

Table of Contents

Section 1	Introduction	1-1
1.1	Proposed Project Components Contemplated in This Environmental Assessment, Their Independent Utility, and Cumulative Impacts Assessment	1-1
1.2	Construction Component Background and Airport Master Plan Process	1-2
1.2.1	City of Atlanta Continued Commitment to Infrastructure Modernization and Customer Service at Hartsfield-Jackson.	1-3
1.2.2	Enhancing Customer Service by Better Accommodating International Nonstop Departures	1-5
1.2.3	Factors Affecting Aircraft Take-off Performance and Their Effects on Runway Length	1-7
1.3	Modified Departure Procedures Background.....	1-8
1.4	Status of Airline Industry, Forecast Activity, and Desire to Implement Proposed Action	1-10
1.5	National Airspace System Benefits of Implementing the Proposed Project	1-13
1.6	The Proposed Project	1-14
1.6.1	Construction Component.....	1-14
1.6.2	Modified Departure Procedures	1-16
1.6.2.1	Modified Departure Headings Component	1-16
1.6.2.2	Cross Complex Departures Component.....	1-20
1.7	Agency Scoping and Public Information Workshop	1-24
1.8	Proposed Project Scope Change after Agency Scoping and Public Information Workshop.....	1-25
1.9	City of College Park Public Meeting and Draft Environmental Assessment Public Hearing.....	1-25
1.9.1	City of College Park Public Meeting	1-26
1.9.2	Draft Environmental Assessment Public Hearing.....	1-26
1.10	180-Day Cross Complex Departures Component	1-26
1.11	Compliance with NEPA, FAA, and State of Georgia Environmental Evaluation Requirements	1-27

Section 2	Purpose and Need	2-1
2.1	Introduction	2-1
2.2	Purpose and Need – Construction Component	2-1
2.3	Purpose and Need – Cross Complex Departures Component and Modified Departure Headings Component	2-1
2.4	Implementation of Proposed Project Not Anticipated to Affect Growth in Passengers or Operations	2-1
2.5	Requested Federal Action	2-2
2.5.1	Requested Federal Actions – Construction Component	2-3
2.5.2	Requested Federal Actions – Modified Departure Procedures	2-3
2.6	Relationship to Recent Environmental Documentation and Other Projects at Hartsfield-Jackson	2-3
2.7	Proposed Project Funding and Implementation Schedule.....	2-4
Section 3	Alternatives	3-1
3.1	Introduction	3-1
3.1.1	Construction Component Alternatives	3-1
3.1.2	Modified Departure Procedures Alternatives	3-1
3.2	Construction Component Alternatives Screening Criteria.....	3-1
3.3	Construction Component Alternatives Considered and Application of Level 1 Screening	3-2
3.3.1	On-Site Family of Alternatives	3-4
3.3.1.1	Concept and Use of Declared Distances to Reduce Construction Impact and Cost.....	3-4
3.3.1.2	Application of Declared Distances to On-Site Alternatives	3-4
3.3.2	Off-Site Family of Alternatives	3-7
3.3.2.1	Accommodating International Activity at an Atlanta-Area General Aviation/Military Airport...3-7	
3.3.2.2	Accommodating International Activity at Other Airports in Georgia or Adjacent States.....	3-8
3.3.3	Other Family of Alternatives	3-9
3.4	Construction Component Level 2 Screening.....	3-10
3.4.1	Introduction	3-10

3.4.1.1	Runway 8R-26L Extension Alternative.....	3-9
3.4.1.2	Runway 9L-27R Extension Alternative.....	3-10
3.4.1.3	Runway 10-28 Extension Alternative.....	3-10
3.5	Results of Level 2 Screening.....	3-16
3.6	Sponsor’s Preferred Construction Component Alternative.....	3-16
3.7	Modified Departure Headings Component and Cross Complex Departures Alternatives Screening Criteria.....	3-16
3.8	Modified Departure Headings Component Alternatives Considered and Application of Screening	3-17
3.8.1	Safe and Efficient Airspace	3-17
3.8.2	Noise Exposure to New Noise-Sensitive Areas	3-21
3.8.3	Developing Headings Alternatives within the Wedges	3-21
3.8.3.1	West Wedge	3-21
3.8.3.2	East Wedge	3-24
3.9	Cross Complex Departures Component Alternatives Considered and Application of Screening	3-25
3.10	Summary of Departure Heading Use.....	3-25
3.11	Sponsor’s preferred Modified Departure Procedures Alternative	3-26
3.12	Effects of Implementing the No-Action Alternative	3-27
3.13	Construction Component Construction Schedule.....	3-27
3.14	Applicable Federal, State, or Local Required Permits/Approvals....	3-28
Section 4	Affected Environment.....	4-1
4.1	Project Setting	4-1
4.1.1	Physiography	4-1
4.1.2	Geology	4-1
4.1.3	Soils.....	4-5
4.1.4	Climatology	4-5
4.2	Environmental Impact Categories Not Evaluated	4-5
4.3	Air Quality	4-6
4.3.1	Regional/Local Air Quality Conditions.....	4-7
4.3.2	Meteorological Conditions	4-7

4.3.3	Status of the State Implementation Plan.....	4-9
4.4	Compatible Land Use	4-9
4.5	Department of Transportation Act: Section 4(f).....	4-9
4.5.1	Introduction	4-9
4.5.2	Resources Proximate to the Airport	4-11
4.5.3	Resources Distant from the Airport	4-11
4.6	Fish, Wildlife, and Plants.....	4-11
4.6.1	Threatened and Endangered Species	4-11
4.6.2	Existing Conditions.....	4-11
4.7	Hazardous Materials, Pollution Prevention, and Solid Waste.....	4-12
4.7.1	Regulatory Background.....	4-12
4.7.2	Existing and Historic Conditions	4-13
4.7.3	Solid Waste Disposal Facilities	4-13
4.8	Historical, Architectural, Archaeological, and Cultural Resources..	4-13
4.8.1	Construction Component.....	4-13
4.8.2	Modified Departure Headings Component and Cross Complex Departures Component.....	4-14
4.9	Light Emissions and Visual Impacts	4-14
4.10	Noise	4-14
4.11	Socioeconomic Impacts, Environmental Justice, and Children’s Health & Safety Risks.....	4-16
4.11.1	Introduction	4-16
4.11.2	Socioeconomic Conditions	4-16
4.11.3	Environmental Justice	4-18
4.11.4	Children’s Health and Safety Risks	4-18
4.12	Water Quality.....	4-18
4.12.1	Surface Water	4-18
4.12.2	Stormwater Regulations and Airport Permitting.....	4-19
Section 5	Environmental Consequences.....	5-1
5.1	Introduction.....	5-1
5.2	Separate and/or Combined Evaluation of Each Component	5-1
5.3	Air Quality	5-2

5.3.1	Introduction	5-2
5.3.2	Construction Component – Construct Runway 27R Extension	5-2
5.3.3	Construction Component – Additional Taxi Distance	5-3
5.3.4	Construction Component – Change in Stage Lengths and Climb Performance	5-3
5.3.5	Modified Departure Headings Component – Use of Additional Heading on Runway 8R	5-3
5.3.6	Modified Departure Headings Component – use of Additional Heading on Runway 27R.....	5-3
5.3.7	Annual net Emissions Increase/Decrease by Year	5-3
5.3.8	Clean Air Act Conformity	5-3
5.3.8.1	De Minimis Comparison.....	5-4
5.3.8.2	Regional Significance Comparison	5-5
5.3.9	Dispersion Modeling	5-5
5.3.10	Air Toxics/Hazardous Pollutants Assessment	5-6
5.3.11	Conclusion.....	5-7
5.4	Compatible Land Use	5-7
5.4.1	Construction Component.....	5-7
5.4.2	Cross Complex Departures Component and Modified Headings Component	5-7
5.5	Construction Impacts	5-7
5.5.1	Description of Proposed Project Construction Component Construction Process	5-8
5.5.2	Noise	5-9
5.5.3	Air Quality.....	5-9
5.5.4	Water Quality.....	5-9
5.5.5	Utilities	5-10
5.5.6	Borrow Site Activities	5-10
5.5.7	Aircraft Runway Assignment and Airfield Operational Impacts Due to Construction	5-10
5.5.8	Conclusions	5-11
5.6	Department of Transportation Act: Section 4(f).....	5-11
5.6.1	Construction Component.....	5-11

5.6.2	Modified Departure Procedures	5-12
5.6.3	Conclusion.....	5-12
5.7	Fish, Wildlife, and Plants	5-12
5.8	Hazardous Materials, Pollution Prevention, and Solid Waste.....	5-12
5.8.1	Phase I ESA Findings.....	5-12
5.8.2	Hazardous Materials.....	5-13
5.8.3	Solid Waste.....	5-13
5.8.4	Conclusion.....	5-13
5.9	Historical, Architectural, Archaeological, and Cultural Resources..	5-13
5.10	Light Emissions and Visual Impacts	5-14
5.10.1	Light Emissions	5-14
5.10.2	Visual Impacts	5-14
5.10.3	Conclusion.....	5-14
5.11	Natural Resources and Energy Supply	5-14
5.11.1	Natural Resources	5-14
5.11.2	Energy Supply	5-15
5.11.2.1	Electricity and Fossil Fuel Other Than Jet Fuel ..	5-15
5.11.2.2	Jet Fuel – Additional Taxi Distance and Change in Climb Performance Due to Construction Component	5-15
5.11.2.3	Jet Fuel – Reduced Consumption Due to Modified Departure Procedures	5-15
5.11.3	Conclusions	5-16
5.12	Noise	5-16
5.12.1	Introduction	5-16
5.12.2	Construction Component – Haul Truck Traffic Noise	5-17
5.12.3	Construction Component – Other Construction Noise.....	5-17
5.12.4	Construction Component Operation Only – Aircraft Noise	5-18
5.12.5	Cross Complex Departures Component – Aircraft Noise ...	5-18
5.12.6	Modified Departure Headings Component – Aircraft Noise	5-23
5.12.7	Construction Component, Cross Complex Departures Component, and Modified Departure Headings Component Combined – Aircraft Noise.....	5-25

5.12.8	Conclusion.....	5-25
5.13	Secondary (Induced) Impacts.....	5-29
5.14	Socioeconomic Impacts, Environmental Justice, and Children’s Health and Safety Risks	5-30
5.14.1	Socioeconomic Impacts.....	5-30
5.14.2	Environmental Justice	5-30
5.14.3	Children’s Environmental Health and Safety Risks.....	5-32
5.14.4	Conclusion.....	5-33
5.15	Water Quality	5-33
5.15.1	Stormwater	5-33
5.15.2	Groundwater	5-33
5.15.3	Conclusion.....	5-33
5.16	Cumulative Impacts.....	5-34
5.16.1	Introduction	5-34
5.16.2	Department of Aviation Projects Completed in Recent Past or to be Completed by July 2009.....	5-34
5.16.3	Department of Aviation Projects Anticipated to be Completed after July 2009.....	5-35
5.16.3.1	Department of Aviation Projects Anticipated to be Under Construction Concurrently with Proposed Project Construction.....	5-35
5.16.3.2	Other DOA Master Plan Projects Predicated on Demand.....	5-36
5.16.4	Projects Proposed by Others.....	5-37
5.16.5	Further Clarification on Projects in Conjunction with a New Master Lease and Atlanta Metropolitan Commercial Aviation Capacity Study	5-38
5.16.6	Summary of Cumulative Impacts Associated with Proposed Project Construction.....	5-39
5.17	Other Considerations	5-39
5.17.1	Consistency with Approved State or Local Plans or Laws..	5-39
5.17.2	Commitment of Local Resources.....	5-40
5.17.3	Relationship between Local Short-Term Uses of the Environment and Maintenance and Enhancement of Long-Term Productivity.....	5-40

Section 6	Measures to Minimize Impacts	6-1
6.1	Introduction	6-1
6.2	Aircraft Noise	6-1
6.3	Air Quality	6-1
6.3.1	Air Quality as a Result of Proposed Project Implementation	6-1
6.3.2	Air Quality as a Result of Entire Airport Facility	6-2
6.4	Water Resources and Water Quality.....	6-3
6.4.1	NPDES Requirements	6-3
6.4.2	Update of Storm Water Pollution Prevention Plan	6-3
6.5	Construction	6-3
6.5.1	Erosion Control during Construction	6-3
6.5.2	Open Burning of Vegetation.....	6-4
6.6	Hazardous Materials	6-4
Section 7	Public and Agency Involvement	7-1
7.1	Public Agency Scoping.....	7-1
7.2	Public Involvement.....	7-1
7.3	Agency Involvement.....	7-2
Section 8	List of Preparers.....	8-1

Tables

Table 1-1	Maximum Take-off Weights from Existing and Extended Runway 27R at Two Temperatures (pounds).....	1-6
Table 1-2	Factors Affecting Aircraft Take-off Roll Performance and Influence on Runway Length.....	1-7
Table 1-3	Runway Lengths at Peer United States Airport.....	1-8
Table 1-4	Taxi-Out Delay for Most Delay Impacted United States Airports.....	1-9
Table 1-5	Delay Reduction Achieved with Use of Two Headings.....	1-9
Table 1-6	ATL Domestic, International, and Total Passengers Forecast.....	1-11
Table 1-7	ATL Annual and Annual Average Day Operations Forecast Summary.....	1-12
Table 1-8	Annual Passengers and Operations Forecast Summary Comparison.....	1-12
Table 1-9	Comparison of FAA Terminal Area Forecasts for Hartsfield-Jackson.....	1-13
Table 1-10	Construction Component Activities.....	1-14
Table 1-11	Departure Headings Currently in Use.....	1-16
Table 1-12	Modified Departure Headings Component Departure Headings.....	1-18
Table 2-1	Major H-JDP Program Component Environmental Processes.....	2-4
Table 3-1	Construction Component Alternatives Evaluated.....	3-2
Table 3-2	Comparison of Runway Environment Lengths.....	3-6
Table 3-3	Off-Site Family of Alternatives (Other Air Carrier Airports).....	3-8
Table 3-4	Two-Level Alternatives Screening Analysis (First Level).....	3-10
Table 3-5	Runway Extension Alternatives Differentiating Characteristics.....	3-14
Table 3-6	Two-Level Alternatives Screening Analysis (Second Level).....	3-16
Table 1-11	Departure Headings Currently in Use.....	3-22
Table 1-12	Modified Departure Headings Component Departure Headings.....	3-25
Table 3-7	Comparison of Daytime Heading Use – Year 2010.....	3-26
Table 3-8	Proposed Project Construction Schedule.....	3-27
Table 3-9	Potential Approvals, permits, and/or Reviews for Implementing Proposed Project.....	3-28
Table 4-1	Environmental Impact Categories not Affected by No Action Alternative or Proposed Project.....	4-5
Table 4-2	Atlanta Nonattainment Area Ozone Data (1998-2007).....	4-8
Table 4-3	Atlanta Nonattainment Area Twenty-Four-Hour and Annual PM2.5 Data (1999-2007).....	4-8

Table 4-4	Federal and State Listed Species October 2008.....	4-12
Table 5-1	Separate and Combined Evaluation of Impact Categories	5-1
Table 5-2	Project-Related Emissions Inventory	5-4
Table 5-3	Atlanta Nonattainment Area – Regional Emissions Inventory	5-6
Table 1-12	Modified Departure Headings Component Departure Headings	5-23
Table 5-4	Annual Economic Impact Created by a Daily Flight	5-29
Table 5-5	Minority Population Percentages	5-32
Table 5-6	Recently Completed or Soon to be Completed DOA-sponsored Projects with Cumulative Impact Implications	5-35
Table 5-7	Principal Remaining Hartsfield-Jackson Development Program Elements	5-36
Table 5-8	Other DOA-Sponsored Projects with Cumulative Impact Implications.....	5-36
Table 5-8	Projects Sponsored by Others with Cumulative Impact Implications.....	5-37

Figures

Figure 1-1	Construction Component Location	1-4
Figure 1-2	Proposed Project Construction Component	1-15
Figure 1-3	Current Departure Headings	1-17
Figure 1-4	Proposed Project Departure Procedures Component	1-18
Figure 1-5	Runway 26L & Runway 27R Departure Corridors.....	1-21
Figure 1-6	Runway 9L & 27R Cross Complex Departures.....	1-22
Figure 1-7	All Cross Complex Departure Corridors	1-23
Figure 3-1	On-Site Alternatives	3-3
Figure 3-2	Example of Runway 27R, Runway Environment, and Declared Distances	3-5
Figure 3-3	Facilities Acquisition and/or Relocation to Implement Runway 8R-26L Alternative	3-12
Figure 3-4	Facility Acquisition and/or Relocation to Implement Runway 9L-27R Alternative	3-13
Figure 3-5	Facility Acquisition and/or Relocation to Implement Runway 10-28 Alternative	3-15
Figure 3-6	Departure Wedges	3-18
Figure 3-7	Departure Wedges and Relationship to Atlanta Class B Airspace.....	3-20
Figure 3-8	Proposed Project Departure Procedures Component – Runway 26L.....	3-22
Figure 4-1	Proposed Project Construction Component Location Map	4-2
Figure 4-2	Airport Vicinity Map.....	4-3
Figure 4-3	Airport Layout Plan.....	4-4
Figure 4-4	Airport Environs Land Use.....	4-10
Figure 4-5	Year 2007 Noise Contours	4-15
Figure 4-6	Loop Road and Gate 54 Access	4-17
Figure 4-7	Reaches of Sullivan Creek & Flint R. Proximate to Airport	4-19
Figure 5-1	Year 2010 Noise Contours Comparison – No Action Alternative vs. Construction Component.....	5-19
Figure 5-2	Year 2015 Noise Contours Comparison – No Action Alternative vs. Construction Component.....	5-20
Figure 5-3	Year 2010 Noise Contours Comparison – No Action Alternative vs. Cross Complex Departure Procedures Component	5-21

Figure 5-4	Year 2015 Noise Contours Comparison – No Action Alternative vs. Cross Complex Departure Procedures Component.....	5-22
Figure 5-5	Year 2010 Noise Contour Comparison No Action alternative vs. Modified Departure Headings Component	5-24
Figure 5-6	Year 2015 Noise Contour Comparison No Action alternative vs. Modified Departure Headings Component	5-26
Figure 5-7	Year 2010 Noise Contour Comparison No Action Alternative vs. Proposed Project	5-27
Figure 5-8	Year 2015 Noise Contour Comparison No Action Alternative vs. Proposed Project	5-28

Appendices

- Appendix A Agency Scoping and Public Information Workshop Comments
- Appendix B Phase I Environmental Site Assessment
- Appendix C Noise Analysis
- Appendix D Air Quality Analysis
- Appendix E Fuel Consumption with Additional Taxi Distance Due to Construction Component
- Appendix F Jet Fuel Consumption Due to Departure Procedures Component
- Appendix G Agency and Public Comments on Draft Environmental Assessment