

# TABLE OF CONTENTS

---

## Kendall-Tamiami Executive Airport Runway Extension Environmental Assessment

	<u>Page</u>
<b>1. Introduction</b>	<b>1-1</b>
1.1 The Environmental Assessment	1-1
1.2 Environmental Evaluation Process	1-1
1.3 Airport Description	1-2
1.4 Proposed Project	1-2
<b>2. Purpose and Need</b>	<b>2-1</b>
2.1 Introduction	2-1
2.2 Purpose of the Proposed Action	2-1
2.3 Need for the Proposed Improvements	2-2
2.3.1 Accommodate the Length Requirements for Existing and Future Fleet of GA Business Jet Aircraft	2-2
2.3.2 Allow the Airport to Function in its Defined Role as a Reliever	2-6
2.3.3 Improve Operational Safety Margin for Aircraft and the Public	2-8
2.4 Requested Federal Action	2-8
2.5 Timeframe of Proposed Action	2-8
<b>3. Alternatives</b>	<b>3-1</b>
3.1 Introduction	3-1
3.2 Alternatives Considered	3-2
3.3 Alternatives Screening Criteria	3-2
3.3.1 Purpose and Need	3-3
3.3.2 Cost and Constructability Considerations	3-3
3.3.3 Miami-Dade Aviation Department Goals	3-4
3.4 Alternatives Evaluation	3-5
3.4.1 Other Modes of Transportation	3-5
3.4.2 Use of Alternate Airport	3-6
3.4.3 Alternative 1: No-Action Alternative	3-6
3.4.4 Alternative 2: Extend Runway 9R-27L at Both Ends	3-7
3.4.4.1 Purpose and Need	3-8
3.4.4.2 Cost and Constructability	3-8
3.4.4.3 MDAD Goals	3-8
3.4.5 Alternative 3: Extend Runway 9R-27L at the West End	3-9
3.4.5.1 Purpose and Need	3-9
3.4.5.2 Cost and Constructability	3-9
3.4.6 Alternative 4: Extend Runway 9L-27R at Both Ends	3-10

	<u>Page</u>
3.4.6.1 Purpose and Need	3-10
3.4.6.2 Cost and Constructability	3-10
3.4.7 Alternative 5: Extend Runway 13-31 at Both Ends	3-11
3.4.7.1 Purpose and Need	3-11
3.4.7.2 Cost and Constructability	3-11
3.4.8 Alternatives Considered but Not Retained	3-12
3.4.9 Alternatives Considered and Retained for Further Analysis	3-12
3.5 Preferred Alternative	3-12
<b>4. Affected Environment</b>	<b>4-1</b>
4.1 Airport Location and Study Area	4-1
4.2 Human Environment	4-1
4.2.1 Land Use	4-1
4.2.2 Noise	4-2
4.2.3 Historic, Archaeological and Cultural Resources	4-13
4.2.4 Socioeconomic and Environmental Justice Characteristics	4-13
4.2.5 Miami-Dade County Comprehensive Development Master Plan Goals	4-14
4.2.6 Section 4(f) and 6(f) Resources	4-15
4.3 Physical Environment	4-15
4.3.1 Water Resources	4-15
4.3.2 Floodplains	4-16
4.3.3 Coastal Resources	4-17
4.3.4 Wild and Scenic Rivers	4-17
4.3.5 Prime and Unique Farmlands	4-17
4.3.6 Air Quality	4-17
4.3.7 Hazardous Materials	4-18
4.3.8 Light Emissions and Visual Impacts	4-20
4.4 Natural Environment	4-20
4.4.1 Fish, Wildlife and Plants	4-20
4.4.2 Threatened and Endangered Species	4-21
4.4.3 Wetlands	4-22
<b>5. Environmental Consequences</b>	<b>5-1</b>
5.1 Aircraft Noise Effects	5-2
5.1.1 Overview of Impacts	5-2
5.1.2 Significance Criteria	5-2
5.1.3 Methodology	5-2
5.1.4 Year 2009 Impacts	5-3
Alternative 1	5-3
Alternative 2	5-7
5.1.5 Year 2015 Impacts	5-10
Alternative 1	5-10
Alternative 2	5-14
5.1.6 Mitigation	5-16

	<u>Page</u>
5.2 Compatible Land Use	5-17
5.2.1 Overview of Impacts	5-17
5.2.2 Significance Criteria	5-17
5.2.3 Methodology	5-17
5.2.4 Year 2009 and 2015 Impacts	5-18
Alternative 1	5-18
Alternative 2	5-18
5.2.5 Mitigation	5-18
5.3 Socioeconomic Impacts, Environmental Justice and Children's Environmental Health and Safety	5-18
5.3.1 Overview of Impacts	5-18
5.3.2 Significance Criteria	5-18
5.3.3 Methodology	5-19
5.3.4 Year 2009 and 2015 Impacts	5-19
Alternative 1	5-19
Alternative 2	5-19
5.3.5 Mitigation	5-20
5.4 Air Quality	
5.4.1 Overview of Impacts	5-20
5.4.2 Significance Criteria	5-20
5.4.3 Methodology	5-21
5.4.4 Year 2009 and 2015 Impacts	5-22
Alternative 1	5-22
Alternative 2	5-22
5.4.5 Mitigation	5-23
5.5 Water Quality	5-24
5.5.1 Overview of Impacts	5-24
5.5.2 Significance Criteria	5-24
5.5.3 Methodology	5-24
5.5.4 Year 2009 and 2015 Impacts	5-25
Alternative 1	5-25
Alternative 2	5-25
5.5.5 Mitigation	5-26
5.6 Department of Transportation Act: Section 4(f)	5-27
5.6.1 Overview of Impacts	5-27
5.6.2 Significance Criteria	5-27
5.6.3 Methodology	5-27
5.6.4 Year 2009 and 2015 Impacts	5-27
Alternative 1	5-27
Alternative 2	5-27
5.6.5 Mitigation	5-28
5.7 Historic, Architectural, Archaeological and Cultural Resources	5-28
5.7.1 Overview of Impacts	5-28

	<u>Page</u>
5.7.2 Significance Criteria	5-28
5.7.3 Methodology	5-29
5.7.4 Year 2009 and 2015 Impacts	5-29
Alternative 1	5-29
Alternative 2	5-30
5.7.5 Mitigation	5-30
5.8 Fish, Wildlife and Plants (Threatened and Endangered Species)	5-30
5.8.1 Overview of Impacts	5-30
5.8.2 Significance Criteria	5-30
5.8.3 Methodology	5-31
5.8.4 Year 2009 and 2015 Impacts	5-32
Alternative 1	5-32
Alternative 2	5-32
5.8.5 Mitigation	5-32
5.9 Wetlands	5-33
5.9.1 Overview of Impacts	5-33
5.9.2 Significance Criteria	5-33
5.9.3 Methodology	5-33
5.9.4 Year 2009 and 2015 Impacts	5-34
Alternative 1	5-34
Alternative 2	5-34
5.9.5 Mitigation	5-34
5.10 Floodplains	5-34
5.10.1 Overview of Impacts	5-34
5.10.2 Significance Criteria	5-34
5.10.3 Methodology	5-35
5.10.4 Year 2009 and 2015 Impacts	5-35
Alternative 1	5-35
Alternative 2	5-35
5.10.5 Mitigation	5-36
5.11 Coastal Resources	5-36
5.11.1 Overview of Impacts	5-36
5.11.2 Significance Criteria	5-36
5.11.3 Methodology	5-37
5.11.4 Year 2009 and 2015 Impacts	5-37
Alternative 1	5-37
Alternative 2	5-37
5.11.5 Mitigation	5-37
5.12 Wild and Scenic Rivers	5-38
5.12.1 Overview of Impacts	5-38
5.12.2 Significance Criteria	5-38
5.12.3 Methodology	5-38
5.12.4 Year 2009 and 2015 Impacts	5-38

	<u>Page</u>
Alternative 1	5-38
Alternative 2	5-38
5.12.5 Mitigation	5-38
5.13 Farmlands	5-39
5.13.1 Overview of Impacts	5-39
5.13.2 Significance Criteria	5-39
5.13.3 Methodology	5-39
5.13.4 Year 2009 and 2015 Impacts	5-39
Alternative 1	5-39
Alternative 2	5-39
5.13.5 Mitigation	5-39
5.14 Natural Resources and Energy Supply	5-40
5.14.1 Overview of Impacts	5-40
5.14.2 Significance Criteria	5-40
5.14.3 Methodology	5-40
5.14.4 Year 2009 and 2015 Impacts	5-41
Alternative 1	5-41
Alternative 2	5-41
5.14.5 Mitigation	5-41
5.15 Light Emissions and Visual Impacts	5-42
5.15.1 Overview of Impacts	5-42
5.15.2 Significance Criteria	5-42
5.15.3 Methodology	5-42
5.15.4 Year 2009 and 2015 Impacts	5-42
Alternative 1	5-42
Alternative 2	5-42
5.15.5 Mitigation	5-42
5.16 Construction Impacts	5-43
5.16.1 Overview of Impacts	5-43
5.16.2 Significance Criteria	5-43
5.16.3 Methodology	5-43
5.16.4 Year 2009 and 2015 Impact	5-43
Alternative 1	5-43
Alternative 2	5-43
5.16.5 Mitigation	5-44
5.17 Hazardous Materials, Pollution Prevention and Solid Waste	5-45
5.17.1 Overview of Impacts	5-45
5.17.2 Significance Criteria	5-45
5.17.3 Methodology	5-46
5.17.4 Year 2009 and 2015 Impacts	5-46
Alternative 1	5-46
Alternative 2	5-46
5.17.6 Mitigation	5-46

	<u>Page</u>
5.18 Secondary (Induced) Impacts	5-47
5.18.1 Overview of Impacts	5-47
5.18.2 Significance Criteria	5-47
5.18.3 Methodology	5-47
5.18.4 Year 2009 and 2015 Impacts	5-47
Alternative 1	5-47
Alternative 2	5-47
5.18.5 Mitigation	5-48
5.19 Cumulative Impacts	5-48
5.19.1 Overview of Impacts	5-48
5.19.2 Significance Criteria	5-48
5.19.3 Methodology	5-48
5.19.4 Year 2009 and 2015 Impacts	5-49
Alternative 1	5-49
Alternative 2	5-49
<b>6. Mitigation</b>	<b>6-1</b>
<b>7. Coordination and Public Involvement</b>	<b>7-1</b>
7.1 Introduction	7-1
7.2 Agency Coordination	7-1
7.3 Public Information Meetings	7-1
7.4 Draft Environmental Assessment Availability for Review	7-2
7.5 Public Hearing	7-2
<b>8. List of Preparers, List of Parties to Whom Sent</b>	<b>8-1</b>
8.1 List of Preparers	8-1
8.2 List of Parties to Whom Sent	8-3
<b>9. Glossary of Terms</b>	<b>9-1</b>
<b>10. References</b>	<b>10-1</b>

## List of Figures

Figure Number		Follows
1-1	Location/Vicinity Map	1-2
1-2	Airport Layout Plan	Figure 1-1
3-1	Alternative 2 - Runway 9R-27L Extension	3-7
3-2	Alternative 3 - Runway 9R-27L Extension West	3-9
3-3	Alternative 4 - Runway 9L-27R Extension	3-10
3-4	Alternative 5 – Runway 13-31 Extension	3-11
4-1	General and Detailed Study Areas	4-1
4-2	Existing Land Use	Figure 4-1
4-3	East Flow Primary Flight Corridors	4-10
4-4	West Flow Primary Flight Corridors	Figure 4-3
4-5	Helicopter Primary Flight Corridors	Figure 4-4
4-6	2005 DNL Contours	4-12
4-7	Area of Potential Effect	4-13
4-8	Section 4(f) Properties	4-15
4-9	Flood Hazard Zones	4-16
4-10	FLUCFCS & Protected Species	4-20
5-1	2009 No Action DNL Contours	5-6
5-2	2009 With Runway Extension DNL Contours	5-9
5-3	2015 No Action DNL Contours	5-13
5-4	2015 With Runway Extension DNL Contours	5-16

## List of Tables

2.3-1	FAA Runway Length Recommendations	2-3
2.3-2	Business Jet Runway Length Requirements	2-5
2.3-3	Reliever Airport Criteria	2-6
2.3-4	Weight Penalties Existing Runway (Net Jet Operations Only)	2-7
3.1	Alternatives Screening	3-13
4.2.2-1	2005 Aircraft Operations	4-4
4.2.2-2	Daily Average Air Taxi Operations (2005)	4-5
4.2.2-3	Daily Average Itinerant General Aviation Operations (2005)	4-6
4.2.2-4	Daily Average Itinerant Military Operations (2005)	4-7
4.2.2-5	Daily Average Local Flight Training Operations (2005)	4-7
4.2.2-6	2005 Runway Use Percentages	4-8
4.2.2-7	2005 Arrival Corridor Percentages	4-9
4.2.2-8	2005 Departure Corridor Percentages	4-10
4.2.2-9	2005 Helicopter Corridor Percentages	4-11
4.2.2-10	FAA Compatible Land Use Guidelines	4-12
4.2.4-1	Demographic Data for Miami-Dade County and General Study Area	4-14
4.4.3-1	Habitat Classification and Acreage	4-23
5.1-1	2009 Aircraft Operations For Both Alternative 1 and Alternative 2	5-3
5.1-2	2000 Daily Average Air Taxi Operations For Alternative 1	5-4
5.1-3	2009 Daily Average General Aviation Operations For Alternative 1	5-5
5.1-4	2009 Daily Average Itinerant Military Operations For Alternative 1	5-6
5.1-5	2009 Daily Average Local Flight Training Operations For Alternative 1	5-6

5.1-6	2009 Daily Average Air Taxi Operations For Alternative 2	5-7
5.1-7	2009 Daily Average General Aviation Operations For Alternative 2	5-8
5.1-8	2009 Daily Average Itinerant Military Operations For Alternative 2	5-9
5.1-9	2009 Daily Average Local Flight Training Operations For Alternative 2	5-9
5.1-10	2015 Aircraft Operations For Both Alternative 1 and Alternative 2	5-10
5.1-11	2015 Daily Average Air Taxi Operations For Alternative 1	5-11
5.1-12	2015 Daily Average General Aviation Operations For Alternative 1	5-12
5.1-13	2015 Daily Average Itinerant Military Operations For Alternative 1	5-13
5.1-14	2015 Daily Average Local Flight Training Operations For Alternative 1	5-13
5.1-15	2015 Daily Average Air Taxi Operations For Alternative 2	5-14
5.1-16	2015 Daily Average General Aviation Operations For Alternative 2	5-15
5.1-17	2015 Daily Average Itinerant Military Operations For Alternative 2	5-16
5.1-18	2015 Daily Average Local Flight Training Operations For Alternative 2	5-16
5.4.4-1	Emissions Inventory (tons) For Construction Activities	5-22
5.4.4-2	2009 Change In Emissions Alternative 2 Compared To Alternative 1	5-23
5.4.4-2	2015 Change In Emissions Alternative 2 Compared To Alternative 1	5-23
5.10-1	Comparison Of Peak Discharges For The 10-Year, 72-Hour Design Storm At TMB	5-36

## Appendices

- A Letters from Aircraft Operators
  
- B Correspondence from Federal, State and Local Agencies and Response to Comments on Early Notification Package
  
- C Public Meetings and Response to Citizen Comments
  
- D Aviation Noise Fundamentals
  
- E Threatened & Endangered Species Survey
  
- F Cultural Resource Assessment Survey
  
- G Draft EA Notice of Availability and Public Hearing
  
- H Comments and Responses on Draft EA