

Capital Improvements Plan Provincetown Municipal Airport

Final

December 17, 2011



FINAL DOCUMENT

**Final Environmental Impact Report
Environmental Assessment
Section 4(f) Evaluation
(FEIR/EA)**

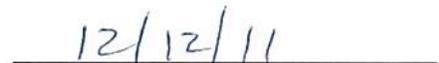
**Capital Improvements Plan
Provincetown Municipal Airport
Provincetown, Massachusetts**

December 17, 2011

The Environmental Assessment becomes a federal document when evaluated, signed, and dated by the responsible federal official.



Responsible Federal Official



Date

FINAL ENVIRONMENTAL IMPACT REPORT
ENVIRONMENTAL ASSESSMENT
SECTION 4(f) EVALUATION (FEIR/EA)
EEA No. 13789

Capital Improvements Plan
Provincetown Municipal Airport
Provincetown, Massachusetts

Submitted by:
Provincetown Airport Commission
Race Point Road, P.O. Box 657
Provincetown, MA 02657

In conjunction with:
MassDOT Aeronautics
and the
Federal Aviation Administration

Prepared by:
Jacobs
343 Congress Street
Boston, MA 02210

In association with:
Horsley Witten Group
90 Route 6A
Sandwich, MA 02563

This Environmental Assessment becomes a Federal document when evaluated and signed by the responsible Federal Official.

**DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
FINDING OF NO SIGNIFICANT IMPACT (FONSI)**

I have carefully and thoroughly considered the facts contained in the attached EA. Based on that information, I find the proposed Federal action is consistent with existing national environmental policies and objectives of Section 101(a) of the National Environmental Policy Act of 1969 (NEPA). I also find the proposed Federal action will not significantly affect the quality of the human environment or include any condition requiring any consultation pursuant to section 102(2)(c) of NEPA. As a result, FAA will not prepare an EIS for this action.

APPROVED: _____

DATE: _____

TABLE OF CONTENTS

| | |
|---|-------------|
| List of Abbreviations..... | X |
| MEPA Certificate on NPC/Draft Environmental Impact Report (NPC/Draft EIR/EA)..... | xiii |
| CCC Notice of Hearing for Joint Review..... | xxiii |
| SECTION 1.0 OVERVIEW | 1-1 |
| 1.1 Introduction | 1-1 |
| 1.2 Changes Since the Filing of the NPC/DEIR/EA | 1-4 |
| 1.3 Improvement Projects Considered By This FEIR/EA..... | 1-5 |
| 1.4 Project Issues and Impact Analysis | 1-5 |
| SECTION 2.0 PURPOSE AND NEED | 2-1 |
| 2.1 Overview of Airport Safety and Security Design Standards..... | 2-1 |
| 2.2 Airport Operational Safety and Security CIP Projects | 2-5 |
| 2.3 Airport Capacity Improvement CIP Projects | 2-14 |
| SECTION 3.0 PROPOSED ACTION AND ALTERNATIVES ANALYSIS..... | 3-1 |
| 3.1 Westerly Taxiway System Improvements..... | 3-2 |
| 3.1.1 No Action | 3-2 |
| 3.1.2 Westerly TW System Improvements (Proposed Action and Preferred Alternative) | 3-2 |
| 3.1.3 Environmentally Preferred Alternative | 3-3 |
| 3.1.4 Alternatives Considered But Rejected | 3-4 |
| 3.2 East End TW Relocation | 3-4 |
| 3.2.1 No Action | 3-4 |
| 3.2.2 East End TW Relocation (Proposed Action and Preferred Alternative) | 3-5 |
| 3.2.3 Environmentally Preferred Alternative | 3-5 |
| 3.2.4 Alternatives Considered But Rejected | 3-5 |
| 3.3 Terminal Apron Reconstruction..... | 3-5 |
| 3.3.1 No Action | 3-6 |
| 3.3.2 Reconstruct Terminal Apron within the Existing Footprint (Proposed Action and Preferred Alternative) | 3-6 |
| 3.3.3 Environmentally Preferred Alternative | 3-6 |
| 3.3.4 Alternatives Considered But Rejected | 3-6 |
| 3.4 Easterly End of Parallel TW Reconstruction | 3-6 |
| 3.4.1 No Action | 3-6 |
| 3.4.2 Reconstruct Parallel TW within Existing Footprint (Proposed Action and Preferred Alternative)..... | 3-7 |
| 3.4.3 Environmentally Preferred Alternative | 3-7 |
| 3.4.4 Alternatives Considered But Rejected | 3-7 |
| 3.5 Taxiway Lighting and Electric Vault | 3-7 |
| 3.5.1 No Action | 3-8 |
| 3.5.2 Install TW Lighting and Lighted TW Signs, and Construct Electric Vault (Proposed Action and Preferred Alternative)..... | 3-8 |
| 3.5.3 Environmentally Preferred Alternative | 3-8 |
| 3.5.4 Alternatives Considered But Rejected | 3-9 |
| 3.6 Sightseeing Shack Improvements | 3-9 |

| | | |
|-------------|--|-------------|
| 3.6.1 | No Action | 3-9 |
| 3.6.2 | Repair or Replace Building (Proposed Action and Preferred Alternative) | 3-9 |
| 3.6.3 | Environmentally Preferred Alternative | 3-9 |
| 3.6.4 | Alternatives Considered But Rejected | 3-10 |
| 3.7 | Access Road to MALSF Approach Lights | 3-10 |
| 3.7.1 | No Action | 3-10 |
| 3.7.2 | Construct Turn-Around (Proposed Action and Preferred Alternative) | 3-10 |
| 3.7.3 | Environmentally Preferred Alternative | 3-10 |
| 3.7.4 | Alternatives Considered But Rejected | 3-11 |
| 3.8 | Service Access Roads to the Localizer Equipment Shelter (LES) and to the Weather Station (AWOS) | 3-11 |
| 3.8.1 | No Action | 3-12 |
| 3.8.2 | Service Access Road to AWOS Alternative 2 and Service Access Road to LES Alternative 2 (Proposed Action and Preferred Alternative) | 3-12 |
| 3.8.3 | Service Access Road to AWOS Alternative 2 and Service Access Road to LES Alternative 6 | 3-12 |
| 3.8.4 | Environmentally Preferred Alternative | 3-12 |
| 3.8.5 | Alternatives Considered But Rejected | 3-13 |
| 3.9 | Perimeter Safety/Security Fence | 3-14 |
| 3.9.1 | No Action | 3-14 |
| 3.9.2 | Perimeter Safety / Security Fence Concept 6 (Proposed Action and Preferred Alternative) | 3-15 |
| 3.9.3 | Perimeter Safety / Security Fence Concept 4 | 3-16 |
| 3.9.4 | Perimeter Safety / Security Fence Concept 1 | 3-16 |
| 3.9.5 | Environmentally Preferred Alternative | 3-16 |
| 3.9.6 | Alternatives Considered But Rejected | 3-16 |
| 3.10 | Auto Parking Expansion | 3-18 |
| 3.10.1 | No Action | 3-18 |
| 3.10.2 | Auto Parking Concept 4, Phases 1 and 2 (Proposed Action and Preferred Alternative) | 3-18 |
| 3.10.3 | Auto Parking Concept 1 | 3-19 |
| 3.10.4 | Environmentally Preferred Alternative | 3-19 |
| 3.10.5 | Alternatives Considered But Rejected | 3-19 |
| 3.11 | Terminal Building | 3-20 |
| 3.11.1 | No Action | 3-20 |
| 3.11.2 | Vertical Concept (within existing footprint) - (Proposed Action and Preferred Alternative) | 3-20 |
| 3.11.3 | Horizontal Concept (expand footprint) | 3-21 |
| 3.11.4 | Environmentally Preferred Alternative | 3-21 |
| 3.11.5 | Alternatives Considered But Rejected | 3-21 |
| 3.12 | Turf Apron Expansion | 3-22 |
| 3.12.1 | No Action | 3-22 |
| 3.12.2 | Expand Apron, Full Dimension | 3-22 |

| | | |
|---|---|-------------|
| 3.12.3 | Expand Apron, Reduced Dimension (Proposed Action and Preferred Alternative) | 3-22 |
| 3.12.4 | Environmentally Preferred Alternative | 3-22 |
| 3.12.5 | Alternatives Considered But Rejected | 3-22 |
| SECTION 4.0 AFFECTED ENVIRONMENT | | 4-1 |
| 4.1 | Introduction | 4-1 |
| 4.2 | Airport Facilities..... | 4-1 |
| 4.3 | Transportation (Auto Parking/Aviation Operations/ Transportation Demand Management (TDM) / Pedestrian/Bicycle) | 4-6 |
| 4.4 | Wetlands and Wetland Buffer Zones | 4-7 |
| 4.5 | Floodplain..... | 4-11 |
| 4.6 | Coastal Dunes | 4-11 |
| 4.7 | Cultural Grasslands | 4-12 |
| 4.8 | Rare Species Habitat | 4-13 |
| 4.9 | Drainage/Stormwater Management | 4-15 |
| 4.10 | Visual Environment | 4-16 |
| 4.11 | Section 4(f) Properties..... | 4-26 |
| SECTION 5.0 ENVIRONMENTAL CONSEQUENCES | | 5-1 |
| 5.1 | Introduction and Methodology | 5-1 |
| 5.1.1 | Definitions | 5-1 |
| 5.1.2 | Methodology | 5-4 |
| 5.1.3 | Field Investigations | 5-5 |
| 5.1.4 | References | 5-5 |
| 5.2 | Westerly Taxiway System..... | 5-5 |
| 5.2.1 | No Action | 5-5 |
| 5.2.2 | Westerly TW System Improvements (Preferred Alternative)..... | 5-6 |
| 5.3 | East End TW..... | 5-9 |
| 5.3.1 | No Action | 5-9 |
| 5.3.2 | Relocate East End TW with Standard Right Angle (Preferred Alternative) | 5-10 |
| 5.4 | Terminal Apron..... | 5-12 |
| 5.4.1 | No Action | 5-12 |
| 5.4.2 | Reconstruct within the Existing Footprint (Preferred Alternative) | 5-13 |
| 5.5 | Easterly End of Parallel TW | 5-14 |
| 5.5.1 | No Action | 5-14 |
| 5.5.2 | Reconstruct within the Existing Footprint (Preferred Alternative) | 5-15 |
| 5.6 | TW Lighting, Lighted TW Signs, and Electric Vault | 5-16 |
| 5.6.1 | No Action | 5-16 |
| 5.6.2 | Install TW Lighting and Lighted TW Signs, and Construct New Electric Vault (Preferred Alternative)..... | 5-17 |
| 5.7 | Sightseeing Shack Improvements | 5-19 |
| 5.7.1 | No Action | 5-19 |
| 5.7.2 | Sightseeing Shack Improvements (Within Existing Footprint) | 5-20 |
| 5.8 | Access Road to MALSF Approach Lights | 5-21 |

| | | |
|--|--|-------------|
| 5.8.1 | No Action | 5-21 |
| 5.8.2 | Construct Turn-Around (Preferred Alternative)..... | 5-22 |
| 5.9 | Service Access Roads to LES and AWOS | 5-23 |
| 5.9.1 | No Action | 5-23 |
| 5.9.2 | Construct LES Option 2 / AWOS Option 2 (Preferred Alternative)..... | 5-24 |
| 5.9.3 | Construct LES Alternative 6 / AWOS Alternative 2 | 5-26 |
| 5.10 | Perimeter Safety and Security Fence..... | 5-28 |
| 5.10.1 | No Action | 5-28 |
| 5.10.2 | Construct Fence Concept 6 (Preferred Alternative)..... | 5-29 |
| 5.10.3 | Construct Fence Concept 4..... | 5-33 |
| 5.10.4 | Construct Fence Concept 1..... | 5-34 |
| 5.11 | Auto Parking..... | 5-36 |
| 5.11.1 | No Action | 5-36 |
| 5.11.2 | Construct Concept 4 Auto Parking (Preferred Alternative) | 5-37 |
| 5.11.3 | Construct Concept 1 Auto Parking..... | 5-41 |
| 5.12 | Terminal Building Expansion | 5-42 |
| 5.12.1 | No Acton | 5-42 |
| 5.12.2 | Construct Vertical (Within Existing Footprint)..... | 5-43 |
| 5.12.3 | Horizontal Alternative (Expand Footprint) | 5-50 |
| 5.13 | Turf Apron..... | 5-54 |
| 5.13.1 | No Action | 5-54 |
| 5.13.2 | Full Dimension | 5-55 |
| 5.13.3 | Reduced Dimension (Preferred Alternative)..... | 5-56 |
| 5.14 | Evaluation of Impairment of Park (CCNS) Resources or Values | 5-57 |
| 5.15 | Cumulative Impacts | 5-61 |
| SECTION 6.0 PROJECT DESCRIPTION (PREFERRED ALTERNATIVE) | | 6-1 |
| 6.1 | CIP Project Construction and Permitting Schedule | 6-1 |
| 6.2 | Westerly Taxiway System Improvements..... | 6-5 |
| 6.3 | Relocate East End TW | 6-5 |
| 6.4 | Reconstruct Terminal Apron | 6-6 |
| 6.5 | Reconstruct Easterly End of Parallel TW..... | 6-6 |
| 6.6 | Install Taxiway Edge Lights and Construct Electric Vault | 6-7 |
| 6.7 | Sightseeing Shack Improvements | 6-7 |
| 6.8 | Improve Access Road to MALSF Approach Lights..... | 6-7 |
| 6.9 | Construct Service Access Roads to the Localizer Equipment Shelter and to the Weather Station..... | 6-7 |
| 6.10 | Install Perimeter Safety/Security Fence | 6-8 |
| 6.11 | Expand Auto Parking | 6-8 |
| 6.12 | Expand Terminal Building | 6-9 |
| 6.13 | Expand Turf Apron..... | 6-10 |
| SECTION 7.0 MITIGATION PLANS..... | | 7-1 |
| 7.1 | Wetland Mitigation Plan..... | 7-1 |
| 7.2 | Coastal Dune and Cultural Grassland Mitigation Plan..... | 7-8 |
| 7.3 | Invasive Species Integrated Management Plan and Resource Enhancement | 7-10 |

| | | |
|---|---|-------------|
| 7.4 | Vegetation Management Plan | 7-13 |
| 7.5 | Construction Management Plan | 7-14 |
| 7.6 | Summary of Proposed Mitigation..... | 7-14 |
| SECTION 8.0 STATUTORY AND REGULATORY STANDARDS AND COMPLIANCE..... | | 8-1 |
| 8.1 | National Park Service Special Use Permit | 8-1 |
| 8.2 | NEPA / MEPA Process | 8-1 |
| 8.3 | Coastal Zone Management Program Federal Consistency Review..... | 8-1 |
| 8.4 | Americans with Disabilities Act | 8-2 |
| 8.5 | Clean Air Act | 8-2 |
| 8.6 | DOT Act Section 4(f)..... | 8-3 |
| 8.7 | Executive Order 11988 Floodplain Management..... | 8-3 |
| 8.8 | Executive Order 11990 Protection of Wetlands | 8-3 |
| 8.9 | Executive Order 12898 Environmental Justice | 8-4 |
| 8.10 | Federal Endangered Species Act of 1973, as amended | 8-4 |
| 8.11 | National Historic Preservation Act of 1966 and Archeological Resources Protection Act of 1979..... | 8-4 |
| 8.12 | US ACOE Section 404 Permit | 8-5 |
| 8.13 | Cape Cod Commission DRI Process..... | 8-5 |
| 8.14 | DEP Section 401 Water Quality Certificate..... | 8-5 |
| 8.15 | MA Wetlands Protection Act and Provincetown Bylaw..... | 8-5 |
| 8.16 | MA Endangered Species Act..... | 8-6 |
| 8.17 | Executive Order 385 and CCC Regional Policy Plan | 8-6 |
| 8.18 | National Pollution Discharge Elimination System (NPDES) | 8-6 |
| SECTION 9.0 FINDINGS | | 9-1 |
| 9.1 | MassDOT Aeronautics Draft Section 61 Findings | 9-3 |
| 9.2 | MA DEP Draft Section 61 Findings..... | 9-7 |
| 9.3 | MA NHESP Draft Section 61 Findings | 9-11 |
| 9.4 | Section 4(f) Evaluation..... | 9-15 |
| 9.5 | Statement of Findings, E.O. 11990 Protection of Wetlands | 9-19 |
| 9.6 | Statement of Findings, E.O. 11988 Floodplain Management..... | 9-23 |
| 9.7 | CZM Federal Consistency Certification | 9-27 |
| SECTION 10.0 AGENCY COORDINATION AND PUBLIC PARTICIPATION..... | | 10-1 |
| 10.1 | Agency Correspondence and Coordination | 10-1 |
| 10.2 | Public Participation..... | 10-65 |
| 10.3 | Wetland Delineation Review and Permitting Process..... | 10-75 |
| 10.4 | Relationship to Other Planning Efforts..... | 10-109 |
| SECTION 11.0 DISTRIBUTION LIST | | 11-1 |
| SECTION 12.0 LIST OF PREPARERS..... | | 12-1 |
| SECTION 13.0 MEPA / NEPA DOCUMENTS..... | | 13-1 |
| 13.1 | Secretary’s Certificate on the NPC/Draft EIR/EA and Responses | 13-1 |
| 13.2 | Comment Letters on the Draft EIR/NPC and Responses..... | 13-19 |

| | | |
|------|---|--------|
| 13.3 | October 2007 Comment Letter from National Park Service and Responses | 13-71 |
| 13.4 | July 2008 Comment Letter from National Park Service and Responses | 13-89 |
| 13.5 | December 2008 Comment Letter from National Park Service and Responses | 13-99 |
| 13.6 | January 30, 2009 Comment Letter from National Park Service | 13-109 |
| 13.7 | November 5, 2010 Comment Letter from National Park Service..... | 13-113 |

APPENDICES

1. Wetland Reports and Documents
2. Wildlife and Rare Species Habitat Assessment Reports
3. NPDES Plans
4. Traffic and Parking Study Reports
5. NPS Agreements and Other Documents
6. FAA/TSA/ MassDOT Aeronautics Standards, Regulations, and Guidelines
7. CCC DRI Application Elements
8. Glossary

List of Figures

| | |
|--|------|
| Figure 1.1 USGS Locus Map | 1-13 |
| Figure 1.2 Overview of CIP Projects..... | 1-15 |
| Figure 3.1 Westerly TW System Concepts..... | 3-23 |
| Figure 3.2 East End TW Relocation..... | 3-25 |
| Figure 3.3 Alternative Electric Vault Locations..... | 3-27 |
| Figure 3.4 Approach Lights Access Road Alternatives..... | 3-29 |
| Figure 3.5 Access Road Concepts | 3-31 |
| Figure 3.6 LES Access Road Alternatives | 3-33 |
| Figure 3.7 AWOS Access Road Alternatives..... | 3-35 |
| Figure 3.8 Alternative Fence Alignments..... | 3-37 |
| Figure 3.9 Fence Concept 6..... | 3-39 |
| Figure 3.10 Expand Auto Parking Concept 1 | 3-41 |
| Figure 3.11 Expand Auto Parking Concept 2..... | 3-43 |
| Figure 3.12 Expand Auto Parking Concept 3 | 3-45 |
| Figure 3.13 Expand Auto Parking Concept 4..... | 3-47 |
| Figure 3.14 Terminal Vertical Concept 1 Profile Views | 3-49 |
| Figure 3.15 Terminal Vertical Concept 2 Profile Views | 3-51 |
| Figure 3.16 Terminal Horizontal Expansion Profile Views | 3-53 |
| Figure 3.17 Turf Apron Improvements Concept | 3-55 |
| Figure 3.18 Turf Apron Alternatives Plan..... | 3-57 |
| Figure 4.1 Airside Facilities | 4-27 |
| Figure 4.2 Landside Facilities | 4-29 |
| Figure 4.3 Existing Terminal Building | 4-31 |
| Figure 4.4 Resource Plan..... | 4-33 |
| Figure 4.5 Wetland Buffer Zone Impact Plan | 4-35 |
| Figure 4.6 Rare Species Habitat Map | 4-37 |
| Figure 4.7 Potential Spadefoot Breeding Areas..... | 4-39 |
| Figure 5.1 Schematic of a Bioretention System for Phase 2..... | 5-39 |
| Figure 5.2 Examples of varying roof designs and building insets and projections..... | 5-45 |
| Figure 5.3 Examples of varying roof colors..... | 5-45 |
| Figure 5.4 Airport Pavement Plan | 5-73 |
| Figure 6.1 Westerly TW System Improvements | 6-11 |
| Figure 6.2 East End TW Improvements | 6-13 |
| Figure 6.3 TW Edge Lights Cross Section | 6-15 |
| Figure 6.4 TW Edge Lights Plan..... | 6-17 |
| Figure 6.5 Approach Lights Access Road Plan | 6-19 |
| Figure 6.6 AWOS and LES Access Roads Plan..... | 6-21 |
| Figure 6.7 Fence Details..... | 6-23 |
| Figure 6.8 Fence Plan- West End | 6-25 |
| Figure 6.9 Fence Plan- East End | 6-27 |
| Figure 6.10 Auto Parking Concept 4 | 6-29 |
| Figure 6.11 Terminal Elevation..... | 6-31 |
| Figure 6.12 Terminal Plan View | 6-33 |
| Figure 6.13 Turf Apron | 6-35 |
| Figure 7.1 West End Mitigation..... | 7-23 |
| Figure 7.2 East End Mitigation | 7-25 |
| Figure 7.3 Wetland Details Cross Section..... | 7-27 |
| Figure 7.4 Grassland Impacts Plan | 7-29 |
| Figure 7.5 Vegetation Management Plan | 7-31 |

List of Tables

| | |
|---|------|
| Table 1-1 List of Environmental Categories Evaluated..... | 1-6 |
| Table 2-1 Summary of Regulations Pertaining to CIP Projects | 2-14 |
| Table 2-2 Summary of Purpose and Need..... | 2-18 |
| Table 5-1 Impact Intensity Definitions for CIP Projects at PVC..... | 5-3 |
| Table 5-2 Changes in Impervious Surface..... | 5-70 |
| Table 5-3 Summary of Impacts and Proposed Mitigation | 5-71 |
| Table 6-1 Construction Phasing | 6-1 |
| Table 6-2 Permitting Requirements & Phasing | 6-2 |
| Table 7-1 Draft Planting List for Wetland Mitigation Areas..... | 7-6 |
| Table 7-2 Draft Plant List for Coastal Dune Creation | 7-9 |

List of Photos (Unless otherwise noted, all photos by Jacobs)

| | |
|---|------|
| Photo 4-1 Interior of Terminal..... | 4-2 |
| Photo 4-2 The Hangar. | 4-3 |
| Photo 4-3 The Secure Fuel Pump Station..... | 4-3 |
| Photo 4-4 ARFF/SRE Storage Garage. | 4-4 |
| Photo 4-5 Sightseeing Shack. | 4-4 |
| Photo 4-6 Entrance to Airport Parking Lot..... | 4-5 |
| Photo 4-7 Existing Airport Security Fencing. | 4-5 |
| Photo 4-8 Coastal Interdunal Marsh Community..... | 4-9 |
| Photo 4-9 Cranberry-Pine Swales..... | 4-10 |
| Photo 4-10 Open Coastal Dune Habitat..... | 4-12 |
| Photo 4-11 Pitch Pine on Coastal Dune..... | 4-12 |
| Photo 4-12 Cultural Grassland. | 4-13 |
| Photo 4-13 View of Airfield runway..... | 4-17 |
| Photo 4-14 View of Taxiway and GA Apron. | 4-18 |
| Photo 4-15 Airside Terminal Apron Area. | 4-19 |
| Photo 4-16 View from Visitor Center Observation Deck..... | 4-19 |
| Photo 4-17 Airside Terminal and Apron | 4-20 |
| Photo 4-18 View from NPS Beach Parking Lot..... | 4-21 |
| Photo 4-19 View from Bike Path. | 4-21 |
| Photo 4-20 Terminal Entrance..... | 4-22 |
| Photo 4-21 Entrance to Airport Parking Area | 4-22 |
| Photo 4-22 GA Parking Apron. | 4-23 |
| Photo 4-23 Northern Dunes..... | 4-23 |
| Photo 4-24 Aerial View..... | 4-24 |
| Photo 4-25 Race Point Road Intersection with Airport Entrance..... | 4-25 |
| Photo 4-26 Airport Entrance Drive. Intersection with bike path..... | 4-25 |
| Photo 5-1 Taxiway Lights. | 5-18 |
| Photo 5-2 Safety Security Fence. | 5-33 |
| Photo 5-3 Existing view of Airport parking lot from bike path..... | 5-40 |
| Photo 5-4 Photo Simulation Example Showing | 5-40 |
| Photo 5-5 Telescopic views of area buildings from NPS Visitors Center..... | 5-44 |
| Photo 5-6 Existing view from beach parking lot..... | 5-47 |
| Photo 5-7 An example of photo simulation to show the visual impact of the vertical design..... | 5-47 |
| Photo 5-8 Existing view from bike path..... | 5-48 |
| Photo 5-9 Example of use of photo simulation | 5-48 |
| Photo 5-10 Existing view from Visitors' Center Observation Deck..... | 5-49 |
| Photo 5-11 Example of use of photo simulation with a proposed second floor added to the Terminal..... | 5-49 |
| Photo 5-12 Existing view from beach parking lot..... | 5-51 |
| Photo 5-13 Photo simulation of Horizontal Option viewed from beach parking lot..... | 5-51 |
| Photo 5-14 Existing view from bike path..... | 5-52 |
| Photo 5-15 Photo simulation of Horizontal Option viewed from bike path..... | 5-52 |
| Photo 5-16 Existing view from Visitors' Center Observation Deck..... | 5-53 |
| Photo 5-17 Photo simulation of Terminal Horizontal Option viewed from Observation Deck..... | 5-53 |

List of Abbreviations

| | |
|----------------|---|
| ADG | Airplane Design Group |
| AIP | Airport Improvement Program |
| ALP | Airport Layout Plan |
| ALS | Approach Light System |
| ALSF-II | High intensity approach lighting system with sequenced flashing lights |
| AOA | Airport Operations Area |
| ARC | Airport Reference Code |
| ARFF | Aircraft Rescue and Firefighting Facilities |
| ARP | Airport Reference Point |
| ATSA | Aviation and Transportation Security Act |
| AWOS | Automated Weather Observing System |
| BOS | Boston Logan International Airport |
| BVW | Bordering Vegetated Wetland |
| CAT I | Category I Instrument Landing System |
| CAT II | Category II Instrument Landing System |
| CCC | Cape Cod Commission |
| CCNS | Cape Cod National Seashore |
| CCRTA | Cape Cod Regional Transit Authority |
| CIP | Capital Improvements Project |
| Db | Decibel |
| DbA | A-weighted Decibel |
| DHS | Department of Homeland Security |
| DME | Distance Measuring Equipment |
| DNL | Day Night Average Sound Level |
| DRI | Decision of Regional Impact |
| EA | Environmental Assessment |
| EIR | Environmental Impact Report |
| EIS | Environmental Impact Statement |
| EPA | Environmental Protection Agency |
| FAA | Federal Aviation Administration |
| FAR | Federal Aviation Regulation |
| FBO | Fixed Base Operator |
| FONSI | Finding Of No Significant Impact |
| GA | General Aviation |
| GS | Glide Slope |
| GPS | Global Positioning System |
| HIRL | High Intensity Runway Lights |
| IFR | Instrument Flight Rules |
| INM | Integrated Noise Model |
| ILS | Instrument Landing System |
| IVW | Isolated Vegetated Wetland |
| Leq | Equivalent Sound Level |
| LES | Localizer Equipment Shelter |
| LIRL | Low Intensity Runway Lights |
| LOC | Localizer |
| LOS | Level of Service |
| MassDOT | MA Department of Transportation Aeronautics Division (formerly Massachusetts Aeronautical Commission) |
| MALS | Medium Intensity Approach Light System |

| | |
|---------------|---|
| MALSF | MALS with sequenced flashing lights |
| MALSR | MALS with runway alignment indicator lights |
| MIRL | Medium Intensity Runway Lights |
| MITL | Medium Intensity Taxiway Lights |
| MM | Middle Marker |
| NAVAID | Navigational Aids |
| NDB | Non-Directional Beacon |
| NEPA | National Environmental Policy Act |
| NHESP | Natural Heritage Endangered Species program |
| NLR | Noise Level Reduction |
| NPDES | National Pollutant Discharge Elimination System |
| NPIAS | National Plan of Integrated Airport Systems |
| NPS | National Park Service |
| MEPA | Massachusetts Environmental Policy Act |
| OFA | Object Free Area |
| PAPI | Precision Approach Path Indicator |
| PCC | Provincetown Conservation Commission |
| PVC | Provincetown Municipal Airport |
| RCO | Remote Control Outlet |
| REILs | Runway End Identifier Lights |
| ROD | Record of Decision |
| ROFA | Runway Object Free Area |
| RPZ | Runway Protection Zone |
| RSA | Runway Safety Area |
| RW | Runway |
| SIDA | Security Identification Display Area |
| SUP | Special Use Permit |
| SWPPP | Storm Water Pollution Prevention Plan |
| TAF | FAA's Terminal Area Forecast |
| TDM | Transportation Demand Management |
| TSA | Transportation Security Administration |
| TW | Taxiway |
| VASI | Visual Approach Slope Indicator |
| VFR | Visual Flight Rules |



The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

DEVAL L. PATRICK
GOVERNOR
TIMOTHY P. MURRAY
LIEUTENANT GOVERNOR
IAN A. BOWLES
SECRETARY

July 18, 2007

Tel: (617) 626-1000
Fax: (617) 626-1181
<http://www.mass.gov/envir>

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
DRAFT ENVIRONMENTAL IMPACT REPORT/NOTICE OF PROJECT CHANGE

PROJECT NAME : Provincetown Municipal Airport Capital Improvements Plan
PROJECT MUNICIPALITY : Provincetown
PROJECT WATERSHED : Cape Cod
EOEA NUMBER : 13789
PROJECT PROPONENT : Provincetown Airport Commission
DATE NOTICED IN MONITOR : June 11, 2007

As Secretary of Energy and Environmental Affairs, I hereby determine that the Draft Environmental Impact Report (DEIR)/Notice of Project Change (NPC) submitted on the above project **adequately and properly complies** with the Massachusetts Environmental Policy Act (G. L., c. 30, ss. 61-62H) and with its implementing regulations (301 CMR 11.00). I am allowing the proponent to proceed with the reconstruction of the terminal apron and the easterly end of the parallel taxiway within the same footprint prior to the completion of the FEIR.

Project Description

According to the DEIR/NPC, the proposed project, the Capital Improvement Plan (CIP), consists of the following projects: 1) Westerly Taxiway (TW) System Improvements; 2) Relocation of the East End TW; 3) Reconstruction of the Easterly End of the Parallel TW within the same Footprint; 4) Reconstruction of the Terminal Apron within the same Footprint; 5) Installation of Edge Lights and Construction of an Electric Vault; 6) Rehabilitation or Replacement of the Sightseeing Shack; 7) Improvements to the Medium Intensity Approach Light System with Sequenced Flashing Lights (MALSF) Access Road; 8) Construction of Service Access Roads; 9) Installation of a Perimeter Safety/Security Fence; 10) Construction of a Turf Apron; 11) Expansion of the Auto Parking Area; and 12) Expansion of the Terminal Building. The CIP would be completed over a period of five to ten years. The proponent is seeking to comply with Federal Aviation Administration (FAA) safety, security, and design

EOEEA #13789

DEIR/NPC Certificate

July 18, 2007

standards. These improvements will have minor impacts on the normal runway operations, and there will be no runway expansion and no increase in capacity.

The existing Provincetown Municipal Airport (PMA) contains approximately 13,316 square feet (sf) of airport structures that include a terminal building, aircraft hanger, a snow removal equipment building (SRE), sightseeing shack, a 3,500 foot long runway (Runway 7-25), a taxiway system, aircraft parking, an approach lighting system, navigational aids, and two auto parking areas. It is a public use, commercial service airport with scheduled airline passenger service to and from Logan International Airport, and it enplanes 10,000 or more passengers annually. PMA has a full Instrument Landing System runway approach capability. The PMA is located on 322 acres of federally owned land, which is within the Cape Cod National Seashore (CCNS) and is administered by the National Park Service (NPS). About 4-7 acres of land would be impacted by the project.

This project is subject to a mandatory EIR. The project may require Variances from the Water Quality Certification and the Wetlands Regulations. A Superseding Order of Conditions and a Section 401 Water Quality Certificate may be needed from the Department of Environmental Protection (MassDEP). The project will require review under the Massachusetts Endangered Species Act (MESA) by the Natural Heritage and Endangered Species Program (NHESP) to determine if it will require a Taking Permit and/or a Conservation and Management Permit. It will require a Notice of Intent to be filed with the Provincetown Conservation Commission. The project will need to obtain a Special Use Permit from the NPS. It must comply with the National Pollutant Discharge Elimination System (NPDES) General Permit for stormwater discharges from a construction site. The project will need a Section 404 Programmatic General Permit from the U.S. Army Corps of Engineers. The project will also come under review as a Development of Regional Impact (DRI) with the Cape Cod Commission (CCC), and is undergoing joint review with the CCC and the MEPA Office. Because an agency of the Commonwealth, the Massachusetts Aeronautics Commission (MAC) is providing a portion of the funding, MEPA jurisdiction extends to all aspects of the project that may have significant environmental impacts.

Changes to the Project

The proponent has included a run-up pad prior to the West Entrance TW as part of the Westerly Taxiway System Improvements. However, this run-up pad was always considered as a component of the project by the proponent. The run-up pad was shown but not discussed in the ENF. The proponent is proposing to construct a turn-around for the FAA vehicles which use the access road to the MALSF approach lights. It has also requested permission to go forward with projects #3) the Reconstruction of the Easterly End of the Parallel TW and #4) the Reconstruction of the Terminal Apron, which will be constructed within their existing footprints. The terminal apron and easterly end of the parallel TW's pavement is over twenty years old and funding may be programmed prior to the completion of the FEIR. I am allowing both of these Replacement Projects to be completed prior to the completion of the FEIR

EOEEA #13789

DEIR/NPC Certificate

July 18, 2007

Review of the DEIR/NPC

The DEIR provided a detailed project description with a summary/history of the project. It included existing and proposed site plans. The EIR described the existing (2004) and projected level of passengers and flights and airport operations (including general aviation) for the next twenty years (2024). It identified that Phase 1 included the reconstruction of the terminal apron and the easterly end of the parallel TW within their respective footprints.

The DEIR described each local, regional, state, and federal agency action required for the project. The DEIR discussed which of the projects within the CIP are safety improvement projects required by the FAA. However, more discussion is needed in the FEIR to determine which projects are solely to comply with required FAA regulations.

In addition to the Preferred Alternative, the No-Build Alternative, the DEIR summarized the alternatives for each of the CIP projects. The DEIR provided a comparative analysis that showed the differences between the environmental impacts associated with some of the CIP projects. The DEIR clarified some of the differences between FAA safety and design requirements and the recommendations for each project proposed within the CIP.

The proponent has identified that the project may impact the following wetland resource areas: 265,890 sf of permanent and 223,320 sf temporary impacts to Coastal Dune; 2,000 sf of permanent and 44,000 sf of temporary impacts to Bordering Vegetated Wetlands (BVW); and 64,215 sf of permanent and 53,360 sf of temporary impacts to Isolated Land Subject to Flooding (ILSF). Areas of isolated wetland and BVW along the fence alignment will be pruned to maintain an unobstructed area along the fence.

The DEIR addressed the significance of the wetland resources on the project site. There are no nearby public water supplies and wells. The DEIR identified the fencing proposed in tidal creek areas where tidal movements may encumber debris. The proponent has a plan to deal with the blockage of tidal flow material. Bordering vegetated wetlands that have been delineated in the field were surveyed, mapped, and located on the plans. The Provincetown Conservation Commission has accepted the resource area boundaries. The DEIR included a detailed wetlands replication plan for areas to be altered and the proposed wetland replication species, planned construction sequence, and a discussion of the required performance standards and monitoring.

The DEIR provided a summary of the proponent's site habitat assessment. The Natural Heritage Endangered Species Program (NHESP) required a habitat assessment for the Eastern Spadefoot Toad, the Vesper Sparrow, the Eastern Box Turtle, and the Broom Crowberry.

The DEIR evaluated potential drainage impacts on water resources from the project. It included a description of the existing runways' drainage system design in the construction area and identified any proposed changes. Proposed activities, including construction mitigation,

EOEEA #13789

DEIR/NPC Certificate

July 18, 2007

erosion and sedimentation control were evaluated. The DEIR discussed the consistency of the project with the provisions of the National Pollutant Discharge Elimination System (NPDES) General Permit from the U.S. Environmental Protection Agency for stormwater discharges from construction sites. It included discussion of best management practices employed to meet the NPDES requirements, and included a draft Pollution Prevention Plan in Appendix 3.1.

In Appendix 4, the DEIR provided the weekday morning, midday and evening peak hour traffic LOS analysis for the Route 6/Racepoint Road intersection, which included volume to capacity ratios, delays, and queues for the 95th percentile. The DEIR's LOS table included each movement for this intersection. It included a map of the traffic study area.

The DEIR identified the number of parking spaces recommended by the Institute of Traffic Engineers for an airport. The proponent has proposed pervious parking spaces.

The DEIR identified the existing Transportation Demand Management (TDM) measures, such as rental car availability, taxicabs, and bus service to the center of Provincetown.

There are no sidewalks along Race Point Road, and none are proposed. Walking is prohibited on the CCNS Bikeway that is adjacent to the airport.

The DEIR presented existing noise contours at the airport. It stated that estimated projected noise levels and contours for the next ten years (2014) would not increase from the CIP projects.

During the DEIR process, the proponent has consulted with the Massachusetts Historical Commission (MHC) and the Provincetown Historic Preservation Commission.

The DEIR included a visual resource assessment in Section 5. The visual resource assessment examined the visual impacts of the project included in the CIP, especially building expansions and vegetation clearing, on the Cape Cod National Seashore.

The DEIR did not identify any hazardous waste studies and remediation efforts undertaken at the project site by the proponent.

The FEIR should resolve all the remaining issues outlined below, as required by this Certificate. It should include a copy of this Certificate.

Project Description

The FEIR should provide a detailed project description with a summary/history of the project. It should carefully describe all elements of each of the twelve CIP projects. The FEIR should clarify which of the proposed CIP projects are required by FAA regulations vs. suggested by FAA guidelines. It should include existing and proposed site plans. The FEIR should

EOEEA #13789

DEIR/NPC Certificate

July 18, 2007

investigate feasible methods of reducing wetland impacts and the creation of impervious areas. It should summarize the permits required for the project. The FEIR should demonstrate how each of the projects within the CIP is consistent with the applicable performance standards. It should contain sufficient information to allow the permitting agencies to understand the environmental consequences of their official actions related to the project. The FEIR should identify if the CIP is compatible with zoning, regional planning, and Executive Order 385.

The FEIR should describe how the twelve CIP projects would be phased over the anticipated five to ten years. It should detail how these projects or groups of projects would be phased to go forward.

Alternatives Analysis

The FEIR should demonstrate that the alternatives for the expansion of the turf apron, parking lot and the terminal building have been evaluated with the ability to avoid or minimize wetland related impacts. The analysis should clearly present the alternative configurations at the site and identify the advantages and disadvantages of the Preferred Alternative. The FEIR should provide a comparative analysis that clearly shows the differences between the environmental impacts associated with each of the alternatives for the turf apron, parking lot and terminal expansion CIP projects.

Wetlands

The Wetland Section of the FEIR should examine options that avoid impacts to wetland resource areas, their associated buffer zones, riverfront protection areas and 100-year flood plain areas. Wetland figures should identify buffer zones, riverfront areas, and 100-year flood plains. Where it has been demonstrated that impacts are unavoidable, the FEIR should illustrate that the impacts have been minimized, and that the project will be accomplished in a manner that is consistent with the Performance Standards of the Wetlands Regulations (310 CMR 10.00). The FEIR should provide an accurate measurement of the wetland resource areas that will be affected by the project.

The FEIR should provide the information required by DEP when requesting a variance, as outlined in 310 CMR 10.05(b). According to MassDEP, the proposed expanded turf apron, auto parking lot and terminal building appear to be related to forecasted increases in airport capacity, and these non-safety related CIP projects will be required to be designed in conformance to the applicable wetlands regulations. The proponent needs to evaluate practicable alternatives, to explain why the preferred alternative is allowed under the regulations, and to describe the mitigation measures proposed to reduce the impacts. The FEIR should provide evidence of an overriding public interest that is associated with the project as stated in MassDEP's comment letter. The FEIR should include replication locations delineated on plans, elevations, typical cross sections, test pits or soil boring logs, groundwater elevations, the hydrology of areas to be altered and replicated, list of wetland plant species, and the planned

EOEEA #13789

DEIR/NPC Certificate

July 18, 2007

construction sequence. It should outline how the proponent will provide additional wetland replication and restoration areas that are greater than 1:1.

Rare Species

The FEIR should identify if the project will impact any state-listed species. It should explain any proposed monitoring program. The FEIR should describe any habitat enhancements. Since the proposed fencing project will likely have the greatest impact on wildlife habitat migration within the CCNS, the FEIR should specifically identify any potential impact from the proposed fencing project on rare or endangered species. The proponent should explain its proposed documentation procedures for its mowing practices of grasslands and its vegetation management program.

Drainage

The FEIR should address the performance standards of DEP's Stormwater Management Policy. It should demonstrate that the project is consistent with this policy. The proponent should use the DEP Stormwater Management Handbook when addressing this issue.

Traffic

The FEIR should explain why it did not complete a Level-of-Service (LOS) analysis for the Race Point Road/Airport Driveway/Race Point Parking Area intersection. It should provide a traffic distribution map for the project that includes background growth from other proposed developments in the area. The FEIR should examine present and future (2014) build and no-build traffic volumes for the intersections. The proponent should identify the land use Codes (LUC) used and how its trip generation estimates have been generated. In the FEIR, traffic accident problem areas should be identified, and solutions should be proposed. The FEIR should discuss the proponent's coordination efforts with MHD and Provincetown as they address regional and local traffic concerns within this area.

Parking

The FEIR should state how many parking spaces are required by local zoning. It should identify if the proponent will designate parking for shuttle buses, taxicabs, and long-term parking. The FEIR should identify whether the proponent is considering controlling parking through fees or timed restrictions with enforcement.

Transportation Demand Management (TDM)

The FEIR should identify the proponent's TDM measures during peak periods, such as employee ridesharing, an automatic teller machine, shuttle bus service to the hotels and guest houses, rental cars, a shared-car service (such as ZipCar), and taxicab service improvements that

EOEEA #13789

DEIR/NPC Certificate

July 18, 2007

discourage single passenger trips to and from the airport.

Pedestrian Issues

The FEIR should identify the locations of sidewalks within the parking area now. It should show where any proposed sidewalk improvements are proposed.

Construction Issues

The FEIR should include a construction management plan that describes the project's phasing, erosion and sedimentation controls, monitoring, and contingencies. It should describe the amount of fill material required and estimate the number of truck trips per day and the time period involved for the different projects contained in the CIP. The FEIR should describe how the fence would be constructed within wetland areas, and construction staging areas should be identified on plans.

Sustainable Design

This project presents a good opportunity to successfully incorporate cost-effective sustainable design elements and construction practices into the project. These elements can minimize environmental impacts and reduce operating costs. The FEIR should summarize the proponents' efforts to ensure that this project includes Leadership in Energy and Environmental Design (LEED) Certified buildings or the equivalent. Because this project may receive funds from the Massachusetts Aeronautics Commission (MAC), the FEIR should detail how this project will comply with Executive Order No. 484 - Leading by Example – Clean Energy and Efficient Buildings. I strongly encourage the proponent to consider incorporating elements, such as those noted below, into its project design, construction and management:

- water conservation and reuse of wastewater and stormwater;
- renewable energy technologies to meet energy needs;
- optimization of natural day lighting, passive solar gain, and natural cooling;
- energy efficient HVAC and lighting systems, appliances and other equipment, and solar preheating of air;
- building supplies and materials that are non-toxic, made from recycled materials, and made with low embodied energy;
- easily accessible and user-friendly recycling system infrastructure incorporated into the building design;
- development of a solid waste reduction plan;
- development of an annual audit program for energy consumption, waste streams, and use of renewable resources;
- Low Impact Development (LID) principles that reduce stormwater, potable water, wastewater, and wetland impacts and that provide water conservation and the reuse of wastewater and stormwater; and

EOEEA #13789

DEIR/NPC Certificate

July 18, 2007

- LEED Certification.

Mitigation

The FEIR should include a separate chapter on mitigation measures. It should outline the proponent's wetland replication areas as part of its mitigation package.

This chapter on mitigation should include proposed Section 61 Findings for MassDEP, MAC, and NHESP. The proposed Section 61 Findings should contain a clear commitment to mitigation, an estimate of the individual costs of the proposed mitigation and the identification of the parties responsible for implementing the mitigation. A schedule for the implementation of mitigation should also be included.

In the DEIR, the proponent has committed to the following mitigation measures:

- Provide approximately 64,000 sf of isolated wetlands restoration in two areas;
- Restore 1,000 sf of Bordering Vegetated Wetlands;
- Monitor wetlands restoration twice annually for two years by a qualified wetland scientist;
- Restore approximately 32,000 sf of dune habitat in two areas;
- Restore approximately 192,000 sf of Cultural Grassland;
- Undertake an Invasive Species Management Plan using mechanical measures;
- Install bioretention areas for stormwater treatment for impervious surfaces;
- Implement a Habitat Creation and Restoration Plan;
- Implement an Erosion Control Plan;
- Install a ticket gate for validated parking in the parking lot;
- Provide a bicycle rack near the main entrance to the Terminal;
- Install additional parking lot landscaping to screen the area from the CCNS; and
- Implement TDM measures.

These above measures do not include all of the mitigation measures for the fencing, terminal, and parking CIP projects, which are unknown until preferred alternatives are selected by the proponent.

Response to Comments

The FEIR should include copies of all comment letters. It should provide a response to all comments within the scope of this project. I recommend that the response address the question and not just refer to a particular Section of the report as was done in the DEIR. The Response to Comments section should provide clear answers to the questions raised.

EOEEA #13789

DEIR/NPC Certificate

July 18, 2007

Circulation

The FEIR should be circulated in compliance with Section 11.16 of the MEPA regulations and copies should also be sent to the list of "comments received" below and to Provincetown officials. A copy of the EIR should be made available for public review at the Provincetown Public Library.

July 18, 2007
DATE


Ian A. Bowles

Comments received:

Division of Marine Fisheries, 7/5/07
Jacobs Edwards and Kelcey (JEK), 7/5/07
Cape Cod Commission, 7/10/07
Association to Preserve Cape Cod (APCC), 7/11/07
DEP/SERO, 7/11/07
Mass Audubon, 7/11/07
National Park Service, 7/12/07
Mass Wildlife, 7/12/07
Jacobs Edwards and Kelcey, 7/16/07

13789deir
IAB/WTG/wtg



CAPE COD COMMISSION

3225 MAIN STREET
P.O. BOX 226
BARNSTABLE, MA 02630
(508) 362-3828
FAX (508) 362-3136
E-mail: frontdesk@capecodcommission.org

HEARING NOTICE CAPE COD COMMISSION & ENVIRONMENTAL REVIEW

The Cape Cod Commission will conduct a public hearing on Wednesday, June 27, 2007 beginning at 6:30 p.m. in the Provincetown Town Hall, Judge Welsh Hearing Room, 260 Commercial Street, Provincetown, MA. This development will be reviewed pursuant to Sections 12(i) and 13(b) of the Cape Cod Commission Act and pursuant to the Massachusetts Environmental Policy Act ("MEPA", G.L. c.30, secs. 61, 62-62H) for joint review by the Commission and State Executive Office of Environmental Affairs, MEPA unit. The purpose of this hearing will be to gather information for the joint Commission Development of Regional Impact (DRI)/MEPA review and to comment on the Notice of Project Change (NPC)/Draft Environmental Impact Report (DEIR) that has been prepared by the proponent. This notice is being published as required by Section 5 of the Cape Cod Commission Act and MEPA regulations.

Project Name: Provincetown Airport Capital Improvements Plan
Project Applicant: Provincetown Airport Commission
Project Location: Race Point Road, Provincetown, MA
Project Description: Proposed safety and facility improvements at Provincetown Municipal Airport including the following: taxiway relocation and reconstruction; reconstruction of the terminal apron; access roads construction and improvements; installation of perimeter fence; and expansion of automobile parking and terminal building, among others.

Anyone wishing to testify orally will be welcome to do so. Written comments may also be submitted at the hearing, or delivered or mailed to the Cape Cod Commission, P.O. Box 226, 3225 Main Street, Barnstable, MA 02630 for receipt on or before the date of the hearing or until the record is closed. The NPC/DEIR and relevant documents may be viewed by calling the Commission office at (508) 362-3828 to schedule an appointment between the hours of 8:30 a.m. and 4:30 p.m. Written comments may also be submitted to MEPA Unit, Secretary, Executive Office of Environmental Affairs, 100 Cambridge Street, Suite 900, Boston, MA 02114. If you need a reasonable accommodation, please let us know by June 21, 2007. Please call for more information and to make your request.

SECTION 1.0 OVERVIEW

Section 1.1 includes the following: Introduction, Organization of the Document, Wetland Impact Methodology, Proposed Federal Aviation Administration (FAA) Actions, Proposed National Park Service (NPS) Actions, and Background on the previous NEPA document prepared for the Airport.

1.1 Introduction

The Provincetown Municipal Airport Commission proposes a Capital Improvements Plan (CIP) of safety and facility improvements at the Provincetown Municipal Airport (Airport or PVC). Implementation of the CIP will fulfill the mission of the Airport to operate a safe, secure, and reliable non-hub primary service airport receiving scheduled airline passenger service. As shown on Figure 1.1, the Airport is located within the Cape Cod National Seashore (CCNS), on Outer Cape Cod, Massachusetts. The projects are listed in Section 1.3, shown in Figure 1.2, and described in more detail in Sections 3, 5, and 6.

This Final Environmental Impact Report/Environmental Assessment and Section 4(f) Evaluation (FEIR/EA) has been prepared in conformance with the Massachusetts Environmental Policy Act (MEPA) regulations and the July 18, 2007 Certificate of the Secretary of Energy and Environmental Affairs (No. 13789) on the Notice of Project Change/Draft Environmental Impact Report/Environmental Assessment (NPC/Draft EIR/EA).

This document has also been prepared in conformance with the FAA guidelines for compliance with the National Environmental Policy Act (NEPA), FAA Orders 5050.4B and 1050.1E. It is a draft document until it is signed by an FAA official. A Section 4(f) Evaluation has been prepared and is part of this document. The 4(f) Evaluation can be found in Section 9.4.

This document has also been prepared to be consistent with the NPS NEPA guidelines and requirements, found in the NPS Director's Order -12 (DO-12).

The Final EIR/EA/Section 4(F) has been submitted to the Cape Cod Commission (CCC) as a supplement to the Development of Regional Impact (DRI) application. Appendix 8 provides an outline of the DRI submission.

Organization of This Document

The document has been modified since the NPC/Draft EIR/EA. The changes in the organization of the document have been made in order for the FEIR/EA/Section 4(f) to satisfy the Cape Cod National Seashore's (CCNS) NEPA format. The document still meets FAA NEPA and MEPA obligations and standards. The changes are explained below:

Section 1, Introduction, has been revised. The description of the Airport facilities has been moved to Section 4 which describes the existing environment. Impact categories that have been dismissed from further review are identified in Section 1.4.

Section 2, Purpose and Need, has been expanded.

Section 3, Proposed Action and Alternatives Analysis (formerly Proposed Improvements in NPC/DEIR/EA), contains the alternatives analysis that was in Section 4 of the NPC/Draft EIR/EA. It identifies all the alternatives that have been considered for each element of the CIP. Impacts associated with alternatives that have been considered but dismissed are discussed in this section. Additional discussion of the impacts associated with the Proposed Project (Preferred Alternative), other alternatives, and the No Action can be found in Section 5.

Section 4, Affected Environment (formerly Section 5 in the NPC/DEIR/EA), describes the existing environment.

Section 5, Environmental Consequences (formerly Section 6 in the DEIR), describes the impacts of the Preferred Alternative, other alternatives considered, and the No Action (No Build) for each of the project elements of the CIP.

Section 6, Project Description (formerly Section 3 in DEIR/EA), provides a detailed description and plans of the proposed projects (Preferred Alternatives).

Section 7, Mitigation Plans, has been expanded.

Section 8, Statutory and Regulatory Standards and Requirements, has been expanded.

Section 9, Findings (formerly Section 61 Findings), has been expanded to include additional Section 61 Findings, the Section 4(f) Evaluation, and Statements of Findings (SOF) for wetlands and floodplains, and the CZM Consistency Certification.

Section 10, Agency Coordination and Public Participation, has been updated.

Section 11, Distribution List, has been revised to include NPS distribution requests.

Section 12, List of Preparers, has been updated.

Section 13, MEPA Documents and Comments, has been updated and includes comment letters from NPS

Resource Area Impact Assessment Methodology For the Safety/Security Fence

Direct and Indirect Impacts: For the purposes of assessing the potential impacts associated with the safety/security fence, impacts to wetland resource areas (freshwater wetlands and coastal dunes) have been identified as falling into one of two general categories: direct or indirect. These categories are based upon discussions with MA DEP and other regulatory agencies specific to characterizing impacts associated with the installation and maintenance of the safety/security fence.

The term *Direct Impact* is used in this document to identify alterations which would involve permanent fill (e.g., from fence posts), and vegetation management that would significantly alter the plant community within the clear areas along the fence. Vegetation management where the wetland

plant community would be appreciably altered from an existing forested community (PFO) or a dense shrub community (PSS) to one that is permanently maintained as a low-growing plant community has been included as a direct impact.

Indirect impacts, while modifying the vegetation communities, would not significantly alter the wetlands or dunes and would not impair the ability of these resource areas to continue to provide the same or similar functions and values as those provided by these areas prior to disturbance. An example of indirect impacts may be reducing the height of shrubby vegetation, but still maintaining a shrub swamp community.

Areas of minimal, if any, vegetation cutting and maintenance would not be considered an impact. For example, when the fence alignment would traverse existing low-growing plant communities, this area would not be included as an impact. In addition, vegetation management practices that would necessitate the cutting of *Phragmites* within the wetland along the fence alignment would not be considered an impact. *Phragmites* is currently cut by the Airport in the ILS area and the plant is also cut by other agencies for mosquito control or drainage.

Data have been collected along the preferred fence alignment (Concept 6) to qualify and quantify impacts to freshwater wetlands within Wetland C/J/FK (BVW), Isolated Vegetated Wetlands (IVW) and coastal dunes.

Proposed FAA Action

The FAA New England Region is the sponsor for the proposed Airport improvements.

The FAA action that is the subject of this FEIR/EA/Section 4(f) is:

1. Approve and sign the EA which then becomes the Finding of No Significant Impact (FONSI) for FAA.
2. Provide financial assistance for the construction of the CIP projects and implementation of proposed mitigation measures.

Proposed NPS Action

The Airport is located on property owned by the United States, managed by the NPS CCNS, and permitted to the Airport. The Airport operates under a Special Use Permit (SUP). The NPS Superintendent and the Airport Commission have been working toward a Memorandum of Agreement for the purposes of coordinating airport operations. NPS, as the entity leasing the land used for airport operations, has stated that the Airport is required to obtain approval from CCNS before proceeding with the CIP projects. The NPS further states that their evaluation of a request for approval must comply with NEPA.

The NPS CCNS action that is the subject of this document is:

1. Issue a FONSI based on this FEIR/EA/Section 4(f) in consideration of public review and comment.
2. Continue to work towards a Memorandum of Agreement for the CIP projects.

Background

In October 1999, a FEIS/FEIR/Section 4(f) Statement was prepared for Proposed Airport Improvements Program, which included improvements to the runway safety areas, navigational

system, terminal building and other facilities. These projects were implemented between 2001 and 2003. Extensive coordination between the NPS and the FAA took place regarding preconditions to any proposed expansion of the runway. The Agreement established a future process that would need to be followed to analyze the potential for impacts of a runway expansion. The full text of that agreement (Attachment 1), the FAA ROD (November 16, 2000), the NPS ROD (November 28, 2001), and the letter from NPS to FAA (February 21, 2001) are provided in Appendix 5.

No runway extension was approved at that time and no runway extension is proposed at this time.

1.2 Changes Since the Filing of the NPC/DEIR/EA

Footprint Pavement Reconstruction

The July 18, 2007 Certificate issued on the NPC/DEIR/EA by the Secretary of Energy and Environmental Affairs allowed the Airport to proceed with the reconstruction of the Terminal Apron and the easterly end of the parallel taxiway within the same footprint, prior to the completion of the Final EIR/EA.

The Terminal Apron reconstruction project was issued an Order of Conditions (DEP File No. 058-0440) by the Provincetown Conservation Commission (PCC) and coordination was also carried out with the Natural Heritage and Endangered Species Program (NHESP) and NPS. However, to avoid segmentation, this project is included in the alternatives analysis and the evaluation of impacts. Construction was completed in the fall of 2008, after the summer peak season.

Although the reconstruction of the easterly end of the parallel taxiway has also been allowed by the Secretary to go forward ahead of the completion of the MEPA process, the project will likely be completed as part of the westerly taxiway system improvements. As requested by NHESP, these two projects will be included in the submission for MESA review to avoid segmentation.

Alternatives

In response to DEP comments on the NPC/Draft EIR/EA, the alternatives analysis has been expanded and additional alternatives have been developed for the turf apron and auto parking lot that avoid impacts to wetlands. The turf apron will be smaller in order to avoid wetland impacts. The auto parking layout has been revised to avoid wetland impacts and will be constructed in 2 phases. The Airport Commission would go forward with Phase 1 at this time. Construction of Phase 2 would be contingent upon additional parking studies that would be reviewed and approved by NPS and CCC.

Also, a new alternative for the safety/security fence has been developed that avoids impacts to Hatches Harbor and minimizes impacts to state listed species and their habitats. In response to the Secretary's Certificate on the NPC/DEIR/EA and subsequent discussions with NHESP and NPS staff, additional assessments and evaluations have been completed in order to develop a fence alignment that would be in compliance with FAA protected airport surfaces and meet environmental permit performance standards to minimize adverse impacts to wetlands, coastal dunes, rare species habitat, and general wildlife habitat. An additional fence alternative alignment (Concept 6) has been developed and is the Preferred Alternative.

Renaming of the Taxiway System

The Airport has renamed the TWs to be consistent with nomenclature used at other airports. The changes are as follows:

Parallel TW changed to: TW A
East End TW changed to: TW B
Mid Connector TW changed to: TW C
West End TW changed to: TW D

However, this document retains the former names to be consistent with the NPC/Draft EIR/EA and to avoid confusion.

1.3 Improvement Projects Considered By This FEIR/EA

This document considers 12 Airport improvements projects that are proposed for the Airport's Capital Improvements Program (CIP). The projects are listed below and identified on Figure 1.2 at the end of Section 1. Additional descriptions of the projects are provided in Sections 3, 5, 6 and 7. These projects are being considered in a single FEIR/EA to facilitate an integrated assessment of effects to the environment.

Proposed CIP Projects

1. Westerly Taxiway System Improvements (Realign West End, Mid Connector and a portion of the Parallel TWs)
2. Relocate East End TW
3. Reconstruct Terminal Apron
4. Reconstruct Easterly End of Partial Parallel TW
5. Install TW Lighting and Construct Electric Vault
6. Repair Sightseeing Shack
7. Improve Access Road to Approach Lights (MALSF)
8. Construct Service Access Roads to AWOS and LES
9. Install Perimeter Fence
10. Expand Auto Parking
11. Expand Terminal Building
12. Expand Turf Apron

1.4 Project Issues and Impact Analysis

FAA Orders 5050.4B and 1050.1E, and NPS Director's Order -12 (DO-12) were reviewed to identify environmental categories. Some categories are not present at the Airport or are not likely to have impacts associated with planned improvements as discussed below.

A summary list of all of the categories is provided in Table 1-1.

| Table 1-1 List of Environmental Categories Evaluated | |
|--|---|
| Impact Categories adapted from FAA 1050.1E | Determination |
| Air Quality | No Impacts. Dismissed from Further Analysis. |
| Coastal Resources (Coastal Dunes) | Addressed in FEIR/EA. |
| Compatible Land Use | No Impacts. Dismissed from Further Analysis. |
| Construction Impacts | Addressed in FEIR/EA under various Resource Areas. |
| Department of Transportation Act: Section 4(f) Properties | Addressed in FEIR/EA. |
| Farmlands | Not Present. Dismissed from Further Analysis. |
| Cultural Grasslands | Addressed in FEIR/EA. |
| Rare Species Habitat (Rare and Endangered Species) | Addressed in FEIR/EA |
| Floodplain | Addressed in FEIR/EA |
| Hazardous Materials, Pollution Prevention, and Solid Waste | No Impacts. Dismissed from Further Analysis. |
| Cultural Resources (Archaeological and Historic) | No Impacts. Dismissed from Further Analysis. |
| Visual Environment | Addressed in FEIR/EA |
| Natural Resources and Energy Supply | No Impacts. Dismissed from Further Analysis. |
| Noise | No Impacts. Dismissed from Further Analysis. |
| Secondary (Induced) Impacts | No Impacts. Dismissed from Further Analysis. |
| Socioeconomic Impacts, Environmental Justice, and | No Impacts. Dismissed from Further Analysis. |
| Drainage / Stormwater Management (Water Quality) | Addressed in FEIR/EA |
| Wetlands and Wetland Buffer Zones | Addressed in FEIR/EA |
| Wild and Scenic Rivers | Not Present. Dismissed from Further Analysis. |
| Traffic | No Impacts to Traffic LOS. Dismissed from Further Analysis. |
| Transportation (Auto Parking/Aviation) | Addressed in FEIR/EA |
| Park Operations | No Impacts. Dismissed from Further Analysis. |
| Impairment of Park Resources | Addressed in FEIR/EA per DO-12. |
| Cumulative Impacts | Addressed in FEIR/EA per DO-12. |
| <i>Source: Adapted from FAA Order 1050.1E, Appendix A, NPS Director's Order – 12 (DO-12) and Consultant Evaluations.</i> | |

Environmental Impact Categories Evaluated and Dismissed from Further Analysis

The No Action, Proposed Action (Preferred Alternative), and reasonable alternatives would not affect the following Environmental Impact Categories:

Air Quality

The Airport's current level of activity (approximately 100,000 annual GA operations and less than 12,000 annual passenger enplanements) is well below the federal threshold for an air quality assessment. The future projects will not cause Airport activity to exceed the 180,000 GA operations and the 1.3 million enplanements threshold that triggers an air quality analysis. Aircraft operations, aircraft fueling, and auto traffic have not been air quality issues at the Airport.

Air quality is not expected to be adversely impacted by any planned improvements included in the CIP and operations and enplanements will remain below the threshold for an air quality assessment. Additionally, auto traffic is not projected to increase significantly as a result of the CIP projects. Therefore, impacts are not expected and air quality is dismissed as an impact category for more detailed study.

Compatible Land Use

The proposed CIP projects would provide improvements to existing facilities and would not extend outside of the existing lease boundary for the Airport. There would be no change to adjacent land uses. There would be no change to the existing noise contours at the Airport. There will be a net decrease in pavement. There would be no community disruption, business relocations or induced socioeconomic impacts. Therefore, impacts are not expected and Compatible Land Use is dismissed as an impact category for more detailed study.

Farmlands

None of the CIP projects would affect agricultural lands or prime or unique farmlands soils as defined by the Natural Resource Conservation Service. Therefore, impacts are not expected and Farmlands is dismissed as an impact category for more detailed study.

Hazardous Materials, Pollution Prevention, and Solid Waste

Oil or hazardous materials (OHM) are used and stored in several locations at the Airport. Aviation gas (Avgas) is the most commonly transferred and stored hazardous material at the Airport. During the replacement of the old underground storage fuel tank in 1991, contaminated soil was identified and DEP was notified. The soils were excavated and disposed of by a licensed contractor at a licensed disposal facility. A Waiver Completion Statement was submitted in 1999.

To minimize the risk associated with bulk storage and transfer of Avgas, the Airport has drafted a Spill Prevention Control and Countermeasure Plan (SPCCP) in accordance with Code of Federal Regulations 40, Subpart 112 (40 CFR 112). The SPCCP is provided in Appendix 3.

The SPCCP identifies bulk fuel storage and transfer locations at Airport facilities and provides information critical to the prevention of, and response to, releases of OHM. An Emergency Response Action Plan (ERAP) is attached to the SPCCP, and provides emergency personnel contact information, local, state, and federal emergency response agencies, as well as release reporting information. The SPCCP also establishes personnel training requirements, outlines general spill

response procedures, and contains standard operation procedures for Airport operations involving the transfer of OHM.

Additionally, the Airport has prepared a Stormwater Pollution Prevention Plan (SWPPP) in accordance with National Pollutant Discharge Elimination System (NPDES) standards. SWPPP documents identify potential sources of stormwater pollution at Airport facilities, reflect current operating conditions, and plan for future development of the Airport's facilities. This document is also provided in Appendix 3.

The SWPPP identifies locations where OHM are stored and used, and also identifies drainage areas, stormwater conveyances, and stormwater discharge locations for Airport facilities. The Airport currently maintains a 10,000 gallon underground storage tank (UST) for the storage of Avgas, located approximately 120 feet west of the terminal. The Avgas UST is a double-walled tank with interstitial monitoring and cathodic protection from corrosion. The Airport also maintains a 500 gallon above ground storage tank (AST) for the storage of diesel fuel, located east of the Airport Hangar. The diesel fuel AST is equipped with a secondary containment concrete bunker, and supplies the main terminals emergency generator.

Cape Air, the fixed base operator (FBO) at the Airport, conducts and oversees all transfers of Avgas. Vendor deliveries, as well as transfer of Avgas to the Airport's 1,200 gallon mobile refueler, occur at the fuel farm transfer station. In the event of a release of OHM, the Airport maintains spill response equipment at both the fuel farm transfer station and Airport Operations building.

In addition to the transfer of Avgas and diesel fuel, the use of OHM at the Airport is limited to occasional light operator maintenance of Airport equipment, and periodic use of Type I ethylene glycol for deicing Cape Air aircraft. Deicing operations are conducted on the main apron pavement in a location that prevents deicing fluid from entering any stormwater catch basins. Hazardous waste is properly disposed of by a licensed hazardous waste contractor as needed. With the exception of light servicing of maintenance equipment, Airport operations do not include aircraft maintenance or vehicle servicing. The Airport does not use pesticides, insecticides, or herbicides in grounds keeping operations.

The planned improvements will not change the existing management of spills and hazardous materials at the Airport. Therefore, impacts are not expected, and the category of Hazardous Materials, Pollution Prevention, and Solid Waste is dismissed for more detailed study.

Please note that Stormwater Management is discussed under Drainage.

Cultural Resources

Information for this section was provided in part by NPS. Cultural resource impact categories considered are as follows:

Archaeological Resources: any material remains or physical evidence of past human life or activities which are of archaeological interest, including the record of the effects of human activities on the environment. They are capable of revealing scientific or humanistic information through archaeological research.

There are no known Archeological Resources at the Airport.

Cultural Landscape: a geographic area, including both cultural and natural resources and the wildlife or domestic animals therein, associated with a historic event, activity, person or exhibiting other cultural or aesthetic values.

It is anticipated that Cultural Landscapes will receive negligible long term impacts. The CIP projects will occur within the immediate Airport operational area and not within undisturbed areas of Cultural Landscapes. The preferred alternative for the safety/security fence is not expected to have impacts to the Cultural Landscape surrounding the Airport. Impacts to the adjacent Dune Shacks of the Peaked Hill Bars Historic District will be negligible, depending on the final height of new structures and their affect on viewshed from the district.

Structures: a constructed work, usually immovable by nature or design, consciously created to serve some human activity.

The MHC has determined that there will no impacts to historic structures with the Sightseeing Shack project. CCNS concurs with MHC that no historic structures are present in the immediate area of potential effect.

Museum Objects: a material thing possessing functional, aesthetic, cultural, symbolic, and/or scientific value, usually moveable by nature or design. Museum objects include prehistoric and historic objects, artifacts, works of art, archival material, and natural history specimens that are part of a museum collection.

There are no Museum Objects located in the vicinity of the proposed CIP projects. Therefore, impacts to Museum Objects may be dismissed as an impact topic.

Ethnographic Resources: a site, structure, object, landscape, or natural resource feature assigned traditional legendary, religious, subsistence, or other significance in the cultural system of a group traditionally associated with it.

There are no known Ethnographic Resources at the Airport.

Cultural resources on the Outer Cape include historic sites such as the Race Point Lighthouse, the Race Point Ranger Station (former Coast Guard Station), the Dune Shacks of Peaked Hill Bars Historic District, the Herring Cove Bathhouse of 1953, and the former U.S. life saving station (now the Old Harbor Museum). Archaeological sites include shipwrecks along the beach, prehistoric archaeological sites and remains of fisherman shacks near Herring Cove and Race Point.

Although Pre-Contact period sites have not been reported within the area of the Airport, there are Native American archeological sites of that period in the former Province Lands and Pilgrim Springs areas, near Pilgrim Lake in Truro, according to the NPS. The NPS has also indicated that while the shifting of sand toward and around the toe of Cape Cod was occurring in late prehistory, it is likely that hunting and fishing were carried on by native peoples around the wetlands formed in the new lands next to the highlands of the Cape.

Coordination has been carried out with the Massachusetts Historical Commission (MHC) regarding the historical significance of the Sightseeing Shack and other significant historic or archaeological resources within the Airport lease area. In their correspondence dated April 2, 2007, MHC determined that the CIP project is unlikely to affect significant historic or archaeological resources. The determination is included in Section 10.1. The CCNS park archaeologist has determined that no archaeological testing is necessary for the fence or taxiway lights projects.

Therefore impacts are not expected, and the category of Historical, Architectural, Archaeological, and Cultural Resources is dismissed for more detailed study.

Natural Resources and Energy Supply

The proposed CIP projects would not cause an increase in demand that would exceed available natural resource (such as timber, minerals) or energy supplies. FAA policy encourages the development of facilities that include principles of sustainability. The Terminal will be designed to be a “green” building to the extent feasible and will minimize demand for energy or other natural resources. There would be a minor temporary use of energy resources to power equipment and construction vehicles and to generate construction materials. Therefore, impacts are not expected and Natural Resources and Energy Supply is dismissed as an impact category for more detailed study.

Noise

Although there are no residential areas near the Airport, the CCNS is considered a noise sensitive area. The Province Lands Visitor Center, the Race Point Beach area, a bike trail, a hiking trail, and several summer cottages are east of the Airport under the approach to Runway 25. The Province Lands Visitor Center is approximately a half mile north of the Airport. The Race Point Beach area is approximately a half mile east of the Airport. The Race Point Beach parking lot is approximately a quarter mile from the Airport parking lot. A section of the bike trail is within the Airport lease area and crosses Airport Drive. At the closest point the bike path is approximately 650 feet from the end of Runway 25, where the Runway Safety Area nearly abuts the bike path, separated by a fence.

Aircraft noise is created by low flying aircraft operating in the traffic pattern for landing or departing the Airport. Commercial or private sightseeing planes which operate over the CCNS are regulated by specific federal airspace restrictions that specify a 2,000-foot minimum flight elevation over national parks.

In an effort to minimize the Airport’s noise impacts, a non-standard right hand traffic pattern was established for Runway 25 to keep planes over the water. This pattern keeps approaching and departing aircraft farther away from the amphitheater and Province Lands Visitor Center. Noise complaints have decreased since the change in the air traffic pattern.

An extensive noise analysis was done in 1996 and included in the 1999 Environmental Impact Statement/Report (EEA No. 9386) to assess the noise impacts of shifting the runway in order to construct the runway safety areas. The runway safety area project has been completed and the associated noise contours have been incorporated into a noise contour plan for the Airport. Since the noise study was completed for the runway safety area, there has been no change in the commercial fleet mix and none is anticipated for the next ten years. It is expected that the commercial commuter fleet mix will remain the same.

The noise contours for the existing Airport were provided in the NPC/DEIR/EA. The planned improvements will not increase operations and will not change the existing noise contours. The proposed addition of turf apron area will accommodate planes that are currently parked on the Mid Connector TW during peak periods and will not result in more flights into the Airport. Therefore, impacts are not expected and noise is dismissed as an impact category for more detailed study.

Secondary (Induced) Impacts

The proposed CIP projects will address existing needs at the Airport. Secondary impacts are not expected and therefore this category is dismissed for more detailed study.

Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks

The proposed CIP projects will not change local or regional land use and will not impact neighborhoods or businesses. The area is not mapped as an Environmental Justice Viewer on the MassGIS database. Therefore, impacts are not expected and Socioeconomic Impacts is dismissed as an impact category for more detailed study.

Wild and Scenic Rivers

The NPS and MassGIS database has been checked. There are no Wild and Scenic Rivers within the project area. Therefore, impacts are not expected and Wild and Scenic Rivers is dismissed as an impact category for more detailed study.

Traffic

The primary access for automobiles to the Airport is Race Point Road. Traffic on Race Point Road, leaving northbound from the intersection with Route 6 and Conwell Street, enters the CCNS, passes an intersection with Province Lands Road, and arrives at the Airport driveway approximately two miles from the intersection with Route 6. Race Point Road continues on to Race Point Beach, where the NPS maintains a five-bay, 340 car parking facility. From here, special off-road vehicles may continue on the beach or along specific restricted NPS roads which access the dune lands. Although vehicles may arrive at the Airport via Province Lands Road, traffic counts conducted by the CCC revealed traffic is very light on this road, and a vast majority of the traffic utilizes Race Point Road for Airport access. Readers unfamiliar with the roadway system can refer to figures included in Appendix 4. Race Point Road, Province Lands Road, and Conwell Street are all local two lane roads. The intersection of Race Point Road and Province Lands Road is under stop control. Route 6 is a major arterial with two travel lanes separated by a median. There are exclusive left turn lanes at the intersection with Conwell Street and Race Point Road.

In accordance with the MEPA certificate on the ENF, a level-of-service (LOS) analysis of the signalized intersection of Route 6 at Conwell Street and Race Point Road and the unsignalized intersection of Race Point Road and Airport Drive was conducted. The analysis was done by using the widely accepted software program Synchro v.6.0, which is based upon the concepts and procedures described in the Highway Capacity Manual (HCM).

Automatic Traffic Recorders (ATR) and Turning Movement Counts (TMCs) were used to collect current traffic data in August 2006 and August/September 2007, which is within the seasonal peak period of activity at the Airport. The ATRs were placed along Airport Drive, and at two locations on

Race Point Road. The ATRs collected average daily traffic volumes over an extended period of time and provide an hourly volume breakdown.

The TMCs were performed during the weekday morning, midday, evening and Saturday midday peak periods. The TMCs were conducted at the study area intersections of Route 6 at Race Point Road, and Race Point Road at Airport Drive. The level-of-service (LOS) analysis was conducted utilizing the TMCs.

Signalized Intersection of Route 6 at Conwell Street and Race Point Road

Under all conditions (2007 Existing, 2024 No Action and 2024 Build), this intersection currently operates at LOS A during the weekday morning peak hour and at LOS B during the weekday midday, evening and Saturday midday peak hours.

Unsignalized Intersection at Race Point Road and Airport Drive

Under all conditions, the critical movements (all movements from Airport Drive) at this unsignalized intersection operate at LOS A during the weekday morning, midday, and evening and Saturday midday peak hours.

Additional information is provided in the Traffic Operation Report and Parking Analysis provided in Appendix 4.

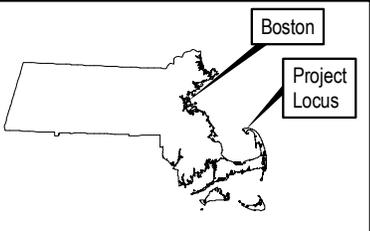
The CIP projects will not impact traffic operations. The Level of Service (LOS) will not be impacted by any of the alternatives. Therefore, impacts to traffic are not expected and Traffic is dismissed as an impact category for more detailed study. The impacts to auto parking capacity, pedestrian movement, and bicyclists are addressed in this document under Transportation.

Park Operations

Park Operations refers to the access to buildings and beaches and other daily activities and services provided by the Park. The CCNS maintains buildings, trails, roads, and parking lots. Implementation of the Project would not cause interruptions nor interfere with efficient park operations. Construction related traffic will not interfere with access to the visitor centers or beach parking lots. Therefore, impacts are not expected and Park Operations is dismissed as an impact category for more detailed study. However, Impairment to Park Resources is discussed in this document as required by NPS NEPA guidelines.

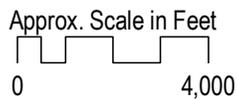


LOCUS



Prepared By:

JACOBS

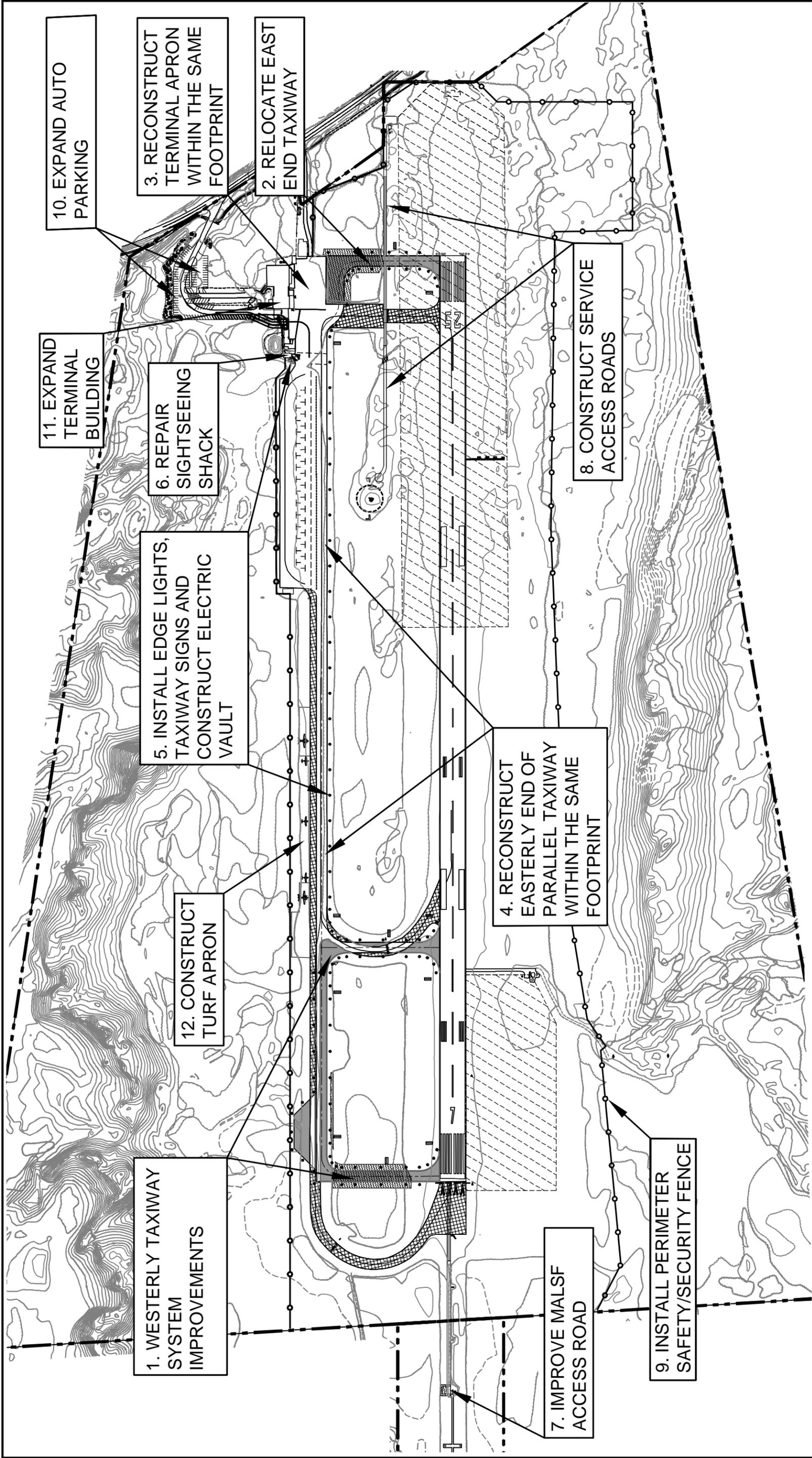


Data compiled from the following source:
MassGIS, Commonwealth of Mass. EOE

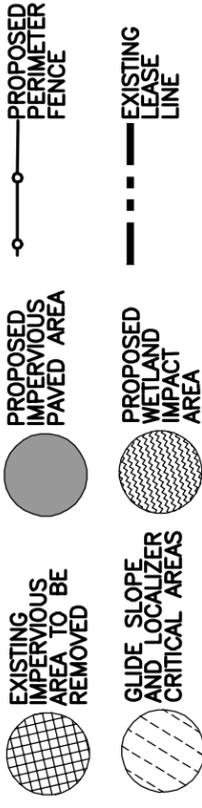
**Provincetown Municipal Airport
Capital Improvements Plan**

LOCUS MAP

Figure 1.1



Prepared By:



Provincetown Municipal Airport
Capital Improvements Plan



PROJECT OVERVIEW

Figure 1.2

SECTION 2.0 PURPOSE AND NEED

Purpose

The purpose of the CIP project elements is to:

- Enhance Airport safety and security.
- Enhance the efficiency of the Airport to more fully meet the current and anticipated demand.

Several of the CIP projects will provide operational safety and security improvements at Provincetown Municipal Airport that comply with current FAA, Massachusetts Department of Transportation (MassDOT) Aeronautics Division, and TSA safety and security design standards for a non-hub primary service airport. The use of these standards is mandatory for airport projects receiving Federal grant-in-aid assistance. It is the policy of the Airports Division of the FAA New England regional office that airport improvement projects must comply with the national airport design standards.

Three of the CIP projects will address existing and anticipated capacity needs. The proposed addition to the Terminal would replace the lost passenger space taken by TSA for secure waiting areas, and passenger and baggage screening, and support future passenger needs. The proposed improvements to the parking lot and the turf apron are design to address the current and projected needs at the Airport.

Need

The CIP projects are needed because:

- Certain airfield facilities do not meet current safety and security standards.
- The Airport's existing parking and terminal facilities cannot efficiently meet current and projected demand.

To explain the purpose and need for these projects, the following discussion of the FAA and TSA safety and security regulations, standards and guidelines is provided as background.

2.1 Overview of Airport Safety and Security Design Standards

The following discussion is based on information obtained from FAA, MassDOT, and TSA. Additional information was obtained from staff at the FAA New England Regional Office, Planning Branch, and Safety & Standards Branch. Applicable portions of regulations and design standards are included in Appendix 6.

The primary mission of the FAA is safety. As stated in FAA Order 5100.38C, Airport Improvement Program Handbook: "The highest aviation priority of the United States is the safe and secure operation of the airport and airway system." The authority to regulate the aviation system, and the extensive design standards are discussed below.

Acts of Congress

Safety

The Federal Aviation Administration has been given the authority to regulate civil aviation by several acts of Congress. Starting with the Air Commerce Act of 1926, the new aeronautics branch of the Department of Commerce assumed responsibility for aviation oversight and concentrated on safety rulemaking and certification of pilots and aircraft. It also took over operation of the nation's system of lighted airways from the Post Office Department. The Civil Aeronautics Act of 1938 transferred responsibilities to a new independent agency, the Civil Aeronautics Authority. The Federal Aviation Act of 1958 created a new independent body, the Federal Aviation Agency, with broader authority to combat aviation hazards. In 1966 Congress authorized the Department of Transportation and the Agency became the Federal Aviation Administration. The Airport and Airway Development Act of 1970 made FAA responsible for safety certification of airports served by air carriers. The Airport and Airway Improvement Act of 1982 established the Airport Improvement Program (AIP). The AIP provides grants to public agencies for the planning and development of public-use airports that are included in the National Plan of Integrated Airport Systems (NPIAS). The NPIAS is comprised of all commercial service airports, all reliever airports, and selected general aviation airports.

Security

The FAA became more involved in the field of aviation security during the hijacking epidemic of the 1960s. The Aviation Security Improvement Act of 1990 directed the FAA to develop guidelines for airport design to allow for security enhancement. The Aviation and Transportation Security Act (ATSA), signed into law November 2001, established the Transportation Security Administration (TSA) following the September 11, 2001 terrorist attacks. The TSA was given responsibility for securing all modes of transportation, including aviation. The establishment of the Department of Homeland Security (DHS) in 2002 further defined the responsibilities of TSA. Although the public is most aware of efforts to improve security relative to passenger and baggage screening, another area of aviation security pertains to the perimeters of airport properties. In June 2006, TSA issued Recommended Security Guidelines for Airport Planning, Design and Construction, which includes guidelines for perimeter security and access points.

Laws and Regulations

The FAA has the statutory authority to issue rules on aviation safety under Title 14 and Title 49 of the United States Code. The United States Code is the codification by subject matter of the general and permanent laws of the United States. It is divided by broad subjects into 50 titles and published by the Office of the Law Revision Counsel of the U.S. House of Representatives.

Safety

Title 14 presents regulations governing the activities of the Department of Transportation and the National Aeronautics and Space Administration in the areas of aeronautics and space, including: aircraft, aviators, airspace, air traffic, certification of air carriers and operations, and airports. Chapter 1 of Title 14 includes the Federal Aviation Administration, Department of Transportation. The following section is relevant to the discussion of the proposed projects at the Airport:

- 14 CFR Part 77 applies to Objects Affecting Navigable Airspace. Part 77 establishes standards for determining obstructions in navigable airspace. These standards are established through imaginary obstacle free surfaces with relation to the airport and each runway.

Security

Regulations relative to airport security can be found at Title 14 CFR Part 107 and Part 121. Part 107 regulates airport security and Part 121 defines the operating regulations for commercial carriers.

Title 49 also relates to security at airports. Title 49 presents regulations governing research and special programs administration, railroads, highways, vessel cargo containers, traffic safety, surface transportation, transit administration, and transportation safety. The following section is relevant to the discussion of the proposed projects at the Airport:

- 49 CFR Subchapter C Part 1542 applies to Civil Aviation Security. Part 1542 requires airport operators to adopt and carry out a security program approved by TSA.
- 49 CFR Part 1544 applies to the security of airport operations.

Airport Operations Safety Design Standards and Guidelines

The FAA publishes documents known as Advisory Circulars (ACs) and Orders, while not regulations, provide accepted operational safety design standards to meet responsibilities pursuant to the regulations. The use of these standards is mandatory for airport projects receiving Federal grant-in-aid assistance. AIP funded projects are required to comply with certain FAA Advisory Circulars (AC). The list of required ACs is provided in Appendix 6 and can also be found at <www.faa.gov/airports_airtraffic/airports/aip/media/aip_pfc_checklist_fy2007.pdf>.

FAA Airport Design Advisory Circular (AC 150/5300-13) includes the design standards for all civilian airports. As stated on the signature page of the Advisory, “For airport projects receiving Federal grant-in-aid assistance, the use of these standards is mandatory.” The design standards are important because they establish a uniformity and consistency of design that has been adopted by the FAA to promote the safe movement of aircraft at all airports in the United States. Whenever possible, existing airport facilities are brought to current standards as an adjunct to other projects, such as pavement reconstruction and other improvement projects.

Specific sections of relevant ACs and Orders that apply to the proposed projects are provided later in this section.

Airport Security Design Standards and Guidelines

FAA Airport Design Advisory Circular (AC 150/5300-13, Chapter 6, Paragraph 614) includes site requirements for NAVAID facilities and security of those facilities.

In June 2001, the FAA issued revised Recommended Security Guidelines pursuant to the Aviation Security Improvement Act of 1990. In June 2006, TSA issued Recommended Security Guidelines for Airport Planning, Design and Construction.

In Massachusetts, public-use airports are subject to requirements issued by the MassDOT Aeronautics Division Directive Airport Security AD-001a. Each airport is required to prepare an Airport Security Plan in accordance with the Directive and Federal guidelines.

On the local level, the Provincetown Airport Commission applies all the guidance documents to prepare a Security Plan for the Airport that is appropriate for the type of airport operations, secure areas, and other conditions specific to the Airport. The specifics of the PVC Security Plan cannot be discussed in this unclassified document for security reasons. However, the most visible impact has been the mandatory conversion of approximately 1,600 square feet (61%) of the passenger lobby to TSA restricted area.

Airport Waivers

FAA policy states that all new airport projects receiving AIP funds must be constructed in compliance with the national design standards for airports. Existing facilities such as taxiways, runways and safety areas must be brought up to current design standards as part of any construction project to the fullest extent possible.

Waivers to airport design standards for a specific airport may be granted if there are unique local conditions and an equivalent level of safety can be provided under the waiver. Any waiver of an airspace clearance standard related to new construction, reconstruction, expansion, or upgrade on an airport which receives Federal aid requires special review and FAA approval. The waiver must be fully justified on the basis of need and must provide an equivalent level of safety. These are reviewed on a case by case basis.

FAA issued the Airport a Waiver in 1980 of the standard for the width of the FAR Part 77 primary surface, which is one of several navigable airspace surfaces. The clearing of the Airport's primary surface is 500 feet wide (250 feet off the runway centerline on either side) instead of the standard 1,000 foot width. It was determined that tree clearing to comply with the standard 1,000 foot primary surface would have an adverse impact on the Cape Cod National Seashore (CCNS) that could be avoided while still providing an equivalent level of safety. The Waiver was justified based on the slow approach speed of the DC-3, the small GA aircraft using the Airport at the time, and the installation of the Instrument Landing System (ILS), which would provide an acceptable level of safety at the Airport. Waivers are typically written for the aircraft type using the airport at the time. In 1980, the Waiver was written for safe operations of the DC-3 commuter aircraft and small General Aviation (GA) type aircraft which were the primary aircraft type at the time.

Waivers may be revoked if necessary to safely accommodate any significant changes in aircraft operating at an airport. Although the type of aircraft operating at the Airport has changed, there is no indication that the 1980 Waiver will be revoked. The Waiver is included in Appendix 6.

The justification of applying for waivers for the proposed CIP safety projects was evaluated. Measures that would provide an equivalent level of safety for operations on the taxiways would require a control tower which the Airport does not have.

2.2 Airport Operational Safety and Security CIP Projects

The purpose and need for each of the twelve (12) project elements is presented in this and the following section. Table 2-1 provides the specific references for the FAA, MassDOT, and TSA safety and security design standards. The applicable portions of the referenced documents are provided in Appendix 6. A summary of the purpose and need for each of the 12 CIP project elements is provided in Table 2-2.

The purpose of nine of the twelve projects is to provide operational safety and security at the Airport. The listed order of the projects does not necessarily reflect the order in which they would be constructed. Construction and permitting phasing is discussed in Section 6. The CIP projects are:

1. Westerly Taxiway System Improvements
2. Relocate East End Taxiway
3. Reconstruct Terminal Apron
4. Reconstruct Easterly End of Parallel Taxiway
5. Install Taxiway Edge Lights and Construct Electric Vault
6. Sightseeing Shack Improvements
7. Improve Access Road To Medium Intensity Approach Light System with Flashers (MALSF) Approach Lights
8. Construct Service Access Roads to the Localizer Equipment Shelter (LES) and to the Automated Weather Observation Station (AWOS)
9. Install a Perimeter Safety/Security Fence

2.2 PROPOSED SAFETY AND SECURITY PROJECTS

1. Westerly Taxiway (TW) System Improvements

The components of the TW system at the westerly end of Runway 7 are closely interconnected in terms of function and design. For these reasons the West End Connector TW, the westerly end of the Parallel TW, and the Mid Connector TW are included under the heading of Westerly TW System Improvements. The sub elements of the Westerly TW System are discussed separately in terms of purpose and need and for the alternatives analysis. They are combined as one project in terms of impacts and mitigation because the elements overlap and the entire taxiway system would be constructed together.

A. Relocate the West End Taxiway (TW)

Purpose: Safety

The purpose of relocating the West End Connector TW (West End TW) is to comply with FAA flight operation safety standards. There are three issues with the current alignment:

1. The West End TW is a jug-handle shaped taxiway. The jug-handle configuration was constructed years ago to accommodate the turning radius of the DC-3 airliners that were flown at the time. The DC-3s are no longer in operation. Currently, FAA design standards provide for an L-shaped intersection with a right angle to the runway for operational safety. Such a reconfiguration would generally be programmed when the taxiway pavement needs to be reconstructed.

2. The existing taxiway is located within the Runway 7 approach surface as defined by 14 CFR Part 77. Because of this condition, pilots waiting to depart Runway 7 are required to hold short of the runway, limiting their view of the runway, which makes the taxiing procedure especially hazardous during low visibility and peak operating times.

3. The taxiway intersects parallel to the end of the runway rather than at a right angle to the runway because the runway was shifted east to accommodate FAA required Runway Safety Areas (RSAs) and minimize environmental impacts. This intersection is not in compliance with the current FAA design standards. This increases the risks of runway incursions or collisions on the runway and must be corrected. This is a non-compliant safety issue for the Airport.

The West End TW is within the approach surface as a result of the shift of the runway to the east to accommodate runway safety areas (MEPA Certificate on FEIR #9386, January 14, 2000). At the time the runway was reconstructed with the safety areas, it was not feasible to include the reconstruction of the taxiways. It has always been the intention to correct this design deficiency as funds became available.

Need: Does not meet current FAA safety and design standards.

The West End TW needs to be relocated because it is within the approach surface, it intersects parallel to the end of the runway and it is not at a right angle with the runway so that approaching aircraft are not visible to taxiing planes. The fact that the Airport does not have a control tower adds to the need for a standard design taxiway at the Runway 7 end.

This project is needed because of the existing flight operation safety issues. Additionally, the taxiway pavement is eligible for reconstruction and funding is available. Although the taxiway would be relocated again if the runway were extended, (as noted in the comments on the ENF), it is not anticipated that a need for additional runway length would occur before the Year 2024 planning period and the safety issue must be addressed now.

Reference: 14 CFR Part 77.25(d); AC 150/5300-13 (See Table 2-1 and Appendix 6 for specific sections)

FAA has indicated that the West End connector taxiway would not qualify for a Waiver and must comply with national design standards when it is constructed.

B. Realign and Reconstruct the Westerly End of the Parallel Taxiway (TW)

Purpose: Safety

The purpose of realigning the parallel TW is to enhance safety by providing a straight alignment between the runway ends and the apron area in accordance with FAA design standards. The current taxiway shifts to the north at the mid-connector taxiway. An additional purpose of reconstructing the taxiway is to replace the section of aging pavement. Pavement is constructed according to FAA specifications, and the pavement is showing signs of deterioration. It is eligible for FAA reconstruction funding.

Need: Shift in taxiway presents an operational safety hazard.

The Parallel TW needs to be realigned and reconstructed because the taxiway centerline shifts twenty feet to the north between the Mid Connector taxiway and the West End taxiway. This shift in the centerline requires the pilot to change speed and direction, which presents a hazardous situation to pilots during nighttime and low visibility conditions. There are periods when fog moves in over the Airport and is trapped by the dunes to the north and south which provide natural barriers so the fog cannot dissipate. This reduces visibility and increases the risk of pilots “missing the turn” in what they expect to be a straight taxiway. The aircraft could potentially hit another parked aircraft or veer off into the wetlands. This hazard is not in compliance with FAA design standards. The shift in centerline resulted from a 1984 project to address non-compliance with an FAA Object Free Area. The taxiway centerline was shifted approximately twenty feet to the south between the mid and east taxiway connectors. The section between the Mid Connector TW and West End TW was not shifted at the time.

It has been suggested in the comments on the ENF that installing taxiway edge lights alone could address the operational safety issues. Taxiway edge lights would enhance safety during nighttime conditions, but the hazardous geometry still needs to be brought into compliance with FAA standards to enhance overall safety. This area of the Airport does not have any ambient lighting, as in the vicinity of the Terminal and East End TW area.

The realignment also provides the opportunity to remove some pavement along the length of the parallel taxiway as discussed later in the document.

Reference: AC 150/5300-13 (See Table 2-1 and Appendix 6 for specific sections)

FAA requires parallel taxiways connect to the runway thresholds at ILS airports. FAA policy is that this deficiency in the TW alignment must be corrected in accordance with current design standards when the pavement is reconstructed.

C. Realign the Mid Connector TW

Purpose: Safety

The purpose of realigning the Mid Connector TW is to bring the taxiway into compliance with FAA operational safety design standards. Similar to the West End taxiway, the Mid Connector taxiway is a jug-handle shape that was designed for the old tailwheel-equipped Douglas DC-3 passenger plane. The taxiway does not meet at the current standard right angle with the runway. However, aircraft holding to depart are not located within any clear zones, and the current alignment does not pose any current operational hazards.

Need: Does not meet current FAA safety and design standards.

The Mid Connector taxiway should be realigned because it does not meet current FAA standards and is not at a right angle with the runway. Although FAA has indicated that the mid TW would be acceptable for the short term until the pavement is reconstructed, it would be more cost efficient for design and construction to realign the Mid TW at the same time the parallel taxiway is realigned. For these reasons, the realignment is proposed as part of the Westerly TW System Improvements.

Reference: AC 150/5300-13 (See Table 2-1 and Appendix 6 for specific sections)

FAA requires that this alignment be brought up to current standards when the pavement is reconstructed.

2. Relocate the East End TW

Purpose: Safety

The East End TW has the standard design of a ninety-degree intersection but does not comply with the design standard to connect with the end of Runway 25. Pilots are required to “back taxi” in order to reach the end of Runway 25 prior to takeoff. This creates the potential for collisions between a back-taxiing aircraft and one that may be landing.

As some have pointed out, this offset is a result of the shift of the runway 200 feet to the east to provide RSAs. The taxiway was in existence at the time, but was not part of the project to construct RSAs. FAA did not require that it be reconstructed at that time and it was not included in the 1999 EIS/EIR.

Need: Aircraft must back-taxi on active runway, creating an operational safety hazard.

The project will eliminate the need to back-taxi on an active runway, in compliance with FAA operational safety and airfield design standards. The back-taxi maneuver creates a potential conflict with aircraft on final approach to landing. This operational hazard should be eliminated to be in compliance with FAA’s runway Incursion Prevention Program.

Reference: AC 150/5300-13 (See Table 2-1 and Appendix 6 for specific sections)

FAA requires that this intersection be brought up to current standards when the pavement is reconstructed.

3. Reconstruct the Terminal Apron

Purpose: Airfield Pavement Maintenance and Safety

The purpose of the terminal apron project is to maintain airfield safety and operational access by reconstructing the pavement within the existing footprint.

Need: Pavement is over twenty years old.

The terminal apron pavement needs to be reconstructed because it has deteriorated to fair condition. In the Certificate on the DEIR/NPC, the Secretary of EOEEA allowed the project to go forward prior to completion of the FEIR/EA. The project does not result in an increase in pavement or change in the footprint. A Notice of Intent was filed with the Provincetown Conservation Commission and the project was constructed in 2008. The Order of Conditions for the project is included in Section 10.3.

Reference: AC 150/5320-6d (See Table 2-1 and Appendix 6 for specific sections)

This project has been given clearance to go forward prior to circulation of the FEIR/EA and was completed in 2008.

4. Reconstruct the Easterly End of the Parallel TW within the Existing Footprint

Purpose: Airfield Pavement Maintenance and Safety

The purpose of reconstructing the pavement within the existing footprint of the easterly portion of the partial parallel taxiway is to replace pavement that is in poor condition. In the Certificate on the DEIR/NPC, the Secretary of EOEEA allowed the project to go forward prior to completion of the FEIR/EA, if funding is available. The project does not result in an increase in pavement or change in the footprint.

Need: Pavement is over twenty years old.

The project is needed because the pavement is in poor condition. Pavement at airports needs to be maintained so that loose or cracked pavement does not damage aircraft or present a hazard to operations.

In the Certificate on the DEIR/NPC, the Secretary of EOEEA allowed the project to go forward prior to completion of the FEIR/EA. The project does not result in an increase in pavement or change in the footprint. Although the reconstruction of the easterly end of the parallel taxiway has also been allowed by the Secretary to go forward ahead of the completion of the MEPA process, the project will likely be completed as part of the westerly taxiway system improvements.

Reference: AC 150/5220-6d (See Table 2-1 and Appendix 6 for specific sections)

FAA requires that the pavement be maintained up to current standards.

5. Install TW Lighting and Construct an Electric Vault

Purpose: Safety

The purpose of the TW edge lights, signs, and a new separate electric vault is to improve operational safety on the taxiways during nighttime operations and to upgrade the reliability of the power supply to the taxiway and runway lighting system.

Need: Lack of TW edge lights and signage presents an operational safety hazard.
Electric vault is not up to electrical code standards.

Medium Intensity Taxiway Edge Lights (MITLs) are needed for the taxiway system. The taxiways currently have reflectors but the lack of lighting can be a safety hazard during inclement weather or sudden fog conditions. Improvements to the lighting system for the taxiways would require additional space for the airfield electric vault which is currently located inside the sightseeing shack. A separate electrical vault is required to support the new lighting system, to allow adequate space that meets electrical code, and bring the system up to standards.

Reference: DOT/FAA/AR-04/10, Section 4; AC 150/5300-13 (See Table 2-1 and Appendix 6 for specific sections)

FAA requires that facilities be maintained to current operational and safety standards as part of reconstruction projects.

6. Sightseeing Shack Improvements

Purpose: Safety/Maintenance

The purpose of the Sightseeing Shack project is to repair or replace the building once the electrical equipment is removed.

Need: Building is in poor condition.

Since the building walls may need to be opened to remove the electrical equipment as part of the Install Taxiway Lighting and Construct Electric Vault improvements, and the structure is in poor condition, the building needs to be repaired or replaced with a new structure.

Reference: 2005 Master Plan.

It is the intent of the Airport Commission to maintain a building in the same location of similar size and with similar architecture, including a front porch.

7. Improve Access Road to the MALSF Approach Lights

Purpose: Safety

The purpose of improving the existing access road to the Runway 7 approach lights is to address an operational safety issue.

Construction of the existing embankment for the access road to the Medium Intensity Approach Light System with Flashers (MALSF) at the Runway 7 end was permitted by the DEP Decision on the Request for a Variance, dated May 18, 2001, and a CCC DRI Decision dated April 13, 2000. A new survey was completed for the final design stage for that project. When the impact area was recalculated with the updated elevation information, a discrepancy was discovered. In order to build the road with shoulders and a turn-around, additional area of Bordering Vegetated Wetland (BVW) would have needed to be filled beyond the amount specified in the Variance. Staff at DEP, the Provincetown Conservation Commission, and the CCC was consulted at the time. A request to amend the Variance was not prepared because of time and legal constraints relative to funding, construction contracts, and runway closures. Therefore, in order to be in compliance with the Variance, the road was constructed on a filled embankment approximately 3 feet above the adjacent wetland area, but without shoulders and without a turn-around area. Permitting agencies reviewed and approved the access road as constructed.

Need: FAA service vehicles must back up 400 feet on narrow embankment, presenting an operational safety hazard.

Several years of vehicle operations on the access road have confirmed the need for an improvement to the road. Because of the narrow width and lack of a turn-around area, FAA service vehicles must back up for a distance of 400 feet before being able to turn around. Without shoulders, this maneuver has always been difficult because the drivers of the FAA utility vehicles have difficulty seeing the edge of the road, especially in poor weather. Recently a vehicle went off the road onto the side slope. A large crane parked within the runway safety area was required to extricate the van. The runway had to be closed while the crane was on location.

FAA design standards for access roads to FAA owned and operated facilities have specific pavement requirements for the roads when they join a runway or taxiway. FAA Order 6940.1 specifies a paved access road for a minimum of 300 feet if it comes off a runway or taxiway. The pavement minimizes the potential for a vehicle to track stones or other foreign material onto the runway or taxiways, which might damage a plane. Aircraft turbine engines can be damaged from the ingestion of stones or other foreign objects.

At the time the MALSF road was constructed trucks were able to drive on the abandoned runway pavement resulting from the shift in the runway. This pavement will be removed as part of the relocation of the West End TW. The area will be rehabilitated as grassland habitat as part of the proposed mitigation for the CIP projects. Because of that pavement removal, the Airport proposes to pave the first 300 feet of the access road in accordance with FAA Order 6940.1. The access road to the glide slope antenna is currently paved for the entire distance.

Reference: Order 6940.1; AC 150/5300-13 (See Table 2-1 and Appendix 6 for specific sections)

FAA requires that this be brought up to current standards as funds become available.

8. Construct Service Access Roads to the Localizer Equipment Shelter (LES) and to the Weather Station (AWOS)

Purpose: Safety

The purpose of constructing access roads is to comply with FAA operational standards by providing vehicle access to the airfield equipment. The service access roads would improve maintenance access, especially in inclement weather or emergencies. As explained below, the access roads to the AWOS and LES have always been required, but at the time, construction of road access was put aside in order to complete the critical runway and MALSF improvements.

The CCC has asked in its comment letter on the ENF why the LES and AWOS access roads were not identified as a need during the RSA and MALSF approach lights project review. The need to relocate the AWOS was not anticipated during the design of the RSA and MALSF project. Therefore, relocating the AWOS was not part of the design or permitting project for the runway and MALSF improvements. The AWOS wind tower has its own clearance requirements and the strict clearance requirements of the AWOS wind tower instrument became apparent after the design and environmental permitting process was completed and the project had advanced to the construction phase. Significant tree clearing would have been necessary to avoid moving the AWOS after the RSA project. To avoid the need to cut additional trees, the AWOS was relocated to the infield between the runway and the taxiway, next to the wind cone and segmented circle. The AWOS field design change

was reviewed and approved by DEP, the Provincetown Conservation Commission, and CCC. Because of the constraints of construction contracts, runway closures, and committed funding, an access road was not included in the submission because it would have required additional design and permitting. Access by road is proposed now because FAA requires compliance with applicable regulations for any new construction at an airport.

Similarly, the need to provide power service to the new localizer shelter (LES) was not included in the design and permitting process for the RSA and approach lights projects. Excavation to install the power cable was allowed by the CCC and DEP on the alignment of an existing foot path in Wetland B, provided the area was replanted and restored to the original narrow path. Although a narrow path walkway was allowed to be disturbed, there was not enough time to request a change to the DEP Variance and CCC DRI to include an access road to the localizer shelter. Access by road is proposed now because FAA requires compliance with applicable regulations for any new construction at an airport.

Need: Access is not in compliance with FAA Order 6940.1.

Equipment used by FAA technicians to serve the Localizer and AWOS is heavy and not easily transported by foot. The FAA technicians support a regional network of equipment, driving their utility trucks and vans to each site. Navigational equipment is repaired and replaced during all weather conditions to ensure safe airline operating conditions. Airports with passenger service are priority for immediate equipment repairs. The project is needed because current vehicle access to the Localizer Equipment Shelter and the Automated Weather Observing Station (AWOS) is off the active runway over unpaved surfaces.

Reference: Order 6940.1; AC 150/5300-13 (See Table 2-1 and Appendix 6 for specific sections)

FAA requires that this be brought up to current standards as funds become available.

9. Install Perimeter Safety/Security Fence

Purpose: Safety and Security

The purpose of the perimeter fencing is both safety and security. First, the fencing would improve safety by deterring deer and coyote, as well as hunters and hikers, from encroaching on the airfield's operational area. Additionally, for the safety and security of all users of the CCNS, the perimeter fence is proposed to separate areas designated for airport operations from airport lease areas that are currently used by the public for recreational activities.

Secondly, fencing secures the Airport Operating Area (AOA), the Security Identification Display Area (SIDA), and other security areas from unauthorized access, in compliance with TSA Guidelines. The key concerns and concepts are to restrict access, control the flow of people, provide security screening, separate critical areas, protect areas and assets, and protect aircraft, people and property.

Need: Perimeter fence is needed for operational safety and security.

The Airport currently has fencing at the east end of Runway 25 which is adjacent to the CCNS bike path, and around the terminal apron and the fueling station.

Fencing is also needed to enclose currently unsecured areas and minimize unauthorized access for security. The Airport is a commercial service airport with scheduled flights into Boston Logan International Airport via Cape Air. Since Cape Air flies directly to Logan's secure terminal areas for direct connections to Jet Blue and other passenger airlines as discussed in Section 4, the Cape Air passengers must be pre-screened at Provincetown Airport. This direct connection to Logan means that airfield security at PVC must meet the rigid standards found under FAR Part 107.

Fencing is needed to deter deer and coyote from coming onto the runways and other operating areas. There have been several collisions over the years between aircraft and deer, resulting in damage to the planes and death of the animals. There have also been incidences when coyotes were on the runway and interfered with landing operations.

On limited occasions, hikers and horseback riders have gone down the runway, mistaking it as a paved road. Additionally, since recreational activities at the CCNS include a hunting program for deer, waterfowl, rabbit, and other species, there is a need to identify and limit access to the Airport operating lease area for the safety of all users. Currently, hunting is allowed by NPS regulation up to the edge of the glide slope critical area, which is directly adjacent to the runway as shown on Figure 1.3. Occasionally in hunting season, hunters have been observed crossing the runway and two hunting blinds were recently discovered as close as 200 feet from the runway. Despite signs, hunting activity is taking place within the airport operation area. These incidents are considered runway incursions, which increase the risk of accidents and need to be addressed to be in compliance with FAA's Runway Incursion Prevention Program.

Reference: *Recommended Security Guidelines for Airport Planning, Design and Construction*, revised June 15, 2006, TSA; AC 150/5300-13; MassDOT Aeronautics Division Directive AD-001a, November 14, 2001 (See Table 2-1 and Appendix 6 for specific sections)

FAA and the Airport Commission recognize that the Airport is located within a sensitive environment. An alternative that provides for critical sections of fence, along with signage and the use of natural barriers has been evaluated and is discussed in Sections 3, 5 and 6.

| Table 2-1 Summary of Regulations Pertaining to CIP Projects | |
|--|---|
| Improvement Project | Regulations |
| 1. Westerly Taxiway System Improvements | |
| West Entrance | 14CFR FAR Part 77.25(d) FAA Waiver No. 55 AC 150/5300-13, Appendix 16, Table A16-1A, Note 9 AC 150/5300-13, Paragraph 409 (holding bay) AC 150/5300-13, Paragraph 413 AC 150/5300-13, Paragraph 204 |
| Mid Connector | AC 150/5300-13, Paragraph 407 AC 150/5300-13, Paragraph 413 AC 150/5300-13, Paragraph 204 |
| Parallel TW | AC 150/5300-13, Appendix 16, Table A16-1A, Note 9 AC 150/5300-13, Paragraph 204 |
| 2. Relocate East End TW | AC 150/5300-13, Appendix 16, Table A16-1A, Note 9 AC 150/5300-13, Paragraph 413 AC 150/5300-13, Paragraph 204 |
| 3. Reconstruct Terminal Apron | AC 150/5320-6D, Paragraph 302a |
| 4. Reconstruct Easterly End of Partial Parallel TW | AC 150/5320-6D, Paragraph 302a |
| 5. Install TW Lighting and Construct Electric Vault | DOT/FAA/AR-04/10, Section 4 - AC 150 /5300-13, Paragraph 803,3, d |
| 6. Sightseeing Shack Improvements | |
| 7. Improve Access Road to Approach Lights (MALSF) | AC 150/5300-13, Paragraph 310 Order 6940.1 |
| 8. Construct Service Access Roads to AWOS and LES | AC 150/5300-13, Paragraph 310 Order 6940.1 |
| 9. Install Perimeter Fence | DHS/TSA June 2006 Guidelines, Part III, Section A < http://www.tsa.gov/assets/pdf/airport_security_design_guidelines.pdf > AC 150/5300-13, Paragraph 614 MassDOT Aeronautics Directive AD-001a, November 14, 2001 |
| 10. Expand Auto Parking | *CCC Technical Bulletin 96-003 |
| 11. Expand Terminal Building | 49CFR Part 1542.103(14) and Part 1544 |
| 12. Expand Turf Apron | * |
| <p><i>Note: Referenced sections are provided in Appendix 6.</i></p> <p><i>*: Project was developed as part of the 2005 Master Planning Process and in accordance with the Airport's Mission Statement.</i></p> | |

2.3 Airport Capacity Improvement CIP Projects

The purpose of the remaining three CIP project elements is to provide capacity improvements to meet existing and projected demand at the Airport.

- 10. Expand Auto Parking
- 11. Expand Terminal Building
- 12. Expand Turf Apron

The Forecasts included in the 2005 Airport Master Plan Update identify existing and future facility needs. As part of the Airport's master planning process, aviation forecasts were prepared for

scheduled aircraft operations and passenger enplanements (boardings). Forecasts of passenger enplanements and scheduled aircraft operations (Cape Air) were used to design the auto parking project and terminal needs. Definitions of all terms are provided in the Glossary.

The Forecasts, along with discussions with the Airport Commission, project that peak hour scheduled operations will increase from 10 in 2004 to 12 in 2024. Peak hour passengers are anticipated to increase at an annual rate of 0.7%, from 92 (2005) during the peak hour to 104 in 2024.

10. Expand Auto Parking

Purpose: Capacity

The purpose of expanding the existing 62 space auto parking area is to more adequately meet existing and future parking needs and reconstruct the deteriorating access road.

Need: Inadequate parking to meet current and future needs.

Recognized guidelines for parking are published for commercial airports similar to PVC by the Institute for Traffic Engineers (ITE), which is the methodology required in the CCC Guidelines for Transportation Impact Assessment, Technical Bulletin 96-003. Current peak period parking space needs range from 62 to 126 spaces over weekdays or weekends. It is projected that for the highest demand period of 2024 on a Saturday during peak season, 145 spaces will be needed. Therefore, there is a need for 75 to 83 additional spaces to meet long term future needs. This range in demand was derived from the recorded enplaning 2005 passengers. Although scheduled flights are often used for parking projections, enplaning passengers were used for the Provincetown Airport. Enplaning passengers is a more accurate projection to use compared to flights, because of the variation in the number of sections in a flight at the Airport and specific operating conditions at the Airport. Parking data observations taken during weekdays in August 2006 and a full week in August 2007 were used for the parking analysis. Observations recorded in the 2008 Supplemental Study were not used in the analysis but were collected to make observations during a holiday week and weekend. Observations taken during weekdays in August 2010 were used to compare relative space requirements observed and recorded previously. These observations were similar to August 2007 recordings.

The proposed two phase parking expansion will meet existing and future needs through the mid term planning period. If the parking demand surpasses the long term projections and Phase 2 is proposed, a new separate EA for Phase 2 would be prepared.

Reference: *ITE Parking Generation Handbook, 2nd Edition, 1987*; CCC Technical Bulletin 96-003; and *March 2006 Traffic Operations Report and Parking Study*

11. Expand Terminal Building

Purpose: Replace lost public use area and meet future demand.

The purpose of expanding the terminal building is to replace passenger area that was displaced by TSA for mandatory passenger screening and security personnel, as well as to meet projected passenger and support needs.

Need: There is inadequate public space for passenger use and support functions.

Public use area in the terminal lobby is needed to replace the area occupied by the TSA screening areas and space for security personnel. The public space has been decreased by 61 percent due to TSA operations that were not incorporated into the design for the current building. The public use area lost to TSA includes the outside porch (650 SF), the indoor passenger waiting area (700 SF), and the inside baggage room (310 SF), totaling more than 1,660 SF. This represents 34 percent of the entire terminal building and 61 percent of the passenger lobby and public waiting areas. The screening of passengers and baggage has resulted in a dramatically reduced public waiting area, as well as reduced areas for other passenger processing functions.

The Planning and Design Guidelines for Airport Terminal Facilities Advisory Circular AC 150/5360-13 indicates that for airports with less than 250,000 enplanements, 150 SF of gross terminal building area per design peak hour passenger is the typical planning criteria. The design peak hour total number of passengers for 2024 would be 104. Applying 150 SF per peak hour passenger yields a terminal area of 15,600 SF. However, this planning criterion would not be appropriate for the Airport, given its seasonal nature and location within the CCNS.

Passenger enplanements are forecast to increase by 0.7 percent annually. Applying this 0.7 percent annual increase to the existing 4,800 SF terminal building plus the reclaimed 1,660 SF lost to TSA (6,460 SF) would yield a minimum 7,430 SF (rounded to 7,500 SF) terminal building spatial need. This area would accommodate the current deficiency of 1,660 SF in public space, as well as an increase in 970 SF to meet the projected twenty-year future demand.

The Airport Commission has included an additional 315 SF of space for a food vendor, 400 SF for the Airport Manager and Commission Office, and 450 SF of space for a conference room, which would result in an 8,595 SF (rounded to 8,600 SF) terminal building. Therefore, the range of terminal building spatial needs would be a range from 7,500 to 8,600 SF.

After considering the location of the Airport within the Cape Cod National Seashore, the limited room for expansion, and the seasonal variation of passenger demand, it was determined that a 7,500 SF to 8,600 SF building would address the passenger needs at the Airport. These areas will be refined during design planning sessions that would include NPS staff, Airport staff, and the Airport Commission.

Reference: 49CFR Part 1542.103(14) and Part 1544 (See Table 2-1 and Appendix 6 for specific sections)

12. Expand Turf Apron

Purpose: Capacity

The purpose of expanding the turf apron is to provide additional space for visiting aircraft during the peak season outside of the taxiway object free area (TOFA).

Construction of the turf apron area was permitted by the DEP Decision on the Request for a Variance, dated May 18, 2001, and a CCC DRI Decision dated April 13, 2000. New survey was completed for the final design phase. When the impact area was recalculated with the updated elevation information, a discrepancy was discovered. In order to build the full turf apron, an additional isolated wetland area would have needed to be filled beyond the amount specified in the Variance. A request to amend the Variance was not prepared because of time constraints relative to funding, construction contracts, and runway closures. Therefore, a smaller turf apron was constructed. The smaller apron does not meet current needs.

Activity at the Airport is highly seasonal with the majority of the Airport's annual aircraft operations occurring during the three-month June-July-August peak summer season. With this concentration of increased operations there is an increase in demand for aircraft parking which creates overcrowding on the aircraft parking apron and increased risk of an operational incident.

Need: Inadequate aircraft parking areas to meet current and future needs.

There is inadequate paved aircraft parking space during the summer and this seasonal overflow demand is accommodated on designated turf areas alongside the taxiway. At times, the Mid Connector taxiway is shut down in order to provide overflow parking. This creates an operational safety issue, due to the hazard of using an aircraft movement area for parking airplanes. Peak hour parking needs at the Airport were evaluated for aircraft parking needs at the Airport. The Airport Manager, FBO staff, and ramp attendants evaluated peak hour parking over a period of four years (2000 through 2004) and estimated that 60 aircraft were parked during the peak hour during this time period. The forecast of peak hour visiting aircraft anticipates an increase of 0.5% annually from 60 in 2004 to 68 in 2024. There is a need to meet this current and future demand. The need for parking ranges from an additional five spaces in the short-term to eight spaces to address the long-term aircraft parking needs.

Reference: *2005 PVC Airport Master Plan*

| Table 2-2 Summary of Purpose and Need | | |
|---|---|--|
| CIP Project Element | Purpose | Need |
| 1. Westerly Taxiway System Improvements | Safety | Does not comply with FAA design and safety standards. |
| 2. Relocate East End TW | Safety | Aircraft are required to back-taxi on active runway. |
| 3. Reconstruct Terminal Apron Within Existing Footprint | Airfield Pavement Maintenance and Safety | Pavement is over 20 years old. Aircraft can be damaged by loose or cracked pavement. |
| 4. Reconstruct Easterly End of Parallel Taxiway | Airfield Pavement Maintenance and Safety | Pavement is over 20 years old. Aircraft can be damaged by loose or cracked pavement. |
| 5. Install TW Lighting and Construct Electric Vault | Safety | Lights and signage are needed to improve safety during nighttime and poor visibility conditions; electric vault is needed to upgrade the reliability of airfield lighting. |
| 6. Sightseeing Shack Improvements | Safety/Maintenance | Building is in need of repair. |
| 7. Improve Access Road To MALSF Approach Lights | Safety | FAA service vehicles must backup over 400 feet on narrow embankment. |
| 8. Construct Service Access Roads to the Localizer Equipment Shelter and to the Weather Station | Safety | The Airport does not have access roads to these FAA facilities per FAA Order 6940.1. |
| 9. Install a Perimeter Safety/Security Fence | Safety and Security | Airport does not comply with security guidelines for Part 107 airports. |
| 10. Expand Auto Parking | Capacity | Peak season demand exceeds capacity. |
| 11 Expand Terminal Building | Replace Lost Public Use Area and Capacity | Peak season demand exceeds capacity. TSA screening areas took 61% of the passenger lobby and public waiting areas. |
| 12. Expand Turf Apron | Capacity | Peak season demand exceeds capacity. |

Source: Consultant Evaluations

SECTION 3.0 PROPOSED ACTION AND ALTERNATIVES ANALYSIS

This section describes the Preferred Alternative (Proposed Action), the No Action, and reasonable alternatives (if any). As defined in FAA Order 5050.4B, the Proposed Action is “the solution the airport sponsor wishes to implement to solve the problem(s) it is facing” and all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted. Alternatives to the Proposed Action have been considered and evaluated. An explanation is provided to explain why some alternatives have been judged “not reasonable” and eliminated from further analyses.

This section also identifies the Environmentally Preferred Alternative. In accordance with NEPA, NPS and FAA are required to identify the “environmentally preferred alternative”. The Environmentally Preferred Alternative is defined by the Council on Environmental Quality (CEQ) as “the alternative that will promote the national environmental policy as expressed in NEPA, Section 101(b)”. In general, the Environmentally Preferred Alternative is the alternative that causes the least damage to the biological and physical environment and that best protects, preserves, and enhances historic, cultural and natural resources. The Environmentally Preferred Alternative is not necessarily the Preferred Alternative.

The environmentally preferred alternative includes alternatives that achieve the following goals:

- Fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- Assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;
- Attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
- Preserve important historic, cultural and natural aspects of our national heritage and maintain, wherever possible, an environment which supports diversity and variety of individual choice;
- Achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities; and
- Enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

The CIP projects include both safety/security projects and capacity projects. In order to evaluate the projects for the Environmentally Preferred Alternative in terms of the above-listed goals, the grouping of projects was further differentiated to identify projects occurring within an existing footprint (footprint reconstruction projects), operational safety projects that were related to Part 77 navigational airspace, ground operational safety projects, and impact area of the project. Each Environmentally Preferred Alternative has been chosen based on the goals of NEPA, with the aid of these additional criteria.

The projects discussed are:

- 3.1 Westerly Taxiway System Improvements
- 3.2 East End TW Relocation
- 3.3 Terminal Apron Reconstruction
- 3.4 Easterly End of Parallel TW Reconstruction
- 3.5 TW Lighting, Lighted TW Signs, and Electric Vault Installation

-
- 3.6 Sightseeing Shack Improvements
 - 3.7 Access Road to MALSF Approach Lights Improvements
 - 3.8 Service Roads to LES and AWOS Construction
 - 3.9 Perimeter Safety/Security Fence Installation
 - 3.10 Auto Parking Expansion
 - 3.11 Terminal Building Expansion
 - 3.12 Turf Apron Expansion

3.1 Westerly Taxiway System Improvements

This FEIR/EA evaluates the potential impact of improving the westerly end of the TW system at the Airport. The sub elements of the Westerly Taxiway System consist of the West End Connector Taxiway, the Westerly End of Parallel Taxiway, and the Mid Connector Taxiway. Two alternatives will be analyzed for environmental impacts in Section 5, and two alternatives have been considered but rejected. The two alternatives analyzed are the No Action alternative and an alternative that would construct westerly TW system improvements. The alternatives that have been considered for the project are illustrated on figures provided at the end of this section.

3.1.1 No Action

The No Action alternative would maintain the West End TW in its current location and does not address the operational safety issues discussed in the Purpose and Need (Section 2). The taxiway would continue to be located within the clear zone in the approach for Runway 7, which creates the potential for collision between a landing aircraft and a plane waiting to takeoff. Aircraft would continue to taxi onto the runway parallel to the runway end and out of visual contact with approaching aircraft. Aircraft would continue to hold short of the runway which limits their view of the runway and other aircraft.

The No Action alternative would maintain the jog in the parallel taxiway, would not replace the pavement which is in poor condition, and would not address the operational safety issues discussed in detail in Section 2. The pavement is over 20 years old and in poor condition. Paved surfaces at airports must be maintained in good condition. Airfield pavement standards estimate a useful lifespan of 20 years, after which pavement is eligible for reconstruction.

The No Action alternative would maintain the existing Mid Connector TW with the non standard jug-handle intersection with the runway and the parallel taxiway. It would also not align properly with the proposed relocated West End TW and the proposed realigned westerly end of the parallel TW. No impacts to natural resources would occur with the No Action alternative because there would be no construction or change in current conditions.

3.1.2 Westerly TW System Improvements (Proposed Action and Preferred Alternative)

The sub elements of the Westerly Taxiway System consist of:

- A. West End Connector Taxiway
- B. Westerly End of Parallel Taxiway
- C. Mid Connector Taxiway

The sub elements are discussed individually but will be combined as one project in terms of permitting and construction because the elements would be constructed at the same time.

(A.) Relocate West End Taxiway with Standard Right Angle Out of the Runway 7 Approach

The alternative to relocate the West End TW would address the operational safety issues and would be in compliance with FAA design standards. The taxiway would connect with the end of the runway at a right angle and would be located out of the approach for the runway.

(B.) Realign Westerly End of Parallel Taxiway

This alternative would shift the westerly end of the parallel TW to meet the existing edge of pavement of the easterly portion of the parallel TW. A run-up pad, as required by FAA design standards for new construction, would also be constructed at the end for aircraft to perform required engine and systems checks before takeoff, without blocking the taxiway.

The parallel TW would be reconstructed with a consistent width of 40 feet. Since the pavement width is currently 60 feet, pavement would be removed. Cultural Grassland habitat would be restored in areas of pavement removal.

(C.) Realign Mid Connector TW

The alternative to realign the Mid Connector TW would provide a standard 90 degree intersection design. The aging pavement would also be reconstructed to address the hazard of loose pavement causing harm to aircraft and passengers. The project would be constructed within the existing area of pavement and managed Cultural Grassland habitat.

Collectively, the three elements of the Preferred Alternative for the Westerly TW System Improvements (shown on Figure 3.1) would result in alterations to approximately 28,655 SF of freshwater wetlands, 6,400 SF of coastal dune, and temporary impacts to grassland and rare species habitats for one or more state-listed species. Proposed mitigation measures, as discussed further in Section 7.0, would provide restoration of these habitats and implement construction phase mitigation measures.

3.1.3 Environmentally Preferred Alternative

After review, the Westerly Taxiway System Improvements (Preferred Alternative) is the Environmentally Preferred Alternative. The Preferred Alternative would result in a net loss of pavement (See Table 5-2 in Section 5) and includes mitigation to restore areas of wetland and coastal dune impacted by the project. The overall net loss in pavement from all taxiway projects is approximately 42,200 SF. The current state of the taxiway is a hazard to aviators and passengers, and is a risk to the safety of those traveling to and from the Airport, as Airport operation in this area involves runway activity and airplanes in flight (as opposed to ground operations such as taxiing). Constructed improvements are necessary to address the Part 77 navigable airspace safety and operational issues of the West End TW that is currently within the approach to RW 7. These improvements will restore and maintain operational safety within the Part 77 airspace. Additionally, measures to minimize adverse impacts to wetlands and coastal dunes such as steepened slopes have been incorporated into the design, and construction period mitigation measures such as erosion control and construction timing will be implemented to reduce overall impact. An invasive species management plan would also be implemented to preserve an environment that supports the natural

diversity found within the CCNS. Permitting agencies will issue permits with the condition that wetland mitigation is monitored and repaired, if not successful.

Among the alternatives considered, the West End Taxiway Improvements would ultimately attain the greatest balance between the human population, the operational safety needs for the Airport, and the surrounding natural environment.

3.1.4 Alternatives Considered But Rejected

Existing Footprint Alternative

The alternative that would reconstruct the West End TW within the existing footprint was suggested by others during the ENF comment period as a way to minimize impacts to wetland and grassland habitats. This alternative would provide a standard right angle connection to the runway, but the taxiway would continue to be located within the approach to Runway 7, as illustrated on Figure 3.1. Likewise, the risk of collisions would not be reduced because aircraft would continue to enter parallel to the runway end, rather than perpendicular to the end of the runway.

This alternative would have unavoidable impacts to approximately 13,665 SF of freshwater wetlands in Wetlands I and C/J/FK, as well as additional impacts to grassland habitat.

The alternative that would reconstruct the existing TW footprint with a standard right angle within the existing footprint has been deemed unsafe and unfeasible because it would not comply with the FAA safety and design standards and it would not address existing operational safety issues. This alternative has been dismissed from further review.

Lights on Existing Parallel TW Alternative

It was suggested in the comments on the ENF that installation of taxiway lights alone on the existing taxiway could address the safety issues relative to the jog in the partial parallel taxiway. Environmental impacts with this alternative would be limited to minor impacts to grassland habitat. However, pilots do not expect to encounter a jog mid-way along a parallel taxiway. Installation of edge lights would not fully eliminate the non-standard hazardous condition of maneuvering the aircraft through an unexpected turn at night and in bad weather conditions, and would not correct the operational safety issues created by the misaligned pavement. This alternative has been dismissed from further review.

3.2 East End TW Relocation

Two alternatives for the East End Taxiway improvements have been analyzed within this FEIR/EA, including the No Action alternative and an alternative that would relocate the East End TW to connect with the end of Runway 25. The alternative that has been considered for the project is illustrated on Figure 3.2, provided at the end of this section.

3.2.1 No Action

The No Action alternative would maintain the 200-foot offset between the end of Runway 25 and East End TW. Aircraft would continue to back-taxi on the active runway maintaining the current unsafe conditions by possibly interfering with landing aircraft. No impacts to natural resources would occur with the No Action alternative because there would be no construction or change in current conditions.

3.2.2 East End TW Relocation (Proposed Action and Preferred Alternative)

The alternative to relocate the East End TW to connect with the end of the runway would be in full compliance with FAA mandated design standards without impacting the terminal apron. There would be a slight curve in the East End TW centerline to avoid aircraft on the terminal apron. This configuration would not present a safety hazard because the terminal apron is well lit with overhead lighting, and planes are moving slowly as they enter the East End TW. Implementation of this alternative would result in alterations to approximately 28,300 SF of freshwater wetlands (Wetland B), and approximately 5,000 SF of coastal dune. It would also be within managed Cultural Grasslands, with potential impacts to rare species habitat.

3.2.3 Environmentally Preferred Alternative

Of the alternatives considered for the East End Taxiway, the East End TW Relocation alternative (Preferred Alternative) is the Environmentally Preferred Alternative. While this alternative involves construction, relocating the current configuration of the taxiway will greatly reduce the significant safety hazard that the current configuration presents to aviators and passengers traveling to and from the Airport. The Preferred Alternative will address the Part 77 navigable airspace safety and operational issues of the East End TW that currently requires planes to back taxi on the active runway. As operations within the East End TW involve runway activity and airplanes in flight, the relocation of the taxiway is required to restore the necessary level of safety in this area to avoid potential undesirable and unintended consequences, while maintaining the diversity of natural resources at the Airport, to the fullest extent possible.

The preferred alternative includes mitigation to restore areas of wetland and coastal dune impacted by the relocation of the taxiway. Overall, the wetland mitigation plan for the CIP projects results in 1.3:1 on site replication, with the addition of invasive species management for several species and a special wetland enhancement management program for *Phragmites*, which will have a beneficial impact on wetlands at the Airport. Measures to minimize adverse impacts to wetlands and coastal dunes such as steepened slopes have been incorporated into the design, and construction period mitigation measures will be implemented such as erosion control and time of construction to reduce overall impacts. An invasive species management plan will also be implemented to preserve an environment that supports the natural diversity found within the CCNS. Permitting agencies will issue permits with the condition that wetland mitigation is monitored and repaired, if not successful. The East End TW Relocation would ultimately attain the greatest balance between the human population, the need to restore operational safety for the Airport, and the natural environment.

3.2.4 Alternatives Considered But Rejected

No other alternatives were identified.

3.3 Terminal Apron Reconstruction

In accordance with MEPA and NHESP, the Terminal Apron Reconstruction has been included in this FEIR/EA to avoid segmentation, although NEPA does not require this project to be included in the FEIR/EA. This project was allowed to go forward because it would have no impacts. This FEIR/EA evaluates two alternatives for reconstruction of the Terminal Apron pavement, including the No Action alternative and an alternative that would reconstruct the Terminal Apron pavement.

3.3.1 No Action

The No Action alternative would retain the existing pavement, and would not address the Airport safety issues associated with deteriorated pavement. As previously noted, paved surfaces at airports must be maintained in good condition and are eligible for reconstruction after 20 years. No impacts to environmental resources would occur as a result of the No Action alternative because the pavement would not be reconstructed adjacent to wetland or coastal dune resources.

3.3.2 Reconstruct Terminal Apron within the Existing Footprint (Proposed Action and Preferred Alternative)

The Preferred Alternative would reconstruct the terminal apron pavement within the same footprint to address Airport safety issues. As there would be no environmental impacts, and the implementation of this project element would neither preclude or constrain considerations for all other CIP elements, the Secretary of Energy and Environmental Affairs allowed the Airport to proceed with the reconstruction of the Terminal Apron within the same footprint prior to the completion of the FEIR as iterated in the MEPA Certificate issued on the NPC/DEIR.

The Airport applied for an Order of Conditions (OOC) from the Provincetown Conservation Commission. Coordination was also carried out with staff at the Massachusetts Natural Heritage & Endangered Species Program (NHESP) regarding requirements under MESA, and this project qualifies as an exempt project pursuant to 321 CMR 10.14 (8): “the maintenance, repair or replacement, but not widening of existing paved roads, ...and paved parking areas,…” NHESP reviewed and commented as part of the Notice of Intent (NOI) process under the Wetland Protection Act. The project will, however, be included in the Massachusetts Endangered Species Act (MESA) application for the Airport’s CIP projects to avoid segmentation. The project was issued an OOC (DEP File No. 058-0440), and construction was completed in fall 2008.

3.3.3 Environmentally Preferred Alternative

Upon review of the Terminal Apron alternatives, the Terminal Apron Reconstruction within the Existing Footprint has been selected as the Environmentally Preferred Alternative. This reconstruction project (completed in 2008) was limited to the repavement of the existing paved areas within the same footprint, and there were no impacts to adjacent cultural or natural resource areas. The reconstruction of the Terminal Apron addressed the ground operation safety issues to taxiing aircraft posed by the deteriorating state of the Terminal Apron pavement. Of the alternatives considered, the Terminal Apron Reconstruction best achieved the balance between restoring the safety and productivity of the Airport while protecting the surrounding natural environment (as the project did not impact resource areas). If the Terminal Apron was not reconstructed, it would yield increasing safety concerns for pilots and passengers.

3.3.4 Alternatives Considered But Rejected

No other alternatives were identified.

3.4 Easterly End of Parallel TW Reconstruction

Two alternatives were evaluated in this FEIR/EA for reconstructing the easterly end of the Parallel TW pavement, the No Action alternative and an alternative that would reconstruct the pavement.

3.4.1 No Action

The No Action alternative would retain the existing pavement which is over 20 years old and in poor condition. Pavement at airports is required to be maintained in good condition. The No Action alternative would result in increasing safety concerns for pilots and their passengers. There would be no impacts to environmental resources with the No Action alternative because there would be no pavement reconstruction near wetland or other natural resources.

3.4.2 Reconstruct Parallel TW within Existing Footprint (Proposed Action and Preferred Alternative)

The Preferred Alternative would reconstruct the pavement within the same footprint, but with a reduced pavement width of 40 feet. Grassland habitat would be restored in the pavement removal areas. As this project element would occur within the existing footprint and there would be no environmental impacts as a result of its implementation, the Certificate issued on the NPC/DEIR by the Secretary of Energy and Environmental Affairs allowed the Airport to proceed with the reconstruction of the easterly end of the parallel TW within the same footprint prior to the completion of the FEIR. However, construction of this project element would likely be carried out in conjunction with the West End Taxiway Improvements.

3.4.3 Environmentally Preferred Alternative

The Environmentally Preferred Alternative is the Reconstruction of the Parallel TW within Existing Footprint (Preferred Alternative). The project will not impact wetlands or other natural resources because it will occur within the footprint of the existing Parallel TW. The reconstruction of the parallel taxiway would reduce the pavement width, result in an overall reduction of impervious surfaces at the Airport, and restore a level of safety to ground operations in this area. Timing of construction and erosion controls will be implemented to protect adjacent resources and listed species. This alternative will increase the safety and productivity of the human environment at the Airport while also enhancing the quality of the surrounding natural environment. Areas gained by the pavement reduction would be restored to grassland habitat that is important to state-listed rare Vesper Sparrows, thereby increasing and enhancing environmental resources at the Airport. Reconstruction achieves the greatest balance between preserving the safety and productivity of the Airport as well as protecting the surrounding natural environment.

3.4.4 Alternatives Considered But Rejected

No other alternatives were identified.

3.5 Taxiway Lighting and Electric Vault

This FEIR/EA evaluates the potential impact of installing taxiway edge lights and lighted TW signs, and constructing a new electric vault. Two alternatives will be analyzed for environmental impacts in Section 5, and two alternatives have been considered but rejected. The two alternatives analyzed are the No Action alternative and an alternative that would install edge lights and construct an electric vault adjacent to the existing Sightseeing Shack. It should be noted that construction of the Electric Vault would be considered a Connected Action (per NPS DO-12) to the Sightseeing Shack improvements (see Section 3.6 below), as the two elements are closely related and interdependent. The alternatives that have been considered for these project elements are illustrated on Figure 3.3 provided at the end of this section.

3.5.1 No Action

Implementation of the No Action alternative would maintain the taxiway edge reflectors and not upgrade the electric equipment that would remain inside the Sightseeing Shack. There would be no environmental impacts as a result of the No Action alternative because there would be no construction or disturbance within the managed grasslands.

3.5.2 Install TW Lighting and Lighted TW Signs, and Construct Electric Vault (Proposed Action and Preferred Alternative)

Install TW Lighting and Lighted TW Signs

The alternative to install TW edge lights would locate the lights 10 feet off the edge of pavement along the entire length of the taxiway as required by FAA design standards, and lighted TW signs would be installed to identify the locations of each TW. The electric cable for the lights and TW signage would be installed within the existing mowed grassland habitat using the cable plowing method, as described in Section 5.6.2.5. The area would be restored as grassland. Construction timing and other construction mitigation measures would minimize rare species habitat impacts. Lighting is controlled by pilots remotely and would only be operational during landings and takeoffs under inclement weather conditions or at night. Disruptions to Vesper Sparrows or other species are anticipated to be minimal and would be no different than the existing lighting system for the runway.

Construct Electric Vault

With the Preferred Alternative, the constructed Electric Vault would be located immediately adjacent to the Sightseeing Shack (Alternative 1) in an area of managed grassland, which is isolated from larger expanses of grassland habitat at the Airport. Electric equipment currently housed within the Sightseeing Shack would be upgraded to current electric codes and housed within a new vault adjacent to the Sightseeing Shack. The location of the Electric Vault under the Preferred Alternative would be close to the existing electrical service and equipment, which would minimize the distance for the new main cable connection. Environmental impacts would be minimal.

3.5.3 Environmentally Preferred Alternative

The Environmentally Preferred Alternative for this CIP project is the No Action alternative, solely because it does not involve a safety project within Part 77 navigable surfaces nor does it occur within an existing footprint. The safety and operational issue pertains to taxiing aircraft and ground operations. While the proposed project would result in operational safety improvements along the taxiway as well as electrical improvements, it would entail the construction of an additional structure (Electric Vault) and the installation of TW edge lights and signs along the taxiway. The No Action alternative will not involve a new structure or lighting and cultural grasslands would not be disturbed.

However, the No Action alternative will not address the need to bring the existing electric equipment up to current electrical design criteria. The Preferred Alternative for the installation of the taxiway lights would have negligible impacts to adjacent managed grasslands because the cable installation method which has little ground disturbance will be used. As discussed in Section 3.5.2, the trenching construction method will not be used. Impacts to grassland habitat would be negligible for the location of the proposed electric vault, as it would be located in an area previously determined to be of little

significance as habitat due to its isolated location with respect to the expanse of grassland habitat at the Airport.

3.5.4 Alternatives Considered But Rejected

Alternative Construction Method for Light Installation

The trenching construction method for the cable adjacent to the TW would excavate a trench approximately eight inches wide by two feet deep to install the electric cable, and would result in more grassland disturbance compared to the cable method. This construction component alternative has been dismissed from further review.

Alternative Vault Locations

Two alternatives were considered for the location of the proposed Electric Vault. Alternative 2 would locate the vault behind the paved GA apron. Alternative 3 would locate the vault at the far west end of the paved GA apron. Each of these alternatives would result in environmental impacts within an area of managed cultural grassland that is contiguous with expanses of this habitat at the Airport and/or impacts to freshwater wetlands (Wetland C) in order to accommodate the conduit for the cable, which would need to avoid other underground utilities in the area. The Preferred Alternative meets the project need with fewer impacts. These alternatives have been dismissed from further review.

3.6 Sightseeing Shack Improvements

Two alternatives have been evaluated in this FEIR/EA for the proposed improvements to the Sightseeing Shack and will be carried forward through the analysis for environmental consequences in Section 5. The two alternatives analyzed are the No Action alternative and an alternative that would repair or replace the building within the existing footprint. It should be noted that improvements to the Sightseeing Shack would be considered a Connected Action to the Installation of TW Lighting and Lighted TW Signs, and Construct Electric Vault (see Section 3.5 above), as the improvements to the Sightseeing Shack would be tied to the relocation of the electrical equipment that is currently housed within the Sightseeing Shack.

3.6.1 No Action

The No Action alternative would allow the existing structure to remain in its present condition, housing the existing electrical equipment that is not up to current electric codes. No impacts would occur to natural resources under the No Action alternative because there would no construction adjacent to natural resources and no change to the building.

3.6.2 Repair or Replace Building (Proposed Action and Preferred Alternative)

Under this alternative, following the relocation of the existing electrical equipment, the Sightseeing Shack would either be repaired (Preferred Alternative), or the walls would be replaced, as necessary. No long-term environmental impacts would occur as a result of this action. The Massachusetts Historical Commission (MHC) has determined that the building is not historically significant (see Section 10.1).

3.6.3 Environmentally Preferred Alternative

Upon consideration of the alternatives presented for this CIP project, the Repair or Replacement of the Building (Preferred Alternative) has been selected as the Environmentally Preferred Alternative, as all

work will occur entirely within the footprint of the existing Sightseeing Shack. The structural integrity of the existing structure is deteriorating and poses a safety concern to those at the Airport. If the structure was not repaired, undesirable or unintended consequences may occur. The repair of the Sightseeing Shack would restore the structure to its original state and increase the safety of persons using the structure while improving the overall aesthetic value of the Airport. Of note, the building is not considered a state or federal historic structure. Furthermore, the repair of this building will not impact nearby natural resource areas.

3.6.4 Alternatives Considered But Rejected

No other alternatives were identified.

3.7 Access Road to MALSF Approach Lights

This FEIR/EA evaluates the potential impact of improving the access road to the MALSF approach lights. Two alternatives will be analyzed for environmental impacts in Section 5, including the No Action alternative and an alternative that would construct a turn-around. Three alternatives have been considered but rejected. Alternatives considered for this project element are illustrated on Figure 3.4 provided at the end of this section.

3.7.1 No Action

The No Action alternative would maintain the existing narrow access road. As a result, vehicles accessing the MALSF for maintenance or repairs would continue to back up for a distance of approximately 400 feet along the narrow access road. The associated safety issues discussed in Section 2 would not be addressed. There would be no environmental impacts associated with the No Action alternative because there would no construction within the wetland resource.

3.7.2 Construct Turn-Around (Proposed Action and Preferred Alternative)

The Preferred Alternative would involve the construction of a turn-around area, such that vehicles would not have to back up the length of the narrow access road. The proposed turn-around area would be 30 feet wide and 30 feet long to provide enough space for a vehicle to safely reverse direction. The turn-around area would impact approximately 960 SF of freshwater wetlands (Wetland C/J/FK), and would be constructed along the north side of the embankment so that it would not interfere with the approach lights. The material used to construct the turn-around would be structural base material with gravel fill, approved by the Engineer and brought to the site. The top finish layer could be obtained from excavated areas on site. No material would be excavated from the adjacent wetland area for fill material and any material brought to the site will be from a certified archeological object-free and weed-free source. Proposed compensatory mitigation for lost wetland area would be provided on-site at a 1:1 ratio (see Figures 7.1-7.4). Additional mitigation measures will include construction phase mitigation measures.

3.7.3 Environmentally Preferred Alternative

After review, the No Action alternative has been selected as the Environmentally Preferred Alternative solely because the project does not involve operational safety improvements for aircraft operations within Part 77 navigable surfaces nor will it occur within an existing footprint. Additionally, under the No Action alternative there would be no construction and wetlands would not

be altered. The safety and operational issue is ground operation-related and affects vehicles accessing the navigational lighting system.

3.7.4 Alternatives Considered But Rejected

Reduced Turn-Around Footprint with Curbing

A smaller turn-around area with curbing installed along the length of the access roadway to alert drivers to the limits of the roadway width was considered. This alternative would reduce but not eliminate direct wetland impacts. Additionally, even something as low as a concrete curb could not be installed as it would constitute a vertical penetration into the Runway 7 approach surface, and would not be allowed under FAA regulations. This alternative has been dismissed from further review.

Guardrail

Installation of a guardrail along the length of the existing access roadway was also considered as an alternative, but was deemed unfeasible because of the vertical penetration into the Runway 7 approach surface. Any objects required to be located within this object free approach area must be frangible (able to be snapped off on impact), which would defeat the function of a guardrail. In addition, the roadway embankments would need to be widened to accommodate the construction of the guardrail without losing width along the roadway, necessitating additional wetland alteration. This alternative has been dismissed from further review.

Acquire a Utility Vehicle

The Airport has considered acquiring a utility vehicle for the purposes of accessing the MALSF equipment for maintenance or repair, suggested by others during review of the DEIR/EA. This alternative would not result in additional environmental impacts. This alternative would require FAA personnel to transfer their equipment to a smaller utility vehicle. However, the alternative is impractical because FAA personnel need access to all equipment in their vehicles during all weather conditions, and could not feasibly transfer all the equipment to a small utility vehicle. The runway is required to be shut down for certain inspection or maintenance procedures, and transferring necessary equipment, which would not all fit within a smaller vehicle at one time, would result in potential unnecessary delays at the Airport. This alternative has been dismissed from further review.

Construct Shoulders (Option 1)

This alternative would widen the entire length of the MALSF access road embankments to construct 2-foot shoulders on each side of the existing access road. This alternative would impact approximately 1,800 SF of Wetland C/J/FK, and would not eliminate the safety hazard of vehicles needing to back up for 400 feet. This alternative has been dismissed from further review.

3.8 Service Access Roads to the Localizer Equipment Shelter (LES) and to the Weather Station (AWOS)

Three alternatives were analyzed for the Service Access Roads to the LES, including the No Action alternative, an alternative that would construct an access road to the LES behind the hold line and off the East End TW (Alternative 2), and an alternative that would construct an access road off Race Point Road (Alternative 6). Two alternatives were analyzed for the Service Access Roads to the AWOS, including the No Action alternative and an alternative that would construct an access road to the AWOS behind the hold line and off the East End TW (Alternative 2). Several alternatives have been

considered but rejected for these two project elements: All alternatives considered for these projects are illustrated on Figures 3.5, 3.6, and 3.7 provided at the end of this section.

3.8.1 No Action

The No Action alternative would retain the lack of defined access routes to both the LES and the AWOS, which essentially prevents vehicle access to the sites other than within the runway operating area. Although there are a few circumstances when service on the AWOS requires the runway to be shutdown, most inspection and maintenance operations are carried out while the runway is active. There would be no impacts to wetlands and coastal dunes because access roads would not be constructed.

3.8.2 Service Access Road to AWOS Alternative 2 and Service Access Road to LES Alternative 2 (Proposed Action and Preferred Alternative)

The Preferred Alternatives for these CIP project elements would construct 10-foot wide defined access roadways that would be paved for the first 300 feet off the East End TW in full compliance with FAA standards. The access road to the AWOS would necessitate alterations to coastal dune and wildlife/rare species habitat (10,560 SF) and 290 SF of wetland alteration within Wetland H. The LES access road would require alterations to 7,610 SF of coastal dune habitat. Proposed mitigation measures, including construction and timing measures, and compensatory mitigation for the loss of natural resources is part of the design of this alternative.

3.8.3 Service Access Road to AWOS Alternative 2 and Service Access Road to LES Alternative 6

This combination of alternatives for the access roadways would construct a 10-foot wide roadway extending from the East End TW (again, paved for the first 300 feet) for the AWOS access roadway, with construction of a dense packed gravel surface (i.e., unpaved) roadway off of Race Point Road for access to the LES. This would result in alterations to 10,560 SF of coastal dune and wildlife/rare species habitat, and 290 SF of wetland alteration within Wetland H. Somewhat reduced alterations to coastal dune habitat (2,500 SF) will occur as a result of the LES access roadway.

3.8.4 Environmentally Preferred Alternative

The Environmentally Preferred Alternative for this CIP project is the No Action alternative because the project does not involve operational safety improvements for aircraft operations within Part 77 navigable surfaces and will not occur within an existing footprint. The No Action alternative would not result in construction, and wetland and coastal dune resources would not be altered. The safety and operational issue pertains to vehicles accessing the weather station and the localizer equipment.

Although the No Action Alternative would not involve construction within wetlands and coastal dunes, this alternative would not address the operational safety issues resulting from the lack of designated access roads to the airfield equipment. The No Action alternative would not eliminate the tracking of foreign materials onto the runway and taxiways, which presents a safety hazard to users at the Airport. The No Action alternative is not the Preferred Alternative. The Preferred Alternative for the project includes measures to minimize adverse impacts to wetlands and coastal dunes such as steepened slopes and a narrower road width. Construction period mitigation measures will be implemented such as erosion control and time of construction to reduce overall impacts.

3.8.5 Alternatives Considered But Rejected

Pavement Alternatives

The alternative of constructing the roads with a porous pavement was evaluated. Porous pavement is a special type of pavement that allows rain and snowmelt to pass through, reducing runoff. However, these pavements require an intensive maintenance schedule and can easily become clogged with sands. Additionally, the pavement is damaged by freezing and thawing in the northern climates. Alternative types of pavement that can be colored (e.g., Natural Pave[®], a sand-colored pavement, etc.) were also evaluated. These proprietary products have not been tested for durability under airport pavement standards. Because of the maintenance and durability issues, porous and other types of pavement has been dismissed from further review.

Acquire Utility Vehicle

In response to comments received on the NPC/Draft EIR/EA, the Airport has considered the use of an off-road utility vehicle for access to the AWOS and LES. As with the use of a utility vehicle for the MALSF, this alternative has been deemed unfeasible because FAA personnel need access to all equipment in their vehicles and cannot feasibly transfer all the equipment to a smaller utility vehicle. This alternative has been dismissed from further review.

LES Alternative 1

Similar to the Preferred Alternative, LES Alternative 1 connects with the East End TW. The road would be approximately 475 feet long and would be paved in compliance with FAA standards (e.g., paved for the first 300 feet). Alterations would occur within a small amount of coastal dune and cultural grassland habitat. This alignment would be in compliance with FAA standards and would meet the project purpose and need, but would not line up with the Preferred Alternative identified for the AWOS road, which is preferable. This alternative has been dismissed from further review.

LES Alternative 3

Alternative 3 for the LES extends from the employee parking lot driveway adjacent to the gravel pathway that marks the location of the primary service power cables to the NAVAID facilities. This access roadway would be paved and would impact approximately 3,600 SF of isolated wetland in Wetland B. To minimize wetland impacts in this area, the possibility of following the existing narrow path from the driveway to the LES was considered. However, the primary service power cable to the NAVAID facilities is located within this alignment and must be avoided. Alternative 3 has been deemed unfeasible because it would result in wetland impacts that can be avoided, and impacts the power cable. This alternative has been dismissed from further review.

LES Alternative 4

The alignment for LES Alternative 4 would extend from the end of the runway at the Runway 25 End, and has a direct connection with the active runway operating area. This alternative would impact a small amount of cultural grasslands, and coastal dunes, and associated habitat areas. Construction of new access roads in locations that require vehicles to travel within the active runway operating area do not meet FAA design standards and would not be allowed. This alternative has been dismissed from further review.

LES Alternative 5

As with LES Alternative 4, this alignment has a direct connection with the active runway operating area and would result in alterations within a small amount of cultural grasslands, coastal dunes, and associated habitats. Construction of new access roads in locations that require vehicles to travel within the active runway operating area do not meet FAA design standards and would not be allowed. This alternative has been dismissed from further review.

AWOS Alternative 1

Alternative 1 for the AWOS access road connects with the East End TW. The road would be approximately 800 feet long and would be paved in compliance with FAA standards. Alternative 1 would impact approximately 440 SF of Wetland H and impact a small amount of coastal dunes. This alternative would align with the LES Alternative 1, but has been dismissed from further review, because a shift in the alignments of both access roadways would reduce wetland impacts.

AWOS Alternative 3

Alternative 3 would connect with the parallel taxiway and, as with all of the alternatives for the access roadways, would be paved for 300 feet. Approximately 3,000 SF of Wetland H would be altered for this alternative, as well as a small amount of cultural grasslands. Because other alignments would have smaller wetland impacts, this alternative was dismissed from further review.

AWOS Alternative 4

Similar to the LES Alternatives 4 and 5, this alignment has a direct connection with the active runway operating area, which would not meet FAA design standards and would not be allowed. This alternative would result in alterations to coastal dune (3,480 SF), a small amount of grassland habitat, and Wetland H (720 SF). This alternative has been dismissed from further review.

AWOS Alternative 5

The L-shaped configuration of this alternative alignment would result in alterations to 9,840 SF of cultural grassland habitat and 720 SF of Wetland H. As with AWOS Alternative 4, this alignment has a direct connection with the active runway operating area (between the runway and the hold line of the taxiway), which would not meet FAA design standards and would not be allowed. This alternative has been dismissed from further review.

3.9 Perimeter Safety/Security Fence

Seven alternatives have been evaluated for the construction of a Perimeter Safety/Security Fence, four of which are carried forward and analyzed for environmental impacts in Section 5. Three alternatives have been considered but rejected. The four alternatives analyzed are the No Action alternative, Concept 6 (Final Preferred Alternative), Concept 4, and Concept 1 (Preferred Alternative in Draft EIR/EA). It should be noted that Concept 1 has been dismissed but has been carried forward to the impact analysis because it was the preferred alternative in the DEIR and must be retained to comply with NPS NEPA procedures. The alternatives that have been considered for this project element are illustrated on Figures 3.8 and 3.9 provided at the end of this section.

3.9.1 No Action

The No Action alternative would have no direct impacts to the natural resources or habitats at the Airport because clearing for the fence and construction of the fence would not occur. However, the No

Action alternative would not address the operational safety and security, visitor safety, and wildlife safety issues discussed in Section 2. The potential for deer and other (non-avian) wildlife to continue to come into conflict with operating aircraft, jeopardizing the safety of passengers and pilots using the Airport, would remain. Unauthorized persons would continue to have undeterred access to the currently unsecured airport operating area, and recreational users (including hunters) would remain a potential threat to the health and safety of aircraft operations and those using the Airport facilities. It may also be noted that TSA and MassDOT ban the possession of firearms in aircraft operational areas.

3.9.2 Perimeter Safety / Security Fence Concept 6 (Proposed Action and Preferred Alternative)

Following the alignment shown on Figures 3.8 and 3.9 at the end of this section, Concept 6 would involve the construction of an 11,700 linear foot (LF), 8-foot high, black vinyl chain link security fence with 2 inch openings topped with an additional foot consisting of 3 strands of barbed wire for a total height of nine feet. The fence would traverse areas of coastal dune (8,060 SF direct; 24,028 SF indirect) and freshwater BVW wetlands (1,152 SF direct; 8,972 SF indirect), and Isolated Vegetated Wetlands (25,648 SF direct; 3,952 SF indirect), and directly and indirectly alter wildlife and rare species habitats. Direct impacts to natural resources would involve alterations associated with the installation of fence posts, while indirect alterations would be associated with the proposed 4-foot wide swaths of managed vegetation on both sides of the fence, which are required to be clear of trees and tall shrubs that may otherwise jeopardize the fence integrity. These areas would be either brush hogged or trimmed but would not be graded. The cleared areas would allow for inspection of the fence. This alignment, which is in close proximity to the taxiway on the north side and existing maintained areas to the south, would eliminate the need for construction of patrol roads. Since July of 2009, significant agency coordination and field site work has been completed relative to refining the alignment of the preferred alternative, Concept 6. The fence alignment is shown on scaled plans that have been field checked and are accurate enough for permitting. The final precise location of the fence would be determined in the field prior to construction as directed by staff of NHESP, NPS, and other permitting agencies, in order to minimize to the fullest extent possible impacts to wetlands while at the same time preserving critical buffer. The fence would connect with the existing sections of fence adjacent to the bike path and the SRE building. Additionally, Concept 6 would eliminate fencing at the west end around the ILS.

Approximately 113 acres would be separated from remaining areas of the CCNS with Concept 6 fence area. The majority of the area consists of airport infrastructure (paved runway and taxiways, buildings, parking areas, navigational aids, and managed safety areas). Additionally, the western-most end around the ILS would not be enclosed, thus eliminating direct impacts within tidally-influenced portions of Wetland C/J/FK. In consultation with NHESP, the fence design would also have gaps along the bottom to allow for the movement of Eastern Box Turtles, minimizing impacts to the movements of this state-listed rare species as well as other small animals.

The fence design, 9 feet tall (total) topped with barbed wire, would deter deer from jumping the fence. Although deer can jump higher than 9 feet, the angled wire on top makes it difficult for them to judge the height of the fence. Additionally, cleared areas along the fence would allow deer to run along the outside of the fence (rather than jump the fence onto the active airfield if alarmed). Although the Preferred Alternative results in avoidable impacts, proposed mitigation and design modifications have avoided and minimize impacts to the fullest extent feasible.

3.9.3 Perimeter Safety / Security Fence Concept 4

Concept 4 would involve the construction of an approximately 15,400 LF fence of similar design to that of the Preferred Alternative. However, this fence alignment would enclose the approach light system, completely enclosing the Airport facilities. Direct (50 SF Isolated, 540 SF BVW) and indirect (5,670 SF Isolated, 43,080 SF BVW SF) alterations to wetlands as well as alterations to coastal dunes and associated habitats would occur with Concept 4. This concept would meet the project purpose and would not impact Airport operations or protected operational and navigational surfaces and object free areas. However, it would have impacts to tidal flow in Hatches Harbor.

3.9.4 Perimeter Safety / Security Fence Concept 1

The alignment under Concept 1 follows the perimeter of the Airport lease area. The length of the fence would be approximately 24,000 LF and would result in direct (34,067 SF) and indirect (33,800 SF) alterations to wetlands as well as direct (209,845 SF) and indirect (208,200 SF) alterations to coastal dunes and associated habitats, while completely enclosing approximately 317 acres of the 322 acres of the Airport. This alignment would require a 10-foot wide paved or gravel access road to allow for fence maintenance. The alignment would meet the project purpose and would protect Airport operations within airport operational areas and navigational surfaces. However, it would have impacts to tidal flow in Hatches Harbor.

3.9.5 Environmentally Preferred Alternative

Of the alternatives considered for the Perimeter Safety/Security Fence, the No Action alternative has been selected as the Environmentally Preferred Alternative, as the project does not involve operational safety improvements for aircraft operations within Part 77 navigable surfaces and will not occur within an existing footprint. The No Action alternative would not involve construction and would not alter wetland and coastal dune resources.

Although the No Action alternative would not involve construction within wetlands and coastal dunes, this alternative would not address the safety and security issues resulting from the lack of a perimeter fence. While the No Action alternative would not result in any impacts to natural resources, this alternative would continue to risk the health and safety of those at the Airport, possibly resulting in potentially undesirable or unintended consequences, both of which are defining elements of an environmentally preferred alternative per DO-12.

The No Action alternative is not the Preferred Alternative. An extensive analysis was carried out for the safety security fence in order to identify an alternative that would address the security and safety issues while minimizing impacts to wildlife, wetlands, and other natural resources. While the Preferred Alternative would result in impacts to resource areas, significant mitigation measures have been incorporated into the design and alignment of the fence concept to minimize these impacts. Additionally, a construction management plan has been drafted to minimize impacts during construction.

3.9.6 Alternatives Considered But Rejected

This section describes the following alternatives that have been identified and dismissed as explained.

- Concept 2: Apron Offset North; 500 Foot Primary Surface South
- Concept 3: Apron Offset North; 1,000 Foot Primary Surface South

- Concept 5: Apron Offset North; Wetland Offset South

Concepts 2 and 3 include a fence around the ILS with a 10-foot wide maintained area on the outside of the fence clear of trees and shrubs and a 10-foot wide vehicle travel path on the Airport side of the fence for security inspection patrols.

Concept 5 includes a fence around the ILS with a 4-foot wide maintained area on the outside of the fence clear of trees and shrubs and a 10-foot wide vehicle travel path, which would be maintained on the Airport side of the fence for security inspection patrols, except where the fence can be inspected from the GA aprons on the north.

Concept 2: Apron Offset North; 500 Foot Primary Surface South

This fence alignment would be offset approximately 320 feet from the runway centerline on the south side in compliance with the current FAA Waiver, and approximately 10 feet off the back of the aircraft aprons on the north side of the taxiway. The total length of the fence would be approximately 17,000 LF, enclosing approximately 104 acres. The alignment would directly and indirectly impact approximately 4 acres of wetlands (both bordering and isolated) and prime breeding habitat for the Eastern Spadefoot Toad with additional impacts to coastal dunes and associated habitats. In addition, Concept 2 has the potential to impact tidal flow and flood storage capacity since the fence in the vicinity of the ILS may impede normal tidal flow and flooding during storm events.

Concept 2 would meet the project purpose and need, and would be in compliance with the current FAA Waiver. Under the current Waiver, any fence alignment must be at least 63 feet beyond the edge of the FAR Part 77 Primary Surface to accommodate the 7 to 1 Transitional Surfaces that extend upward and out as an obstruction clear area. However, if this Waiver were ever to be revoked in the future, the fence under Concept 2 would have to be removed and relocated. Therefore this alternative has been deemed unfeasible and has been dismissed from further review.

Concept 3: Apron Offset North; 1,000 Foot Offset Primary Surface South

This alignment would have an approximately 500-foot offset from the runway centerline on the south and approximately 10 feet off the back of the aircraft aprons on the north side. The length of the fence would be approximately 17,900 LF, enclosing approximately 128 acres. The alignment would impact approximately 4.5 acres of wetlands (both bordering and isolated) and prime breeding habitat for the Eastern Spadefoot Toad with additional impacts to coastal dunes and Eastern Box Turtle habitat, and would likely have adverse impacts to these rare species. As with Concept 2, Concept 3 has the potential to impact tidal flow and flood storage capacity since the fence would be in the vicinity of the ILS. Maintaining the fence alignment in close proximity to the taxiway would reduce direct, long-term wetland and dune impacts by eliminating the need for a portion of the perimeter roadway. Concept 3 would meet the project purpose and need. However, this alternative has been deemed unfeasible for environmental permitting reasons and has been dismissed from further review.

Concept 5: Apron Offset North; Wetland Offset South

The Concept 5 alternative follows the same alignment on the southern side as Concept 4 (see Section 3.9.3). On the northern side, however, the fence would be located a minimum of 10-feet behind the aircraft parking aprons. The length of the fence would be approximately 14,000 LF, encompassing 148 acres. Concept 5 would impact approximately 1.5 acres (direct and indirect) of wetlands, and as with Concepts 2 and 3, also would have the potential to impact tidal flow and flood storage capacity in the vicinity of the ILS. While located within wetland areas, the close proximity of the fence to the

taxiway would eliminate the need for a perimeter roadway along this stretch of the fence (e.g., as with the northern segments considered in Concepts 2 and 3). It is anticipated that this alignment would only require vegetation management along the fence, minimizing wetland alterations. In addition, portions of these wetlands are currently subject to vegetation management practices to maintain airfield safety. Similar to Concept 4, Concept 5 is also located at the base of the dune ridge to the south of the runway. Where required, the width for the vehicle path would be approximately 10 feet wide. The width of vegetation clearing would be reduced to 4 feet for the entire perimeter of the fence to further minimize impacts. The 4-foot clearing would be on both sides of the fence where a 10-foot patrol road is not necessary.

This alignment provides suitable clearance along the north side of the GA aprons to accommodate spatial considerations for aircraft that are pushed by hand onto the turf aprons, access to the electric controls on the back of the GA apron light poles, and overall constructability and, as such, meets the purpose and need and fully complies with FAA design standards.

This proposed alignment, while reducing overall wetland impacts, would still result in habitat fragmentation on the south side of the Airport, separating the large aggregate of isolated wetland areas from the adjacent upland areas of coastal dune. Taking the results of the Eastern Spadefoot Toad habitat surveys into consideration, placement of the fence along the toe of the dune ridge had the potential for interfering with breeding activity for this species. Accordingly, it was determined that Concept 5 was not the preferred alternative with respect to the natural resources at the Airport. Concept 5 again requires the construction of patrol roads along most lengths of the fence (except for north of the taxiway) for monitoring, and encloses a portion of the tidally-influenced wetlands within Hatches Harbor. As such, this alternative has been dismissed from further review.

3.10 Auto Parking Expansion

Three alternatives have been analyzed for the Auto Parking Expansion: The No Action alternative, an alternative that would construct additional parking in two phases Concept 4 (Preferred Alternative), and an alternative that would construct additional parking in one phase (Concept 1 Preferred Alternative in Draft EIR/EA). Three additional alternatives have been considered but dismissed from further review. The alternatives that have been considered for the project are illustrated on Figures 3.10 through 3.13 provided at the end of this section. All alternatives include reconstructing the deteriorated access road.

3.10.1 No Action

The No Action alternative would retain the existing parking area. Existing and future needs would not be met because parking would continue to be congested at peak periods, and visitors would continue to park along Airport Drive occasionally during peak periods, creating a potential safety hazard. The No Action would not impact natural resources because there would be no additional parking area constructed within coastal dune resources.

3.10.2 Auto Parking Concept 4, Phases 1 and 2 (Proposed Action and Preferred Alternative)

The parking lot currently has 62 spaces. Concept 4 would construct 28 additional spaces for Phase 1 (Phase 1 total 90 spaces). Phase 2 would construct additional parking spaces (estimated at an additional 29 spaces for a total of 119) after additional parking studies have been carried out and the

studies have been reviewed and approved by NPS and CCC. Expanding the parking lot in phases would address the existing and mid term planning period need for additional parking.

The Preferred Alternative would result in an initial impact of 7,315 SF of coastal dune with the potential for approximately 5,707 SF of additional dune alteration for Phase 2. Dune alterations would be mitigated as discussed in Section 7. The parking aisles would be paved and parking spaces would consist of packed gravel. Infiltration swales would be constructed for Phase 1. A bioretention system would be constructed for Phase 2 which would provide treatment of runoff in accordance with current WPA regulations. Landscaping designed to screen views of the parking would use native plants similar to those listed in the NPS *Site and Building Design and Rehabilitation Handbook*, September 2005 developed for the Highlands Center at CCNS.

As an adjunct element to Phase 1, efforts to reduce demand by improving awareness of the shuttle system, encouraging the use of taxis, and working with NPS to explore the use of remote lots for long-term parking may possibly reduce or delay the need to implement Phase 2. The phases would be permitted separately with the Provincetown Conservation Commission so that each phase can be evaluated independently but with an understanding of the entire project.

3.10.3 Auto Parking Concept 1

Concept 1 would construct the proposed parking lot expansion in one phase by constructing 57 additional spaces and a third aisle with parking on both sides directly adjacent and parallel to the existing two aisles, providing a total of 119 spaces. This number of spaces would meet most of the existing and projected demand. The aisle would be paved and the parking spaces would be packed gravel. Alterations to coastal dune (10,000 SF) and isolated wetlands (4,650 SF of Wetland A) would occur under Concept 1.

3.10.4 Environmentally Preferred Alternative

The Environmentally Preferred Alternative for the proposed Auto Parking Expansion has been identified to be the No Action alternative, because the project is a capacity improvement. Additionally, with the No Action alternative there would be no construction and no impacts to coastal dune.

However, the No Action alternative is not the Preferred Alternative because it would not address the purpose and need for additional auto parking.

3.10.5 Alternatives Considered But Rejected

Auto Parking Concept 2

Concept 2 would provide a total of 161 spaces by constructing two additional aisles parallel to the existing two aisles. This configuration would impact approximately 10,950 SF of isolated wetland within Wetland A, as well as more than 10,000 SF of coastal dune and associated habitat. The aisles would be paved and the parking spaces would be packed gravel. This alternative has been dismissed from further review because this number of spaces would exceed the existing and projected demand.

Auto Parking Concept 3

Concept 3 would provide a total of 116 spaces parallel to the entrance drive, and would meet most of the existing and projected demand. This configuration would impact approximately 1,125 SF of isolated wetland within Wetland A and coastal dune habitat. The aisles would be paved and the

parking spaces would be packed gravel. This option puts some of the parking spaces at a long distance from the entrance to the Terminal and would be more visible from Race Point Road. The vehicle circulation is also awkward. This alternative has been dismissed from further review.

3.11 Terminal Building

Three alternatives for the Terminal Building expansion project element were explored, including the No Action alternative, an alternative that would construct a second floor within the existing footprint (Vertical Concept), and an alternative that would expand the 1st floor footprint (Horizontal Concept). All three alternatives are carried forward in the assessment of environmental impacts in Section 5.0. The alternatives that have been considered for the project are illustrated on Figures 3.14, 3.15, and 3.16 provided at the end of this section.

3.11.1 No Action

The No Action would maintain the current conditions in the passenger terminal building. Figure 1.4 in Section 1 depicts the floor plan of the existing terminal building along with photos. The space requirements for TSA operations were not in existence when the current terminal building was designed and built. The 1,660 SF taken over by TSA would not be replaced and the inefficient and cramped conditions for passengers and Airport staff would continue. Currently, passengers do not have enough space in the public, non-secure waiting area, and general aviation pilots do not have space for flight planning, while the conference room and various office spaces are congested and used for storage that was lost due to TSA occupation, which would continue. No impacts to the environment would occur because there would be no construction or change in the appearance or size of the building.

3.11.2 Vertical Concept (within existing footprint) - (Proposed Action and Preferred Alternative)

The Vertical Concept alternative would place a second floor above the existing building and reconfigure space in the existing first floor terminal. The Vertical Concept would satisfy the need to obtain the lost space to TSA, as well as the projected 0.7% annual increase in passengers over the planning period. This concept would provide the additional terminal space needed to operate the Airport in a safe and efficient manner. This concept would provide the additional 1,660 SF of lost TSA space plus approximately 1,000 to 2,200 SF of projected demand over the 20-year period.

The Vertical Concept would have no direct impacts to natural resources and potential impacts to the visual environment would be mitigated with landscape screening as well as with design elements. Minimizing the mass and height of the building is a priority of the CCNS. In order to accommodate a second floor, the increased height of the proposed building would be as minimal as possible, while maintaining an aesthetically pleasing architecture for NPS guests. It would likely be necessary to raise the height of the building to accommodate the second floor. The Vertical Concept terminal building would be approximately 6 to 12 feet higher than the existing 20'9^{3/4}" building, resulting in a 26'9^{3/4}" to 32'9^{3/4}" building height. A maximum height would be identified during meetings between the Airport, the architect, and CCNS staff. The Airport architects will work closely with CCNS staff to ensure a collaborative effort goes into designing the terminal building expansion. CCNS staff will be a member of the terminal design client group from the scoping of the project to final design.

The Vertical Concept alternative would provide the spatial needs to satisfy the purpose and need, while satisfying CCNS request for input from pre-design to ensure minimal visual impacts to Park resources. Therefore, the Vertical Concept is the Preferred Alternative.

3.11.3 Horizontal Concept (expand footprint)

The Horizontal Concept alternative would expand the building to the southwest adjacent to the existing passenger waiting area. The building height of the addition would match the height of the existing terminal building. The alternative would also include modifications to the interior of the existing terminal building.

The Horizontal Concept alternative expansion would provide an additional 900 to 1,200 SF of non-secured area, less than the needed 1,600 SF lost to TSA secure operations, and would not satisfy the purpose and need. Horizontal expansion would result in alterations to Wetland C (560 SF). Any further expansion to the west would affect the location of the underground fuel tank. Expansion to the north would impact the existing passenger drop-off area and/or the existing parking lot. This would impact the proposed expansion of the parking area.

Additionally, the Horizontal Concept would require that the TSA trailer be relocated. After further evaluation since the NPC/DEIR/EA, it has been determined that the TSA trailer could not be located adjacent to the fuel farm due to Occupational Health and Safety Administration (OSHA) requirements. The location for the TSA trailer would likely need to be in the passenger parking lot or adjacent to the GA apron, again having an adverse impact on parking by occupying a minimum of six parking spaces. The auto parking area circulation road would need to be realigned, resulting in the loss of several additional auto parking spaces.

The Horizontal Concept would also have additional potential impacts on the visual environment, as the relocated TSA trailer would be visible from the existing CCNS bike path. In addition, TSA operations would also be located outside the secure area, which is unacceptable to TSA.

3.11.4 Environmentally Preferred Alternative

The Environmentally Preferred Alternative for the proposed Terminal Building Expansion has been identified to be the No Action alternative, because the project is a capacity improvement. There would be no construction and no change in the visual environment under the No Action alternative.

However, the No Action alternative is not the Preferred Alternative because it would not address the purpose and need for additional space in the Terminal. NPS visitors that utilize the Airport as a means of accessing the CCNS, as well as Airport staff and pilots, would continue to be inconvenienced by the existing cramped conditions in the Terminal. With careful design coordination through NPS, the Preferred Alternative would have minimal visual impacts on Park visitors, and would achieve the Purpose and Need.

3.11.5 Alternatives Considered But Rejected

No other alternatives were identified.

3.12 Turf Apron Expansion

The potential impacts of constructing additional turf apron to accommodate GA aircraft were analyzed with three alternatives: the No Action alternative, an alternative that would construct additional apron space for a full range of GA aircraft (Full Dimension alternative), and an alternative that would accommodate smaller GA aircraft (Reduced Dimension). The alternatives that have been considered for the project are illustrated on Figures 3.17 and 3.18 provided at the end of this section.

3.12.1 No Action

The No Action would maintain the current area for turf parking of GA aircraft. There would be no impacts to natural resources because the turf area would not be reconstructed and reinforced. The need for additional parking area would not be met and it would continue to be necessary to close the Mid Connector taxiway to provide overflow aircraft parking areas during peak demand, and would not meet the purpose and need.

3.12.2 Expand Apron, Full Dimension

The Full Dimension alternative would construct the turf apron outside of the Taxiway Free Area (TOFA) in compliance with FAA safety design standards, and would accommodate the full range of GA aircraft that use the turf apron at the Airport. The width of the apron would accommodate the larger GA planes. Implementation of this alternative would result in impacts to Wetland C (1,250 SF). There would be temporary impacts to cultural grassland habitat (approximately 16,800 SF) during construction, which would be restored to grasslands.

3.12.3 Expand Apron, Reduced Dimension (Proposed Action and Preferred Alternative)

Under the Reduced Dimension alternative, additional turf apron would be constructed between the two existing areas for turf apron parking by increasing the carrying capacity of the existing grass area to support the weight of the planes. Approximately 16,780 SF of existing managed cultural grassland habitat would be temporarily impacted during construction, and would be restored to managed grassland habitat.

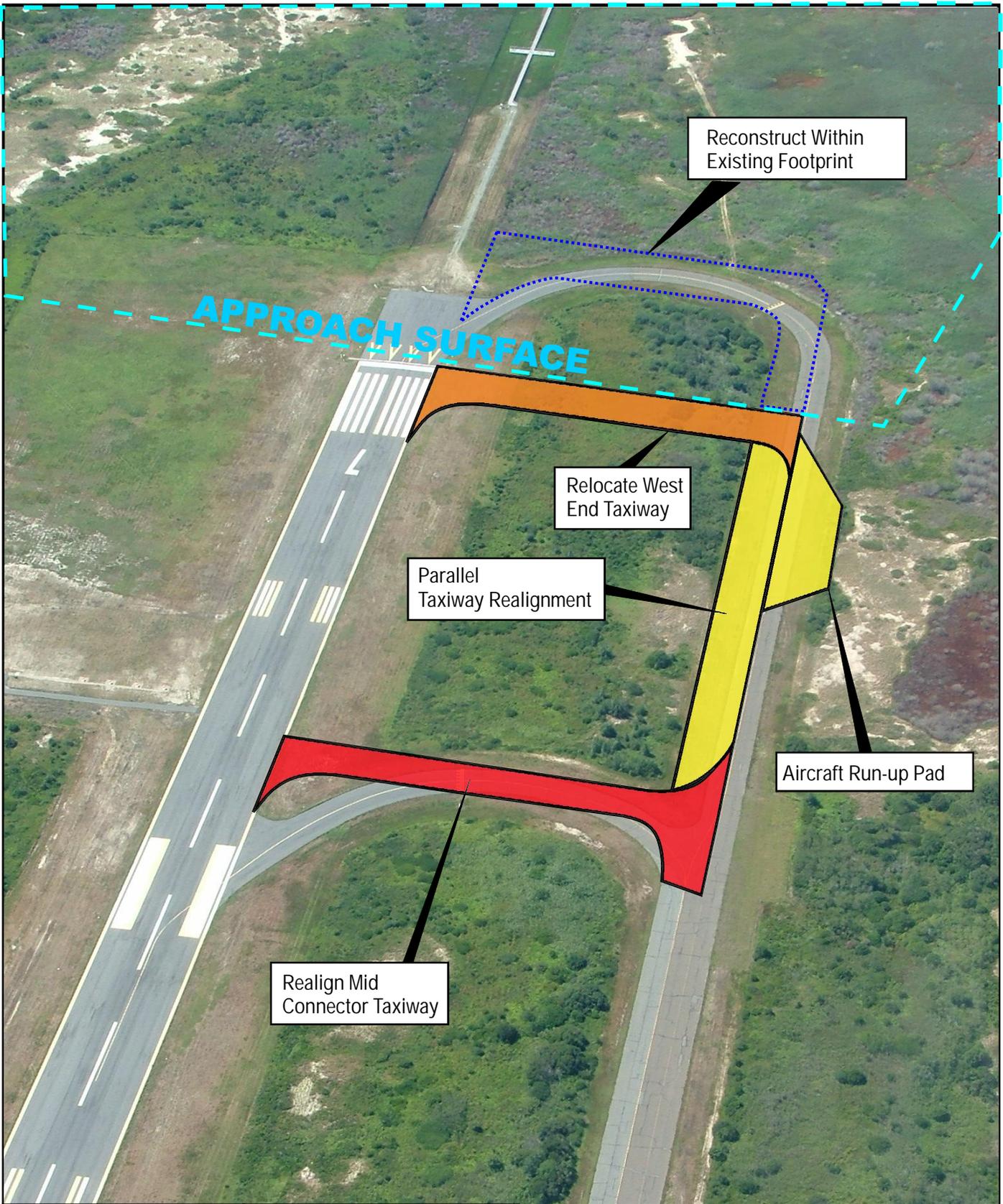
3.12.4 Environmentally Preferred Alternative

The Environmentally Preferred Alternative for the proposed Turf Apron Expansion has been identified to be the No Action alternative, as the project is a capacity improvement. The No Action alternative would not result in construction or impacts to cultural grassland.

However, the No Action alternative is not the Preferred Alternative because it would not address the purpose and need for additional turf apron space. The Preferred Alternative would, after mitigation and through careful construction timing, restore the grassland habitat with little or no impacts to this resource, while achieving a balance between the need for visitor aircraft parking space and protection of the natural environment.

3.12.5 Alternatives Considered But Rejected

No other alternatives were identified.



Prepared By:

JACOBSTM

Source: Edwards and Kelcey 2007

Provincetown Municipal Airport
 Capital Improvements Plan
 Westerly Taxiway
 System Improvements

Figure 3.1



Relocate East End Taxiway

Prepared By:

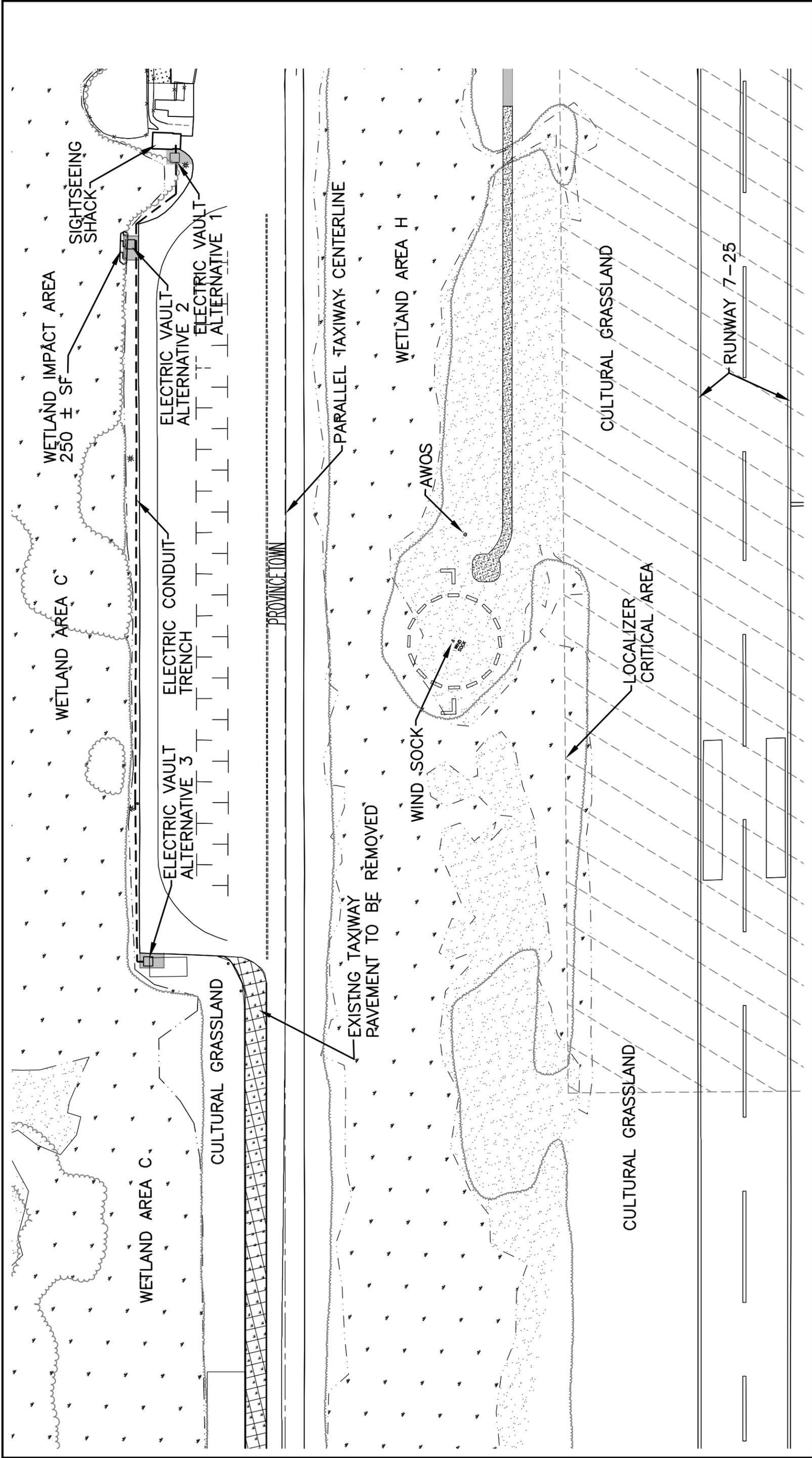
JACOBS

Provincetown Municipal Airport
Capital Improvements Plan

East End Taxiway Relocation

Source: Edwards and Kelcey 2007

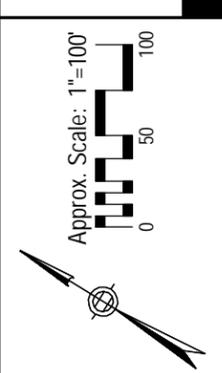
Figure 3.2



Prepared By:



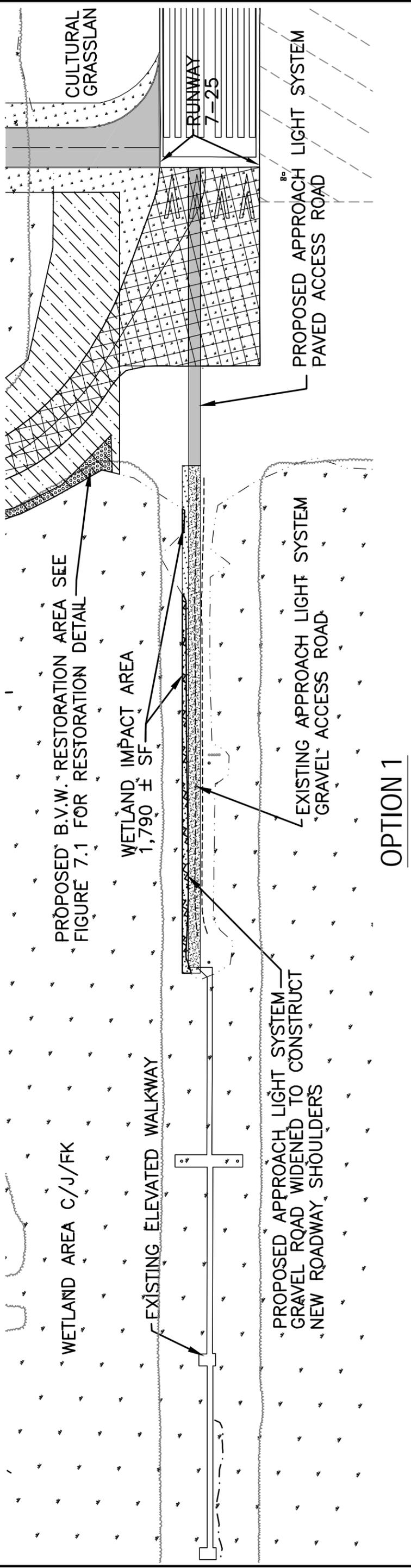
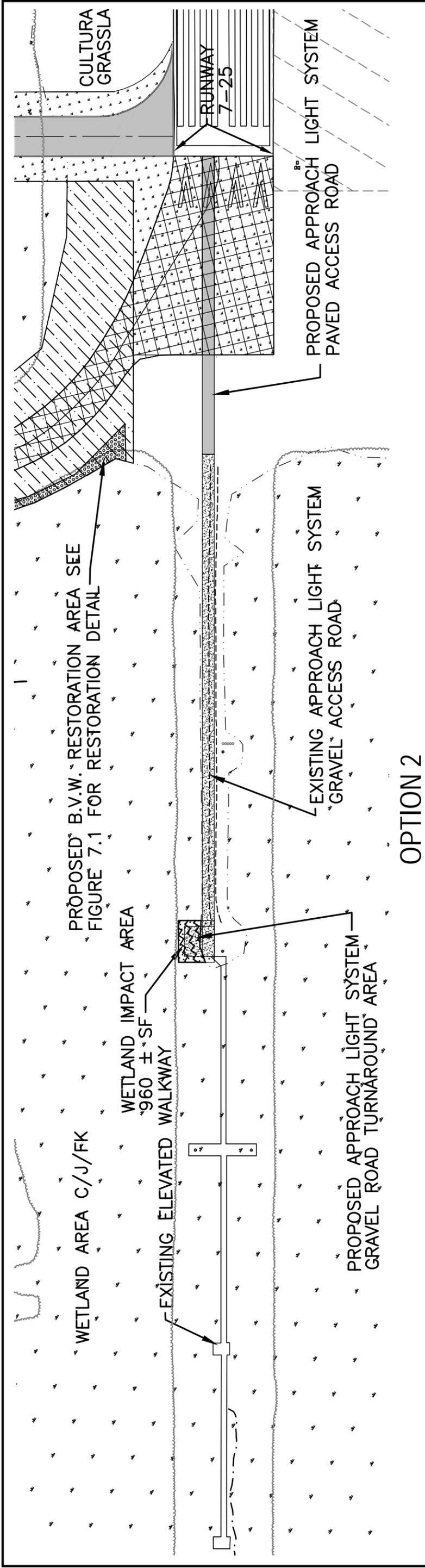
-  EXISTING IMPERVIOUS AREA TO BE REMOVED
-  EXISTING DUNE AREA
-  PROPOSED IMPERVIOUS PAVED AREA
-  PROPOSED PERVIOUS GRAVEL AREA
-  PROPOSED RESTORATION AREA
-  EXISTING WETLAND AREA
-  EXISTING TRELLINE EXISTING BRUSHLINE
-  PROPOSED CULTURAL GRASSLAND
-  PROPOSED WETLAND IMPACT AREA



Provincetown Municipal Airport
Capital Improvements Plan

ALTERNATIVE VAULT LOCATIONS

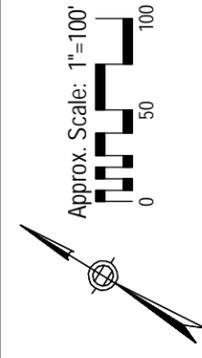
Figure 3.3



Prepared By:

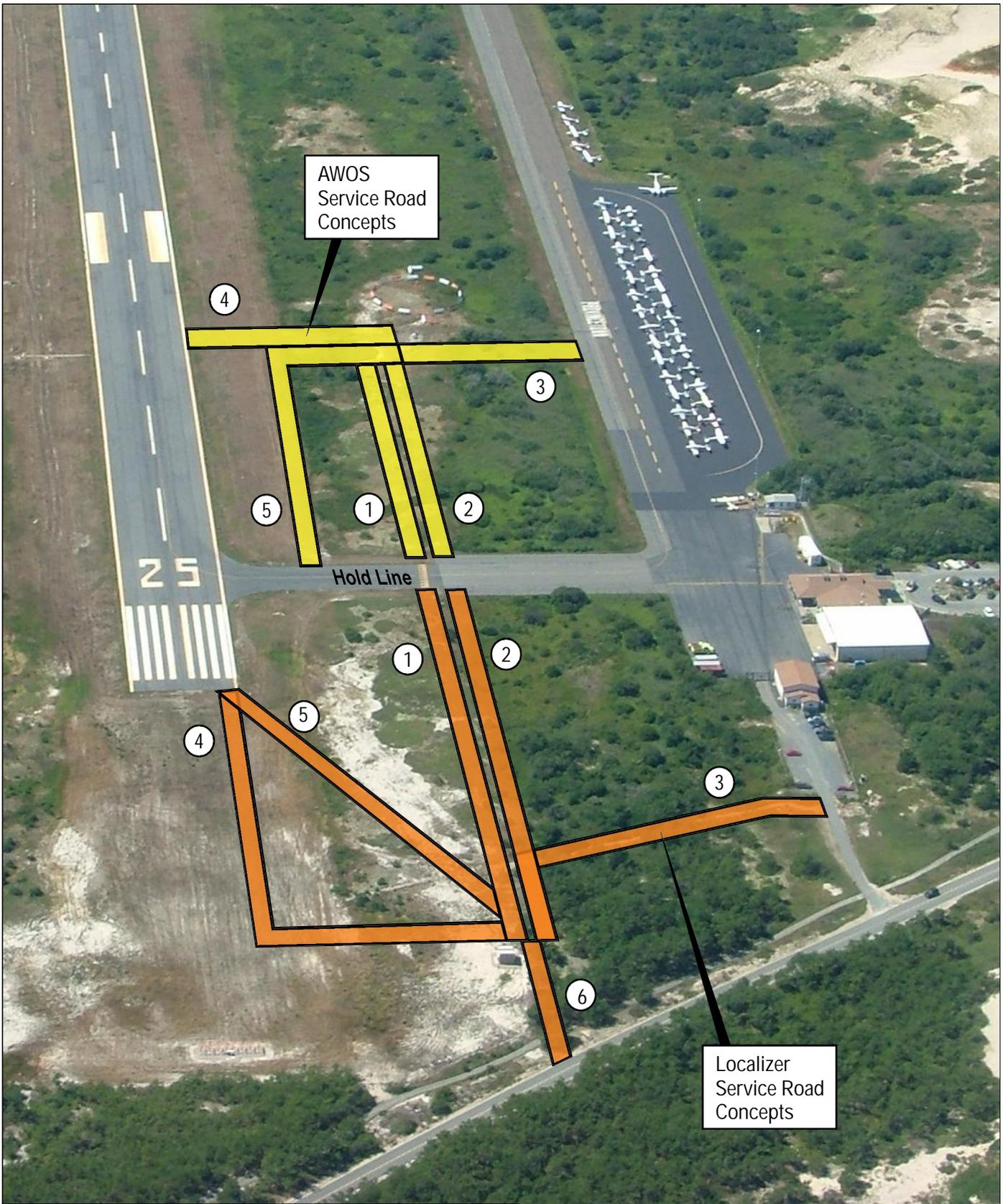
JACOBS

- EXISTING IMPERVIOUS AREA TO BE REMOVED
- EXISTING WETLAND AREA
- EXISTING DUNE AREA
- EXISTING TREE LINE EXISTING BRUSHLINE
- PROPOSED IMPERVIOUS PAVED AREA
- PROPOSED CULTURAL GRASSLAND
- PROPOSED PERVIOUS GRAVEL AREA
- PROPOSED WETLAND IMPACT AREA
- PROPOSED RESTORATION AREA



Provincetown Municipal Airport
Capital Improvements Plan
**APPROACH LIGHTS ACCESS ROAD
ALTERNATIVES**

Figure 3.4



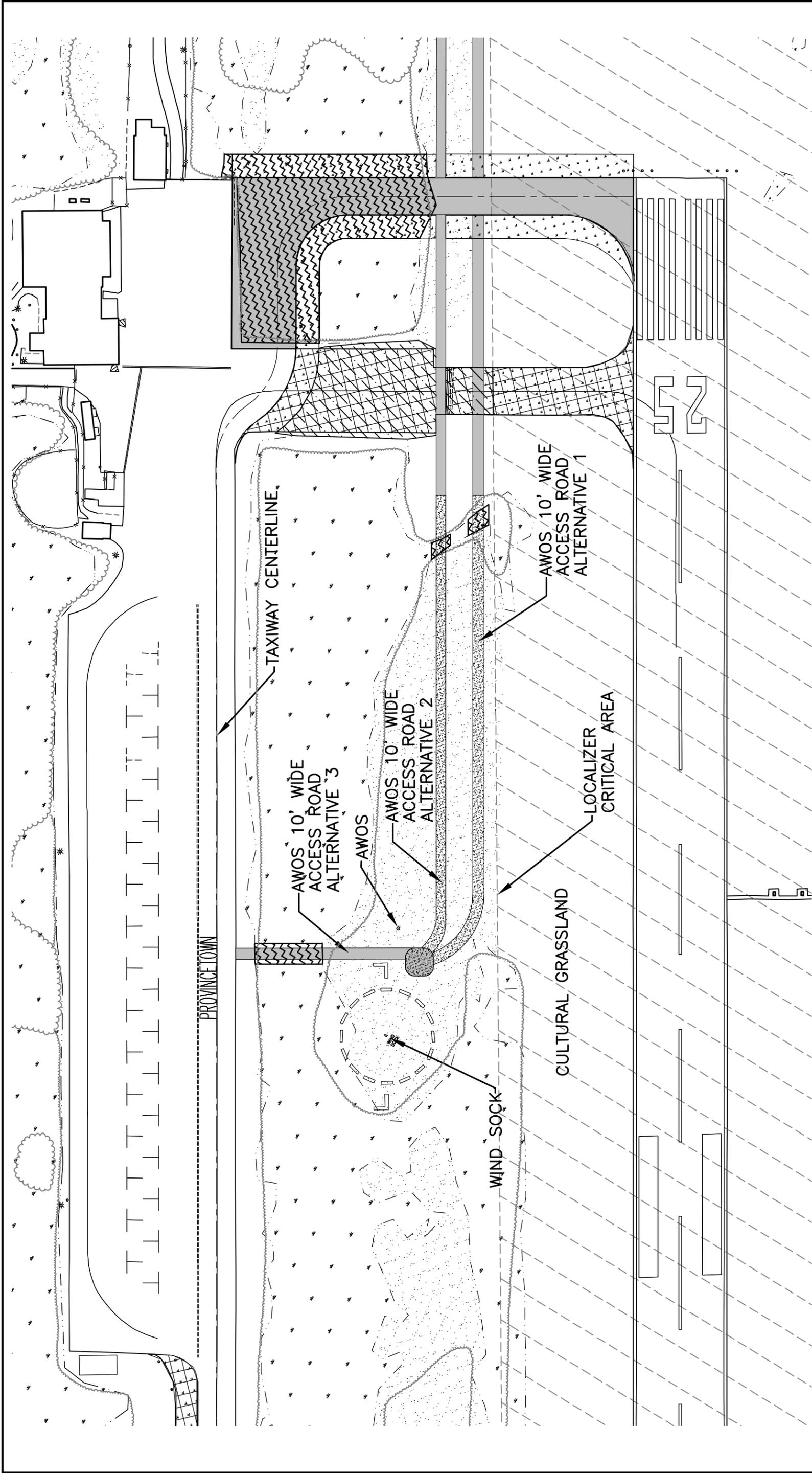
Prepared By:

JACOBSTM

Source: Edwards and Kelcey 2005

Provincetown Municipal Airport
 Capital Improvements Plan
SERVICE ROADS PROJECT CONCEPTS

Figure 3.5



Prepared By:



-  EXISTING IMPERVIOUS AREA TO BE REMOVED
-  EXISTING DUNE AREA
-  EXISTING TREELINE
-  EXISTING WETLAND AREA
-  EXISTING BRUSHLINE

-  PROPOSED IMPERVIOUS PAVED AREA
-  PROPOSED PERVIOUS GRAVEL AREA
-  PROPOSED CULTURAL GRASSLAND

-  PROPOSED RESTORATION AREA
-  PROPOSED WETLAND IMPACT AREA

- 

Approx. Scale: 1"=100'



Provincetown Municipal Airport
Capital Improvements Plan

AWOS ACCESS ROAD ALTERNATIVES

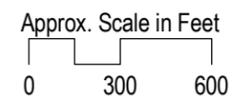
Figure 3.7

Fence Alignment Legend:

-  Airport Lease Line
-  Fence Concept 1
-  Fence Concept 2
-  Fence Concept 3
-  Fence Concept 4
-  Fence Concept 5
-  Fence Concept 6
-  Fence Concept 6 (overlapping Concept 2)



Prepared By:
JACOBS



Data Source: MassGIS, Commonwealth of Massachusetts EOE



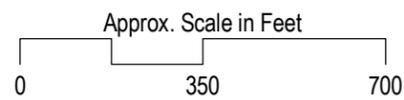
Provincetown Municipal Airport
Capital Improvements Plan
**ALTERNATIVE
FENCE ALIGNMENTS**
Figure 3.8

Legend:

— Fence Concept 6



Prepared By:
JACOBS



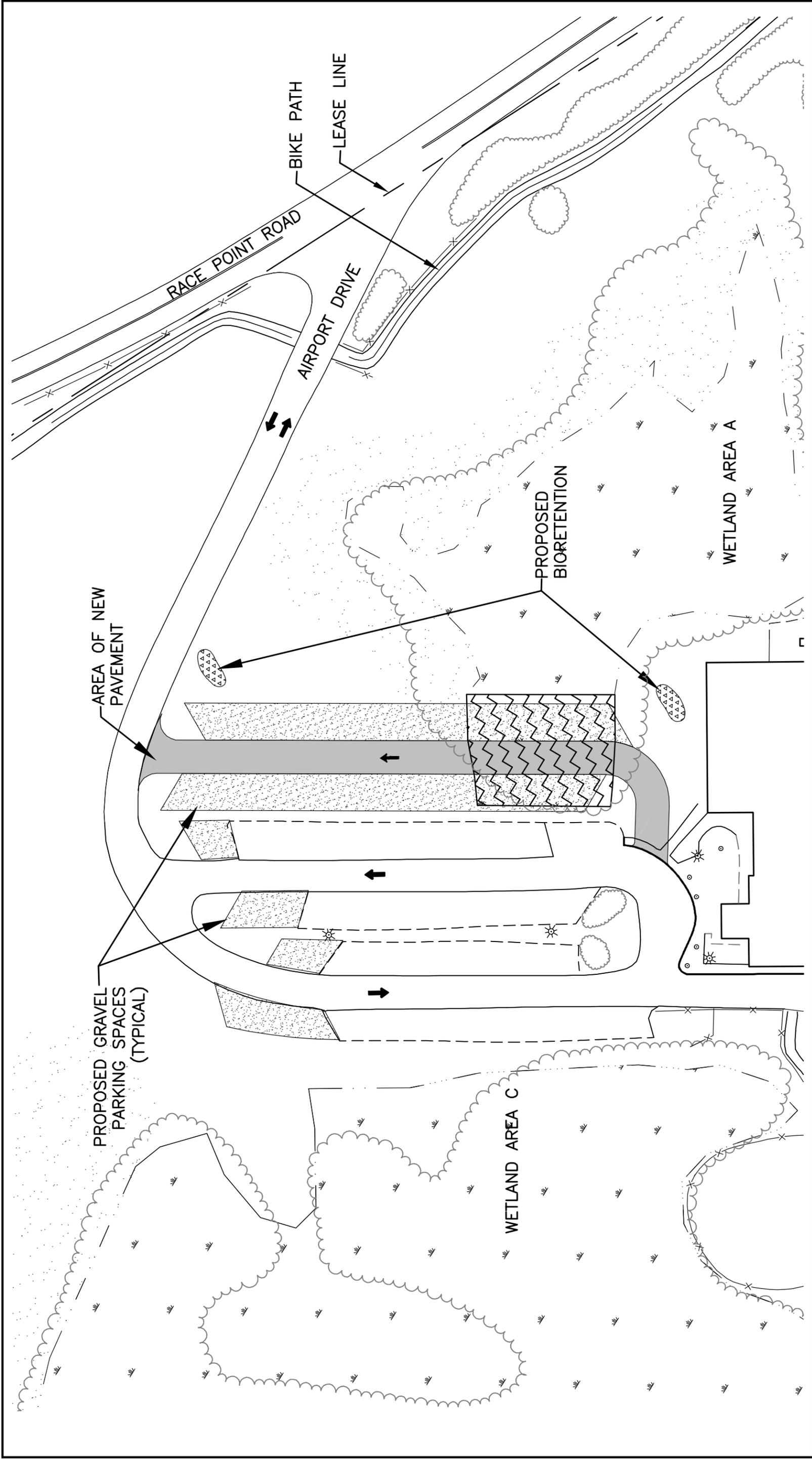
Data Source: MassGIS, Commonwealth of Massachusetts EOE



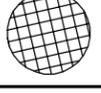
Provincetown Municipal Airport
Capital Improvements Plan

FENCE CONCEPT 6

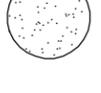
Figure 3.9



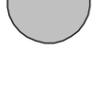
Prepared By:



EXISTING IMPERVIOUS AREA TO BE REMOVED



EXISTING DUNE AREA



PROPOSED IMPERVIOUS PAVED AREA



PROPOSED PERVIOUS GRAVEL AREA



PROPOSED NATURAL LANDSCAPE BUFFER AREA



EXISTING WETLAND AREA



EXISTING TREE LINE



EXISTING BRUSHLINE



PROPOSED WETLAND IMPACT AREA



PROPOSED BIORETENTION AREA



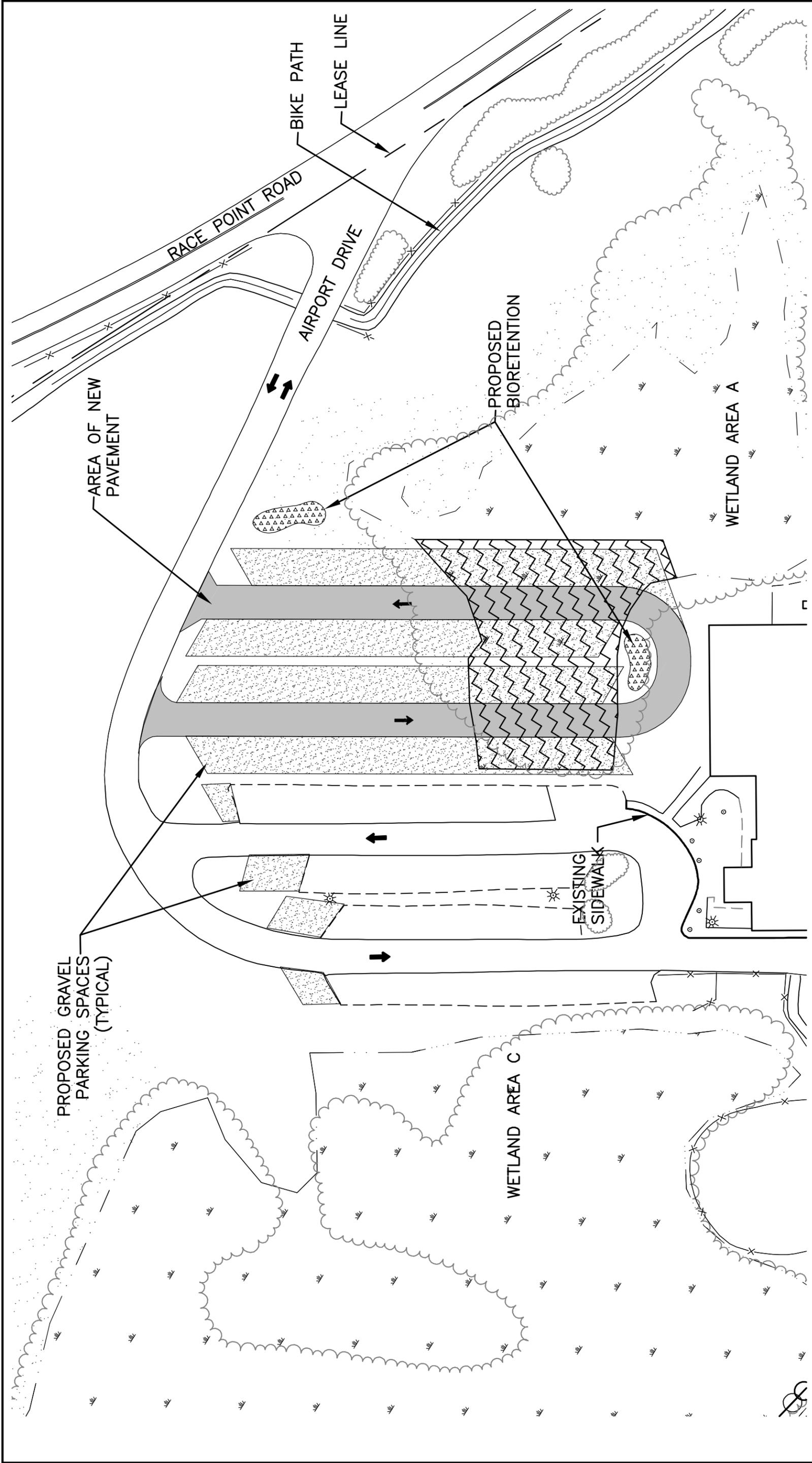
PROPOSED CULTURAL GRASSLAND

Provincetown Municipal Airport
Capital Improvements Plan

EXPAND AUTO PARKING CONCEPT 1

Figure 3.10





Prepared By:



-  EXISTING IMPERVIOUS AREA TO BE REMOVED
-  EXISTING WETLAND AREA
-  EXISTING DUNE AREA
-  EXISTING TREELINE EXISTING BRUSHLINE
-  PROPOSED IMPERVIOUS PAVED AREA
-  PROPOSED CULTURAL GRASSLAND
-  PROPOSED PERVIOUS GRAVEL AREA
-  PROPOSED WETLAND IMPACT AREA
-  PROPOSED NATURAL LANDSCAPE BUFFER AREA
-  PROPOSED BIORETENTION AREA

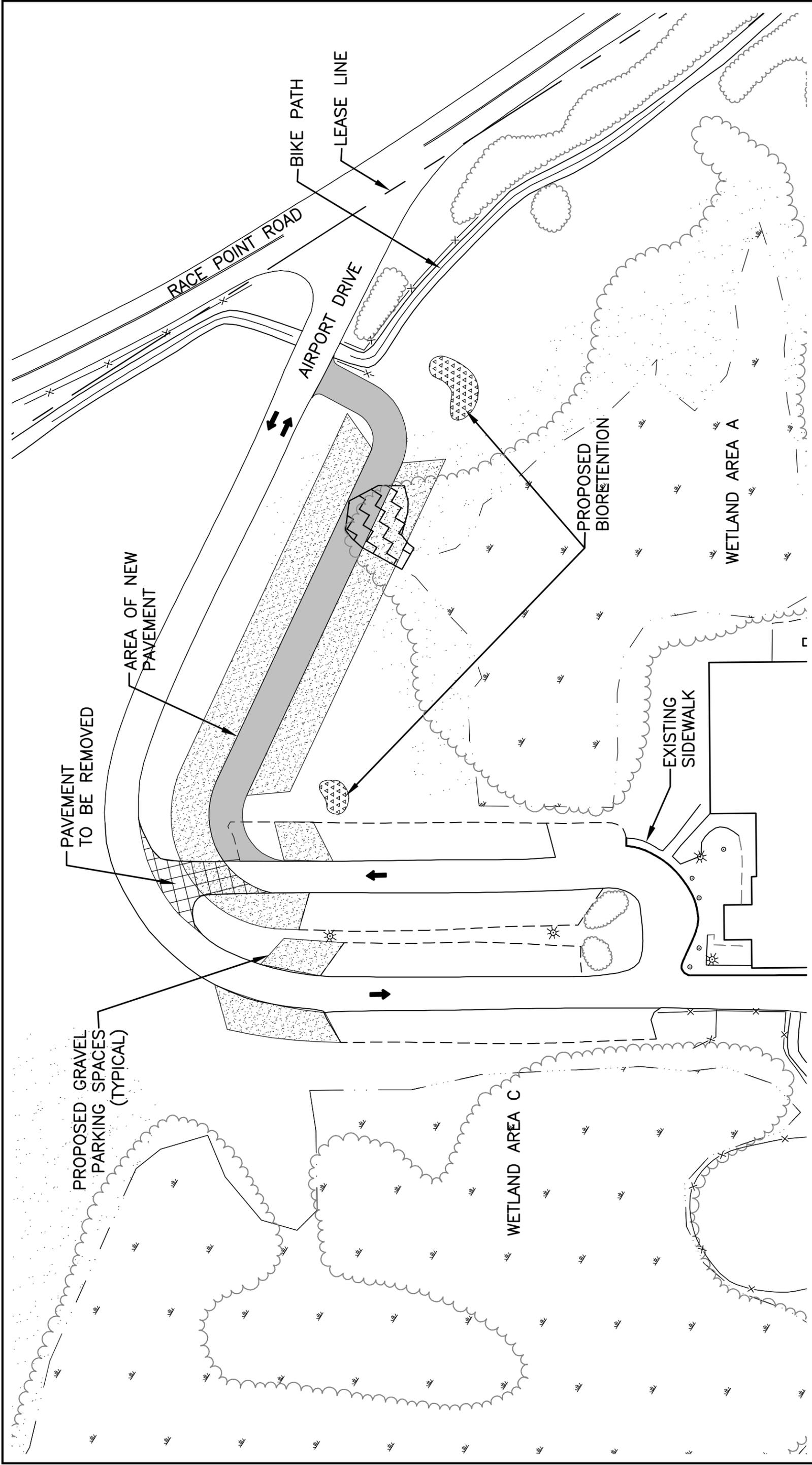


Approx. Scale: 1"=50'
 0 25 50

Provincetown Municipal Airport
 Capital Improvements Plan

EXPAND AUTO PARKING CONCEPT 2

Figure 3.11

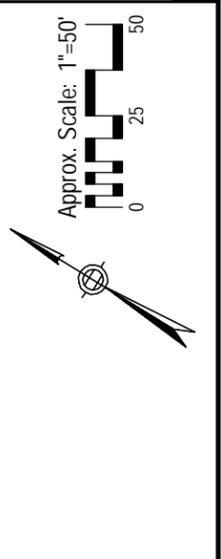


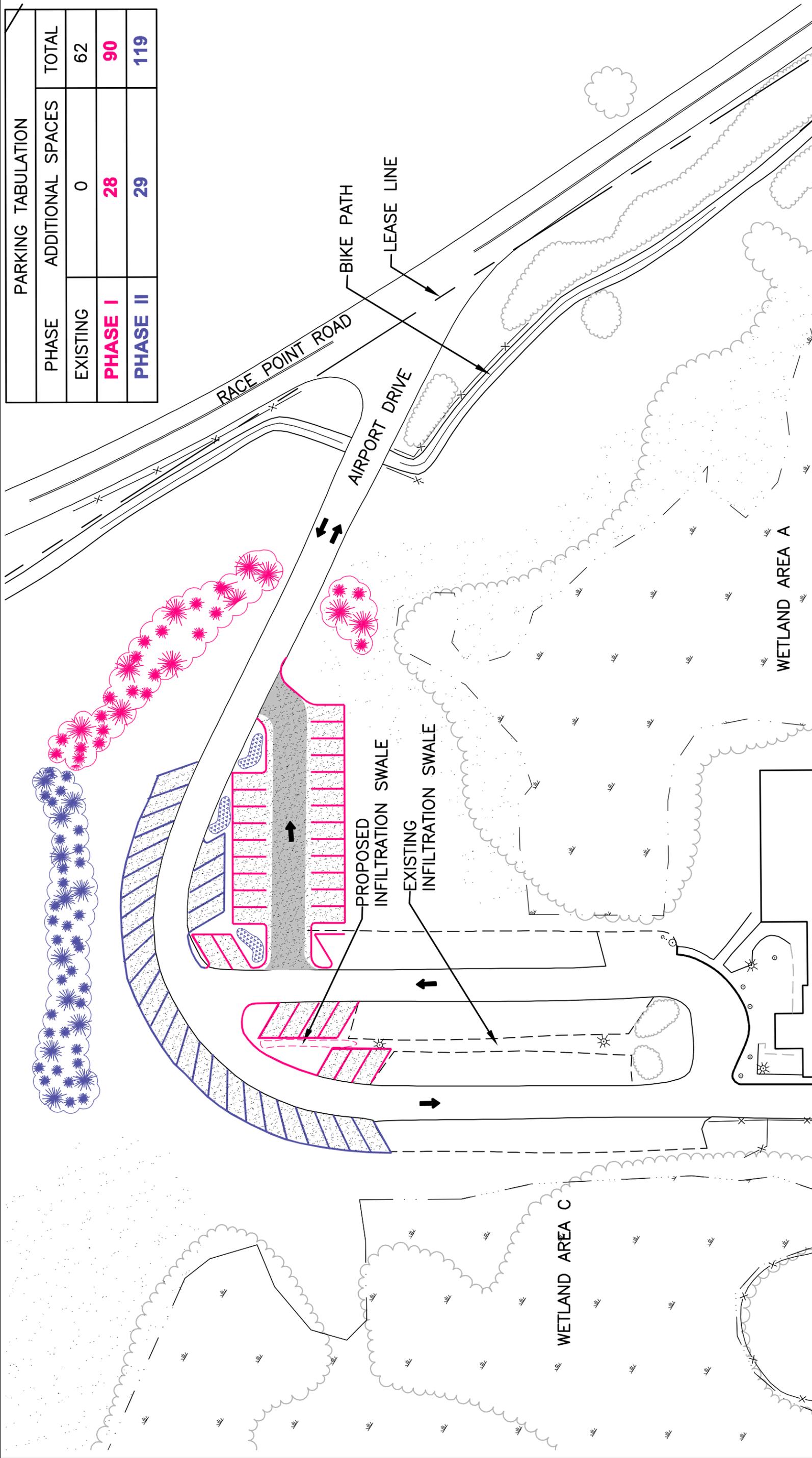
Prepared By:



- EXISTING IMPERVIOUS AREA TO BE REMOVED
- EXISTING IMPERVIOUS PAVED AREA
- EXISTING DUNE AREA
- EXISTING WETLAND AREA
- EXISTING TREELINE
- EXISTING BRUSHLINE

- PROPOSED IMPERVIOUS PAVED AREA
- PROPOSED PERVIOUS GRAVEL AREA
- PROPOSED NATURAL LANDSCAPE BUFFER AREA
- PROPOSED WETLAND IMPACT AREA
- PROPOSED CULTURAL GRASSLAND
- PROPOSED BIORETENTION AREA





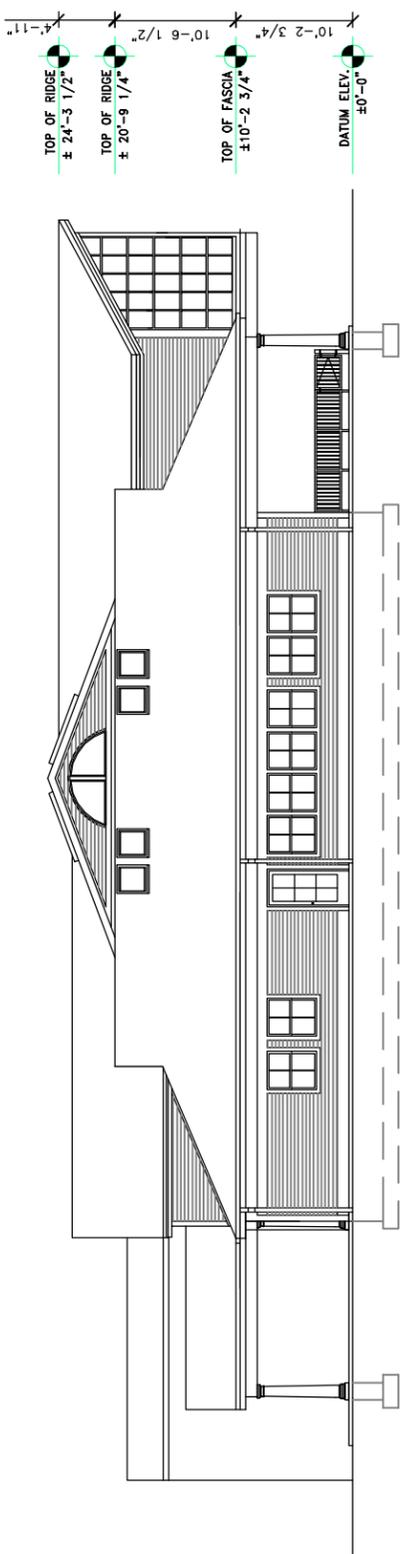
| PARKING TABULATION | | |
|--------------------|-------------------|------------|
| PHASE | ADDITIONAL SPACES | TOTAL |
| EXISTING | 0 | 62 |
| PHASE I | 28 | 90 |
| PHASE II | 29 | 119 |

Prepared By:
JACOBS

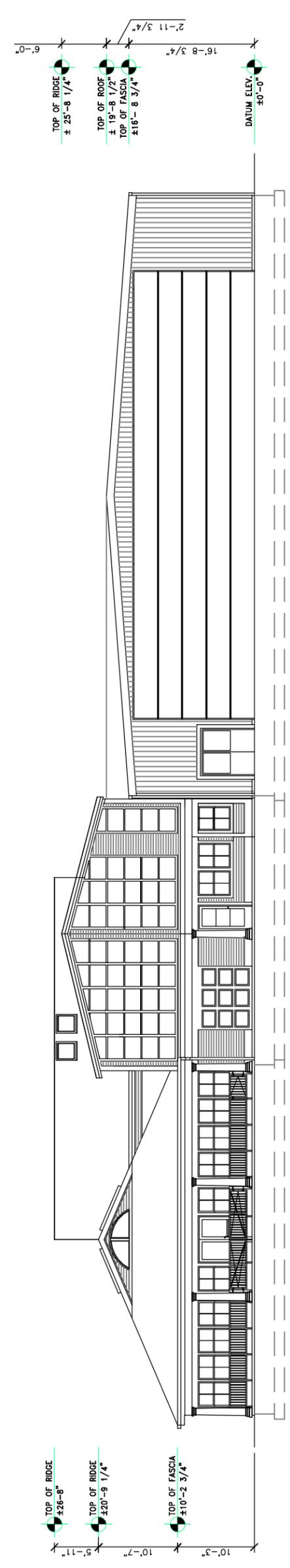
- EXISTING IMPERVIOUS AREA TO BE REMOVED
- EXISTING WETLAND AREA
- EXISTING DUNE AREA
- EXISTING TREELINE/EXISTING BRUSHLINE
- PROPOSED IMPERVIOUS PAVED AREA
- PROPOSED CULTURAL GRASSLAND
- PROPOSED PERVIOUS GRAVEL AREA
- PROPOSED WETLAND IMPACT AREA
- PROPOSED NATURAL LANDSCAPE BUFFER AREA
- PROPOSED BIORETENTION AREA

Approx. Scale: 1"=50'

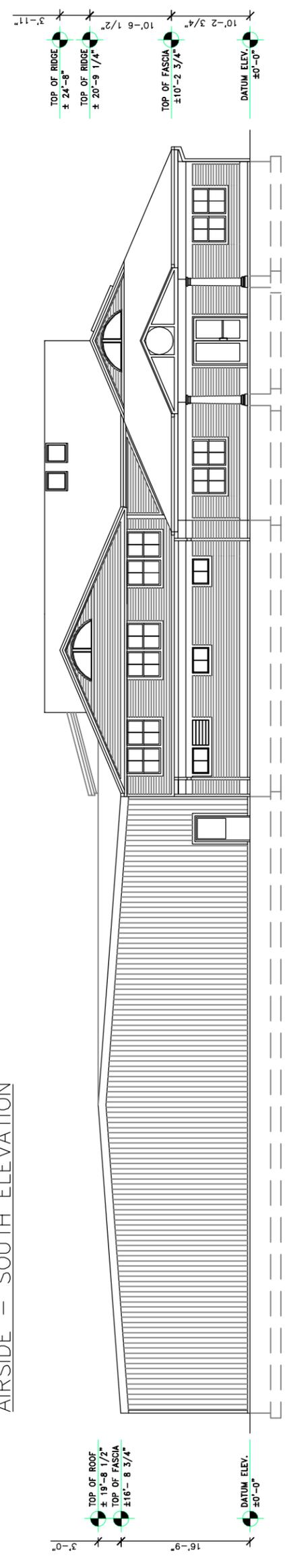
Provincetown Municipal Airport
 Capital Improvements Plan
**AUTO PARKING PLAN
 CONCEPT 4**
 Figure 3.13



VERTICAL CONCEPT 1
WEST ELEVATION



VERTICAL CONCEPT 1
AIRSIDE - SOUTH ELEVATION



VERTICAL CONCEPT 1
ENTRY - NORTH ELEVATION

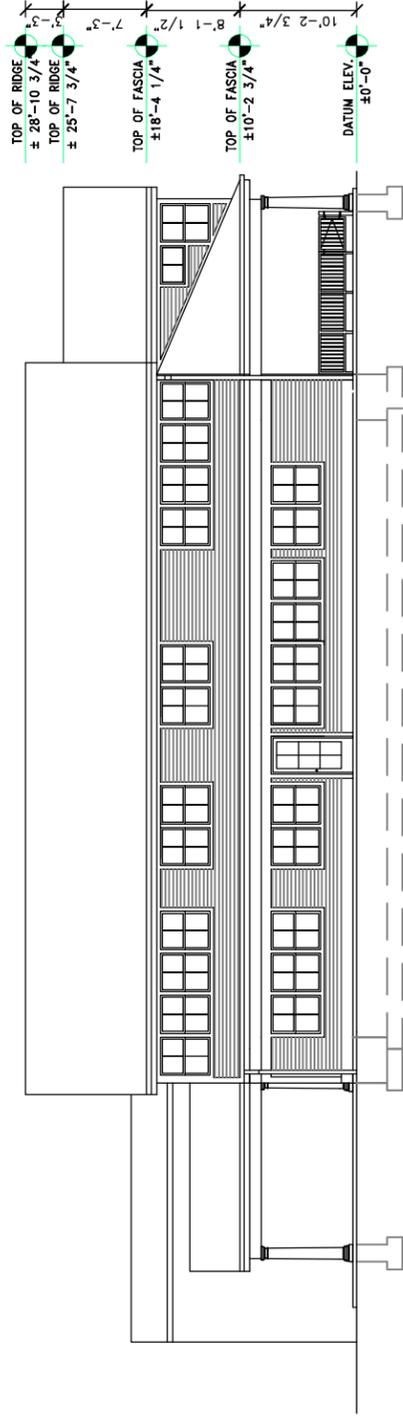
Prepared By:



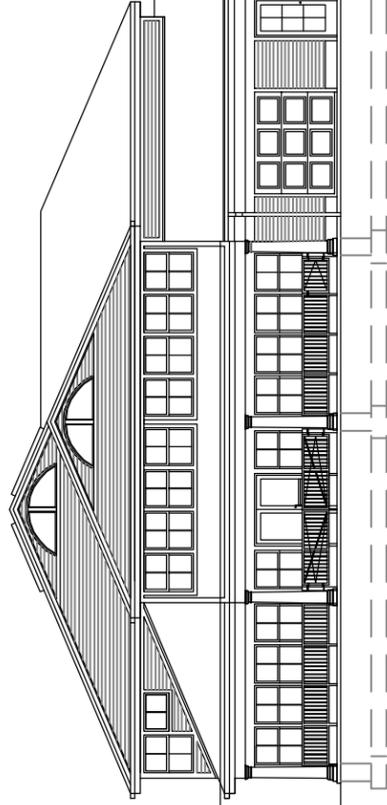
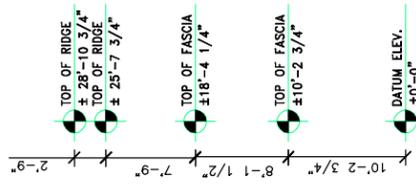
Approx. Scale: 1/16"=1'
0 8 16

Provincetown Municipal Airport
Capital Improvements Plan
AIRPORT TERMINAL BUILDING
VERTICAL CONCEPT 1 ELEVATIONS

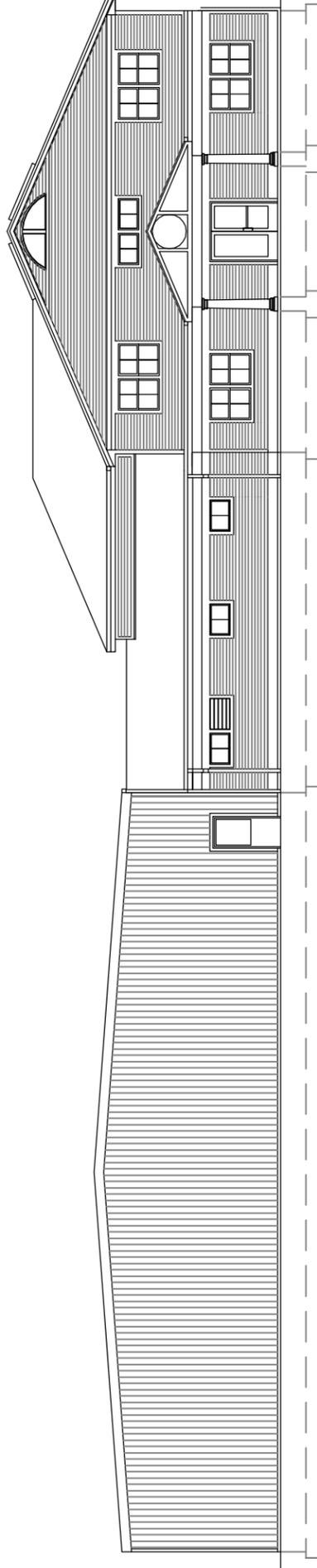
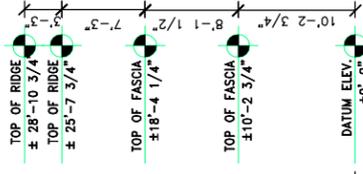
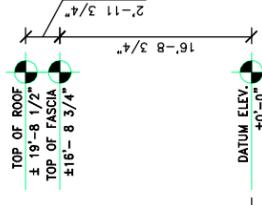
Figure 3.14



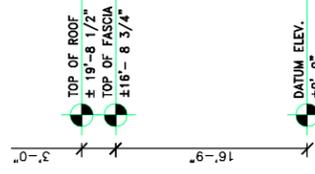
VERTICAL CONCEPT 2
WEST ELEVATION



VERTICAL CONCEPT 2
SOUTH ELEVATION



VERTICAL CONCEPT 2
ENTRY - NORTH ELEVATION



Prepared By:

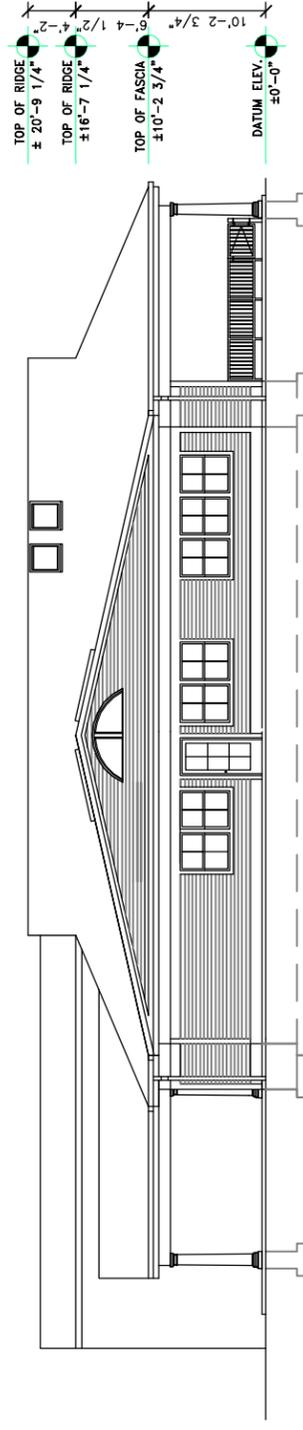


Approx. Scale: 1/16"=1'
0 8 16

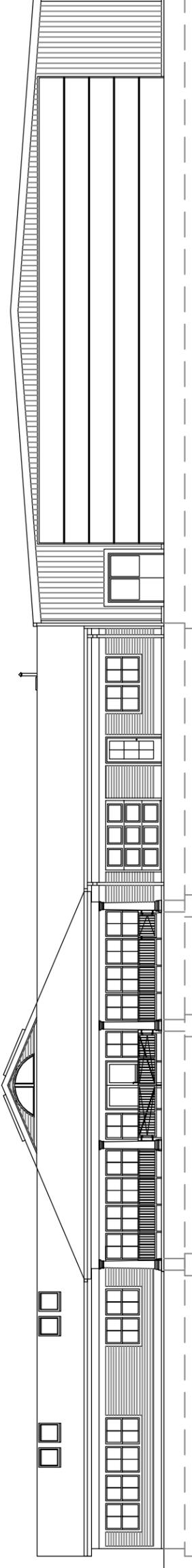
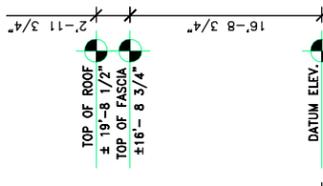
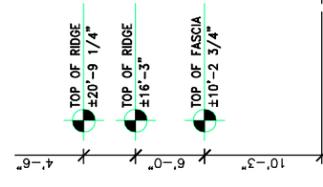
Provincetown Municipal Airport
Capital Improvements Plan

AIRPORT TERMINAL BUILDING
VERTICAL CONCEPT 2 ELEVATIONS

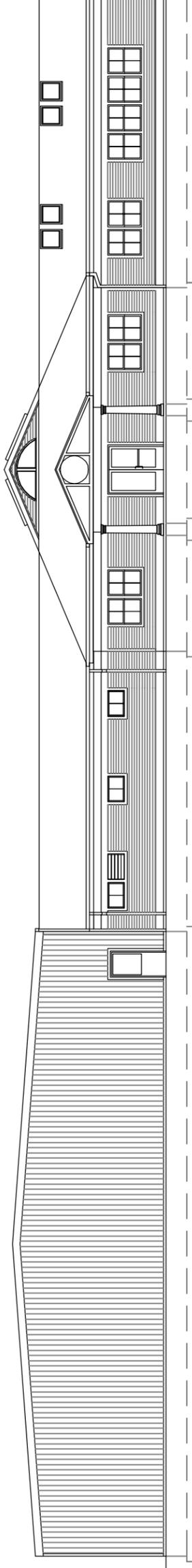
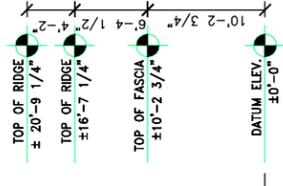
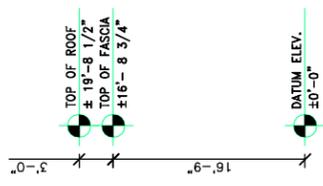
Figure 3.15



HORIZONTAL CONCEPT
WEST ELEVATION



HORIZONTAL CONCEPT
AIRSIDE — SOUTH ELEVATION



HORIZONTAL CONCEPT
ENTRY — NORTH ELEVATION

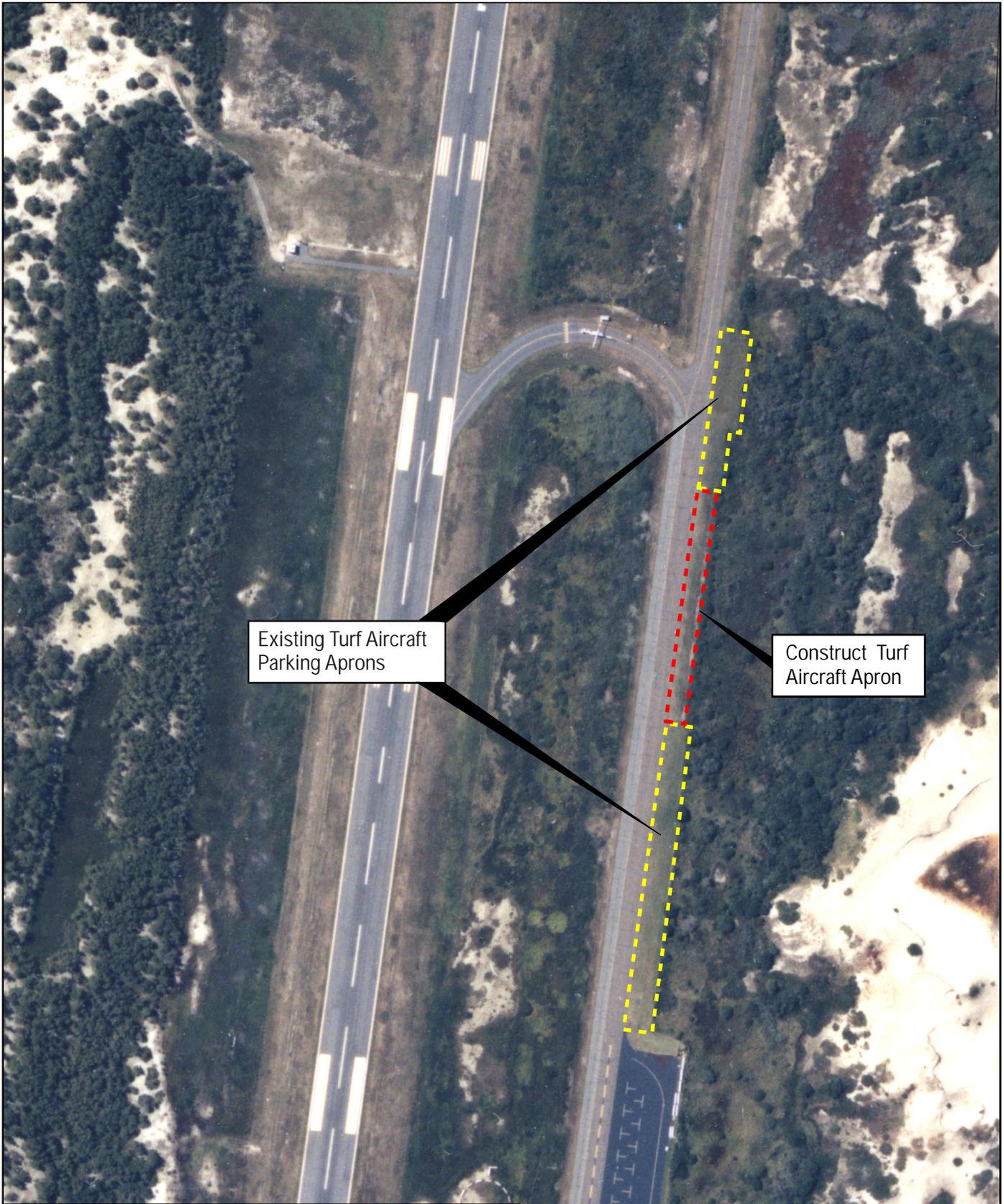
Prepared By:



Approx. Scale: 1/16"=1'
0 8 16

Provincetown Municipal Airport
Capital Improvements Plan
AIRPORT TERMINAL BUILDING
HORIZONTAL CONCEPT ELEVATIONS

Figure 3.16



Existing Turf Aircraft
Parking Aprons

Construct Turf
Aircraft Apron

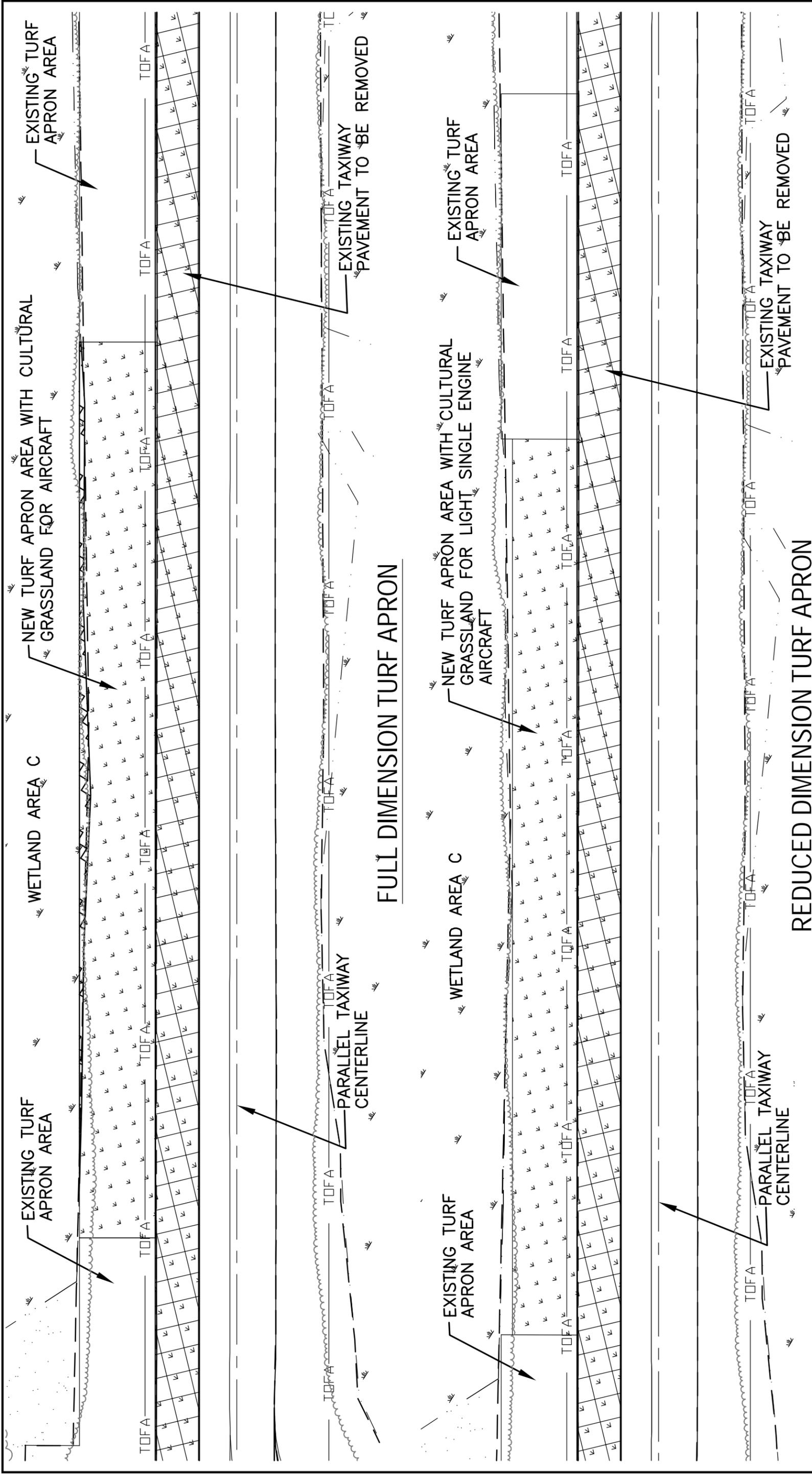
Prepared By:

JACOBSTM

Source: Edwards and Kelcey 2007

Provincetown Municipal Airport
Capital Improvements Plan
Turf Apron Improvements

Figure 3.17

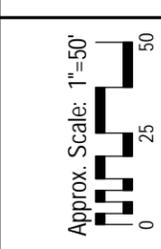


Prepared By:



- EXISTING IMPERVIOUS AREA TO BE REMOVED
- EXISTING WETLAND AREA
- EXISTING DUNE AREA
- EXISTING TRELENE EXISTING BRUSHLINE
- PROPOSED IMPERVIOUS PAVED AREA
- PROPOSED CULTURAL GRASSLAND
- PROPOSED PERVIOUS GRAVEL AREA
- PROPOSED WETLAND IMPACT AREA
- PROPOSED RESTORATION AREA

Provincetown Municipal Airport
Capital Improvements Plan



TURF APRON ALTERNATIVES PLAN

Figure 3.18

SECTION 4.0 AFFECTED ENVIRONMENT

4.1 Introduction

This section provides a description of the existing built and natural environment at the Airport and the immediate surroundings.

4.2 Airport Facilities

The Airport is located in Provincetown, Massachusetts on the northern tip of Cape Cod (Figure 1.2). The Airport is within the Cape Cod National Seashore (CCNS), sited on approximately 322 acres of federally owned land administered by the NPS.

The Airport is a Non-hub Primary Service airport as defined by the FAA National Plan of Integrated Airport Systems. It is a public use, commercial service airport with scheduled Cape Air airline passenger service to and from Logan International, enplaning 10,000 or more passengers annually. JetBlue Airways and Cape Air have formed a marketing partnership. JetBlue has placed its code on flights operated by Cape Air, making it possible for customers to book travel on a single itinerary between Provincetown and other cities that connect through JetBlue at Logan.

The Airport is one of eleven airports in Massachusetts that have a runway with full Instrument Landing System (ILS) approach capabilities. Throughout this document the Airport is referenced using either its 3-letter FAA airport identification code, PVC, or as the Airport. This and other terms are defined in the document and the Glossary provided in Appendix 8.

The Airport consists of developed airside and landside areas maintained for airport facilities and operations, as well as undeveloped areas that consist of grasslands, coastal dunes, and wetlands. The existing environmental resources in the undeveloped areas of the Airport are discussed later in this Section.

Airside Facilities

Airside facilities include a single runway (Runway 7-25), a taxiway system, aircraft parking aprons (ramps), an approach lighting system (MALSF), navigational aids, and weather instrumentation (AWOS). See Figure 4.1, Airside Facilities, for the locations of these facilities.

Runway 7-25 is 3,500 feet long and 100 feet wide. The runway was first paved in 1948. The most recent reconstruction of the runway was completed in 2003 and also included construction of runway safety areas (RSA). The RSAs are now in full compliance with FAA design standards.

The taxiway system provides aircraft with direct routes between the terminal area and the runway. The taxiways at the Airport include a parallel taxiway and three entrance taxiways. The West End and Mid Connector taxiways are jug-handle shaped because at the time they were built, the large tail dragger DC-3 aircraft (no longer in use) was the largest aircraft using the runway. The jug handle shapes allowed the larger DC-3s landing on Runway 25 to exit the runway with a more gradual turn, and the smaller airplanes at somewhat higher speeds. The East End taxiway was reconstructed, but not relocated, as part of the

reconstruction of the runway in 2003. The East End taxiway requires a 200-foot back-taxi to depart from Runway 25.

The aircraft parking aprons at the Airport include both paved and turf aprons. There are two paved parking aprons. One is adjacent to the terminal area (Terminal Apron) and is used to support commercial service at the Airport. The other paved apron (GA Apron), used by general aviation aircraft, is located southwest of the sightseeing shack (discussed later in this section). The two turf aprons are located west of the paved General Aviation apron along the parallel taxiway.

The ILS system consists of a glide slope antenna, the glide slope critical area (a flat area maintained to bounce radio signals), a localizer antenna and its critical area, and an approach lighting system and its critical area. The ILS allows aircraft to land at the Airport when visibility is reduced below three statute miles and ceilings are below one thousand feet. The Airport also has an on-field Automated Weather Observation Station (AWOS).

Landside Facilities

Landside facilities include a terminal building, aircraft hangar, an aircraft rescue and firefighting/snow removal equipment garage (ARFF/SRE), ground support facilities, the former administration building referred to as the Sightseeing Shack, and an auto parking area. See Figure 4.2, Landside Facilities, for the location of these facilities.

The terminal building, reconstructed in 1998, is an approximately 4,800 square foot single story wooden structure with post and beam construction. The terminal provides passenger facilities, Transportation Security Administration (TSA) screening areas, and a conference room. Passenger facilities include vending machines, bathrooms, ticketing counters, passenger queuing space, and passenger circulation and waiting areas. The interior of the terminal is shown in the following photo. Figure 4.3 shows the exterior of the building and the interior floor plan.



Photo 4-1 Interior of Terminal TSA area to right.

The single hangar at the Airport is owned by the Town of Provincetown and operated by Cape Air. Since 1989, Cape Air has been the Airport's Fixed Base Operator (FBO), as well as the commercial service operator for the Airport. The hangar, shown in the following photo, is a 6,000 square foot steel-framed structure that houses a large central bay for aircraft storage. No scheduled maintenance operations are conducted in the hangar. The hangar is attached to the passenger terminal building.



Photo 4-2 The Hangar. Several aircraft can be stored.

The fuel farm, shown in the following photo, is owned by the Town of Provincetown and leased by Cape Air. It is located west of the terminal building and northeast of the sightseeing shack. There is one 10,000-gallon below ground tank. The fuel tank is a double steel walled underground tank with a leak detection monitoring system.



Photo 4-3 The Secure Fuel Pump Station Earth covered fuel tank is in background.

The ARFF/SRE garage, owned by the Town of Provincetown, is located on the east end of the terminal ramp, next to the employee parking lot. The garage is approximately 40 feet wide by 80 feet long, as shown in the following photo. The garage houses the ARFF vehicle and some SRE equipment. Maintenance of these vehicles is conducted by the Town or private contractors, off-airport.



Photo 4-4 ARFF/SRE Storage Garage.

The Sightseeing Shack, owned by the Town of Provincetown, is thought to be the original administration building which was built around 1948. Passengers for the summer sightseeing flights used to wait on the porch but TSA restrictions now require passengers to wait in front of the Terminal until they are escorted to the planes. It includes a small bathroom (now out of service), airfield navigational aid electrical equipment, a Remote Communications Outlet (RCO) for radio signal repeater equipment, and the airfield electric lighting vault. There is a small front porch where GA pilots are requested to register as they arrive, as shown in the following photo.



Photo 4-5 Sightseeing Shack. Photo taken prior to TSA restrictions that now prohibit unescorted access to the building. FAA Communications is in background.

The Airport has free parking for passengers and visitors and an employee parking area. There are 62 automobile parking spaces located in front of the terminal building, on the north side as shown in the following photo. Five of these spaces are allocated for automobile rentals, four are allocated for taxi stands, and three are allocated for handicapped plate (HP) vehicles, with the remaining 50 spaces allocated for passengers and visitors. The central access aisles are paved with bituminous concrete, and the spaces consist of crushed gravel with a cement capstone to indicate individual parking spaces.

There is also a 20-space employee gravel parking area located east of the terminal area that can be seen in Photo 1-7. This parking area has no direct access to the terminal side of the Airport. There is a secure pedestrian gate for authorized employees, which allows access to the secure side of the terminal area. The employee lot consists of crushed gravel with no space boundary markings. There is a bituminous entrance road from Race Point Road leading across the NPS bicycle path into the employee parking area.



Photo 4-6 Entrance to Airport Parking Lot.

The Airport's existing security fencing is located at the east end of Runway 7-25, around the terminal apron and around the fueling station as shown in the following photo.



Photo 4-7 Existing Airport Security Fencing. Locations are indicated in yellow. Employee parking lot is in upper center of photo.

4.3 Transportation (Auto Parking/Aviation Operations/ Transportation Demand Management (TDM) / Pedestrian/Bicycle)

Auto Parking

The Airport parking lot has 62 spaces, including 3 spaces allocated for handicapped plate vehicles and 5 for the rental car company. Employees are required to park their vehicles in a separate, designated area.

Aviation Operations

An Aviation Operation refers to an aircraft arriving or departing the Airport. One aircraft arrival and departure is equal to two operations. In addition to an aircraft taking off or landing, an operation also includes aircraft flying approaches to the instrumentation located at the Airport (touch and go).

The Airport is serviced by Cape Air which is the commercial airline traveling between Boston International and Provincetown Airport. The number of commercial operations varies from four daily flights (eight operations) during the off-season to eight daily flights during the peak season. Previous peak seasons have indicated that up to eight sections (term used for additional planes) could be added to each flight time. This means that there are eight aircraft during one flight schedule period. Sections are added to flights in an on-demand passenger basis to support the number of passengers needing to fly to and from Boston.

The GA operations also vary during peak seasons. The summer months historically account for 75% of annual aircraft activity. There is also a corresponding change in the aircraft type using the airport. During off-season months, the typical aircraft are single engine piston and the twin engine Cessna 402. Summertime aircraft use includes a variety of larger turbine aircraft and helicopters.

The FAA maintains the navigational equipment at the Airport. There is a high demand and use of this equipment during the summer period. The FAA shuts down the runway when working on the majority of airfield navigational equipment during both routine maintenance and during periods that the navigational aids need adjusting. The AWOS navigational facility can be serviced during runway operations if the FAA can locate the service vehicle outside any object free area and away from a navigational critical area.

Transportation Demand Management (TDM) Measures

Currently, there are three measures in place that can be referred to as Transportation Demand Management (TDM) measures. These are rental car availability, taxi cabs, and a shuttle bus service to Provincetown managed by the Cape Cod Regional Transit Authority (CCRTA). A rental car company currently operates out of the Airport and 5 spaces in the parking lot are allocated for rental cars.

The primary taxi cab companies in Provincetown typically have one taxi coordinated with the arrival of the scheduled Cape Air commercial service. The cab companies encourage ride sharing during peak periods with a standard six dollars per person rate to downtown from the Airport.

The Breeze shuttle bus route has included a stop at the Airport during past summers. The shuttle bus schedule was not synchronized with Cape Air commercial flights. Due to funding issues, the shuttle service has been changed from a scheduled service to an “on-call” service.

Currently there is no fee to park at the Airport. Although summer beach visitors occasionally use the Airport parking lot instead of the beach lot to avoid a fee, it is unlikely that the parking capacity for Airport users is affected. At this time there is no plan to implement a parking fee because it would require additional staffing at the Airport.

Bicycles/Pedestrians

Bicycles are typically not a mode of transportation used to go to the Airport. However the Provincetown Airport is immediately adjacent to the Province Lands Bicycle Path, a dedicated off-road paved path that leads most of the way to Provincetown center.

Race Point Road does not have any sidewalks throughout its entire length and pedestrians are allowed to use the bicycle path as a walkway.

4.4 Wetlands and Wetland Buffer Zones

Wetlands

The Cape Cod National Seashore supports a wide variety of marine and freshwater resources formed by the geological events that created Cape Cod, many of which are found within the Provincetown Municipal Airport lands. The geologic characteristics combined with a fluctuating, seasonally-high groundwater table results in seasonal saturation of the upper portion of the soil profile for significantly long periods of time during early portions of the growing season. Inundated and/or saturated soil conditions favor the establishment of hydrophyte-dominant plant communities and the deposition of organic material, which are typical of wetland habitats. Rainfall received during storm events also contributes to saturated soil and inundated land conditions.

Wetland habitats at the Airport include isolated freshwater wetlands dominated by grass and herbaceous species (Palustrine Emergent Wetlands or PEM), shrub-dominated isolated wetlands (Palustrine Scrub-Shrub Wetland or PSS); and isolated freshwater forested wetlands (Palustrine Forested Wetland or PFO) dominated by pitch pine (*Pinus rigida*). These isolated wetlands, ranging in size from a few hundred square feet to several acres in size, are associated with coastal interdunal swales and are often separated from each other by low to moderate dune ridges closer to the airfield and extensive higher dune ridges, oriented approximately parallel to the Airport runway further out from the airfield. Isolated PSS wetlands also occur within the existing airfield, located between the existing taxiways and the runway, and separated from paved surfaces by managed grassland communities of varying width.

The shrub-dominant interdunal wetlands (PSS), which are the predominant type of wetland habitat at the Airport, have a non-tidal, seasonally or temporarily flooded water regime. The relatively dense shrub communities include plant species such as winterberry (*Ilex verticillata*), red maple (*Acer rubrum*), meadowsweet (*Spiraea latifolia*), highbush blueberry (*Vaccinium corymbosum*), northern bayberry (*Myrica pensylvanica*), red chokeberry (*Aronia* spp.), and American cranberry (*Vaccinium macrocarpon*), which often occurs in dense mats. Herbaceous plants observed frequently among the Airport wetlands include sphagnum moss (*Sphagnum* spp.), various sedges (*Carex* spp.), rushes (*Juncus* spp.), cinnamon fern (*Osmunda*

cinnamomea), royal fern (*O. regalis*), and sensitive fern (*Onoclea sensibilis*), common reed (*Phragmites australis*), wide-leaf cattail (*Typha latifolia*), woolgrass (*Scirpus cyperinus*), and various goldenrods (*Solidago* spp.).

Within the pitch pine-forested area between the runway and the steep coastal dune habitat to the southeast of the Airport managed areas, there is an extensive mosaic of additional interdunal forested wetland swales. Within these freshwater wetlands, pitch pine has adapted to the seasonally saturated conditions and is considered a local wetland indicator species.

In the far western reaches of the Airport, there is a larger wetland system (Wetland C/J/FK) that transitions along a salinity gradient from a freshwater system (PEM-PSS-PFO) to a brackish system (primarily PEM, trending toward Estuarine Emergent Marsh or EEM) as groundwater seeps are met with the tidal influence of the Hatches Harbor estuarine system. Brackish portions of this wetland system are dominated by a non-native invasive species, common reed (*Phragmites australis*). Efforts to control and manage this invasive plant community were implemented in the early 2000s through the Hatches Harbor Restoration Project, and areas of *Phragmites* die-back with an emerging salt marsh community can be observed along the landward-reaches of the restored salt water regime influence. One small area of this emerging salt marsh plant community was identified and delineated in the field (“SM”). Wetland areas in the vicinity of the proposed project footprints for each project element, including potential alternative locations, were delineated in the field and are depicted on Figures 4.4 and 4.5 found at the end of this section. Wetland areas are also identified on figures in Sections 3 and 6.

It should be noted that the wetland areas at the airport are protected and regulated under several different wetlands laws, including the Federal Clean Water Act (33 U.S.C. 1251, et seq.), the Massachusetts Wetlands Protection Act (M.G.L. Ch. 131 § 40), the Town of Provincetown Wetlands Protection Bylaw (Chapter 12 of the Provincetown General Bylaws), and the Cape Cod Commission Act (Chapter 716 of the Acts of 1989). During the earlier planning stages of the Airport CIP projects, the Airport delineated only those wetland areas in close proximity to the proposed project elements and/or their alternative locations within the 322-acre Airport site. Each wetland area was assigned a unique alphabetical designation.

The wetland areas have been reviewed and approved by the local Provincetown Conservation Commission under state and local wetlands laws, specifically through an Abbreviated Notice of Resource Area Delineation (ANRAD). The Order of Resource Area Delineation (ORAD) was issued on January 25, 2007, and was recently renewed until January 2013. The U.S. Army Corps of Engineers has also issued a Preliminary Jurisdictional Determination (JD) under the Federal Clean Water Act, acknowledging the presence of “waters of the United States” at this site. A complete description of all delineated wetland areas and copies of the state and local wetlands approvals and the Preliminary JD are provided within Appendix 2. A brief description of the affected wetlands is provided below.

The West End TW is situated adjacent to Wetland C/J/FK (a transitional PSS-PEM in this location) and Wetland I (a scrub-shrub community), and is separated from these wetlands by managed grasslands. Vegetation within each of these wetland areas is maintained for Airport safety. As noted above, seaward portions of Wetland C/J/FK are tidally-influenced and evidence of dieback due to an increase in salinity near this TW End has been observed. Wetland I is non-tidal and has a seasonally or temporarily flooded water regime. Vegetation within Wetland C/J/FK in this location includes winterberry, arrowwood (*Viburnum*

dentatum), meadowsweet, blue-joint (*Calamagrostis canadensis*), American cranberry, and rose (*Rosa* sp.). Lesser amounts of purple loosestrife (*Lythrum salicaria*), wide-leaf cattail (*Typha latifolia*), and woolgrass are also present, along with significantly large communities of common reed. Vegetation within Wetland I includes red chokeberry, winterberry, meadowsweet, stepplebush (*Spiraea tomentosa*), highbush blueberry, American cranberry, bayberry, and poison ivy (*Toxicodendron radicans*). Relocation of the West End TW will occur within a portion of Wetland I, while portion of the safety/security fence and the improvements to the access road for the MALSF approach lights will occur within freshwater portions of Wetland C/J/FK.



Photo 4-8 Coastal Intertidal Marsh Community.

The view is south of runway with pitch pine dune habitat to the right.

The East End TW is adjacent to Wetland B. As with Wetland I, this isolated wetland is separated from impervious surfaces to its north, west, and south, by managed grasslands, and is bounded by low dune habitat to its southeast, east, and northeast. Plant species observed within Wetland B included American cranberry, highbush blueberry, dangleberry (*Gaylussacia frondosa*), meadowsweet, winterberry, pitch pine, willow (*Salix* spp.), various sedges and rushes, and small patches of common reed. Relocation of the East End TW and a portion of the security/safety fence will occur within portions of Wetland B.

Wetland C, which is one of the larger isolated wetlands at the Airport, is located immediately north of the existing partial parallel taxiway. This wetland is non-tidal and seasonally or temporarily flooded. This wetland is largely a scrub-shrub community, interspersed with emergent marsh habitat within its interior. Portions of Wetland C are managed to maintain Airport safety areas. Commonly observed plant species within this wetland included winterberry, arrowwood, meadowsweet, blue-joint, American cranberry, and rose. The easternmost corner of Wetland C, nearest the Airport terminal building and parking lot, is a forested palustrine habitat (PFO) supporting a mature community of willow trees. A portion of the security/safety fence will occur within a portion of Wetland C.

Wetlands L and K, located south of the Airport runway and adjacent managed grasslands, comprise a large isolated forested freshwater wetland (PFO) that gradually transitions to a scrub-shrub community in the southern and eastern portions of these wetlands. This wetland system is separated from surrounding isolated wetlands by low dune ridges and pockets of dune communities are found within its interior. Forested areas are dominated by pitch pine with a sparse shrub community and a groundcover dominated by cranberry. The northernmost portions of Wetland L are subject to vegetation management practices to maintain Airport safety zones, and woody vegetation is periodically cut once it reaches above a certain height. In these areas, the habitat is maintained as a PSS-PEM wetland community. Wetland K is largely open within its interior, supporting an emergent marsh community dominated by cranberry and various sedges and a small amount of common reed. Wetland K has been observed to support standing water throughout the year. A portion of the security/safety fence will occur within portions of Wetlands L and K, although not within the portion of Wetland K that supports year-round standing water.



Photo 4-9 Cranberry-Pine Swales. This is considered a local wetland habitat type.

A series of smaller isolated wetlands interspersed with low rising dune ridges occupies the southeastern corner of the Airport. Smaller wetlands are occupied primarily by a few pitch pines with cranberries and occasional sedges, while moderate-sized wetlands are often forested along the perimeter with open cranberry swales intermingled with dense areas of shrubs toward the interior. Each of these wetlands is supported by a non-tidal, seasonally wet hydrologic regime. A portion of the security/safety fence will occur within portions of this series of freshwater wetlands, specifically within Wetland DB/FG, Wetland E/DD, and Wetland BC/F.

Wetland Buffers

Buffer zones, the upland (non-wetland) areas surrounding a wetland that often separate the wetlands from developed areas, also occur at the Airport. In accordance with certain state, regional, and local wetlands protection bylaws and regulations, most, if not all of the wetland areas found at the Airport are afforded a 100-foot jurisdictional buffer zone. The Corps, while not asserting jurisdiction over wetland buffers, recognizes the importance of maintaining undisturbed buffers around wetlands to further their protection.

In general, the jurisdictional 100-foot buffer zone to the wetland areas at the Airport consists of one or more of the following elements: undisturbed, naturally-vegetated coastal dunes, managed grasslands, impervious surfaces (buildings, pavement), or in some cases, where wetland areas are in close proximity to each other, the 100-foot jurisdictional buffer zone to one wetland may encompass one or more of the adjacent wetland areas. The collective 100-foot jurisdictional buffer zone to the wetland areas is depicted on Figure 4.5 at the end of Section 4.0. Areas of affected buffer zone are also identified in this figure.

4.5 Floodplain

In 1930, a dike was constructed across the Hatches Harbor salt marsh to restrict tidal flow to approximately 200 acres of salt marsh in an attempt to control salt marsh mosquitoes. In the 1940s the Airport was constructed on land that was filled in behind the dike. The Airport is within the 100-year floodplain as designated on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map dated 1985.

The Hatches Harbor Restoration Project was begun in the 1990s by the NPS in partnership with the Town of Provincetown to restore up to 90 acres of salt marsh behind the dike. Several local, state, and federal agencies approved the salt marsh restoration plan. During the winter of 1998-99, new culverts with adjustable tide gates were installed in the dike to gradually allow tidal flow into the marsh.

The isolated freshwater wetlands on the site are presumed to be Isolated Land Subject to Flooding (ILSF).

4.6 Coastal Dunes

Coastal dune habitats at the Airport can be classified as Maritime Dune, Maritime Shrubland, or Maritime Pitch Pine on dunes, as described in the Classification of the Natural Communities of Massachusetts published by the Massachusetts Natural Heritage & Endangered Species Program (NHESP). Dunes are hills of sand generally parallel to the coastline, which form a natural barrier between the sea and the mainland. The composition and structure of the vegetation depend on the dune stability. The dune closest to the beach is called the primary dune. Secondary dunes are landward of the primary dune.

The coastal dune habitats located along the lease line to the northwest of the airfield are mapped within the boundaries of the Race Point barrier beach system. Although the barrier beach system includes both primary and secondary dune habitats, there are no primary dunes located within the Airport lease area. Dunes north of the Airport are generally vegetated with American beachgrass and common hairgrass in open exposed areas. Occasionally, seaward-facing slopes (both primary and secondary dunes) are completely devoid of vegetation. Topography among these dunes varies widely from nearly flat to steeply sloping.



Hensley Willett Group

Photo 4-10 Open Coastal Dune Habitat The dunes along the northern lease line range from steeply sloping (on the left) to nearly flat (foreground).

The coastal dune habitats located to the southeast of the airfield are secondary coastal dune habitats that are not within the barrier beach system. While the topography among these secondary dunes is equally varied, the more stable substrate of these areas supports a greater diversity of vegetative species, including trees and shrubs. It is in these areas that communities of Maritime Pitch Pine on Dunes and Maritime Shrubland occur to varying degrees. Coastal dune areas are indicated on Figure 4.4.



Photo 4-11 Pitch Pine on Coastal Dune habitats located to the southeast of the Airfield include a mosaic of pitch pine and open areas.

4.7 Cultural Grasslands

Cultural Grassland habitat, shown on Figure 4.4, at the Airport includes primarily Cultural Grassland with incipient (or developing) Sandplain Grassland and/or Sandplain Heathland. Cultural Grasslands result from the Airport's active mowing of the airfield's operational safety areas, in compliance with FAA regulations, and

occur adjacent to the taxiway and runway. These areas are mowed frequently to maintain runway and taxiway safety areas as well as the clear surfaces for navigational instrumentation. Sandplain Grasslands are open communities with grasses and occasional small shrubs, which are maintained naturally by fire and salt spray, and less frequently by vegetation pruning. Sandplain Heathland is open with shrubs and low-growing trees such as scrub oak. Additional information on the grassland habitats at the Airport is provided in the wildlife habitat report in Appendix 2.



Photo 4-12 Cultural
Grassland.

These areas adjacent to the parallel taxiway are maintained for safety.

4.8 Rare Species Habitat

There are no federally listed or proposed endangered or threatened species that have been identified at the Airport. The beaches north and west of the Airport are known to support federally-threatened piping plovers. Piping plovers are closely monitored by the NPS. They nest and forage primarily along the shoreline and, at lower densities, within the dunes and cobble fields south of the shoreline and adjacent to the Pole Line Route sand road. Plovers in these more interior areas frequently forage in the Hatches Harbor system. However, plovers have not been known to nest or forage in or adjacent to the Airport. The NPS has indicated that they treat all State-listed species (as listed by NHESP) the same as any Federally-Threatened or Endangered species, and, in addition to minimizing impacts, will seek to further their protection along with promoting their recovery and security on a Federal level.

The Massachusetts Natural Heritage Atlas (October 2008) maps the entire Airport lease area within both Priority Habitat of Rare Species and Estimated Habitat of Rare Wildlife and Certified Vernal Pools. These designations are made by the Massachusetts Division of Fisheries and Wildlife, NHESP. Based on observations made by NPS biologists and submitted to NHESP, the Airport is mapped for four State-listed rare species: Eastern Box Turtle, Eastern Spadefoot Toad, Vesper Sparrow, and Broom Crowberry. To support the preparation of the EIR/EA and permit applications, species-specific surveys were performed by the Horsley Witten Group (HW) between 2004 and 2005, and again in 2008. General wildlife habitat assessments were

performed by HW staff between 2004 and 2006, with additional data gathered in 2007 and 2008. All habitats encountered were evaluated for their ability to provide suitable habitat for rare species. Of these four species, HW staff recorded a population of Broom Crowberry within the managed Cultural Grasslands near the glide slope antenna, and a single female Eastern Box Turtle was observed in June 2007. The presence of the other two species at the Airport, however, is confirmed in records of the NPS.

Habitat requirements for each of the four species and the location of potential habitat for rare species are discussed below. Figure 4.6, taken from the Natural Resources Inventory and Rare Species Habitat Assessment Report, provided in Appendix 2, depicts the approximate areas of potential habitat within the Airport lease area for each of the four species based upon field observations and supplemented with available source data from MassGIS for areas not assessed in the field. Since the filing of the DEIR, additional habitat assessments were conducted for the Eastern Spadefoot Toad to further refine potential habitat areas. The updated habitat information is reflected in this document.

Broom Crowberry

Broom Crowberry is a Massachusetts Species of Special Concern. It is a low-growing, densely branching evergreen shrub that inhabits open areas (low shrub communities or sandy flats, as well as dry pitch pine/scrub oak barrens and relic sand dunes). The NHESP-described natural communities with which this species is associated include Sandplain Heathland and Pitch Pine – Scrub Oak Communities. Broom Crowberry was previously reported at the Airport in the managed Cultural Grassland habitat. The presence of a small population of Broom Crowberry was confirmed within the Cultural Grassland area that is maintained for the glide slope critical area. Potential habitat for this species is located throughout the Airport lease area (outside of the wetland areas), although no additional individuals or populations of Broom Crowberry have been encountered.

Eastern Box Turtle

The Eastern Box Turtle is a Massachusetts Species of Special Concern. This small terrestrial turtle uses a relatively wide range of habitats, including woodlands, field edges, thickets, and wetlands. Optimal habitats on Cape Cod include pine barrens and oak thickets, where box turtles are associated with cranberry-dominated swales. This species would be considered a generalist in the context of habitat preference, and potential habitat for this species is found throughout the Airport lease area.

As noted above, a single individual Eastern Box Turtle was observed during an on-site meeting in June 2007. Suitable habitat for this species is present, particularly in areas within the southern portions of the Airport, which are classified as Maritime Dune and Coastal Interdunal Marsh/Swale communities. Here, foraging habitat and abundant food sources are found within close proximity to open areas of sand suitable for nesting habitat. All pitch-pine dominated habitats, including the cranberry-pine swales, as well as the lower slopes of the pitch pine and oak-dominant dune habitats provide potential habitat for Eastern Box Turtles.

Eastern Spadefoot Toad

The Eastern Spadefoot Toad is a Massachusetts Threatened Species. Reported habitat for this medium-sized toad species includes dry sandy or loose soils in areas of sparse shrub growth of open forest areas with adjacent shallow, temporary pools that provide breeding habitat. Portions of the Airport provide suitable habitat features

for this species, particularly south and southeast of the Airport runway and, as noted above, presence of this species has been observed at the Airport by NPS biologists. A detailed habitat suitability study was conducted by HW field biologists in the spring of 2008 to identify prime and potential breeding habitat for this species at the Airport. HW worked in conjunction with Brad Timm, Ph.D. candidate and Eastern Spadefoot Toad specialist, to complete the field surveys of Eastern Spadefoot Toad habitat and to update the habitat maps included within this document (see Figure 4.7, and Appendix 2).

Vesper Sparrow

The Vesper Sparrow is designated as a Threatened Species in Massachusetts. This small sparrow is reported to inhabit open areas (cultivated fields, grasslands, fallow fields, and pastures), as well as Sandplain Heath lands. This species was not observed during the 2004-2006 habitat surveys, but has been recorded during prior surveys. Potential habitat for the Vesper Sparrow occurs within the managed Cultural Grasslands adjacent to the Airport runway, taxiway, and runway approach areas and the immediately adjacent maintained shrub thickets, as well as throughout the open grassy dune habitats to the north and west of the Airport. Regular mowing of the Cultural Grasslands as part of routine Airport maintenance, in part, provides suitable habitat for this species.

4.9 Drainage/Stormwater Management

Approximately six percent of the 322-acre airport site is paved. All stormwater runoff from the facility is discharged on site, through runoff infiltration. The Airport is located within the CCNS, and as such all waters (and wetlands) in and adjacent to the CCNS are designated Outstanding Resource Waters (ORW) pursuant to 314 CMR 4.06, Cape Cod Coastal Drainage Area.

Stormwater runoff from the runway, taxiways, GA paved apron, and most of the terminal apron drains via sheet flow to surrounding grass areas and infiltrates to underlying sandy soils. Salt and sand are not applied by the Airport to these paved areas.

Roof drains from the terminal building, hangar, and equipment garage all flow to the ground and either drain off the pavement and infiltrate into the ground or flow into the catch basins.

The stormwater drainage system on the terminal apron towards the ARFF/SRE garage consists of two catch basins, associated outfalls, and a trench drain, which drains into the outflow pipe for one of the catch basins. These structures collect sheet flow from small areas of the apron in front of the terminal and ARFF/SRE garage to prevent flooding and/or icing. The catch basins and trench drain have been fitted with a filtration system to intercept petroleum-based pollutants from the stormwater runoff. The filtration system contains adsorbent material that is an inert blend of minerals known as amorphous alumina silicate, which removes pollutants.

There are two automobile parking lots on the Airport property. The main parking lot, located on the north side of the terminal building, has paved traffic aisles with the parking spaces and median unpaved. The median is also equipped with a gravel swale to facilitate drainage. The smaller lot, for employee parking was constructed in a similar manner.

A Stormwater Pollution Prevention Plan (SWPPP) and a Spill Prevention Control and Countermeasures Plan (SPCCP) have been prepared for the Airport. The draft SPCCP is included in Appendix 3.

4.10 Visual Environment

The visual environment of the Airport consists of the underlying landform and the land cover (both natural and man made development). The underlying landform consists of a relatively flat floodplain surrounded by low undulating topography with long views and an open feeling. The sand dunes, grasslands and tidal flats with long views of the water and sky are defining natural landforms.

The existing visual environment of the Airport consists of a combination of natural and man made features. The visual appearance of the landscape is dependent upon the underlying landform and its land cover. The natural elements include coastal dunes, grasslands, wetlands, and the Hatches Harbor salt marsh. The vegetation cover includes grasses, shrubs, and thickets of pitch pine and scrub oak. Beyond the immediate areas surrounding the Airport facilities views of the ocean can be seen.

Since 1947, the Airport has been a component of the man made visual environment of the Outer Cape. The man made elements within the Airport include several buildings of various sizes such as the Terminal Building, the hangar, the maintenance equipment building, and Sightseeing Shack. Additional vertical elements at the Airport include the FAA instrumentation tower and light poles. The Airport area also has flat horizontal elements including the runway, the system of taxiways, and aircraft parking areas, as well as auto parking areas.

Nearby man-made elements include NPS buildings such as the Old Harbor Life Saving Station, the Province Lands Visitor Center and its 170 car parking lot, as well as the tiered, approximately 340 car parking lot for Race Point Beach. Paved roadways, including Race Point Road and Province Lands Road, and the NPS bike path are also man-made elements within the visual environment.

An assessment of the existing visual environment is provided to support the evaluation of visual impacts to the environment. The Airport and adjacent areas were divided into Visual Assessment Units. The Visual Assessment Unit is a combination of a specific landscape element and the surface area visible from a given viewpoint (viewshed). These Units provide a framework for the assessment of visual resources and potential impacts. Since a characteristic of the CCNS is the vast spatial extent, one of the Units is the distant horizon. The Units are illustrated in the accompanying photos.

The Units are discussed below in terms of landscape character, quality, and viewer groups. The dominance of form, the scale and diversity of elements, and continuity of the texture and color of the landscape form landscape character. Three elements that contribute to landscape quality include: Vividness, Intactness, and Unity. Vividness is the impression received from the visual pattern of contrasting elements. Intactness relates to the visual order of elements. Unity is the degree to which elements combine to form a harmonious visual pattern.

Viewer groups are defined in this document to include Airport user groups with a view from the airfield and terminal area as well as groups with a view of the Airport area (airfield and other currently non-secured undeveloped areas within the lease area) from various view points. Although views of the Airport are visible by users of Race Point Road, the duration of the view is limited and for that reason, users of the road are not

included as a specific viewer group. Users of the road are likely to be included in one of the following viewer groups:

- A. Visitors at the Province Lands Observation Platform
- B. Visitors at Race Point Beach Parking Area
- C. Hikers / Hunters/ Off-road users
- D. Users of the bike path
- E. Commercial airline users
- F. Passengers on sightseeing flights

Visual Assessment Units

1. Airfield

The airfield includes the runway, taxiway system, aircraft parking areas (referred to as aprons or ramps), managed grassland safety areas, the weather/navigation equipment within the infields, and sections of existing security fence. The airfield is of a uniform flat topography. Even though the area includes unpaved and paved areas, the visual character is one of uniform color, line, and texture because the specific elements are in the same horizontal plane and are similar in color except for the AWOS which is required to be a bright color. The overall airfield can only be seen from a distance by viewers in planes or at the NPS Visitor Center's observation platform. From that perspective individual elements are not very distinct. The overall airfield can be seen by Viewer Groups A, E, and F. On the ground, a small portion of the airfield at the end of Runway 25 can be seen by viewer group D. Hikers and hunters may experience views of portions of the airfield, but this is not an authorized public viewpoint and has not been included in this evaluation.



Photo 4-13 View of Airfield runway.



Photo 4-14 View of Taxiway and GA Apron.

2. Airside Terminal Area

The airside terminal area consists of the Airport buildings and terminal apron. The buildings include the airside portion of the terminal building (back) with the terminal aircraft parking apron, the hangar, the equipment building, the TSA trailer, and the Sightseeing Shack. The colors of the buildings and roofs are muted pinks, grays, and whites which blend in with the surrounding muted colors of the sand dunes, vegetation and ocean.

The airside terminal area can be seen from several viewpoints. From a distant viewpoint at the Province Lands Visitor Center observation deck, the buildings tend to flatten and have less mass. Within this viewshed, Race Point Road is a dominant visual element, along with the Beach parking area, and the horizon with the vertical elements of the former NPS Coast Guard buildings in the distance at Race Point Beach as seen in Photo 4-9.

Users of the CCNS Race Point Beach parking area also have a view of the landside terminal area which is discussed next, along with the auto parking visual assessment unit.

The airside of the Terminal Building can be seen at a distance by Viewer Groups A, E, and F. From a distance the height of the buildings is not evident and the color of the roofs and siding match the surrounding color scheme of the landscape.



Photo 4-15 Airside Terminal Apron Area. The ARFF/SRE garage is in the background with the fueling area on the left.



Photo 4-16 View from Visitor Center Observation Deck. Race Point Road is in the center and the Airport is on the left.



Photo 4-17 Airside Terminal and Apron

3. Airport Auto Parking Area and Landside Terminal Entrance

The auto parking area for the Airport is located at the front public (landside) entrance to the terminal. The lot has a paved access with a gravel base for the angled parking spaces.

The parking area can be seen from Race Point Road and the CCNS Race Point Beach parking lot, as well as by users of the bike path (Viewer Groups B and D). The parking area is also one of the visual elements in the Race Point Road intersection assessment unit discussed below. These viewer groups are within the viewshed for a short period of time and are generally on their way to other recreational areas. The parking lot cannot be seen from the observation platform and cannot be seen by users of the beach, two places where viewers tend to stay for a longer period of time.



Photo 4-18 View from NPS Beach Parking Lot. Terminal Area is in the background.



Photo 4-19 View from Bike Path. Auto parking area and Terminal entrance is in the background.



Photo 4-20 Terminal Entrance



Photo 4-21 Entrance to Airport Parking Area

4. Coastal Dunes

Coastal dunes are the predominant visual element within the Airport lease area and the Outer Cape in general. The dunes are seen from every viewpoint and at various distances. Views of the coastal dunes are provided in many photos in this section and throughout the document.



Photo 4-22 GA Parking Apron. View of northern dunes from East End taxiway.

5. Freshwater Wetlands

Although there are many isolated wetland areas within the Airport lease area, the areas are not immediately recognized as wetlands since they do not have large expanses of open water with marsh-like vegetation such as seen in the salt marsh area discussed below. The areas can be visually striking as seen in the following photo but tend to be seen visually as part of the coastal dune habitat, especially during dry periods. Additional photos of the wetlands are provided in the previous Section 4.3.



Photo 4-23 Northern Dunes. Isolated wetlands and dunes north of terminal.

6. Hatches Harbor Salt Marsh

Hatches Harbor is an approximately 200-acre salt marsh located west of Runway 7-25. Because of the topography, it is not readily seen from the ground except along the dike road, which is only accessible to hikers and off-road vehicles. The marsh can be seen in the cover photo.

7. Intersection of Race Point Road / Airport Access Drive / Beach Parking Lot Access Drive and Bike Path

Race Point Road is the main access road to the Airport and Race Point Beach. It is a two lane paved roadway that is maintained year round. Much of the roadway length is bordered by pitch pine forest. The view opens up as it enters the sandy open coastal dune habitat. At the intersection of Race Point Road, Airport Drive, the bike path, and the Beach parking lot driveway, views of the landside portions of the Airport and parking lot are visible as well as the FAA communication tower. Also within this visual unit are signs to the beach parking lot and other attractions.



Photo 4-24 Aerial View. Airport is at bottom of photo and NPS Race Point Beach Parking Lot is at the top of photo.



Photo 4-25 Race Point Road Intersection with Airport Entrance.



Photo 4-26 Airport Entrance Drive. Intersection with bike path.

8. Horizon

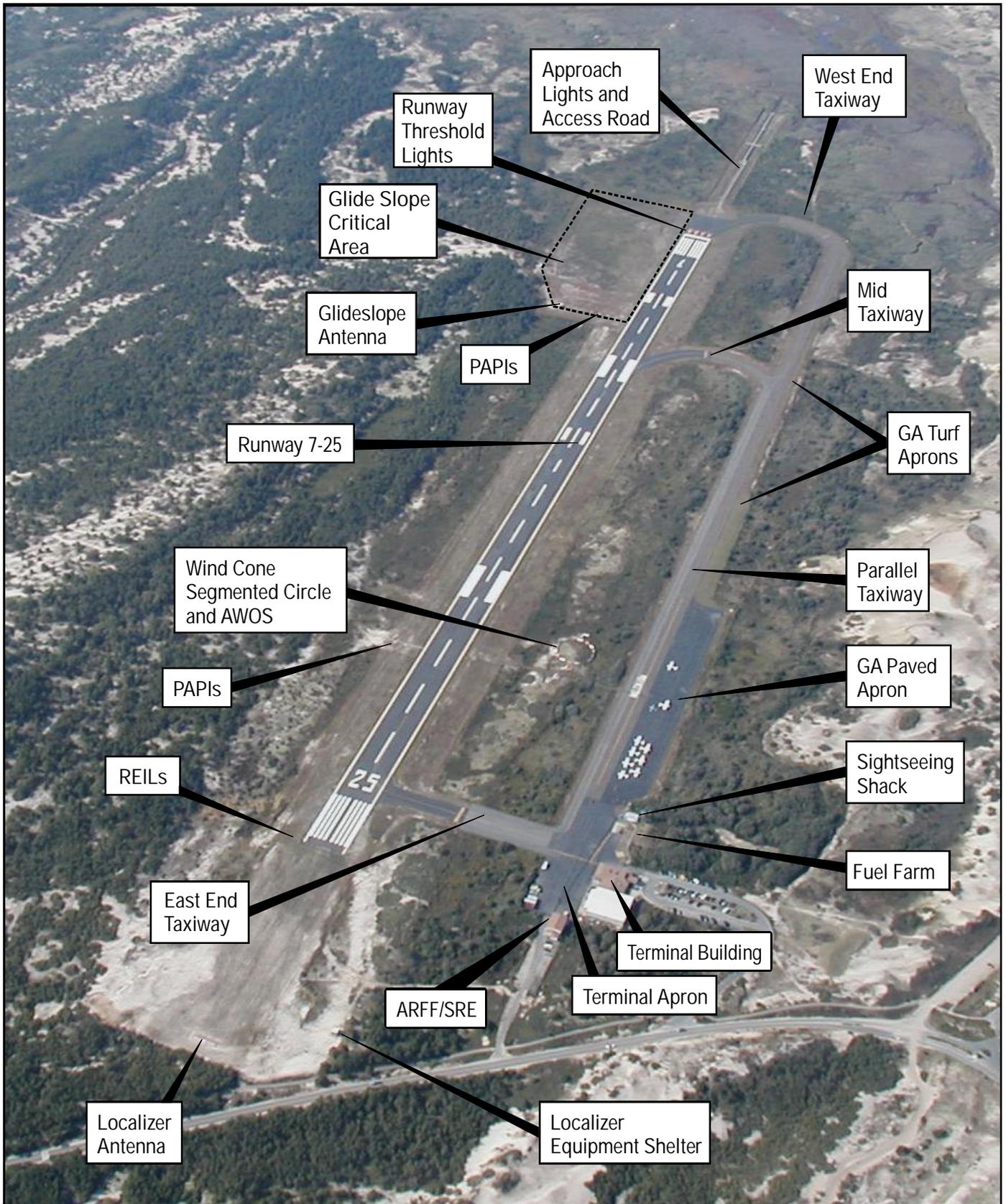
The horizon is a dominant visual feature of the Outer Cape where long views of the horizon can be seen from certain perspectives over the salt marsh and coastal dunes. The horizon cannot be seen by users of the Airport because the airfield is lower than the surrounding coastal dunes and Hatches Harbor dike. The horizon can be seen by viewers on the observation platform at the Province Lands Visitor Center (Viewer Group A, Photo 4-9). The view of the horizon includes natural features as well as the former Coast Guard buildings maintained

by the NPS. The Airport buildings are below the horizon line and contained within the back-dune area of pitch pine and scrub oak vegetation.

4.11 Section 4(f) Properties

Section 4(f) of the Department of Transportation Act of 1966, recodified at 49 U.S.C. 303 (c) but still referred to as Section 4(f), provides that the Secretary of Transportation will not approve any project that requires the use of any publicly owned land that is part of a park or recreation area unless there is no feasible and prudent alternative to the use of such land and the project includes mitigation to minimize impacts.

The land under the Airport would be considered public land as defined by Section 4(f) because it is owned by the U.S. Department of the Interior and is within the CCNS, a unit of the NPS. However, Section 3 of the 1962 authorization that conveyed the Commonwealth Province Lands to the United States for the establishment of the CCNS provides that a portion of the Province Lands are subject to a pre-existing lease for public airport and access purposes. Since the establishment of the CCNS, the Airport operates under Special Use Permits (included in Appendix 5). The NPS leases land within a prescribed boundary designated for aviation operations. This boundary is indicated as the Airport lease line on plans and figures in this document.



Prepared By:

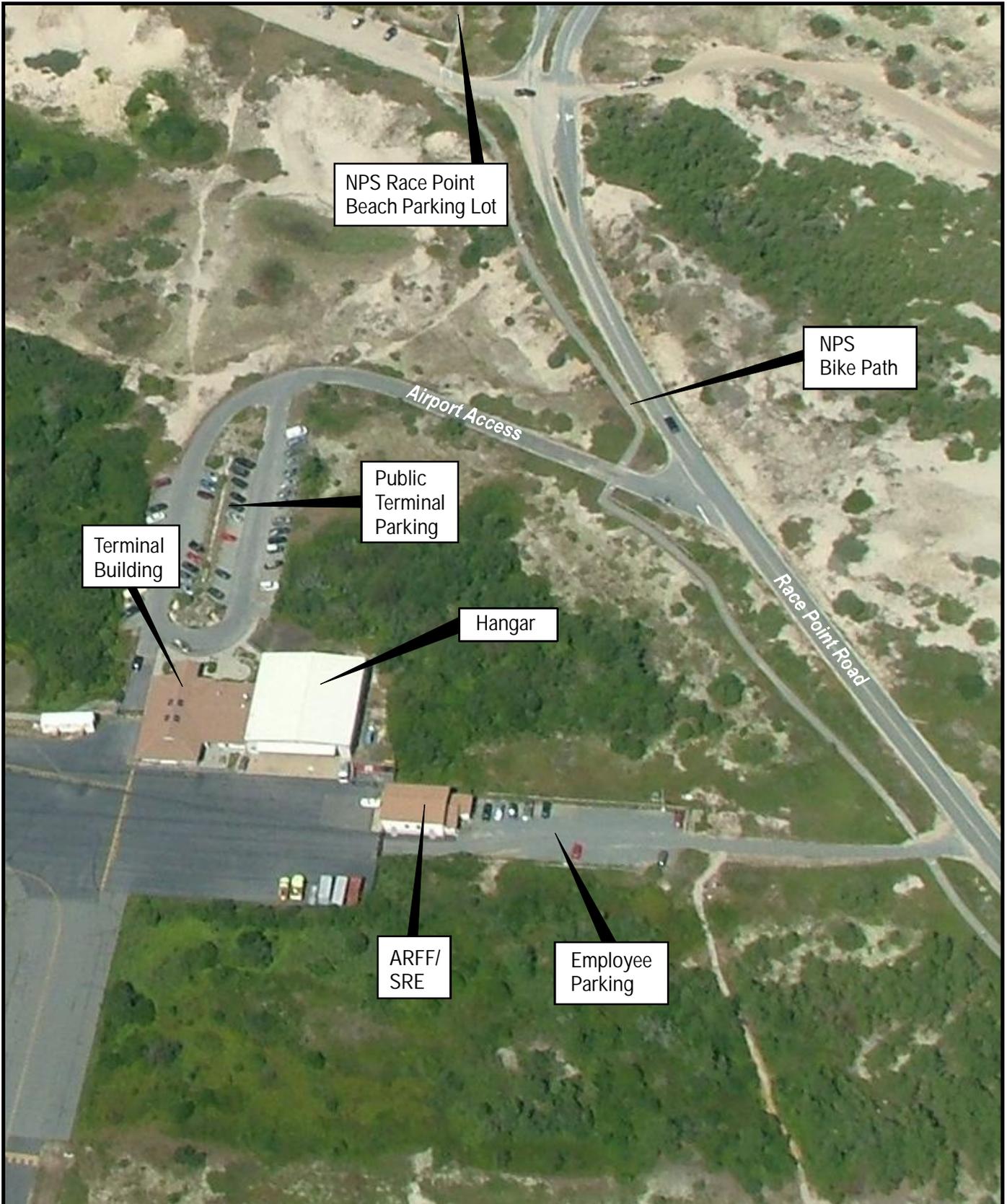


Note: See Glossary for definitions and descriptions of acronyms
 Source: Edwards and Kelcey 2004

Provincetown Municipal Airport
 Capital Improvements Plan

Airside Facilities

Figure 4.1



Prepared By:

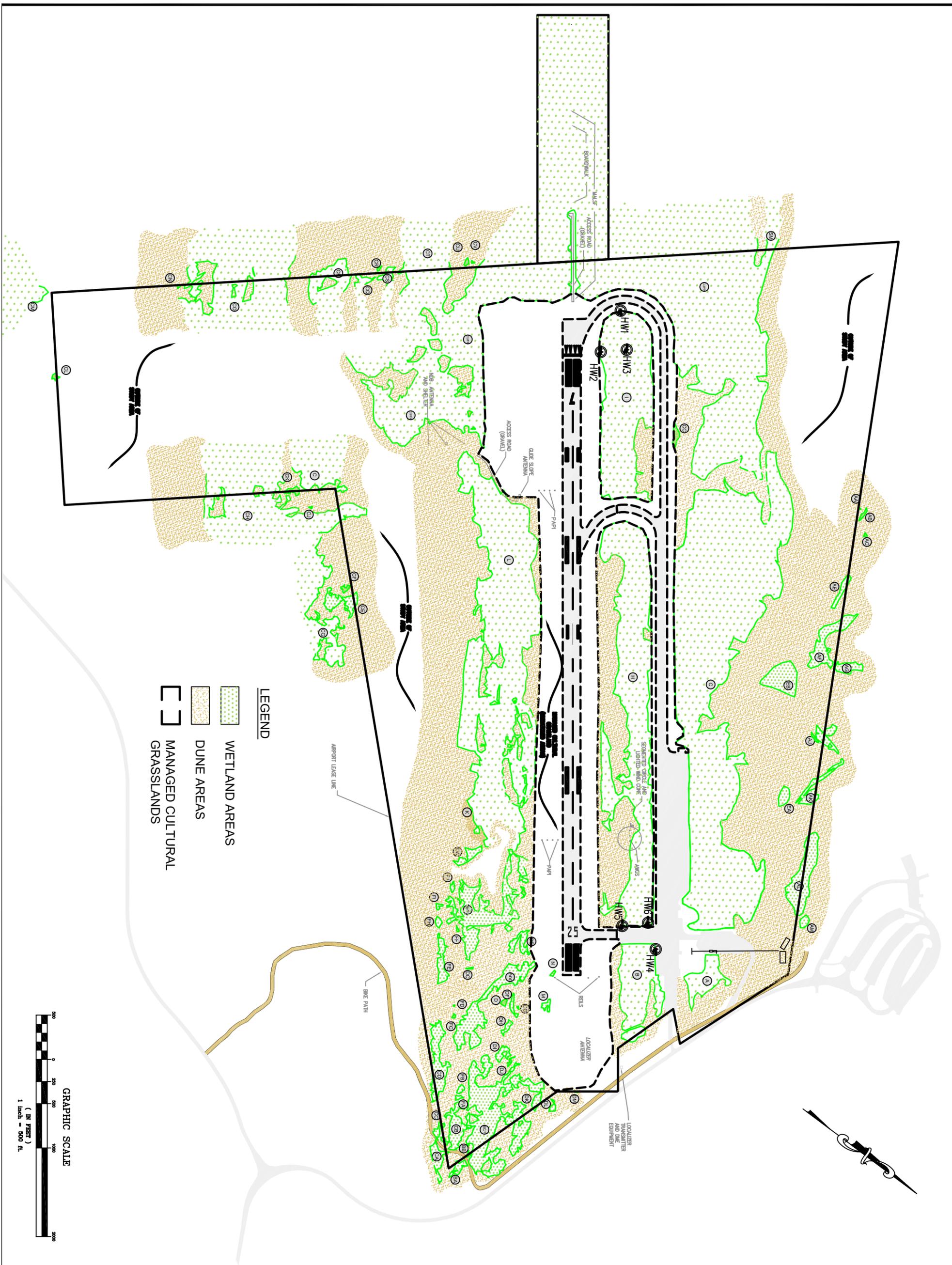
JACOBS

Source: Edwards and Kelcey 2005

Provincetown Municipal Airport
Capital Improvements Plan

Landside Facilities

Figure 4.2



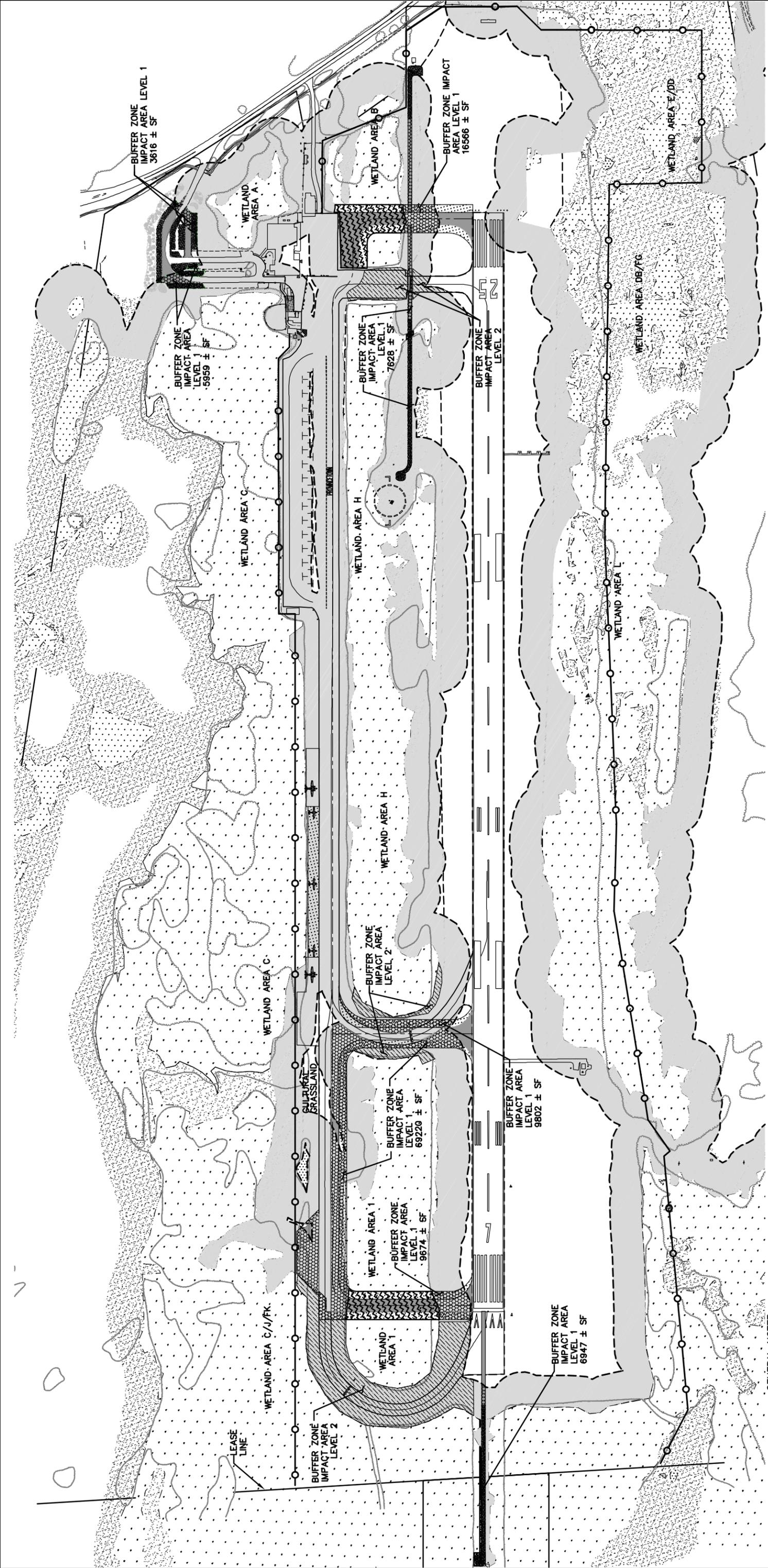
LEGEND

- WETLAND AREAS
- DUNE AREAS
- MANAGED CULTURAL GRASSLANDS



| Sheet Number: 4027A | Project Number: 4027A | Survey Provided By: Horsley Witten Group, Inc. 90 Route 6A Sandwich, MA Phone: (508) 833-6600 Fax: (508) 833-3150 Dated: December 2006 | Prepared For: PROVINCETOWN MUNICIPAL AIRPORT Race Point Road P.O. Box 657 Provincetown, MA 02657 508-487-0241 508-487-4110 Fax | Plan Set: PROVINCETOWN MUNICIPAL AIRPORT PROVINCETOWN, MA | Horsley Witten Group Sustainable Environmental Solutions www.horsleywitten.com 90 Route 6A Sandwich, MA 02563 508-833-6600 voice 508-833-3150 fax | Revisions | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------------------|---------------------------------|--|---|--|--|------------------|--|------|------|----|-------|-------------|---|---------|-----|-----|-----------------------------|---|--|--|--|--|---|--|--|--|--|---|--|--|--|--|---|--|
| | | Date: 11/06/07 | Designed By: ERK | Drawn By: ERK | | Checked By: AB | <table border="1"> <tr> <th>Rev.</th> <th>Date</th> <th>By</th> <th>Appr.</th> <th>Description</th> </tr> <tr> <td>△</td> <td>9/16/08</td> <td>ERK</td> <td>AMB</td> <td>Updated Cultural Grasslands</td> </tr> <tr> <td>△</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | Rev. | Date | By | Appr. | Description | △ | 9/16/08 | ERK | AMB | Updated Cultural Grasslands | △ | | | | | △ | | | | | △ | | | | | △ | |
| Rev. | Date | By | Appr. | Description | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| △ | 9/16/08 | ERK | AMB | Updated Cultural Grasslands | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| △ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| △ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| △ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| △ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

**FIGURE 4.4
RESOURCE AREA PLAN**



GENERAL NOTES:

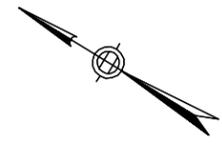
1. SEE FIGURE 4.1 FOR DETAILED WETLAND AREA IDENTIFICATION.
2. BUFFER ZONE IMPACT AREA LEVEL 1 TO BE CONVERTED TO AIRPORT MANAGED AREA (PAVEMENT, GRAVEL, OR GRASSLAND).
3. BUFFER ZONE IMPACT AREA LEVEL 2 TO BE CONVERTED TO NATURAL RESOURCES.
4. FOR ALL AREAS OF LEVEL 2 RESTORATION SEE FIGURES IN SECTION 7.

Prepared By:



Legend:

- BUFFER ZONE IMPACT AREA LEVEL 1
- BUFFER ZONE IMPACT AREA LEVEL 2
- WETLAND BUFFER ZONE
- PROPOSED WETLAND IMPACT AREA
- EXISTING WETLAND AREA
- PROPOSED IMPERVIOUS PAVED AREA
- PROPOSED PERVIOUS GRAVEL AREA
- EXISTING TREELINE
- EXISTING BRUSHLINE
- PROPOSED SECURITY FENCE



Approx. Scale: 1" = 300'



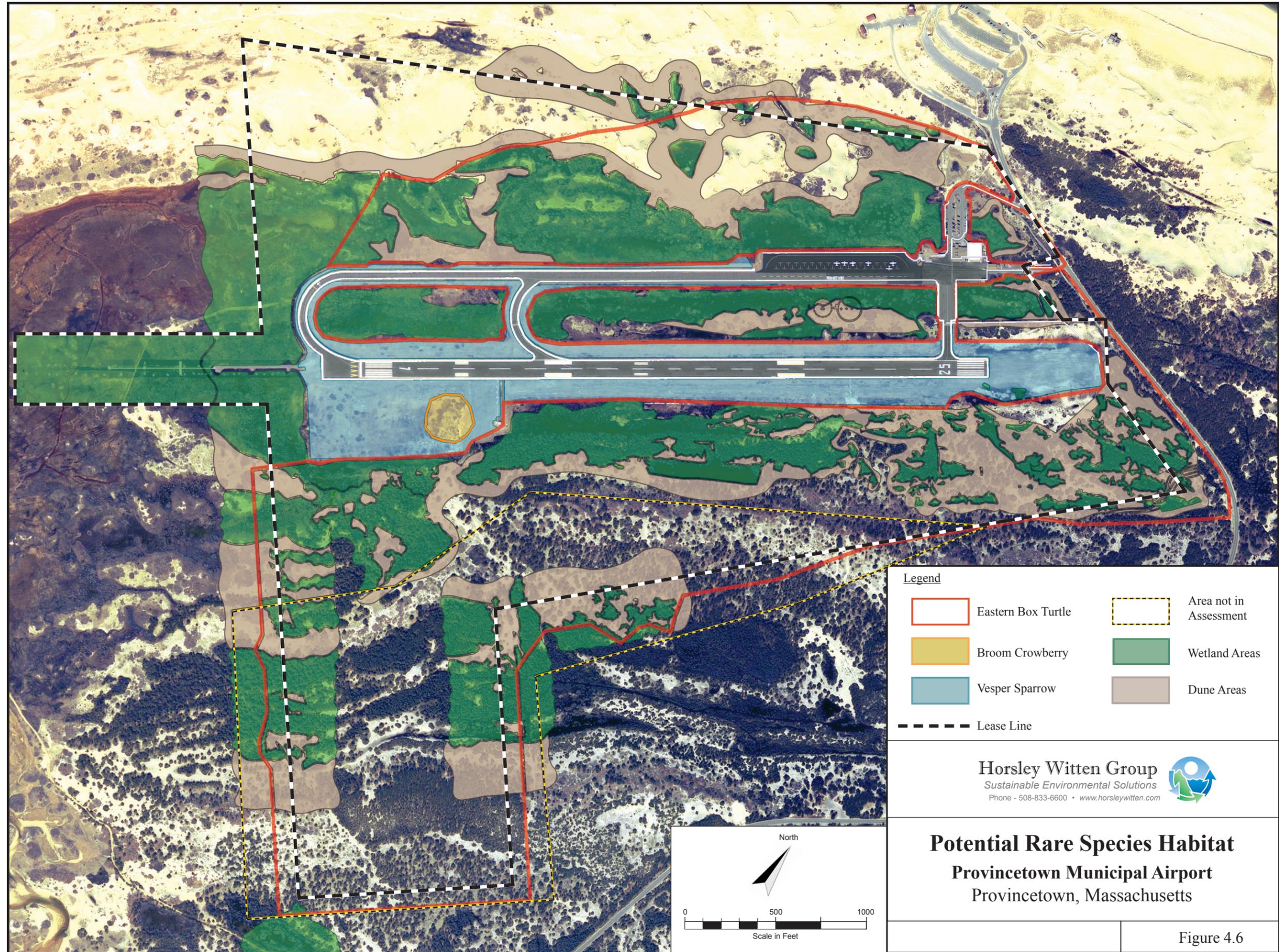


Figure 4.6

Notes and Legend:

Legend

- Eastern Spadefoot Toad (Breeding) Prime
- Eastern Spadefoot Toad (Breeding) Potential less than 1000 S.F. (less than 10m X 10m)
- Eastern Spadefoot Toad (Breeding) Potential more than 1000 S.F. (more than 10m X 10m)
- Area not in Assessment
- Wetland Areas
- Lease Line
- Proposed Fence

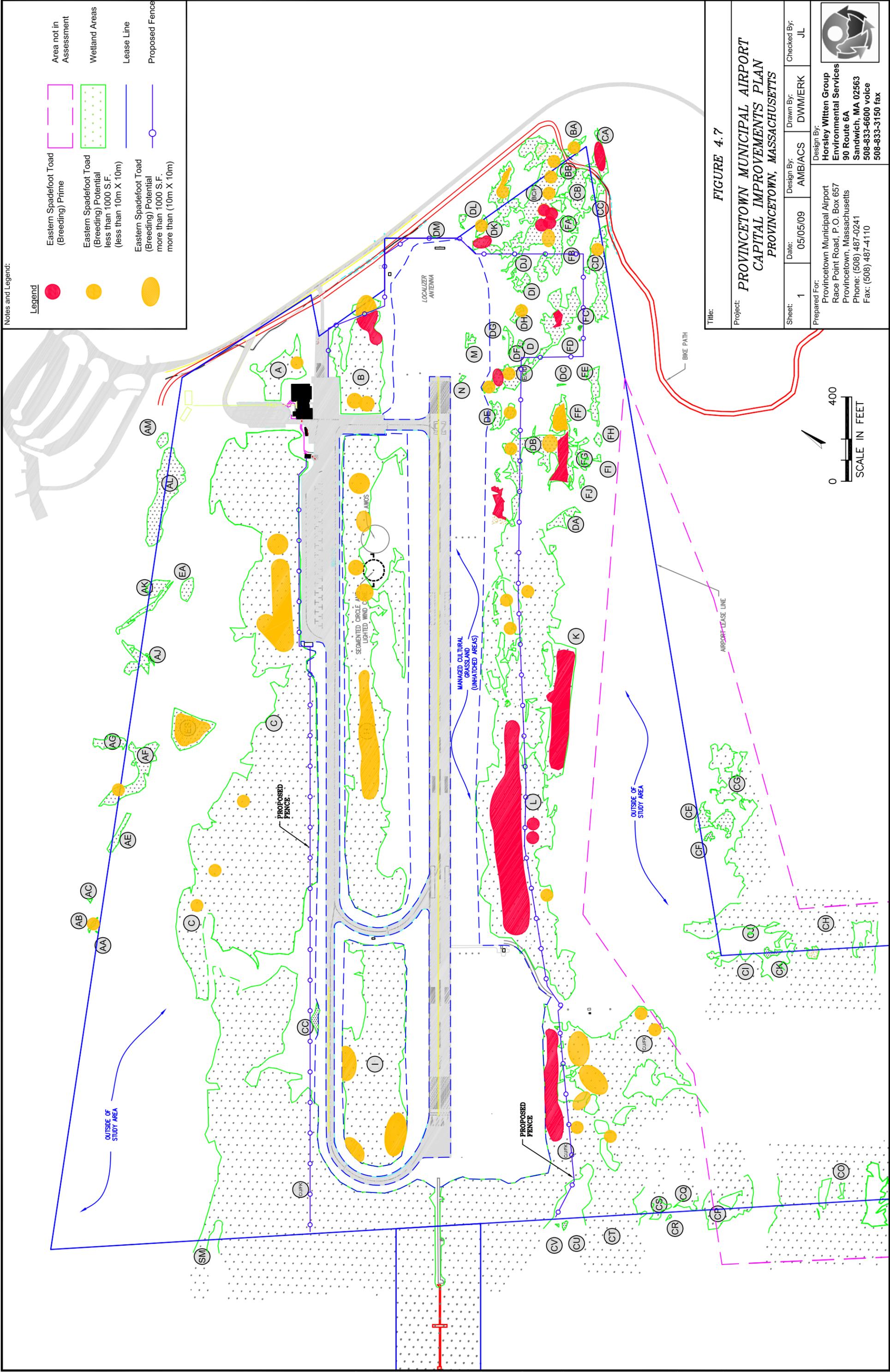


FIGURE 4.7

**PROVINCETOWN MUNICIPAL AIRPORT
CAPITAL IMPROVEMENTS PLAN
PROVINCETOWN, MASSACHUSETTS**

| | | | | | | | | | |
|--------|---|-------|----------|------------|---------|-----------|---------|-------------|----|
| Sheet: | 1 | Date: | 05/05/09 | Design By: | AMB/ACS | Drawn By: | DWM/ERK | Checked By: | JL |
|--------|---|-------|----------|------------|---------|-----------|---------|-------------|----|

Prepared For:
Provincetown Municipal Airport
Race Point Road, P. O. Box 657
Provincetown, Massachusetts
Phone: (508) 487-0241
Fax: (508) 487-4110

Design By:
Horsley Witten Group
Environmental Services
90 Route 6A
Sandwich, MA 02563
508-833-6600 voice
508-833-3150 fax

