Georgia and Airports District Office in Orlando, Florida and at the administrative offices of the City of Cooper City, City of Dania Beach, City of Fort-Lauderdale, City of Hollywood, City of Lauderhill, City of Pembroke Pines, City of Plantation, City of Sunrise, and the Town of Davie, as well as the Fort Lauderdale-Hollywood International Airport. The addresses for these locations are provided in the Final EIS, in *Chapter Nine*.

The Final EIS is available on Broward County's website at:

http://www.broward.org/airport/community_airportexpansion.htm

This ROD is available on the FAA's web site at:

www.faa.gov/airports_airtraffic/airports/environmental/records_decision/

WHAT SHOULD YOU DO?

You should read this ROD to understand the actions that the FAA and the Airport Sponsor will take in order to implement the proposed development and expansion of Runway 9R/27L and associated projects at the Fort Lauderdale-Hollywood International Airport in Broward County, Florida.

[10] Letter from Josephus Eggelletion, Mayor Broward County Florida, to Bart Vernace, Assistant Manager, FAA Orlando Airports District Office, RE: Broward County (Sponsor) Preferred Runway Alternative. Dated: August 10, 2007.

WHAT HAPPENS AFTER THIS?

The Airport Sponsor may proceed with the actions to implement the proposed project, as approved, and the FAA may proceed with processing applications for Federal grant-in-aid funding.

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APPENDICES

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EXHIBITS

1. DESCRIPTION OF THE AIRPORT SPONSOR'S PROPOSED ACTION AND PURPOSE AND NEED

This section describes the airport sponsor's proposed action, why the proposal is necessary, and the action's location and information on when the action would occur.

AIRPORT SPONSOR'S PROPOSED ACTION: The Proposed Action includes the redevelopment and extension of Runway 9R/27L to an 8,000-foot by 150-foot elevated runway with EMAS, and associated projects, which are described in the Final EIS, Chapter Two, *The Proposal*, Section 2.0 *Airport Sponsor's Proposed Project.*

The Proposed Action consists of the following key development actions:

- Expand Runway 9R/27L to an overall length of 8,000 feet and width of 150 feet with an Engineered Materials Arresting System (EMAS) at both runway ends. The runway extends to the east without encroaching onto NE 7th Avenue and would be elevated over the Florida East Coast (FEC) Railway and U.S. Highway 1; the western extent of the runway is the Dania Cut-Off Canal.
- Construct a new full-length parallel taxiway 75 feet wide on the north side of Runway 9R/27L with separation of 400 feet from 9R/27L.
- Construct an outer dual parallel taxiway that would be separated from the proposed north side parallel taxiway by 276 feet.
- Construct connecting taxiways from the proposed full-length parallel taxiway to existing taxiways.
- Construct an Instrument Landing System (ILS) for landings on Runways 9R and 27L. Runway ends 9R and 27L would have a Category I ILS, which includes a Medium Intensity Approach Light System with runway alignment indicator lights (MALSR), localizer, and glideslope.
- Decommission Runway 13/31. Due to the increased elevation of Runway 9R/27L at its intersection with Runway 13/31, Runway 13/31 would be closed permanently.
- Terminal Redevelopment Envelope. The terminal redevelopment envelope can accommodate a total of 67 to 77 gates and would accommodate the FAA-forecast levels of passenger-related activity through 2020. For the EIS analysis, Option 2B[11] of the FLL Master Plan Update Phase 1 was used as a representative layout of a 67 to 77 gate complex. The terminal redevelopment envelope accommodates the potential redevelopment of Terminals 2, 3, and 4 including aircraft parking positions, taxilanes, and remote parking positions. (The terminal redevelopment envelope is depicted on Exhibit D.2-3 and D.2-10 in the Final EIS Appendix D.2, *Terminal Gate Verification.*)

[11] Leigh Fisher Associates (now known as Jacobs Consultancy) report dated January 2006, *Master Plan Update—Phase I, Draft Final Summary Report. Development Option 2B*, Figure 6-24, Figure 6-25 and pp. 6-18 to 6-23.

During project design, the Airport Sponsor will consider the refinement of the airfield and terminal area elements that include the design, location, and number of taxiway exits, aircraft holding pads, and runway access areas.

The connected actions associated with the development of the Proposed Action are:

- Close Airport Perimeter Road located within the approach to Runway 9R
- Relocate Airport Surveillance Radar (ASR-9)
- Acquire all, or a portion, of the Hilton Fort Lauderdale Airport Hotel (formerly the Wyndham Fort Lauderdale Airport Hotel)
- Acquire all, or a portion, of the Dania Boat Sales

The Airport Sponsor's Proposed Action, Alternative B1c, has the same physical alignment, design and configuration as the FAA's Preferred Alternative (B1b). However, Alternative B1c considers the implementation of the operational noise abatement actions referenced in the *County's Airfield Development Program Objective Statement (*October 26, 2004) and specifically described in a memorandum to the FAA in August 2006.[12] These operational noise abatement actions would limit the capacity of Runway 9R/27L in 2012. Broward County has interpreted that the operational noise abatement actions would no longer be in place by 2020.[13]

The FAA will not consider the approval of a runway development project with noise abatement runway use procedures that would limit its capacity in the opening year without a study of alternative noise measures such as required under 14 CFR Part 150, Airport Noise Compatibility Planning. Broward County may recommend such noise operational noise abatement measures for Alternative B1b as part of an updates to its Part 150 airport noise compatibility program.

WHY THE PROPOSAL IS NECESSARY: Under 49 USC 47101(a)(7), the FAA is charged with carrying out a policy ensuring "that airport construction and improvement projects that increase the capacity of facilities to accommodate passenger and cargo traffic be undertaken to the maximum feasible extent so that safety and efficiency increase and delays decrease."[14]

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[12] Memorandum from Max Wolfe/Eric Bernhardt, Leigh Fisher Associates (now Jacobs Consultancy), to Virginia Lane, AICP, Environmental Specialist, Federal Aviation Administration. Subject: Sponsor's Proposed Project Operational Assumptions. Dated: August 22, 2006/Revised: August 24, 2006.

[13] The FAA's review of this memorandum and the analysis referenced in this memorandum indicates that Broward County has interpreted that the operational noise abatement actions would no longer be in place in order to maintain acceptable levels of delay as defined by Broward County. Memorandum from Max Wolfe/Eric Bernhardt, Leigh Fisher Associates (now Jacobs Consultancy), to Virginia Lane, AICP, Environmental Specialist, Federal Aviation Administration. Subject: Sponsor's Proposed Project Operational Assumptions. Dated: August 22, 2006/Revised: August 24, 2006.

[14] 49 U.S.C. 47101(a)(7). Title 49 Transportation. SUBTITLE VII—AVIATION PROGRAMS PART B—AIRPORT DEVELOPMENT AND NOISE CHAPTER 471—AIRPORT DEVELOPMENT SUBCHAPTER I-AIRPORT IMPROVEMENT § 47101.

The National Plan of Integrated Airport Systems (NPIAS) supports this policy and underscores the FAA goals identified in the *Flight Plan (2004-2008)*[15] for safety and capacity. The most recent NPIAS (2007-2011)[16] report was prepared in accordance with 49 USC Section 47103 and provided to Congress in September 2006. FLL is identified as a large hub in the NPIAS. Large hubs are those airports that each account for at least one percent of total U.S. passenger enplanements[17] The nation's air traffic delay problems tend to be concentrated at the 30 large hub airports where the average delay per aircraft operation was six minutes in 2004. These 30 large hub airports plus five of the busiest medium hub airports are included in FAA's 10-year plan to increase the capacity and efficiency of the national airspace system, known as the Operational Evolution Plan (OEP).

The U.S. Congress stressed the importance of airports to the economy and required the FAA to implement a process for expedited and coordinated environmental reviews for airport capacity enhancement projects at congested airports and for safety and security projects under *Vision 100 Century of Aviation Reauthorization Act Public Law 108-176*. FLL is a congested airport within the meaning of Vision 100.[18]

More recently, in a report entitled *Capacity Needs in the National Airspace System 2007-2025,* the FAA determined that FLL would need additional capacity within the 2007 timeframe.[19]

The FLL forecast provided in the FAA Terminal Area Forecast (TAF)[20] projects that operations will continue to increase. The projected continued growth will result in a continued shortage of capacity at FLL and increasing levels of delay. A more detailed discussion of capacity and delay at FLL is provided in the Final EIS in Chapter Three, *Purpose and Need*, Section 3.2 *Problem Statement* and Section 3.3 *Need for the Project*.

The FAA received a number of comments on the Final EIS regarding the potential effect of increasing fuel costs on operations at FLL and the reduction in operations nationwide announced by a number of airlines in early 2008. The comments

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15 *FAA Flight Plan 2004-2008*. Internet web site: http://www.faa.gov/apo/strategicplan/FAA_Flight_Plan.pdf#search=%22Flight%20Plan%20(2004-2008)%20for%20safety%20and%20capacity%22

16 FAA National Plan of Integrated Airport Systems (NPIAS) (2007-2011), submitted to the U.S. Congress September 2006; October 2006. Internet web site: http://www.faa.gov/airports_airtraffic/airports/planning_capacity/npias/reports/index.cfm

17 FAA's use of the term hub airport is somewhat different than that of airlines, which use it to denote an airport with significant connecting traffic by one or more carriers. The hub categories used by FAA are defined in Section 40102 of Title 49 of the United States Code (2004).

18 The FAA interprets 49 U.S.C. §47175(2) to refer to *FAA's Airport Capacity Benchmark Reports of 2001 and 2004*.

19 *Capacity Needs in the National Airspace System 2007-2025, An Analysis of Airport and Metropolitan Demands and Operational Capacity in the Future*. Federal Aviation Administration. Table E1. May 2007.

20 The 2006 FAA Terminal Area Forecast (TAF) for FLL was used in the EIS analysis. The FAA reviewed the 2007 FAA TAF (when it was published in December 2007) to determine the variance between the 2006 TAF and 2007 TAF projections for FLL. The FAA determined the variance in projected operations was within the FAA's standard for determining projected forecast consistency (within 10 percent (+/-) for the five-year projection; and within 15 percent (+/-) for the 10-year and beyond forecast projections). *See* the Final EIS, Chapter Three, Section 3.3.1.1 *Projected Operational Demand.*

questioned the FAA's reliance on 2006 operations that did not represent airline changes in response to the fuel cost increase. However, although the price of fuel and economic fluctuations can affect an airport's operations, these variables have been taken into account by the FAA in the FLL TAF.

The FAA's TAF is updated annually. In the TAF for FLL, the near term forecast of operations[21] is based, in part, on the future schedules of the airlines serving the airport. Airline schedules include anticipated changes in the market such as reductions in operations in response to increased fuel costs. The long term estimates of domestic enplanements are forecast as a function of real yield at the airport[22] and employment in the metropolitan area. These enplanement forecasts in turn are translated into operation forecasts using assumptions for average seats per aircraft and load factor. The long term forecasts are not significantly influenced by the short term changes in the price of fuel, rather they are more influenced by regional and national economic and employment indicators.

The FAA is currently preparing the 2008 TAF. Based upon the preliminary 2008 TAF[23] for FLL a comparison with the 2006 TAF used in the EIS analysis indicates that the difference in projected operations between the 2006 TAF and the preliminary 2008 TAF for 2012 and 2020 is within an acceptable range.[24] The 2008 TAF is anticipated to be published by the FAA in late 2008 or early 2009. In the event that the 2008 TAF forecasted operations, when published, are significantly different from the forecast used in the EIS, the FAA will complete any appropriate additional environmental review.

By examining the analysis of capacity and delay issues at FLL, the FAA would fulfill its statutory responsibilities to administer the National Airspace System. The FAA through the independent analyses provided in the EIS, determined that the existing airfield infrastructure at FLL lacks sufficient capacity[25] to accommodate existing and forecast air carrier demand at a level of delay established for FLL in the EIS.[26,27]

The purpose of the proposed action is to provide sufficient capacity for existing and forecast demand at FLL with an acceptable level of delay. The FAA considered the deficiencies at FLL, as discussed in the Final EIS, Chapter Three *Purpose and Need*, Section 3.2 *Problem Statement*, and their impact on the FAA's purpose of

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21 Near term would be within a one to two year time frame. Long term would be beyond the two year time frame.

22 Yield is the average amount of revenue the airline would receive per revenue passenger mile. Yield is derived by dividing total passenger revenue by total revenue passenger miles. Real yield means that the dollar amounts have been adjusted to take out inflation over time.

23 Preliminary FAA Terminal Area Forecast for FLL, September 2008.

24 The FAA standard for determining projected forecast consistency defines acceptable when a forecast is within 10 percent (+/-) for the five-year projection. For forecast projections within the 10-year and beyond, a 15 percent (+/-) difference is considered consistent with the FAA's TAF. (FAA Order 5100.38C *Airport Improvement Program Handbook*, paragraph 428.a. *Aviation Forecasting*.)

25 As stated in FAA Advisory Circular 150/5060-5, *Airport Capacity and Delay*, capacity (throughput capacity) is a measure of the maximum number of aircraft operations that can be accommodated on the airport or airport component in an hour.

26 An established delay threshold is typically around four to six minutes of average delay per operation based on data contained in the FAA National Plan of Integrated Airport Systems (NPIAS) (2007-2011).

27 The threshold used in the EIS to define acceptable levels of delay at FLL is six minutes per operation. *See* the Final EIS, Chapter Three *Purpose and Need*, Section 3.3.1.3, *Level of Delay*.

enhancing safety, efficiency, and capacity on both the regional and national level, and has identified the following needs at FLL:

- The need for sufficient airfield capacity, to the extent practicable, to accommodate existing and projected air carrier demand at a level of delay established for FLL in the EIS analysis, which is six minutes of average annual delay per operation;
- The need for an enhanced and balanced airfield; and
- The need for sufficient gate and apron capacity to address existing and forecast passenger demand and aircraft congestion on the ramp.

LOCATION OF THE PROPOSED ACTION: The proposed action will occur in Broward County, Florida, primarily on airport property that is owned by Broward County.

WHEN THE PROPOSED ACTION WOULD OCCUR: Project initiation and mobilization is expected to begin with the issuance of the ROD. It is projected that construction will begin in 2009. Construction is expected to last between four to six years, with completion occurring in the 2012 to 2014 timeframe.

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2. REQUESTED FEDERAL ACTIONS AND APPROVALS

This section summarizes the actions and approvals the airport sponsor has asked FAA and other federal agencies to give before the sponsor can implement the proposed action.

FAA DETERMINATIONS RELATING TO ELIGIBILITY FOR FEDERAL FUNDS FOR THE PROPOSED PROJECT: FAA determinations relating to eligibility for Airport Improvement Program (AIP) funds and to impose and use Passenger Facility Charges (PFC) funds for the proposed project.

FAA APPROVAL TO AMEND THE ALP TO DEPICT THE PROPOSED ACTION AND ASSOCIATED DETERMINATIONS: FAA approval of an ALP,[28] environmental determinations and sponsor assurances and certifications required as conditions of eligibility for grants of federal funding for the proposed project,[29] and determinations under other environmental laws, regulations, and executive orders discussed in the EIS.

FAA INSTALLATION AND/OR RELOCATION OF NAVIGATIONAL AIDS ASSOCIATED WITH THE PROPOSED NEW RUNWAY: FAA determination for the installation and/or relocation of navigational aids associated with the new runway.[30]

FAA APPROVAL OF AIR TRAFFIC CONTROL PROCEDURES AND MODIFICATION OF FLIGHT PROCEDURES FOR THE RUNWAY: The FAA would approve new air traffic control and instrument procedures for FLL to include an expanded runway and the closure of Runway 13/31. These procedures would be flight tested, and published for general use.[31]

FAA EVALUATION AND DETERMINATION OF AIRSPACE OBSTRUCTIONS: Determinations and actions, through the aeronautical study process of any off-airport obstacles that might be obstructions to the navigable airspace under the standards and criteria of 14 CFR Part 77 *Objects Affecting Navigable Airspace*[32], and an evaluation of the appropriateness of proposals for on-airport development from an airspace utilization and safety perspective based on aeronautical studies conducted pursuant to the standards and criteria of 14 CFR Part 157, *Notice of Construction, Alteration, Activation, and Deactivation of Airport*.

FAA CERTIFICATION AND OTHER APPROVALS: FAA modification or amendment of existing certificates or specifications is required to comply with FAA design standards and to accommodate, in a safe and efficient manner, the passenger enplanements and aircraft activity forecasts.

- Certification under 14 CFR Part 139, *Certification of Airports*.

[28] 49 U.S.C. § 47107(a)(16)
[29] 49 U.S.C. § 47106(c)
[30] 49 U.S.C. § 40103
[31] 49 U.S.C. § 40103
[32] 49 U.S.C. § 40103(b) and 40113

- Operating Specifications for scheduled air carriers intending to operate at the airport in the future under FAR 14 CFR Part 121, *Certification and Operations: Domestic, Flag, and Supplemental Air Carriers and Commercial Operations of Large Aircraft.*

APPLICABLE ENVIRONMENTAL LAWS, REGULATIONS, STATUTES, AND POLICIES

In accordance with Federal law and agency guidance, the Final EIS contains the information that the FAA will use to make the following findings, determinations, and certifications for the selected alternative.

DETERMINATIONS WITH REGARD TO ENVIRONMENTAL LAWS, REGULATIONS, AND EXECUTIVE ORDERS

- Determination of general conformity under the Clean Air Act, 42 U.S.C. § 7506(c)(1).
- Determination that the Proposed Action is consistent with approved coastal zone management programs, Executive Order 13089, Coral Reef Protection; Coastal Barrier Resources Act, 16 U.S.C. § 3501-3510, and Coastal Zone Management Act, 16 U.S.C. § 1451-1464.
- Determinations under 49 U.S.C. § 303(c) [Section 4(f)] with respect to use of any publicly-owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state or local significance; or land from an historic site of national, State, or local significance.
- Findings regarding the potential impact to Federally endangered or threatened and protected species, marine mammals, essential fish habitat and migratory birds, and state-listed species. Endangered Species Act, 16 U.S.C. § 1531-1544. Marine Mammal Protection Act, 16 U.S.C. § 1361-1421h. Related Essential Fish Habitat Requirements of the Magnuson-Stevens Act, as amended by the Sustainable Fisheries Act, 16 U.S.C. § 1855(b)(2). Migratory Bird Treaty Act, 16 U.S.C. § 703-712.
- Floodplain determination and findings in accordance with Executive Order 11998, *Floodplain Management,* and DOT Order 5650.2, *Floodplain Management and Protection*.
- Determination in accordance with Section 106 of the National Historic Preservation Act of 1966. The FAA is required to make a determination related to the potential effect of the proposed actions on properties either listed or eligible to be listed on the National Register of Historic Places that are in the vicinity of the development of the proposed actions. National Historic Preservation Act, 16 § U.S.C. 470(f).
- Determination regarding coordination and consultation with Native American representatives in accordance with DOT Order 5301.1, Department of Transportation Programs, Policies, and Procedures Affecting American Indians, Alaska Natives, and Tribes; and FAA Order 1210.20, American Indian and Alaskan Native Tribal Consultation Policy and Procedures.

- Determination regarding environmental justice in accordance with Executive Order 12898 and DOT Order 5610.2, Environmental Justice.
- Determination that water quality requirements will be satisfied in accordance with the Clean Water Act. Clean Water Act, 33 U.S.C. § 1251, et seq.
- Determinations in accordance with Executive Order 11990, Protection of Wetlands. Department of Transportation (DOT) Order 5660.1A, Preservation of the Nation's Wetlands, and Section 404 of the Clean Water Act. 33 U.S.C. 1344. For this project involving new construction that will directly affect wetlands, the FAA must determine that there is no practicable alternative to such construction and that the proposed action includes all practicable measures to minimize harm to wetlands.
- Determination regarding actions associated with the project that would require relocation assistance for displaced persons or businesses pursuant to the Uniform Relocation Assistance and Real Property Acquisition Policies Act (42 U.S.C. 4601 et seq.).
- Determination regarding the independent and objective evaluation required by the Council on Environmental Quality (40 C.F.R. Section 1506.5).

FAA DETERMINATIONS UNDER 49 USC SECTIONS 47106 AND 47107

- Determination of consistency with existing plans of public agencies for the development of the area surrounding the airport. 49 U.S.C. § 47106(a)(1).
- Determination that fair consideration has been given to the interests of communities in or near the project location. 49 U.S.C. § 47106(b)(2).
- Determination in accordance with 47106(c)(1)(A) that the Sponsor has provided the following certifications:
  - an opportunity for a public hearing was given to consider the economic, social, and environmental effects of the location and the location's consistency with the objectives of any planning that the community has carried out; 49 U.S.C. § 47106(c)(1)(A)(i)
  - the airport management board has voting representation from the communities in which the project is located or has advised the communities that they have the right to petition the Secretary about a proposed project; and 49 U.S.C. § 47106(c)(1)(A)(ii)
  - with respect to an airport development project involving the location of an airport, runway, or major runway extension at a medium or large hub airport, the airport sponsor has made available to and has provided upon request to the metropolitan planning organization in the area in which the airport is located, if any, a copy of the proposed amendment to the airport layout plan to depict the project and a copy of any airport master plan in which the project is described or depicted; and 49 U.S.C. § 47106(c)(1)(A)(iii)
- For this project, which involves the location of a new runway or major runway extension, determination in accordance with 49 U.S.C. § 47106(c)(1)(C) of whether there are significant adverse effects on natural resources,

determination that no possible and prudent alternative to the project exists, and that the project includes every reasonable step to minimize the significant adverse effects.

- Determination that the Airport Sponsor has, or will take, the appropriate action, as pertains to the adoption of zoning laws to the extent reasonable to restrict the use of land next to or near the airport to uses that are compatible with normal airport operations 49 U.S.C. § 47107(a)(10).

LIST OF OTHER FEDERAL, STATE, AND LOCAL PERMITS AND APPROVALS

The following permits and approvals are required by federal agencies (other than the FAA) and state and local agencies for implementation of the FAA's Preferred Alternative (B1b):

- Issuance of a Clean Water Act Section 404 permit by the U.S. Army Corps of Engineers (USACE) related to potential impacts to jurisdictional streams and wetlands, based upon a determination that there is no practicable alternative to the selected alternative and all practicable measures have been considered to avoid, minimize, and mitigate harm to wetlands.
- Issuance of a Clean Water Act Section 404 permit by the USACE for dredge and fill, based upon review and comment by the U.S. Environmental Protection Agency (USEPA), U.S. Fish and Wildlife Service (USFWS), National Marine Fisheries Service (NMFS), and the Florida State Historic Preservation Office (SHPO).
- Section 401 Water Quality Certification from the South Florida Water Management District (SFWMD), based upon the FAA determination that standards under the CWA will be met.
- Modification to the National Pollutant Discharge Elimination System (NPDES) permit (Section 402 of the Clean Water Act) for proposed construction activities; this would be coordinated through the Florida Department of Environmental Protection.
- Modification to the SFWMD Environmental Resource Permit (ERP) No. 06-00339-S for impacts to jurisdictional wetlands. This permit modification constitutes State Water Quality Certification for the Section 404 Permit.

3. SUMMARY OF ALTERNATIVES CONSIDERED

This section briefly describes the reasonable alternatives the EIS analyzed in detail. It also identifies the environmentally preferred alternative (C1) (40 CFR § 1505.2 (b)), the Airport Sponsor's proposed action (B1c), and the FAA's Preferred Alternative (B1b) (FAA Order 5050.4B, paragraph 1007.e. (7)). The Airport Sponsor's proposed action was described in detail in Section 1, above.

BRIEF D ESCRIPTION OF ALTERNATIVES CONSIDERED: The Council on Environmental Quality's (CEQ) regulations implementing NEPA (40 CFR Parts 1500 through 1508) require that all reasonable alternatives that might accomplish the objectives of a proposed project be identified and evaluated. Therefore, in compliance with NEPA[33] and other special purpose environmental laws, the FAA analyzes those alternatives that could achieve the established purposes and needs for the project.

Reasonable alternatives include those that are practical or feasible from a technical and economic standpoint.[34] According to CEQ Section 1502.14(c) the FAA, as the lead agency, has a responsibility to explore and objectively evaluate all reasonable alternatives, including those beyond the agency's jurisdiction.

The analysis of EIS alternatives is an independent examination by the FAA of a reasonable range of alternatives that could meet the identified purposes and needs for the Airport Sponsor's Proposed Project as described in detail in the EIS. The alternatives that the FAA considered included off-site and on-site alternatives, and a no action alternative. On-site alternatives included non-runway development (i.e., demand management) and runway development alternatives. (To review the range of alternatives considered, *see* the Final EIS, Chapter Four, *Alternatives*, Section 4.1.1, *Off-Site Alternatives*, and Section 4.2.2, *On-Site Alternatives*.)[35]

As a requirement of NEPA, a no action alternative must be carried forward in the assessment of environmental impacts.[36] With the No Action Alternative, the FLL airfield configuration would remain as it is today, with no additional runways,

[33] National Environmental Policy Act of 1969 (NEPA) Part 1502, Environmental Impact Statement, Section 1502.14.

[34] 46 Federal Register 18026, Memorandum: *FORTY MOST ASKED QUESTIONS CONCERNING CEQ's NATIONAL ENVIRONMENTAL POLICY ACT REGULATIONS*, March 16, 1981.

[35] After the Final EIS was published DOT and FAA finalized an amended policy on airport rates and charges and limitations on operations at the three NY area airports. These actions are consistent with the dismissal of demand management alternatives for FLL in Section 4.2.2.4 of the Final EIS. In affording airport sponsors greater flexibility to use landing fees to manage congestion, DOT/FAA stated that the amendments were intended "as a mechanism to address delay when capacity projects will not be available in time to prevent increasing delays and in those congested airports where capacity expansion is simply not feasible." 73FR 40430 July 14, 2008. Similarly, DOT/FAA imposed flight caps at the NY area airports to reduce congestion and delays until the airport sponsor is able to bring needed capacity projects, such as additional taxiway and other improvements, on line. Use of demand management if at all, as a stop gap measure and last resort, is in harmony with congressional policies encouraging airport improvement projects to increase capacity to be undertaken "to the maximum feasible extent" while artificial restrictions on airport capacity, which are not in the public interest, "should be imposed to alleviate air traffic delays only after other reasonably available and less burdensome alternatives have been tried." 49 U.S.C. 47101(a)(7), (9).

[36] Council on Environmental Quality's (CEQ) regulations implementing NEPA (40 CFR Parts 1500 through 1508), Sec. 1502.14(d) Include the alternative of no action.

extensions, or improvements to any existing runways, and the airfield would be operated in accordance with the current air traffic procedures.[37] The No Action Alternative serves as the baseline of comparison for the assessment of future conditions/impacts.

The alternatives analysis identified and evaluated a range of reasonable alternatives that could substantially meet the stated purpose and need for the project. First, the analysis screened both the off-airport and on-airport alternatives that could feasibly address capacity and reduce delay at the FLL at the threshold of six minutes of acceptable delay. None of the off-site alternatives and none of the non-runway on-site alternatives were determined by the FAA to meet the stated purpose and need. (*See* the Final EIS, Chapter Four, *Alternatives*, Section 4.1.1, *Off-Site Alternatives*, and Section 4.2.2, *On-Site Alternatives*.)[38]

Next, the on-site runway development alternatives that could address capacity and reduce delay were subjected to a detailed analysis. The analysis considered runway length, airfield throughput capacity,[39] constructability,[40] and the consideration of "fatal flaws."[41] An alternative that did not meet one or more of these criteria also did not meet purpose and need and therefore was eliminated from further evaluation in the EIS. (For the full discussion of the screening analysis, *see* the Final EIS, Chapter Four, *Alternatives*, Section 4.2.2.5, *Runway Development Alternatives*.)

As a result of the alternatives screening process, the FAA determined that eight of the runway development alternatives could potentially meet the stated purpose and need to increase capacity and reduce delay, and did not appear to have substantial constructability issues or "fatal flaws". These eight runway development alternatives and the No Action alternative were subjected to detailed environmental analysis in the EIS and are listed below. (*See* the Final EIS, Chapter Four, *Alternatives*, Section 4.3, *Alternatives to be Assessed for Environmental Impacts*.)

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[37] *FAA Environmental Assessment for the Proposed Use of Runways 9R/27L and 13/31 When the Preferred Runway Cannot Efficiently Accommodate Existing Operations at Fort Lauderdale-Hollywood International Airport (FLL).* Broward County, Florida. 2008.

[38] Given the similarities between PHL and FLL, a peak hour pricing program would not likely work at FLL because the fees would cause reductions in the general aviation and turboprop aircraft that principally use the south runway at FLL during peak periods and do not contribute to delays. Cancellation of these flights would have little impact on congestion on the primary runways and therefore would not significantly reduce delays at FLL. PHL Runway 17-35 Extension Project Final EIS, pages 3-31 and 3-32.

[39] As stated in FAA Advisory Circular 150/5060-5, *Airport Capacity and Delay*, capacity (throughput capacity) is a measure of the maximum number of aircraft operations that can be accommodated on the airport or airport component in an hour.

[40] Constructability considers the physical characteristics of each alternative and its direct impact on existing facilities and structures, infrastructure, and natural features. These physical characteristics can affect engineering costs, project schedules, operational safety and efficiency, and construction sequencing or phasing.

[41] "Fatal flaws" are discussed in the Final EIS Chapter Four - *Alternatives*, Section 4.2.2.5.1 *Fatal Flaws.* "Fatal flaws" in the EIS analysis are associated with direct impacts on existing facilities that would result in substantial redevelopment or inhibit development or maintenance of existing transportation infrastructure. The fatal flaws considered in the alternatives included encroachment of the Dania Cut-Off Canal, Interstate-95, and/or the Seaboard Coast Line Railroad (CSX Transportation); major impacts to the existing terminal core area that would cause significant disruption of airline and passenger service; or impacts to or the relocation of the Florida Power Light (FPL) LaDania Substation.

- **Alternative A (No Action):** the airfield configuration would remain as it is today, with no additional runways, extensions, or improvements to any existing runways, and the airfield would be operated in accordance with the current air traffic procedures. Runway 9L/27R is 9,000 feet long by 150 feet wide; Runway 9R/27L is 5,276 feet long by 100 feet wide; and, Runway 13/31 6,930 feet long by 150 feet wide.
- **Alternative B1:** redevelop and extend existing Runway 9R/27L to an 8,600-foot by 150-foot elevated runway; this runway would extend east over the FEC Railway and U.S. Highway 1; Runway 13/31 would be permanently closed
- **Alternative B1b (FAA's Preferred Alternative):** redevelop and extend existing Runway 9R/27L to an 8,000-foot by 150-foot elevated runway with EMAS; this runway would extend east over the FEC Railway and U.S. Highway 1; Runway 13/31 would be permanently closed (*see* this ROD, Exhibit 1 *FAA's Preferred Alternative (B1b)*)
- **Alternative B1c (Airport Sponsor's Proposed Action):** redevelop and extend existing Runway 9R/27L to an 8,000-foot by 150-foot elevated runway with EMAS; this runway would extend east over the FEC Railway and U.S. Highway 1; includes the implementation of the operational noise abatement actions described in the *County's Airfield Development Program Objective Statement* (October 26, 2004),[42] and specifically in a memorandum to the FAA in August 2006 which would limit the capacity of Runway 9R/27L in 2012; Broward County has interpreted that the operational noise abatement actions would no longer be in place by 2020;[43] Runway 13/31 would be permanently closed
- **Alternative B4:** build a new 6,001-foot at grade runway with EMAS located 340 feet north of existing south runway (to replace existing Runway 9R/27L); Runway 13/31 would remain open
- **Alternative B5:** build a new 7,800-foot elevated runway with EMAS located 320 feet south of existing south runway (to replace existing Runway 9R/27L); this runway would extend east over the FEC Railway and U.S. Highway 1; Runway 13/31 would be permanently closed
- **Alternative C1:** build a new 7,721-foot at grade runway located 850 feet north of existing Runway 9L/27R (a dependent parallel runway to existing Runway 9L/27R); Runway 13/31 would be permanently closed

[42] Letter from Tom Jargiello, Director of Aviation, Broward County Aviation Department, Fort Lauderdale-Hollywood International Airport, to Dean Stringer, Manager, FAA Orlando Airports District Office. This letter pertains to the Broward County Board of County Commissioners Goals and Objectives. Dated: November 1, 2004. "This responds to your letter dated December 24, 2003 requesting information necessary for the preparation of the revised Environmental Impact Statement (EIS) for the proposed extension of Runway 9R/27L at the Fort Lauderdale-Hollywood International Airport."

[43] Memorandum from Max Wolfe/Eric Bernhardt, Leigh Fisher Associates (now Jacobs Consultancy), to Virginia Lane, AICP, Environmental Specialist, Federal Aviation Administration. Subject: Sponsor's Proposed Project Operational Assumptions. Dated: August 22, 2006/Revised: August 24, 2006.

- **Alternative D1:** redevelop and extend existing Runway 9R/27L to 8,000 feet and build a new 7,721-foot runway north of existing Runway 9L/27R; Runway 13/31 would be permanently closed; (combination of Alternatives B1b and C1)
- **Alternative D2:** build a new 6,001-foot at grade runway with EMAS located 340 feet north of existing south runway (to replace existing Runway 9R/27L), and build a 7,721-foot at grade runway located 850 feet north of existing Runway 9L/27R; Runway 13/31 would be permanently closed; (combination of Alternatives B4 and C1)

SUMMARY OF OPERATIONAL CAPACITY AND DELAY, IMPACTS TO AIRPORT PROPERTY, AND ENVIRONMENTAL IMPACTS OF THE ALTERNATIVES: In identifying the Preferred Alternative, the FAA considered three major factors. First, it considered the extent to which an alternative could, as a practical matter, meet the stated purpose and need to accommodate existing and projected air carrier demand at a level of delay established for FLL, which is six minutes of average annual delay per operation; to provide sufficient airfield capacity, to the extent practicable; to provide an enhanced and balanced airfield; and, to provide sufficient gate and apron capacity to address existing and forecast passenger demand and aircraft congestion on the ramp.

Second, the FAA considered the extent to which an alternative impacted existing airport property, including airport tenant facilities and the availability of airport property for future development.

Third, the agency considered whether the implementation of an alternative would result in significant adverse environmental impacts, and if so, whether the alternative would meet the requirements of 49 USC §47106(c)(1)(C).

Operational capacity and delay: The first consideration in the identification of FAA's Preferred Alternative was the extent to which an alternative could increase operational capacity and reduce delay at FLL. For the alternatives that were studied in detail, operational capacity and delay were assessed in the EIS in terms of maximum capacity[44], actual throughput or practical capacity,[45] and average

[44] As stated in FAA Advisory Circular 150/5060-5, *Airport Capacity and Delay*, capacity (throughput capacity) is a measure of the maximum number of aircraft operations that can be accommodated on the airport or airport component in an hour. It represents a condition of balanced arrival and departure demand that its based on the methodology in the AC.

[45] When calculating capacity and delay it is standard industry practice to calibrate capacity to reflect the usability of the actual runway pavement. This is 'practical capacity' (also known as 'actual throughput'). This type of capacity analysis considers factors that can affect runway use and usability (or utility). These factors can include aircraft type and runway length. For example: a 5,000 foot runway at Airport A may have an hourly maximum throughput capacity of 50 operations (based on the maximum number of operations that can occur by aircraft that can use a 5,000-foot runway). If the forecast demand for Airport A includes aircraft that all can operate on such a runway, then the practical capacity for Airport A will be the same as the throughput capacity. However, the forecast demand for Airport B may include only 20 aircraft operations able to use a 5,000-foot runway. Therefore, because of the demand at Airport B the 'practical capacity' is 20 operations, not 50. Several major commercial airports in the U.S. have runways of less than 6,000 feet. Some examples include Runway 15L/33R at Baltimore Washington International Airport and Runway 14/32 at Boston Logan International Airport. The 'practical capacity' of the runways at these airports is determined by the types of aircraft and number of aircraft operations using such aircraft that can actually operate on a runway 6,000 feet in length.

minutes of delay per operation. The analysis of capacity and average delay was used to determine the extent to which an alternative could meet the stated purpose and need to increase capacity and reduce delay at FLL. [46]

A key aspect of operational capacity and delay was the extent of actual throughput or practical capacity provided by an alternative.

Table 1 ***Hourly Capacity Estimates – Total Airfield***, summarizes the maximum and practical hourly capacity of the airport under each alternative. Maximum capacity shown in these tables refers to the capacity estimated from the FAA AC 150/5060-5. By comparison, the practical capacity listed on Table 1 takes into consideration actual demand able to use available runways according to the aircraft types and runway length characteristics of each alternative.

TABLE 1
HOURLY CAPACITY ESTIMATES – TOTAL AIRFIELD
Fort Lauderdale-Hollywood International Airport

	MAXIMUM CAPACITY[1]					PRACTICAL CAPACITY[2]
	East Flow		West Flow		All Weather	All Weather
	VFR	IFR	VFR	IFR	Average	Average
No Action	115	106	105	100	113	84
B1/B1b/B1c/B5	108	104	102	98	107	107
B4[3]	108	104	102	98	107	107
C1[4]	134	116	127	101	131	101
D1	130	113	124	99	128	128
D2	130	113	124	99	128	128
Percent of Annual	**75%**	**6%**	**18%**	**1%**	**100%**	**100%**

1 Maximum capacity presents a condition of balanced arrival and departure demand

2 Practical Capacity takes into consideration actual demand able to use available runways according to the aircraft types and runway length characteristics.

3 Alternative B4 is the only alternative, other than the No Action, under which Runway 13/31 would remain in operation. Even though Runway 13/31 remains open it does not result in an increase in the practical capacity as compared to the other "B" alternatives, because Runway 13/31 crosses Runway 9L/27R and operations are directed to either Runway 13/31 or Runway 9L/27R but not to both runways simultaneously. The airfield operates most efficiently in an east/west configuration; Alternative B4 would have two east/west parallel runways that could accommodate air carrier demand, which is why the practical capacity for Alternative B4 is equal to the other 'B' alternatives.

4 The practical capacity for Alternative C1 is lower than all alternatives except for the No Action because no improvements would be made to Runway 9R/27L and the north airfield parallel runway system would operate as a dependent runway system.

The 850-foot separation distance between Runway 9L/27R and the new closely spaced parallel runway north of Runway 9L/27R is not sufficient to allow for simultaneous independent arrival operations to occur to both runways. Additionally, existing Runway 9R/27L cannot accommodate air carrier operations due to its length (5,276 feet) and width (100 feet). Because of the dependent north parallel runway system, Alternative C1 will only provide one runway capable of accommodating air carrier arrivals at a time during peak arrival periods and as a result the

46 For a discussion of the operational capacity and delay as assessed in the EIS, *see* the Final EIS, Chapter Three, *Purpose and Need*, Section 3.3.1.2 *Existing Airfield Capacity*, Section 3.3.1.3 *Level of Delay*, and Appendix F, *Net Benefits Analysis*.

airfield's practical capacity is reduced as compared to all of the other runway development alternatives. Departures on the closely spaced parallel runways would have to be coordinated by FLL Air Traffic Control to meet wake turbulence separation requirements.

Note: The practical capacity of Alternative A is less than the maximum capacity because certain types of aircraft in the forecast fleet and a number of operations will not be able to use existing Runway 9R/27L.

Source: FAA Advisory Circular 150/5600-5 and Landrum & Brown analysis, 2008.

For a more detailed discussion of the hourly capacity estimates and actual demand, *see* the Final EIS, Appendix F *Net Benefits Analysis*, Section F.4 *Capacity Analysis.*

Because capacity is a function of delay, many airports plan new runways or runway improvements when approaching six minutes of delay. The delay threshold used in this EIS for establishing the runway capacity of FLL is six minutes per operation because it is within the range of the FAA's planning guidance and it is acceptable to the Airport Sponsor. A more detailed discussion of delay is provided in the Final EIS in Chapter Three, *Purpose and Need*, Section 3.3.1.3 *Level of Delay*.

Average minutes of delay was calculated per operation using a queue modeling methodology. Demand, defined in terms of the number of arrivals and departures in five-minute intervals, was modeled against the estimated capacity of each alternative in VFR and IFR weather conditions for both east and west operating flows. *See* the Final EIS, Appendix F.5, *Demand/Capacity Analysis* and Table F-11 and Table F-12 in Appendix F, *Net Benefit Analysis*. To maintain average delays at the six minutes per operation threshold, there is a need to provide a practical airfield capacity of between 101 and 107 operations per hour.

Airport Property Impacts: The second consideration in the FAA's identification of the preferred alternative was the extent to which an alternative would impact existing airport tenant leaseholds and facilities and the availability of airport property for relocation of facilities and future development.

To identify the tenant leasehold impacts and potential impacts of relocation on availability of existing and future airport property, the FAA prepared a tenant relocation analysis that considered the airport property within the current FLL boundary owned by Broward County.[47] This analysis identified the airport properties and tenant leasehold facilities that could be directly or indirectly[48] impacted with the development of an alternative; the potential areas of on-airport

[47] The EIS analysis focused on the availability of existing on-airport property and tenant leaseholds depicted by the 2004 FLL Leasehold Identification Map and the assumption that in-kind replacements (in terms of gross leasehold displacements) would be offered by Broward County to tenants that would be displaced with each alternative. While some changes have occurred to on airport tenant leasehold areas since the EIS analysis was prepared, the FAA's tenant relocation analysis was conducted based on the information contained in the 2004 FLL Leasehold Identification Map and does not include any additional changes resulting from lease renewals or new leaseholds that may have been approved by Broward County since that time.

[48] Direct impacts included those tenant facilities that required removal in order to conform to the airfield geometric requirements and/or NAVAID siting criteria. Indirect impacts include tenant facility relocations resulting from airspace encroachments or to allow for a more efficient use of airport property.

property that could accommodate relocated facilities; and was used in the development of a comparative analysis of the projected costs among the various alternatives.[49]

The tenant relocation analysis was based on information provided to the FAA by Broward County in November 2004.[50] It was presented in the Draft EIS in Chapter Four, *Alternatives,* Section 4.3 *Alternatives to Be Assessed for Environmental Impacts*, and Appendix E, *Airfield Planning Engineering and Constructability Review*. [51]

In December 2007, the Airport Sponsor submitted comments to the FAA raising concerns about the potential impact to airport properties and tenant leasehold facilities that could occur with the development of Alternative D2. Broward County's concern was that the "D2 Alternative would result in significant and costly relocation, loss of any future tenant expansion capabilities, complete elimination of any aviation development growth and, when completed in its entirety, create an unbalanced airfield terminal/landside situation."[52] The FAA considered each of these concerns in the Final EIS. The most important points from FAA's perspective are summarized below.

- *Sponsor states Alternative D2 would result in significant and costly relocation*

  The comparative cost estimate for the EIS alternatives was prepared at a planning level of detail and included facility relocation costs.[53] The estimated cost of facility relocations addressed in-kind replacement costs (such as utility infrastructure, structure square footage, vehicle and aircraft parking areas).

  Other costs associated with facility relocation, such as loss of business revenue or employee costs were not included and would be assessed during design and

[49] "Facility Relocations" costs for each alternative represent estimated in-kind replacement costs (such as utility infrastructure, structure square footage, vehicle and aircraft parking areas). *See* the Final EIS, Chapter Four Alternatives, Section 4.4 *Projected Costs*.

[50] FLL Leasehold Identification Map, Broward County Aviation Department, November, 2004. *See* the Final EIS, Appendix E *Airfield Planning, Engineering and Constructability Review*, Section E.1.6 *Facility Impacts*, Table E.1-7 FLL *Tenant Leasehold Impact Summary (Non Terminal Impacts)* and Exhibit E.1-11 *Existing Tenant Leasehold Summary*.

[51] In response to the Broward County comments on the Draft EIS, the FAA prepared additional information regarding the potential impacts to airport properties. Using the information compiled from the November 2004 FLL Leasehold Identification Map, more detailed text and exhibits were developed to describe the impacts for all of the runway development alternatives. Revised exhibits illustrated the areas that could accommodate the relocated tenant leasehold facilities that would be impacted due to the airfield and/or terminal development considered by each alternative. This additional information was presented to interested parties at airport meetings in October 2007 and was included in the Final EIS. *See* the Final EIS, Chapter Four, *Alternatives*, Section 4.3 *Alternatives to Be Assessed for Environmental Analysis*, Appendix E *Airfield Planning, Engineering and Constructability Review*, Section E.1.6 *Facility Impacts*, Exhibits E.1-12-E.1-17; and revised Table E.1-8 *FLL Tenant Facility Relocation Summary (Acres)* provided in this ROD in Appendix C, *Final EIS Errata Documents*.

[52] Letter from Kent G. George, A.A.E., Director of Aviation, Broward County Aviation Department, Fort Lauderdale-Hollywood International Airport, to Dean Stringer, Manager, FAA Orlando Airports District Office. RE: This letter pertains to Alternative D2 and Broward County's comments on the tenant relocation, future tenant expansion capabilities, and future aviation development growth. Dated: December 7, 2007.

[53] *See* the Final EIS Chapter Four *Alternatives*, Section 4.4 *Projected Costs*, and Appendix E *Airfield Planning, Engineering and Constructability Review* Section E.1.6 *Facility Impacts*.

construction planning.[54] Therefore, the potential total cost for facility relocations could be higher than the planning level cost estimates used for the EIS comparative analysis of alternatives. Impacts to on airport businesses, including loss of business revenue and employee costs, were not considered as adverse socioeconomic impacts in the Final EIS because, although there could potentially be some disruption, the alternatives did not cause extensive relocation of community businesses that would create severe economic hardship for the affected communities or substantial loss in the community tax base. For all of the alternatives except for D1 and D2 the businesses and employees could be relocated to airport property.

While the north airfield alternatives (C1, D1, and D2) would result in greater in-kind replacement costs for tenant relocations as compared to the south airfield alternatives (B1, B1b/c, and B5), these south airfield alternatives would result in greater costs for airfield construction than the north alternatives in order to elevate the new runway.

The EIS comparative analysis of projected costs takes these various factors into consideration.[55,56]

- *Sponsor expressed concern that Alternative D2 would result in a loss of any future tenant expansion capabilities*

The EIS analysis also provides information regarding potential future airport development opportunities. With the north airfield alternatives future airport development opportunities would be more limited as compared with the south airfield alternatives.

The EIS analysis took into consideration the potential surplus and deficiencies of airport property that would result from the development of each alternative. The north runway development alternatives would result in less developable airside and non-airside property as compared with the south runway development alternatives. Because an airport should be as self-sustaining as possible in accordance with grant assurances, it is important for an Airport Sponsor to have sufficient land to the extent possible for aeronautical and non-aeronautical development as a means to generate airport revenue.[57]

The EIS analysis provided information regarding impacts to airport property and tenant leasehold facilities with the north airfield alternatives. The north airfield alternatives would result in more impacts to airport property and tenant

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54 FAA Order 5100.38C *Airport Improvement Program Handbook*, Chapter 5. Airfield Construction and Equipment Projects, Section 10 Miscellaneous, paragraph 593 Purchase, Relocation, or Demolition of Ineligible Facilities, p. 103.

55 For example, the FAA's Preferred Alternative (B1b) would result in an estimated $25.6 million for facility relocations and $604.8 million in construction costs, as compared to Alternative C1 which would result in $361.5 million for facility relocations and $129.9 million in construction costs. *See* the Final EIS, Chapter Four, Section 4.4 *Projected Costs*.

56 Costs associated with the alternatives proposed at FLL include capital investment costs and annual operation and maintenance (O&M) costs. Detailed capital costs were developed for each alternative and include all costs associated with the construction of the proposed alternative. The comparative cost analysis did not include noise mitigation or wetland mitigation costs. See Final EIS Chapter 4, Alternatives Section 4.4 Projected Costs and Appendix F, Net Benefits Analysis Section F.6.2 Project Costs.

57 49 U.S.C. §47101 (a)(13) and Grant Assurance 24.

leasehold facilities than the south airfield alternatives. This has the potential to lessen Broward County's ability to generate aeronautical and non-aeronautical revenue streams at FLL.

- *Sponsor indicates that Alternative D2 would result in the complete elimination of any aviation development growth*

  The north airfield alternatives would result in a deficiency of airport property available for future development and would substantially reduce the ability for development and/or expansion at FLL. The Sponsor's Proposed Action would not result in a deficiency of property and would not require acquisition for future development.

- *Sponsor indicates that when fully constructed, Alternative D2 would create an unbalanced airfield terminal/landside situation*

  As discussed above, the north runway development alternatives would result in the potential for less developable airside and non-airside property as compared with the south runway development alternatives. This could result in an imbalance between developed airfield facilities and the land available for potential development. Because an airport should be as self-sustaining as possible in accordance with grant assurances, it is important for an Airport Sponsor to have sufficient land to the extent possible for aeronautical and non-aeronautical development as a means to generate airport revenue.[58]

Potential Direct, Secondary (Induced), Environmental, and Cumulative Impacts: In the identification of the FAA's Preferred Alternative (B1b) at FLL, the third consideration was whether the implementation of an alternative would result in significant adverse impacts to an environmental resource category, and if so whether the alternative would meet the requirements under 49 U.S.C. § 47106(c)(1)(C). The Final EIS analysis discloses the potential environmental impacts for the projected conditions in 2012 and 2020; 2012 was the projected earliest implementation year for the runway development alternatives; and 2020 represented the earliest future condition after full implementation of the alternatives with the development of two runways (Alternatives D1 and D2).

* * * * *

The paragraphs below describe each alternative's operational capacity and delay; impacts on existing tenant leasehold facilities and availability of airport property; and, potential direct and secondary environmental and cumulative impacts. The runway development alternatives are compared to the No Action Alternative. Tables 2 and 3 provide a summary comparison in tabular form of each alternative's operational capacity and delay, and environmental impacts. A comparison of impacts on existing tenant leasehold facilities and availability of airport property is provided at Table E.1-8 in Appendix C of this ROD.

- **Table 2** ***Summary of Alternatives – Net Benefit Analysis***
- **Table 3** ***Summary of Alternatives – Environmental and Cumulative Impacts***

[58] 49 U.S.C. §47101 (a)(13) and Grant Assurance 24.

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Table 2
SUMMARY OF ALTERNATIVES - NET BENEFIT ANALYSIS
Fort Lauderdale-Hollywood International Airport

BENEFITS/COSTS	ALTERNATIVE A	B1	B1b	B1c	B4*	B5	C1	D1	D2
Operational									
Maximum Hourly Capacity Estimate [1/]									
Total Airfield	113	107	107	107	107	107	131	128	128
All Weather Average Includes East Flow/West Flow and VFR/IFR[2/] conditions									
Practical Hourly Capacity Estimate [1/]									
Total Airfield	84	107	107	107	107	107	101	128	128
All Weather Average Includes East Flow/West Flow and VFR/IFR [2/] conditions									
2012: Average Minutes of Delay Per Operation [3/]	10.7	1.2	1.2	3.9	2.2	1.2	1.9	N/A [5/]	N/A [5/]
2012: Benefit Over No Action [4/]	N/A	9.5	9.5	6.8	8.5	9.5	8.8	N/A [5/]	N/A [5/]
2020: Average Minutes of Delay Per Operation [3/]	26.2	3.1	3.1	3.1	4.7	3.1	5.0	1.2	1.5
2020: Benefit Over No Action [4/]	N/A	23.1	23.1	23.1	21.5	23.1	21.2	25.0	24.7
Costs (Estimates in 2007 Dollars):									
Construction	$ -	$ 637,680,200	$ 641,098,000	$ 641,098,000	$ 485,191,000	$ 610,715,300	$ 137,694,800	$ 749,687,200	$ 607,855,700
Airfield Design	$ -	$ 67,714,300	$ 67,714,200	$ 67,714,200	$ 55,559,100	$ 56,026,300	$ 13,769,500	$ 74,186,400	$ 68,070,400
Land Acquisitions & Facility Relocations [6/]	$ -	$ 101,337,700	$ 101,337,700	$ 101,337,700	$ 37,389,600	$ 93,410,800	$ 383,217,700	$ 473,361,400	$ 419,639,300
Total Costs:	$ -	$ 806,732,200	$ 810,149,900	$ 810,149,900	$ 578,139,700	$ 760,152,400	$ 534,682,000	$ 1,297,235,000	$ 1,095,565,400
Benefit/Cost Ratio [7/]									
Evaluation period: 2007 - 2020 [8/]	N/A	1.87	1.87	1.66	3.21	1.99	2.95	1.31	2.10
Evaluation period: 2007 - 2030 [8/]	N/A	3.75	3.75	3.42	5.08	3.99	5.08	3.17	4.01

NOTE:
*/ A sensitivity analysis was prepared for Alternative B4 for 2012 and 2020 conditions to determine the potential affect of pilot refusal to use the 6,001-foot runway. The analysis results, provided in the Final EIS, Appendix F *Net Benefit Analysis* , Table F 19, shows the consequence of potential pilot refusal is an increase in delay from 2.2 to 3.1 minutes per aircraft in 2012. In 2020, the delay increases from 4.7 minutes to 10.2 minutes. *See* the Final EIS, Appendix F *Net Benefit Analysis* , Section F.6.4 *Alternative B4 Sensitivity Analysis* .

FOOTNOTES

1/ Maximum capacity presents a condition of balanced arrival and departure demand, arrival peak, and departure peak. Practical capacity takes into consideration actual demand able to use available runways according to the aircraft types and runway length characteristics of each alternative.

2/ VFR: Visual Flight Rules - Rules and procedures specified in Federal Aviation Regulations Part 91 for aircraft operations under visual conditions (i.e. "good" weather).
IFR: Instrument Flight Rules - Rules and procedures specified in Federal Aviation Regulations Part 91 for aircraft operations during flight in Instrument Meteorological Conditions (i.e. "poor" weather).

3/ Average minutes of delay was calculated per operation using a queue modeling methodology. Demand, defined in terms of the number of arrivals and departures in five-minute intervals, was modeled against the estimated capacity of each alternative in VFR and IFR weather conditions for both east and west operating flows. *See* the Final EIS, Appendix F.5 *Demand/Capacity Analysis* and Table F-11 and Table F-12 in Appendix F *Net Benefit Analysis* .

4/ Benefit over No-Action was computed by subtracting each alternative's delay from the delay resulting from the No Action Alternative.

5/ Alternatives D1 and D2 would not be fully operational by 2012. In 2012 the noise impacts for Alternative D1 would be the same as Alternative B1b; and for Alternative D2 the noise impacts would be the same as Alternative B4.

6/ For Alternatives B1, B1b, B1c, B5, and D1 the estimated land acquisition cost includes the full acquisition of the Hilton (former Wyndham) Hotel and the Dania Boat Sales. For Alternatives B4 and D2 the estimated land acquisition cost includes the full acquisition of the Dania Boat Sales. Alternative C1 does not require the acquisition of any land.

7/ This analysis quantifies the annual costs and benefits of each alternative through the year 2030. The net present value of costs and benefits was calculated and is expressed in 2007 dollars. Net present value of benefits divided by the net present value of costs yields a benefit/cost ratio that can be used to compare the relative benefit of each alternative. A ratio greater than one (1.0) indicates that the benefits yielded by the project outweigh the costs of developing the project.

8/ Ratio for 2006 - 2020 evaluation period indicates the project's ability to provide a positive return on investment over a shorter period of time (from the end of construction to 2020) while the 2030 ratio (evaluation period of 2006 - 2030) represents the benefits accrued over the life of the project (from the end of construction to 2030). These ratios provide a comparison of projects that differ significantly in terms of cost, time to be fully implemented, benefits in the near term, and ability to deliver benefits in the long-term.

Source: Landrum & Brown, 2008

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Table 3
SUMMARY OF ALTERNATIVES - ENVIRONMENTAL AND CUMULATIVE IMPACTS
Fort Lauderdale-Hollywood International Airport

	ALTERNATIVE									
ENVIRONMENTAL CONSEQUENCES	**A**	**B1**	**B1b**	**B1c**	**B4**	**B5**	**C1**	**D1**	**D2**	**CUMULATIVE**
Air Quality	Impact Would Not Exceed Standards (NAAQS) 1/	Impact Would Not Exceed Standards (NAAQS) 1/	Impact Would Not Exceed Standards (NAAQS) 1/	Impact Would Not Exceed Standards (NAAQS) 1/	Impact Would Not Exceed Standards (NAAQS) 1/	Impact Would Not Exceed Standards (NAAQS) 1/	Impact Would Not Exceed Standards (NAAQS) 1/	Impact Would Not Exceed Standards (NAAQS) 1/	Impact Would Not Exceed Standards (NAAQS) 1/	No Significant Cumulative Impact
Airport Noise Impacts Within 65+DNL										
2012:										
Residential Dwelling Units 2/	13	632	652 4/	118 4/	372	840	28	N/A 5/	N/A 5/	
Population (# of persons)	33	1,538	1,593 4/	285 4/	973	1,928	71	N/A 5/	N/A 5/	
Noise Sensitive Facilities 3/	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	N/A 5/	N/A 5/	
Area of 65 DNL in Square Miles	5.0	5.6	5.6	5.6	5.3	5.6	4.9	N/A	N/A	No Significant Cumulative Impact
2020:										
Residential Dwelling Units 2/	696	1,046	1,051 4/	1,051 4/	477	1,260	285	801	303	
Population (# of persons)	1,772	2,447	2,472 4/	2,472 4/	1,492	4,235	717	1,926	789	
Noise-Sensitive Facilities 3/	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	No Impact	
Area of 65 DNL in Square Miles	6.0	6.5	6.5	6.5	6.2	6.5	5.5	6.5	6.3	
Compatible Land Use5/	No Direct Impact No Change in Land Use or Zoning	Acquire all or part of the Hilton Hotel and the Dania Boat Sales No Change in Land Use or Zoning	Acquire all or part of the Hilton Hotel and the Dania Boat Sales No Change in Land Use or Zoning	Acquire all or part of the Hilton Hotel and the Dania Boat Sales No Change in Land Use or Zoning	Partial acquisition of the Dania Boat Sales warehouse may be necessary No Change in Land Use or Zoning	Acquire all of the Hilton Hotel and the Dania Boat Sales No Change in Land Use or Zoning	No Direct Impact No Change in Land Use or Zoning	Acquire all or part of the Hilton Hotel and the Dania Boat Sales No Change in Land Use or Zoning	Partial acquisition of the Dania Boat Sales warehouse may be necessary No Change in Land Use or Zoning	No Significant Cumulative Impact No Significant Cumulative Impact
Water Quality	Impact Would Not Exceed Standards	Impact Would Not Exceed Standards	Impact Would Not Exceed Standards	Impact Would Not Exceed Standards	Impact Would Not Exceed Standards	Impact Would Not Exceed Standards	Impact Would Not Exceed Standards	Impact Would Not Exceed Standards	Impact Would Not Exceed Standards	No Significant Cumulative Impact
Wetlands	No Impact	Direct Impact to 15.17 acres	Direct Impact to 15.41 acres	Direct Impact to 15.41 acres	Direct Impact to 0.13 acres	Direct Impact to 21.67 acres	Direct Impact to 15.40 acres	Direct Impact to 21.87 acres	Direct Impact to 15.54 acres	No Significant Cumulative Impact
Floodplains	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Cumulative Impact
Coastal Resources	Consistent with FCMP 6/	Consistent with FCMP 6/	Consistent with FCMP 6/	Consistent with FCMP 6/	Consistent with FCMP 6/	Consistent with FCMP 6/	Consistent with FCMP 6/	Consistent with FCMP 6/	Consistent with FCMP 6/	No Significant Cumulative Impact
Fish, Wildlife, & Plants										
Federally-Listed Species & Critical Habitats										
West Indian Manatee	No Impact	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect	No Impact	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect	No Significant Cumulative Affect
Wood Stork	No Impact	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect	No Significant Cumulative Affect
Smalltooth Sawfish	No Impact	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect	May affect, but not likely to adversely affect	No Impact	May affect, but not likely to adversely affect	No Impact	May affect, but not likely to adversely affect	No Impact	No Significant Cumulative Affect
Johnson's Seagrass	No Impact	No Impact	No Impact	No Impact	No Impact	May affect, but not likely to adversely affect	No Impact	No Impact	No Impact	No Significant Cumulative Affect
State-Listed Species	No Impact	Surveys for Florida Burrowing Owl would be conducted prior to initiating construction	Surveys for Florida Burrowing Owl would be conducted prior to initiating construction	Surveys for Florida Burrowing Owl would be conducted prior to initiating construction	Surveys for Florida Burrowing Owl would be conducted prior to initiating construction	Surveys for Florida Burrowing Owl would be conducted prior to initiating construction	Surveys for Florida Burrowing Owl would be conducted prior to initiating construction	Surveys for Florida Burrowing Owl would be conducted prior to initiating construction	Surveys for Florida Burrowing Owl would be conducted prior to initiating construction	No Significant Cumulative Affect
Essential Fish Habitat	No Impact	No Significant Affect	No Significant Affect	No Significant Affect	No Significant Affect	No Significant Affect	No Significant Affect	No Significant Affect	No Significant Affect	No Significant Cumulative Affect
Hazardous Materials	No Impact	Minimal Impact	Minimal Impact	Minimal Impact	Minimal Impact	Minimal Impact	Minimal Impact	Minimal Impact	Minimal Impact	No Significant Cumulative Impact
Solid Waste	No Significant Increase	No Significant Increase	No Significant Increase	No Significant Increase	No Significant Increase	No Significant Increase	No Significant Increase	No Significant Increase	No Significant Increase	No Significant Cumulative Increase
Socioeconomic, Environmental Justice, & Childrens' Health & Safety	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Cumulative Impact
Secondary (Induced) and Infrastructure										
Surface Transportation	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Cumulative Impact
Economic Impact: Final Demand Employment Associated with Construction Spending for All Industries in Region	Not applicable due to no construction activity	Positive	Positive	Positive	Positive	Positive	Positive	Positive	Positive	Positive Cumulative Economic Impact
Public Services	No Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Cumulative Impact
Light Emissions & Visual Impacts	No Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Impact	No Significant Cumulative Impact
Natural Resources and Energy	No Adverse Affect	No Adverse Affect	No Adverse Affect	No Adverse Affect	No Adverse Affect	No Adverse Affect	No Adverse Affect	No Adverse Affect	No Adverse Affect	No Adverse Cumulative Affect
Construction	No Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	No Adverse Affect	No Adverse Affect	No Adverse Affect	No Adverse Affect	No Adverse Cumulative Affect
Noise	No Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	No Adverse Cumulative Affect
Air Quality	No Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	No Adverse Cumulative Affect
Water Quality	No Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	No Adverse Cumulative Affect
Surface Transportation	No Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	Temporary Impact	No Adverse Cumulative Affect

Table 3
SUMMARY OF ALTERNATIVES - ENVIRONMENTAL AND CUMULATIVE IMPACTS
Fort Lauderdale-Hollywood International Airport

FOOTNOTES

1/ NAAQS: National Ambient Air Quality Standards, established by the U.S. Environmental Protection Agency

2/ Includes single-family homes, multi-family units, and mobile homes.

3/ Includes schools, churches, nursing homes, and libraries

4/ Alternative B1b, the FAA's Preferred Alternative (B1b), has the same physical alignment, design and configuration as Alternative B1c, the Airport Sponsor's Proposed Action. However, Alternative B1c considers the implementation of the operational noise abatement actions described in the County's Airfield Development Program Objective Statement (October 26, 2004), which would limit the use of Runway 9R/27L in 2012. As a matter of policy, the FAA will not consider the approval of a runway development project with noise abatement runway use procedures that would limit its capacity in the opening year without a study of alternative noise abatement measures such as required under 14 CFR Part 150. The FAA's Preferred Alternative (B1b) does not include any operational noise abatement actions that would limit the use of Runway 9R/27L.Broward County has interpreted that the operational noise abatement

5/ For Compatibile Land Use, the runway development alternatives were examined to determine whether the proposed airport improvements would result in the acquisition or taking of a property, and/or require a change in land use/zoning.

6/ FCMP: Florida Coastal Management Program

Source: Landrum & Brown, 2008

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Alternative A (No Action): In terms of all weather hourly averages, Alternative A would provide a practical capacity of 84 operations apart from its maximum capacity of 113 operations. Alternative A would have 10.7 average minutes of delay per operation in 2012; and 26.2 average minutes of delay per operation in 2020.

Based on the EIS tenant relocation analysis, the airport contains an estimated 363 acres of property and tenant leasehold facilities[59] outside of the central terminal complex. There would be no displacement of facilities with the No Action alternative. There would be 234.9 acres of airport land available for future development, including 83.9 acres available for future airside development.[60] The 234.9 acres includes available airport property west of I-95.

Alternative A would exceed the 24-hour PM2.5 National Ambient Air Quality Standard (NAAQS) in 2012 and 2020. Alternative A would not exceed the NAAQS for any other criteria pollutants in 2012 and 2020. In terms of noise exposure for 2012, there would be 13 residential dwelling units with a total population of 33 within the 65 Day-Night Average Sound Level (DNL) noise contour. No noise-sensitive public facilities (i.e. churches, schools, hospitals, nursing homes, libraries) are located within the 65 DNL noise contour in 2012. In terms of noise exposure for 2020, there would be 696 residential dwelling units with a total population of 1,772 within the 65 DNL noise contour. No noise-sensitive public facilities are located within the 65 DNL noise contour in 2020. Because there is no development or construction, no off-airport property would be acquired; and there would be no changes to land use planning and zoning.

No historic properties or archaeological sites would be affected. There would be no impact to Section 4(f) or Section 6(f) resources. Water quality standards would not be exceeded. There would be no impact to wetlands. There would be no significant impact to floodplains. This alternative would be consistent with the Florida Coastal Management Program. There would be no impacts to federally-listed species and critical habitats. There would be no impact to state-listed species. There would be no impact to essential fish habitat. There are no wild and scenic rivers or farmlands in the Study Area, therefore, there are no impacts under the No Action or any of the development alternatives.

There would be no impact to areas of known hazardous waste contamination. There would be no significant increase in solid waste. Land acquisition would not be necessary; therefore, there would be no residential or business relocations, no change to local traffic patterns, and no loss in community tax base.

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[59] *See* the Final EIS Appendix E, Table E.1-7 FLL *Tenant Leasehold Impact Summary (Non-Terminal Impacts*) for a list of these airport and tenant facilities and Exhibit E.1-11 *Existing Tenant Leasehold Summary*. These facilities include general aviation (GA) and fixed base operators (FBO), cargo/warehouse facilities, office buildings, parking facilities, Broward County facilities, and vacant undeveloped airport property. The 363.3 acres are located on airport property east of Interstate 95.

[60] *See* this ROD, Appendix C, revised Table E.1-8 *Tenant Facility Relocation Summary (acres),* Alternative A.

There would be no disproportionate impact to minority or low-income communities and no effects on children's health and safety. For secondary induced impacts, there would be no impact to surface transportation infrastructure, no economic affect due to construction spending and activities, and no impact on public services. There would be no visual impact due to light emissions. There would be no adverse affect on energy supply/natural resources. There would be no construction impact.

Alternative A would not result in any significant direct, indirect, or cumulative impacts or affects for any of the environmental impact categories, except for air quality.

Alternative B1: r edevelop a nd e xtend exist ing R unway 9R/27L to an 8,600-foot by 150-foot elevated r unway. Alternative B1 would improve capacity and reduce delays in comparison to Alternative A. Alternative B1 would provide a maximum and practical all weather average hourly capacity of 107 operations. Alternative B1 would have 1.2 average minutes of delay per operation in 2012; and 3.1 average minutes of delay per operation in 2020.

Based on the EIS tenant relocation analysis, the airport contains an estimated 363 acres of property and tenant leasehold facilities[61] outside of the central terminal complex. The Alternative B1 airfield configuration would displace 18.6 acres (five percent) of these existing facilities. After development of the new runway and associated facilities, there would be 134.6 acres of airport land available for future facility development, including 39.4 acres available for future airside development.[62]

Alternative B1 would improve air quality in comparison to Alternative A, the No Action Alternative. Although emissions of certain pollutants would increase temporarily during construction, Alternative B1 would not cause exceedances of the NAAQS. The concentrations of the criteria pollutants under Alternative B1 would be less than those under the No Action Alternative for both 2012 and 2020. In terms of noise exposure for 2012, there would be 632 residential dwelling units with a total population of 1,538 within the 65 DNL noise contour. No noise-sensitive public facilities (i.e. churches, schools, hospitals, nursing homes, libraries) are located within the 65 DNL noise contour in 2012. In terms of noise exposure for 2020, there would be 1,046 residential dwelling units with a total population of 2,447 within the 65 DNL noise contour. No noise-sensitive public facilities are located within the 65 DNL noise contour in 2020. There would be off-airport property impacts due to the required acquisition of all or a portion of the Hilton (formerly the Wyndham) Fort Lauderdale Airport Hotel and the Dania Boat Sales. This alternative would not require a land use or zoning change and would be consistent with current local land use and zoning documents.

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[61] *See* the Final EIS Appendix E, Table E.1-7 FLL *Tenant Leasehold Impact Summary (Non-Terminal Impacts*) for a list of these airport and tenant facilities and Exhibit E.1-11 *Existing Tenant Leasehold Summary*. These facilities include general aviation (GA) and fixed base operators (FBO), cargo/warehouse facilities, office buildings, parking facilities, Broward County facilities, and vacant undeveloped airport property.

[62] *See* this ROD, Appendix C, revised Table E.1-8 *Tenant Facility Relocation Summary (acres),* Alternative B1.

No historic properties or archaeological sites would be affected. There would be no impact to Section 4(f) or Section 6(f) resources. Water quality standards would not be exceeded. There would be 15.17 acres of impacts to wetlands; this includes 2.81 acres of mangrove wetlands.[63] There would be no significant impact to floodplains. This alternative would be consistent with the Florida Coastal Management Program. There are no wild and scenic rivers or farmlands in the Study Area, therefore, there are no impacts. This alternative "may affect but is not likely to adversely affect" three federally-listed species: the West Indian Manatee, the wood stork, and the smalltooth sawfish. Surveys for one state-listed species, the Florida Burrowing Owl, would be conducted prior to initiating construction activities. There would be no significant affect to essential fish habitat.

There would be minimal impact to areas of known hazardous waste contamination. There would be no significant increase in solid waste. The acquisition of all or a portion of the Hilton (formerly the Wyndham) Fort Lauderdale Airport Hotel and the

Dania Boat Sales properties would be required. No residential land acquisition would be necessary. There would be no significant impact to local traffic patterns, and no significant loss in community tax base.

There would be no disproportionate impact to minority or low-income communities and no effects on children's health and safety. For secondary induced impacts, there would be no significant impact to surface transportation infrastructure, a positive economic affect due to construction spending and activities, and no significant impact on public services. There would be no significant visual impact due to light emissions. There would be no adverse affect on energy supply/natural resources. There would be temporary construction impacts.

Alternative B1 would not result in any significant direct, indirect, or cumulative impacts for any of the environmental impact categories.

Alternative B1b (FAA's Preferred Alternative): redevelop and extend existing Runway 9R/27L to an 8,000-foot by 150-foot elevated runway with EMAS (*see* Exhibit 1 *FAA's Preferred Alternative (B1b)*). Alternative B1b would provide the same operational and delay benefits as Alternative B1. Alternative B1b would provide a maximum and practical all weather average hourly capacity of 107 operations. It would have 1.2 average minutes of delay per operation in 2012; and 3.1 average minutes of delay per operation in 2020.

Based on the EIS tenant relocation analysis, the airport contains an estimated 363 acres of airport properties and tenant leasehold facilities[64] outside of the central terminal complex. The Alternative B1b airfield configuration would displace

[63] Mangrove wetlands are considered to be a higher quality wetland, and therefore, are identified and considered independently of total wetland acreage.

[64] *See* the Final EIS Appendix E, Table E.1-7 FLL *Tenant Leasehold Impact Summary (Non-Terminal Impacts*) for a list of these airport and tenant facilities and Exhibit E.1-11 *Existing Tenant Leasehold Summary*. These facilities include general aviation (GA) and fixed base operators (FBO), cargo/warehouse facilities, office buildings, parking facilities, Broward County facilities, and vacant undeveloped airport property.

the same percentage of existing facilities and, after development of the new runway and associated facilities, would have the same acreage of land available, including land for airside development, as Alternative B1. [65]

Alternative B1b would have slightly different noise and wetland impacts than Alternative B1. In terms of noise exposure for 2012, there would be 652 residential dwelling units with a total population of 1,593 within the 65 DNL noise contour. No noise-sensitive public facilities (i.e. churches, schools, hospitals, nursing homes, libraries) are located within the 65 DNL noise contour in 2012. In terms of noise exposure for 2020, there would be 1,051 residential dwelling units with a total population of 2,472 within the 65 DNL noise contour. No noise-sensitive public facilities are located within the 65 DNL noise contour in 2020.

There would be 15.41 acres of impacts to wetlands; this includes 3.05 acres of mangrove wetlands.[66] However, air quality, off-airport property impacts due to acquisition, land use and zoning, historic and archeological, Section 4(f) and 6(f) resource, water quality, floodplain, coastal zone, federally and state-listed species, essential fish habitat, hazardous waste, solid waste, land acquisition, local traffic patterns, community tax base, environmental justice, children's health and safety, surface transportation infrastructure, economic affects, public services, visual and light emission, energy supply/natural resources, and temporary construction impacts for Alternative B1b are like those of Alternative B1. As noted above, there are no wild and scenic rivers or farmlands in the Study Area, therefore, there are no impacts. Alternative B1b would not result in any significant direct, indirect, or cumulative impacts for any of the environmental impact categories.

Alternative B1c (Airport Sponsor's Proposed Action): Redevelop and extend existing Runway 9R/27L to an 8,000-foot by 150-foot elevated runway with EMAS; includes the implementation of the operational noise abatement actions in 2012. Broward County has interpreted that the operational noise abatement actions would no longer be in place by 2020.[67]

Alternative B1c provides the same operational and delay benefits as B1 and B1b except that average minutes of delay in 2012 are higher due to the imposed runway use limitations required by the Airport Sponsor for this alternative. Alternative B1c would provide a maximum and practical all weather average hourly capacity of 107 operations. Alternative B1c would have 3.9 average minutes of delay per operation in 2012; and 3.1 average minutes of delay per operation in 2020.

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[65] *See* this ROD, Appendix C, revised Table E.1-8 *Tenant Facility Relocation Summary (acres),* Alternative B1b/B1c.

[66] The installation of the runway approach lights and associated access roads would impact 0.20 acres of W-25a and 0.18 acres to W-25b for Alternative B1b while Alternative B1 only impacts 0.14 acres of W-25a.

[67] Memorandum from Max Wolfe/Eric Bernhardt, Leigh Fisher Associates (now Jacobs Consultancy), to Virginia Lane, AICP, Environmental Specialist, Federal Aviation Administration. Subject: Sponsor's Proposed Project Operational Assumptions. Dated: August 22, 2006/Revised: August 24, 2006.

Based on the EIS tenant relocation analysis, the airport contains an estimated 363 acres of airport properties and tenant leasehold facilities[68] outside of the central terminal complex. The Alternative B1c airfield configuration would have identical impacts to Alternatives B1 and B1b in this area.[69]

Alternative B1c includes short term runway use limitations that would result in fewer significant noise impacts than Alternatives B1 and B1b in 2012. However, its noise impacts in 2020 and other environmental impacts are otherwise identical to those of Alternative B1b. In terms of noise exposure for 2012, there would be 118 residential dwelling units with a total population of 285 within the 65 DNL noise contour. No noise-sensitive public facilities (i.e. churches, schools, hospitals, nursing homes, libraries) are located within the 65 DNL noise contour in 2012.

Alternative B1c would not result in any significant direct, indirect, or cumulative impacts for any of the environmental impact categories.

Alternative B4: Build a new 6,001-foot at grade runway with EMAS located 340 feet north of existing south runway (to replace existing Runway 9R/27L). Runway 13/31 would remain open. Like Alternatives B1, B1b, and B1c, Alternative B4 would provide a maximum and practical all weather average hourly capacity of 107 operations. Alternative B4 would have 2.2 average minutes of delay per operation in 2012; and 4.7 average minutes of delay per operation in 2020. However, Alternative B4 is the only alternative whose relatively short runway length could cause airlines and pilots to decide to wait to use the longer runway "pilot refusals", rather than accept a "payload penalty."[70]

FAA conducted additional delay analysis for this alternative in response to comments from the Airport Sponsor and airlines about the 6,001-foot runway length. During the EIS process, the Airport Sponsor and several airlines that operate at FLL raised concerns[71,72] about the length of the Alternative B4 runway

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[68] *See* the Final EIS Appendix E, Table E.1-7 FLL *Tenant Leasehold Impact Summary (Non-Terminal Impacts*) for a list of these airport and tenant facilities and Exhibit E.1-11 *Existing Tenant Leasehold Summary*. These facilities include general aviation (GA) and fixed base operators (FBO), cargo/warehouse facilities, office buildings, parking facilities, Broward County facilities, and vacant undeveloped airport property.

[69] *See* this ROD, Appendix C, revised Table E.1-8 *Tenant Facility Relocation Summary (acres),* Alternative B1b/B1c.

[70] Pilot refusals refer to when the pilot in command of an aircraft requests from Air Traffic Control to use a different runway than the one assigned by Air Traffic Control. Payload penalty refers to when an aircraft must reduce the number of passengers, cargo, or fuel that it carries in order to not exceed the maximum weight allowed to take off from a specific runway length. A reduction of passengers or cargo results in reduced revenues. A reduction in fuel results in less distance flown, thus it results in limitations on the markets that can be reached *See* Appendix F, *Net Benefits Analysis* Section F.6.4 *Alternative B4 Sensitivity Analysis*.

[71] During the EIS process Broward County raised concerns with the length of the runway in Alternative B4 and the potential necessity for payload penalties on aircraft operations. Therefore, the FAA conducted a sensitivity analysis on Alternative B4 to determine the impact estimated pilot refusals, caused by potential payload penalties, would have on delay. The FAA also received comments on the Draft EIS from several airlines expressing this concern with Alternative B4.

[72] "SWA does not support Option B4 since it is the shortest extension scenario and will not provide any payload benefit." Email to Virginia Lane, FAA Orlando Airports District Office, From: Craig Aldinger, Flight Operations Engineer, Southwest Airlines, Co. Dated: May 1, 2007.
(*See* the Final EIS, Appendix P, Comment Code: EC015).
"Delta strongly opposes the B4 alternative as its length combined with significant obstructions will greatly restrict operating capacity, thus, receiving only a small percentage of utilization by Delta

and the potential necessity for payload penalties on aircraft operations. Therefore, the FAA conducted a sensitivity analysis on Alternative B4 operations to determine the impact on delay of potential pilot refusals.

A sensitivity analysis was conducted for Alternative B4 for 2012 and 2020 conditions to determine the potential effect of pilot refusal to use the 6,001-foot runway. The sensitivity analysis assumed that approximately 48 departures (in 2012) and 81 departures (in 2020) going to long-haul destinations, defined as destinations that are 1,000 miles or more from FLL would have to take a payload penalty to use the shorter 6,001-foot south runway. The payload penalty would translate into a reduction of passengers and cargo on these flights. To avoid reducing passengers and cargo, pilots would elect to request the longer Runway 9L/27R for departure. Therefore, the sensitivity analysis assigned 48 departures (in 2012) and 81 departures (in 2020) to the longer north runway to avoid reducing payload. Some flights were reassigned from the north runway to the south runway to avoid an imbalance in runway use due to this assumption. The analysis results, provided in the Final EIS, Appendix F *Net Benefit Analysis*, Table F-19, shows the consequence of potential pilot refusal is an increase in delay from 2.2 to 3.1 minutes per aircraft in 2012. In 2020, the delay increases from 4.7 minutes to 10.2 minutes.[73] *See* the Final EIS, Appendix F Net *Benefit Analysis*, Section F.6.4 *Alternative B4 Sensitivity Analysis*.

Based on the EIS tenant relocation analysis, the airport contains an estimated 363 acres of airport properties and tenant leasehold facilities[74] outside of the central terminal complex. Although the Alternative B4 airfield configuration would displace more facilities than the B1, B1b, and B1c alternatives, there would be more airport property available for future development. It would displace 27.6 acres (eight percent) of the existing facilities but after development of the new runway and associated facilities, there would be 199 acres of airport land available for future facility development, including 65.9 acres available for airside development.[75]

Alternative B4 would have fewer noise impacts in 2012 than Alternatives B1 and B1b, but not Alternative B1c. It would have fewer noise impacts than Alternative B1c in 2020. The impacts of Alternative B4 would be less than Alternatives B1, B1b, and B1c in three other impact categories: off-airport property impacts due to

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Air Lines." Letter to Virginia Lane, FAA Orlando Airports District Office, From: D. Carlos Phillips, Engineer-Technical Development Flight Operations Engineering, Delta Air Lines, Inc. Dated: May 1, 2007. (*See* the Final EIS, Appendix P, Comment Code: EC017).
"While the 6,000 foot runway, 9R/27L is adequate for our mainline aircraft, it would not be the preferred option within our pilot group." Letter to Virginia Lane, FAA Orlando Airports District Office, From: Chuck Allen, Director-Corporate Affairs, US Airways. Dated: May 21, 2007. (*See* the Final EIS, Appendix P, Comment Code: LC102)

[73] Even a conservative pilot refusal rate of 80 departures per day would result in delay over 10 minutes by 2020 according to the sensitivity analysis. *See* the Final EIS Appendix F *Net Benefits Analysis*, Section F.6.4 *Alternative B4 Sensitivity Analysis*.

[74] *See* the Final EIS Appendix E, Table E.1-7 FLL *Tenant Leasehold Impact Summary (Non-Terminal Impacts*) for a list of these airport and tenant facilities and Exhibit E.1-11 *Existing Tenant Leasehold Summary*. These facilities include general aviation (GA) and fixed base operators (FBO), cargo/warehouse facilities, office buildings, parking facilities, Broward County facilities, and vacant undeveloped airport property.

[75] *See* this ROD, Appendix C, revised Table E.1-8 *Tenant Facility Relocation Summary (acres),* Alternative B4.

acquisition, wetlands, and federally-listed species. In terms of noise exposure for 2012, there would be 372 residential dwelling units with a total population of 973 within the 65 DNL noise contour. No noise-sensitive public facilities (i.e. churches, schools, hospitals, nursing homes, libraries) are located within the 65 DNL noise contour in 2012. In terms of noise exposure for 2020, there would be 477 residential dwelling units with a total population of 1,492 within the 65 DNL noise contour. No noise-sensitive public facilities are located within the 65 DNL noise contour in 2020. There would be off-airport property impacts if the partial acquisition of the Dania Boat Sales is necessary.

There would be 0.13 acres of impacts to wetlands; all of which are mangrove wetlands. This alternative "may affect but is not likely to adversely affect" two federally-listed species; the West Indian Manatee and the wood stork.

Environmental impacts of Alternative B4 would otherwise be similar to those of Alternatives B1, B1b, and B1c. Alternative B4 would not result in any significant direct, indirect, or cumulative impacts for any of the environmental impact categories.

Alternative B5: build a 7,800-foot elevated runway with EMAS located 320 feet south of existing south runway (to replace existing Runway 9R/27L). Like Alternatives B1, B1b, B1c, and B4, Alternative B5 would provide a maximum and practical all weather average hourly capacity of 107 operations. It would have 1.2 average minutes of delay per operation in 2012; and 3.1 average minutes of delay per operation in 2020.

Based on the EIS tenant relocation analysis, the airport contains an estimated 363 acres of airport properties and tenant leasehold facilities[76] outside of the central terminal complex. The Alternative B5 airfield configuration would displace slightly fewer facilities and leave more property available for airside development than Alternatives B1, B1b and B1c. It would displace 15.4 acres (four percent) of the existing facilities. After development of the new runway and associated facilities, there would be 98.9 acres of airport land available for future facility development, including 42.6 acres available for airside development.[77]

Alternative B5 would have environmental impacts similar to those of Alternatives B1, B1b, and B1c, except in the areas of noise, wetlands, federally-listed species, and off airport property impacts. Impacts for these categories would be greater with Alternative B5. In terms of noise exposure for 2012, there would be 840 residential dwelling units with a total population of 1,928 within the 65 DNL noise contour. No noise-sensitive public facilities (i.e. churches, schools, hospitals, nursing homes, libraries) are located within the 65 DNL noise contour in 2012. In terms of noise exposure for 2020, there would be 1,260 residential dwelling units with a total population of 4,235 within the 65 DNL noise contour. No noise-

[76] *See* the Final EIS Appendix E, Table E.1-7 FLL *Tenant Leasehold Impact Summary (Non-Terminal Impacts*) for a list of these airport and tenant facilities and Exhibit E.1-11 *Existing Tenant Leasehold Summary*. These facilities include general aviation (GA) and fixed base operators (FBO), cargo/warehouse facilities, office buildings, parking facilities, Broward County facilities, and vacant undeveloped airport property.

[77] *See* this ROD, Appendix C, revised Table E.1-8 *Tenant Facility Relocation Summary (acres),* Alternative B5.

sensitive public facilities are located within the 65 DNL noise contour in 2020. There would be 21.67 acres of impacts to wetlands; this includes 2.85 acres of mangrove wetlands. There would be no significant impact to floodplains. This alternative "may affect but is not likely to adversely affect" four federally-listed species: the West Indian Manatee, the wood stork, the smalltooth sawfish, and Johnson's Seagrass.

The acquisition of all of the Hilton (formerly the Wyndham) Fort Lauderdale Airport Hotel and the Dania Boat Sales properties would be required. Alternative B5 would not result in any significant direct, indirect, or cumulative impacts for any of the environmental impact categories.

Alternative C1: Build a 7,72 1-foot at grade runway located 850 feet north of existing R unway 9L/27R (a de pendent parallel run way t o existing Runway 9L/27R). Like Alternative A, Alternative C1 has a practical all weather average hourly capacity much lower than its maximum all weather average hourly capacity. Alternative C1 would provide a practical hourly capacity of 101 operations in comparison to a maximum capacity of 131 operations because no improvements would be made to Runway 9R/27L and the north airfield parallel runway system would operate as a dependent runway system. Alternative C1 would have 1.9 average minutes of delay per operation in 2012; and 5.0 average minutes of delay per operation in 2020. Other then Alternative A and Alternative B4, Alternative C1 has the highest level of delay in 2020.

Based on the EIS tenant relocation analysis, the airport contains an estimated 363 acres of airport properties and tenant leasehold facilities[78] outside of the central terminal complex. The Alternative C1 airfield configuration would displace almost three-quarters of the existing tenant leasehold acreage, leaving a little more than half the amount of land available for future development under Alternatives B1, B1b, and B1c, including approximately one-fifth the amount available for airside development under these alternatives. It would displace 261.5 acres (72 percent) of these existing facilities. After development of the new runway and associated facilities, there would be 71.9 acres of airport land available for future facility development, including 8.2 acres available for airside development.[79]

The environmental impacts of Alternative C1 would be similar to those of Alternatives B1, B1b, and B1c, except for noise, off-airport property impacts, wetlands, and federally-listed species. Impacts for these categories would be significantly less with Alternative C1 than with Alternative B1, B1b, and B1c. In terms of noise exposure for 2012, there would be 28 residential dwelling units with a total population of 71 within the 65 DNL noise contour. No noise-sensitive public facilities (i.e. churches, schools, hospitals, nursing homes, libraries) are located within the 65 DNL noise contour in 2012. In terms of noise exposure for 2020, there would be 285 residential dwelling units with a total population of

[78] *See* the Final EIS Appendix E, Table E.1-7 FLL *Tenant Leasehold Impact Summary (Non-Terminal Impacts*) for a list of these airport and tenant facilities and Exhibit E.1-11 *Existing Tenant Leasehold Summary*. These facilities include general aviation (GA) and fixed base operators (FBO), cargo/warehouse facilities, office buildings, parking facilities, Broward County facilities, and vacant undeveloped airport property.

[79] *See* this ROD, Appendix C, revised Table E.1-8 *Tenant Facility Relocation Summary (acres),* Alternative C1.

717 within the 65 DNL noise contour. No-noise-sensitive public facilities are located within the 65 DNL noise contour in 2020. The development and construction of Alternative C1 would not cause any off-airport property impacts because the airport sponsor would not need to acquire any land from off-airport businesses.

There would be 15.40 acres of impacts to wetlands;[80] no mangrove wetlands would be impacted. This alternative "may affect but is not likely to adversely affect" one federally-listed species, the wood stork.

Alternative C1 would not result in any significant direct, indirect, or cumulative impacts for any of the environmental impact categories.

Alternative D1: redevelop and extend existing Runway 9R/27L to 8,000 feet and build a new 7,721-foot runway north of existing Runway 9L/27R (combination of Alternatives B1b and C1). Alternative D1 would provide substantially greater maximum and practical all weather average hourly capacity of 128 operations, compared to all other alternatives, expect for Alternative D2. Alternative D1 would have the same average minutes of delay per operation as Alternative B1, B1b, and B5 in 2012 – 1.2 average minutes of delay per operation; this alternative would not be fully operational in 2012. In 2020, Alternative D1 would have fewer minutes of delay than any other alternative, 1.2 average minutes of delay per operation.

Based on the EIS tenant relocation analysis, the airport contains an estimated 363 acres of airport properties and tenant leasehold facilities[81] outside of the central terminal complex. Like Alternative C1, the Alternative D1 airfield configuration would displace approximately three-quarters of existing facilities. It would displace 269.8 acres (74 percent) of these existing facilities. After development of the new runway and associated facilities, there would be a deficit of 32.8 acres of airport land available for future facility development.[82] D1 would result in a deficiency of 32.4 acres of airport property available for existing airside tenants (accessible by aircraft).

This alternative would not be fully operational by 2012; the 2012 noise impacts to residential dwelling units would be the same as Alternative B1b. In terms of noise exposure for 2012, there would be 652 residential dwelling units with a total population of 1,593 within the 65 DNL noise contour. No noise-sensitive public facilities (i.e. churches, schools, hospitals, nursing homes, libraries) are located within the 65 DNL noise contour in 2012. In terms of noise exposure for 2020, there would be 801 residential dwelling units with a total population of 1,926 within the 65 DNL noise contour. No noise-sensitive public facilities are located within the 65 DNL noise contour in 2020.

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80 The 15.40 acres of impacts to wetlands are due to airport and tenant facility relocations. It may be possible, with further planning, design, and engineering, that these relocated facilities could be relocated on airport property to avoid impacts to wetlands.

81 *See* the Final EIS Appendix E, Table E.1-7 FLL *Tenant Leasehold Impact Summary (Non-Terminal Impacts*) for a list of these airport and tenant facilities and Exhibit E.1-11 *Existing Tenant Leasehold Summary*. These facilities include general aviation (GA) and fixed base operators (FBO), cargo/warehouse facilities, office buildings, parking facilities, Broward County facilities, and vacant undeveloped airport property.

82 *See* this ROD, Appendix C, revised Table E.1-8 *Tenant Facility Relocation Summary (acres),* Alternative D1

There would be 21.87 acres of impacts to wetlands; this includes 3.05 acres of mangrove wetlands. The remaining environmental impacts would be essentially the same as those of Alternatives B1 and B1b.

Alternative D1 would not result in any significant direct, indirect, or cumulative impacts for any of the environmental impact categories.

Alternative D2: build a new 6,001-foot at grade runway with EMAS located 340 feet north of existing south runway and build a 7,721-foot at grade runway located 850 feet north of existing Runway 9L/27R (combination of Alternatives B4 and C1). Alternative D2 would provide the same operational capacity benefits as Alternative D1; maximum and practical all weather average hourly capacity of 128 operations. Alternative D2 would have the same average minutes of delay per operation as Alternative B4 in 2012 – 2.2 average minutes of delay per operation; this alternative would not be fully operational in 2012. In 2020, Alternative D2 would have 1.5 average minutes of delay per operation.

Based on the EIS tenant relocation analysis, the airport contains an estimated 363 acres of airport properties and tenant leasehold facilities[83] outside of the central terminal complex. The Alternative D2 airfield configuration would displace slightly more facilities than Alternative D1; 280.5 acres (77 percent) of existing facilities. After development of the new runway and associated facilities, there would be 35.8 acres of non-airside property available for future development, however, there is a deficit of 8.2 acres of airport property available for existing airside access by aircraft.[84]

This alternative would not be fully operational by 2012; therefore the 2012 noise impacts to residential dwelling units would be the same as Alternative B4. In terms of noise exposure for 2012, there would be 372 residential dwelling units with a total population of 973 within the 65 DNL noise contour. No noise-sensitive public facilities (i.e. churches, schools, hospitals, nursing homes, libraries) are located within the 65 DNL noise contour in 2012. In terms of noise exposure for 2020, there would be 303 residential dwelling units with a total population of 789 within the 65 DNL noise contour. No noise-sensitive public facilities are located within the 65 DNL noise contour in 2020.

There would be 15.54 acres of impacts to wetlands; this includes 0.14 acres of mangrove wetlands. Except for noise and wetlands discussed above, the environmental impacts of Alternative D2 would be like those of Alternative B4.

Alternative D2 would not result in any significant direct, indirect, or cumulative impacts for any of the environmental impact categories.

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[83] *See* the Final EIS Appendix E, Table E.1-7 FLL *Tenant Leasehold Impact Summary (Non-Terminal Impacts*) for a list of these airport and tenant facilities and Exhibit E.1-11 *Existing Tenant Leasehold Summary*. These facilities include general aviation (GA) and fixed base operators (FBO), cargo/warehouse facilities, office buildings, parking facilities, Broward County facilities, and vacant undeveloped airport property.

[84] *See* this ROD, Appendix C, revised Table E.1-8 *Tenant Facility Relocation Summary (acres),* Alternative D2.

3.1 THE ENVIRONMENTALLY PREFERRED ALTERNATIVE: This section identifies the environmentally preferred alternative (40 CFR 1505.2(b)).

In accordance with 40 CFR 1505.2(b), the environmentally preferred alternative must be identified in the ROD. The CEQ 40 Most Asked Questions, Question 6a, defines the environmentally preferred alternative as "the alternative that will promote the national environmental policy as expressed in NEPA's Section 101. Ordinarily, this means the alternative that causes the least damage to the biological and physical environment; it also means the alternative which best protects, preserves, and enhances historic, cultural and natural resources."

The EIS analysis discloses the potential environmental impacts for the projected conditions in 2012 and 2020; 2012 was the projected earliest implementation year for the runway development alternatives; and 2020 represented the earliest future condition after full implementation of the alternatives with the development of two runways (Alternatives D1 and D2). Because the ultimate build out year for the full range of alternatives is 2020, the FAA is identifying the environmentally preferred alternative based on 2020 conditions.

Alternative C1 in 2020 would impose the least potential environmental impacts of all of the runway development alternatives. From a NEPA perspective, applying the guidance in Question 6a of the *40 Most Asked Questions*, the environmentally preferred alternative is Alternative C1.

The FAA has identified Alternative C1 as the Environmentally Preferred Alternative because it has the least significant impacts in noise and compatible land use in 2020 compared to all other alternatives. It is the only alternative that does not require the acquisition of property off the airport. It avoids impacts on mangrove wetlands, and could potentially avoid impacts to all wetlands through further design.

Noise and Compatible Land Use Impacts: For 2020 conditions, the Alternative C1 noise exposure would result in the least impacts of all the alternatives in terms of residential dwelling units (285) and population (717) within the 65 DNL noise contour. Similar to all other alternatives, no noise-sensitive public facilities (i.e. churches, schools, hospitals, nursing homes, libraries) are located within the Alternative C1 65 DNL noise contour in 2020.

Off-airport Property Impacts: Alternative C1 is the only alternative, other than the No Action alternative, that does not require the acquisition of any off-airport property. Similar to all of the other runway development alternatives, no change is required to the local land use plans or zoning regulations.

Wetlands: Alternative C1 is the only runway development alternative that does not impact mangrove wetlands. There would be 15.40 acres of impacts to wetlands due to relocation of facilities, which could potentially be avoided through further planning, design, and engineering.

Although total wetland impacts for Alternative C1 (15.40 acres) as compared to the FAA's Preferred Alternative (15.41 acres) are essentially the same, Alternative C1 does not impact any mangrove wetlands as compared to 3.05 acres of mangrove

wetlands for the FAA's Preferred Alternative (B1b). Significantly, Alternative C1's wetland impacts are primarily due to airport and tenant facility relocations. It may be possible, with further planning, design, and engineering, to relocate these facilities on airport property so as to avoid any impacts to wetlands. For this reason, Alternative C1 is also environmentally superior to Alternative B4, which would impact 0.13 acres of mangrove wetlands. Because all of the other development alternatives, including Alternative B1b and B4, would affect mangrove wetlands, the FAA has deferred to the expertise of the USACE in determining that Alternative C1 is preferable to Alternative B4 in terms of potential wetland impacts.

Alternative C1 and the other runway development alternatives have similar potential environmental impacts for all other environmental impact categories.

3.2 THE PROPOSED ACTION: The Airport Sponsor's Proposed Action, described in detail in Section 1 of this ROD, is reviewed below.

The Airport Sponsor presented the FAA with a proposal to expand and elevate Runway 9R/27L to an overall length of 8,000 feet and width of 150 feet. The reconstructed Runway 9R/27L would also be equipped with an Engineered Materials Arresting System (EMAS)[85] at both runway ends. The Airport Sponsor's Proposed Project meets the Airport Sponsor's goals and objectives as identified in the *County's Airfield Development Program Objective Statement* adopted by the Commission on October 26, 2004.[86] These goals and objectives included: enhance FLL capacity by accommodating forecast traffic through 2020 in a manner that will maintain an average annual delay level at or below six to ten minutes, decommission the use of Runway 13/31 (crosswind), mitigate noise impacts, and implement residential noise mitigation initiatives.

The Airport Sponsor's Proposed Action, Alternative B1c, has the same physical alignment, design, and configuration as the FAA's Preferred Alternative (B1b). However, Alternative B1c considers the implementation of the operational noise abatement actions in 2012 which the Airport Sponsor provided to the FAA in a memorandum describing the sponsor's proposed project operational assumptions.[87] Broward County has interpreted that the operational noise abatement actions would no longer be in place by 2020.[88]

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[85] Engineered Material Arresting System (EMAS) is a "soft ground arresting system" consisting of a crushable cellular cement material installed on the runway overrun in a predetermined bed layout. EMAS provides a reliable and predictable capability to stop an aircraft by crushing under the weight of an aircraft providing deceleration and a safe stop. *See* FAA Order 5200.9, *Financial Feasibility and Equivalency of Runway Safety Area Improvements and Engineered Material Arresting Systems.*

[86] Letter from Tom Jargiello, Director of Aviation, Broward County Aviation Department, Fort Lauderdale-Hollywood International Airport, to Dean Stringer, Manager, FAA Orlando Airports District Office. This letter pertains to the Broward County Board of County Commissioners Goals and Objectives. Dated: November 1, 2004.

[87] Memorandum from Max Wolfe/Eric Bernhardt, Leigh Fisher Associates (now Jacobs Consultancy), to Virginia Lane, AICP, Environmental Specialist, Federal Aviation Administration. Subject: Sponsor's Proposed Project Operational Assumptions. Dated: August 22, 2006/Revised: August 24, 2006.

[88] Memorandum from Max Wolfe/Eric Bernhardt, Leigh Fisher Associates (now Jacobs Consultancy), to Virginia Lane, AICP, Environmental Specialist, Federal Aviation Administration. Subject:

3.3 THE PREFERRED ALTERNATIVE: The FAA identified its Preferred Alternative (B1b) in the Final EIS in accordance with FAA Order 5050.4B, paragraph 1007.e.(7), [40 CFR 1502.14 (e)]. As discussed in Chapter Eight, Section 8.0 *Introduction*, of the Final EIS, the FAA statutory mission is to provide leadership in planning and developing a safe, efficient national airport system to satisfy the needs of the aviation interests of the United States. In accomplishing this mission, the FAA considers economics, environmental compatibility, and local proprietary rights, and safeguards the public investment.[89] This mission guides final agency decisions regarding proposed airport development projects. In identifying the Preferred Alternative, the FAA considered the ability of each alternative to meet the purpose and need for the project, the Airport Sponsor's goals and objectives, the impacts to existing on-site airport tenants as well as impacts to future growth and development at FLL, and the potential environmental impacts.

The FAA identified Alternative B1b as the FAA's Preferred Alternative. This alternative redevelops and extends existing Runway 9R/27L to an 8,000-foot by 150-foot elevated runway with EMAS, and would extend east over the FEC Railway and U.S. Highway 1. In addition, Runway 13/31 would be permanently closed.

The FAA's Preferred Alternative (B1b) differs from the environmentally preferred alternative (Alternative C1) and the Airport Sponsor's Proposed Action (Alternative B1c). This ROD presents the FAA's reasons for selecting its preferred alternative (40 CFR 1505.2(b)) for approval and implementation rather than Alternative C1 or the Airport Sponsor's Proposed Action (Alternative B1c), or any of the other alternatives.

FAA CONSIDERATION OF PURPOSE AND NEED AT FLL

In support of the FAA's statutory responsibility under 49 USC 47101(a)(7), the FAA identified the purpose of the proposed action is to provide sufficient capacity for existing and forecast demand at FLL. The FAA considered the deficiencies at FLL, as discussed in the Final EIS, Chapter Three *Purpose and Need*, Section 3.2 *Problem Statement*, and their impact on the FAA's purpose of enhancing aviation safety, efficiency, and capacity on both the regional and national level, and has identified the following needs at FLL:

- The need for sufficient airfield capacity, to the extent practicable, to accommodate existing and projected air carrier demand at a level of delay established for FLL in the EIS analysis, which is six minutes of average annual delay per operation;
- The need for an enhanced and balanced airfield; and
- The need for sufficient gate and apron capacity to address existing and forecast passenger demand and aircraft congestion on the ramp.

Sponsor's Proposed Project Operational Assumptions. Dated: August 22, 2006/Revised: August 24, 2006. Memorandum is included in Final EIS Appendix C, *Airport Sponsors Correspondence*.

[89] http://www.faa.gov/about/office_org/headquarters_offices/arp/

FAA CONSIDERATION OF AIRPORT SPONSOR GOALS AND OBJECTIVES

The FAA considered the Airport Sponsor's goals and objectives as identified in the *County's Airfield Development Program Objective Statement* adopted by the Commission on October 26, 2004, in the development of the EIS. These goals and objectives included: enhance FLL capacity by accommodating forecast traffic through 2020 in a manner that will maintain an average annual delay level at or below six to ten minutes, decommission the use of Runway 13/31 (crosswind), mitigate noise impacts, and implement residential noise mitigation initiatives.

FAA CONSIDERATION OF AIRPORT PROPERTY IMPACTS

As noted in this ROD above in Section 3.0, *Summary of Alternatives Considered*, *Airport Property Impacts*, the Airport Sponsor submitted comments to the FAA on the Draft EIS raising concerns about the potential impact to airport properties and tenant leasehold facilities, and the availability of airport property for future development as a result of the implementation of one of the north runway alternatives.[90,91]

To address these issues the FAA prepared and included in the Final EIS a tenant relocation analysis that evaluated the airport property within the current FLL boundary owned by Broward County and identified the tenant leasehold impacts and potential impacts of relocation on the availability of existing and future airport property. This analysis identified the airport properties and tenant leasehold facilities that could be directly or indirectly impacted with the development of an alternative and the potential areas of airport property that could accommodate relocated facilities and future development. This information was used in the was used in the development of a comparative analysis of the projected costs among the various alternatives.

The FAA used this information to determine which alternative was preferable in terms of potential impacts on existing airport property and future development. Notwithstanding the Sponsor's concerns presented in the December 2007 letter, the FAA determined there was no basis for considering the projected costs of relocating tenant facilities differently than any other project cost in comparing alternatives and identifying the preferred alternative. The analysis in the Final EIS indicates that Alternative B1b still qualifies as the agency's preferred alternative when this concern is set aside.

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[90] Letter from Kent G. George, A.A.E., Director of Aviation, Broward County Aviation Department, Fort Lauderdale-Hollywood International Airport, to Dean Stringer, Manager, FAA Orlando Airports District Office. RE: This letter pertains to Alternative D2 and Broward County's comments on the tenant relocation, future tenant expansion capabilities, and future aviation development growth. Dated: December 7, 2007.

[91] *See* the Final EIS, Chapter Four, *Alternatives*, Section 4.3 *Alternatives to Be Assessed for Environmental Analysis*, Appendix E *Airfield Planning, Engineering and Constructability Review*, Section E.1.6 *Facility Impacts*, Exhibits E.1-12-E.1-17; and revised Table E.1-8 *FLL Tenant Facility Relocation Summary (Acres)* provided in this ROD in Appendix C, *Final EIS Errata Documents*.

FAA CONSIDERATION OF POTENTIAL ENVIRONMENTAL IMPACTS

The FAA has considered the potential environmental impacts that would occur with each alternative as compared to the FAA's Preferred Alternative (B1b) for 2020. While the Final EIS analysis discloses the potential environmental impacts for the projected conditions in 2012 and 2020 (2012 was the projected earliest implementation year for the runway development alternatives), 2020 represented the earliest future condition after full implementation of the alternatives with the development of two runways (Alternatives D1 and D2). Therefore, the FAA identified the environmentally preferred alternative based upon 2020 conditions. The potential environmental impacts for each alternative are discussed in Section 3 above under the subheading titled *Summary of Operational Capacity and Delay, On-Airport Tenant Facility Impacts, and Environmental and Cumulative Impacts of the Alternatives Considered.*

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In identifying its Preferred Alternative the FAA has made the following assessments:

- **Alternative A (No Action):** Alternative A does not meet the purpose of the proposal because it does not address the capacity issues at FLL. The average minutes of delay per operation for 2020 conditions for Alternative A is 26.2 compared to 3.1 minutes of delay per operation for the FAA's Preferred Alternative (B1b). Alternative A would have a practical hourly capacity of 84 operations compared to the FAA's Preferred Alternative (B1b) which would provide 107 operations.

  Alternative A also does not meet the identified need for sufficient airfield capacity, to the extent practicable, to accommodate existing and projected air carrier demand at a level of delay established for FLL in the Final EIS; it does not meet the need for an enhanced and balanced airfield; and it does not meet the need for sufficient gate and apron capacity to address existing and forecast passenger demand and aircraft congestion on the ramp.

  Alternative A would not meet the Airport Sponsor's goals and objectives as identified in the *County's Airfield Development Program Objective Statement* adopted by the Commission on October 26, 2004. These goals and objectives included: enhance FLL capacity by accommodating forecast traffic through 2020 in a manner that will maintain an average annual delay level at or below six to ten minutes, decommission the use of Runway 13/31 (crosswind), mitigate noise impacts, and implement residential noise mitigation initiatives.

  Regarding impacts to airport properties and tenant leasehold facilities, Alternative A would not result in any impacts to existing facilities and would provide available surplus property for future airport facility development.

  The airport contains an estimated 363 acres of airport properties and tenant leasehold facilities outside of the central terminal complex. There would be no displacement of existing facilities with the Alternative A compared to a displacement of 18.6 acres (five percent) with the FAA's Preferred Alternative (B1b). There would be 234.9 acres of airport land available for future airport

and tenant facility development compared to 134.6 acres for the FAA's Preferred Alternative (B1b). Eighty-four acres would be available for airside development compared to 39 acres for the FAA's Preferred Alternative (B1b).

The FAA has considered the potential environmental impacts that would occur with the Alternative A as compared to the FAA's Preferred Alternative (B1b). In most of the environmental impact categories no impacts would occur with Alternative A because no construction is associated with this alternative.

The impact categories where there is a significant difference between the FAA's Preferred Alternative (B1b) and Alternative A are air quality, noise, compatible land use, and wetlands. Alternative A exceeds the 24-hour $PM_{2.5}$ National Ambient Air Quality Standard (NAAQS). Alternative A does not exceed the NAAQS for any other criteria pollutants in 2012 and 2020. The noise and compatible land use impacts for Alternative A in 2020 would be 696 residential dwelling units with a total population of 1,772 within the 65 DNL noise contour. The noise and compatible land use impacts for the FAA's Preferred Alternative (B1b) in 2020 would be 1,051 residential dwelling units with a total population of 2,472 within the 65 DNL noise contour. There would be no impacts to wetlands due to construction activities because no construction would occur, as compared to 15.41 acres of wetland impacts with the FAA's Preferred Alternative (B1b).

In summary, for 2020 conditions, the noise and compatible land use impacts of Alternative A (No Action) are significantly less than the FAA's Preferred Alternative (B1b). Also, Alternative A would not displace any on-airport tenants and there would be on-airport land available for future tenant development. However, Alternative A does exceed the 24-hour $PM_{2.5}$ NAAQS and does not meet the purpose and need because it does not address the capacity deficiency at FLL.

- **Alternative B1: re develop and e xtend existi ng R unway 9R/27L to an 8,600-foot by 15 0-foot elevated runway .** To avoid an encroachment into the Dania Cut-Off Canal on the west and to NE 7th Avenue to the east, the Alternative B1 proposed runway, at 8,600-feet, would require the use of declared distance[92] to achieve a standard runway safety area (RSA) at both runway ends. Due to the increased elevation of Runway 9R/27L at its intersection with Runway 13/31, Runway 13/31 would be permanently closed.

  Alternative B1 would have a practical hourly capacity of 107 operations which is the same as the FAA's Preferred Alternative (B1b). The average minutes of delay per operation for 2020 conditions for Alternative B1 is 3.1 minutes which is the same as the FAA's Preferred Alternative (B1b). Alternative B1 would meet the purpose of the proposed action to provide sufficient capacity for existing and forecast demand at FLL; and it would meet the identified need for sufficient airfield capacity, the need for an enhanced and balanced airfield, and the need for sufficient gate and apron capacity. However, Alternative B1 would require the use of declared distances in order to meet the FAA's RSA standard. The FAA's Preferred Alternative (B1b) would not require the use of declared

[92] Declared distance is the distance the airport owner declares available for the airplane's takeoff run, takeoff distance, accelerate-stop distance, and landing distance requirements.

distance to meet the FAA's RSA standard. Eliminating the need for declared distance improves the operational capability of the runway by allowing for the full use of the available runway length.

Alternative B1 would meet the Airport Sponsor's goals and objectives as identified in the *County's Airfield Development Program Objective Statement* adopted by the Commission on October 26, 2004.

Regarding impacts to airport properties and tenant leasehold facilities, Alternative B1 would result in relatively minimum impacts (five percent) to existing facilities and would provide available surplus property for future airport facility development.

The airport contains an estimated 363 acres of airport properties and tenant leasehold facilities outside of the central terminal complex. With Alternative B1 there would be a displacement of 18.6 acres (five percent) of airport properties and tenant leasehold facilities, which is the same as the FAA's Preferred Alternative (B1b). After development of the new runway and associated facilities, there would be 134.6 acres of airport land available for future facility development, which is the same as the FAA's Preferred Alternative (B1b). Thirty-nine acres would be available for airside development which is the same as the FAA's Preferred Alternative (B1b).

The FAA has considered the potential environmental impacts that would occur with Alternative B1 compared to the FAA's Preferred Alternative (B1b). For 2020 conditions, the potential environmental impacts of Alternative B1 are essentially the same as the FAA's Preferred Alternative (B1b) for all environmental impact categories except for noise, compatible land use, and wetlands. Noise and compatible land use impacts within the 65 DNL noise contour and the wetland impacts for Alternative B1 are slightly less than the FAA's Preferred Alternative (B1b).

In summary, the potential noise, compatible land use, and wetland impacts of Alternative B1 are slightly less than the FAA's Preferred Alternative (B1b); all other potential environmental impacts are essentially the same. However, Alternative B1 would require the use of declared distances in order to avoid encroachment into the Dania Cut-Off Canal and 7th Avenue and to meet FAA's RSA standard at both runway ends.

- **Alternative B1c (Airport Sponsor's Proposed Action): Redevelop and extend existing Runway 9R/27L to an 8,000-foot by 150-foot elevated runway with EMAS; includes the implementation of the operational noise abatement actions in 2012. Broward County has interpreted the operational noise abatement actions would no longer be in place by 2020.[93]**

  Alternative B1c would meet the purpose of the proposed action to provide sufficient capacity for existing and forecast demand at FLL; and it would meet the identified need for sufficient airfield capacity, the need for an enhanced and

[93] Memorandum from Max Wolfe/Eric Bernhardt, Leigh Fisher Associates (now Jacobs Consultancy), to Virginia Lane, AICP, Environmental Specialist, Federal Aviation Administration. Subject: Sponsor's Proposed Project Operational Assumptions. Dated: August 22, 2006/Revised: August 24, 2006.

balanced airfield, and the need for sufficient gate and apron capacity; however, the FAA's Preferred Alternative (B1b) will meet the purpose and needs of the proposal without the implementation of operational noise abatement procedures that would limit capacity in 2012. The implementation of noise abatement runway use procedures in 2012 for Alternative B1c reduces the overall capacity of the airfield in the opening year. The FAA will not consider the approval of a runway development project with noise abatement runway use procedures that would limit its capacity in the opening year without a study of alternative noise measures such as required under 14 CFR Part 150.

Alternative B1c would have a practical hourly capacity of 107 operations which is the same as the FAA's Preferred Alternative (B1b). The average minutes of delay per operation for 2020 conditions for Alternative B1c is 3.1 minutes which is the same as the FAA's Preferred Alternative (B1b).

Alternative B1c would meet the Airport Sponsor's goals and objectives as identified in the *County's Airfield Development Program Objective Statement* adopted by the Commission on October 26, 2004.

Regarding impacts to airport properties and tenant leasehold facilities, Alternative B1 would result in relatively minimum impacts (five percent) to existing facilities, and would provide available surplus property for future airport facility development.

The airport contains an estimated 363 acres of airport properties and tenant leasehold facilities outside of the central terminal complex. With Alternative B1c there would be a displacement of 18.6 acres (five percent) of airport properties and tenant leasehold facilities, which is the same as the FAA's Preferred Alternative (B1b). After development of the new runway and associated facilities, there would be 134.6 acres of airport land available for future facility development, which is the same as the FAA's Preferred Alternative (B1b). Thirty-nine acres would be available for airside development which is the same as the FAA's Preferred Alternative (B1b).

The FAA has considered the potential environmental impacts that would occur with the Alternative B1c as compared to the FAA's Preferred Alternative (B1b). Although the noise impacts in 2012 for Alternative B1c are less than the FAA's Preferred Alternative (B1c), this is a result of the implementation of the noise abatement procedures which would limit capacity. For 2020 conditions, the potential environmental impacts of Alternative B1c are the same as the FAA's Preferred Alternative (B1b). The 2020 noise and compatible land use impacts for Alternative B1c are the same as the FAA's Preferred Alternative (B1b). The noise exposure is the same because Broward County has interpreted that the operational noise abatement actions would no longer be in place by 2020. For all other environmental impact categories, the potential environmental impacts of Alternative B1c are essentially the same as the FAA's Preferred Alternative (B1b).

In summary, the 2020 potential environmental impacts of Alternative B1c are the same as the FAA's Preferred Alternative (B1b). However, in the short-term Alternative B1c includes the implementation of operational noise abatement actions and the FAA will not consider the implementation of these noise abatement actions because they would limit capacity of the airfield in 2012. The FAA would not select an alternative that would limit runway capacity without a study of alternative noise abatement measures as part of a study pursuant to 14 CFR Part 150 or similar study.

- **Alternative B4: Build a new 6,001-foot at grade runway with EMAS located 340 feet north of existing south runway (to replace existing Runway 9R/27L). Runway 13/31 would remain open.**

  Although Alternative B4 would have the same practical hourly capacity of 107 operations as the FAA's Preferred Alternative (B1b), Alternative B4 is the least effective runway development alternative in terms of reducing delay compared to the other alternatives in 2020.

  As noted in a previous section of this ROD, during the EIS process, the Airport Sponsor and several airlines that operate at FLL raised concerns with the length of Alternative B4 and the potential necessity for payload penalties on aircraft operations. Therefore, the FAA conducted a sensitivity analysis on Alternative B4 operations to determine the impact on delay of potential pilot refusals. Alternative B4 is the only alternative with a runway length that could result in potential pilot refusal in response to avoiding payload penalties.

  Without a pilot refusal assumption, average minutes of delay for Alternative B4 is 2.2 minutes per operation in 2012 and 4.7 minutes per operation in 2020, compared to 1.2 and 3.1 minutes per operation, respectively, for the FAA's Preferred Alternative (B1b). The sensitivity analysis results, discussed above in Section 3 and provided in the Final EIS, Appendix F *Net Benefit Analysis*, Table F-19, shows that pilot refusals potentially would increase delay from 2.2 to 3.1 minutes per aircraft in 2012. In 2020, the delay would increase from 4.7 minutes to 10.2 minutes.[94] *See* the Final EIS, Appendix F Net *Benefit Analysis*, Section F.6.4 *Alternative B4 Sensitivity Analysis*.

  Alternative B4 would not meet the purpose of the proposed action to provide sufficient capacity for existing and forecast demand at FLL in 2020 based on the sensitivity analysis; and it would not meet the identified need for sufficient airfield capacity, and would not meet the need for an enhanced and balanced airfield.

  Alternative B4 would not meet the Airport Sponsor's objective as identified in the *County's Airfield Development Program Objective Statement* adopted by the Commission on October 26, 2004 to decommission the use of (crosswind) Runway 13/31.[95] However, Alternative B4 would enhance FLL capacity, mitigate noise impacts, and implement residential noise mitigation initiatives.

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[94] Even a conservative pilot refusal rate of 80 departures per day would result in delay over 10 minutes by 2020 according to the sensitivity analysis. *See* the Final EIS Appendix F *Net Benefits Analysis*, Section F.6.4 *Alternative B4 Sensitivity Analysis*.

[95] Decommissioning the crosswind runway was stipulated in the Board's December 9, 2003, motion and included in the October 2004 Broward County Objective Statement, see Appendix B in this ROD.

Regarding impacts to airport properties and tenant leasehold facilities, Alternative B4 would result in relatively minimum impacts (eight percent) to existing facilities, and would provide available surplus property for future airport facility development.

The airport contains an estimated 363 acres of airport properties and tenant leasehold facilities outside of the central terminal complex. With Alternative B4 there would be a displacement of 27.6 acres (eight percent) of airport properties and tenant leasehold facilities compared to the FAA's Preferred Alternative (B1b) which would displace 18.6 acres (five percent) of facilities. After development of the new runway and associated facilities, there would be 199 acres of airport land available for future airport and tenant facility development compared to 134.6 with the FAA's Preferred Alternative (B1b). Sixty-six acres would be available for airside development compared to thirty-nine acres for the FAA's Preferred Alternative (B1b).

The FAA has considered the potential environmental impacts that would occur with Alternative B4 as compared to the FAA's Preferred Alternative (B1b). For most of the environmental impact categories the impacts are essentially the same for both Alternative B4 and the FAA's Preferred Alternative (B1b), except for noise, compatible land use, Federally listed species, and wetland impacts. The noise and compatible land use impacts for Alternative B4 are significantly lower when compared to the FAA's Preferred Alternative (B1b). The noise and compatible land use impacts for Alternative B4 in 2020 would be 477 residential dwelling units with a total population of 1,492 within the 65 DNL noise contour. The noise and compatible land use impacts for the FAA's Preferred Alternative (B1b) in 2020 would be 1,051 residential dwelling units with a total population of 2,472 within the 65 DNL noise contour.

Alternative B4 may affect but is not likely to adversely affect two listed species as compared to three listed species for the FAA's Preferred Alternative.

The wetland impact for Alternative B4 is 0.13 acres of mangrove wetlands compared to 15.41 acres of wetlands with the FAA's Preferred Alternative (B1b), 3.05 acres of which is mangrove wetlands.

In summary, the 2020 potential noise and compatible land use and wetland impacts for Alternative B4 are significantly less than the FAA's Preferred Alternative (B1b). However, based on the comments received from the Airport Sponsor and the airlines regarding the Alternative B4 runway, the FAA finds that it is reasonable to assume there will be pilot refusal on the 6,001-foot south runway that could result in delays of greater than 10 minutes per operation. Therefore, Alternative B4 would not meet the purpose and need of the proposal based on the sensitivity analysis.

- **Alternative B5: build a 7,800-foot elevated runway with EMAS located 320 feet south of existing south runway (to replace existing Runway 9R/27L).**

  Alternative B5 would have a practical hourly capacity of 107 operations which is the same as the FAA's Preferred Alternative (B1b). The average minutes of delay per operation for Alternative B5 is the same as the FAA's Preferred Alternative (B1b) in 2020. Therefore, Alternative B5 would meet the purpose of

the proposal and it would also meet the identified need for sufficient airfield capacity, the need for an enhanced and balanced airfield, and the need for sufficient gate and apron capacity.

Alternative B5 would meet the Airport Sponsor's goals and objectives as identified in the *County's Airfield Development Program Objective Statement* adopted by the Commission on October 26, 2004.

Regarding impacts to airport properties and tenant leasehold facilities, Alternative B1 would result in relatively minimum impacts (four percent) to existing facilities and would provide available surplus property for future airport facility development.

The airport currently contains an estimated 363 acres of airport properties and tenant leasehold facilities outside of the central terminal complex. With Alternative B5 there would be a displacement of 15.4 acres (four percent) of airport properties and tenant leasehold facilities compared to the FAA's Preferred Alternative (B1b) which would displace 18.6 acres (five percent) of facilities. After development of the new runway and associated facilities, there would be 98.9 acres of airport land available for future facility development compared to 134.6 with the FAA's Preferred Alternative (B1b). Forty-three acres would be available for airside development compared to 39 acres for the FAA's Preferred Alternative (B1b).

The FAA has considered the potential environmental impacts that would occur with Alternative B5 as compared to the FAA's Preferred Alternative (B1b). For most of the environmental impact categories the impacts are essentially the same for Alternative B5 and the FAA's Preferred Alternative (B1b), except for noise, compatible land use, Federally listed species, and wetland impacts. The noise and compatible land use impacts for Alternative B5 are greater than the FAA's Preferred Alternative (B1b). In 2020, the noise and compatible land use impacts for Alternative B5 would be 1,260 residential dwelling units with a total population of 4,235 within the 65 DNL noise contour. For the FAA's Preferred Alternative (B1b) the noise and compatible land use impacts in 2020 would be 1,051 residential dwelling units with a total population of 2,472 within the 65 DNL noise contour. The noise and compatible land use impacts for Alternative B5 are significantly higher in 2020 compared to the FAA's Preferred Alternative (B1b).

Alternative B5 may affect but is not likely to adversely affect four listed species as compared to three listed species for the FAA's Preferred Alternative.

The wetland impact for Alternative B5 is 21.67 acres compared to 15.41 acres with the FAA's Preferred Alternative (B1b). The impact to mangrove wetlands are essentially the same for both alternatives.

In summary, although Alternative B5 meets the purpose and need of the proposal, the potential environmental impacts of Alternative B5 are greater for the environmental impact categories of noise and compatible land use than the FAA's Preferred Alternative (B1b). Alternative B5 would also result in greater wetland impacts than the FAA's Preferred Alternative (B1b).

- **Alternative C1: Build a 7,721-foot at grade runway located 850 feet north of existing Runway 9L/27R (a dependent parallel runway to existing Runway 9L/27R).**

  For Alternative C1, the practical capacity is the lowest and the average minutes of delay is higher than all other alternatives, except for the No Action, because no improvements would be made to Runway 9R/27L and the north airfield parallel runway system would operate as a dependent runway system.

  Alternative C1 would meet the purpose of the proposed action to provide for existing and forecast demand at FLL; and it would meet the identified need for sufficient airfield capacity, the need for an enhanced and balanced airfield, and the need for sufficient gate and apron capacity. However, Alternative C1 provides the least practical capacity of any of the runway development alternatives. Alternative C1 would provide a practical hourly capacity of 101 operations compared to the FAA's Preferred Alternative (B1b) which would provide 107 operations. Alternative C1 also has the highest delay of any of the runway development alternatives. Alternative C1 would have 5.0 average minutes of delay per operation in 2020[96] compared to 3.1 average minutes of delay per operation for the FAA's Preferred Alternative (B1b).

  For Alternative C1, the 850-foot separation distance between Runway 9L/27R and the new closely spaced parallel runway north of Runway 9L/27R is not sufficient to allow for simultaneous independent arrival operations to occur to both runways. Additionally, existing Runway 9R/27L cannot accommodate air carrier operations due to its length (5,276 feet) and width (100 feet). Because of the dependent north parallel runway system, Alternative C1 will only provide one runway capable of accommodating air carrier arrivals at a time during peak arrival periods. As a result the airfield's practical capacity is reduced as compared to all of the other runway development alternatives. Departures on the closely spaced parallel runways would have to be coordinated by FLL FAA Air Traffic Control to meet wake turbulence separation requirements. By comparison, the FAA's Preferred Alternative (B1b) would allow for simultaneous arrival and departure operations on two runways, both of which can accommodate air carrier operations, existing Runway 9L/29R and the expanded Runway 9R/27L.

  With the configuration of the dependent north parallel runway system of Alternative C1, there would be more runway crossings as compared to the FAA's Preferred Alternative (B1b). The Alternative C1 airfield configuration would require all aircraft using the new north parallel runway to cross an active runway to access the terminal area. In east flow and west conditions, under Alternative C1, every arrival to Runway 8/26 would need to cross the departure runway, Runway 9L/27R. An increase in runway crossings at FLL will increase the complexity of the coordination of air traffic control ground movements.

[96] While Alternative C1 would have 5.0 average minutes of delay per operation under all weather conditions, the average minutes of delay under IFR conditions could be as high as 32.2 average minutes of delay in East Flow operations and as high as 79.1 average minutes of delay in West Flow operations. Although IFR conditions occur only 6.9 percent of the year, only the No Action Alternative results in this level of delay under IFR conditions. By comparison, Alternative B1b would have 3.2 average minutes of delay in East Flow operations and 8.3 average minutes of delay in West Flow operations. *See* the Final EIS, Appendix F *Net Benefits Analysis*, Table F12 *Alternatives Delay Detail – Year 2020*.

To maintain the safe and efficient crossing of runways, additional air traffic control coordination would be required as compared to the FAA's Preferred Alternative (B1b).

Alternative C1 would meet the Airport Sponsor's goals and objectives as identified in the *County's Airfield Development Program Objective Statement* adopted by the Commission on October 26, 2004.

Regarding impacts to airport properties and tenant leasehold facilities, Alternative C1 would result in substantial impacts (72 percent of tenant leaseholds acreage) to existing facilities. While there would be available land for future airport facility development, the majority of this land is non-airside (45 acres), and located west of Interstate 95. There would be minimum airside land available for future airport development.

The airport currently contains an estimated 363 acres of airport properties and tenant leasehold facilities outside of the central terminal complex. With Alternative C1 there would be a substantial displacement of 261.5 acres (72 percent) of airport properties and tenant leasehold facilities compared to the FAA's Preferred Alternative (B1b) which would displace 18.6 acres (five percent) of facilities. After development of the new runway and associated facilities, there would be 71.9 acres of on-airport land available for future airport property and tenant leasehold facility development compared to 134.6 acres with the FAA's Preferred Alternative (B1b). Only eight acres would be available for airside development compared to 39 acres for the FAA's Preferred Alternative (B1b).

The FAA has considered the potential environmental impacts that would occur with Alternative C1 as compared to the FAA's Preferred Alternative (B1b). For most of the environmental impact categories the impacts are essentially the same for both Alternative C1 and the FAA's Preferred Alternative (B1b), except for noise, compatible land use, Federally listed species, and wetland impacts. The noise and compatible land use impacts for Alternative C1 are significantly less than the FAA's Preferred Alternative (B1b) In 2020, the noise and compatible land use impacts for Alternative C1 would be 285 residential dwelling units with a total population of 717 within the 65 DNL noise contour. For the FAA's Preferred Alternative (B1b), the noise and compatible land use impacts in 2020 would be 1,051 residential dwelling units with a total population of 2,472 within the 65 DNL noise contour.

Alternative C1 may affect but is not likely to adversely affect one listed species as compared to three listed species for the FAA's Preferred Alternative.

Although total wetland impacts for Alternative C1 (15.40 acres)[97] as compared to the FAA's Preferred Alternative (15.41 acres) are essentially the same, Alternative C1 does not impact any mangrove wetlands as compared to 3.05 acres of mangrove wetlands for the FAA's Preferred Alternative (B1b).

[97] The 15.40 acres of impacts to wetlands are due to airport and tenant facility relocations. It may be possible, with further planning, design, and engineering, that these relocated facilities could be relocated on airport property to avoid impacts to wetlands. However, this would further reduce available airport property for future development.

In summary, although Alternative C1 meets the purpose and need of the proposal it would provide less capacity and would have a higher level of delay per operation when compared to the FAA's Preferred Alternative (B1b). Alternative C1 would result in a substantial displacement of existing airport properties and tenant leasehold facilities compared to the FAA's Preferred Alternative (B1b) and would result in minimum airside land available for future airport development. When compared to the FAA's Preferred Alternative (B1b), the potential environmental impacts of Alternative C1 in 2020 are less for the categories of noise and compatible land use, and Alternative C1 would not impact any mangrove wetlands.

- **Alternative D1: redevelop and extend existing Runway 9R/27L to 8,000 feet and build a new 7,721-foot runway north of existing Runway 9L/27R (combination of Alternatives B1b and C1).**

  Alternative D1 would meet the purpose of the proposed action to provide for existing and forecast demand at FLL; and it would meet the identified need for sufficient airfield capacity, the need for an enhanced and balanced airfield, and the need for sufficient gate and apron capacity. Alternative D1 would provide a practical hourly capacity of 128 operations compared to the FAA's Preferred Alternative (B1b) which would provide practical hourly capacity of 107 operations. Alternative D1 would have 1.2 average minutes of delay per operation in 2020 compared to 3.1 average minutes of delay per operation for the FAA's Preferred Alternative (B1b).

  For Alternative D1 the average minutes of delay is the lowest and the practical capacity is the highest of all of the runway development alternatives because it provides for a three runway system capable of accommodating air carrier demand on all runways.

  Alternative D1 would meet the Airport Sponsor's goals and objectives as identified in the *County's Airfield Development Program Objective Statement* adopted by the Commission on October 26, 2004.

  However, regarding impacts to airport properties and tenant leasehold facilities, Alternative D1 would result in substantial impacts (74 percent of tenant leaseholds acreage) to existing facilities. There would be no available land for future airport facility development.

  The airport contains an estimated 363 acres of airport properties and tenant leasehold facilities outside of the central terminal complex. With Alternative D1 there would be a substantial displacement of 269.8 acres (74 percent) of airport properties and tenant leasehold facilities compared to the FAA's Preferred Alternative (B1b) which would displace 18.6 acres (five percent) of facilities. After development of the new runway and associated facilities, there would be a deficit of 32.8 acres for the relocation of facilities and no land available for future facility development as compared to the FAA's Preferred Alternative (B1b) with 134.6 acres of available airport property for future development. There would be a deficit of thirty-two acres for airside development compared to 39 available acres for the FAA's Preferred Alternative (B1b).[98]

[98] Although there may be ways to potentially reduce the airport property deficiencies noted for Alternatives D1 and D2, available airport property for future development is substantially greater with the FAA's Preferred Alternative (B1b) as compared to either Alternatives D1 or D2.

The FAA has considered the potential environmental impacts that would occur with Alternative D1 as compared to the FAA's Preferred Alternative (B1b). For most of the environmental impact categories the impacts are essentially the same for both Alternative D1 and the FAA's Preferred Alternative (B1b), except for noise, compatible land use, and wetland impacts. The noise and compatible land use impacts for Alternative D1 are less than the FAA's Preferred Alternative (B1b). In 2020, the noise and compatible land use impacts for Alternative D1 would be 801 residential dwelling units with a total population of 1,926 within the 65 DNL noise contour. For the FAA's Preferred Alternative (B1b), the noise and compatible land use impacts in 2020 would be 1,051 residential dwelling units with a total population of 2,472 within the 65 DNL noise contour.

The wetland impact for Alternative D1 is 21.87 acres compared to 15.41 acres with the FAA's Preferred Alternative (B1b). The impacts to mangrove wetlands for Alternative D1 and the FAA's Preferred Alternative (B1b) are the same, 3.05 acres.

In summary, Alternative D1 meets the purpose and need of the proposal and it would provide greater capacity with a lower level of delay per operation when compared to the FAA's Preferred Alternative (B1b). However, Alternative D1 would result in a substantial displacement of existing on-airport properties and tenant leasehold facilities compared to the FAA's Preferred Alternative (B1b) and there would be a deficit in available land for existing tenants and no available land for future airport development. When compared to the FAA's Preferred Alternative (B1b), the potential environmental impacts of Alternative D1 in 2020 are less for the categories of noise and compatible land use and Alternative D1 would impact more wetlands than the FAA's Preferred Alternative (B1b).

- **Alternative D2: build a new 6,00 1-foot at g rade runway with EMAS located 340 feet north of existing so uth runway and build a 7,7 21-foot at gr ade run way located 8 50 feet north of existing Runway 9L/27R (combination of Alternatives B4 and C1).**

  Alternative D2 would meet the purpose of the proposed action to provide sufficient capacity for existing and forecast demand at FLL; and it would meet the identified need for sufficient airfield capacity, the need for an enhanced and balanced airfield, and the need for sufficient gate and apron capacity. For Alternative D2 the practical capacity and average minutes of delay are similar to Alternative D1 because it provides for a three runway system capable of accommodating air carrier demand on all runways. Alternative D2 would provide a practical hourly capacity of 128 operations compared to the FAA's Preferred Alternative (B1b) which would provide a practical hourly capacity of 107 operations. In 2020, Alternative D2 would have 1.5 average minutes of delay per operation compared to 3.1 average minutes of delay per operation for the FAA's Preferred Alternative (B1b).

  Alternative D2 would meet the Airport Sponsor's goals and objectives as identified in the *County's Airfield Development Program Objective Statement* adopted by the Commission on October 26, 2004.

However, regarding the impacts to airport properties and tenant leasehold facilities, Alternative D2 would result in substantial impacts (77 percent of tenant leaseholds acreage) to existing facilities. There would be no available land for future airport facility development.

The airport contains an estimated 363 acres of airport properties and tenant leasehold facilities outside of the central terminal complex. With Alternative D2 there would be a substantial displacement of 280.5 acres (77 percent) of existing on-airport tenant facilities compared to the FAA's Preferred Alternative (B1b) which would displace 18.6 acres (five percent) of on-airport tenant facilities. After development of the new runway and associated facilities, there would be 35.8 acres of non-airside property available for future development as compared to the FAA's Preferred Alternative (B1b) with 97.3 acres of available non airside property for future development. There would be a deficit of eight acres for airside development compared to 39 acres of available airside property for the FAA's Preferred Alternative (B1b).[99]

The FAA has considered the potential environmental impacts that would occur with Alternative D2 as compared to the FAA's Preferred Alternative (B1b). For most of the environmental impact categories the impacts are essentially the same for both Alternative D2 and the FAA's Preferred Alternative (B1b), except for noise, compatible land use, and wetland impacts. The noise and compatible land use impacts for Alternative D2 are significantly less than the FAA's Preferred Alternative (B1b). In 2020, the noise and compatible land use impacts for Alternative D2 would be 303 residential dwelling units with a total population of 789 within the 65 DNL noise contour. For the FAA's Preferred Alternative (B1b), the noise and compatible land use impacts in 2020 would be 1,051 residential dwelling units with a total population of 2,472 within the 65 DNL noise contour.

The wetland impact for Alternative D2 is 15.54 acres compared to 15.41 acres with the FAA's Preferred Alternative (B1b). The impact to mangrove wetlands is 0.14 acres for Alternative D2 compared to 3.05 for the FAA's Preferred Alternative (B1b).

In summary, Alternative D2 meets the purpose and need of the proposal and it would provide greater capacity with a lower level of delay per operation when compared to the FAA's Preferred Alternative (B1b). However, Alternative D2 would result in a substantial displacement of existing on-airport properties and tenant leasehold facilities compared to the FAA's Preferred Alternative (B1b) and there would be no airside land available for future airport development. When compared to the FAA's Preferred Alternative (B1b), the potential environmental impacts of Alternative D2 in 2020 are significantly less for the categories of noise and compatible land use and Alternative D2 would impact less acres of mangrove wetlands than the FAA's Preferred Alternative (B1b).

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[99] Although there may be ways to potentially reduce the airport property deficiencies noted for Alternatives D1 and D2, available airport property for future development is substantially greater with the FAA's Preferred Alternative (B1b) as compared to either Alternatives D1 or D2.

3.4 THE SELECTED ALTERNATIVE: This section identifies FAA's Selected Alternative (B1b) (FAA Order 5050.4B, paragraph 1007.e.(7)). The FAA statutory mission is to provide leadership in planning and developing a safe, efficient national airport system to satisfy the needs of the aviation interests of the United States. In accomplishing this mission, the FAA considers economics, environmental compatibility, and local proprietary rights, and safeguards the public investment.[100] This mission is given appropriate weight by FAA in any final decisions regarding a proposed action.

The FAA identified Alternative B1b as its preferred alternative in the Final EIS (*see* this ROD, Exhibit 1 *FAA's Preferred Alternative (B1b)*). The FAA's Preferred Alternative (B1b) as described in Section 3.3 is identified as the selected alternative in this ROD.

All of the factors that led the FAA to identify Alternative B1b as the Preferred Alternative equally support a decision to select it and approve the related Federal actions necessary for its implementation at FLL. In addition, FAA selects Alternative B1b for the following reasons.

First, Alternative B1b is consistent with the FAA's statutory and policy obligations, specifically the FAA's legal obligation to plan the kind of airport development necessary to provide a safe, efficient, and integrated system of public-use airports adequate to anticipate and meet the needs of civil aeronautics (49 U.S.C. § 47103).

Second, in making this selection, the FAA was fully aware of the environmental consequences and the benefits as described throughout the Final EIS and this ROD. Additionally, the FAA gave full consideration to all comments regarding the Draft and Final EIS..

The FAA has selected Alternative B1b for approval and implementation because:

- Alternative B1b would meet the identified purpose and need for the proposed action of providing sufficient airfield capacity, facilitating balanced use of the airfield infrastructure, and the need to add sufficient gate and apron capacity to address existing and forecast passenger demand and aircraft congestion on the ramp. It would provide a maximum and practical hourly capacity of 107 operations. It would have 1.2 average minutes of delay per operation in 2012; and 3.1 average minutes of delay per operation in 2020.
- Alternative B1b would address the Airport Sponsor's goals and objectives by enhancing FLL capacity by accommodating forecast traffic through 2020 in a manner that will maintain an average annual delay level at or below six to ten minutes, decommissioning the use of Runway 13/31 (crosswind), and mitigating noise impacts by implementing residential noise mitigation measures.
- Alternative B1b would provide airport property to relocate existing on-airport tenants and facilities and surplus property for future airport facility development.

[100] http://www.faa.gov/about/office_org/headquarters_offices/arp/

- Alternative B1b assures that the sponsor will have sufficient land for aeronautical and non-aeronautical development as a means to generate airport revenue consistent with its obligation to be as self-sustaining as possible.[101]

Some of the other alternatives the FAA considered but did not select had fewer environmental impacts, such as noise impacts or wetland impacts, or may have offered greater capacity or further reduced delay. The alternatives are compared relative to operational capacity and delay and environmental impacts in Table 2 and Table 3 provided at the end of this document. The reasons the FAA did not select the other alternatives are summarized below. For additional detailed discussion of Alternative B4, C1, and D2 see Section 4.4 *Identification of Wetlands and Consideration of Executive Order 11990, Protection of Wetlands* and Section 6 *Findings, Determinations, Certifications*.

- **Alternative A (No Action):**

  The FAA did not select Alternative A because it does not meet the purpose and need; it does not address the capacity deficiency at FLL. It also causes an exceedance of the NAAQS.

- **Alternative B1: redevelop and extend existing Runway 9R/27L to an 8,600-foot by 150-foot elevated runway.**

  The FAA did not select Alternative B1 because it would require the use of declared distances in order to avoid encroachment into the Dania Cut Off Canal and 7th Avenue and to meet FAA's RSA standard. Eliminating the need for declared distance improves the operational capability of the runway by allowing for the full use of the available runway length.

- **Alternative B1c (Airport Sponsor's Proposed Action): Redevelop and extend existing Runway 9R/27L to an 8,000-foot by 150-foot elevated runway with EMAS; includes the implementation of the operational noise abatement actions in 2012. Broward County has interpreted that the operational noise abatement actions would no longer be in place by 2020.[102]**

  The FAA did not select Alternative B1c because in the short-term it includes the implementation of operational noise abatement actions. The implementation of these noise abatement actions would limit capacity of the airfield in 2012. In 2012, Alternative B1c would have a higher level of delay per operation when compared to the FAA's Selected Alternative (B1b). The FAA would not select an alternative that would limit runway capacity without a study of alternative noise abatement measures as part of a study pursuant to 14 CFR Part 150 or similar study.

[101] 49 U.S.C. §47101 (a)(13) and Grant Assurance 24.

[102] Memorandum from Max Wolfe/Eric Bernhardt, Leigh Fisher Associates (now Jacobs Consultancy), to Virginia Lane, AICP, Environmental Specialist, Federal Aviation Administration. Subject: Sponsor's Proposed Project Operational Assumptions. Dated: August 22, 2006/Revised: August 24, 2006.

- **Alternative B4: Build a new 6,001-foot at grade runway with EMAS located 340 feet north of existing south runway (to replace existing Runway 9R/27L). Runway 13/31 would remain open.**

  Based on FAA experience it is reasonable to assume there will be pilot refusals on the 6,001-foot south runway that could result in delays of greater than 10 minutes per operation in 2020. Therefore, the FAA did not select Alternative B4 because it would not meet the purpose and need of the proposal based on the Sensitivity Analysis.

  In addition, Alternative B4 is the only runway development that would not close the crosswind runway, Runway 13/31 which is an objective of Broward County. Closing the crosswind runway would result in noise reduction and increase available property for future development in the mid-field and West Side areas of the airport property. [103] The FAA has received public comment supporting the closure of Runway 13/31.

  The Alternative B4 three-runway airfield configuration would require aircraft to cross Runway 13/31 to access the north or south airfield, compared to the FAA's Selected Alternative B1(b). This increase in runway crossings with Alternative B4 will increase the complexity of the coordination of air traffic control ground movements as usage of Runway 13/31 increases with future demand.

- **Alternative B5: build a 7,800-foot elevated runway with EMAS located 320 feet south of existing south runway (to replace existing Runway 9R/27L).**

  The FAA did not select Alternative B5 because although it provides the same operational benefit as the FAA's Selected Alternative, the potential environmental impacts are greater for noise and compatible land use, Federally listed species, and wetlands, than the FAA's Selected Alternative (B1b).

- **Alternative C1: Build a 7,721-foot at grade runway located 850 feet north of existing Runway 9L/27R (a dependent parallel runway to existing Runway 9L/27R).**

  The FAA did not select Alternative C1 because it would provide less capacity and would have a higher level of delay per operation when compared to the FAA's Selected Alternative (B1b).

  In addition, Alternative C1 would result in a substantial displacement of existing airport properties and tenant leasehold facilities compared to the FAA's Selected Alternative (B1b) and would result in minimum airside land available for future airport development.

  Alternative C1 would limit property available to the Airport Sponsor as compared to the FAA's Selected Alternative for aeronautical and non-aeronautical development as a means to generate airport revenue consistent with its obligation to be as self-sustaining as possible.

[103] Decommissioning the crosswind runway was stipulated in the Board's December 9, 2003, motion and included in the October 2004 Broward County Objective Statement, see Appendix B in this ROD.

- **Alternative D1: redevelop and extend existing Runway 9R/27L to 8,000 feet and build a new 7,721-foot runway north of existing Runway 9L/27R (combination of Alternatives B1b and C1).**

  The FAA did not select Alternative D1 because it would involve substantial displacement of existing on-airport properties and tenant leasehold facilities compared to the FAA's Selected Alternative (B1b), providing no airside or non-airside land available for future airport development. Alternative D1 would limit property available to the Airport Sponsor as compared to the FAA's Selected Alternative for aeronautical and non-aeronautical development as a means to generate airport revenue consistent with its obligation to be as self-sustaining as possible.

  In addition, when compared to the FAA's Selected Alternative (B1b), Alternative D1 would impact more wetlands.

- **Alternative D2: build a new 6,001-foot at grade runway with EMAS located 340 feet north of existing south runway and build a 7,721-foot at grade runway located 850 feet north of existing Runway 9L/27R (combination of Alternatives B4 and C1).**

  Similarly, the FAA did not select Alternative D2 because it would entail substantial displacement of existing on-airport properties and tenant leasehold facilities compared to the FAA's Selected Alternative (B1b) and there would be no airside and minimal non-airside land available for future airport development.

  Alternative D2 would limit property available to the Airport Sponsor as compared to the FAA's Selected Alternative for aeronautical and non-aeronautical development as a means to generate airport revenue consistent with its obligation to be as self-sustaining as possible.

4. SUMMARY OF MITIGATION MEASURES

In accordance with 40 CFR § 1505.3, FAA Order 5050.4B, and FAA Order 1050.1E, the FAA will take appropriate steps through federal grant assurances and conditions, and ALP approvals to ensure that the Airport Sponsor's implements mitigation measures identified in the Final EIS and this ROD as conditions of project approval. The FAA will monitor implementation of these measures as necessary to assure that representations made in the Final EIS, Chapter Eight, *FAA's Preferred Alternative (B1b)*, Section 8.6 FAA's Preferred Alternative (B1b)*: Mitigation Of Environmental Impacts,* and ROD, with respect to mitigation, are carried out. The approvals contained in this ROD are conditioned on the completion and implementation of all mitigation measures (*see* Section 8 *Conditions and Approvals*).

The analysis provided in the Final EIS identified three environmental categories in which the selected alternative would cause significant impacts requiring consideration of mitigation: noise, compatible land use, and wetlands. The FAA finds that these measures constitute all reasonable steps to minimize harm and take all practicable measures to avoid or minimize harm from the selected alternative. This section describes the mitigation measures recommended in the Final EIS.

4.1 NOISE AND COMPATIBLE LAND USE

The mitigation of incompatible land uses for 2020 conditions is recommended within the 65 DNL noise contour of the FAA's Preferred Alternative (B1b).

Table 4, ***Incompatible Land Use – 2020 FAA's Preferred Alternative (B1b)****,* indicates the number of housing units, population, and noise-sensitive public facilities located in each noise exposure contour band.

TABLE 4
INCOMPATIBLE LAND USE - 2020 FAA'S PREFERRED ALTERNATIVE (B1b)
Fort Lauderdale-Hollywood International Airport

INCOMPATIBLE LAND USE	DNL NOISE CONTOUR			ESTIMATED TOTAL
	65-70 DNL	70-75 DNL	75+ DNL	65+ DNL
Single-Family Units	**550**	**21**	**0**	**571**
Multi-Family Units	**360**	**30**	**0**	**390**
Mobile Home Units	**90**	**0**	**0**	**90**
TOTAL Estimated Residential Units	**1,000**	**51**	**0**	**1,051**
TOTAL Estimated Population	*2,345*	*127*	*0*	*2,472*
Noise-Sensitive Public Facilities (School, Church, Nursing Home, Hospital, Library)	0	0	0	0

Source: Landrum & Brown, 2008

4.2 RECOMMENDED MITIGATION FOR INCOMPATIBLE LAND USE

The FAA has considered the seven Broward County proposed noise mitigation principles[104] in the development of recommended mitigation for the EIS. As explained below in the *Summary of Recommended Mitigation for Incompatible Land Use*, the FAA has determined that the County's principles numbered one, two, three, and five are appropriate to address the incompatible land uses within the 2020 65 DNL noise contour of the FAA's Preferred Alternative (B1b). Only the sound insulation and easement elements of principle number four are appropriate. The following paragraphs discuss the County's principles and how they could be applied to mitigate incompatible land use as a result of implementing the FAA's Preferred Alternative (B1b).

1. *Apply the long-term/ultimate contour – Apply mitigation principles and identify mitigation eligibility areas using the long-term/ultimate contour of the Runway Alternative approved in the Record of Decision (ROD).*

   The development of recommended mitigation measures will be based on the 65 DNL of the long-term/ultimate (2020) noise contour for the FAA's Preferred Alternative (B1b). (*See* **Exhibit 2*, FAA's Preferred Alternative (B1b) — 2020 Noise Exposure Contour***.)

2. *Establish mitigation areas based on neighborhoods – utilizing the contours of the approved project, establish areas eligible for mitigation with the objective of keeping neighborhoods intact by incorporating natural boundaries and neighborhood blocks.*

   The 2020 65 DNL noise contour for the FAA's Preferred Alternative (B1b) (*see* Exhibit 2) bisects several neighborhoods/subdivisions. In identifying the areas recommended for mitigation, each eligible neighborhood/subdivision area will be considered as a whole so as not to alter the character of a contiguous residential community. Thus, the FAA will ensure, to the extent practicable, that community cohesion will be maintained when the mitigation strategies are applied.

   In some cases, this may require a mitigation area to extend beyond the boundary of the 65 DNL noise contour to follow natural geographic boundaries, street patterns, and contiguous neighborhood boundaries.

3. *Acquisition of mobile home parks in the +65 DNL noise contour – Relocation of residents and acquisition of the mobile home park/business. Convert the property to a compatible use. In accordance with the Uniform Relocation Assistance and Real Property Acquisition Polices Act of 1970, provide relocation assistance for residents to either County developed affordable housing or other locations. Future use of the acquired property would be controlled by recorded restrictive covenants.*

[104] Letter from Kent G. George, A.A.E., Director of Aviation, Broward County Aviation Department, to Virginia Lane, FAA Orlando Airport District Office, Subject: Broward County Proposed Noise Mitigation Principles. Dated November 9, 2007.

The FAA's role in the mitigation is to determine the properties that are potentially eligible for participation in a mitigation measure. It is the Airport Sponsor's responsibility to determine which of the eligible mitigation measures would be implemented and the priority and scheduling of the implementation.

Mobile homes are not considered compatible with airport noise levels greater than 65 DNL. It is not feasible or cost-effective to apply sound insulation techniques to mitigate high levels of noise in a mobile home. The practicable mitigation option for mobile homes is acquisition of the unit or relocation of the unit outside of the airport's 65 DNL noise contour. The future use of the acquired property would be controlled by recorded restrictive covenants.

Mobile homes, given their mobile nature, are often located on leased land in a mobile home park. Typically, under Part 150 program guidelines mobile home owners are not individually included in an acquisition program unless they own the land on which the mobile home is located. Thus, they are treated as if they are renters.

Participation in a noise-based acquisition program for mobile homes would be voluntary on the part of the individual mobile home owner (if they own the land on which the mobile home is located) and on the part of the owner of a mobile home park/business. There are an estimated 90 mobile home units located within the 2020 65 DNL noise contour of the FAA's Preferred Alternative (B1b) that could potentially be eligible for participation in a voluntary acquisition program.

4. *Soundproofing and easements – Soundproofing offered to all eligible single- and multi-family units; in addition, compensation for outdoor impacts will be offered above Uniform Appraisal Standards for Federal Land Acquisitions at a valuation that will be determined at implementation of the program.*

   The FAA's role in the mitigation is to determine the properties that are eligible for participation in mitigation. It is the Airport Sponsor's responsibility to determine which of the eligible mitigation programs would be implemented and the priority and scheduling of those mitigation programs.

   The Airport Sponsor could develop a sound insulation program for eligible single- and multi-family units within the 2020 65 DNL of FAA's Preferred Alternative (B1b). Such a program would be eligible for federal funding. The FAA encourages that an avigation easement be obtained from the homeowner; however, it is not required for participation in a sound insulation program.[105] Once a unit is sound insulated, the land use is considered to be a compatible land use within a 65 DNL noise contour.

   Homeowner participation in a sound insulation program is voluntary. There are an estimated 571 single-family units and 390 multi-family units located within the 2020 65 DNL noise contour of the FAA's Preferred Alternative (B1b) that could potentially be eligible for participation in a voluntary sound insulation program.

[105] An avigation easement (covenant) runs with the land and all future owners learn of the easement when they buy the property. It is a property right acquired from a land owner that grants the right-of-flight; the right to cause noise, dust, etc., related to aircraft flight.

Compensation for 'outdoor impacts' is not eligible for federal funding. The purchase of an easement for 'outdoor impacts' due to aircraft noise does not mitigate the existing land use nor does it make it compatible with airport/aircraft operations based on its location within a DNL noise contour.

5. *Purchase assurance/sales guarantee – For those that decline soundproofing, implement a purchase assurance program to acquire the property at Fair Market Value. Future use of the acquired property would be controlled by recorded restrictive covenants.*

   The FAA's role in the mitigation is to determine the properties that are eligible for participation in a mitigation program. It is the Airport Sponsor's responsibility to determine which of the eligible mitigation programs would be implemented and the priority and scheduling of the implementation.

   A purchase assurance/sales guarantee program would be implemented by the Airport Sponsor. For a Purchase Assurance program the airport acts as buyer of last resort, sound-insulates the structure, sells the property, and retains an easement. For a Sales Assistance program, the airport would sound-insulate the structure, guarantee that the property owner will receive the appraised value (or some increment thereof, regardless of final sales value that is negotiated with a buyer), and retain easement.

   With both of these programs the underlying land use does not change. The residential use remains and, unless the property is sound insulated, it will remain an incompatible land use. Once a unit is sound insulated through participation in the purchase assurance/sale guarantee program the land use is considered to be a compatible land use within a 65 DNL noise contour.

   Homeowner participation in a purchase assurance/sales guarantee program is voluntary. There are an estimated 571 single-family units and 390 multi-family units located within the 2020 65 DNL noise contour of the FAA's Preferred Alternative (B1b) that could potentially be eligible for participation in a voluntary purchase assurance/sale guarantee program.

6. *Voluntary Acquisition of residentially zoned vacant parcels – Voluntarily acquire residentially-zoned, vacant parcels at Fair Market Value and coordinate with the local communities to change the zoning and land use plan to compatible use. Future use of the acquired property would be controlled by recorded restrictive covenants.*

   The mitigation of noise impacts resulting from the implementation of the FAA's Preferred Alternative (B1b) would apply to the existing incompatible land uses ('existing' structures) located within the 65 DNL noise contour. The consideration of land use measures for undeveloped, vacant parcels is more appropriately addressed by the Airport Sponsor, Broward County, in a 14 CFR Part 150 study.

7. *Provide noise mitigation in excess of minimum federal guidelines.*

   While an airport sponsor may propose noise mitigation based upon local land use compatibility guidelines that exceeds federal guidelines, it is unlikely that federal funding would be available due to limited funding and the priority given to mitigation within the 65+ DNL. The 65 DNL noise contour is the noise level at which residential land uses are considered compatible with airport noise under

federal land use compatibility guidelines.[106] It would be more appropriate for Broward Country to address noise mitigation in excess of the minimum federal guidelines in its *Part 150 Noise Compatibility Study Update* for FLL.

For FAA-funded mitigation to be considered beyond the 65 DNL, the local jurisdictions would need to establish a specific DNL (i.e., the 60 DNL noise exposure contour) as their local threshold for compatible land use. Then local land use policies and local land use controls (zoning, comprehensive plans, subdivision regulations, building codes, etc.) would need to be adopted and enforced to control the development of incompatible land uses within the area encompassed by that DNL noise exposure contour.

For example, the airport sponsors at both Minneapolis and Cleveland have taken steps to establish DNL 60 dB as their local threshold for compatible land use. Both announced measures to expand their Part 150 residential sound insulation programs to the DNL 60 dB contour band. The Part 150 Update for the Cleveland Hopkins International Airport contains a measure to sound insulate residences within or contiguous to the 60 DNL band of the NCP noise contours.

The FAA approved that measure in August, 2000 on the basis that the airport sponsor adopted the DNL 60 dB noise contour as the designation of incompatible land use, thus making the measure fully eligible for AIP or PFC funding.[107]

The FAA approval is based on the distinction between compatible and incompatible land use. Therefore, airport and local officials must clearly establish a local standard for compatible land use below the FAA DNL 65 dB guideline if they want to apply for FAA funding approval for mitigation projects to achieve their lower standard.[108] The footnote to Table 1 – *Land Use Compatibility with Yearly Day-Night Average Sound Levels* provided in 14 CFR Part 150, Appendix A, states: "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 local authorities. FAA determinations under 14 CFR 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."

The FAA supports efforts to establish local noise standards and the FAA recognizes those standards in Part 150 noise compatibility programs. As reflected in the 14 CFR Part 150 guidance, local officials may assume the responsibility for establishing a local land use noise compatibility standard for

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[106] Code of Federal Regulations (CFR) Title 14--Aeronautics and Space, Chapter I--Federal Aviation Administration, Department of Transportation, Part 150--Airport Noise Compatibility Planning. Appendix A, Table 1—Land Use Compatibility With Yearly Day-Night Average Sound Levels.

[107] Local Noise Standards for Land Use Compatibility, March 2001, William Albee, Director of Special Projects with the Acoustics Group of Wyle Laboratories, Arlington, VA. walbee@arl.wylelabs.com; acousticsgroup@wylelabs.com. Internet site: http://www.wylelabs.com/services/arc/documentlibrarywylewhitepapers/lns.html (Web sit was last accessed: March 28, 2008).

[108] Local Noise Standards for Land Use Compatibility, March 2001, William Albee, Director of Special Projects with the Acoustics Group of Wyle Laboratories, Arlington, VA. walbee@arl.wylelabs.com; acousticsgroup@wylelabs.com. Internet site: http://www.wylelabs.com/services/arc/documentlibrarywylewhitepapers/lns.html (Web sit was last accessed: March 28, 2008).

airport noise that reflects the community's opinions and values.[109] Currently, the steps necessary to establish land use compatibility at 60 DNL have not been taken by Broward County. Therefore, neither this EIS nor a 14 CFR Part 150 Study would address local land uses as incompatible below the 65 DNL.

Summary of Recommended Mitigation for Incompatible Land Use: The FAA has identified residential units that may be eligible for participation in a compatible land use mitigation measure. Broward County's responsibility is to decide how to apply the mitigation. The mitigation areas and the mitigation measures identified in the EIS are part of this ROD. The conditions of approval set forth in this ROD in Section 8 (*Conditions and Approvals*), requires that the Airport Sponsor implement noise mitigation measures addressing the impacts within the 65 DNL noise exposure contour that result from the FAA's Preferred Alternative (B1b). The participation of the individual home owner and/or property owner will be voluntary in any of the offered mitigation measures.

The above seven mitigation measures are based on the Broward County proposed noise mitigation principles.[110] The FAA has determined that the County's principles numbered one, two, three, and five are appropriate to address the incompatible land uses within the 2020 65 DNL noise contour of the FAA's Preferred Alternative (B1b). Only the sound insulation and easement elements of principle number four are appropriate. Broward County will determine how any one or a combination of these measures would be implemented.

- The mitigation measures (sound insulation, purchase assurance/sales guarantee, and mobile home mitigation) will address a neighborhood/ subdivision area as a whole to ensure, to the extent practicable, that community cohesion will be maintained when the mitigation strategies are applied; thus, mitigation areas may extend beyond the 65 DNL noise contour to follow natural geographic boundaries, street patterns, and contiguous neighborhood boundaries
- Acquisition of mobile home units and the relocation of residents in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Policies Act* (49 CFR Part 24) with the FAA's recommendation that the future use of the acquired property be controlled by recorded restrictive covenants
- Sound insulation of eligible single-family and multi-family units with the FAA's recommendation that an avigation easement be acquired
- Purchase guarantee/sales assistance (with sound insulation) for eligible single-family and multi-family units with the FAA's recommendation that an avigation easement be acquired

[109] Local Noise Standards for Land Use Compatibility, March 2001, William Albee, Director of Special Projects with the Acoustics Group of Wyle Laboratories, Arlington, VA. walbee@arl.wylelabs.com; acousticsgroup@wylelabs.com. Internet site: http://www.wylelabs.com/services/arc/documentlibrarywylewhitepapers/lns.html (Web sit was last accessed: March 28, 2008).

[110] Letter from Kent G. George, A.A.E., Director of Aviation, Broward County Aviation Department, to Virginia Lane, FAA Orlando Airport District Office, Subject: Broward County Proposed Noise Mitigation Principles. Dated November 9, 2007.

4.3 IDENTIFICATION OF INCOMPATIBLE LAND USE WITHIN 65+ DNL

The existing incompatible land use within the 2020 65 DNL noise contour of the FAA's Preferred Alternative (B1b) consists of single-family, multi-family, and mobile homes. These residential units are located within the City of Dania Beach to the west of the airport along the extended centerline of Runway 9R/27L (*see* **Exhibit 3, *FAA's Preferred Alternative (B1b) — West of FLL***) and south of the airport parallel to Runway 9R/27L (*see* **Exhibit 4, *FAA's Preferred Alternative (B1b) — South of FLL***). To the north or east of the airport no incompatible land uses are located within the 65 DNL noise contour (*see* Exhibit 2, *FAA's Preferred Alternative (B1b) — 2020 Noise Exposure Contour*).

West of FLL: As shown on Exhibit 3, the incompatible land use within the 65+ DNL west of FLL consists of single- and multi-family structures built in the 1960's and 1970's with a median construction year of 1964. These structures are located west of Ravenswood Road to SW 35th Avenue between SW 42nd Street on the north and Griffin Road to the south. The neighborhoods/subdivisions in this area are Broward Heights, Seaboard Park, Marshalls Everglade Subdivision mobile home community, Avon Heights, Avon Park, and Davis Isles.

As shown on the table on Exhibit 3, there are 703 residential units in the 65 DNL noise contour. No existing incompatible use occurs within the 75+ DNL noise contour. There are an estimated 10 residential units within the 70 to 75 DNL noise contour (10 single-family), and 693 residential units within the 65 to 70 DNL noise contour (391 single-family, 260 multi-family, and 42 mobile homes). Within the portion of the 65 DNL noise contour located south of the airport, 57 percent are single-family structures, 37 percent are multi-family structures, and six percent are mobile homes.

The total population of these 703 residential units is estimated at 1,738. An estimated population of 25 is within the 70 to 75 DNL noise contour, and a population of 1,713 is within the 65 to 70 DNL noise contour.

The 42 mobile home units are located in the Marshalls Everglade Subdivision mobile home community located east of SW 24th Avenue, west of Ravenswood Road, and north of Griffin Road. This mobile home community is wholly-owned by one individual and leased space is provided for mobile homes; the mobile home owners do not own the land.

South of FLL: As shown on Exhibit 4, the single-family and multi-family structures directly south of FLL were built in the 1960's and 1970's with a median construction year of 1971. These structures are located on the south side of Griffin Road just west of Old Griffin Road between the Dania Cut-Off Canal on the west side, to NW 6th Avenue on the east side. The neighborhoods/subdivisions in this area are Melaleuca Gardens, Nautilis Isle, Argonaut Isle, Florian Isle, and the Ocean Waterway mobile home community.

As shown on the table on Exhibit 4, there are 348 residential units in the 65 DNL noise contour. No existing incompatible use occurs within the 75+ DNL noise contour. There are an estimated 41 residential units within the 70 to 75 DNL noise contour (11 single-family and 30 multi-family), and 307 residential units within the

65 to 70 DNL noise contour (159 single-family, 100 multi-family, and 48 mobile homes). Within the portion of the 65 DNL noise contour located south of the airport, 49 percent of the units are single-family structures, 37 percent are multi-family structures, and 14 percent are mobile homes.

The total population of these 348 residential units is estimated at 733. An estimated population of 102 is within the 70 to 75 DNL noise contour, and a population of 631 is within the 65 to 70 DNL noise contour.

The 48 mobile home units are located in the Ocean Waterway mobile home community south of FLL between the Dania Cut-Off Canal and Interstate-95. The mobile home owners, the Ocean Waterway Co-Op, Inc., also own the individual mobile home lots.

Implementation and Funding of FAA-Approved EIS Mitigation Measures: Because the noise impacts to incompatible land use are attributable to the implementation of the FAA's Preferred Alternative (B1b), (inside the 65+ DNL noise exposure contour and those contiguous neighborhoods adjacent to the 65 DNL noise exposure contour), measures to mitigate these impacts are eligible for federal funding. To determine the priority for distributing funds, the FAA follows the planning guidance in FAA Order 5100.39A, *Airports Capital Improvement Plan (ACIP),* to systematically identify, prioritize, and assign funds to critical airport development and associated capital needs for the National Airspace System (NAS). The ACIP also serves as the basis for distributing grant funds under the Airport Improvement Program (AIP).

In awarding AIP funds, the FAA emphasizes the highest priority projects using the ACIP needs-based plan of funding projects within a three- to five-year period. Programs to improve the compatibility of airports with the surrounding communities (i.e., land use mitigation programs) are subject to the ACIP needs-based planning and prioritization.[111] In addition to prioritizing the allocation of funds, FAA Order 5100.39A also provides a numerical rating system to determine the implementation priority phasing of noise mitigation programs. This system requires that program implementation begin within the highest DNL noise contour band. The numerical rating system is provided in FAA Order 5100.39A, Appendix 6, *NPIAS-ACIP Standard Descriptions-ACIP Codes and National Priority Ratings*.

4.4 IDENTIFICATION OF WETLANDS AND CONSIDERATION OF EXECUTIVE ORDER 11990, PROTECTION OF WETLANDS

Executive Order 11990, as amended, requires all federal agencies to avoid providing assistance for new construction located in wetlands, unless there is no practicable alternative to such construction, and all practicable measures to minimize harm to wetlands are included in the action.

The FAA has selected the FAA's Preferred Alternative (B1b) for approval, which will impact 16.83 acres of wetlands (15.41 acres of direct wetland impacts and 1.42 acres of secondary wetland impacts).[112] The FAA's determination that there is

[111] FAA Order 5100.39A, *Airports Capital Improvement Plan*, Paragraph 5.b.(3).

[112] *See* the Final EIS, Appendix M.3, *Conceptual Wetland Mitigation Plan* and Section 3.2, *Secondary Impacts.*

no practicable alternative to the wetlands impacts of Alternative B1b is set forth in Section 6, Findings, Determinations, and Certifications below**.** Therefore, consistent with Executive Order 11990, prior to approval, the FAA must determine that there is no practicable alternative to the wetland impacts of such development. Under CWA Section 404 Guidelines, an alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. 40 CFR §230.10(a)(2).

The complete avoidance of direct impacts to wetlands is not practicable for any of the runway development alternatives due to the existing airfield geometry, and presence of major transportation corridors and surrounding development. [113],[114] However, two of the runway development alternatives would have less direct impacts to wetlands as compared to the FAA's Preferred Alterative (B1b).[115] These alternatives are Alternative B4 and Alternative C1.

Alternative B4 would impact 0.13 acres of wetlands, all of which are mangrove wetlands; Alternative C1 would impact 15.40 acres of wetlands, none of which are mangrove wetlands; compared to the FAA's Selected Alternative (B1b) with 15.41 acres of wetlands, of which 3.05 acres are mangrove wetlands. The FAA has determined that Alternative B4 and Alternative C1 are not practicable alternatives to Alternative B1b for the following reasons:

- Alternative B4 has a higher level of delay during all weather conditions as compared to the FAA's Preferred Alternative (B1b) in 2020; average minutes of delay per operation for Alternative B4 is 4.7, 10.2 with the Sensitivity Analysis; average minutes of delay per operation for Alternative B1b is 3.1.

  Alternative B4 would not meet the basic project purpose to reduce delays as well as Alternative B1b. Alternative B4 has a higher level of delay as compared to the FAA's Preferred Alternative (B1b) in 2020; average minutes of delay per operation for Alternative B4 is 4.7; average minutes of delay per operation for Alternative B1b is 3.1. Moreover, based on the FAA's EIS analysis which is supported by letters from airlines operating at FLL there is a potential for pilot refusals with the 6,000-foot runway under Alterative B4. Any refusals would cause an increase in the delay beyond the 4.7 average. According to the analysis, pilot refusals on Alternative B4 would result in 10.2 minutes of average delay per operation. Theses pilot refusals would cause this alternative to exceed the acceptable level of delay identified for FLL (six minutes).

  Alternative B4 is the only runway development that would not meet Broward County's objective to close the crosswind runway, Runway 13/31. This objective is derived from a continuing effort to ensure that sufficient airport property is available for future aeronautical and non aeronautical development at FLL as well

[113] The US Army Corps of Engineers is bound to defer to the FAA and consider only those alternatives that the FAA has determined are reasonable because FLL is a congested airport and this is a capacity project subject to streamlined environmental review under 49 USC §47171(k).

[114] The 15.40 acres of impacts to wetlands resulting from Alternative C1 are due to airport and tenant facility relocations. It may be possible, with further planning, design, and engineering, that these relocated facilities could be relocated on airport property to avoid impacts to wetlands. However, whether there are some or no wetlands impacted by Alternative C1 is irrelevant as the FAA has determined that Alternative C1 is not practicable.

[115] The wetlands impacts, including impacts to mangrove wetlands, for Alternative B1b and Alternative B1 are essentially the same, at 15.41 acres and 15.17 acres, respectively.

as to reduce potential noise impacts resulting from use of the crosswind runway. [116] In the furtherance of this objective, Broward County evaluated the decommissioning of Runway 13/31 as part of the Master Plan Update process[117] which increases airport property available for future terminal development and support facility development in the mid-field and West Side areas of the airport property.

There would be runway crossings of Runway 13/31 with Alternative B4 compared to the FAA's Preferred Alternative (B1b), which closes Runway 13/31. The Alternative B4 three-runway airfield configuration would require aircraft to cross an active runway (13/31) to access the north or south airfield, compared to the FAA's Preferred Alternative B1(b) which is a two runway configuration with the closure of Runway 13/31.

This increase in runway crossings with Alternative B4 will increase the complexity of the coordination of air traffic control ground movements. These crossings could become an operational concern for air traffic control as usage of Runway 13/31 increases with future demand. At some point, ground operations could become sufficiently complex to affect the overall efficiency of aircraft operations on both Runways 13/31 and Runway 9R/27L. To maintain the safe and efficient crossing of runways, additional air traffic control coordination would be required with Alternative B4, as compared to the FAA's Preferred Alternative (B1b). [118]

- Alternative C1 has a higher level of delay during all weather conditions as compared to the FAA's Preferred Alternative (B1b) in 2020; average minutes of delay per operation for Alternative C1 is 5.0; average minutes of delay per operation for Alternative B1b is 3.1.

  During IFR conditions, which occur 6.9 percent of the year, Alternative C1 would have delays comparable to the No Action Alternative and much higher than the FAA's Preferred Alternative. While Alternative C1 would have 5.0 average minutes of delay per operation under all weather conditions, the average minutes of delay under IFR conditions could be as high as 32.2 average minutes of delay in East Flow operations and as high as 79.1 average minutes of delay in West Flow operations. Only the No Action Alternative results in this level of delay under IFR conditions. By comparison, Alternative B1b would have 3.2 average minutes of delay in East Flow operations and 8.3 average minutes of delay in West Flow operations. *See* the Final EIS, Appendix F *Net Benefits Analysis*, Table F12 *Alternatives Delay Detail – Year 2020*.

  With the configuration of the dependent north parallel runway system of Alternative C1, there would be more runway crossings as compared to the FAA's Preferred Alternative (B1b). The Alternative C1 airfield configuration would

[116] Decommissioning the crosswind runway was stipulated in the Board's December 9, 2003, motion and included in the October 2004 County Objective Statement.

[117] Broward County Florida, Master Plan Update – Phase I, Draft Final Summary Report, January 2006, Leigh Fisher Associates, A division of Jacobs Consultancy Inc. Broward County is currently conducting Phase II.

[118] Department of Transportation Notice of program renewal. *Runway Incursion Information Evaluation Program* Federal Register Notice Volume 69. No 138 July 20, 2004; and Memorandum from Rick Marinelli, P.E. Airport Engineering Division, AAS-100, x77669 To: All Regional Airports Division Managers Subject Engineering Brief No. 75: *Incorporation of Runway Incursion Prevention into Taxiway and Apron Design*, November 19, 2007.

require aircraft to cross an active runway to access the terminal area. In east flow and west conditions, under Alternative C1, every arrival to Runway 8/26 would need to cross the departure runway, Runway 9L/27R. An increase in runway crossings at FLL will increase the complexity of the coordination of air traffic control ground movements. To maintain the safe and efficient crossing of runways, additional air traffic control coordination would be require as compared to the FAA's Preferred Alternative (B1b).

Finally, Alternative C1 would not address the overall project purpose because it would not meet the airport sponsor's goal of flexibility to allow future growth opportunities. Alternative C1 would result in substantial impacts (72 percent) to existing airport property and tenant leasehold facilities. While there would be available land for future airport facility development, this majority of this land is non-airside (45 acres), and located west of Interstate 95, and there would be minimum airside land available for future airport development.

The airport currently contains an estimated 363 acres of airport properties and tenant leasehold facilities outside of the central terminal complex. With Alternative C1 there would be a substantial displacement of 261.5 acres (72 percent) of airport properties and tenant leasehold facilities compared to the FAA's Preferred Alternative (B1b) which would displace 18.6 acres (five percent) of facilities. After development of the new runway and associated facilities, there would be 71.9 acres of on-airport land available for future airport property and tenant leasehold facility development compared to 134.6 acres with the FAA's Preferred Alternative (B1b). Only eight acres would be available for airside development compared to 39 acres for the FAA's Preferred Alternative (B1b). Alternative C1 would reduce Broward County's ability to generate aeronautical and non-aeronautical revenue streams at FLL and would result in an imbalance between developed airside facilities and the land available for potential development.

In sum, Alternative B1b is the development alternative that has the least impacts on wetlands while best achieving the basic aviation purpose of the project of adding capacity and reducing delays without compromising the overall purpose of the project to preserve opportunities for future growth.

Upon determining that there were no practicable alternatives to the wetland impacts, the FAA attempted to minimize and mitigate wetland impacts of the selected alternative. A sequencing process was followed to avoid wetland impacts, followed by minimizing wetland impacts, and finally, by requiring mitigation for unavoidable impacts to the aquatic environment. This sequence is described in the Clean Water Act Section 404 (b)(1) Guidelines (40 CFR, Part 230, Subparts B-F). Subpart B requires the analysis of alternatives that avoid wetland encroachments and states that no discharge shall be permitted unless measures have been taken to minimize potential adverse impacts. The FAA notes that the USACE acknowledges the avoidance and minimization that have occurred over the history of this proposed project.[119]

[119] Letter from Tori K. White, Chief, Palm Beach Gardens Permits Section, U.S. Army Corps of Engineers, Jacksonville District. To: Virginia Lane, FAA Orlando Airports District Office. RE: Palm Beach Gardens Regulatory Section, Fort Lauderdale-Hollywood International Airport Draft EIS, SAJ-1995-4561. Dated: March 6, 2008.

The avoidance and minimization of impacts to wetlands was considered by Broward County in the development of the Proposed Action. In December 2003, the Broward County Commission approved a modified south runway expansion which was to stay within the confines of 7th Avenue on the east side of the Airport. This configuration avoids impacts to the wetlands located to the east of 7th Avenue. This reduced the overall impacts to wetlands by approximately five acres as compared to the previous proposed project considered in earlier NEPA documents.[120] In particular, this configuration greatly reduces impacts to Wetland 25 from approximately 14 acres to less than one-half acre.

In addition, the Proposed Action includes a shortened approach light system in compliance with FAA design standards. This configuration further minimizes impacts to wetlands as compared to a standard approach light system. The shortened approach light system reduces wetland impacts by 0.57 acres and avoids permanent impacts to West Lake Park. Broward County committed to the use of a shortened runway approach light system for the Proposed Action to minimize wetland impacts.[121]

The runway approach light system would require the installation of cables in the vicinity of the Dania Cut-Off Canal. These cables are proposed to be installed through directional drilling under the Dania Cut-Off Canal or a comparable method. This technique places the cables below the bottom of the canal, which avoids impacts to the canal bottom and avoids impacts to the aquatic habitat adjacent to, and within the canal.

The construction of access road(s) to the approach light system for maintenance has the potential to impede the underlying flow of water. The access road(s) would be designed with sufficient cross-road culverts to allow tidal waters to flow freely. The culvert arrangement would avoid creating measurable secondary hydrologic impacts on the surrounding wetlands. Design and construction options to further reduce potential impacts would be evaluated during the permit process.

The FAA has developed conceptual wetland mitigation based on input from, and in coordination with, the U.S. Army Corps of Engineers (USACE), the South Florida Water Management District (SFWMD), and the U.S. Environmental Protection Agency (EPA), and the National Marine Fisheries Service (NMFS).

The FAA took into consideration the functional values lost by the resource to be impacted in the wetland analysis contained in the EIS and has proposed appropriate compensatory wetland mitigation as identified in the Airport Sponsor's *Conceptual Wetland Mitigation Plan*.[122] The USACE and SFWMD have acknowledged these considerations and proposed mitigation.[123,124]

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[120] The *Supplemental Draft Environmental Impact Statement Proposed Expansion of Runway 9R-27L Fort Lauderdale-Hollywood International Airport, February 2002*, identified that permanent impacts to approximately 21 acres of wetlands would occur as a result of the Proposed Project.

[121] See Appendix E, *Airfield Planning, Design, & Constructability Review*, Section E.1.5, *NAVAID Facilities*.

[122] See the Final EIS, Appendix M, *Conceptual Wetland Mitigation Plan*.

[123] Letter from Tori K. White, Chief, Palm Beach Gardens Permits Section, U.S. Army Corps of Engineers, Jacksonville District. To: Virginia Lane, FAA Orlando Airports District Office. RE: Palm Beach Gardens Regulatory Section, Fort Lauderdale-Hollywood International Airport Draft EIS, SAJ-1995-4561. Dated: March 6, 2008.

Based on the availability of mitigation credits that would be available from West Lake Park and based on the USACE and SFWMD comments received to date on the Airport Sponsor's *Conceptual Wetland Mitigation Plan*, wetland impacts would be mitigated for the FAA's Preferred Alternative (B1b). The mitigation proposed in the Airport Sponsor's *Conceptual Wetland Mitigation Plan* will be finalized during the USACE Section 404 and SFWMD Environmental Resource Permit (ERP) permitting processes.

Broward County, as the applicant, will apply for all required permits. Broward County has obtained permits from the USACE and the SFWMD that allow for habitat restoration and enhancement within West Lake Park.[125] Broward County has provided a letter indicating its commitment to implement the wetland mitigation that would be required for project impacts.[126] A Department of the Army permit under Section 404 of the Clean Water Act will be required for this project and a modification to the SFWMD Environmental Resource Permit (ERP) No. 06-00339-S for impacts to jurisdictional wetlands. In response to the NMFS Conservation Recommendations[127], the FAA will ensure that the Airport Sponsor, in consultation with NMFS Habitat Conservation Division (HCD), will develop a mitigation and monitoring plan as part of the Section 404 permit process.

In response to the NMFS Conservation Recommendations, the FAA will ensure that the Airport Sponsor, in consultation with NMFS, will develop a mitigation and monitoring plan as part of the 404 permit process. Based on the preceding, NMFS has indicated that the FAA has completed its coordination in accordance with the Magnuson-Stevens Act.[128]

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[124] Letter from Sally B. Mann, Director, Office of Intergovernmental Programs, Florida Department of Environmental Projection, to Virginia Lane, FAA Orlando Airports District Office, RE: SAI# FL200806204295C Reference SAI# FL200703223172C. Dated: July 28, 2008.

[125] United States Army Corps of Engineers (USACE) Permit Number SAJ-2002-00072 and South Florida Water Management District (SFWMD) Permit Number 06 04016 P.

[126] Letter from Marc Gambrill, Broward County Aviation Department, to Virginia Lane, FAA Orlando Airports District Office. Dated December 4, 2007

[127] Letter from Paul Weller for Miles M. Croom, Assistant Regional Administrator, Habitat Conservation Division, National Marine Fisheries Service, to Virginia Lane, FAA Orlando Airports District Office. Dated: May 17, 2007

[128] Email from Pace Wilbur, Atlantic Branch Chief, Charleston (F/SER47) Southeast Regional Office, NOAA Fisheries, to Virginia Lane, FAA Orlando Airports District Office. Dated: November 25, 2008

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5. COMMENTS ON THE FINAL EIS

The FAA has carefully assessed and considered comments received on the Final EIS in making its decision. Appendix A of this ROD (*Comments Received and FAA Responses on the Final EIS*) provides copies of comments received on the Final EIS with responses to substantive comments received from federal, state, and local agencies, municipalities, and individuals.

The following is an overview of the most commonly raised issues contained in the comments on the Final EIS:

- FAA's Terminal Area Forecast used in the analysis is obsolete due to increases in jet fuel prices and reduction in airline schedules
- FAA's analysis of demand narrowed the focus of purpose and need
- FAA's capacity and demand projections were flawed
- FAA did not adequately explain the fatal flaw analysis as it related to the alternatives to be evaluated in the environmental consequences chapter of the EIS
- Non-runway development alternatives were unreasonably eliminated from further consideration
- Air quality analysis and findings are not adequate
- Noise modeling and findings are not adequate
- The socioeconomic impact analysis and effect of aircraft overflight on property values is inadequate
- Cumulative impacts analysis is inadequate
- FAA did not provide enough information regarding identification of Alternative B1b as the FAA's Preferred Alternative
- Final EIS does not follow substantive procedural and legal requirements including those required by NEPA, CEQ, and the FAA's own regulations

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6. FINDINGS, DETERMINATIONS, AND CERTIFICATIONS

In accordance with federal law and agency guidance, the FAA makes the following findings, determinations, and certifications for the selected alternative. These findings, determinations, and certifications are based upon the information and analysis contained in the Final EIS and the Administrative Record supporting the EIS.

6.1 COMPLIANCE WITH LAWS, REGULATIONS, AND EXECUTIVE ORDERS

There are a number of federal, state, and local agency approvals and permits that would have to be issued before the FAA's Preferred Alternative (B1b) could be implemented. These approvals and permits were identified in an Section 2 of this ROD. There are also Executive Orders (EOs) such as those concerning floodplains (EO 11988) and wetlands (EO 11990), that would be applicable to the selected alternative. Section 6.1 summarizes the degree to which the selected alternative is consistent with the laws, regulations, and Executive Orders not specific to FAA's regulatory authority.

- **Determination of general conformity under the Clean Air Act, 42 U.S.C. § 7506(c)(1).**

  The FAA has determined that its preferred alternative conforms to the State Implementation Plan for all criteria pollutants including the one hour ozone standard under Section 176(c)(1) of the Clean Air Act, as amended [42 U.S.C. § 7506(C)(1)], as implemented by 40 CFR Part 93. Based upon an estimate of ozone precursor emissions (NOx and VOCs), the preferred alternative would result in emissions below de minimis levels in 2009, 2010, and 2011. It would reduce emissions in comparison to the Future No Action Alternative in 2012 and 2020.

  This determination is based on analysis contained in the Final EIS in Chapter Five *Affected Environment*, Section 5.B *Air Quality*, and Chapter Six *Environmental Consequences*, Section 6.B *Air Quality*.

- **Determination that the Proposed Action is consistent with approved coastal zone management programs, Executive Order 13089, Coral Reef Protection; Coastal Barrier Resources Act, 16 U.S.C. 3501-3510, and Coastal Zone Management Act, 16 U.S.C. 1451-1464.**

  The Florida Department of Environmental Protection (FDEP) has issued a preliminary determination that the FAA's Preferred Alternative is consistent with the policies of the Florida Coastal Management Program (FCMP). The state's issuance of the necessary resource permits to Broward County as airport sponsor will serve as the final finding of consistency with the FCMP.

  This determination is based on analysis contained in the Final EIS in Chapter Five *Affected Environment*, Section 5.E.4 *Coastal Resources*, and Chapter Six *Environmental Consequences*, Section 6.E.4 *Coastal Resources*. *See* correspondence from the Florida Department of Environmental Protection. Dated July 28, 2008, provided in Appendix B, *Agency Letters: Concurrence, Certifications, Correspondence*.

- **Determination under 49 U.S.C. 303(c) [Section 4(f)] with respect to use of any publicly-owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state or local significance; or land from an historic site of national, State, or local significance.**

  The FAA has determined there would be no direct or constructive use of any publicly-owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state or local significance; or land from an historic site of national, State, or local significance, as a result of the implementation of the FAA's Preferred Alternative (B1b).

  The FAA's Preferred Alternative (B1b) would have a temporary construction impact to West Lake Park, which is a Section 4(f) resource, in the event that a temporary slurry pipe is used to transport dredge material from Port Everglades to FLL. The Broward County Parks and Recreation Division informed the FAA that this portion of West Lake Park is not accessible to the public and there are no park programs or activities offered in this portion of the park. There would be no permanent change or alterations to the park and all land disturbed would be fully restored. *See* Appendix B, *Agency Letters: Concurrence, Certifications, Correspondence* to review the correspondence from the Broward County Parks and Recreation Division, dated December 12, 2006.[129]

  This determination is based on analysis contained in the Final EIS in Chapter Five *Affected Environment*, Section 5.D.2, *Section 4(f) Properties [Recodified as 49 U.S.C. 303(c)] and Section 6(f) Land and Water Conservation Fund Act* and Chapter Six *Environmental Consequences*, Section 6.D.2, *Section 4(f) Properties [Recodified as 49 U.S.C. 303(c)] and Section 6(f) Land and Water Conservation Fund Act*.

- **Findings and determinations regarding the potential impact to endangered or threatened and protected species, marine mammals, essential fish habitat and migratory birds. Endangered Species Act, 16 U.S.C. 1531-1544. Marine Mammal Protection Act, 16 U.S.C. 1361-1421h. Related Essential Fish Habitat Requirements of the Magnuson-Stevens Act, as amended by the Sustainable Fisheries Act, 16 U.S.C. 1855(b)(2). Migratory Bird Treaty Act, 16 U.S.C. 703-712.**

  The FAA has determined that the FAA's Preferred Alternative (B1b) "may affect, but is not likely to adversely affect" Federally-listed endangered or threatened species (i.e. the Smalltooth sawfish), would have no affect on Johnson's Seagrass, and "may affect, but is not likely to adversely affect" marine mammals (West Indian manatee). FAA has also determined that it is "not likely to affect" state-listed species (Florida Burrowing Owl), and that there would be no significant impacts to essential fish habitat or migratory birds. There are no designated critical habitats within the Study Area. The FAA determined that there would be "no effect" on the other eight Federally-listed animal species and the other 16 state listed animal and 35 state listed plant species that would potentially occur or be present in the Study Area.

[129] Although West Lake Park, identified as a 4f property, will receive wetland mitigation as a consequence of this project, the mitigation plan for this park had been previously submitted and permitted. The mitigation set forth in the EIS and ROD will enhance the park as it currently exists, and therefore would not constitute a "use" as contemplated under 4f.

This determination is based on informal consultation, agency coordination and analysis, including a Biological Assessment contained in the Final EIS in Chapter Five *Affected Environment*, Section 5.F.1 *Fish, Wildlife, and Plants*, Chapter Six *Environmental Consequences*, Section 6.F.1 *Fish, Wildlife, and Plants*, the *Conceptual Wetland Mitigation Plan* January 24, 2008, provided in the Final EIS Appendix M, B*iological Resources*, and *Direct, Secondary, and Cumulative Effects on Essential Fish Habitat* February 5, 2008 provided in the Final EIS Appendix M, B*iological Resources*. Agency concurrence/coordination letters are included in this ROD in Appendix B *Agency Letters: Concurrence, Certifications, Correspondence*.

The U.S. Fish and Wildlife Service (USFWS) has concurred with the FAA's determination that the project "may affect, but is not likely to adversely affect" the West Indian manatee. The FAA agrees to follow the Service's *Standard Manatee Construction Conditions* during implementation of the project. The USFWS has concurred with the FAA's determination that the project "may affect, but is not likely to adversely affect" the wood stork. The FAA agrees to provide mitigation to offset the loss of wood stork foraging habitat resulting from the project. The number of credits to offset any potential loss of wood stork foraging habitat could be based on the USFWS *Draft Wood Stork Foraging Analysis Methodology*.[130]

The National Marine Fisheries Service (NMFS) has concurred with the FAA's determination that the smalltooth sawfish "are not likely to be adversely affected" by the project. The FAA agrees to use turbidity controls and comply with NMFS' March 23, 2006, *Sea Turtle and Smalltooth Sawfish Construction Conditions*[131] during implementation of the project.

Consultation with the NMFS was conducted pursuant to section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884:16 U.S.C. 1531 *et seq*.). The FAA prepared a Biological Assessment (BA) for potential impacts to the smalltooth sawfish and other species regulated by the NMFS under Section 7(c) of the Endangered Species Act. The NMFS reviewed the BA and concurred with the FAA determination that the smalltooth sawfish "are not likely to be affected" by the Proposed Action.[132] The FAA will ensure that the construction will use turbidity controls and comply with the NMFS' March 23, 2006, *Sea Turtle and Smalltooth Sawfish Construction Conditions*.

The FAA provided an Essential Fish Habitat (EFH) assessment in accordance with 50 CFR Section 600.920(e) for an EFH assessment in the Draft EIS. In response to their comments on the Draft EIS, the NMFS provided Conservation Recommendations in accordance with Section 305(b)(4)(A) of the Magnuson-

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130 Letter from Paul Souza, Field Supervisor, South Florida Ecological Services Office, U.S. Fish and Wildlife Services, South Florida Ecological Services Office, to Virginia Lane, FAA Orlando Airports District Office, RE: Service Federal Activity Code: 41420-2007-FA-0701. Dated: January 31, 2008.

131 Letter from Roy E. Crabtree, Ph.D., Regional Administrator, National Marine Fisheries Service, to Virginia Lane, FAA Orlando Airports District Office, RE: File: 1514-22.f.1.FL, Ref: I/SER/2008/ 00504. Dated: March 24, 2008.

132 Letter from Roy E. Crabtree, Ph.D., Regional Administrator, United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Regional Office. To: Virginia Lane, FAA Orlando Airports District Office. Dated March 24, 2008.

Stevens Act, and also requested additional information in order to fully evaluate the proposed project.[133] The FAA provided the requested additional information and the FAA's response to the NMFS EFH Conservation Recommendations.[134] The FAA has fully considered the EFH Conservation Recommendations in accordance with the requirements of Section 305(b)(4)(B) of the Magnuson-Stevens Act. Consistent with the NMFS EFH Conservation Recommendations, a *Conceptual Wetland Mitigation Plan* to compensate for unavoidable impacts to wetlands and EFH was provided in the Final EIS, Appendix M, B*iological Resources*. The *Conceptual Wetland Mitigation Plan* references a monitoring plan for the ecological success of the off-site compensatory mitigation as described in Section Five of the *Conceptual Wetland Mitigation Plan*. Further refinement of the *Conceptual Wetland Mitigation Plan* and the monitoring plan are to be addressed by Broward County and the USACE during the Section 404 permitting process.

NMFS provided comments on the Final EIS regarding the additional information referenced above.[135] The FAA resubmitted the additional information to NMFS for their review and comment and conducted further coordination with NMFS regarding their Conservation Recommendations.[136]

In response to the NMFS Conservation Recommendations, the FAA will ensure that the Airport Sponsor, in consultation with NMFS HCD, will develop a mitigation and monitoring plan as part of the 404 permit process. Based on the preceding, NMFS has indicated that the FAA has completed its coordination in accordance with the Magnuson-Stevens Act.[137]

The FAA coordinated with the State of Florida Department of Environmental Protection and the Florida Fish and Wildlife Conservation Commission regarding potential impacts to protected state species. Based on the state's coordinated review and comment on the Final EIS[138], the FAA has determined that the implementation of the FAA's Preferred Alternative (B1b) would have no effect upon state listed species. Suitable nesting habitat for the Florida burrowing owl has been historically reported on airport property, but no burrowing owl activity on-airport was observed during field surveys conducted for this EIS in November 2004. Implementation of the FAA's Selected Alternative (B1b) is not likely to result in impacts to the Florida burrowing owl. In accordance with state requirements, the FAA ensures that field surveys would be conducted on-airport

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133 Letter from Paul Weller for Miles M. Croom, Assistant Regional Administrator, Habitat Conservation Division, National Marine Fisheries Service, to Virginia Lane, FAA Orlando Airports District Office, RE: F/SER4:JK/pw. Dated: May 17, 2007

134 Letter from Virginia Lane, FAA Orlando Airports District Office, to Jocelyn Karazsia, National Marine Fisheries Service, with enclosure Direct, Secondary, and Cumulative Effects on Essential Fish Habitat. Dated: September 29, 2008.

135 Letter from Paul Weller for Miles M. Croom, Assistant Regional Administrator, Habitat Conservation Division, National Marine Fisheries Service, to Virginia Lane, FAA Orlando Airports District Office, RE: F/SER4:JK/pw. Dated: July 25, 2008

136 Letter from Virginia Lane, FAA Orlando Airports District Office, to Jocelyn Karazsia, National Marine Fisheries Service, with enclosure *Direct, Secondary, and Cumulative Effects on Essential Fish Habitat*. Dated: September 29, 2008.

137 Email from Pace Wilbur, Atlantic Branch Chief, Charleston (F/SER47) Southeast Regional Office, NOAA Fisheries, to Virginia Lane, FAA Orlando Airports District Office. Dated: November 25, 2008

138 Letter from Sally B. Mann, Director, Office of Intergovernmental Programs, Florida Department of Environmental Projection, to Virginia Lane, FAA Orlando Airports District Office, RE: SAI# FL200806204295C Reference SAI# FL200703223172C. Dated: July 28, 2008.

within any appropriate habitat to determine the presence or absence of this species no less than 90 days prior to beginning construction of the project to ensure that the species has not recurred.

- **Floodplain determination and findings in accordance with Executive Order 11998, *Floodplain Management*. The environmental decision made by the FAA must also include floodplain findings in accordance with DOT Order 5650.2, *Floodplain Management and Protection*.**

  The FAA has determined that the FAA's Preferred Alternative (B1b) would not result in a significant encroachment on a floodplain as defined in DOT Order 5650.2, *Floodplain Management and Protection* which implements Executive Order 11998, *Floodplain Management*. This determination is based on analysis contained in the Final EIS in Chapter Five *Affected Environment*, Section 5.E.3 *Floodplains*, and Chapter Six *Environmental Consequences*, Section 6.E.3 *Floodplains*.

  With the exception of the No Action Alternative, a floodplain encroachment would occur with any of the runway development alternatives due to the existing airfield geometry and the presence of major transportation corridors and surrounding development. However, none of the runway development alternatives would result in a significant encroachment. The FAA will ensure through special grant conditions that the Airport Sponsor's final design for the proposed project minimize potential harm to or within the base floodplain. The FAA's Preferred Alternative (B1b) would conform to applicable state and local floodplain protection standards.

- **Determination concerning effects on historic properties in accordance with Section 106 of the National Historic Preservation Act of 1966. [National Historic Preservation Act, 16 U.S.C. 470(f)].**

  The FAA has determined in accordance with Section 106 of the National Preservation Act of 1966 that there would be no effect of the Preferred Alternative on any properties either listed or eligible to be listed on the National Register of Historic Places as a result of implementation of the FAA's Preferred Alternative (B1b). The Florida Historic Preservation Officer has concurred with the FAA's determination that there would be no effect of the Preferred Alternative on any properties either listed or eligible to be listed on the National Register of Historic Places as a result of implementation of the FAA's Preferred Alternative (B1b).[139,140]

  This determination is based on analysis contained in the Final EIS in Chapter Five *Affected Environment*, Section 5.D.1 *Historic, Architectural, Archeological, and Cultural Resources* and Chapter Six *Environmental Consequences*, Section 6.D.1 *Historic, Architectural, Archeological, and Cultural Resources*.

[139] Letter from Frederick P. Gaske, Director, and State Historic Preservation Officer, to John Whitaker, Janus Research, RE: DHR Project File No. 2005-12090. Dated: December 28, 2005

[140] Letter from Frederick P. Gaske, Director, and State Historic Preservation Officer, to Virginia Lane, FAA Orlando Airports District Office, RE: DHR Project File No. 2007-2396-B & 2007-2527-B. Dated: July 17, 2007.

- **Determination regarding coordination and consultation with Native American representatives in accordance with DOT Order 5301.1, Department of Transportation Programs, Policies, and Procedures Affecting American Indians, Alaska Natives, and Tribes; and FAA Order 1210.20, American Indian and Alaskan Native Tribal Consultation Policy and Procedures.**

  Throughout the EIS process, the FAA has coordinated with Native American representatives in accordance with DOT Order 5301.1, *Department of Transportation Programs, Policies, and Procedures Affecting American Indians, Alaska Natives, and Tribes*; and FAA Order 1210.20, *American Indian and Alaskan Native Tribal Consultation Policy and Procedures*. This coordination is documented in the Final EIS in Chapter Six *Environmental Consequences*, Section 6.D.1 *Historic, Architectural, Archeological, and Cultural Resources*, and Appendix K.1, *Historic, Architectural, Archeological, and Cultural Resources*.

  No comments were received by the FAA from Native American representatives during the EIS process.

- **Determination regarding environmental justice in accordance with Executive Order 12898 and DOT Order 5610.2, Environmental Justice.**

  The FAA has determined that in accordance with Executive Order 12898 and DOT Order 5610.2, *Environmental Justice*, no disproportionately high and adverse impacts would occur to minority or low income populations as a result of the implementation of the FAA's Preferred Alternative (B1b). This determination is based on analysis contained in the Final EIS in Chapter Five *Affected Environment*, Section 5.H.1.2 *Environmental Justice* and Chapter Six *Environ-mental Consequences*, Section 6.H.1.2 *Environmental Justice*.

- **Determination that appropriate water quality requirements will be satisfied in accordance with the Clean Water Act. Clean Water Act, 33 U.S.C. §§ 1251, et seq.**

  The FAA has determined that the FAA's Preferred Alternative (B1b) would not result in significant adverse water quality impacts for either surface or ground waters.

  This determination is based on analysis contained in the Final EIS in Chapter Five *Affected Environment*, Section 5.E.1 *Water Quality* and Chapter Six *Environmental Consequences*, Section 6.E.1. *Water Quality*. All permits in accordance with water quality requirements will be obtained including a Section 401 Water Quality Certification from the South Florida Water Management District (SFWMD) and a modification to the National Pollutant Discharge Elimination System (NPDES) permit (Section 402 of the Clean Water Act) for proposed construction activities; this would be coordinated through the SFWMD.

- **Determination by the FAA in accordance with Executive Order 11990, Protection of Wetlands. Any impact to wetlands would necessitate a wetlands determination by the FAA in accordance with the above-mentioned Executive Order and Department of Transportation (DOT) Order 5660.1A, Preservation of the Nation's Wetlands, and Section 404 of the Clean Water Act. 33 U.S.C. § 1344.**

The FAA has selected the FAA's Preferred Alternative (B1b) for approval, which will impact 16.83 acres of wetlands (15.41 acres of direct wetland impacts and 1.42 acres of secondary wetland impacts).[141] Therefore, consistent with Executive Order 11990, prior to approval, the FAA must determine that there is no practicable alternative to the wetland impacts of such development. Under CWA Section 404 Guidelines, an alternative is practicable if it is available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes. 40 CFR §230.10(a)(2).

As discussed in Section 4.4 of this ROD, the FAA has determined that there is no practicable alternative to the selected alternative. The FAA then considered whether impacts to wetlands resulting from Alternative B1b could be minimized or mitigated.

A sequencing process was followed to avoid wetland impacts, followed by minimizing wetland impacts, and finally, by requiring mitigation for unavoidable impacts to the aquatic environment. The FAA notes that the USACE acknowledges the avoidance and minimization that have occurred over the history of this proposed project.[142]

The FAA has developed conceptual wetland mitigation based on input from, and in coordination with, the U.S. Army Corps of Engineers (USACE), the South Florida Water Management District (SFWMD), and the U.S. Environmental Protection Agency (EPA), and the National Marine Fisheries Service (NMFS).

The FAA took into consideration the functional values lost by the resource to be impacted in the wetland analysis contained in the EIS and has proposed appropriate compensatory wetland mitigation as identified in the Airport Sponsor's *Conceptual Wetland Mitigation Plan*.[143] The USACE and SFWMD have acknowledged these considerations and proposed mitigation.[144,145]

The FAA has determined there is no practicable alternative to the selected alternative, consistent with Executive Order 11990, Protection of Wetlands, Executive Order and Department of Transportation (DOT) Order 5660.1A, Preservation of the Nation's Wetlands, and Section 404 of the Clean Water Act. 33 U.S.C. § 1344. The FAA has taken all steps to ensure that all practicable measure to minimize harm to wetlands were included in the selected alternative.

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141 *See* the Final EIS, Appendix M.3, *Conceptual Wetland Mitigation Plan* and Section 3.2, *Secondary Impacts.*

142 Letter from Tori K. White, Chief, Palm Beach Gardens Permits Section, U.S. Army Corps of Engineers, Jacksonville District. To: Virginia Lane, FAA Orlando Airports District Office. RE: Palm Beach Gardens Regulatory Section, Fort Lauderdale-Hollywood International Airport Draft EIS, SAJ-1995-4561. Dated: March 6, 2008.

143 See the Final EIS, Appendix M, *Conceptual Wetland Mitigation Plan*.

144 Letter from Tori K. White, Chief, Palm Beach Gardens Permits Section, U.S. Army Corps of Engineers, Jacksonville District. To: Virginia Lane, FAA Orlando Airports District Office. RE: Palm Beach Gardens Regulatory Section, Fort Lauderdale-Hollywood International Airport Draft EIS, SAJ-1995-4561. Dated: March 6, 2008.

145 Letter from Sally B. Mann, Director, Office of Intergovernmental Programs, Florida Department of Environmental Projection, to Virginia Lane, FAA Orlando Airports District Office, RE: SAI# FL200806204295C Reference SAI# FL200703223172C. Dated: July 28, 2008.

- **Actions associated with the project that would require relocation assistance for displaced persons or businesses pursuant to the Uniform Relocation Assistance and Real Property Acquisition Policies Act (42 U.S.C. 4601 et seq.).**

  These statutory provisions, imposed by Title II of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, require that state or local agencies, undertaking federally-assisted projects which cause the involuntary displacement of persons or businesses, must make relocation benefits available to those persons impacted. As disclosed in the Final EIS Chapter Six Environmental Consequences, Section 8.4.1.4 Facility and Infrastructure Impacts, the FAA's Preferred Alternative (B1b) would require the full or partial acquisition of the Hilton Fort Lauderdale Airport Hotel and the Dania Boat Sales properties. These businesses would be eligible for federal relocation benefits. The FAA's Preferred Alternative (B1b) would not displace any persons.

- **The FAA has given this proposal the independent and objective evaluation required by the Council on Environmental Quality (40 C.F.R. Section 1506.5).**

  As the Final EIS outlined, a lengthy process led to the ultimate identification of the FAA's Preferred Alternative (B1b), the disclosure of potential impacts, and the recommendation of appropriate mitigation measures. This process began with the FAA's competitive selection of an independent Third Party Contractor and continued throughout preparation of the Draft and Final EIS, culminating in identification of the selected alternative in this ROD. The FAA provided input, advice, and expertise throughout the planning and technical analysis, along with administrative direction and legal review of the project. From its inception, the FAA has taken a strong leadership role in the environmental evaluation of this project and has maintained the good faith, objectivity, and integrity of the review process.

6.2 DETERMINATIONS UNDER 49 USC SECTIONS 47106 AND 47107

The FAA makes the following determinations for this project based upon the appropriate information and data contained in the EIS and the administrative record. These environmental determinations are prerequisites for agency approval of applications for grants of federal funding.

- **Determination of consistency with existing plans of public agencies for the development of the areas surrounding the airport. Airport Development Grant Program, 49 U.S.C. 47106(a)(1).**

  It has been the long-standing policy of the FAA to rely heavily upon actions of local planning organizations to satisfy the project consistency requirements of 49 U.S.C. 47106(a)(1) [*see*, e.g., SOC v. Dole, 787 F.2d 186, 199 (7th Cir.,1986)]. Furthermore, both the legislative history and consistent agency interpretations of this statutory provision make it clear that reasonable, rather than absolute, consistency with these plans is all that is required.

  In the development of the Broward County Metropolitan Planning Organization (MPO) *2030 Long Range Transportation Plan* (LRTP) the MPO determined that the Airport Sponsor's proposed project, as described in the Fort Lauderdale-

Hollywood International Airport Master Plan, was consistent with the 2030 LRTP.[146] The FAA finds that the FAA's Preferred Alternative (B1b) is consistent with the existing plans of public agencies authorized by the state in the area in which the airport is located to plan for the development of the area surrounding the airport, and will contribute to the purposes of the 49 U.S.C. 47101 et seq. The FAA is satisfied that it has fully complied with 49 U.S.C. 47106(a)(1).

The FAA's Preferred Alternative (B1b) is consistent with the local comprehensive plans that have been adopted by surrounding jurisdictions as discussed in the Final EIS, Chapter Six, *Environmental Consequences*, Section 6.C.2.2 *Consistency With Local Plans* and described in Chapter Five, *Affected Environment*, Section 5.C.2.2, *Land Use Plans*, and Appendix J.2, *Land Use Policies*. The FAA has also reviewed and considered the substantial documentation in the EIS record demonstrating that throughout the environmental process Broward County has shown concern for the impact of the proposed development action on surrounding communities.

- **Determination that fair consideration has been given to the interests of communities in or near the project location. Airport Development Grant Program, 49 U.S.C. 47106(b)(2).**

  The local planning process (initiated in 1994)[147] and the FAA's environmental process for this EIS, which began with a January 19, 2005 Notice of Intent to prepare an environmental impact statement, results in this point of decision. The EIS process provided opportunities for the expression of, and response to, issues put forward by communities in or near the project location. Nearby communities and their residents have had the opportunity to express their views during agency and public scoping meetings in January 2005, at project focus group meetings throughout the EIS process, at an interim public information meeting held in February 2006, during the Draft EIS comment period (March-May 2007), at the FAA public information workshop held concurrent to the public hearing (May 1, 2007), at the FAA public hearing (May 1, 2007), and during the comment period following public issuance of the Final EIS in June 2008. The Airport Sponsor also conducted a separate public hearing after issuance of the Draft EIS in June 2007 to provide area residents the opportunity to express their views regarding the proposed action.

  The FAA's consideration of these community views, including those of federal, state, and local officials, public organizations, and public individuals are set forth in the Final EIS in Appendix A *Agency Streamlining*, Appendix B *Public Involvement*, Appendix P *Response To Comments*, and Appendix R *Comments Received After Close of the Comment Period;* and in this ROD in Appendix A, *Comments Received and FAA Responses on the Final EIS.* Thus, the FAA has determined that throughout the environmental process, beginning at its earliest planning stages, fair consideration was given to the interest of communities in or near the project location.

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[146] *Broward MPO 2030 Long Range Transportation Plan Update*, Adopted December 2004, Amended July 2007. Section 3.4 Review of Relevant Plans and Studies; and Section 3.4.7 *Fort Lauderdale-Hollywood International Airport (FLL) Master Plan*.

[147] Broward County Public Hearing on the Airport Master Plan Update and approval of the plan by the Broward County Board of County Commissioners, April 4, 1994.

- **Determination in accordance with 47106(c)(1)(A) that the Sponsor has provided the following certifications:**
  - **an opportunity for a public hearing was given to consider the economic, social, and environmental effects of the location and the location's consistency with the objectives of any planning that the community has carried out; 49 U.S.C. 47106(c)(1)(A)(i)]**
  - **the airport management board has voting representation from the communities in which the project is located or has advised the communities that they have the right to petition the Secretary about a proposed project; and 49 U.S.C. 47106(c)(1)(A)(ii)]**
  - **with respect to an airport development project involving the location of an airport, runway, or major runway extension at a medium or large hub airport, the airport sponsor has made available to and has provided upon request to the metropolitan planning organization in the area in which the airport is located, if any, a copy of the proposed amendment to the airport layout plan to depict the project and a copy of any airport master plan in which the project is described or depicted; and 49 U.S.C. 47106(c)(1)(A)(iii)]**

  The Airport Sponsor has provided certifications to the FAA that in accordance with 47106 (c)(1)(A): (i) that an opportunity for a public hearing was given to consider the economic, social, and environmental effects of the location and the location's consistency with the objectives of any planning that the community has carried out; (ii) that the airport management board has voting representation from the communities in which the project is located; and (iii) that the Airport Sponsor has made available to and has provided upon request to the metropolitan planning organization in the area in which the airport is located, if any, a copy of the proposed amendment to the airport layout plan to depict the project and a copy of any airport master plan in which the project is described or depicted.[148] *See* Appendix B, *Agency Letters: Concurrence, Certifications, Correspondence.*

- **Determination in accordance with 49 U.S.C. 47106(c)(1)(C) to approve major airport development projects having significant adverse impacts on natural resources, including fish and wildlife, natural, scenic, and recreation assets, water and air quality, or another factor affecting the environment, only after finding that no possible and prudent alternative to the project exists and that every reasonable step has been taken to minimize the adverse effect.**

  The FAA has determined that implementation of the FAA's Preferred Alternative (Alternative B1b) would cause significant adverse effect on natural resources. Specifically, the FAA anticipates that there will be noise, compatible land use and

[148] Letter from Kent G. George, A.A.E., Director of Aviation, Broward County Aviation Department, Fort Lauderdale-Hollywood International Airport, to Dean Stringer, Manager, FAA Orlando Airports District Office, RE: Sponsor's Certification in Accordance with 49 U.S.C. 47106(c)(1)(a)(i), (ii), (iii); and Certification in Accordance with 49 U.S.C. 47107(a)(10). Dated: September 30, 2008.

wetlands impacts.[149] Alternatives B4, C1, and D2 would have fewer environmental impacts for noise, compatible land use, and wetlands, than the Selected Alternative (B1b). All of these alternatives are capable of being built as a matter of sound engineering principles. However, for the reasons explained in detail below, considering the basic purpose and need to increase runway capacity and reduce delays as well as overall project purposes relating to flexibility for future growth, none of these alternatives would be possible and prudent.

- Alternative B4 has a higher level of delay as compared to the FAA's Preferred Alternative (B1b) in 2020; average minutes of delay per operation for Alternative B4 is 4.7; average minutes of delay per operation for Alternative B1b is 3.1. Moreover, based on the FAA's EIS analysis which is supported by letters from airlines operating at FLL, there is potential for pilot refusal of the 6,000-foot runway under Alterative B4. Any refusals increase the delay beyond the 4.7 average. According to the sensitivity analysis, pilot refusals on Alternative B4 would result in 10.2 minutes of average delay per operation. Theses pilot refusals would cause this alternative to exceed the acceptable level of delay identified for FLL (six minutes).

  In addition, Alternative B4 is the only runway development that would not close the crosswind runway, Runway 13/31 which is an objective of Broward County. Closing the crosswind runway would result in noise reduction and increase available property for future development in the mid-field and West Side areas of the airport property. [150,151] The FAA has received public comment supporting the closure of Runway 13/31.

  There would be runway crossings of Runway 13/31 with Alternative B4 compared to the FAA's Preferred Alternative (B1b), which closes Runway 13/31. The Alternative B4 three-runway airfield configuration would require aircraft to cross an active runway (13/31) to access the north or south airfield, compared to the FAA's Preferred Alternative B1(b) which is a two runway configuration with the closure of Runway 13/31.

  This increase in runway crossings with Alternative B4 will increase the complexity of the coordination of air traffic control ground movements. These crossings could become an operational concern for air traffic control as usage of Runway 13/31 increases with future demand. At some point, ground operations could become sufficiently complex to affect the overall efficiency of aircraft operations on both Runways 13/31 and Runway 9R/27L. To maintain the safe

[149] In light of the policy "that airport projects…provide for the protection and enhancement of natural resources and the quality of the environment of the United States" (49 USC §47101(a)(6)), the FAA interprets the phrases "natural resources" and "another factor affecting the environment" to include impacts of noise on people. But for the consideration of noise and compatible land use, the section 47106(c)(1)(C) determination for this project would parallel the determination regarding practicable alternatives for avoiding wetland impacts.

[150] Decommissioning the crosswind runway was stipulated in the Board's December 9, 2003, motion and included in the October 2004 Broward County Objective Statement, see Appendix B in this ROD.

[151] Broward County Florida, Master Plan Update – Phase I, Draft Final Summary Report, January 2006, Leigh Fisher Associates, A division of Jacobs Consultancy Inc. Broward County is currently conducting Phase II.

and efficient crossing of runways, additional air traffic control coordination would be required with Alternative B4, as compared to the FAA's Preferred Alternative (B1b). [152]

For these reasons, the FAA has determined that the B4 would not be possible and prudent.

- Alternative C1 has a higher level of delay during all weather conditions as compared to the FAA's Preferred Alternative (B1b) in 2020; average minutes of delay per operation for Alternative C1 is 5.0; average minutes of delay per operation for Alternative B1b is 3.1.

  During IFR conditions, which occur 6.9 percent of the year, Alternative C1 would have delays comparable to the No Action Alternative and much higher than the FAA's Preferred Alternative. While Alternative C1 would have 5.0 average minutes of delay per operation under all weather conditions, the average minutes of delay under IFR conditions could be as high as 32.2 average minutes of delay in East Flow operations and as high as 79.1 average minutes of delay in West Flow operations. Only the No Action Alternative results in this level of delay under IFR conditions. By comparison, Alternative B1b would have 3.2 average minutes of delay in East Flow operations and 8.3 average minutes of delay in West Flow operations. *See* the Final EIS, Appendix F *Net Benefits Analysis*, Table F12 *Alternatives Delay Detail – Year 2020*.

  With the configuration of the dependent north parallel runway system of Alternative C1, there would be more runway crossings as compared to the FAA's Preferred Alternative (B1b). The Alternative C1 airfield configuration would require aircraft to cross an active runway to access the terminal area. In east flow and west conditions, under Alternative C1, every arrival to Runway 8/26 would need to cross the departure runway, Runway 9L/27R. An increase in runway crossings at FLL will increase the complexity of the coordination of air traffic control ground movements. To maintain the safe and efficient crossing of runways, additional air traffic control coordination would be require as compared to the FAA's Preferred Alternative (B1b).

  Finally, Alternative C1 would not address the overall project purpose because it would not meet the airport sponsor's goal of flexibility to allow future growth opportunities. Alternative C1 would result in substantial impacts (72 percent) to existing airport property and tenant leasehold facilities. While there would be available land for future airport facility development, this majority of this land is non-airside (45 acres), and located west of Interstate 95, and there would be minimum airside land available for future airport development.

  The airport currently contains an estimated 363 acres of airport properties and tenant leasehold facilities outside of the central terminal complex. With Alternative C1 there would be a substantial displacement of 261.5 acres (72 percent) of airport properties and tenant leasehold facilities compared to the FAA's Preferred Alternative (B1b) which would displace 18.6 acres (five percent)

[152] Department of Transportation Notice of program renewal. *Runway Incursion Information Evaluation Program* Federal Register Notice Volume 69. No 138 July 20, 2004; and Memorandum from Rick Marinelli, P.E. Airport Engineering Division, AAS-100, x77669 To: All Regional Airports Division Managers Subject Engineering Brief No. 75: *Incorporation of Runway Incursion Prevention into Taxiway and Apron Design*, November 19, 2007.

of facilities. After development of the new runway and associated facilities, there would be 71.9 acres of on-airport land available for future airport property and tenant leasehold facility development compared to 134.6 acres with the FAA's Preferred Alternative (B1b). Only eight acres would be available for airside development compared to 39 acres for the FAA's Preferred Alternative (B1b). Alternative C1 would reduce Broward County's ability to generate aeronautical and non-aeronautical revenue streams at FLL.

For these reasons, the FAA has determined that the C1 would not be possible and prudent.

- Alternative D2, as a combination of Alternatives B4 and C1 provides a higher level of capacity and lower delay than the Selected Alternative (B1b), however, Alternative D2 utilizes all available airport property, with a deficiency of 8.2 acres (airside). There would be insufficient available property for existing airport tenant relocation and no available airport property (airside or non-airside) for future aeronautical development. This significant limitation on the growth and economic structure of this airport resulted in a finding that the D2 alternative would not be possible and prudent.

  The FAA has determined that the alternatives that may have resulted in lower environmental impacts are not possible and prudent. The FAA therefore made all possible efforts to minimize the adverse environmental impacts of the Selected Alternative (B1b) and mitigate the unavoidable impacts that result.

  This determination is based on analysis contained in the Final EIS in Chapter Five *Affected Environment*, Chapter Six *Environmental Consequences*, Chapter Seven *Cumulative Impacts,* and Chapter Eight*, Mitigation*.

- **Appropriate action, including the adoption of zoning laws, has been or will be taken to the extent reasonable to restrict the use of land next to or near the airport to uses that are compatible with normal airport operations [49 U.S.C. 47107(a)(10)].**

  The Airport Sponsor has provided written assurance to the FAA, that to the extent reasonable, the Airport Sponsor has taken or will take actions to restrict land uses in the airport vicinity, including the adoption of zoning laws, to ensure the uses are compatible with airport operations.[153] *See* Appendix B, *Agency Letters: Concurrence, Certifications, Correspondence*.

[153] Letter from Kent G. George, A.A.E., Director of Aviation, Broward County Aviation Department, Fort Lauderdale-Hollywood International Airport, to Dean Stringer, Manager, FAA Orlando Airports District Office, RE: Sponsor's Certification in Accordance with 49 U.S.C. 47106(c)(1)(a)(i), (ii), (iii); and Certification in Accordance with 49 U.S.C. 47107(a)(10). Dated: September 30, 2008.

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7. PUBLIC INVOLVEMENT AND AGENCY COORDINATION

The public and federal, state, and local agencies were afforded opportunities to participate in the EIS process and to provide input for FAA consideration in the development of the EIS. The FAA has considered all comments submitted by the general public and the agencies throughout the EIS process.

As part of this process, the FAA briefed federal, state, and local agencies, as well as the public, on the Airport Sponsor's Proposed Project and the runway development alternatives carried forward for detailed evaluation in the EIS. In January 2005, the FAA conducted scoping meetings with agencies and the public to identify the issues to be analyzed in the EIS. On February 2, 2006, a public information workshop was held to provide an update on the status of the EIS process and to receive public comments. *(See* the Final EIS, Appendix B.1, *Scoping,* and Appendix B.3, *Interim Public Workshop.)* Both the FAA and the Airport Sponsor provided opportunities for public involvement and also participated in the various public involvement activities.

7.1 PUBLIC INVOLVEMENT

A series of Project Focus Group meetings were held at key milestones throughout the conduct of the EIS. The Project Focus Groups consisted of small meetings with representatives of community and homeowner association's surrounding the airport. The Project Focus Groups participants represented five communities located in the Study Area: Fort Lauderdale, Plantation, Hollywood, Davie, and Dania Beach. *(See* the Final EIS, Appendix B.2, *Focus Group Meetings.)*

Notices of availability of the Draft EIS and the public information workshop and public hearing were published in 2007 in the Federal Register (March 30), the Sun Sentinel (April 15, 22, and 29), Broward Herald (April 15, 22, and 29), and the El Heraldo (April 16). Following the publication of the Draft EIS and prior to the EIS public hearing, the Broward County Board of County Commissioners requested that the FAA conduct a series of three District-wide briefings at locations in their Districts. These briefings consisted of a presentation of the contents of the Draft EIS followed by a question and answer period. On May 1, 2007, a public information workshop and public hearing were held at the Fort Lauderdale Hollywood Convention Center. Over 600 people attended the FAA public information workshop and the FAA public hearing. *(See* the Final EIS, Appendix B.5, *FAA Public Hearing/Workshop.)*

The FAA's comment period on the Draft EIS closed on May 21, 2007. Comments were received on the Draft EIS from federal, state, and local agencies as well as the public. The FAA reviewed and prepared responses to all substantive comments received on the Draft EIS. This information is provided in the Final EIS in Appendix P, *Response to Comments*.

The FAA continued to receive comments on the information contained in the Draft EIS after the close of the official comment period, May 21, 2007. The FAA's comments to these comments received after the close of the comment period are provided in the Final EIS, Appendix R, *Response to Comments Received After the Close of the Draft EIS Comment Period*.

The EPA's Federal Register Notice on the availability of the Final EIS was published on June 27, 2008. A 30-day agency and public comment period was provided. The FAA has reviewed all comments to determine if any significant or substantial or new issues were raised regarding the analysis or information contained in the Final EIS that had not previously been submitted and considered in the Draft EIS. All comments received were evaluated and considered by the FAA. The responses to those comments are provided in this ROD in Appendix A, *Comments Received and FAA Responses on the Final EIS.*

The City of Dania Beach made a request to the FAA to submit additional comments to supplement their previous comments provided on the Final EIS. Those comments, received in October 2008, were reviewed by the FAA to determine if any significant or substantial or new issues were raised regarding the analysis or information contained in the Final EIS that had not previously been submitted, considered. These comments are responded to in Appendix A of this ROD.

7.2 AGENCY COORDINATION

The FAA coordinated with federal, state, local, and tribal entities throughout the EIS process, including the United States Environmental Protection Agency (EPA), United States Army Corps of Engineers (USACE), United Stated Fish and Wildlife Service (USFWS), the National Marine Fisheries Service (NMFS), the Advisory Council on Historic Preservation (ACHP), the Florida Department of Environmental Protection (FDEP), the Florida Division of Historic Resources, the Florida Department of Transportation (FDOT), South Florida Water Management District (SFWMD), Broward County, and local municipalities.

Vision 100 Act : It is the policy of the United States to undertake projects to increase airport capacity to the maximum feasible extent and further for major projects to protect and enhance natural resources and the quality of the environment.[154] The U.S. Congress stressed the importance of airports to the economy and required the FAA to implement a process for expedited and coordinated environmental reviews for airport capacity enhancement projects at congested airports and for safety and security projects under *Vision 100 Century of Aviation Reauthorization Act Public Law 108-176*. Congress directs the FAA to encourage the construction of capacity projects at congested airports, but qualifies this with the need to assess environmental impacts associated with these projects. FLL was identified as a congested airport in the *FAA's Airport Capacity Benchmark Report of 2004*.[155] Because the FAA has identified FLL as a congested airport, the EIS is subject to the environmental streamlining provisions of the Vision 100 Act.[156]

In accordance with the Vision 100 Act, the FAA entered into a Memorandum of Agreement (MOA) with the following agencies: the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the U.S. Environmental Protection Agency, the Florida Department of Environmental Protection, and Broward County. The MOAs identify agency roles and responsibilities, a methodology for reaching consensus,

[154] 49 U.S.C. 47101(a)(6), (7), Policies.
[155] *FAA's Airport Capacity Benchmark Report of 2004*. Federal Aviation Administration, September 2004.
[156] Vision 100 Century of Aviation Reauthorization Act, Public Law 108-176. December 2003.

and establishes review timeframes and deadlines. The FAA and the MOA signatory agencies have reached consensus on the content of, and the conceptual mitigation identified in, the Final EIS.

Agency Coordination Regarding Impacts to Wetlands: The FAA has consulted with the U.S. Army Corps of Engineers (USACE) and the South Florida Water Management District (SFWMD) regarding wetland impacts and the Airport Sponsor's *Conceptual Wetland Mitigation Plan*.[157] The FAA notes that the USACE acknowledges the avoidance and minimization that have occurred over the history of this proposed project.[158] The SFWMD has commented on the conceptual wetland mitigation plan and permitting requirements under the SFWMD Environmental Resource Permit (ERP) *Basis of Review* process.[159] The FAA has also coordinated the *Conceptual Wetland Mitigation Plan* with the U.S. Environmental Protection Agency (EPA).[160]

National Marine Fisheries Service (NMFS): Consultation with the NMFS was conducted pursuant to section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884:16 U.S.C. 1531 *et seq*.). The FAA prepared a Biological Assessment (BA) for potential impacts to the smalltooth sawfish and other species regulated by the NMFS under Section 7(c) of the Endangered Species Act. The NMFS reviewed the BA and concurred with the FAA determination that the smalltooth sawfish "are not likely to be affected" by the Proposed Action.[161] The FAA will ensure that the construction will use turbidity controls and comply with the NMFS' March 23, 2006, Sea Turtle and Smalltooth Sawfish Construction Conditions.

In response to the NMFS Conservation Recommendations, the FAA will ensure that the Airport Sponsor, in consultation with NMFS HCD, will develop a mitigation and monitoring plan as part of the 404 permit process. Based on the preceding, NMFS has indicated that the FAA has completed its coordination in accordance with the Magnuson-Stevens Act.[162]

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157 *See* Appendix M.3 of the Final EIS, *Conceptual Wetland Mitigation Plan*, Memorandum, To: FLL EIS Administrative Record, From: Mike Tust, Through: Sandra Walters. Subject: Summary of January 31, 2008 telephone conference with Leah Oberlin of the U.S. Army Corps of Engineers (USACE) to discuss analysis and approach of the Federal Aviation Administration's (FAA's) 'Draft' Conceptual Wetland Mitigation Plan for the Ft. Lauderdale-Hollywood International Airport (FLL) Proposed Runway Expansion Environmental Impact Statement (EIS). Dated: January 31, 2008.

158 Letter from Tori K. White, Chief, Palm Beach Gardens Permits Section, U.S. Army Corps of Engineers, Jacksonville District. To: Virginia Lane, FAA Orlando Airports District Office. RE: Palm Beach Gardens Regulatory Section, Fort Lauderdale-Hollywood International Airport Draft EIS, SAJ-1995-4561. Dated: March 6, 2008.

159 Letter from Sally B. Mann, Director, Office of Intergovernmental Programs, Florida Department of Environmental Projection, to Virginia Lane, FAA Orlando Airports District Office, RE: SAI# FL200806204295C Reference SAI# FL200703223172C. Dated: July 28, 2008

160 Letter from Heinz J. Mueller, Chief, NEPA Program Office, Office of Policy and Management, U.S. Environmental Protection Agency, to Virginia Lane, FAA Orlando Airports District Office, RE: EPA NEPA Comments on FAA's FEIS, CEQ #20080244; ERP #FAA-E51052-FL. Dated: July 25, 2008.

161 Letter from Roy E. Crabtree, Ph.D., Regional Administrator, United States Department of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, Southeast Regional Office. To: Virginia Lane, FAA Orlando Airports District Office. Dated March 24, 2008.

162 Email from Pace Wilbur, Atlantic Branch Chief, Charleston (F/SER47) Southeast Regional Office, NOAA Fisheries, to Virginia Lane, FAA Orlando Airports District Office. Dated: November 25, 2008

U.S. Fish and Wildlife Service (USFWS) : Consultation with the USFWS was conducted pursuant to section 7 of the Endangered Species Act of 1973, as amended (Act) (87 Stat. 884:16 U.S.C. 1531 *et seq*.). The USFWS has concurred with the FAA's determinations that the project "may affect, but is not likely to adversely affect" the West Indian manatee and the wood stork. *See* this ROD, Section 6 *Findings, Determinations, and Certifications*.

8. CONDITIONS OF APPROVAL

Section 9 of this ROD outlines the FAA's decision and orders. In granting the approvals contained in Section 9, the FAA incorporates the following conditions.

8.1 FUNDING CONSIDERATIONS

The Airport Sponsor intends to apply for Airport Improvement Program (AIP) funding. This ROD includes the environmental determinations necessary to establish eligibility for approval of grants of federal funding. It does not signify an FAA commitment to provide financial support, which is a separate future decision that will be made in accordance with other applicable federal laws, FAA policies, and procedures. The Airport Sponsor is in the process of finalizing a benefit cost analysis and a financial plan in support of its application for grants of federal funding.

8.2 IMPLEMENTATION OF MITIGATION

In approving this ROD, the FAA is identifying mitigation measures that it deems necessary to avoid or minimize significant environmental impacts associated with approval of the selected alternative.

Section 4 (*Summary of Mitigation Measures)* of this ROD discusses the mitigation actions that are made conditions of approval of this ROD. (These mitigation measures are discussed greater detail in the Final EIS, Chapter Eight, *FAA's Preferred Alternative* and for wetland mitigation in Appendix M.3 *Conceptual Wetland Mitigation Plan*). The approvals contained in this ROD are specifically conditioned upon full implementation of these mitigation measures.

In accordance with 40 CFR § 1505.3, the FAA will take appropriate steps, through federal grant assurances and conditions, airport layout plan approvals, and contract plans and specifications, to ensure that the mitigation actions outlined in this ROD are implemented during project development, and will monitor the implementation of these mitigation actions as necessary to assure that representations made in the Final EIS with respect to mitigation are carried out. These mitigation measures will be made the subject of special conditions included in any future grants of federal financial assistance to the Airport Sponsor.

The primary responsibility for implementation of the mitigation measures that are conditions of approval of this ROD lies with the Airport Sponsor. The FAA will have oversight responsibility to ensure the mitigation measures are implemented. The FAA finds that these measures constitute all reasonable steps to minimize harm and that they represent all practicable means to avoid or minimize harm to wetlands and other environmental harms from the selected alternative and proposed federal actions.

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9. DECISION AND ORDERS

In the Final EIS, Chapter Eight, Section 8.4 *Identification of FAA's Preferred Alternative*, the FAA identified Alternative B1b as the FAA's "preferred alternative." The FAA must now select one of the following choices:

- Approve agency actions necessary to implement the proposed project, or
- Disapprove agency actions to implement the proposed project.

Approval would signify that applicable federal requirements relating to airport development and planning have been met and would permit Broward County, as the Airport Sponsor, to proceed with the proposed development and be eligible to receive federal funding and/or approval to impose and use Passenger Facility Charges for eligible items. In addition, Broward County is required to comply with its obligations under federal grant assurances upon acceptance of a grant offer. Not approving these agency actions would prevent Broward County from proceeding with the implementation of the FAA's Preferred Alternative (B1b).

Decision: I have carefully considered the FAA's goals and objectives in relation to the various aeronautical aspects of the proposed project at Fort Lauderdale-Hollywood International Airport discussed in the Draft Environmental Impact Statement and Final Environmental Impact Statement. The review included: the purpose and need that this project would serve; the alternative means of achieving the purpose and need; the environmental impacts of these alternatives; and the mitigation to preserve and enhance the human, cultural, and natural environment.

Under the authority delegated to me by the Administrator of the FAA, I find that the project in this ROD is reasonably supported. I therefore direct that action be taken to carry out the following agency actions discussed more fully in Section 2 of this ROD, *Requested Federal Actions and Approvals*, including:

1. Eligibility for federal Funds through the Federal Airport Improvement Program (AIP) funding and to impose and use Passenger Facility Charges (PFCs) funding.
2. FAA approval to amend the ALP with the conditions noted in Section 8 of this ROD, *Conditions of Approval,* for the projects summarized in Section 1 of this ROD, *Description of Airport Sponsor's Proposed Action*, which constitutes the selected alternative in this ROD – FAA's Preferred Alternative (B1b).
3. FAA installation and/or relocation of navigational aids associated with the FAA's Preferred Alternative (B1b).
4. The FAA would amend the existing and/or develop new air traffic control procedures for FLL to include an expanded runway and the closure of Runway 13/31. The FAA would have to approve the amended and/or new instrument procedures, verify them through flight testing, and publish the procedures for general use.
5. FAA evaluation, determinations, and actions, through the aeronautical study process of any off-airport obstacles that might be obstructions to the navigable airspace under the standards and criteria of 14 CFR Part 77

Objects Affecting Navigable Airspace[163], and the evaluation of the appropriateness of proposals for on-airport development from an airspace utilization and safety perspective based on aeronautical studies conducted pursuant to the standards and criteria of 14 CFR Part 157, *Notice of Construction, Alteration, Activation, and Deactivation of Airport*.

6. FAA certification and other approvals. FAA modification or amendment of existing certificates or specifications is required to comply with FAA design standards and to accommodate, in a safe and efficient manner, the passenger enplanements and aircraft activity forecasts.
   - Certification under FAR 14 CFR Part 139, Certification of Airports.
   - Operating specifications for scheduled air carriers intending to operate at the airport in the future under FAR 14 CFR Part 121, *Certification and Operations: Domestic, Flag, and Supplemental Air Carriers and Commercial Operations of Large Aircraft*.

Approved:

_____ _____

Douglas R. Murphy
Regional Administrator
FAA Southern Region

Date

[163] 49 U.S.C. § 40103(b) and 40113

10. RIGHT OF APPEAL

This ROD presents the FAA's final decision and approvals for the actions identified, including those taken under the provisions of 49 U.S.C. Subtitle VII, Parts A and B. This decision constitutes a final order of the FAA Administrator subject to review by the Courts of Appeals of the United States in accordance with the provisions of 49 U.S.C. § 46110. Any party seeking to stay the implementation of the ROD must file an application with the FAA prior to seeking judicial relief, as provided in Rule 18(a), Federal Rules of Appellate Procedure.

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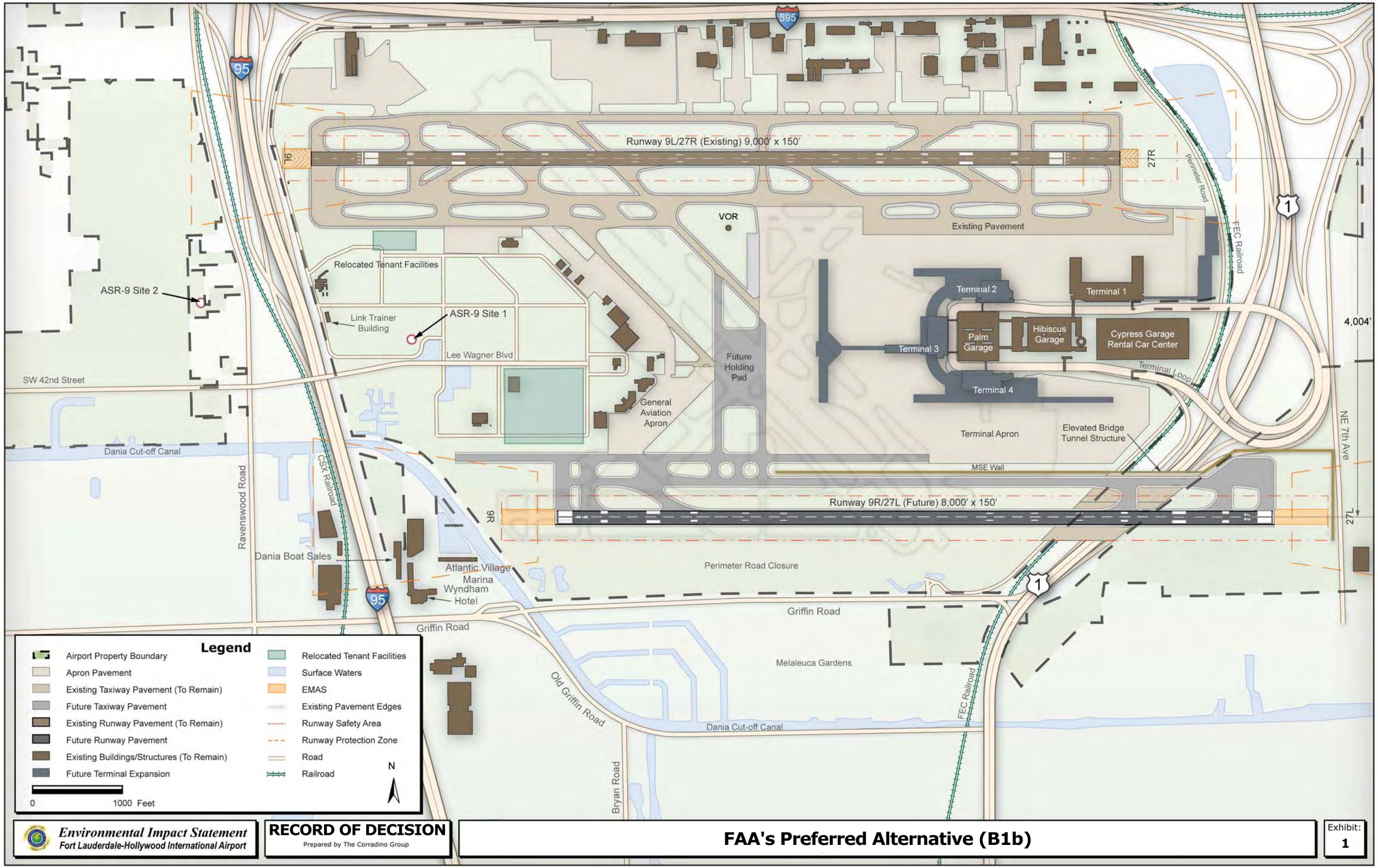


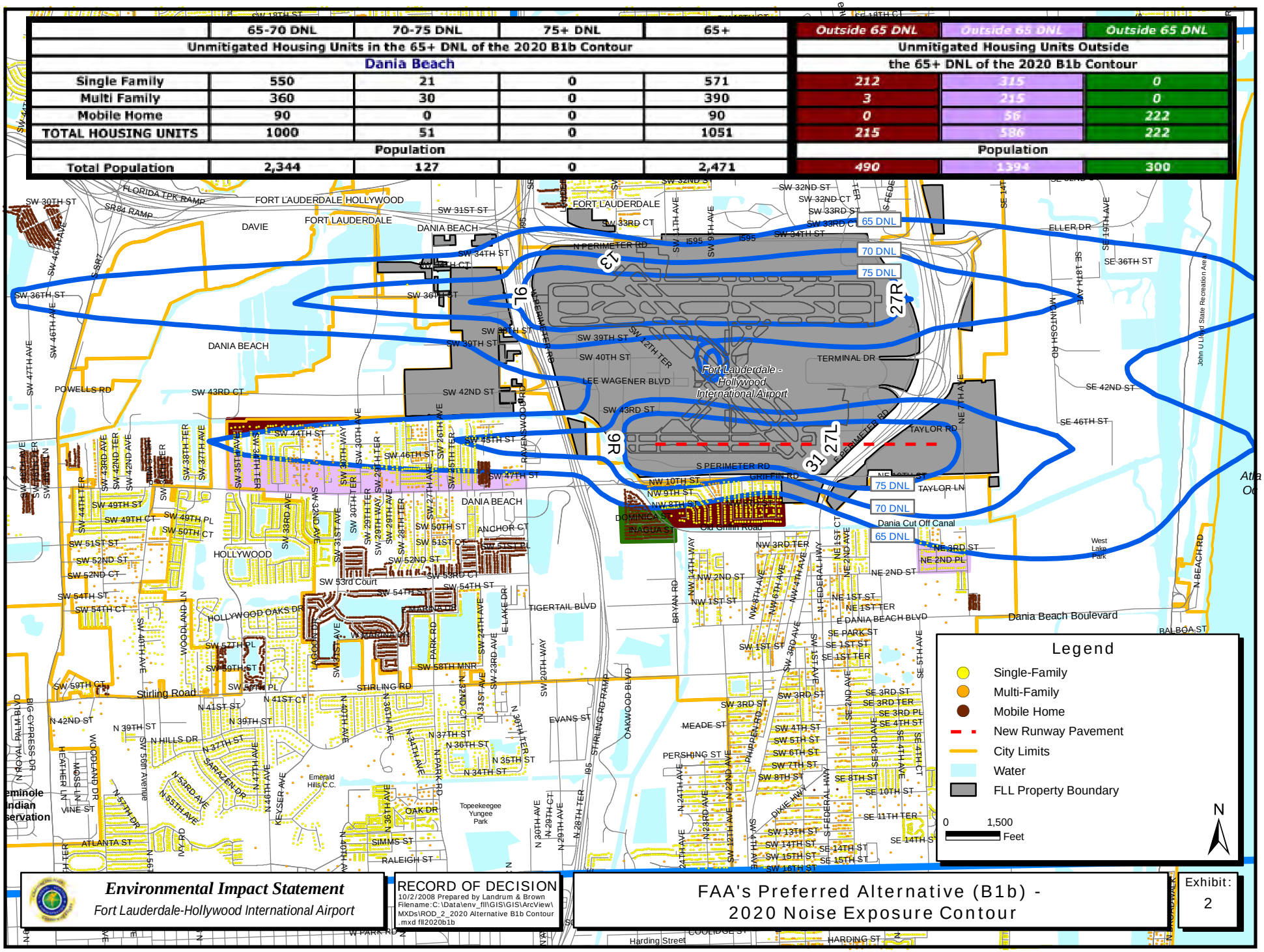
Environmental Impact Statement
Fort Lauderdale-Hollywood International Airport

RECORD OF DECISION
Prepared by The Corradino Group

FAA's Preferred Alternative (B1b)

Exhibit: **1**

	65-70 DNL	70-75 DNL	75+ DNL	65+	Outside 65 DNL	Outside 65 DNL	Outside 65 DNL
Unmitigated Housing Units in the 65+ DNL of the 2020 B1b Contour					Unmitigated Housing Units Outside		
Dania Beach					the 65+ DNL of the 2020 B1b Contour		
Single Family	550	21	0	571	212	315	0
Multi Family	360	30	0	390	3	215	0
Mobile Home	90	0	0	90	0	56	222
TOTAL HOUSING UNITS	1000	51	0	1051	215	586	222
Population					Population		
Total Population	2,344	127	0	2,471	490	1394	300

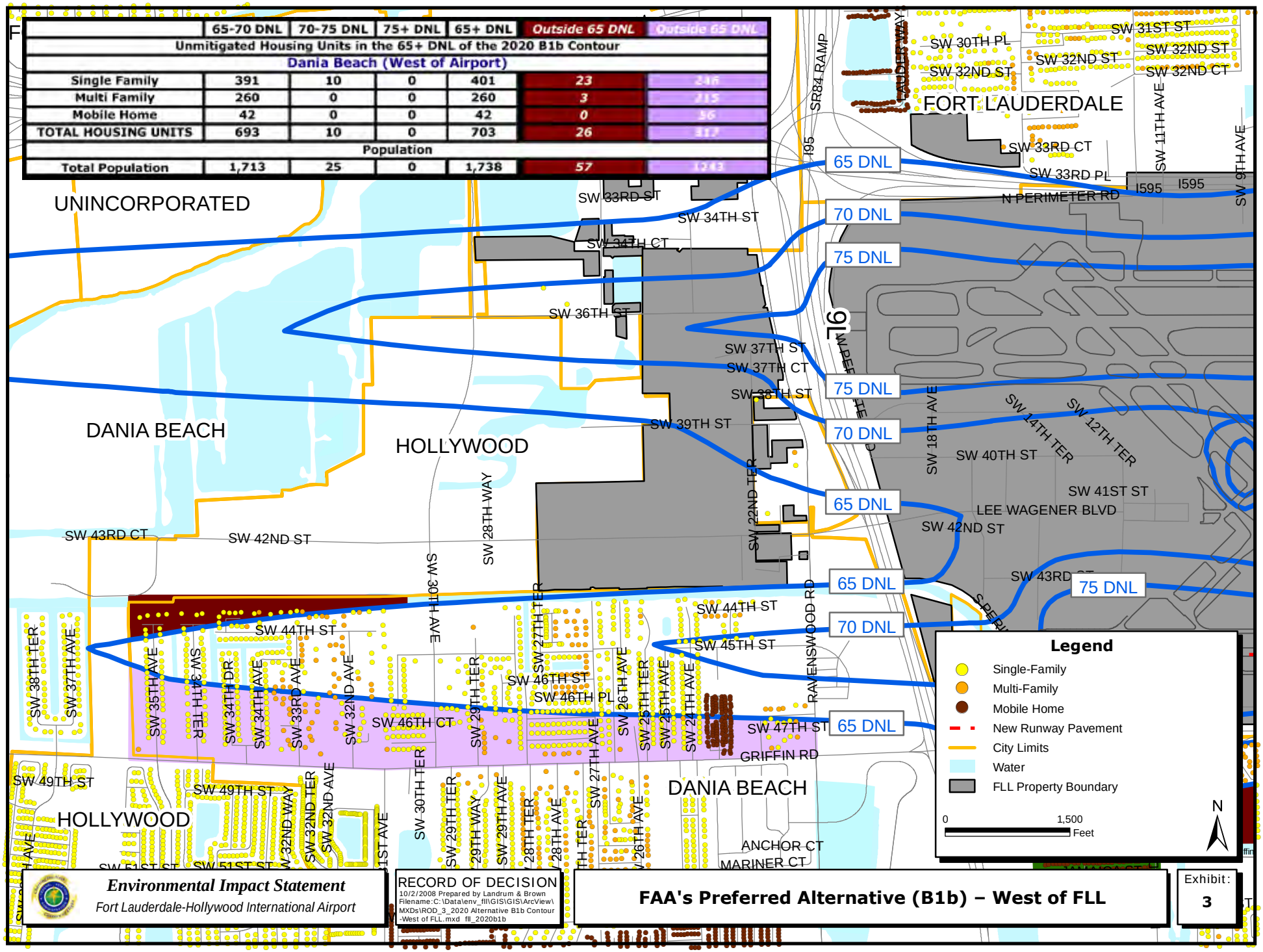


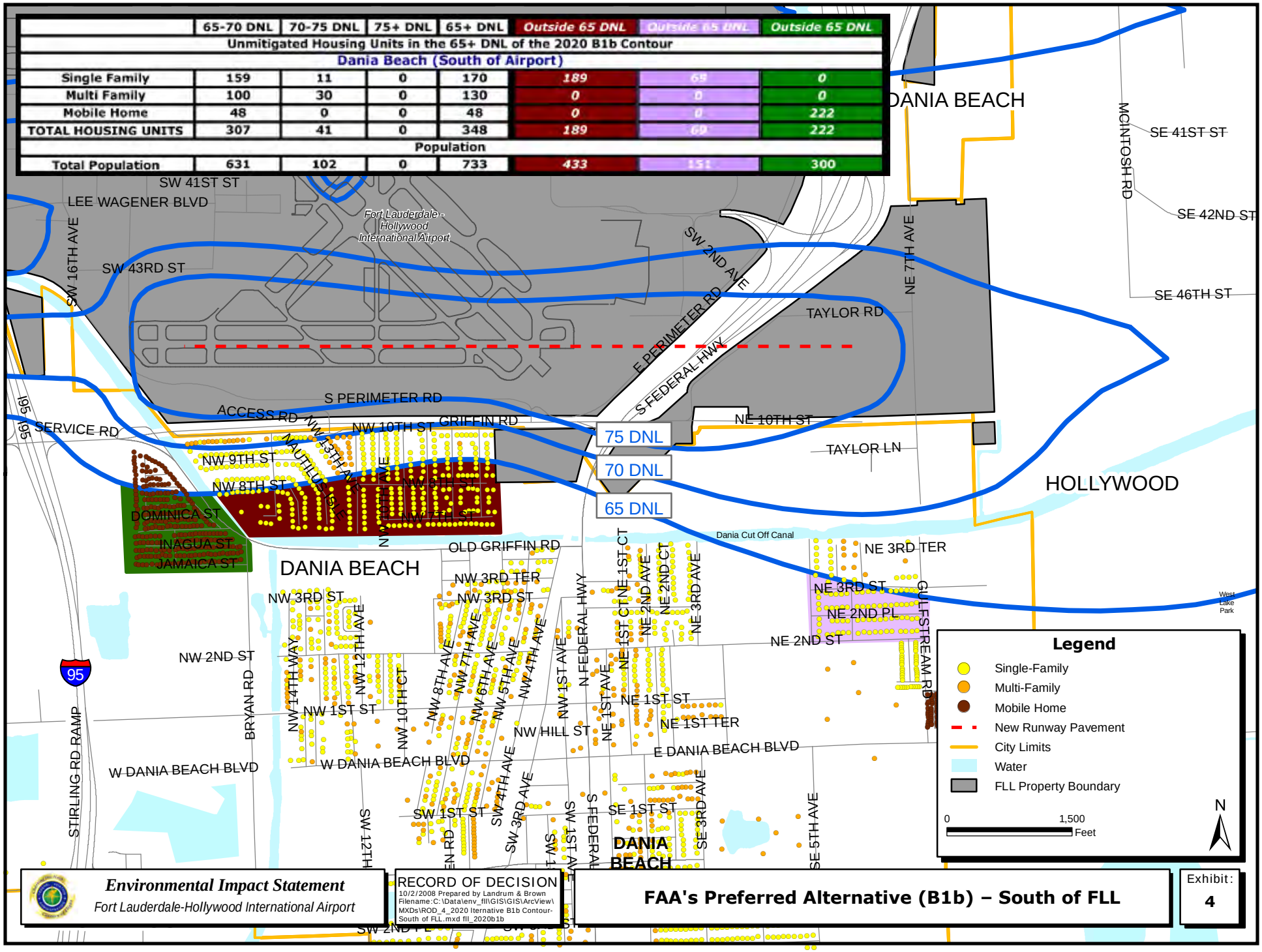
Environmental Impact Statement
Fort Lauderdale-Hollywood International Airport

RECORD OF DECISION
10/2/2008 Prepared by Landrum & Brown
Filename:C:\Data\env_fll\GIS\GIS\ArcView\MXDs\ROD_2_2020 Alternative B1b Contour.mxd fll2020b1b

FAA's Preferred Alternative (B1b) - 2020 Noise Exposure Contour

Exhibit: 2


65-70 DNL | 70-75 DNL | 75+ DNL | 65+ DNL | Outside 65 DNL | Outside 65 DNL
Unmitigated Housing Units in the 65+ DNL of the 2020 B1b Contour
Dania Beach (West of Airport)
Single Family | 391 | 10 | 0 | 401 | 23 | 246
Multi Family | 260 | 0 | 0 | 260 | 3 | 215
Mobile Home | 42 | 0 | 0 | 42 | 0 | 56
TOTAL HOUSING UNITS | 693 | 10 | 0 | 703 | 26 | 317
Population
Total Population | 1,713 | 25 | 0 | 1,738 | 57 | 1243
UNINCORPORATED
DANIA BEACH
HOLLYWOOD
FORT LAUDERDALE
65 DNL
70 DNL
75 DNL
SW 33RD ST
SW 34TH ST
SW 34TH CT
SW 36TH ST
SW 37TH ST
SW 37TH CT
SW 38TH ST
SW 39TH ST
SW 40TH ST
SW 41ST ST
SW 42ND ST
SW 43RD CT
SW 44TH ST
SW 45TH ST
SW 46TH ST
SW 46TH PL
SW 46TH CT
SW 47TH ST
SW 49TH ST
SW 30TH PL
SW 31ST ST
SW 32ND ST
SW 32ND CT
SW 33RD CT
SW 33RD PL
N PERIMETER RD
SR84 RAMP
I95
I595
SW 11TH AVE
SW 9TH AVE
SW 18TH AVE
SW 14TH TER
SW 12TH TER
SW 22ND TER
SW 28TH WAY
SW 30TH AVE
SW 27TH TER
SW 26TH AVE
SW 25TH TER
SW 25TH AVE
SW 24TH AVE
SW 38TH TER
SW 37TH AVE
SW 35TH AVE
SW 34TH TER
SW 34TH DR
SW 34TH AVE
SW 33RD AVE
SW 32ND AVE
SW 29TH TER
SW 29TH WAY
SW 29TH AVE
SW 28TH TER
SW 28TH AVE
SW 26TH AVE
SW 32ND TER
SW 32ND WAY
SW 31ST AVE
RAVENSWOOD RD
LEE WAGENER BLVD
GRIFFIN RD
ANCHOR CT
MARINER CT
Legend
Single-Family
Multi-Family
Mobile Home
New Runway Pavement
City Limits
Water
FLL Property Boundary
0
1,500
Feet
N
Environmental Impact Statement
Fort Lauderdale-Hollywood International Airport
RECORD OF DECISION
10/2/2008 Prepared by Landrum & Brown
Filename:C:\Data\env_fll\GIS\GIS\ArcView\MXDs\ROD_3_2020 Alternative B1b Contour -West of FLL.mxd fll_2020b1b
FAA's Preferred Alternative (B1b) – West of FLL
Exhibit:
3



Environmental Impact Statement
Fort Lauderdale-Hollywood International Airport

RECORD OF DECISION
10/2/2008 Prepared by Landrum & Brown
Filename:C:\Data\env_fll\GIS\GIS\ArcView\MXDs\ROD_4_2020 Iternative B1b Contour-South of FLL.mxd fll_2020b1b

FAA's Preferred Alternative (B1b) – South of FLL

Exhibit: **4**