

Final Environmental Impact Report/
Environmental Assessment

**NANTUCKET MEMORIAL
AIRPORT IMPROVEMENTS
EOEA # 12299**



Prepared for:

Nantucket Airport Commission
30 Macy Lane
Nantucket, MA 02554

May 17, 2004

EPSILON ASSOCIATES INC.
Engineers ■ Environmental Consultants

*Final Environmental Impact Report / Environmental
Assessment*

Nantucket Memorial Airport Improvements

EOEA #12299

Prepared for:

Nantucket Airport Commission
30 Macy Lane
Nantucket, MA 02554

Prepared by:

Epsilon Associates, Inc.
150 Main Street
Maynard, Massachusetts 01754

In association with:

Edwards & Kelcey

The Schrafft Center
529 Main Street.
Boston, MA 02129

Cortell Associates

The Pilot House
Lewis Wharf
Boston, MA 02110

May 17, 2004

Table of Contents

MEPA CERTIFICATE

1.0	PROJECT OVERVIEW	1-1
1.1	Project Name, Proponent, and EOE File Number	1-1
1.2	Project History	1-1
	1.2.1 Previous MEPA Project Review (EOEA #6525/5912)	1-1
	1.2.2 Public Participation / Agency Coordination	1-2
1.3	Current Project Summary	1-2
	1.3.1 Currently Proposed Improvements	1-2
	1.3.2 Current Project Review Progress	1-7
	1.3.3 State Agency Actions	1-8
1.4	Changes Since the DEIR	1-11
	1.4.1 Terminal Improvements	1-11
	1.4.2 Bunker Area Development	1-12
	1.4.3 Changes to Infield Taxiways	1-13
	1.4.4 Transportation Security Administration Requirements	1-13
1.5	Consistency with Planning	1-14
	1.5.1 Airport Capacity	1-14
	1.5.2 Factors Affecting Air Travel Demand	1-16
	1.5.2.1 Comparison to Other Airports	1-17
	1.5.3 Executive Order 385 / Consistency with the Comprehensive Community Plan	1-21
1.6	Potential Impacts and Mitigation Measures	1-23
2.0	PROJECT DESCRIPTION	2-1
2.1	Introduction	2-1
2.2	Detailed Project Description	2-1
	2.2.1 Runway 15/33 Improvements	2-1
	2.2.1.1 500-Foot Extension of Runway 15/33	2-2
	2.2.1.2 Parallel Taxiway for Runway 15/33	2-3
	2.2.1.3 Projected Runway Use	2-3
	2.2.2 Runway 24 Approach Lighting System	2-4
	2.2.3 Runway 6/24 Navigational Aids	2-5
	2.2.4 Water Rescue Equipment Shelter	2-5
	2.2.5 Washing and Deicing Facility	2-6
	2.2.6 Taxiway "F" Overlay	2-7
	2.2.7 Runway 6/24 Rehabilitation	2-7

Table of Contents (Cont'd)

2.2.8	Change to Runway Safety Area	2-8
2.2.9	Passenger Terminal Improvements	2-8
2.2.9.2	Previous Proposals	2-11
2.2.9.3	Current Proposal	2-11
2.2.10	Bunker Area Development	2-12
3.0	CONSERVATION & MANAGEMENT PERMIT APPLICATION	3-1
A.	Existing Site Conditions	3-1
A.1	Vegetation Communities	3-2
A.2	Rare Species Habitat	3-2
A.2.1	Rare Plants	3-2
A.2.2	Rare Moths	3-11
A.2.3	Northern Harrier	3-15
A.3	Current Airport Practices	3-15
A.4	State Protected Species	3-15
A.4.1	Plants	3-16
A.4.2	Moths	3-20
A.4.3	Birds	3-22
B.	Future Site Conditions	3-22
B.1	Runway 15/33 Improvements	3-23
B.1.1	500-Foot Extension of Runway 15/33.	3-23
B.1.2	Parallel Taxiway for Runway 15/33	3-27
B.2	Runway 24 Approach Lighting System	3-27
B.3	Runway 6/24 Navigational Aids	3-28
B.4	Water Rescue Equipment Shelter	3-29
B.5	Washing and Deicing Facility	3-30
B.6	Taxiway "F" Overlay	3-33
B.7	Runway 6/24 Rehabilitation	3-33
B.8	Change to Runway Safety Area	3-33
B.9	Passenger Terminal Improvements	3-33
B.10	Bunker Area Development	3-34
C.	Impact Analysis	3-39
C.1	Rare Plants	3-50
C.1.1	500-foot Extension of Runway 33	3-51
C.1.2	Parallel Taxiway for Runway 15/33	3-51
C.1.3	Runway 24 Approach Lighting System	3-51
C.1.4	Runway 6/24 Navigational Aids	3-51
C.2	Rare Moths	3-52
C.2.1	500-foot Extension of Runway 33	3-52
C.2.2	Parallel Taxiway for Runway 15/33	3-52
C.3	Northern Harrier	3-52
C.4	Summary of Impacts to Rare Plants and Rare Moth Habitat	3-53

Table of Contents (Cont'd)

D.	Conservation Plan	3-53
D.1	Construction and Best Management Practices Plan	3-54
D.2	Restoration of Temporarily Disturbed and Degraded Habitats	3-54
D.3	Conservation Funding	3-55
D.4	Implementation of Adaptive Management Plan	3-55
D.4.1	Introduction	3-55
	D.4.1.1 Existing Ecological Management Plan	3-55
	D.4.1.1 Rationale for Plan Replacement	3-56
D.4.2	Objectives for Revised Plan	3-57
	D.4.2.1 Establish Management Goals	3-57
	D.4.2.2 Identify Current Conditions	3-58
	D.4.2.3 Apply Adaptive Management Approaches	3-58
	D.4.2.4 Integrate with Airport Operations	3-58
D.4.3	Definition and Delineation of Management Schedule Areas	3-59
	D.4.3.1 Management Schedule Areas	3-59
D.4.4	Adaptive Management Elements, Practices, and Schedules	3-60
	D.4.4.1 Vegetation Mowing and Cutting	3-60
	D.4.4.2 Controlled Burning	3-60
	D.4.4.3 Seed Harvesting	3-60
	D.4.4.3 Monitoring and Standards of Success	3-63
	D.4.4.4 Technical Advisory Committee	3-64
	D.4.4.5 Reporting	3-64
D.4.5	Funding of Management Plan and Activities	3-65
	References	3-65
4.0	TRAFFIC	4-1
4.1	Introduction	4-1
4.2	Consistency with Nantucket Comprehensive Community Plan	4-1
4.3	Island-wide Mitigation Measures	4-2
	4.3.1 Proposed Intersection Improvements	4-2
	4.3.2 Other Mitigation Measures	4-3
4.4	Conclusion	4-3
5.0	NOISE	5-1
5.1	Introduction	5-1
5.2	Noise Monitoring Results	5-1
5.3	Compliance with Noise Abatement Procedures	5-2
5.4	Noise Complaints	5-2
5.5	Noise Contours for Potential Future Fleet Mixes	5-4
5.6	Flight Tracking Study	5-7

Table of Contents (Cont'd)

6.0	GROUNDWATER, STORMWATER, WATER SUPPLY & WASTEWATER	6-1
6.1	Groundwater	6-1
6.1.1	Existing Conditions	6-1
6.1.1.1	Topography and Surface Water Drainage Patterns	6-1
6.1.1.2	Groundwater Table	6-1
6.1.2	Groundwater Management Plan	6-2
6.1.2.1	Aircraft Washing and Deicing	6-2
6.1.2.2	Groundwater Monitoring	6-5
6.1.3	Stormwater Management	6-5
6.1.3.1	Existing Stormwater System	6-5
6.1.3.2	Best Management Practices	6-6
6.1.3.3	Stormwater Quality	6-6
6.2	Water and Wastewater	6-6
6.2.1	Water Supply	6-6
6.2.1.1	Projected Need and Available Supply	6-6
6.2.1.2	Potable Water Conservation	6-7
6.2.2	Wastewater Generation	6-8
7.0	MITIGATION / PROPOSED SECTION 61 FINDINGS	7-1
7.1	Previous Mitigation Commitments	7-1
7.2	Summary of Environmental Effects and Mitigation Measures	7-2
7.3	Division of Fisheries and Wildlife	7-2
7.4	Massachusetts Aeronautics Commission	7-4
8.0	RESPONSE TO COMMENTS	8-1

Appendices

Appendix A	Circulation List
Appendix B	Rare Species
Appendix C	Noise
Appendix D	Groundwater Monitoring Results

List of Figures

Section 1.0

- Figure 1-1 Locus Map
- Figure 1-2 Existing Conditions
- Figure 1-3 Proposed Project Elements

Section 2.0

- Figure 2-1 Drainage Details
- Figure 2-2 Terminal Development Concept – Main Floor
- Figure 2-3 Terminal Development Concept – Basement
- Figure 2-4 Bunker Area Aircraft Parking

Section 3.0

- Figure A-1 Existing Conditions
- Figure A-2 Surrounding Land Use
- Figure A-3 Plant Communities
- Figure A-4 Rare Plant Occurrence Areas
- Figure A-5 Rare Moth Habitat
- Figure A-6 Upland Grassland Management Plan, August 1995
- Figure B-1 Proposed Project Elements
- Figure B-2 Drainage Details
- Figure B-3 Terminal Development– Main Floor
- Figure B-4 Terminal Development– Basement
- Figure B-5 Jet Aircraft Parking Apron
- Figure C-1 Proposed Impacts to Plant Communities
- Figure C-2 Proposed Impacts to Rare Plant Occurrence Areas
- Figure C-3 Proposed Impacts to Rare Moth Habitat
- Figure D-1 Revised Management Schedule Areas, April 2004

Section 5.0

- Figure 5-1 Monthly Noise Complaints
- Figure 5-2 DNL Noise Contours for the 2007 Build Mix A Alternative
- Figure 5-3 DNL Noise Contours for the 2007 Build Mix B Alternative

Section 6.0

- Figure 6-1 Groundwater Flow Plan
- Figure 6-2 Drainage Plan

List of Tables

Section 1.0

Table 1-1	Enplanements and Terminal Size at Nantucket and Other Airports
Table 1-2	Summary of Impacts and Mitigation Measures

Section 2.0

Table 2-1	Runway Use by Aircraft Category – No-build and Build Conditions
-----------	---

Section 3.0

Table A-1	Plant Communities – Nantucket Memorial Airport, 2001
Table A-2	Rare Species – Nantucket Memorial Airport, May-October, 2001 and September-October, 2002
Table C-1	Potential Impacts to Rare Plant Occurrence Areas
Table C-2	Potential Impacts to Potential Rare Moth Habitat
Table D-1	State-listed Rare Species in the Vicinity of Nantucket Memorial Airport

Section 5.0

Table 5-1	Noise Complaints by Year, 1996-2003
Table 5-2	Potential Future Fleet Mixes

Section 7.0

Table 7-1	State Agency Actions
Table 7-2	Summary of Impacts and Mitigation Measures

Section 8.0

Table 8-1	Comment Letters Received on the DEIR
-----------	--------------------------------------