

## **6. K. SUMMARY OF ALTERNATIVES INCLUDING POTENTIAL ENVIRONMENTAL IMPACTS AND BENEFITS**

The following table summarizes the potential environmental impacts and/or benefits associated with each of the runway development alternatives including the No Action.

*Table 6.K.1, Summary of Alternatives Including Potential Environmental Impacts and Benefits, is provided on the following page.*

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Table 6.K.1  
SUMMARY OF ALTERNATIVES INCLUDING POTENTIAL ENVIRONMENTAL IMPACTS AND BENEFIT  
Fort Lauderdale-Hollywood International Airport

ENVIRONMENTAL CONSEQUENCES	ALTERNATIVE									
	A	B1	B1b	B1c	B4	B5	C1	D1	D2	
Section 4f (Recodified as 303c) Lands	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	
Water Quality	Impacts Would Not Exceed Standards	Impacts Would Not Exceed Standards	Impacts Would Not Exceed Standards	Impacts Would Not Exceed Standards	Impacts Would Not Exceed Standards	Impacts Would Not Exceed Standards	Impacts Would Not Exceed Standards	Impacts Would Not Exceed Standards	Impacts Would Not Exceed Standards	
Wetlands	No Impacts	15.17 acres	15.41 acres	15.41 acres	0.13 acres	21.67 acres	15.40 acres	21.87 acres	15.54 acres	
Floodplains	No Adverse Impacts	No Adverse Impacts	No Adverse Impacts	No Adverse Impacts	No Adverse Impacts	No Adverse Impacts	No Adverse Impacts	No Adverse Impacts	No Adverse Impacts	
Coastal Resources	Consistent with FCMP <sup>13/</sup>	Consistent with FCMP <sup>13/</sup>	Consistent with FCMP <sup>13/</sup>	Consistent with FCMP <sup>13/</sup>	Consistent with FCMP <sup>13/</sup>	Consistent with FCMP <sup>13/</sup>	Consistent with FCMP <sup>13/</sup>	Consistent with FCMP <sup>13/</sup>	Consistent with FCMP <sup>13/</sup>	
Fish, Wildlife, & Plants Federally-Listed Species & Critical Habitats	No Impacts	May affect, but not likely to adversely affect West Indian Manatee	May affect, but not likely to adversely affect West Indian Manatee	May affect, but not likely to adversely affect West Indian Manatee	May affect, but not likely to adversely affect West Indian Manatee	May affect, but not likely to adversely affect West Indian Manatee	May affect, but not likely to adversely affect West Indian Manatee, Smalltooth Sawfish, & Johnson's Seagrass	No Impacts	May affect, but not likely to adversely affect West Indian Manatee	May affect, but not likely to adversely affect West Indian Manatee
State-Listed Species	No Impacts	Surveys for Florida Burrowing Owl will be conducted prior to initiating construction	Surveys for Florida Burrowing Owl will be conducted prior to initiating construction	Surveys for Florida Burrowing Owl will be conducted prior to initiating construction	Surveys for Florida Burrowing Owl will be conducted prior to initiating construction	Surveys for Florida Burrowing Owl will be conducted prior to initiating construction	Surveys for Florida Burrowing Owl will be conducted prior to initiating construction	Surveys for Florida Burrowing Owl will be conducted prior to initiating construction	Surveys for Florida Burrowing Owl will be conducted prior to initiating construction	Surveys for Florida Burrowing Owl will be conducted prior to initiating construction
Essential Fish Habitat	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts
Hazardous Waste	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts
Solid Waste	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts
Socioeconomic, Environmental Justice, & Childrens' Health & Safety	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts
Secondary Induced and Infrastructure										
Surface Transportation	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts
Economic Impacts: Final Demand Employment Associated with Construction Spending for All Industries in Region	No Impacts	Positive	Positive	Positive	Positive	Positive	Positive	Positive	Positive	Positive
Public Services	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts
Light Emissions & Visual Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts
Natural Resources and Energy	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts
Construction	No Impacts	Temporary Impacts	Temporary Impacts	Temporary Impacts	Temporary Impacts	Temporary Impacts	Temporary Impacts	Temporary Impacts	Temporary Impacts	Temporary Impacts

FOOTNOTES

- <sup>1/</sup> Maximum capacity presents a condition of balanced arrival and departure demand, arrival peak, and departure peak. By comparison, Practical capacity takes into consideration actual demand able to use available runways according to the aircraft types and run characteristics of each alternative. The practical capacity is lower than the maximum capacity for those alternatives that have shorter runways.
- <sup>2/</sup> 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).
- <sup>3/</sup> Average minutes of delay per operation was computed using a queue modeling methodology. Demand, defined in terms of counts of arrivals and departures in five-minute intervals, was modeled against the estimated capacity of each alternative in good (VFR), a conditions. Both east and west operating flows were analyzed.
- <sup>4/</sup> Benefit over No-Action was computed by subtracting each alternative's delay from the delay resulting from the No Action Alternative.

**Table 6.K.1**  
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**Fort Lauderdale-Hollywood International Airport**

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<sup>5/</sup> Alternatives D1 and D2 would not be fully operational by 2012.

<sup>6/</sup> Broward County Aviation Department has indicated that Runways 9R/27L and 13/31 will require full rehabilitation in 2008 and 2009, respectively. For alternatives that consist of the redevelopment of Runway 9R/27L, Broward County will use a less costly Grip of a full rehabilitation. These savings are reflected as estimated additional operation and maintenance savings. Savings from Grip-Flex application are also accounted for with alternatives that decommission Runway 13/31.

<sup>7/</sup> This analysis entails the quantification of 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 2006 dollars. Net present value of benefits divided by the net 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. A ratio of 2.0, for example, indicate as the costs. The higher the ratio, the greater the benefits provided by the project.

<sup>8/</sup> 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 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.

<sup>9/</sup> NAAQS: National Ambient Air Quality Standards, established by the U.S. Environmental Protection Agency

<sup>10/</sup> Includes single-family homes, multi-family units, and mobile homes.

<sup>11/</sup> Includes schools, churches, nursing homes, and libraries

<sup>12/</sup> For the 2012 scenario, Alternatives B1b and B1c (the Airport Sponsor's Proposed Project) represent the same condition with the exception that Alternative B1c includes implementation of Broward County Aviation Department's existing voluntary noise abatement alternatives represent unabated operating conditions. By 2020, the County's existing voluntary noise abatement program would no longer be in effect. The FAA's proposal could include operational abatement measures.

<sup>13/</sup> FCMP: Florida Coastal Management Program

Source: Landrum & Brown, 2007