

DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION  
NEW ENGLAND REGION



RECORD OF DECISION  
AIRPORT IMPROVEMENT PROGRAM  
THEODORE FRANCIS GREEN AIRPORT  
WARWICK, RHODE ISLAND

**September 23, 2011**

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## Errata to the Final Environmental Impact Statement

The following errors were identified in the Final Environmental Impact Statement (FEIS), subsequent to printing and distribution of the document.

1. From the FEIS Executive Summary, Section ES.2, Project Purpose and Need, pg. ES-11 reads “The FAA has confirmed the need for each of the proposed efficiency-related enhancements by considering the 2009 EIS Forecast in all relevant demand analyses.”

The sentence should read: “The FAA has confirmed the need for each of the proposed efficiency-related enhancements by considering the 2010 EIS Forecast in all relevant demand analyses.”

2. From the FEIS Executive Summary, Pages ES-54 and 5-77, the bullets summarizing the temporary construction-related economic benefits expected for Alternative B4 listed the total (indirect and induced impacts) statewide benefits in place of the total for the City of Warwick.

The bullet for Alternative B4 in the published FEIS incorrectly states:

- “Constructing Alternative B4 would directly generate a total of 872 jobs, \$40.9 million in personal income and \$90.6 million in business spending in the City of Warwick during the 2012 to 2020 construction period. When including indirect and induced impacts, the total benefit would be 1,335 jobs, \$58.3 million in income and \$157.8 million in additional spending in the City of Warwick, and additional benefits statewide.”

The bullet for Alternative B4 should read:

- “Constructing Alternative B4 would directly generate a total of 872 jobs, \$40.9 million in personal income and \$90.6 million in business spending in the City of Warwick during the 2012 to 2020 construction period. When including indirect and induced impacts, the total benefit would be 1,276 jobs, \$54.4 million in income and \$132.3 million in additional spending in the City of Warwick, and additional benefits statewide (1,335 jobs, \$58.3 million in wages and \$157.8 million in business revenue).”

3. FEIS Page 4-46 states “The boundaries of WHC 26 and 76 were determined.” Following the publication of the FEIS, in a letter submitted to FAA from the Warwick Historical Cemetery Commission on (WHCC) July 18, 2011, the WHCC requested that further studies be conducted to define the boundaries of WHC 26 and 76. Additional survey work will be conducted as requested. The ROD has been revised to state that mitigation includes defining “the boundaries of Warwick Historical Cemeteries Nos. 26, 76, 77, and 78 to the Cemetery Commission’s satisfaction.” The FEIS also refers to the WHC 26 and 76 boundaries in pages ES-65, ES-86, and 3-46.
4. FEIS Page 5-55, Table 5-38, table note 1 states that 48 parcels would be acquired by 2015 for construction of the safety enhancements for Alternative B2. A total of 50 parcels (totaling approximately 16.3 acres) of mostly commercial land uses would be acquired in 2015 for construction. This has been corrected in the ROD.

## T.F. Green Airport Improvement Program

### Record of Decision

5. FEIS Page 5-283, Table 5-131 states that Hangar No. 1 would be demolished for safety in 2020 under Alternative B2. Hangar No. 1 would be demolished for safety in 2015 under Alternative B2. This has been corrected in the ROD.
6. FEIS Page 5-283, Table 5-131 states that the Section 4(f)/Section 6(f) impact of Alternative B4 on Hanger No. 2 is no adverse affect. It should state that the Section 4(f)/Section 6(f) impact of Alternative B4 on Hanger No. 2 is no physical use (de minimis.) This has been corrected in the ROD.
7. FEIS Page 8-14, Table 8-5 listed Safe Drinking Water Act Compliance as a possible permit or approval. It is no longer anticipated that Safe Drinking Water Act Compliance will be required. This has been corrected in the ROD.

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## Acronyms and Abbreviations

ALP – Airport Layout Plan

CEQ – Council on Environmental Quality

CRMP – Coastal Resources Management Program

DEIS – Draft Environmental Impact Statement

EIS – Environmental Impact Statement

EMAS – engineered materials arresting system

FAA – Federal Aviation Administration

FEIS – Final Environmental Impact Statement

FEMA – Federal Emergency Management Agency

FHWA – Federal Highway Administration

GSE – ground service equipment

HUD – U.S. Department of Housing and Urban Development

MOA – Memorandum of Agreement

NCP – Noise Compatibility Plan

NEM – Noise Exposure Map

NEPA – National Environmental Policy Act

NERASP – New England Regional Airport System Plan

NITHPO – Narragansett Indian Tribal Historic Preservation Office

NRHP – National Register of Historic Places

RIAC – Rhode Island Airport Corporation

RICRMC – Rhode Island Coastal Resources Management Council

RIDEM – Rhode Island Department of Environmental Management

RIDOT – Rhode Island Department of Transportation

RIHPHC – Rhode Island Historical Preservation & Heritage Commission

RISHPO - Rhode Island State Historic Preservation Office

ROD – Record of Decision

RPZ – Runway Protection Zone

RSA – runway safety area

SAMP - Special Area Management Plan

USACE – U.S. Army Corps of Engineers

USEPA – U.S. Environmental Protection Agency

VLAP – Voluntary Land Acquisition Program

WHC – Warwick Historic Cemetery

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## 1 Introduction

This Record of Decision (ROD) sets forth the Federal Aviation Administration's (FAA's) final determinations and environmental approvals for the federal actions necessary to implement the T.F. Green Airport Improvement Program in Warwick, Rhode Island.

The T.F. Green Airport Improvement Program addresses the need for greater efficiency at T.F. Green Airport while also enhancing the safety of T.F. Green Airport for aircraft operators, passengers, and the public who live and work adjacent to the Airport. The T.F. Green Airport Improvement Program's safety projects adhere to FAA's airport design standards for runway safety areas (RSAs), obstructions to airspace, and taxiway separation requirements, all of which serve to enhance the safety of aircraft operations in and around the Airport. As described further in Section 5.2, *Airport Efficiency Enhancements*, of this ROD, the T.F. Green Airport Improvement Program is also needed to enhance the efficiency of the Airport due to overall aviation (aircraft operations and passenger) demand. T.F. Green Airport plays a critical role in the New England Regional Airport System and particularly within the eastern New England region. Appropriate development at T.F. Green Airport enhances the efficiency of the regional airport system, avoids an "over-reliance"<sup>1</sup> on Boston-Logan International Airport (Logan Airport), and addresses aircraft delays<sup>2</sup> at Logan Airport by minimizing leakage to Logan Airport from the T.F. Green Airport catchment area.<sup>3</sup> The New England Regional Airport System Plan (NERASP) identified T.F. Green Airport as one of several airports that could improve the performance of the regional airport system if they can overcome challenges in developing the service required by their communities. Specifically, the NERASP cites T.F. Green's lack of sufficient runway length to efficiently serve its communities' needs for West Coast and international markets.<sup>4</sup> There is a strong demand for West Coast service from the overlapping T.F. Green and Logan Airport service areas. The T.F. Green Airport Improvement Program will improve the airfield facilities at the Airport to better provide for non-stop West Coast service.

The federal actions are discussed in Section 3, *Necessary Federal Actions*, of this ROD. This ROD completes a thorough and careful environmental decision making process. This includes FAA's public disclosure and review by the FAA decision maker of the analysis of alternatives and their potential impacts that are described in the July 2011 Final Environmental Impact Statement (FEIS). This ROD has been prepared and issued by FAA in compliance with the National Environmental Policy Act (NEPA) (42 U.S.C. § 4321, *et seq.*), its implementing regulations (40 CFR Parts 1500-1508), and FAA directives (Orders 1050.1E and 5050.4B). This ROD demonstrates and documents FAA's compliance with the procedural requirements for runway extension and safety projects and other airport development. FAA arrived at these determinations by considering public and agency comments and reviewing the environmental analysis in the FEIS and all other relevant documents that comprise the EIS record. Based upon this review, FAA selects Alternative B4.

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1 *Logan International Airport Airside Improvements Planning Project EIS, Boston, Massachusetts*; FAA, New England Region; 2002.

2 Logan Airside Record of Decision: [www.faa.gov/airports/environmental/records\\_decision/media/rod\\_boston.pdf](http://www.faa.gov/airports/environmental/records_decision/media/rod_boston.pdf)

3 *The New England Regional Airport System Plan*, New England Airport Coalition, Fall 2006, page 30.

4 *Ibid.*, page 1.

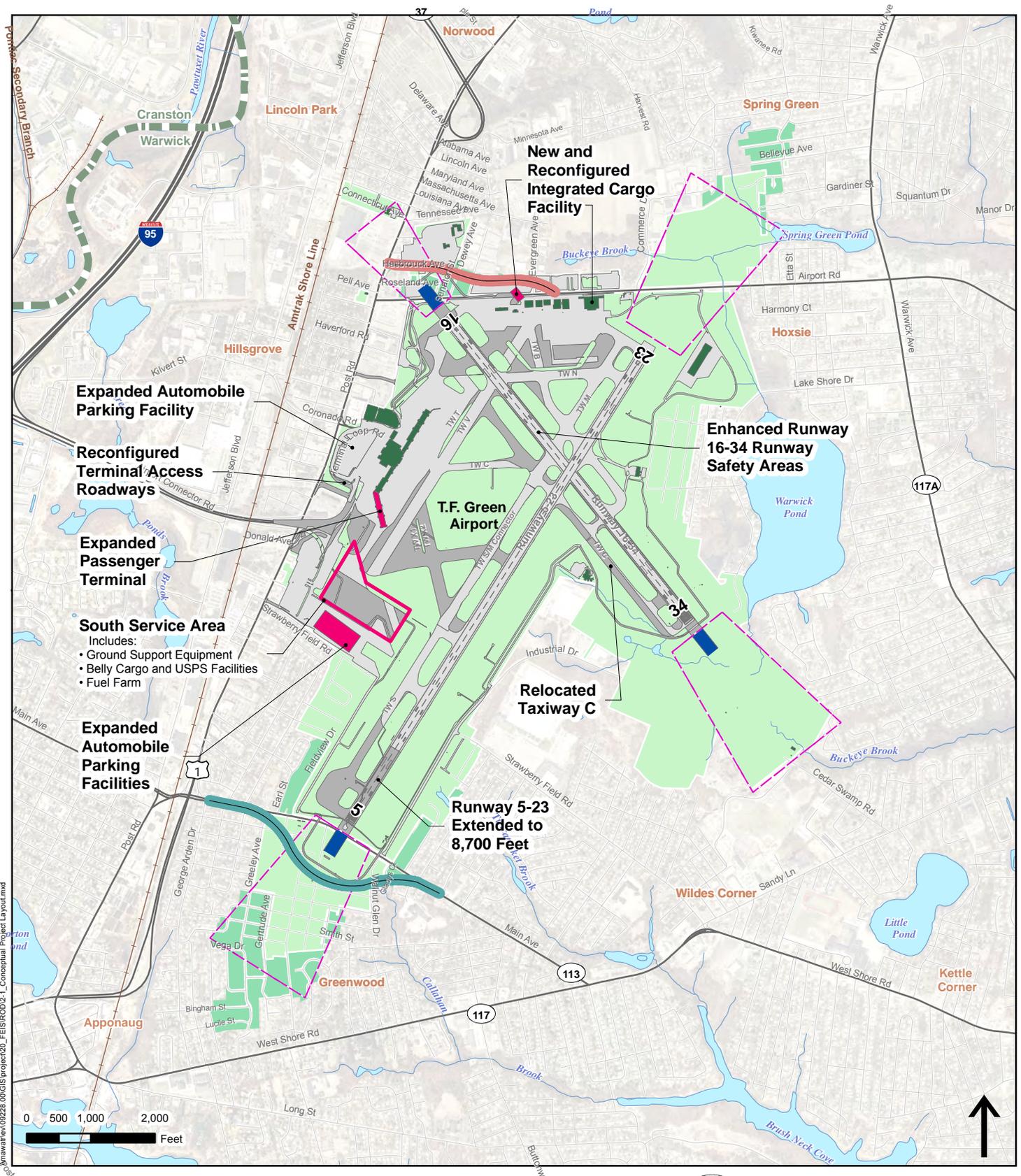
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## 2 Overview of the Project

FAA has selected Alternative B4 for implementation. Section 7.4, *FAA's Selected Alternative* of this ROD, provides detail on FAA's rationale for selecting Alternative B4 (hereafter referred to as the Project). The environmental impacts of the Project are described in Section 9, *Environmental Consequences*, of this ROD. Mitigation requirements are described in Section 10, *Mitigation*, of this ROD, and other conditions of project approval, including environmental permits required, are discussed in Section 11, *Conditions of Project Approval*. The estimated construction and land acquisition cost of the Project is \$439 million. The Project, as fully implemented in 2020, is shown in Figure 2-1.

Voluntary land acquisition for the Runway Protection Zone (RPZ) and noise mitigation is anticipated to begin as early as 2012. The following Project elements are anticipated to be completed by the end of 2015:

- Hangar No. 1 will be demolished between 2013 and 2014 to remove an airspace obstruction.
- Main Avenue will be shifted to the south between 2013 and 2014 to accommodate the extension at the Runway 5 End.
- Between 2013 and 2014, Airport Road will be partially relocated to the north, at the intersection of Post Road, to accommodate the Runway 16-34 safety enhancements.
- Taxiway C will be relocated in 2014 to meet current FAA design standards.
- Other projects associated with the Runway 16-34 safety areas will be constructed between 2013 and 2015, including taxiways, navigational aids, lighting, the Runway 16-34 Perimeter Road, drainage, utilities, and the relocation of Delivery Drive.
- Between 2014 and 2015, Runway 5-23 will be extended south approximately 1,530 feet for a total of 8,700 feet and an engineered materials arresting system (EMAS) will be used on the Runway 5 End to minimize the relocation of Main Avenue.
- Between 2014 and 2015, Runway 16-34 will be shifted north approximately 100 feet to accommodate the enhanced RSAs. An EMAS will be used on the Runway 16 and 34 Ends to minimize impacts to businesses on the Runway 16 End and impacts to natural resources on the Runway 34 End.
- Other projects related to the Runway 5-23 extension and safety areas will be constructed in 2015, including taxiways, aprons, navigational aids, lighting, the Runway 5-23 Perimeter Road, drainage, and utilities.
- Land acquisition will be completed as required for construction of these Project elements.



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**Legend**

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| <span style="display: inline-block; width: 15px; height: 10px; background-color: #d9ead3; border: 1px solid #ccc; margin-right: 5px;"></span> Existing Airport Property  | <span style="display: inline-block; width: 15px; height: 10px; background-color: #4f81bd; border: 1px solid #ccc; margin-right: 5px;"></span> EMAS                   |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: #56b856; border: 1px solid #ccc; margin-right: 5px;"></span> Future Airport Property*   | <span style="display: inline-block; width: 15px; height: 10px; border-bottom: 2px solid #a52a2a; margin-right: 5px;"></span> Partially Relocated Airport Road (2015) |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: #2e7d32; border: 1px solid #ccc; margin-right: 5px;"></span> Existing Airport Buildings | <span style="display: inline-block; width: 15px; height: 10px; border-bottom: 2px solid #008080; margin-right: 5px;"></span> Realigned Main Avenue (2015)            |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: #e91e63; border: 1px solid #ccc; margin-right: 5px;"></span> Future Airport Buildings   | <span style="display: inline-block; width: 15px; height: 10px; border: 1px dashed #e91e63; margin-right: 5px;"></span> Runway Protection Zone                        |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: #f0f0f0; border: 1px solid #ccc; margin-right: 5px;"></span> Existing Pavement          |  |
| <span style="display: inline-block; width: 15px; height: 10px; background-color: #cccccc; border: 1px solid #ccc; margin-right: 5px;"></span> Proposed New Pavement      |  |

\*Assumes 100% participation in voluntary programs.



**Figure 2-1  
Conceptual Project Layout**

T.F. Green Airport  
Improvement Program EIS

The following Project elements are anticipated to be completed by the end of 2020:

- Between 2015 and 2018, the Belly Cargo facility will be replaced in a new location and a new ground service equipment (GSE) facility will be constructed.
- The Airport Fuel Storage Facility will be expanded between 2015 and 2018.
- Between 2016 and 2017, Runway 5-23 will be repaved and Runway 16-34 will be reconstructed and repaved.
- New integrated air cargo facilities will be constructed between 2016 and 2017.
- Additional passenger and employee parking facilities will be constructed between 2017 and 2020.
- Between 2018 and 2020, the enlarged passenger terminal concourses and up to seven additional commercial service gates will be constructed.
- The terminal access roadways will be reconfigured between 2019 and 2020.
- Land acquisition will be completed as required for construction of these Project elements.

For details on the construction phasing, refer to Figures 3-10 through 3-14 of the FEIS, which illustrate the construction of the Project year by year.

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### **3 Necessary Federal Actions**

FAA's actions relative to the Project include approval of the revised Airport Layout Plan (ALP) and establishment of pre-requisites to apply for federal funding and grants. The federal actions required of FAA are:

- The approval of the ALP that depicts the Project, as shown on Figure 2-1, in this ROD;
- The determinations necessary to proceed with considering and processing an application for federal funding of those development items qualifying under the Airport Improvement Program, 49 U.S.C. § 47101, *et seq.*, as well as Passenger Facility Charges, 49 U.S.C. §40117;
- Determination of effects upon safe and efficient utilization of air space;
- The approval for relocation, installation, and/or upgrade of various navigational aids; and
- The approval of associated safety actions (i.e., the air traffic procedures necessary to operate the relocated runway ends) including, but not limited to, revisions to established flight procedures.

In accordance with federal law and agency guidance, FAA makes the determinations for the Project, as documented in Section 12, *Agency Findings*, of this ROD, based upon appropriate information and analysis contained in the FEIS and other portions of the EIS record.

Permits and approvals from other federal agencies required to implement the Project include a Clean Water Act Section 404 Individual Permit from U.S. Army Corps of Engineers (USACE) and a Land and Water Conservation Fund Act Section 6(f) Conversion Approval from the National Park Service.

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## **4 T.F. Green Airport Background**

T.F. Green Airport is a medium-hub primary commercial service airport, owned by the State of Rhode Island and operated by the Rhode Island Airport Corporation (RIAC), which manages all publicly owned airports within the state. In 2010, T.F. Green Airport served approximately 3.9 million passengers with over 220 daily aircraft operations (i.e., aircraft landing or departing).<sup>5</sup> RIAC is a governmental agency and a semiautonomous subsidiary of the Rhode Island Economic Development Corporation.

T.F. Green Airport, which occupies 1,100 acres of land, is located in the City of Warwick, Rhode Island, six miles south of the City of Providence. The Airport is accessible via several major regional and national roadways, including Interstate Highways I-95 and I-295, U.S. Route 1, and State Routes 10 and 37. The InterLink, an intermodal transportation facility recently constructed west of the Airport, includes a direct pedestrian link to the Airport for rail passengers, a consolidated car rental facility, and commuter parking. Warwick Pond and Buckeye Brook and associated wetland systems are located north and east of the Airport property.

The Airport has two runways: the primary runway, Runway 5-23 (7,166 feet) and the secondary, or crosswind runway, Runway 16-34 (6,081 feet). T.F. Green Airport's 352,000 square foot passenger terminal facility contains the ticketing, baggage claim, and surface transportation areas; security services; Federal Inspection Services; concessions area; two concourses with passenger hold rooms; 22 commercial air service gates with 16 jet bridges; and RIAC's administrative offices. The terminal accommodates approximately 16,000 square feet of passenger processing and support space per aircraft gate position. In addition to the terminal, airport facilities include hangars, a fuel farm, air cargo, ground support equipment facilities, and an aircraft rescue and fire fighting facility. On-Airport parking facilities include three parking garages (Garage A, Garage B, and Garage C) and two parking lots (Hourly Lot D and Long-Term Lot E), for a total capacity of 8,422 parking spaces. Figure 4-1 shows the existing airport facilities.

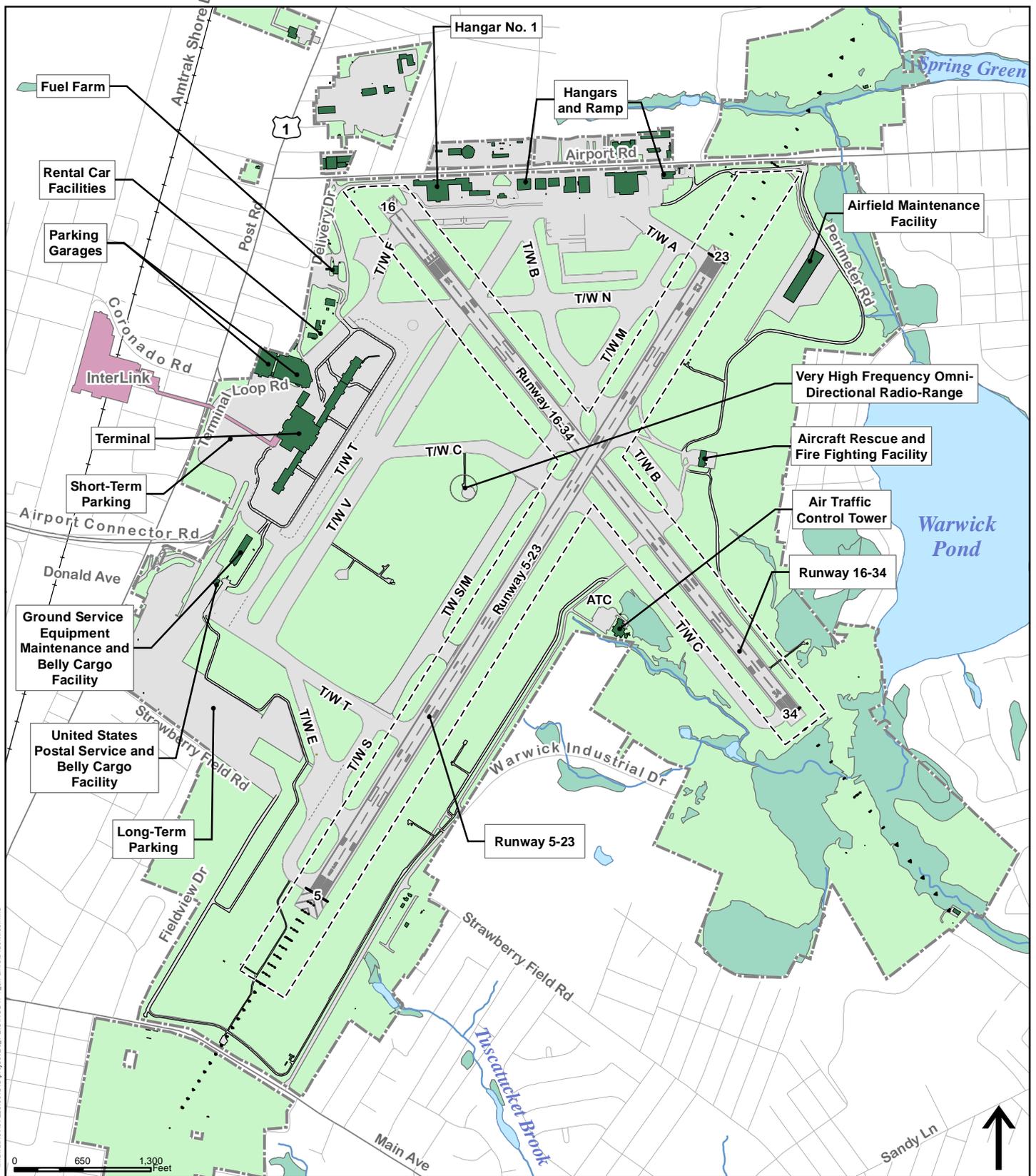
### **4.1 Improvement Project Background**

The EIS process that concludes with the issuance of this ROD started in 2005, after completion of a Master Plan Supplement by RIAC in 2004. A prior NEPA process, initiated in 2003 to address an earlier master planning effort, was suspended to address a longer planning period in the Master Plan Supplement. The EIS process that concludes with this ROD has included:

- A Supplemental Notice of Intent to Prepare an EIS on January 19, 2005;
- A Supplemental NEPA Scoping period and meeting in February 2005;
- A Notice of Availability of the DEIS published in the Federal Register on July 16, 2010;
- A DEIS Comment Period of July 16 to September 15, 2010; and
- An FEIS published in the Federal Register on July 8, 2011.

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<sup>5</sup> T.F. Green Airport – Monthly Airport Passenger Activity Summary, RIAC, December 2010.



**Legend**

- No-Action Airport Property Boundary (2015)
- On Airport Buildings
- Wetlands
- Runway Safety Area
- Approach Lights

Note: New Deicer Management System to be constructed under the No-Action Alternative at an on-Airport location to be determined.



**Figure 4-1**  
**Existing Airport Facilities**

T.F. Green Airport  
Improvement Program EIS

Source: Airport Base (Landrum & Brown)  
Roads, Hydrology (RIGIS)

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## 5 Purpose and Need

The purpose of the T.F. Green Airport Improvement Program is to:

- Enhance Airport safety; and
- Enhance the efficiency of the Airport and the New England Regional Airport System to more fully meet the current and anticipated demand for aviation services.

The following sections outline the purpose and need for both of the proposed program elements.

### 5.1 Airport Safety Enhancements

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FAA's airport design standards should be met to the greatest extent practicable to enhance the safety of airfield operations. Several of the facilities at T.F. Green Airport do not meet current FAA airport design standards or guidelines:

- **Runway 16-34 RSAs** – The RSAs associated with Runway 16-34 do not meet current FAA dimensional standards. Also, the Runway 16-34 pavement is in poor condition and needs to be rehabilitated to avoid unsafe occurrences of foreign object debris on the airfield.
- **Taxiway C** – The separation of Taxiway C and Runway 16-34 does not meet current FAA separation requirements. Taxiway C needs to be moved 100 feet farther from Runway 16-34 (total of 400 feet) to meet the design standards and enhance the safety of airfield operations.
- **Hangar No. 1** – Hangar No.1 is located within the Runway 16-34 object free area and penetrates Part 77 airspace. The hangar needs to be removed to meet current FAA airport design standards and eliminate an obstruction to air navigation.

### 5.2 Airport Efficiency Enhancements

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Many of the T.F. Green Airport Improvement Program plan elements are needed to enhance the efficiency of the Airport due to overall aviation (aircraft operations and passenger) demand. T.F. Green Airport, in the New England Regional Airport System, plays a critical part in defining the need for some of the Airport Improvement Program elements. Within the eastern New England region in particular, T.F. Green, Logan Airport, and Boston-Manchester Regional Airports provide different air services but have overlapping service areas. FAA and the various airport operators have conducted studies to guide proper development of the regional airport system in order to avoid an "over-reliance"<sup>6</sup> on Logan Airport and address aircraft delays<sup>7</sup> at Logan Airport.<sup>8</sup> The efficiency of the New England Regional Airport System depends in part on the ability of RIAC to minimize passenger migration from T.F. Green Airport to Logan Airport to the greatest extent practicable. This is consistent with the 2002 Logan Airport Airside Improvements Planning Project EIS and FAA's

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6 Logan International Airport Airside Improvements Planning Project EIS, Boston, Massachusetts; FAA, New England Region; 2002.

7 Logan Airside Record of Decision: [http://www.faa.gov/airports/environmental/records\\_decision/media/rod\\_boston.pdf](http://www.faa.gov/airports/environmental/records_decision/media/rod_boston.pdf)

8 Logan Airport's airfield currently comprises six runways, which range from 2,557 feet to 10,083 feet in length.

subsequent ROD and with the 2006 NERASP. Although demand for West Coast service from the overlapping T.F. Green and Logan Airport service areas remains strong, the airfield facilities at T.F. Green Airport do not fully optimize the potential for airlines to initiate non-stop West Coast service. As noted in the NERASP, the existing primary runway length at T.F. Green Airport is too short to fully accommodate aircraft capable of providing non-stop service to West Coast markets.

Airfield facilities needed to enhance the efficiency of airfield operations include:

- **Primary Runway Length** – Reducing leakage to Logan Airport will enhance the efficiency of the New England Regional Airport System by “reducing the region’s over-reliance on Logan Airport.”<sup>9</sup> In recent years, non-stop service to West Coast markets from Logan Airport has increased, while connecting service to West Coast markets from T.F. Green Airport has decreased. The primary impediment that is within RIAC’s control to reduce this leakage of West Coast passengers from T.F. Green Airport to Logan Airport is to increase the length of the Airport’s primary runway to maintain flexibility in its facilities. A primary runway extension would allow the Airport to serve long-haul markets in addition to improving service for the current short- and medium-haul markets. Specifically, the existing primary runway length at the Airport is far too short to fully accommodate aircraft capable of providing non-stop service to West Coast markets from T.F. Green Airport. Therefore, to reduce passenger leakage, the primary runway length at T.F. Green Airport needs to be extended to a length that will more fully accommodate aircraft, in order to attract airlines to provide non-stop service from T.F. Green Airport to West Coast markets.
- **Air cargo facilities** – Two facilities currently accommodate cargo operations at the Airport (the belly cargo facility and the Integrated Cargo Facility). The belly cargo facility is located south of the terminal building and the Integrated Cargo Facility is located on Airport Road in Hangar No. 2. The existing belly cargo and ground service equipment (GSE) maintenance building will be demolished to accommodate the proposed terminal and apron expansion, requiring that the belly cargo facilities be replaced. The Integrated Cargo Facilities for dedicated cargo activities currently have 19,400 square feet of available building space. Based upon current industry standards, an integrated cargo facility sized between approximately 18,000 and 35,000 square feet is needed to accommodate existing demand, and between approximately 25,000 and 51,000 square feet is needed to accommodate demand by 2020. A replacement facility for handling belly cargo will be needed and the integrated cargo facility is currently undersized. The efficiency of air cargo facilities will decrease over time if additional capacity is not provided at the Airport.
- **Support facilities** – The existing belly cargo and GSE maintenance functions are operating in a shared facility that is too small to serve the current fleet of motorized GSE units operating at the Airport. In addition, new GSE maintenance facilities are needed to accommodate potential new entrant air carriers, the addition of terminal gates, shifts in the fleet mix, and increased daily departure activity. As the Project calls for the existing GSE maintenance facility to be demolished

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<sup>9</sup> Logan International Airport Airside Improvements Planning Project EIS, Boston, Massachusetts; FAA, New England Region; 2002.

to accommodate the proposed terminal and apron expansion, a new, larger GSE maintenance facility must be created to meet the forecast fleet of motorized GSE units operating at the Airport. Also, demand for Jet A fuel exceeds the existing fuel farm's capacity to receive, process, store, and deliver fuel. The existing fuel farm does not meet industry standards for processing procedures and fuel settling times. Additional Jet A fuel storage capacity is needed to increase throughput and ensure efficient fueling operations at the Airport.

Airport facility enhancements needed for the efficiency of passenger movements include:

- **Passenger terminal complex** – Based upon the forecast increase in passenger volumes and the evolution of the fleet mix to include larger and longer-range aircraft, modifications to the facilities associated with the terminal complex will be required to enhance efficiency and passenger convenience. Modifications to the terminal complex facilities include up to seven additional aircraft gates and modifications to the concourse area, terminal apron, taxi lanes, and the central heating and cooling plant.
- **Roadways** – The existing Terminal Loop Roadway experiences excessive peak hour delays as a result of deficiencies associated with the internal signalized intersection. Enhancements to the roadways that provide access to the terminal area are needed to enhance the existing level of service of the roadway system.
- **Parking facilities** – The capacity of the Airport's long-term passenger and airport employee parking facilities is sufficient for current demand, however, additional parking capacity will be needed to accommodate anticipated passenger and airport employee demand by 2020.

### 5.2.1 Forecast Review

The original forecast of aviation activity developed for this EIS was based upon realistic assumptions and methodologies. The national and global economic recession occurred in 2008-2009 and this affected overall aviation demand. Even with the economic downturn, there remains current and anticipated demand for commercial non-stop service to West Coast markets from T.F. Green Airport. This is based upon the fact that *regional* demand (T.F. Green and Logan Airports) for service to the three largest West Coast markets has not changed in the same manner as other aviation activity at T.F. Green Airport since the time the original forecast was developed. Between 2004 and 2010, the total number of origin and destination (O&D)<sup>10</sup> passengers between T.F. Green and Logan Airports combined has decreased by one percent to the Los Angeles area and increased by 8.6 percent and 20.2 percent to the San Francisco Bay area and Seattle, respectively, for a net increase of 153,000 passengers over all three markets.<sup>11</sup> This demonstrates that regional demand (including T.F. Green and Logan Airports) between these West Coast markets has outpaced overall passenger demand from T.F. Green Airport.

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<sup>10</sup> Passengers who either board (enplane) or deplane at a particular stop, as distinct from those remaining on the plane to go to another destination.

<sup>11</sup> Source: Airline Origin and Destination Survey (DB1B): Market, Bureau of Transportation Statistics, 2011; compiled by Vanasse Hangen Brustlin, 2011.

To address the forecast and the demand for West Coast service, the T.F. Green Airport landside, passenger terminal, and airfield facilities need to be improved. FAA and RIAC adjusted the scale of the passenger terminal improvements by reducing the number of additional proposed gates from 18 in the 2002 Master Plan, to eight in the DEIS, and further reduced to “up to seven additional gates” in the FEIS. These adjustments were made during the planning and EIS process to reflect changed market conditions. In early 2011, FAA confirmed the need for the proposed efficiency projects based upon the latest information available at the time, FAA’s 2010 Draft Terminal Area Forecast (TAF).

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## **6 Alternatives Analysis, Including Range and Evolution of Alternatives**

In close consultation with RIAC, FAA developed and evaluated the T.F. Green Airport Improvement Program alternatives through a six level screening process to identify which alternatives best meet the Improvement Program’s purpose and need and to determine if the alternatives are reasonable and feasible to implement. The safety component of the Improvement Program is focused strictly on physical enhancements to the Airport and cannot be met by off-Airport solutions. For example, there are no off-Airport alternatives available that will bring the deficient RSAs on Runway 16-34 into compliance with the current FAA design criteria. Therefore, in considering off-Airport and non-construction alternatives, FAA focused only on the efficiency enhancement projects that will meet the purpose and need.

The overall intent of the first three screening levels was to identify alternatives that could, at an initial concept level, feasibly and reasonably achieve the goals of the purpose and need. FAA considered on- and off-Airport alternatives, including the use of other airports and modes of transportation, and airport infrastructure or technology improvements. In screening levels 4, 5, and 6, FAA evaluated alternatives made up of combinations of safety and efficiency projects and included an analysis of their potential environmental consequences and costs based upon more detailed design concepts. The six screening levels evaluated a total of 46 on-Airport alternatives and variations of program elements, with 37 on-Airport program element alternatives in screening levels 1 and 2 and nine Airport Improvement Program alternatives in screening levels 3 through 6. Alternatives that could meet the purpose and need and were found to be practicable and feasible were advanced in the alternatives screening process.

### **6.1 Level 1 Screening - Candidate Alternatives**

In the Level 1 Screening, a range of alternatives was identified and evaluated, at an initial concept level, to determine the ability of each alternative to reasonably or practicably meet the purpose and need of the T.F. Green Airport Improvement Program. The analysis included a range of on- and off-Airport alternatives, as well as non-aviation and non-construction alternatives. Alternatives considered included greater use of other airports, developing a new airport, other modes of transportation, non-construction alternatives such as video conferencing, and on-Airport alternatives. Twenty-seven on-Airport candidate alternatives were considered. For more information on these alternatives, see Section 3.3 of the FEIS. Alternatives that did not meet the purpose and need, totally

or in substantial part, were eliminated from further consideration. Only individual program elements that would meet the purpose and need were carried forward.

## **6.2 Level 2 Screening - Preliminary Alternatives**

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In the Level 2 Screening, the alternatives retained from Level 1 were refined and further screened. Any alternatives that, on more detailed evaluation, were found either to be not feasible, unreasonable, or unable to meet the purpose and need were eliminated. Alternatives considered included variations of the on-Airport candidate alternatives that were carried forward from the Level 1 Screening. A total of 27 on-Airport candidate alternatives were considered. Seventeen were carried forward from the Level 1 Screening and 10 modified alternatives were developed. For more information on these alternatives, see Section 3.4 of the FEIS. As a result of comments from state and federal agencies, the City of Warwick, and members of the public, FAA included in Level 2 Screening a preliminary wetlands and stream bed impact analysis.

## **6.3 Level 3 Screening -Airport Improvement Program Alternatives**

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In the Level 3 Screening, five combinations of on-Airport program elements (particularly the Runway 16-34 and Runway 5-23 enhancements) were developed that collectively form the T.F. Green Airport Improvement Program Alternatives. These five build alternatives were screened to determine whether they were reasonable and feasible and should be retained for additional consideration. After the Level 3 Screening, all five alternatives were carried forward. For more information on these alternatives, see Section 3.5 of the FEIS.

## **6.4 Level 4 Screening - Refined Combined Alternatives**

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In the Level 4 Screening, the five Level 3 alternatives were refined and designed to a conceptual level (30 percent design). The five on-Airport alternatives (Improvement Program Options A through E) were evaluated to determine if they were reasonable and feasible based upon safety, environmental impacts, and cost, and if they met the purpose and need and, therefore, should be retained for additional consideration. These Improvement Program Options were a combination of the eleven projects identified in the purpose and need facilities analysis. They included a variety of off-Airport roadway configurations to accommodate the projects, such as relocating a portion of Post Road, tunneling Main Avenue, fully relocating Airport Road, and partially relocating a portion of Airport Road. For more information on the Program Options, see Section 3.6 of the FEIS. The effects of the various Options on the surrounding community and natural resources were also considered, including noise impacts, Section 4(f) impacts, historical resources impacts, and impacts to wetlands and floodplains. Placing Main Avenue in a tunnel was found impracticable and all four Options with the Main Avenue Tunnel were eliminated from further consideration; one Option (Option B) was moved forward to the Level 5 Screening. The Level 4 Screening also evaluated three integrated cargo facility sites and one of these three sites was carried forward into the Level 5 Screening. For more information on the three sites, see Section 3.6 of the FEIS.

## **6.5 Level 5 Screening - Further Refined Build Alternatives**

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In the Level 5 Screening, the alternative advanced from the Level 4 Screening was modified into Alternative B1 (runway extension to 9,350 feet) and additional alternatives were identified, including Alternative B2 (runway extension to 8,700 feet to the north and south) and Alternative B3 North (runway extension to 8,300 feet to the north and south). Altogether, the Level 5 Screening evaluated five build alternatives. For more information on these Alternatives, see Section 3.7 of the FEIS.

Shorter lengths for Runway 5-23 (envisioned in Alternatives B2 and B3 North) were considered with the goal of reducing community and natural resource impacts to the greatest extent practicable, while meeting the purpose and need. Alternative B3 North was eliminated after it was found that it would result in substantially similar environmental impacts to Alternative B2 while not meeting the purpose and need as fully as Alternative B2. In addition, RIAC determined Alternative B3 North was not practicable to justify its financial investment.

Subsequent to the dismissal of Alternative B3 North, the Project (Alternative B4) was developed (runway extension to 8,700 feet to the south). The Project was developed to minimize impacts caused by an extension of the runway to the north, which was proposed in Alternatives B1, B2, and B3 North. In order to compare the Project to an 8,300-foot alternative that also avoided impacts caused by a northerly runway extension, Alternative B3 South was developed (runway extension to 8,300 feet to the south).

Alternative B3 South was eliminated from further consideration after it was determined that it would result in substantially similar noise impacts, Section 4(f) impacts, historical resources impacts, socioeconomic impacts, construction impacts and costs, and identical impacts to wetlands and floodplains as the Project, while not meeting the purpose and need as fully as the Project.

In the final step of the Level 5 Screening, Alternative B1 was eliminated from further consideration. Although a Runway 5-23 extension to 9,350 feet most fully meets the purpose and need, it also has the greatest impacts to natural resources and the community, and has the highest costs. Mitigation for the adverse environmental impacts of such a runway, if possible, was found impracticable and inconsistent with federal and state regulations and policies. Based upon these considerations, Alternative B1 was eliminated from further consideration. Therefore, Alternative B2, which includes an 8,700 Runway 5-23 extended to the north and south, and the Project, which includes an 8,700-foot Runway 5-23 extended to the south, were advanced in the alternatives screening process. Both alternatives include all the other safety and efficiency enhancement program elements. As with each level of the screening process, the No-Action Alternative was also advanced.

## **6.6 Level 6 Screening - Final Alternatives**

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Due to the longevity of the T.F. Green Airport Improvement Program NEPA process and the economic recession, following the environmental analysis in the Level 5 Screening, FAA compared the aviation activity forecasts with its most recent TAF, as directed by FAA Order 5050.4B, to confirm that the forecast was within 10 to 15 percent of the most recent TAF at the time. The original 2004

forecast of aircraft operations and passenger enplanements was no longer within FAA consistency criteria.<sup>12</sup> Therefore, the forecast was updated in 2009. The Level 6 Screening used the revised DEIS Forecast and compared the environmental consequences and benefits of the No-Action Alternative, Alternative B2, and the Project for the relevant environmental resource categories specified in FAA Order 1050.1E.

The FEIS evaluated the environmental impacts of three alternatives: Alternative B2, the Project (collectively referred to as “the Build Alternatives”), and the No-Action Alternative, all of which are described below.

#### **6.6.1 Alternative B2**

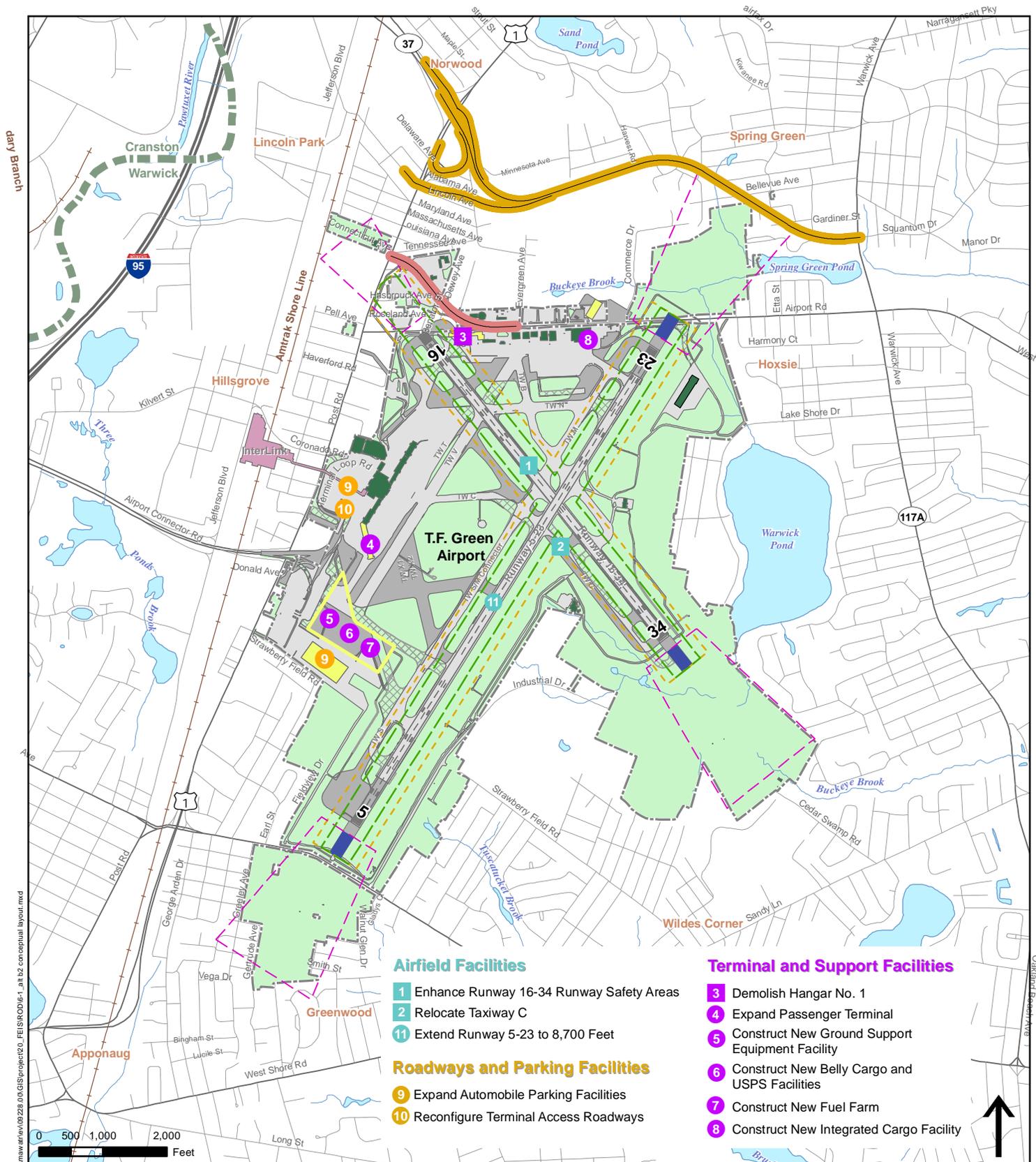
Alternative B2 (Figure 6-1) was developed to avoid impacts to Main Avenue and minimize impacts to natural resources and residential communities south and north of the Airport. Table 6-1 summarizes the program elements included in Alternative B2. Runway 5-23 would be extended approximately 600 feet north and 930 feet south, for a total of 8,700 feet. Alternative B2 includes Runway 16-34 safety enhancements, Partially Relocated Airport Road, Fully Relocated Airport Road with associated enhancements to Warwick Avenue, and the Integrated Cargo Facility. EMAS would be used on the Runway 23, 5, and 34 Ends.

The construction of Alternative B2 would be phased so that the safety enhancements associated with Runway 16-34 would be completed as early as the end of 2015, while the efficiency enhancements, including the extension of Runway 5-23, would be completed as early as 2020. As described above, the elements expected to be completed by the end of 2015 include:

- Runway 16-34 safety areas, taxiways and aprons, the Runway 16-34 Perimeter Road, drainage, utilities, necessary land acquisition, and Delivery Drive relocation, requiring partially Relocated Airport Road, including drainage, utilities, and necessary land acquisition;
- Taxiway C Relocation; and
- Hangar No. 1 Demolition.

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<sup>12</sup> FAA Order 5050.4B states that forecasts should be within 10 percent of the TAF for the 5-year analytical period and within 15 percent for the 10-year analytical period.



**Airfield Facilities**

- 1 Enhance Runway 16-34 Runway Safety Areas
- 2 Relocate Taxiway C
- 11 Extend Runway 5-23 to 8,700 Feet

**Roadways and Parking Facilities**

- 9 Expand Automobile Parking Facilities
- 10 Reconfigure Terminal Access Roadways

**Terminal and Support Facilities**

- 3 Demolish Hangar No. 1
- 4 Expand Passenger Terminal
- 5 Construct New Ground Support Equipment Facility
- 6 Construct New Belly Cargo and USPS Facilities
- 7 Construct New Fuel Farm
- 8 Construct New Integrated Cargo Facility

**Legend**

- No-Action Airport Property Boundary (2015)
- Airport Buildings
- No-Action Existing Pavement
- Proposed Pavement to be Removed
- Proposed New Pavement
- EMAS
- EIS Project
- Efficiency Enhancement Element
- Safety Enhancement Element
- Fully Relocated Airport Road (2020)
- Partially Relocated Airport Road (2015)
- Realigned Main Avenue (2015)
- Runway Object Free Area
- Runway Safety Area
- Runway Protection Zone

Note: New Deicer Management System to be constructed under the No-Action Alternative at an on-Airport location to be determined.



**Figure 6-1**

**Alternative B2 Conceptual Layout**

T.F. Green Airport Improvement Program EIS

# T.F. Green Airport Improvement Program

## Record of Decision

**Table 6-1 Summary of EIS Build Alternatives**

Program Element	Alternative B2	The Project
<i>Safety Enhancement Elements (Completed by the end of 2015)</i>		
Enhance Runway 16-34 Safety Areas and Rehabilitate Pavement	Yes and shift 400' to north	Yes and shift 100' to north (pavement rehabilitation will be completed by 2020)
Partially Relocate Airport Road to accommodate Runway 16-34 RSAs	Partially Relocate at Tennessee Avenue	Partially Relocate at Hasbrouck Avenue
Relocate Delivery Drive	Yes	Yes
Relocate Taxiway C	Yes	Yes
Demolish Hangar No. 1	Yes	Yes
<i>Efficiency Enhancement Elements (Completed by 2020 except as noted)</i>		
Extend Runway 5-23 by 1,530 feet to 8,700 feet	Extend to north and south	Extend to south (by end of 2015)
Enhance Runway 5-23 Safety Areas	Yes	Runway 5 End only
Realign/Relocate Off-Airport Roadways	Fully Relocate Airport Road from Squantum Drive to Route 37	Realign Main Avenue by end of 2015
Construct New Integrated Cargo Facility (Site 3)	Site 3	Split Facility at Site 3
Expand Passenger Terminal by up to 7 gates	Yes	Yes
Construct New Ground Support Equipment Facility	Yes	Yes
Construct New Belly Cargo Facility	Yes	Yes
Construct Fuel Farm	Yes	Yes
Expand Automobile Parking Facilities	Yes	Yes
Reconfigure Terminal Access Roadways	Yes	Yes
<b>Estimated Construction and Land Acquisition Costs</b>	<b>\$516 million</b>	<b>\$439 million</b>

The elements expected to be completed by 2020 include:

- Runway 5-23 extension and safety areas, taxiways and aprons, the Runway 5-23 Perimeter Road, drainage, utilities, and necessary land acquisition (the Runway 5-23 extension will result in the removal of the Winslow Park facilities that are within the Project's Runway 5-23 Runway Protection Zone (RPZ)); requiring Fully Relocated Airport Road, including drainage, utilities and necessary land acquisition;
- Runway 5-23 will be repaved and Runway 16-34 will be reconstructed and repaved; and
- Expanded passenger terminal and gates, new GSE facility, new belly cargo facility, new fuel farm, new Integrated Cargo Facility, expanded auto parking facilities, and reconfigured terminal access roadways.

### 6.6.2 The Project (Alternative B4 - FAA's Selected Alternative)

The Project (Figure 2-1) will extend Runway 5-23 south approximately 1,530 feet for a total of 8,700 feet. It shifts Runway 16-34 north just under 100 feet to accommodate the RSAs and minimizes impacts to businesses on the Runway 16 End and natural resources on the Runway 34 End. The Runway 16-34 safety enhancements will require a partial relocation of Airport Road at the intersection of Post Road and Airport Road. Airport Road will be partially relocated to the north by the end of 2015. Main Avenue will be shifted to the south at the Runway 5 End by the end of 2015. EMAS will be used on the Runway 5, 16, and 34 Ends. The Integrated Cargo Facility will consist of a split operation in the vicinity of Site 3, including the existing Hangar No. 2, where cargo operations currently are housed, and a new cargo building east of the Runway 16 End. Table 6-1 summarizes the program elements included in the Project.

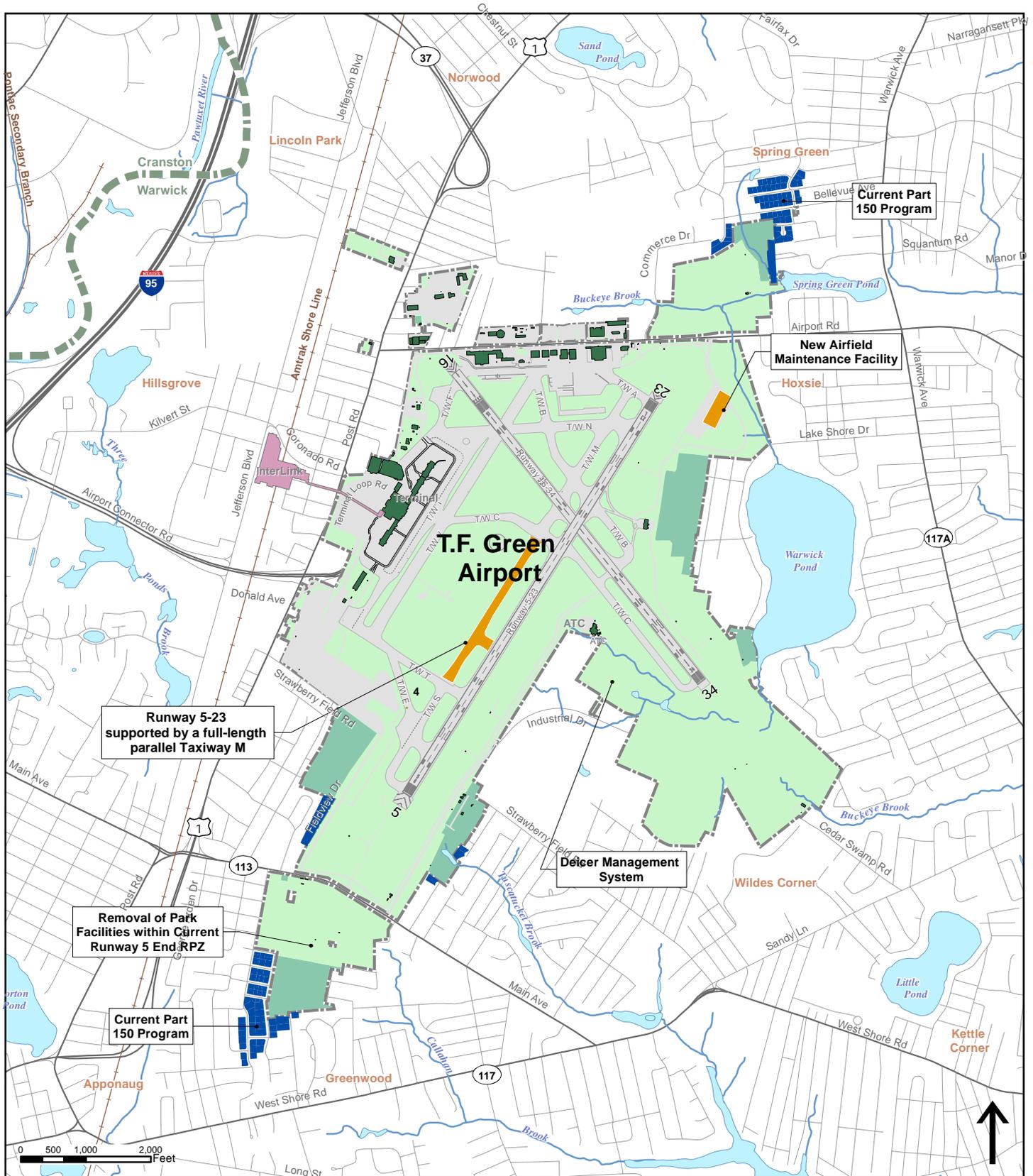
In order to meet FAA's deadline for bringing RSAs up to standard by 2015, as well as to address community concerns about which houses will be acquired, RIAC is considering ways to move certain program elements forward. An expedited schedule is only possible for the Project because the number of parcels required for mandatory land acquisition for construction is substantially less than the number of parcels that would be required to construct Alternative B2. For the Project, it is assumed that construction will be phased so that the safety enhancements associated with Runway 16-34 and the Runway 5-23 extension will be completed by the end of 2015. Specifically, those elements expected to be completed by the end of 2015 include:

- Runway 16-34 safety areas, taxiways, navigational aids and lighting, the Runway 16-34 Perimeter Road, drainage and utilities, land acquisition required for construction, Delivery Drive relocation, and Partially Relocated Airport Road, including drainage, utilities and land acquisition required for construction;
- Taxiway C Relocation;
- Hangar No. 1 Demolition; and
- Runway 5-23 extension and safety areas, taxiways and aprons, navigational aids and lighting, the Runway 5-23 Perimeter Road, drainage, utilities, and land acquisition required for construction (the Runway 5-23 extension will result in the removal of the portions of Winslow Park facilities that are within the Project's Runway 5 RPZ), and Realigned Main Avenue, including drainage and utilities and land acquisition required for construction.

The Runway 5-23 and Runway 16-34 reconstruction and repaving and the remaining efficiency enhancement elements will be completed by 2020, including the expanded passenger terminal and gates, new GSE facility, new belly cargo facility, new fuel farm, new Integrated Cargo Facility, expanded auto parking facilities, and reconfigured terminal access roadways.

### 6.6.3 No-Action Alternative

The future No-Action Alternative (Figure 6-2) provides a base scenario for assessing the impacts of the Build Alternatives being considered. The No-Action Alternative comprises any and all actions that RIAC



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**Legend**

- No-Action Airport Property Boundary (2015)
- 2004 Airport Boundary
- Completed Part 150 VLAP
- Airport Buildings
- Municipal Boundary
- No-Action Alternative Project
- Current Part 150 VLAP



**Figure 6-2**  
**No-Action Alternative**

T.F. Green Airport  
Improvement Program EIS

intends to complete<sup>13</sup> that are independent of the T.F. Green Airport Improvement Program and that will be undertaken whether or not the Improvement Program moves forward. The No-Action Alternative assumes that periodic maintenance and minor modifications needed to maintain safe operations at T.F. Green Airport will be undertaken. Other planned actions within or near T.F. Green Airport, by RIAC and by other parties, are assumed to have occurred prior to constructing the first phase of the Improvement Program (2015). Figure 6-2 identifies the No-Action Airport projects that will change the physical footprint of the Airport. These include the following projects:

- Airfield Maintenance Facility and access roadway (completed 2007);
- Full-length parallel Taxiway M supporting Runway 5-23 (completed 2008);
- InterLink (completed 2010);
- Removal of the Winslow Park facilities within the current Runway 5 End RPZ (to be completed by 2012);
- New Deicer Management System on-Airport (to be completed by 2015); and
- Land acquisition under the Completed and Current Part 150 Program.

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## **7 The Preferred Alternative, The Sponsor's Proposed Action, The Environmentally Preferable Alternative, and FAA's Selected Alternative**

As required by the Council on Environmental Quality (CEQ) (40 C.F.R. § 1502.14(e)), a lead agency must identify its Preferred Alternative in the FEIS and must identify the Environmentally Preferable Alternative (40 C.F.R. § 1505.2(b)) at the time of its decision.

### **7.1 The Preferred Alternative**

The Preferred Alternative is identified "after reviewing each alternative's ability to fulfill the agency's mission while considering their economic and environmental impacts, and technical factors."<sup>14</sup> FAA's mission is to provide for the safe and efficient use of the national airspace. Alternative B2 and the Project fulfill FAA's mission by enhancing airport safety and enhancing efficiency of the Airport and the New England Regional Airport System to more fully meet the current and anticipated demand for aviation services. FAA identified Alternative B4 as the Preferred Alternative in the FEIS.

### **7.2 The Sponsor's Proposed Action**

In keeping with CEQ's guidance regarding identification of a preferred alternative and because FAA does not initiate airport development projects, FAA's selection of a preferred alternative may, where appropriate, take account of, and accord substantial deference to, the Airport Sponsor's preferences. Consideration of the Airport Sponsor's preferences in evaluating alternatives is appropriate where all alternatives meet the needs of the national airspace system and there is no clearly superior alternative from an environmental standpoint that meets the stated purpose and need. The RIAC Board

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<sup>13</sup> Three of the six projects listed under the No-Action Alternative were completed prior to the filing of the FEIS.

<sup>14</sup> FAA Order 5050.4B, Paragraph 1007(e)(7), p. 10-12, April 28, 2006.

resolution on May 30, 2007, states that “an 8300 foot Runway 5-23 conceptual option will not produce the level of service benefits sought to be achieved through the Airport Improvement Program as generally stated in the EIS Purpose and Need Statement and will provide only limited potential environmental and costs savings benefits over those provided by an 8700 foot Runway 5-23 alternative.” In an April 22, 2010, letter to FAA, RIAC stated that the Project is its proposed action and its preferred alternative because a runway length of 8,700-feet provides the air carriers with maximum flexibility, the Project is substantially less disruptive to residential properties and businesses than other alternatives that meet the purpose and need, and it has the least impact on the environment (wetlands).

### **7.3 The Environmentally Preferable Alternative**

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The Environmentally Preferable Alternative is the alternative which best promotes the national environmental policy as expressed in Section 101 of NEPA (FAA Order 5050.4B, Paragraph 1301 c(1)). FAA Order 5050.4B states that FAA’s Preferred Alternative may be the Environmentally Preferable Alternative, but it need not be. In general, this is the alternative resulting in the least damage to the biological and physical environment and which best protects, preserves, and enhances historic, cultural, and natural resources. FAA identified the No-Action Alternative as the Environmentally Preferable Alternative.

In making its decision, FAA selects the alternative that best satisfies the purpose and need and FAA’s statutory mission, while also meeting FAA’s environmental responsibilities. In making its selection, FAA has completed the appropriate environmental review and the necessary steps in the NEPA process, including:

- Careful consideration of the alternatives and the ability of the alternatives to satisfy the identified purpose and need;
- Evaluation of the potential impacts of the alternatives carried forward; and
- Review and consideration of public testimony, comments submitted in response to the DEIS and FEIS, and coordination with federal, state, and local agencies.

The Environmentally Preferable Alternative is often found to be the No-Action Alternative. Although FAA has analyzed all reasonable steps to minimize harm from significant adverse environmental impacts from the Project, FAA recognizes that the No-Action Alternative would impose the least environmental impact when compared to the other alternatives. Therefore, the No-Action Alternative is the Environmentally Preferable Alternative. Notably, the No-Action Alternative would avoid the impacts of land acquisition and relocation of homes and businesses, as well as impacts on wetlands, floodplains, cultural and historic resources, some noise impacts, some Section 4(f) impacts to recreational facilities, and a possible Section 6(f) resource impact.

## T.F. Green Airport Improvement Program

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Although the No-Action Alternative results in fewer overall environmental impacts, it is not considered a reasonable alternative. The No-Action Alternative is not capable of enhancing airport safety or enhancing the efficiency of the Airport and the New England Regional Airport System to more fully meet the current and anticipated demand for aviation services. It, therefore, does not meet the purpose and need of the T.F. Green Airport Improvement Program.

#### 7.4 FAA's Selected Alternative

FAA identified Alternative B4 as the Preferred Alternative in the FEIS and now selects Alternative B4 (the Project) for implementation. The Project is shown in Figure 2-1 and described in Section 6.6.2, *The Project (Alternative B4 - FAA's Selected Alternative)* of this ROD. Both Alternative B2 and the Project meet the purpose and need. The environmental and socioeconomic impacts of these alternatives are shown in Table 7-1. Table 7-1 represents the total impacts of Alternative B2 and the Project as of 2020.

**Table 7-1 Alternative B2 and the Project: Summary of Key Impacts, Revenues, and Costs**

Impact Category	Alternative B2	The Project
<b>Business Revenue and Tax Impacts</b>		
Gains in Business Revenue in Warwick (2015-2020)	\$63 million	\$385 million
Gains in Business Revenue in Rhode Island (2015-2020)	\$136 million	\$816 million
Gains in Personal Income in Rhode Island (2015-2020)	\$53 million	\$318 million
Gains in State Tax Revenue in Rhode Island (2015-2020)	\$2 million	\$13 million
Annual Property Tax Revenue Loss in City of Warwick, starting in 2020	(\$1,173,997)	(\$567,521)
<b>Temporary Economic Impacts from Construction, 2012 through 2020</b>		
Construction Jobs	1,227 jobs	1,335 jobs
Personal Income	\$53.6 million	\$58.3 million
Statewide Business Revenue	\$161.5 million	\$157.8 million
<b>Business and Job Impacts</b>		
Businesses and Jobs Adversely Affected by Land Acquisition (in Warwick) <sup>1</sup>	38 businesses, 309 jobs	12 businesses, 59 jobs
Most Threatened Jobs - Direct Impact in Warwick	4 businesses, 39 jobs	3 businesses, 14 jobs
Most Threatened Jobs - Direct and Indirect Impacts in Rhode Island	78 jobs	28 jobs
Net Change (Gains) in Jobs in Warwick	733	774 <sup>2</sup>
<b>Residential Acquisition Impacts (2015 and 2020)</b>		
Mandatory Residential Land Acquisition (Due to Construction)	67 housing units	11 housing units
Voluntary Residential Land Acquisition (Noise Mitigation <sup>2</sup> and RPZ)	170 housing units	129 housing units
Total Residential Land Acquisition	237 housing units	140 housing units

1 There is considerable opportunity for relocating the displaced businesses (with the exception of manufacturing, or "most threatened," businesses) to vacant or underdeveloped areas within the City of Warwick. Direct impacts to "most threatened" businesses include four businesses (39 jobs) under Alternative B2, and two businesses (14 jobs) under the Project which are unlikely to relocate within Warwick due to limited vacant/developable industrial lands.

2 Includes residences outside the DNL 70 dB noise contour that have been identified as eligible for acquisition under the concept of "neighborhood equity" or "neighborhood rounding." See FEIS Section 5.1.4, *Land Acquisition Assumptions* (second bullet on FEIS page 5-8) for more discussion of neighborhood rounding.

**Table 7-1 Alternative B2 and the Project: Summary of Key Impacts, Revenues, and Costs (continued)**

<b>Impact Category</b>	<b>Alternative B2</b>	<b>The Project</b>
<b>Noise Impacts After Accounting for Land Acquisition (2015 and 2020 total)</b>		
Exposed to Significant Noise levels (increase of >DNL 1.5 dB at or above DNL 65 dB)	174 people, 74 housing units	434 people, 185 housing units, 1 site
Exposed to Significant Noise Levels and Not Previously Sound Insulated	0 people, 0 housing units, 0 sites	56 people, 24 housing units, 1 site
Exposed to Noise Greater than DNL 70 dB	35 people, 15 housing units	52 people, 22 housing units
Exposed to Noise Between DNL 65 dB and 69.9 dB	2,432 people, 1,035 housing units	2,632 people, 1,120 housing units
Exposed to Noise Between DNL 65 dB and 69.9 dB and Not Previously Sound Insulated	308 people, 131 housing units	369 people, 157 housing units
Exposed to Roadway Traffic Noise	108 housing units	58 housing units
<b>Historic Resources Impacts</b>		
Hangar No. 1 (National Register Eligible)	Adverse effect due to demolition	Adverse effect due to demolition
Hangar No. 2 (National Register Eligible)	Adverse effect due to elimination of public access and view	No adverse effect
Rhode Island State Airport Terminal (Listed on National Register)	Adverse effect due to elimination of public access and view	Adverse effect due to partial landside lawn removal, obstructed public view
Eligible Airport Historic District (National Register Eligible)	Adverse effect due to airfield reconfiguration, hangar, and terminal effects	Adverse effect due to airfield reconfiguration, hangar, and terminal effects
Warwick Historic Cemetery (WHC) 26	Significant impact due to encroachment	Significant impact due to encroachment
Warwick Historic Cemeteries (WHC) 76, 77, and 78	No impact	Possible significant impact from demolition of housing units and Realigned Main Avenue
<b>Section 4(f) / 6(f) Impacts</b>		
Hangar No. 1	Physical use	Physical use
Hangar No. 2	Constructive use	No physical use ( <i>de minimis</i> )
Rhode Island State Airport Terminal	Constructive use	Physical use
Eligible Airport Historic District	Physical use	Physical use
Winslow Park	Physical use	Physical use
<b>Wetlands Impacts</b>	5.8 acres/773 linear feet including impacts to Buckeye Brook	5.0 acres/843 linear feet with no impacts to Buckeye Brook
<b>Floodplain Impacts</b>	0.5 acres	2.3 acres
<b>Conversion of Farmland of Statewide Importance</b>	10.6 acres direct impact + 8.2 acres indirect impact due to fragmentation	No impact
<b>Construction and Preliminary Mitigation Costs</b>	\$516 million	\$439 million

As seen in Table 7-1, when compared to Alternative B2, the Project has the following benefits:

- Demand for non-stop service to the West Coast could be accommodated and airport and system efficiency could be improved five years earlier than with Alternative B2.
- The same aviation safety and efficiency benefits will be realized at a cost for construction and mitigation of \$77 million (15 percent) less than for Alternative B2.
- If the expedited construction schedule of the Project is phased as anticipated, it will result in 80 percent greater economic gains between 2015 and the end of 2020 than Alternative B2, which is a total of \$680 million more in business revenue for the State of Rhode Island than under Alternative B2.
- Based upon the anticipated construction schedule, between 2012 and the end of 2020, the Project will create over 100 additional construction jobs and generate approximately \$4 million more in personal income in Warwick and statewide than Alternative B2.
- The Project will result in the acquisition of 97 fewer housing units than Alternative B2, nearly all of which are considered “affordable,” as defined by the State of Rhode Island (RI General Law 42-128-8.1 and 45-53-3).
- The Project requires the acquisition of 26 fewer businesses than Alternative B2.
- As a result of the acquisition of fewer businesses, the Project will displace 250 fewer jobs, including 25 fewer “most threatened” jobs that are unlikely to relocate within the City of Warwick due to limited vacant/developable industrial lands.
- As a result of the acquisition of fewer housing units and businesses, starting in 2020, the Project will preserve \$606,476 more than Alternative B2 in annual City of Warwick property taxes.
- The Project will introduce 782 total jobs in the City of Warwick in 2015. (Alternative B2 will not result in job growth until 2020).
- The Project will not disrupt the Spring Green Neighborhood because it will not require fully relocating Airport Road.
- The Project will expose 50 fewer housing units to roadway traffic noise impacts than Alternative B2.
- The Project will not result in an adverse Section 106 effect or a Section 4(f) use to Hangar No. 2.
- Alternative B2 and the Project would both result in an adverse effect under Section 106 and a Section 4(f) use to the Rhode Island State Airport Terminal. Alternative B2 would completely eliminate the public’s view of the Terminal from Airport Road (due to fully relocating Airport Road). In contrast, the Project will only obstruct the public’s view of the Terminal from Airport Road (as a result of the proposed split Integrated Cargo Facility).

- The Project will fill 0.8 fewer acres of wetlands and will not directly impact Buckeye Brook or adjacent wetlands.
- The Project will not require conversion of 10.6 acres of Farmland of Statewide Importance.
- The Project will not reduce the last operating farm in the study area, Confreda Farm, from 42.6 acres to 20.6 acres, nor will it result in the potential total loss of Confreda Farm, due to induced development.

When compared to the Project, Alternative B2 has the following benefits:

- Alternative B2 has fewer noise impacts. Compared to the Project, Alternative B2 would result in 260 fewer people and 111 fewer housing units being significantly impacted by noise; of these, only 24 more housing units (56 people) have not previously been sound insulated. Alternative B2 would result in 17 fewer people and seven fewer housing units being exposed to noise at or above DNL 70 dB. Alternative B2 would result in 200 fewer people and 85 fewer housing units being exposed to noise between DNL 65 dB and 70 dB; of these, only 26 more housing units (61 more people) have not previously been sound insulated.
- Based upon the anticipated construction schedule, Alternative B2 would generate approximately \$2 million more in construction business spending in Warwick and \$3.7 million statewide than the Project between 2012 and the end of 2020.
- Alternative B2 would require filling 1.8 fewer acres of floodplains than the Project.
- Alternative B2 would not result in significant impacts to Warwick Historic Cemeteries (other than WHC 26), whereas the Project may potentially significantly impact WHC 76, 77, and 78.
- Alternative B2 would not directly impact the landscaping of the Rhode Island State Airport Terminal, which is an adverse Section 106 effect and a Section 4(f) physical use.
- Vehicular congestion is substantially reduced under Alternative B2 due to the full relocation of Airport Road and a direct east-west connection to Route 37. This connection allows traffic traveling through Warwick to make direct regional connections without the need to travel along Post Road (U.S. Route 1). Easing congestion along Post Road improves intersection operations, reduces vehicle miles traveled and vehicle hours traveled, and provides additional localized air quality benefits.

By virtue of the discussion above, it is clear that neither Alternative B2 nor the Project is clearly environmentally preferable. The environmental impacts are substantially similar. Alternative B2 and the Project would impact a comparable amount of wetlands and floodplains, they would have similar adverse effects to historic properties, and they would cause virtually the same impacts to Winslow Park, a Section 4(f)/Section 6(f) resource. The main difference between the alternatives is that the Project will create significant noise impacts five years earlier than Alternative B2 and that by 2020 the Project will have a significant noise impacts to 111 more housing units than Alternative B2. Of all

the housing units that will be significantly impacted by the Project, all but 24 have already received sound insulation. A large percentage of these 111 housing units would be acquired under Alternative B2, thus, the difference in noise impacts is not as great as it would appear by solely examining the number of impacted residences.

The difference in socioeconomic impacts is more substantial. Specifically, Alternative B2 would result in the acquisition of 97 more housing units and 26 more businesses than the Project, which will result in the displacement of 250 more jobs including 25 more “most threatened jobs,” which are unlikely to relocate in Warwick due to limited vacant/developable industrial lands. Alternative B2 would substantially disrupt the Spring Green Neighborhood because of the construction of Fully Relocated Airport Road, however, because of the inherent difficulty in comparing adverse socioeconomic impacts and adverse noise impacts, it is sufficient to say that between these two build alternatives, there is no clearly environmentally superior alternative. All of the significant impacts of the Project can be mitigated, as described in FEIS Chapter 6, *Mitigation*, and summarized in Section 10, *Mitigation*, of this ROD.

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## **8 Public and Agency Involvement**

FAA has committed to public involvement and sought agency input throughout the EIS process. The facets of the program include:

- Public and Agency Scoping.
- A Public Involvement Program, summarized in Section 8.1, *Public Involvement*, of this ROD.
- A project mailing that included seven public libraries, 17 state and federal resource agencies, 20 federal and state officials, approximately 15 elected and appointed officials in two municipalities, and 1,033 individuals. Individuals signed up for the mailing list at the scoping meetings, public information meetings, DEIS hearing, and on the public website.
- An Agency Coordination process, summarized in Section 8.2, *Consultation and Coordination*, of this ROD.
- A Public Hearing on the DEIS.
- The Executive Summary and CD-ROMs of the DEIS and FEIS were distributed to federal, state, and municipal elected and appointed officials, and individuals. Printed copies and CD-ROMs of the DEIS and FEIS were provided to public libraries, state and federal resource agencies, and on the public website.

### **8.1 Public Involvement**

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The public has been provided extensive opportunities for input and involvement and the public’s interests and concerns have been fully considered throughout the environmental review and decision-making process regarding the Project. Public meetings were held at various points

throughout the development of the EIS and numerous public comments were received in the following formats: oral, written, email, and through the public website. All public comments have been reviewed to ensure that the needs and concerns of the public were considered. Based upon the extensive opportunities for public participation, FAA is satisfied that full consideration has been given to the public's views on the Airport plans.

The public involvement program included the following:

- On January 19, 2005, a Notice of Intent was published in the Federal Register followed by a public scoping meeting held on February 8, 2005, and a scoping comment period that ran from January 19, 2005, to February 22, 2005.
- Between October 2005 and June 2009, FAA held six public information meetings that were each attended by 90 to 600 people and one small group public meeting attended by 50 people.
- In July 2010, the DEIS was distributed and a Notice of Availability was published in the Federal Register on July 16, 2010. A joint public hearing was held on the DEIS and the Clean Water Act Section 404 Permit on August 17, 2010. The DEIS public comment period was extended from the required 45 days per CEQ, to 61 days and ran from July 16, 2010, to September 15, 2010.
- Approximately 2,200 comments on the DEIS were submitted in 160 individual letters, comment forms, emails, or orally. More than 1,500 of the total comments came from the City of Warwick and focused on the purpose and need, socioeconomic impacts, wetlands, and noise. Two federal agencies and five state agencies commented primarily on impacts to wetlands, water quality, and mitigation. Five non-governmental agencies commented primarily on wetlands. A total of approximately 150 letters and public hearing comments from the public focused primarily on noise, land acquisition, socioeconomic impacts, and the purpose and need. The comments were reviewed and considered by FAA in the preparation of the FEIS. FAA's responses to the comments on the DEIS are provided in Volumes 3 and 4 of the FEIS.
- In July 2011, the FEIS was distributed and a Notice of Availability was published in the Federal Register on July 8, 2011, at which time the 30-day waiting period commenced. FAA received comments on the FEIS from the City of Warwick, the USEPA, the USACE, the Warwick Historical Cemetery Commission, and the RIHPHC. These comments were carefully evaluated and are addressed in Attachment A, *Responses to Comments on the FEIS*, of this ROD.
- FAA notified stakeholders and the public about the public information meetings and publication of the DEIS and FEIS through direct individual mailings, email notifications, telephone calls, internet postings on the project website and on a number of state government websites, postings on community bulletin boards and in local businesses, and advertisements in the Warwick Beacon, Cranston Herald, and Providence Journal, and on cable television. Meeting notices were also sent to federal, state, and local elected officials.

## **8.2 Consultation and Coordination**

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FAA acknowledges the significant role played by the Federal Highway Administration (FHWA) by serving as a cooperating agency. In addition, FAA acknowledges the significant roles played by the agencies that participated in the Inter-Agency/Tribal Coordination Group (the Coordination Group). Coordination with the City of Warwick occurred under a separate agreement. The Coordination Group was modeled after the streamlining recommendations included in the *Vision 100- Century of Aviation Reauthorization Act of 2003*. The coordination group included:

- Narragansett Indian Tribal Historic Preservation Office (NITHPO)
- Federal Highway Administration – Rhode Island Division (FHWA)
- Federal Transit Administration – Region I (FTA)
- Rhode Island Coastal Resources Management Council (RICRMC)
- Rhode Island Department of Environmental Management (RIDEM)
- Rhode Island Department of Health (RIDH)
- Rhode Island Historical Preservation & Heritage Commission (RIHPHC)
- Rhode Island Office of the Governor
- Rhode Island Statewide Planning
- Rhode Island Department of Transportation (RIDOT)
- Rhode Island Airport Corporation (RIAC)
- Rhode Island Rivers Council
- U.S. Army Corps of Engineers – New England District (USACE)
- U.S. Environmental Protection Agency – Region I (USEPA)
- U.S. Department of Housing and Urban Development (HUD)
- U.S. Fish and Wildlife Service – Northeast Region (USFWS)

The participation of the Coordination Group in a series of meetings and its review of detailed technical reports over the course of the EIS process greatly benefited FAA and provided a substantial amount of information and perspective on the proposed development from the viewpoint of the other agencies. These meetings and early reports were intended to both enhance the ability of those entities to comment meaningfully and to coordinate the environmental review process during the development of the DEIS, in the formal comment period thereafter, and in the preparation of the FEIS. Agencies were provided with the opportunity to review technical reports on the purpose and need and alternatives analysis; other technical reports were selectively sent to entities with regulatory jurisdiction for further review and input; and the agencies were able to discuss the results of the reports and their comments with FAA and each other at the meetings listed in Table 8-1.

**Table 8-1 Coordination Group Meetings**

Meeting	Date	Topics
Agency Scoping Meeting	February 8, 2005	DEIS Scope Definition
1st Coordination Group Meeting	March 15, 2005	Coordination Agreement
2nd Coordination Group Meeting	April 27, 2005	Finalized Coordination Agreement
3rd Coordination Group Meeting	October 3, 2005	Presented Draft Purpose and Need
4th Coordination Group Meeting	November 8, 2005	Reviewed and Revised Purpose and Need
5th Coordination Group Meeting	March 21, 2006	Reviewed Draft Alternatives Analysis
Coordination Group Tour	April 26, 2006	Airport and Surrounding Communities Tour
6th Coordination Group Meeting	July 25, 2006	Reviewed Draft Supplemental Alternatives Analysis
7th Coordination Group Meeting	February 6, 2007	Presented Draft Summary of Findings
8th Coordination Group Meeting	April 11, 2007	Presented Draft Summary of Findings
9th Coordination Group Meeting	June 13, 2007	Reviewed New Alternative
Coordination Group Tour	November 7, 2008	Airport and Surrounding Communities Tour
10th Coordination Group Meeting	April 8, 2009	Reviewed the Project
11th Coordination Group Meeting	June 3, 2009	Reviewed the Project Impacts
12th Coordination Group Meeting	April 11, 2011	Update on FEIS and Mitigation

## 9 Environmental Consequences

This section of the ROD summarizes environmental consequences of Alternative B2 and the Project in terms of changes from the No-Action Alternatives. It provides a brief comparative overview of the environmental impacts of Alternative B2 and the Project in Section 9.1, *Summary Comparison of Environmental Consequences of the Build Alternatives*. Table 7-1 provides a summary of environmental consequences of Alternative B2 and the Project. Section 9.2, *Environmental Consequences of the Project*, provides a more expanded discussion of the environmental impacts of the Project. More information on the environmental consequences can be found in Chapter 5 of the FEIS. FEIS Chapter 4, *Affected Environment*, describes the baseline environmental conditions within the study area and the area potentially affected by the alternatives. FEIS Chapter 5, *Environmental Consequences*, describes the environmental impacts of the No-Action Alternative and of Alternative B2 and the Project.

The following impact categories are discussed in this ROD because one or both of the Build Alternatives would result in significant impacts:

- Noise
- Compatible Land Use
- Historic, Architectural, Archaeological, and Cultural Resources
- U.S. Department of Transportation Section 4(f) and Section 6(f) Resources
- Wetlands and Waterways
- Floodplains

Social and socioeconomic impacts, while not significant, are discussed in this section because they require mitigation and were the subject of numerous comments on the DEIS. The following environmental impact categories are not addressed in this section because the Build Alternatives would not result in significant impacts:

- Environmental Justice and Children’s Health and Safety Risks
- Surface Transportation
- Air Quality
- Water Quality
- Fish, Wildlife, and Plants
- Coastal Resources
- Farmlands
- Hazardous Materials and Solid Waste
- Light Emissions and Visual Environment
- Natural Resources and Energy Supply
- Construction Impacts

Wild and scenic rivers and federally threatened and endangered species are not present in the study area.

### **9.1 Summary Comparison of Environmental Consequences of the Build Alternatives**

For each resource category in the FEIS, FAA compared the Build Alternatives (Alternative B2 and the Project) to the No-Action Alternative to determine potential effects (beneficial or adverse). Where an alternative would result in an adverse environmental impact, FAA determined whether that impact would be significant based upon FAA impact thresholds and guidelines in FAA Order 1050.1E Appendix A, FAA Order 5050.4B and the Environmental Desk Reference for Airport Actions (FAA, October 2007).

Below are the key findings comparing the environmental consequences of Alternative B2 and the Project, with respect to whether they would result in a significant impact to the natural or human environment.

#### **9.1.1 Noise and Land Use Compatibility Impacts**

Alternative B2 and the Project would result in significant noise and land use compatibility impacts. The Project would result in a greater number of housing units and other sensitive land uses exposed

to significant noise levels compared to Alternative B2. Specifically, under the Project in 2020, 174 housing units and 409 people that are at or above the DNL 65 dB contour would experience an increase of noise of at least 1.5 dB. Under Alternative B2 in 2020, 74 housing units and 174 people that are within the DNL 65 dB contour would experience an increase of noise of at least 1.5 dB. This difference in the noise impacts is somewhat artificial, however, because many of the housing units that would experience noise impacts from Alternative B2 would have been acquired for construction purposes under Alternative B2.<sup>15</sup> Between 2015 and 2020, Alternative B2 would lead to the acquisition of 237 housing units while the Project would lead to the acquisition of only 140 housing units. The Project results in greater noise-related land use compatibility impacts (180 residential parcels on 32 acres) than Alternative B2 (71 residential parcels on 12 acres). Also, of the 174 housing units that will be significantly impacted by noise under the Project in the year 2020, 150 of these housing units have already received sound insulation through the Part 150 program. Thus, 24 significantly impacted housing units have not received sound insulation.

**9.1.2 Section 4(f)/Section 6(f) and Historic, Architectural, Archaeological, and Cultural Resources Impacts**  
The Build Alternatives would result in similar adverse effects to historical properties protected under Section 106 of the National Historic Preservation Act as well as Section 4(f) of the U.S Department of Transportation Act. Both Build Alternatives would lead to the demolition of Hangar No. 1 and reduction in views to the Rhode Island State Airport Terminal. Alternative B2 would completely eliminate the public's view of the Terminal from Airport Road due to fully relocating Airport Road. The Project will obstruct the public's view of the Terminal from Airport Road as a result of the proposed split Integrated Cargo Facility. The two alternatives also differ in that Alternative B2 would result in reduction in views to Hangar No. 2 and the Project would necessitate an impact to the landscaping surrounding the Rhode Island State Airport Terminal. In addition, the Project would likely encroach on local historic cemeteries that are not protected under Section 106, specifically, the 25-foot buffer surrounding Warwick Historic Cemetery (WHC) 77 and WHC 78. WHC 76 may be impacted by the Project under the voluntary land acquisition program (VLAP) for Improvement Program-related noise mitigation. Alternative B2 and the Project would also result in a direct and significant impact to WHC 26, because extending Runway 5 to the south will require the placing of fill on or within 25 feet of WHC 26.

The Build Alternatives will both result in significant impacts to Section 4(f) and Land and Water Conservation Fund Section 6(f) resources. Both Build Alternatives would have the impacts discussed above to the Section 4(f) historical properties and both would also have virtually identical impacts to Winslow Park, which is both a Section 4(f) and Section 6(f) resource. The No-Action Alternative would also significantly affect Winslow Park, although to a lesser degree than the Build Alternatives.

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<sup>15</sup> The Project will require fewer mandatory land acquisitions for construction because it does not include the Fully Relocated Airport Road or changes to the Runway 23 End RPZ.

### **9.1.3 Wetlands and Waterways Impacts**

Both Build Alternatives would have significant impacts to wetlands and waterways. Alternative B2 will impact 5.8 acres of wetlands and 773 linear feet of streams while the Project will impact 5.0 acres of wetlands and 843 linear feet of streams. In addition, much of the impact of the Project is to wetlands affected by previously developed areas within the Airport, whereas the impact of Alternative B2 is also to wetlands associated with Buckeye Brook.

With regard to the impacts to wetlands at the Runway 34 End, the Project includes shifting Runway 16-34 approximately 100 feet north of its present location. This was determined to be the maximum distance that Runway 16-34 can be shifted away from wetlands at the Runway 34 End and comply with FAA standards at the Runway 16 End. This would also avoid displacing 22 businesses (including the Airport Plaza businesses), and resulting lost jobs, personal income, business revenue, state sales and income tax revenue, and local property tax revenue. The Alternative B2 Runway 16 End configuration would also severely compromise the functioning of the rental car processing and maintenance facility, and would eliminate a total of 34 businesses. In comparison, the Project would impact 12 businesses and a smaller number of jobs and have a lesser impact on the associated state and local revenue.

The impacts to wetlands from the Project are directly attributable to the RSA project concerning Runway 34, whereas the impacts to wetlands in Alternative B2 are attributable to both the RSA project at the Runway 34 End and the runway extension at the Runway 23 End.

### **9.1.4 Floodplain Impacts**

Based upon FAA Order 1050.1E, Appendix A Paragraph 9.2f(3), Alternative B2 and the Project would cause a "significant encroachment" to floodplains because both alternatives would cause unavoidable adverse impacts on natural and beneficial floodplain values. The Project impact (2.3 acres, 726 cubic yards) is greater than the impact of Alternative B2 (0.5 acres, 233 cubic yards), but there are sufficient on-airport mitigation opportunities available for both alternatives.

## **9.2 Environmental Consequences of the Project**

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This section of the ROD provides more information on the significant impacts and other social and socioeconomic impacts that will result from the Project. The mitigation planned to offset significant impacts is discussed in Section 10, *Mitigation*, of this ROD.

### **9.2.1 Noise**

FAA assessed changes in noise as a result of the Project using the Integrated Noise Model, as required by FAA Order 1050.1E. FAA applied its criteria of significance for noise impacts, an increase of at least DNL 1.5 dB at or above DNL 65 dB at a noise-sensitive land use. All residential and non-residential noise-sensitive sites that will experience a significant noise impact will be reviewed to determine if they meet FAA criteria for mitigation in the form of sound insulation.

FAA evaluated other noise impacts that will be eligible for mitigation (either through voluntary sound insulation or land acquisition). Both the Department of Housing and Urban Development and FAA consider noise-sensitive properties exposed to noise levels of DNL 65 dB or above as incompatible and prescribe various ways to make the land compatible with the airport environment. Based upon 14 CFR Part 150, *Airport Noise Compatibility Planning*, FAA identified the noise-sensitive land uses that will be located within the DNL 65 dB and above noise contour as a result of the Project. FAA also evaluated changes in noise levels associated with vehicular traffic using the Rhode Island Department of Transportation (RIDOT) requirements.

***Significant Noise Impacts:*** FAA identified significant noise impacts after accounting for all land acquisitions.<sup>16</sup> In 2015, 184 housing units (an estimated 432 people) will experience a significant increase in noise levels as a result of the Project. In 2020, one additional housing unit (estimated two people) will experience a significant increase in noise levels. Therefore, a total of 185 housing units (an estimated 434 people) will be exposed to a significant noise increase, however, all but 24 of the 185 housing units have already been sound insulated as part of a previous Part 150 Noise Compatibility Plan (NCP) effort. In 2015, one non-residential noise-sensitive site will experience a significant noise increase: Jehovah's Witnesses of Warwick. Figure 9-1 illustrates the DNL 60, 65, and 70 dB contours and the areas of significant noise impacts for the Project.

***Other Noise Impacts Eligible for Mitigation:*** FAA identified these noise impacts after accounting for all land acquisitions, including those eligible for voluntary land acquisition for noise mitigation. In 2015, the Project will expose two housing units (an estimated five people) to a noise level of DNL 70 dB or higher and, in 2020, 20 housing units (an estimated 47 people) will be exposed to this level of noise. Housing units exposed to a noise level of DNL 70 dB and above will be eligible for voluntary land acquisition, as shown in Figure 9-1. In 2015, the Project will expose 2,254 people in 959 housing units to a noise level of DNL 65 dB to DNL 69.9 dB and an additional 378 people in 161 housing units will be exposed to this level of noise in 2020, resulting in a total of 2,632 people in 1,120 housing units exposed to a noise level of DNL 65 dB to DNL 69.9 dB by 2020, however, all but 157 housing units out of the 1,120 housing units have already been sound insulated as part of a previous Part 150 NCP effort.

### 9.2.2 Compatible Land Use

The significance threshold for compatible land use impacts, in accordance with FAA Order 1050.1E, is the same as for noise, however, land use compatibility is reported in terms of affected residential land parcels and acreage of residential land, whereas noise is reported in terms of housing units and people. FAA also identified other land use impacts for which mitigation is required or that are eligible for mitigation.

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<sup>16</sup> Including the Completed and Current Part 150 VLAPs associated with the No-Action Alternative, and project-related mandatory acquisition for construction, Future Build VLAPs for noise mitigation consistent with the Part 150 NCP, and for newly created RPZs, as recommended by the FAA.

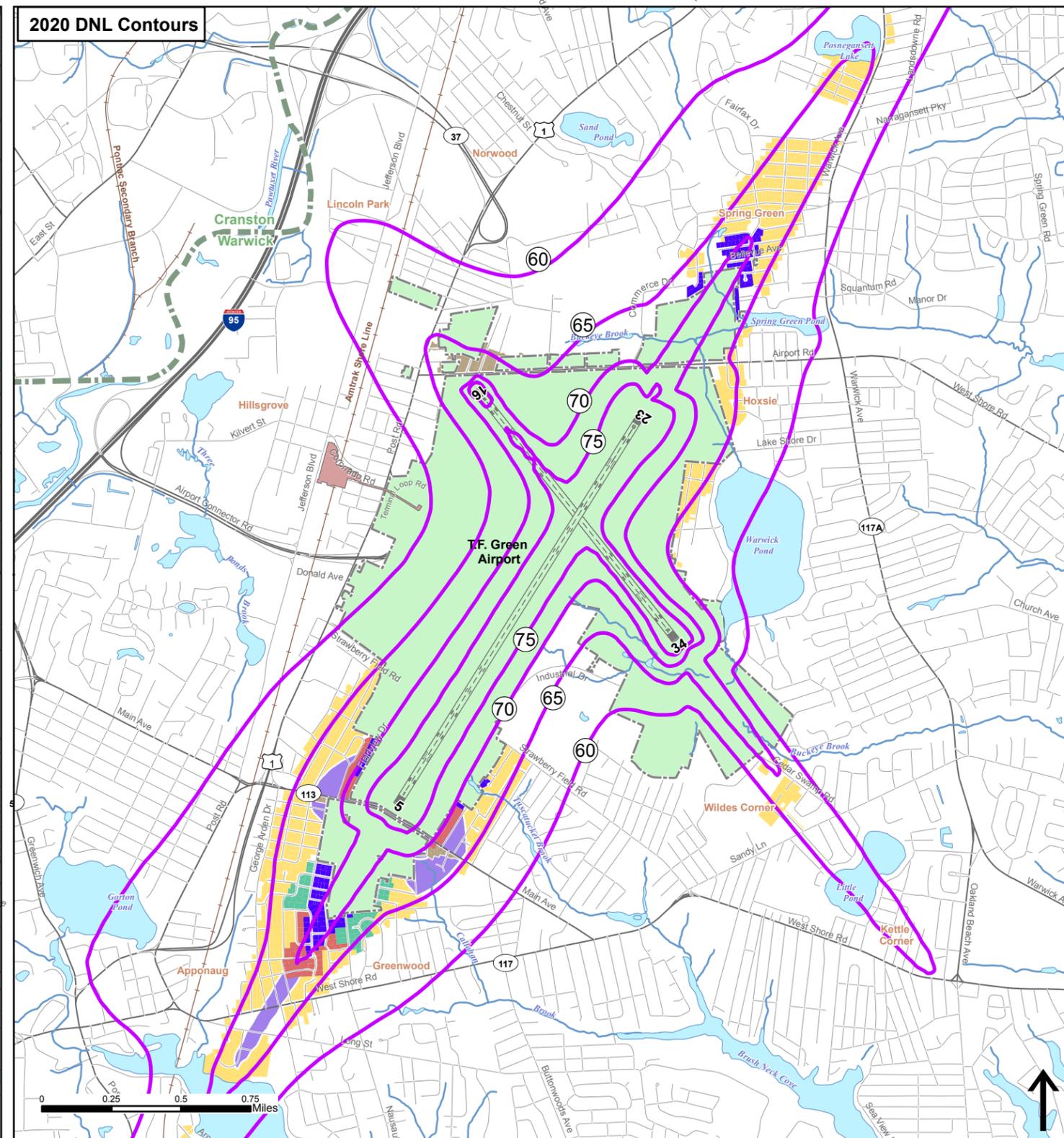
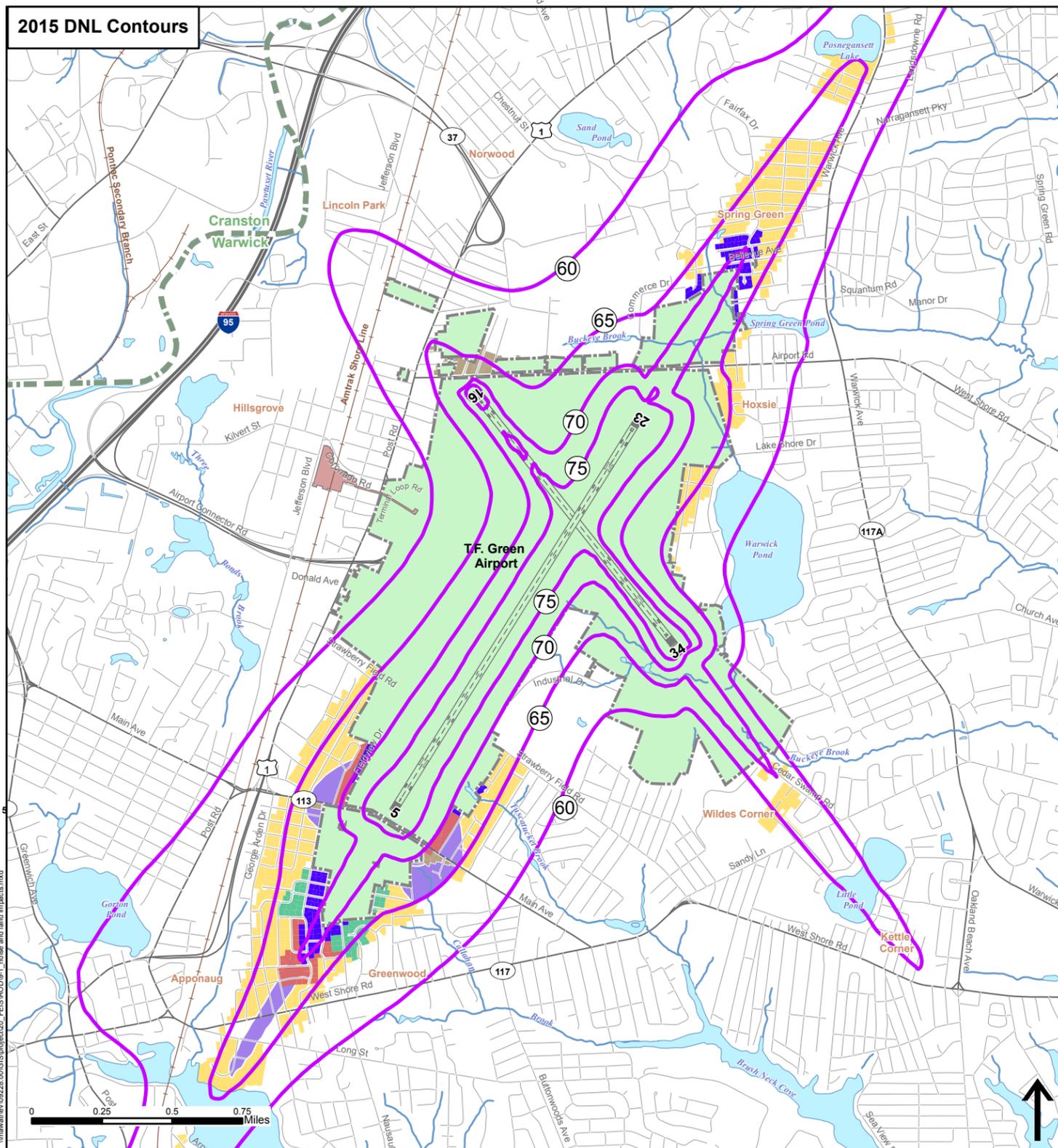
**Significant Land Use Compatibility Impacts:** The Project will result in significant land use compatibility impacts due to a noise increase of at least DNL 1.5 dB at or above DNL 65 dB after accounting for mandatory and voluntary land acquisitions. In 2015, 179 residential parcels totaling approximately 32 acres will experience a significant noise impact. In 2020, one additional residential land parcel totaling 0.01 acres will experience a significant noise impact for a total of 180 residential parcels totaling 32 acres by 2020. The land area affected by a significant increase in noise levels will decrease in each analysis year due to the ongoing voluntary land acquisition associated with the ongoing Part 150 NCP, as well as land acquisition associated with the Project for construction and noise mitigation.

**Other Land Use Compatibility Impacts Eligible for Mitigation:** The Project will require the acquisition of residential and commercial land for construction. In 2015, 16 residential parcels (totaling 2.5 acres) and 23 commercial parcels (totaling 5.5 acres) will be acquired in order to construct the Project. No additional land will be acquired in 2020. As discussed in Section 9.2.1, *Noise*, residential land parcels have been identified for land acquisition for noise mitigation (through voluntary participation by the land owner) for the Project because they will experience noise levels at or above DNL 70 dB as a result of the Project. Two residential parcels (totaling 0.5 acres) will be eligible for land acquisition due to noise impacts in 2015. An additional 75 residential parcels (totaling 17.5 acres) will be eligible for land acquisition due to noise impacts in 2020 for a total of 77 residential parcels (totaling 18 acres). Due to the newly created RPZ area at the Runway 5 End, 64 residential parcels (totaling 14 acres) have been identified for voluntary land acquisition. In total, the Project will result in the acquisition of 157 residential parcels (totaling 34.5 acres) and 23 commercial parcels (totaling 5.5 acres). Figure 9-1 shows the land acquisitions for the Project. Mitigation in the form of relocation assistance, in accordance with the requirements of the *Uniform Relocation Assistance and Real Property Acquisition Policies Act*, is required for all land acquisitions (full and partial) associated with the Project.

### **9.2.3 Social and Socioeconomic Impacts**

The Project will not result in significant socioeconomic impacts, however, the socioeconomic impacts of the Project are of considerable local concern, particularly to the City of Warwick. Therefore, socioeconomic impacts were addressed in detail in the EIS.

The Project will require the acquisition of residential and commercial land for construction, as shown in Figure 9-2. Eleven housing units and 12 businesses will be acquired in order to construct the Project. Sufficient replacement housing exists in the City of Warwick and surrounding communities. Sufficient commercial space for relocating most businesses exists within the City of Warwick, however, of the 12 businesses required to relocate for construction of the Project, three businesses affecting 12 jobs are considered “most threatened” because they are unlikely to relocate within the City of Warwick due to limited vacant and developable industrial lands.



- Legend**
- No-Action Airport Property Boundary (2015)
  - Municipal Boundary
  - Mandatory Land Acquisition for Construction
  - Voluntary Land Acquisition for Project-Related Noise Mitigation\*
  - Voluntary Land Acquisition for FAA-Recommended RPZ Clearing
  - Current Part 150 VLAP
  - Project DNL Contour
  - Voluntary Sound Insulation for Project-Related Noise Mitigation\*\*
  - Areas of Significant Noise Exposure Increase
  - 1.5 dB Increase above 65 DNL

\* Under the Project, residential parcels within the 2015 DNL 70 dB noise contour and Runway 5 End RPZ area would be eligible for acquisition between FY2012 and 2020 because of the expedited construction schedule.

\*\* May include homes already sound insulated.

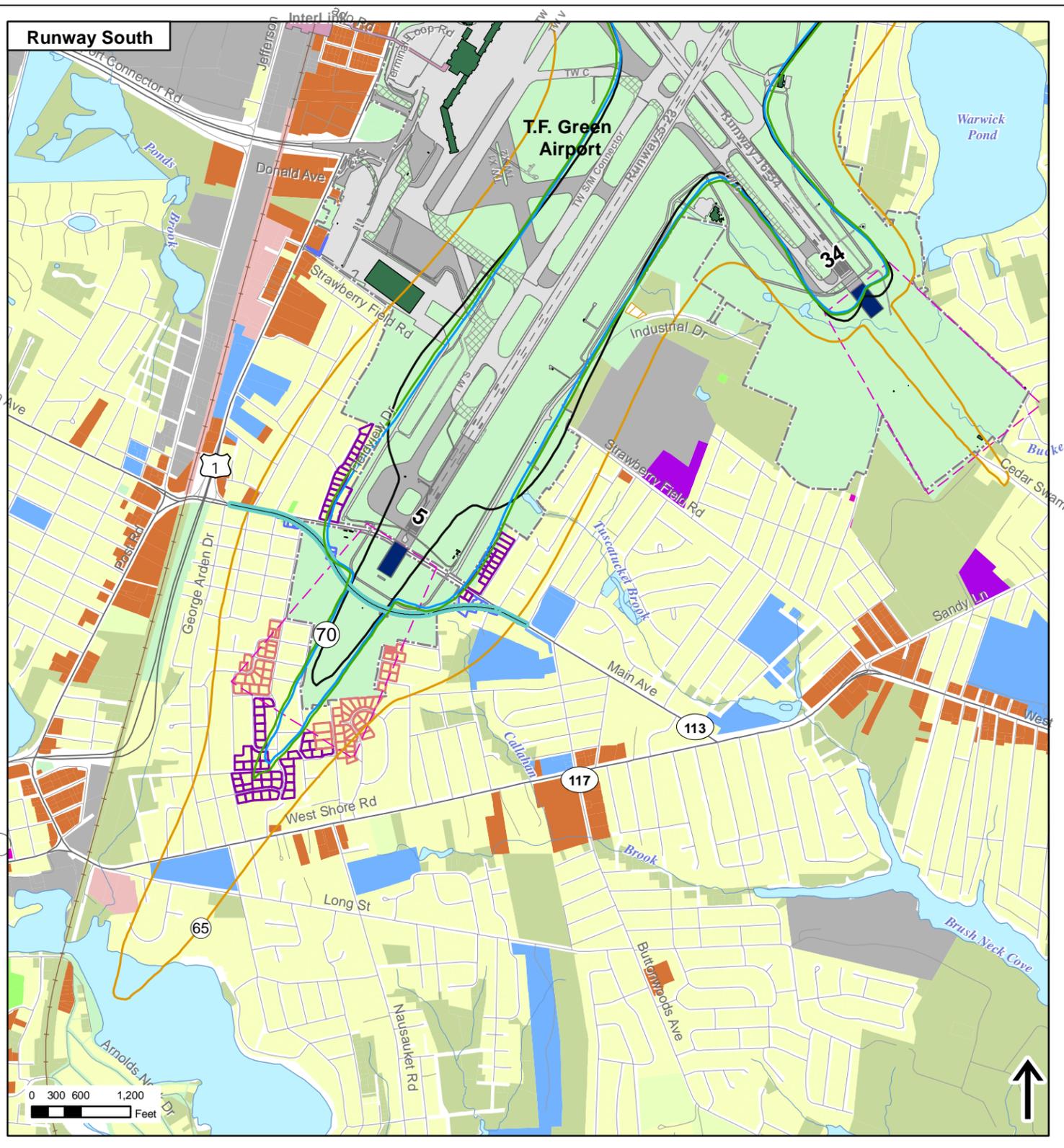
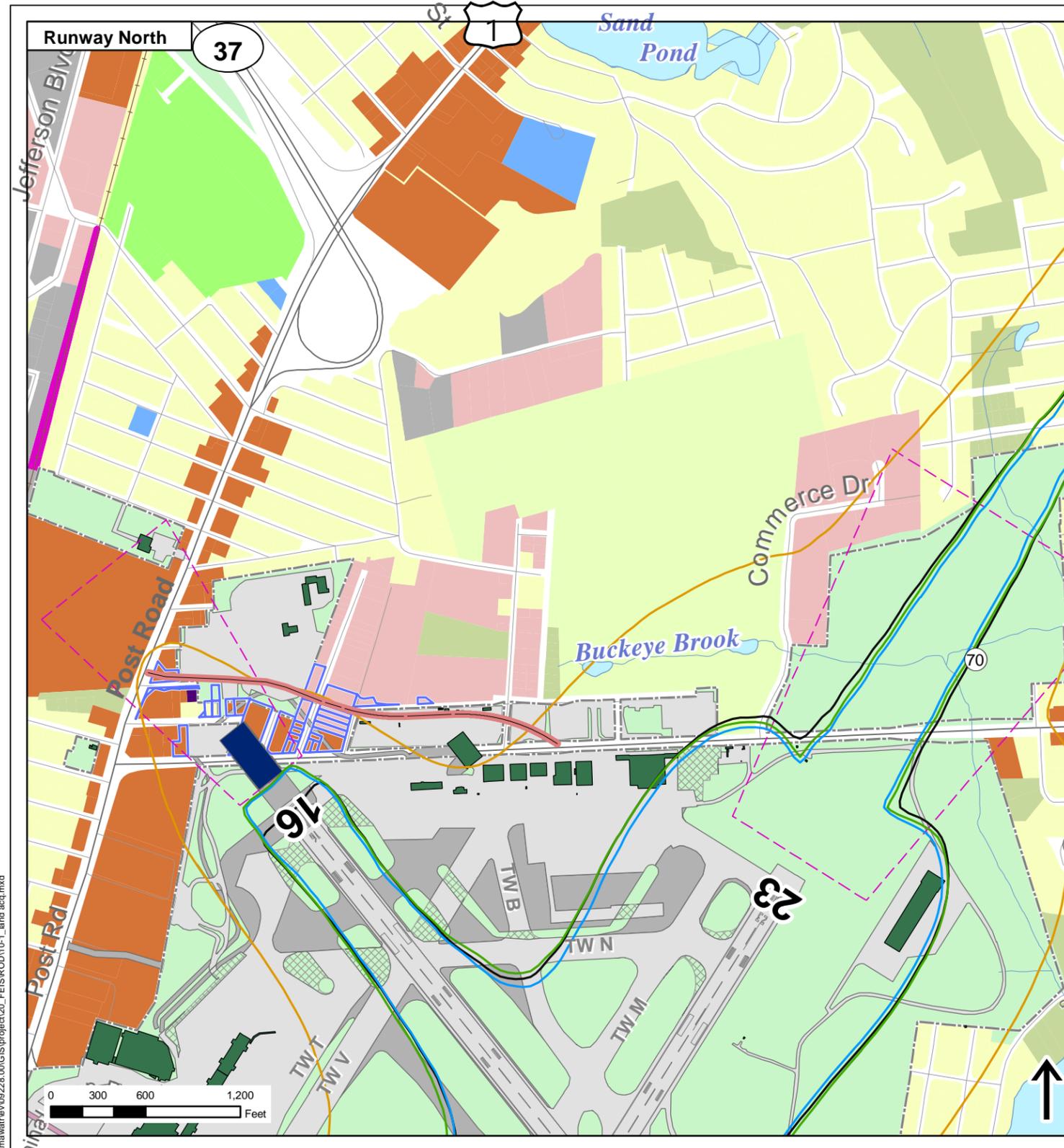


**Figure 9-1**  
**Noise and Land Use Impacts of the Project**

T.F. Green Airport Improvement Program EIS

Source: Noise Contours (HMMH)

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**Legend**

- No-Action Airport Property Boundary (2015)
- Airport Buildings
- No-Action Existing Pavement
- Proposed New Pavement
- Proposed Pavement to be Removed
- EMAS Bed
- Runway Protection Zone
- Realigned Main Avenue (2015)

- No-Action 2015 DNL 70 dB Contour
- No-Action 2020 DNL 70 dB Contour
- Project 2015 DNL 70 dB Contour
- Project 2020 DNL 70 dB Contour
- Project 2020 DNL 65 dB Contour

**Property Acquisition**

- Mandatory Land Acquisition for Construction
- Voluntary Land Acquisition for Project-Related Noise Mitigation\*
- Voluntary Land Acquisition for FAA-Recommended RPZ Clearing

Under the Project, residential parcels within the 2015 DNL 70 dB noise contour and Runway 5 End RPZ area would be eligible for acquisition between FY2012 and 2020 because of the expedited construction schedule.

**Land Uses**

- Commercial - Products Services
- Commercial / Industrial Mixed
- Industrial
- Residential
- Institutional
- State
- Federal
- Undeveloped<sup>1</sup>
- Agriculture
- Cemeteries
- Open Water
- Other Transportation
- Waste Disposal

<sup>1</sup>Includes Wetlands, Forests, Brushland, Recreational Land, and Transitional Areas



**Figure 9-2**  
**Land Acquisition for the Project**

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As discussed in Section 9.2.1, *Noise*, in 2015, two housing units will experience noise levels at or above DNL 70 dB as a result of the Project and will be eligible for voluntary land acquisition in accordance with the Part 150 NCP. An additional 67 housing units will be eligible for voluntary land acquisition due to noise impacts in 2020 and neighborhood rounding, for a total of 69 housing units.<sup>17</sup>

Sixty housing units have been identified for voluntary land acquisition due to the newly created RPZ area at the Runway 5 End. In total, the Project will result in the acquisition of 140 housing units and 12 businesses (affecting 59 jobs). Figure 9-1 shows the land acquisitions for the Project. Land acquisition impacts and required mitigation in the form of relocation assistance are discussed above in Section 9.2.2, *Compatible Land Use*. Sufficient replacement housing exists within the City of Warwick and its surrounding communities, however, as a result of the residential and business relocations, the City of Warwick will experience a loss to its tax base that will result in an annual tax revenue loss. Starting in 2020, the City of Warwick will experience an annual tax revenue loss of \$567,521 (or 0.28 percent).

There will be no substantial reduction in the Level of Service of roads serving the airport and its surrounding communities. Rather, changes in local traffic patterns are generally beneficial because the Project will improve traffic circulation surrounding the Airport, specifically with the proposed improvements to Airport Road and the gateway to the Airport on Post Road.

#### 9.2.4 Historic, Architectural, Archaeological, and Cultural Resources

The Project will result in adverse effects to historical properties and may result in other impacts for which mitigation is required. Section 106 of the National Historic Preservation Act requires federal agencies to consider the effects of their undertakings on properties listed, or eligible for listing, in the National Register of Historic Places (NRHP). Impacts to historical properties that are not eligible for listing in the NRHP, but are considered unique characteristics of the geographic area, are considered significant under NEPA, 40 CFR § 1508.27.

***Significant Impacts and Adverse Effects to Historical Resources:*** The Project will result in significant impacts and adverse effects to the National Register Listed Rhode Island State Airport Terminal and two properties that are eligible for listing in the NRHP: Hangar No. 1 and an airport historic district. The Project requires the removal of Hangar No. 1. The impacts to Hangar No. 1 and the Rhode Island State Airport Terminal result in significant impacts and adverse effect to the NRHP-eligible airport historic district. The Project will also result in a direct and significant impact to a cemetery, WHC 26, because extending Runway 5 to the south will require the placing of fill on or within 25 feet of WHC 26. The Project will also place WHC 26 within the Runway Object Free Area and the tallest headstones penetrate slightly into Part 77 airspace.

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<sup>17</sup> The concept of "neighborhood equity," also referred to as "neighborhood rounding," has been applied where the FAA identified some residential parcels outside the DNL 70 dB noise contour as eligible for federal noise mitigation funding. This includes homes where any portion of the lot is within the DNL 70 dB noise contour, homes that would have been the few remaining residences on the block (or dead-end street) after the project, or homes that would be left isolated or surrounded by non-residential land use.

**Other Impacts to Historical Resources Eligible for Mitigation:** Three additional cemeteries (WHCs 76, 77, and 78) may be affected by the Project. Also, wetland mitigation sites under consideration to offset wetlands impacts are adjacent to known archaeological sites. WHC 76 falls within an area of land acquisition for noise mitigation. If abutting landowners elect to have their properties acquired under a Future Build VLAP and the acquisition includes ground disturbance, potential impacts to WHC 76 may occur. Any potential impacts as a result of land acquisition will be evaluated by FAA and RIAC in consultation with the Warwick Historical Cemetery Commission prior to any acquisition, per stipulations contained in a Memorandum of Agreement (MOA) between FAA, RIAC, and the Rhode Island State Historic Preservation Office (RISHPO). Refer to Attachment B, *Section 106 Memorandum of Agreement*, for a copy of the MOA. Realigned Main Avenue may result in construction occurring in or within 25 feet of WHC 77 and WHC 78. For the purposes of this EIS, it is assumed that Main Avenue will be designed to avoid direct impacts to WHC 77 and 78, but if impacts occur within 25 feet of either cemetery, FAA and RIAC will consult with the Warwick Historical Cemetery Commission prior to any construction.

#### 9.2.5 Section 4(f) and Section 6(f) Resources

The Project will result in significant impacts to Section 4(f)/Section 6(f) resources. The Secretary of Transportation may not approve any program or project that requires the use of any property protected under the U.S. Department of Transportation Act Section 4(f) unless there is no feasible and prudent alternative to the use of such land and the Project includes all possible planning to minimize harm resulting from the use. Under Section 6(f) of the Land and Water Conservation Fund Act, property purchased or developed with funds under the Act may not be converted to uses other than outdoor public recreation uses without approval of the Department of Interior and National Park Service.

**Significant Impacts to Section 4(f) and 6(f) Resources:** The Project will result in significant Section 4(f) impacts to the National Register-eligible historical resources, as described above in Section 9.2.4, *Historic, Architectural, Archaeological, and Cultural Resources*, and to Winslow Park, a part of which is also improved by Section 6(f) funds. As described in FEIS Chapter 7, *Final Section 4(f)/Section 6(f) Evaluation*, FAA finds there are no prudent and feasible alternatives to these impacts that avoid Section 4(f) resources and meet the Project purpose and need.

#### 9.2.6 Wetlands and Waterways

The Project will have impacts to wetlands; most of these wetlands are located in previously developed areas within the Airport.

**Significant Wetlands and Waterways Impacts:** Approximately 5.0 acres of federal jurisdictional vegetated wetlands and 843 linear feet of intermittent stream will be substantially modified by fill placement or culvert installation and will not sustain the existing wetlands functions and values. Principal wetlands functions that will be impacted include nutrient removal/retention/transformation, floodflow alteration, and sediment/toxicant/pathogen retention.

**Other Wetlands and Waterways Impacts:** An additional 6.5 acres of state-regulated perimeter and riverbank wetlands and 0.2 acres of state-regulated floodplain outside of the limits of other freshwater wetlands will be altered.

#### 9.2.7 Floodplains

As part of the Project is located within the Federal Emergency Management Agency (FEMA) designated coastal floodplain that projects upstream through Buckeye Brook into Warwick Pond, the Project will cause unavoidable significant floodplain impacts.

**Significant Floodplains Impacts:** The Project will place 726 cubic yards of fill affecting 2.3 acres in the FEMA-designated coastal floodplain, constituting a significant encroachment that will cause adverse impacts on natural and beneficial floodplain values, including groundwater recharge and water quality maintenance.

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## 10 Mitigation

FAA has adopted all practicable means to avoid or minimize the adverse environmental impacts of the Project. This section summarizes mitigation measures for all significant adverse impacts that cannot be avoided. Mitigation necessary to address permitting or other requirements for impacts that are not significant is also included, as are mitigation measures for other adverse impacts of the Project. There are no changes included herein to the mitigation described in the FEIS. Table 10-1 provides a summary of mitigation measures required for the Project. RIAC has agreed to implement the mitigation measures described herein.

As discussed in detail in Section 11, *Conditions of Project Approval*, of this ROD, FAA is conditioning approval of the Project upon the implementation of these measures by RIAC through the airport layout plan and through any future federal funding. FAA may also take appropriate steps through contract plans, specifications, grant assurances, and special grant conditions to ensure these measures are undertaken. FAA will further monitor the implementation of these mitigation measures as necessary to assure they are carried out as Project commitments, as required by the Council on Environmental Quality.<sup>18</sup> These measures constitute all reasonable steps to minimize harm and constitute all practicable means to avoid or minimize environmental harm from the Project and proposed federal actions, as required by 49 U.S.C. § 47106(c)(1)(B). Table 10-1 summarizes the mitigation requirements. More detailed information on mitigation can be found in Chapter 6, *Mitigation*, of the FEIS.

The mitigation requirements discussed in this section of the ROD and in FEIS Chapter 6, *Mitigation*, were developed in accordance with applicable federal and state requirements and in consideration of state and local guidelines. The concerns of the public and government agencies were also considered. Mitigation measures for the Project include design measures to avoid or reduce impacts, and

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<sup>18</sup> Memorandum to Heads of Federal Departments and Agencies: Appropriate Use of Mitigation and Monitoring and Clarifying the appropriate Use of Mitigated Findings of No Significant Impact, CEQ, January 14, 2011.

measures to replace or restore lost resources and their functions. All significant impacts that will occur as a result of the Project can be mitigated in whole or in part.

**Table 10-1 Summary of Mitigation Measures for Significant and Other Impacts**

Resource	Mitigation Measure
Noise	<p>Sound insulate significantly impacted eligible housing units and one non-residential noise sensitive site (Jehovah's Witnesses of Warwick) when aircraft activity levels result in homes being exposed to a noise level increase of at least DNL 1.5 dB at or above DNL 65 dB, to be determined by Noise Exposure Map (NEM) updates as required under Part 150.</p> <p>Continue to implement ongoing noise compatibility measures for airport operations consistent with the Part 150 NCP.</p> <p>Acquire residential parcels through participation in a voluntary land acquisition program when aircraft activity levels result in homes being exposed to sound levels DNL 70 dB and above, to be determined by NEM updates as required under Part 150.</p> <p>Sound insulate eligible housing units when aircraft activity levels result in homes being newly exposed to noise DNL 65 to 69.9 dB, to be determined by NEM updates as required under Part 150.</p> <p>Install Quiet Pavement on Main Avenue and Airport Road and noise barriers or berms along Main Avenue, as appropriate based upon RIDOT's protocol.</p> <p>Conduct additional acoustical testing of non-residential noise-sensitive sites that have already been sound insulated as part of a previous sound insulation effort under the Part 150 NCP and are exposed to a noise level increase of at least DNL 1.5 dB at or above DNL 65 dB: the John Wickes School and the Baha'i Faith Place of Worship.</p>
Compatible Land Use	<p>See Noise.</p> <p>Update Noise Land Reuse Plan.</p> <p>In areas newly within the 65 dB DNL contour, RIAC will encourage the City of Warwick to adopt appropriate land use controls and development controls to protect against the development of incompatible land uses.</p>
Social and Socioeconomic Environment	<p>Relocate and compensate fairly, consistently, and equitably all acquired residences and businesses according to the requirements of the <i>Uniform Relocation Assistance and Real Property Acquisition Policies Act</i>, as amended (42 U.S.C. § 4601-4655).</p>
Surface Transportation	<p>Relocate Park and Ride facilities and move RIPTA bus stops as needed.</p> <p>Incorporate bicycle and pedestrian accommodation into roadway projects, as appropriate.</p>
Historical, Architectural, Archaeological, and Cultural Resources	<p>Prepare archival documentation for the National Register eligible airport historic district (including the eligible historic district, State Terminal, and Hangars No. 1 and 2).</p> <p>Develop a physical and electronic display depicting the historical development of the Airport.</p> <p>Prepare list of items from Hangar No. 1 for possible salvage and curation.</p> <p>For WHC 26, relocate the headstones, or implement other measures determined by the Warwick Historical Cemetery Commission through permitting.</p> <p>WHC 76 lies within the Future Build VLAP for noise mitigation. If abutting landowners elect to have their property acquired and the residences are demolished, potential impacts to WHC 76 will be evaluated by FAA and RIAC in consultation with the Warwick Historical Cemetery Commission prior to any demolition, per stipulations contained in the Memorandum of Agreement signed by FAA, RIAC and RIHPHC.</p>

**Table 10-1 Summary of Mitigation Measures for Significant and Other Impacts (continued)**

Resource	Mitigation Measure
Historical, Architectural, Archaeological and Cultural Resources (continued)	<p>Define boundaries of WHC 77 and 78, assess potential impacts, and consult with Warwick Historical Cemetery Commission to avoid or mitigate. For the purposes of this ROD, it is assumed that Main Avenue will be designed to avoid the cemeteries.</p> <p>Consult with RIHPHC and NITHPO to develop appropriate archaeological surveys to identify archaeological sites and evaluate their significance and eligibility to the NRHP in areas of potential effect unknown at this time, if not previously surveyed (private property and potential wetlands migration sites). If determined eligible for listing in the NRHP, coordinate with RIHPHC and NITHPO to review avoidance and/or mitigation options.</p> <p>Adhere to the Project-specific Memorandum of Agreement requirements to conduct necessary archaeological investigations, and if required conduct mitigation, prior to construction.</p>
Section 4(f) and Section 6(f) Resources	<p>For eligible airport historic district, State Terminal, and Hangar No. 1 mitigation, see Historical, Architectural, Archaeological, and Cultural Resources, above.</p> <p>Replace impacted Winslow Park recreation facilities on another site outside the RPZ.</p> <p>To mitigate for the encroachment by the Project on certain facilities in Winslow Park, the City of Warwick will need to follow the Section 6(f) conversion process. A replacement property that meets the requirement of Section 6(f) will be provided or funded by RIAC and a specific mitigation plan will be developed by RIAC in cooperation with the City of Warwick, NPS, RIDEM, and FAA.</p>
Wetlands and Waterways	<p>Implement modifications through the design process to minimize unavoidable impacts.</p> <p>Provide compensatory mitigation as required to address lost functions and values in compliance with the USEPA and USACE Final Rule on Compensatory Mitigation for Losses of Aquatic Resources (40 CFR Part 230).</p>
Water Quality	<p>Design and construct stormwater management control systems in accordance with the 2010 RIDEM Stormwater Design and Installation Standards Manual and RIPDES requirements.</p>
Floodplains	<p>Provide compensatory flood storage (incorporated in design) for affected floodplain in a manner consistent with State regulation.</p>
Coastal Resources	<p>Design the Project to comply with the applicable performance standards, including the Greenwich Bay Special Area Management Plan goals and objectives.</p>
Hazardous Materials, Solid Waste, and Pollution Prevention	<p>Design and construct the Project in compliance with applicable local, state, and federal laws and regulations concerning hazardous or solid waste management.</p>
Construction	<p>Construct in accordance with FAA's Advisory Circular 150/5370-10.</p> <p>Relocate the portion of the water main in Airport Road that will be under the Runway 16 RSA.</p> <p>Incorporate appropriate construction mitigation measures into the contract documents and specifications governing the activities of contractors and subcontractors constructing elements of the Project.</p>

## **10.1 Noise**

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Noise mitigation is proposed for significant increases in noise levels and for other noise impacts subject to FAA criteria, as summarized in Tables 10-1 and 10-2 and described below.

### **10.1.1 Mitigation for Significant Noise Impacts of the Project**

RIAC will implement noise mitigation for significant increases in aircraft noise levels as follows:

- Provide sound insulation for eligible housing units that have not been previously sound insulated and will experience a noise increase from the Project of at least DNL 1.5 dB at or above DNL 65 dB when compared to the No-Action Alternative for the same timeframe, at the time that aircraft activity levels result in increased noise levels, to be determined by Noise Exposure Map (NEM) updates as necessary under Part 150. FAA will meet periodically with RIAC to review and monitor implementation of mitigation measures.
- If determined eligible, FAA will provide sound insulation for the Jehovah's Witnesses of Warwick, which has not been previously sound insulated and will experience a noise increase of at least DNL 1.5 dB at or above DNL 65 dB from the Project when compared to the No-Action Alternative for the same timeframe.
- Conduct additional acoustical testing of non-residential noise-sensitive properties that have already been sound insulated as part of a previous sound insulation effort under the Part 150 NCP and that will be exposed to a noise level increase of at least DNL 1.5 dB at or above DNL 65 dB. Results of the testing may allow for installation of air conditioning, or other noise-related mitigation if the property meets FAA criteria for eligibility.

Sound insulation for eligible properties will be provided no later than when aircraft activity levels result in homes being exposed to a noise level increase of at least DNL 1.5 dB at or above DNL 65 dB, to be determined by NEM updates, as required under Part 150.

### **10.1.2 Mitigation for Other Noise Impacts of the Project**

RIAC will undertake mitigation for aircraft and vehicular traffic impacts as summarized in Table 10-2 and in accordance with the criteria of Part 150 and RIDOT vehicular traffic noise criteria, respectively, as follows:

- Continue the ongoing noise compatibility measures for airport operations.
- Acquire eligible residential parcels exposed to noise levels of DNL 70 dB and above, at the time that aircraft activity levels result in the increased noise level, to be determined by NEM updates as required under Part 150.
- Provide sound insulation for eligible residences newly exposed to noise levels between DNL 65 dB and 69.9 dB when aircraft activity levels result in homes being newly exposed to noise DNL 65 to 69.9 dB, to be determined by NEM updates as required under Part 150.

# T.F. Green Airport Improvement Program

## Record of Decision

**Table 10-2 Project Noise Impacts Eligible for Mitigation**

Impact Type	2015 <sup>1</sup>	2020 <sup>1,2</sup>	Total
<b>Project-Related Noise Insulation Mitigation for Significant Noise Impacts (increase of &gt;DNL 1.5 dB at or above DNL 65 dB)<sup>3</sup></b>			
Total Housing Units Significantly Impacted by Noise	184	1	185
Housing Units Significantly Impacted and Previously Sound Insulated	161	0	161
Non-Insulated Significantly Impacted Housing Units	23	1	24
Non-Insulated Non-Residential Noise-Sensitive Sites <sup>4</sup>	1 (Jehovah's Witnesses of Warwick)	0	1 (Jehovah's Witnesses of Warwick)
<b><u>Other Project-Related Noise Mitigation</u></b>			
<b>Project-Related Noise Insulation Mitigation for Housing Units Exposed to Noise between DNL 65 dB and 69.9 dB</b>			
Total Housing Units Impacted by Noise Between DNL 65 dB and 69.9 dB	959	161	1,120
Housing Units Impacted and Previously Sound Insulated	877	86	963
Non-Insulated Housing Units Exposed to Noise Levels DNL 65 dB to DNL 69.9 dB eligible for noise insulation	82	75	157
<b>Project-Related Land Acquisition for Noise Mitigation for Housing Units Exposed to Noise Greater than DNL 70 dB</b>			
Housing Units Exposed to Noise Levels $\geq$ DNL 70 dB eligible to participate in a voluntary land acquisition program under Part 150 <sup>5,6</sup>	2	67	69
<b>Project-related Mitigation for Traffic Noise</b>			
Install Quiet Pavement on Main Avenue and Airport Road and noise barriers or berms along Main Avenue, as appropriate based upon RIDOT's protocol	Yes	—	—

1 Timeframes are estimated. Noise mitigation will be implemented when aircraft activity levels result in noise impacts requiring sound insulation or land acquisition to be determined by NEM updates as required under Part 150.

2 Represents incremental difference from 2015.

3 Excludes housing units that will be acquired for construction (mandatory), for noise mitigation under a Future Build VLAP and for RPZ area clearing (voluntary participation by property owner), as well as housing units and non-residential noise sensitive sites that have been sound insulated as part of a previous sound insulation effort under the Part 150 NCP.

4 Baha'i Faith and the John Wickes School will experience significant noise impacts in 2020. Both have already been sound insulated as part of a previous sound insulation effort under the Part 150 NCP; however, concurrent with the construction of the runway extension, RIAC will conduct additional acoustical testing of non-residential noise-sensitive properties that will be exposed to a noise level increase of at least DNL 1.5 dB at or above DNL 65 dB. Results of the testing may allow for installation of air conditioning, or other noise-related mitigation.

5 May include homes already sound insulated as part of a previous sound insulation effort under the Part 150 NCP.

6 Includes residences outside the DNL 70 dB noise contour that have been identified as eligible for acquisition under the concept of "neighborhood equity," also referred to as "neighborhood rounding."

- Install noise barriers/berms on Airport Road and on Main Avenue as appropriate, following RIDOT's protocol.
- Install Quiet Pavement on relocated Airport Road and Main Avenue as appropriate.
- Implement construction-related noise mitigation, as described in Section 10.13, *Construction Impacts*, of this ROD.

## **10.2 Compatible Land Use**

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Significant compatible land use impacts are generally related to a significant increase in noise to residential land uses and non-residential noise-sensitive sites (e.g., schools). Other land use impacts are concerned with the acquisition of land.

### **10.2.1 Mitigation for Significant Compatible Land Use Impacts of the Project**

As discussed in Section 10.1.1, *Mitigation for Significant Noise Impacts of the Project*, mitigation in the form of sound insulation is proposed for significant compatible land use impacts related to a significant noise increase to residential land uses and non-residential noise-sensitive sites.

### **10.2.2 Mitigation for Other Compatible Land Use Impacts of the Project**

See Section 10.1.2, *Mitigation for Other Noise Impacts of the Project*, for mitigation of other noise impacts on noise-sensitive land uses. Mitigation for land acquisition is discussed in Section 10.3, *Social and Socioeconomic Impacts*. Mitigation proposed for other land use impacts includes the following:

- Upon completion of the EIS process and in accordance with FAA guidelines (specifically Program Guidance Letter 08-2, or PGL 08-2, dated February 1, 2008), RIAC will update the Noise Land Reuse Plan as described in Section 6.3.2.1 of the FEIS. Specifically, RIAC will update the Noise Land Reuse Plan as EIS projects are implemented or within 18 months of the issuance of the ROD, whichever comes first.
- RIAC will continue to consult with the City of Warwick to develop compatible land uses for those lands deemed not required for airport purposes.

## **10.3 Social and Socioeconomic Impacts**

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The Project will not result in significant impacts to social and socioeconomic conditions. Other social and socioeconomic impacts of the Project that are addressed in this section include the relocation of residences and businesses due to mandatory and voluntary property acquisitions.

The Project will result in the relocation of 11 housing units and 12 businesses due to mandatory property acquisitions and will result in the relocation of 129 housing units due to voluntary land acquisition, for a total of 140 housing units and 12 businesses. Sufficient replacement housing exists within the City of Warwick or the immediate surrounding area in order to accommodate all residential relocations. Therefore, the relocations are not a significant impact. Sufficient replacement commercial space exists within the City of Warwick or the immediate surrounding area in order to accommodate most businesses. Of the 12 businesses required to relocate for construction of the Project, however, three businesses affecting 12 jobs are considered “most threatened” because they are unlikely to relocate within the City of Warwick due to limited vacant and developable industrial lands. The relocation process for the full and partial property acquisitions will be carried out in accordance with the requirements of the *Uniform Relocation Act*, as amended (42 U.S.C. § 4601-4655).

#### **10.4 Surface Transportation**

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There will be no significant surface transportation impacts from the Project because there will be no permanent disruption to local traffic patterns that will substantially reduce the Level of Service (LOS) of roads or intersections serving the Airport and its surrounding communities. Where the traffic analysis revealed intersections with degraded LOS, mitigation measures are included in the proposed roadway improvements to meet RIDOT requirements.

Surface transportation enhancements that will be included in the Project consist of:

- Incorporating relocated 'Park and Ride' facilities and relocated RIPTA bus stops into the roadway modifications, as needed; and
- Providing pedestrian and bicycle accommodations, as appropriate and practicable, as part of the roadway relocation and realignment projects.

#### **10.5 Air Quality**

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There are no significant air quality impacts of the Project and, therefore, no mitigation is required. The measures discussed in Section 10.13, *Construction Impacts*, however, will be undertaken to help reduce construction-related emissions associated with construction vehicles and equipment.

#### **10.6 Historical, Architectural, Archaeological, and Cultural Resources**

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FAA and RIAC consulted with the RIHPHC and NITHPO regarding the adverse effect of the Project on historical properties and the significant impact to locally important historical cemeteries to develop mitigation. This consultation has resulted in a signed MOA that includes stipulations to address and mitigate the adverse effects of the Project. The Advisory Council on Historic Preservation (ACHP) was invited to participate in the MOA and did not respond. The executed MOA, which is included in this ROD as Attachment B, *Section 106 Memorandum of Agreement*, has been submitted by FAA to ACHP.

##### **10.6.1 Mitigation for Significant Impacts of the Project to Historical Resources**

FAA and RIAC, in consultation with the appropriate parties (RIHPHC, NITHPO, and the Warwick Historical Cemetery Commission), will implement the provisions of the MOA to mitigate for significant impacts to historical resources. The provisions of the MOA are summarized below:

- Prepare archival documentation for the NRHP eligible airport historic district (including the eligible historic district, State Terminal, and Hangar No. 1 and Hangar No. 2).<sup>19</sup>
- Develop an interpretive display (physical and electronic) depicting the historical development of the Airport.
- Prepare a list of items from Hangar No. 1 for possible salvage and curation.

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<sup>19</sup> The level of documentation, either HABS/HAER or RIHRA, will be determined through consultation.

- Define the boundaries of Warwick Historical Cemeteries Nos. 26, 76, 77, and 78 to the Cemetery Commission's satisfaction, and assess potential impacts and consult to protect (avoid or mitigate).
- For Warwick Historical Cemetery 26 (WHC 26), potential mitigation could include relocating the remains, or other relocation measures determined by the Warwick Historical Cemetery Commission, in accordance with all applicable laws and tribal practices (if necessary).
- Conduct archaeological investigations as needed in areas of proposed direct impacts not previously surveyed (e.g., wetland mitigation areas, Realigned Main Avenue, etc.).

#### 10.6.2 Mitigation for Other Impacts of the Project to Historical Resources

RIAC will continue to consult with the Warwick Historical Cemetery Commission per Rhode Island General Law 23-18-11 *et seq.* and Chapter 12 of the Code of Ordinances of the City of Warwick to address potential impacts to four historical cemeteries located within the area of direct impacts, WHC 26, WHC 76, WHC 77, and WHC 78.

### 10.7 Section 4(f) and Section 6(f) Resources

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The Project will physically or constructively use four Section 4(f) resources, resulting in a significant impact to: the eligible airport historic district, Hangar No. 1, the Rhode Island State Airport Terminal, and Winslow Park. The use of Winslow Park is also a Section 6(f) encroachment, as facilities in the Park were partially improved by a Land and Water Conservation Fund grant.

#### 10.7.1 Mitigation for Significant Section 4(f) Resource Impacts of the Project

Mitigation for significant Section 4(f) resources impacts of the Project will include the following:

- RIAC will replace the Winslow Park recreation facilities that are impacted by the Project (four full-sized softball fields, a clubhouse, two parking lots, a playground, and soccer fields) to a new area in the vicinity of Cedar Swamp Road within the City of Warwick. The Project will not impact two existing smaller softball fields at Winslow Park as they will remain outside of the future RPZ. Sufficient space for parking near these fields will also be outside the future RPZ. Therefore, the smaller fields may continue to remain at this location. The passive recreational area with walking trails could remain within the RPZ because this use is not an assembly of people.
- RIAC and FAA will implement the provisions of the MOA to mitigate for significant impacts to historical resources (see Section 10.6, *Historical, Architectural, Archaeological, and Cultural Resources* of this ROD).

#### 10.7.2 Mitigation for Significant Section 6(f) Resource Impacts of the Project

To mitigate for the encroachment of the Project on certain facilities in Winslow Park, a replacement property of at least equal fair market value and of reasonably equivalent usefulness and location, as required by Section 6(f) of the Land and Water Conservation Fund Act (as amended), will be provided or funded by RIAC. In addition, a specific mitigation plan will be developed in cooperation with the City of Warwick, the National Park Service, RIDEM, and FAA. The Section 6(f) conversion

process will be completed prior to groundbreaking for the runway extension that causes the Section 6(f) impact.

## **10.8 Wetlands and Waterways**

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Although the Project was developed during the alternatives screening to avoid and minimize wetlands impacts while still achieving the Project purpose, significant wetlands impacts will result from the Project.

### **10.8.1 Wetlands Avoidance and Minimization**

Several measures were incorporated into the Runway 34 design for the Project to minimize wetlands impacts. As a result, significant wetlands impacts were reduced between the DEIS and the FEIS, from 7.3 acres of federal-jurisdictional wetlands and approximately 918 linear feet of waterways to 5.0 acres of federal-jurisdictional wetlands and approximately 843 linear feet of waterways. EMAS is used at the Runway 16 and 34 Ends to reduce the total length of each RSA from 1,000 feet to 600 feet and Runway 16-34 will be shifted nearly 100-feet north to avoid wetlands impacts at the Runway 34 End. The Perimeter Road will be rerouted in several areas to reduce wetlands impacts without compromising safety. Impacts were further minimized by steepening the side slopes along the limits of the RSA and Taxiway C from a horizontal ratio of 4 to 1 to a vertical ratio of 3 to 1.

During the design phase of the Project, RIAC will evaluate additional methods to avoid and minimize impacts to wetlands to the extent practicable, and will continue to consult with the USACE, RIDEM, and other appropriate resource agencies when developing ways to minimize effects to the wetlands.

### **10.8.2 Mitigation for Significant Wetlands Impacts of the Project**

Because the Project results in unavoidable significant impacts to wetlands and waterways, compensatory mitigation measures are required to meet FAA and USACE policy of no loss of wetland area and/or functions and values and RIDEM requirements. RIAC will provide compensatory mitigation to address lost functions and values in compliance with the 2008 *Final Rule on Compensatory Mitigation for Losses of Aquatic Resources* (40 CFR Part 230).

USACE New England District provides guidance for recommended minimum compensatory mitigation ratios based upon the wetland cover types impacted.<sup>20</sup> The Project will fill 5.0 acres of federally-regulated wetlands with a recommended minimum equivalent of 10.2 acres of wetland restoration and creation based upon USACE guidance. The Project also proposes to use wetland and upland buffer preservation as part of the mitigation program.

As described in Section 8, *Public and Agency Involvement*, of this ROD, USACE, USEPA, and RIDEM participated with other agencies throughout the development of the EIS in the Inter-Agency/Tribal Coordination Group. After publication of the DEIS, FAA formed a Wetland Working Group comprised

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<sup>20</sup> USACE New England District July 20, 2010. New England District Compensatory Mitigation Guidance: Compensation for Impacted Aquatic Habitat Resource Functions.

of USEPA, USACE, RI Rivers Council, RIDEM, FAA, and RIAC. The Working Group met periodically between the July 2010 publication of the DEIS and the July 2011 publication of the FEIS to discuss mitigation for the Project. The mitigation program proposed in Chapter 6, *Mitigation*, of the FEIS and summarized in Table 10-3 below is a result of the Wetland Working Group process. This program has been designed following guidance from USACE in coordination with the RIDEM Freshwater Wetlands Program.

**Table 10-3 Wetland Mitigation Estimated Acreage**

Wetland Mitigation Type	Wetland Mitigation Site Numbers	Compensation Site Area (acres) <sup>1</sup>	USACE New England District Recommended Ratio <sup>2</sup>	Impacted Wetland Area Equivalent <sup>3</sup>
Creation/Restoration (In Kind) <sup>4</sup>	1, 3, and 6	4.7	2.04:1	2.3
Restoration/Enhancement (In Kind)	3	0.2	3:1	0.1
Wetland/Buffer Preservation	8 and 12	<u>40.0</u>	<u>15:1</u>	<u>2.7</u>
Total		44.9	NA	5.1 <sup>5</sup>

1 The mitigation program will replace the functions and values of the impacted wetlands as required by USACE.

2 Weighted average for all wetland classes impacted from New England District Compensatory Mitigation Guidance (7-20-2010) Table 1.

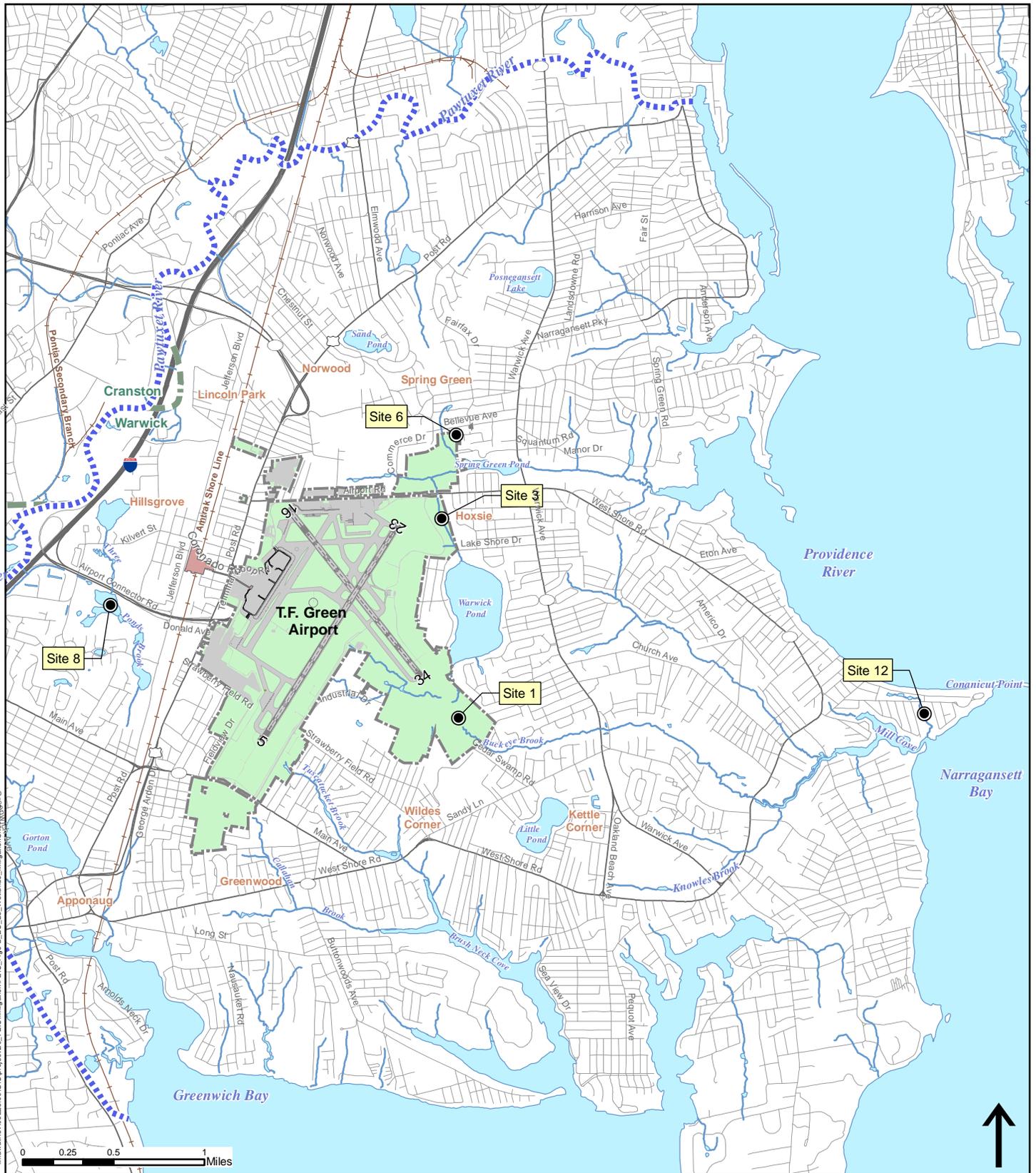
3 The mitigation equivalent of a creation/restoration site is calculated by dividing the area of the site by 2.04

4 Palustrine emergent wetland dominated by invasive common reed will not be replaced in Kind.

5 The Project requires mitigation for the loss of 5.0 acres of wetland.

Potential wetlands mitigation sites are shown in Figure 10-1. The final mitigation program components will be determined through the permitting process. Wetlands Mitigation Site 1 is located on the Airport within the Buckeye Brook watershed south of Runway 34. It has been designed to compensate for the flood storage and wetlands lost from fill that will be placed for the Runway 34 RSA. A compensatory wetland area, designed to hold water only during the duration of larger storms to avoid creating a wildlife hazard, will be constructed in uplands adjacent to the remaining portion of the wetland. A low shrub cover of species that are not wildlife attractants will be planted to obscure the brief periods of shallow flood. Features to be installed as part of this mitigation will promote oxygenation and should lower levels of dissolved iron and manganese in surface waters reaching the wetland.

Wetlands Mitigation Site 3 involves removing existing roads built on fill along Buckeye Brook to restore buried wetlands and their floodplain function during smaller, more frequent storms. This mitigation site will provide 1.3 acres of wetland restoration and 0.2 acres enhancement. The site will be seeded and planted with wetland tree species that are not wildlife attractants. In addition, 49 linear feet of Buckeye Brook presently conveyed through culverts will be day-lighted and placed in constructed stream channels at two locations. Two other existing culverts under the Airport Perimeter Road will be removed to provide an additional 49 linear feet of open channel, for a total of 98 feet of new open channel. Most of a perimeter fence, which currently excludes wildlife from approximately 13 acres of forested upland, wetland and scrub-shrub habitat, will be relocated, which will greatly enhance the wildlife function of this wetland and contiguous habitats north of Warwick Pond.



**Legend**

- No-Action Airport Property Boundary (2015)
- Proposed Watershed Limits for Wetland Mitigation
- Site # Wetland Mitigation Site



**Figure 10-1**  
**Potential Compensatory**  
**Wetland Mitigation Sites**

The Spring Green Pond Inlet Stream originates in a ditch dug through a wetland. For Wetlands Mitigation Site 6, a portion of the lawn area which abuts this channel will be excavated to create approximately 0.4 acre of shrub and forested wetlands next to the stream. An upland buffer will be planted in the slopes grading to the wetlands and existing mature trees will be preserved. This will attenuate flood flows and provide a wetland buffer to enhance the water quality of runoff. The site will be graded to drain back into the stream so a wildlife hazard is not created. Planting will consist of species that do not produce wildlife attractants. This area will provide a wildlife corridor for mammals traveling between habitats at Spring Green Pond and other wetlands. With the other mitigation sites described in this ROD, this site may not be needed to achieve the mitigation goals and this will be evaluated once agreements for the other sites have been negotiated and mitigation credits have been assigned by USACE.

Wetlands Mitigation Site 8 provides an opportunity for preservation of wildlife (primarily waterfowl and wading birds) and warm water fish habitats by acquiring the development rights to 32 acres of dry oak forest, upland grassland, and approximately 12 acres of marsh. These acquisitions will protect the upland areas to the south and west of the marsh, along with a portion of the Three Ponds Brook wetland system located south of the Airport Connector in the Pawtuxet River watershed. The Three Ponds wetland system is listed in City of Warwick Comprehensive Plan as one of the "priority open space sites for protection."<sup>21</sup>

Wetlands Mitigation Site 12 is the Conimicut Point Marsh. The Marsh is divided by Point Avenue into northern and southern parts. The larger southern marsh (Site 12A) is contiguous with the coast and bounded to the north by Point Avenue. It consists of approximately 12 acres, two thirds of which is marsh or tidal river. The smaller northern part (Site 12B) is landlocked between Point Avenue and Shawomet Avenue. It consists of approximately six acres, half of which is wet, however, tidal restrictions have degraded the quality of the marsh. Mitigation will focus on preservation as restoration work could take years of study prior to implementation. Together with Save the Bay, the Mill Cove Conservancy has identified nearly 19 acres of land along the marsh where they wish to purchase development rights because building is permitted on "pre-existing lots," which are under development pressure due to high aesthetic value. In addition to aesthetic values, the marsh provides wildlife habitat for waterfowl and wading birds, important fish and shellfish habitat, and recreational values for kayaking and bird watching.

In a February 23, 2011, meeting of the Wetlands Working Group, representatives of USACE agreed that this program meets USACE's mitigation requirements. Therefore, USACE is likely to approve a Clean Water Act Section 404 Permit for the Project. The Section 404 public hearing was held concurrently with the DEIS public hearing on August 17, 2010. RIAC submitted an application for a Section 404 Permit to USACE in July 2011. USACE will act on the permit following publication of this ROD and completion of the RIDEM permitting process.

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<sup>21</sup> [www.warwickri.gov/index.php?option=com\\_content&view=article&id=852:city-warwick-comprehensive-plan&catid=67:planning-department&Itemid=159](http://www.warwickri.gov/index.php?option=com_content&view=article&id=852:city-warwick-comprehensive-plan&catid=67:planning-department&Itemid=159) accessed January 24, 2011.

RIDEM Freshwater Wetlands Program will require mitigation that involves work in state-regulated wetlands resources to be permitted along with the proposed activities that will impact wetlands. RIDEM may request modifications to mitigation plans during this process. RIAC will coordinate the final mitigation plan with the resource agencies in accordance with the *Final Rule*. Additionally, RIAC will monitor hazardous wildlife activity in the area of the wetland mitigation site near the Runway 34 End. If this area becomes a hazardous wildlife attractant, FAA will direct RIAC to take appropriate steps to mitigate that hazard, which may require relocation of the wetland mitigation area.

### **10.9 Water Quality**

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The Project will avoid significant water quality impacts by reducing roadway and parking areas within the Tuscatucket Brook and Brush Neck Cove watersheds, thereby reducing pollutant loading. In addition, the Project includes improved water quality treatment for the relocation of existing roadways (Airport Road and Main Avenue). Total avoidance of the potential to impact water quality is not possible, as the Project involves new impervious surfaces, new parking, and increased aircraft operations. The Project design includes avoidance and minimization efforts to prevent any risks to water quality. The Project will be designed to comply with all applicable federal and state regulatory standards, including 2010 RIDEM Water Quality Regulations and the *Rhode Island Stormwater Design and Installation Standards Manual* adopted in December 2010.

### **10.10 Floodplains**

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The Project will result in an unavoidable, significant impact to natural and beneficial floodplain values: 726 cubic yards of existing flood storage volume on 2.3 acres will be lost based upon the FEMA floodplain elevation. RIAC will mitigate floodplain impacts by providing compensatory flood storage on the Airport property to prevent impacts at the downstream property limit, in accordance with RIDEM regulations. There is ample area available on the Airport in the vicinity of the Runway 34 End to mitigate floodplain impacts, as described in Section 10.8.2, *Mitigation for Significant Wetlands Impacts of the Project*. RIAC will monitor hazardous wildlife activity in the area of the mitigation site near the Runway 34 End. If this area becomes a hazardous wildlife attractant, FAA will direct RIAC to take appropriate steps to mitigate that hazard, which may require relocation of the mitigation area.

### **10.11 Coastal Resources**

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The proposed T.F. Green Airport Improvement Program is within the Coastal Zone, but will not directly impact any coastal resources. Thus, there are no significant impacts of the Project to the Coastal Zone and no mitigation is required. The Project will, however, be designed to comply with the applicable performance standards of the Rhode Island Coastal Resources Management Plan, *Rhode Island Soil Erosion and Sediment Control Handbook*, the *Rhode Island Stormwater Design and Installation Standards Manual*, and the *Greenwich Bay Special Area Management Plan (SAMP)* goals and objectives, as required by the Rhode Island Coastal Resources Management Council.

### 10.12 Hazardous Materials, Solid Waste

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There are no significant impacts of the Project relative to hazardous materials, solid waste, or pollution prevention and, therefore, no mitigation is required. The Project, however, will require the removal of seven underground storage tanks (USTs). The USTs will be removed and the Project will be constructed in accordance with applicable local, state, and federal laws and regulations concerning hazardous or solid waste management.

### 10.13 Construction Impacts

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The Project will not generate any significant short-term impacts from construction activities. All construction activities will comply with the most recent edition of FAA's Advisory Circular 150/5370-10, *Standards for Specifying Construction of Airports*. A portion of a water main currently exists under Airport Road. In the future, if the water main were to remain in place, that portion of the water main would be under the Runway 16 RSA. During construction, the water main will be relocated as a construction mitigation measure. Additionally, appropriate construction mitigation requirements will be incorporated into the contract documents and specifications governing the activities of contractors and subcontractors constructing elements of the Project. On-site resident engineers and inspectors will monitor construction activities to ensure that mitigation measures are properly implemented. Construction period mitigation measures listed in Table 10-4 will be implemented.

Table 10-4 Summary of Construction Period Mitigation Measures

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Mitigation Measures
<b>Noise</b>
<ul style="list-style-type: none"><li>■ All equipment powered by an internal combustion engine will utilize a properly maintained muffler.</li><li>■ Conduct truck loading, unloading, and hauling so that noise is kept to a minimum.</li><li>■ Route construction equipment and vehicles in areas that will cause the least disturbance to nearby noise sensitive receptors where possible.</li><li>■ Fit air-powered equipment with pneumatic exhaust silencers.</li><li>■ Stationary equipment powered by an internal combustion engine will not be within 150 feet of noise-sensitive sites without portable noise barriers placed between the equipment and the residences. Portable noise barriers are to be constructed of plywood or tongue-and-groove boards and to have a sound absorbing treatment on the surface facing the equipment.</li><li>■ If appropriate, temporary noise barrier walls may be constructed to protect noise-sensitive areas from construction noise.</li></ul>
<b>Surface Transportation</b>
<ul style="list-style-type: none"><li>■ Maintain pedestrian access through work zone as appropriate.</li><li>■ Maintain vehicle and bicycle access as appropriate. Provide temporary traffic detours only when needed.</li><li>■ Coordinate with appropriate officials throughout design and construction phase. Coordinate with abutters as needed.</li><li>■ Accommodate construction worker parking on-Airport.</li></ul>

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**Table 10-4 Summary of Construction Period Mitigation Measures (continued)**

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Mitigation Measures
<b>Air Quality</b>
<ul style="list-style-type: none"><li>■ Limit idling diesel-powered construction vehicles and equipment engines to no more than five consecutive minutes within any 60-minute period.</li><li>■ Construction equipment will be operated with Tier 3 controls where feasible and applicable.</li><li>■ Encourage contractors to substitute low- and zero-emitting construction equipment whenever possible.</li><li>■ Implement a construction employee shuttle service, rideshare program, and/or on-site food service to reduce vehicle trips.</li><li>■ Use electrical drops in place of temporary electrical generators wherever possible.</li><li>■ Implement other construction-related air quality mitigation measures aimed to reduce the occurrence and potential impacts from “fugitive” dust, as needed. These measures could include, but are not limited to, the following:<ul style="list-style-type: none"><li>□ Apply non-toxic soil stabilizers to all inactive construction areas, including areas with disturbed soils and stockpiles of raw materials.</li><li>□ Stabilize on-site truck haul routes and staging areas with dust-prevention materials.</li><li>□ Reduce truck speeds on haul routes to minimize dust.</li><li>□ Remove mud and dirt from haul truck wheels and cover truck bodies before leaving the construction site(s).</li><li>□ Permanently cover all ground surfaces with vegetation or impervious materials as soon as practicable.</li><li>□ Post a publicly visible sign with the contact information for reporting dust complaints.</li></ul></li></ul>
<b>Water Quality</b>
<ul style="list-style-type: none"><li>■ Develop and implement a construction stormwater pollution and prevention plan (SWPPP), including installation of temporary BMPs and implementation of erosion and sediment controls, in accordance with NPDES and RIDEM standards/permits.</li><li>■ Ensure proper timing of construction to minimize the time that an area is left exposed. Temporarily stabilize exposed areas using protective covers. Apply perimeter controls such as silt fences and straw bales to capture sediment before it leaves the site.</li><li>■ Perform regular monitoring to ensure that controls are effective.</li><li>■ Install spill control procedures at designated temporary fueling locations and any temporary sanitary facilities during construction.</li><li>■ Manage waste materials properly.</li><li>■ Address any contaminated soil or groundwater encountered during construction in accordance with all applicable regulations.</li><li>■ If dewatering activities are necessary, comply with all applicable regulations and obtain all required permits.</li></ul>
<b>Wetlands and Waterways</b>
<ul style="list-style-type: none"><li>■ Implement erosion and sedimentation control measures according to the construction SWPPP.</li><li>■ Use appropriate construction measures, such as swamp mats, in work areas to avoid or minimize construction effects on wetlands.</li></ul>
<b>Hazardous Materials and Solid Waste</b>
<ul style="list-style-type: none"><li>■ Implement measures to protect workers and the environment, such as special management procedures for any hazardous, contaminated, or special wastes generated during construction.</li><li>■ Prepare a site-specific Health and Safety Plan, if required.</li></ul>

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## 11 Conditions of Project Approval

For approval of the Project, RIAC must comply with the following conditions:

- Mitigation requirements to minimize or avoid significant impacts to the extent practicable, as detailed in Section 10, *Mitigation*, of this ROD and summarized in Tables 10-1 and 10-2. FAA will monitor the implementation of these mitigation actions as necessary to assure they are carried out as Project commitments.
- No later than 18 months after the commissioning of Runway 5-23, RIAC will comply with requirements under 14 CFR Part 150 and submit any necessary update of its NEM to FAA for acceptance, including the "EIS Preferred Alternative for 2020 Operations" Noise Exposure Map.
- Prior to initiating construction, RIAC will obtain all permits and approvals necessary for development and operation of the Project. A list of the permits and approvals that are likely to be required is provided in Table 11-1.

FAA will ensure that the mitigation measures contained in this ROD are followed through appropriate grant conditions.

**Table 11-1 Permits and Approvals**

Agency	Permit or Approval
<b>Federal</b>	
Army Corps of Engineers	Clean Water Act Section 404 Individual Permit
National Park Service	Section 6(f) Conversion Approval
<b>Tribal - Narragansett Indian Tribe</b>	NHPA Section 106 Coordination, during construction in the event of an unanticipated discovery, per stipulation of the MOA
<b>State</b>	
RI Coastal Resources Management Council	Federal Consistency Review
RI Department of Environmental Management	Freshwater Wetlands Alteration Permit Rhode Island Pollution Discharge Elimination System (RIPDES) - Stormwater Design and Construction CWA Section 401 Water Quality Certification Freshwater Wetlands Preliminary Determination Application Air Pollution Control Permits – Minor Source Permits (modified permit i for steam boilers and emergency generators and a new permit for new fuel storage tanks) Above Ground Storage Tank Application (Fuel Farm) Underground Injection Control Permit (if applicable)
RI Department of Transportation	Physical Alteration Permits Category A/B Assent
RI Historic Preservation and Heritage Commission	NHPA Section 106 Concurrence
<b>Municipal</b>	
City of Warwick	Warwick Historical Cemetery Commission Approval for impacts to historic cemeteries

This table only lists permits or approvals that will be required for implementation of the Project and does not reflect all environmental impacts associated with the Project.

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## 12 Agency Findings

In accordance with applicable law, FAA makes the following determinations for this Project, based upon appropriate information and analyses contained in the FEIS and other portions of the EIS record.

FAA understands that RIAC may apply for federal grant-in-aid funding approvals in conjunction with its decision to proceed with the implementation of the Project components and mitigation measures covered by this ROD. There are numerous findings and determinations prescribed by law that must be made by FAA as preconditions to agency approvals of airport project funding applications. Any grant-in-aid or approval would also reflect appropriate statutory and regulatory assurances and other terms and conditions for FAA's action. This ROD provides the basis to proceed with making those findings and determinations. The agency will make any necessary funding determinations in conjunction with its consideration of appropriate applications and availability of funding.

The following determinations are prescribed by the statutory provisions set forth in the Airport and Airway Improvement Act of 1982, as codified in 49 U.S.C. Sections 47106 and 47107. They are preconditions to FAA's approval of airport funding applications for Airport Improvement Program (AIP)-eligible airport development projects.

### 12.1 The Project is reasonably consistent with existing plans of public agencies for development of areas surrounding the airport (49 U.S.C. 47106(a) (1)) and Executive Order 12372.

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It has been a long-standing policy of FAA to rely heavily upon action of metropolitan planning organizations (MPOs) to satisfy the Project consistency requirement of 49 U.S.C. § 47106(a)(1). [e.g., *SOC v. Dole*, 787 F.2d 186, 199 (7th Cir., 1986)]. Furthermore, both the legislative history and consistent agency interpretations of this statutory provision make it clear that reasonable, rather than absolute, consistency with these plans is all that is required.

The Rhode Island State Planning Council is the statewide MPO. The Planning Council's goals are outlined in the *Rhode Island State Guide Plan*, which is "a means for centralizing and integrating long-range goals, policies, and plans" (Rhode Island General Law 42-11-10 (7)(d.)) Included among the general Goals and Policies of the *Plan* are: expand the markets for the state's products and services through improved communications and transportation facilities; insure that the total transportation needs of the state are considered at the national and state levels, for capital improvements, in the light of environmental and energy source limitations; and expand commercial air service for direct intermediate distance travel (Plan Element 110, November 13, 1974). In addition, Element 640 of the *Plan* is the State Airport System Plan. The goals of Element 640 state that "Rhode Island's airport system will be safe, efficient, and meet applicable FAA design standards

and Transportation Security Administration (TSA) security standards” and that “Rhode Island will be served by a system of airports whose roles and capacities are sufficient to meet current and projected demand within the context of the natural, social, and economic environment.” (Rhode Island Airport System Plan, September 15, 2011).

While it is a policy of the most current (2002) *City of Warwick Comprehensive Plan* to discourage proposals to expand airport runways beyond the current airport fence line, the City and the *Plan* recognize the contributions of the Airport to the municipal economy. For example, RIAC has representation on the City’s Comprehensive Plan Advisory Committee and the *Comprehensive Plan* includes a variety of measures to capitalize economically on the presence of the Airport. These measures include the promotion of tourism at the Airport and airport-related development in the area surrounding the Airport. The Project is also consistent with the *Comprehensive Plan* because proposed wetland mitigation sites 8 and 12 will improve the Three Ponds wetland system and Mill Cove, which are listed as priority resources in the *Plan*. At the time of the issuance of this ROD, the City of Warwick was in the process of updating its *Comprehensive Plan* and expected to complete the update in June 2012. In addition, the 1998 *Warwick Station Redevelopment District Master Plan* supports “seamless travel” for airport customers, which was implemented with the opening of the Interlink intermodal facility in October 2010. The Interlink connects the Airport via a covered walkway to a consolidated rental car facility and commuter trains traveling between Warwick, Providence, and Boston.

The Project is consistent with the general goals and policies of the MPO, the *State Guide Plan*, and with Element 640 of the *Guide Plan*, the 2011 State Airport System Plan. Specifically, the Project is consistent with the *Guide Plan’s* goals for an airport system that is safe, efficient, meets applicable FAA design standards, and meets current and projected demand within the context of the natural, social, and economic environment. FAA accordingly finds that the proposed action is reasonably consistent with the existing plans of public agencies authorized by the state in the area in which the airport is located to plan for the development of the area surrounding the airport and will contribute to the purposes of 49 U.S.C. 47101 *et seq.*

**12.2 The interest of the communities in or near where the Project may be located was given fair consideration (49 U.S.C. 47106(b)(2)).**

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As described in FEIS Chapters 1, *Introduction*, and 8, *Consultation and Coordination*, and summarized in Section 8, *Public and Agency Involvement*, of this ROD, Warwick, Cranston, and their residents have had numerous opportunities to express their views throughout the NEPA review process, at a public hearing, and during the period following public issuance of the FEIS. In addition to scoping, FAA held seven public meetings; between 50 and 600 people attended each meeting. FAA held twenty-two meetings with the Mayor of Warwick, the City of Warwick Planning Department, Warwick City Council, the Warwick Historical Cemetery Commission, and/or the City of Cranston Planning Department.

FAA received approximately 2,200 comments on the DEIS. Of these, approximately 1,500 comments were from the City of Warwick, and the rest of the comments were from two federal and five state agencies, five non-governmental organizations, and approximately 150 individuals. FAA's consideration of these comments is set forth in Appendix A, *Responses to Comments on the FEIS*. Comments received on the FEIS are addressed in Attachment A, *Responses to Comments on the FEIS*, of this ROD. In making its determination under 49 U.S.C. 47106(b)(1), FAA has considered the fact that the City of Warwick is represented on the RIAC Board, as documented in a March 31, 2011, letter from RIAC to FAA (see Section C.6 in Appendix C of the FEIS) and that the City, as well as the public, has participated, through the submission of comments on the DEIS and the FEIS and at numerous meetings and briefings, in FAA's decision to authorize the Project. Thus, FAA determines that throughout the environmental process, fair consideration was given to the interest of communities in or near the Project location.

**12.3 Appropriate action, including the adoption of zoning laws, has been or will be taken as reasonable to restrict the land use next to or near the airport to uses that are compatible with airport operations (49 U.S.C. Section 47107(a)(10)).**

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FAA requires satisfactory assurances that appropriate action, including the adoption of zoning laws, be taken to restrict, to the extent reasonable, the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations, including landing and takeoff of aircraft. In a May 11, 2011, letter to FAA, RIAC committed to advocating for compatible land use with the City of Warwick, which has local zoning authority over the land around T.F. Green Airport (see Section C.6 in Appendix C of the FEIS). In addition, the City of Warwick included the following statement in its 2002 Comprehensive Plan: "Support noise abatement programs and land use measures including but not limited to selective rezoning, establishment of buffer areas and institution of environmental best management practices (BMPs) intended to reduce airport impacts." As explained in the FEIS, development of the Project will result in significant impacts on non-compatible land uses. Based upon the EIS record for this ROD, FAA has concluded that existing noise mitigation programs and the mitigation program described in Section 10.1, *Noise*, of this ROD provide appropriate action to ensure compatible land use in the airport vicinity.

**12.4 RIAC has provided the opportunity for a public hearing to consider economic, social, and environmental effects of the Project location and the location's consistency with the objectives of any planning that the community has carried out (49 U.S.C. Section 47106(c)(1)(A)(i)).**

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The opportunity for a public hearing was provided, as documented in a March 31, 2011, letter from the RIAC to FAA that is included in Appendix C, Section C.6 of the FEIS. RIAC participated in a public hearing on August 17, 2010, at the Community College of Rhode Island-Knight Campus Auditorium, after the release of the DEIS. Details of the Public

Hearings are provided in Section 8.2.2 of the FEIS and are summarized in Section 8.1, *Public Involvement*, of this ROD. Oral and written comments submitted during the public hearing, including FAA responses, are contained in Appendix A of the FEIS.

- 12.5 RIAC has provided certification that the airport management board has voting representation from the communities in which the Project will be located or that the sponsor has advised communities they have the right to petition the Secretary of Transportation about a Project (49 U.S.C. Section 47106.(c)(1)(A)(ii)).**

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RIAC has certified that the Board managing the Rhode Island Airport Corporation (RIAC) has voting representation from Warwick, Rhode Island, the community in which the Project will be located. This certification is included in a March 31, 2011, letter from RIAC to FAA that can be found in Section C.6 in Appendix C of the FEIS.

- 12.6 RIAC has provided a certification verifying that, on request from the metropolitan planning organization (MPO) in the area where the Project is located, the sponsor has made the proposed Airport Layout Plan (ALP) and Master Plan available to the MPO (49 U.S.C. Section 47106(c)(1)(A)(iii)).**

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The Rhode Island State Planning Council is the statewide metropolitan planning organization (MPO). RIAC has notified the Council that the Master Plan and ALP will be made available for its review, once it is approved by FAA. The notification letter is shown in Attachment C, *Airport Sponsor Certification*, to this ROD.

The following determination is required for ALP approval and is a precondition to FAA's approval of airport funding applications for Airport Improvement Program (AIP)-eligible airport development projects.

- 12.7 For actions involving airport location, runway location, or a major runway extension, and found to have a significant adverse effect, there is no possible and prudent alternative to the Project and reasonable steps have been taken to minimize adverse effects (49 U.S.C. Section 47106(c)(1)(B)).**

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This ROD approves a major runway extension that has significant adverse impacts to noise; compatible land use; historic, architectural, archaeological and cultural resources; Sections 4(f) properties and a Section 6(f) property, wetlands and waterways, and floodplains. FAA, in consultation with RIAC, developed and evaluated a wide range of alternatives. The planning and NEPA processes considered runway extensions for Runway 5-23 to lengths of 8,300 feet, 8,700 feet, and 9,350 feet, with several permutations of each length.

The options of extending Runway 5-23 to lengths of 8,300 and 9,350 feet were considered in the EIS but eliminated from detailed study. For the reasons explained in Chapter 3,

*Alternatives Analysis*, of the FEIS, the 9,350 foot runway extension is possible to build, but it is not a prudent alternative to the Project.

The 8,300-foot alternatives are possible to build, but are not prudent. The RIAC Board determined an extension to 8,300 feet did not meet its objective for an appropriate level of service to accommodate current and anticipated demand. Because of this, RIAC, as the airport sponsor, recommended against carrying this length extension forward for detailed analysis. From FAA's perspective, the 8,300-foot runway alternatives do not meet the purpose and need of the Project to the same extent as the 8,700-foot alternatives and the environmental consequences of the 8,300-foot alternatives are not significantly environmentally distinguishable from the Project.

The alternatives carried forward for detailed analysis (No-Action, B2, and the Project) are possible, but the No-Action Alternative is not prudent because it does not meet the purpose and need. Alternative B2 is not prudent because while both alternatives have the same operational benefits: 1) the runway envisioned under Alternative B2 would be completed five years later than it will be under the Project, thus providing both the aviation and economic benefits later, 2) Alternative B2 will cost approximately \$77 million more to construct and mitigate than the Project, and 3) the enhancements to the Runway 34 RSA would require the acquisition of 22 additional businesses when compared to the Project, including Airport Plaza, some of which businesses might choose to close instead of relocating.

The environmental impacts of Alternative B2 and the Project are substantially similar. Both alternatives impact a comparable amount of wetlands and floodplains, have similar adverse effects to historical properties, such as Hangar No. 1 and the Rhode Island State Terminal Building (although the Project will not have an adverse effect on Hangar No. 2), and both cause virtually identical impacts to the Winslow Park ball fields, a Section 4(f) and 6(f) resource. The primary difference between these two alternatives is that the Project has greater noise impacts, while Alternative B2 has greater socioeconomic impacts as discussed in Sections 9 and 10 (*Environmental Consequences* and *Mitigation*) of this ROD. By 2020, the Project is expected to have a significant noise impacts on 185 housing units compared to Alternative B2's impact on 74 housing units. Of the 185 housing units impacted by the Project, all but 24 have been previously sound insulated. All of the 74 housing units impacted by Alternative B2 have already been sound insulated.

Regarding socioeconomic impacts, Alternative B2 would necessitate the acquisition of 237 housing units and 38 businesses. The Project requires the acquisition of only 140 housing units and 12 businesses. Because many of the significant noise impacts from the Project are to housing units that would have been acquired for construction purposes under Alternative B2, the difference in noise impacts between the Project and Alternative B2 is somewhat artificial. In addition to the greater residential acquisitions, Alternative B2

would displace 26 more businesses and 250 more jobs, including 25 more “most threatened” jobs, which are unlikely to relocate in Warwick due to limited vacant/developable industrial land. Alternative B2 would also adversely affect the cohesion of the Spring Green Neighborhood because of the construction of fully relocated Airport Road. It is inherently difficult to compare the type of adverse socioeconomic impacts and adverse noise impacts described above and, thus, FAA concludes that there is no clear environmental difference between Alternative B2 and the Project.

For the reasons stated above, there is no possible and prudent alternative to the Project.

Through this ROD and special grant conditions, FAA is requiring RIAC to take all reasonable steps to minimize significant adverse effects on the environment that would be caused by the Project, as described in Chapter 6, *Mitigation*, of the FEIS and Section 10, *Mitigation*, of this ROD.

The following determinations are required by FAA Order 5050.4B, paragraphs 1204-1208.

**12.8 For the Project, which will directly affect wetlands, there is no practicable alternative to development of the Project. The Project conforms to the Avoidance, Minimization, and/or Compensation of Harm to Wetlands in Accordance with Executive Order 11990 and the Clean Water Act.**

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Executive Order 11990, Protection of Wetlands, and DOT Order 5660.1A, Preservation of the Nation’s Wetlands, require FAA to avoid providing assistance for new construction located in wetlands, unless there is no practicable alternative to such construction, and all practicable measures to minimize harm to wetlands are included in the action. As described in the FEIS and in Section 9, *Environmental Consequences*, of this ROD, development of the Project will result in the unavoidable loss of 5.0 acres of wetlands and 843 linear feet of waterways on Airport property. Modifications to the airfield cannot be made without wetlands and waterways impacts. Practicable means could not be found to eliminate impacts to wetlands and waterways caused by the Project. Alternative B2 would have a greater wetlands impact than the Project and the impact would be to more valuable wetlands. Alternative B2 is not a practicable alternative to the Project because the RSA enhancements would require the taking of Airport Plaza and the acquisition of 22 additional businesses when compared to the Project. The No-Action Alternative does not impact wetlands, but it is not practicable as it does not enhance the safety of the airport nor does it meet the transportation objectives contained in the purpose and need.

As discussed in Section 10.8.1, *Wetlands Avoidance and Minimization*, of this ROD, several measures were taken to minimize wetlands impacts. Between the DEIS and the FEIS, FAA convened a Wetlands Working Group of state and federal agencies, including USACE, to address minimizing impacts to wetlands. As a result, measures were incorporated into the Runway 34 design for the Project to reduce the wetlands to be filled from 7.3 acres of

federal-jurisdictional wetlands and approximately 918 linear feet of waterways to 5.0 acres of federal-jurisdictional wetlands and approximately 843 linear feet of waterways. Measures incorporated into the Runway 34 design to minimize wetlands impact include the use of EMAS at the Runway 16 and 34 Ends, thereby shortening the total length of each RSA from 1,000 feet to 600 feet. Runway 16-34 was also shifted nearly 100-feet north to minimize wetlands impacts at the Runway 34 End. The re-routing of the Perimeter Road is designed to minimize wetlands impacts. Impacts were further minimized by steepening the side slopes along the limits of the RSA and Taxiway C from a horizontal ratio of 4 to 1 to a ratio of 3 to 1. FEIS Chapter 6 and Section 10, *Mitigation*, of this ROD discuss these considerations.

During the design phase of the Project, RIAC will evaluate additional methods to avoid and minimize impacts to wetlands to the extent practicable and will continue to consult with USACE, RIDEM and other appropriate resource agencies when developing ways to minimize effects to the wetlands.

As summarized in Section 10.8.2, *Mitigation for Significant Wetlands Impacts of the Project*, of this ROD, the Wetland Working Group developed a conceptual mitigation program to offset the unavoidable significant impacts that construction of the Project would cause to 5.0 acres of federally-regulated wetlands and waterways. In accordance with federal policies and RIDEM requirements, this program includes a recommended minimum equivalent of 10.2 acres of wetland restoration and creation. More details about the mitigation sites are set forth in Table 10-3 and Section 10.8.2, *Mitigation for Significant Wetlands Impacts of the Project*, of this ROD. RIAC will coordinate the final mitigation plan with the resource agencies in accordance with the 2008 Final Rule on Compensatory Mitigation for Losses of Aquatic Resources (40 CFR Part 230).

FAA finds that there is no practicable alternative to the Project's construction in or around 5.0 acres of wetlands. The Project's mitigation plan includes all practicable measures to minimize harm to wetlands that may result from this direct effect. This Project complies with Executive Order 11990 and DOT Order 5660.1A.

**12.9 Relocation assistance will be provided in accordance with 42 U.S.C. Section 4601 *et seq.*, the Uniform Relocation Assistance and Real Property Acquisition Policies Act.**

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Title II of the Uniform Relocation Assistance and Real Property Acquisition Policies Act (42 U.S.C. Section 4601 *et seq.*), as implemented by the Secretary of Transportation under 49 C.F.R. Part 24, requires that state or local agencies that undertake federally-assisted projects, which cause an involuntary displacement of persons or businesses, to follow the prescribed procedures and provide relocation benefits to those displaced.

As detailed in FEIS Chapter 5, *Environmental Consequences*, and summarized in Section 9, *Environmental Consequences*, of this ROD, the Project will require displacing 11 housing

units and 12 businesses to construct the Project; an additional 129 housing units will be eligible for voluntary land acquisition for noise mitigation and FAA-recommended clearing of the runway protection zone, for a total of 140 housing units and 12 businesses. Per the Act, relocation assistance will be provided to the residents and businesses. As a condition of approval, RIAC is required to provide fair and reasonable relocation payments and assistance payments pursuant to the provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act. Comparable decent, safe, and sanitary replacement properties are available on the open market.

**12.10 For any use of lands with publicly owned parks, recreation areas, national wildlife refuges, or significant historic sites, there is no prudent and feasible alternative to using the land. The Project includes all possible planning to minimize harm to structures from land use (49 U.S.C. Section 303 (c ) and Section 106, National Historic Preservation Act)**

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As summarized in Section 9.2.5, *Section 4(f) and Section 6(f) Resources*, of this ROD and described in detail in FEIS Chapter 7, *Final Section 4(f) / Section 6(f) Evaluation*, the Project will require the “use” of significant historic resources and one recreational resource that is protected under Section 4(f) of the Department of Transportation Act. The Project will result in a physical use of the eligible airport historic district and Hangar No. 1 due to the removal of Hangar No. 1 and modifications and improvements to Runway 16-34 and taxiways at the northern end of the airfield. The Project will also result in a physical use of the Rhode Island State Airport Terminal and a change to its setting. The Project will take part of the front lawn, landscaping, and historical entry of the Terminal due to the construction of the Integrated Cargo Facility. The Project will obstruct the public’s view of the Terminal from Airport Road (as a result of the proposed split Integrated Cargo Facility).

There are no avoidance alternatives for the use of the eligible airport historic district due to modifications and improvements to runways and taxiways other than the No-Action Alternative, which is not feasible as it does not meet the purpose and need. FAA investigated four avoidance alternatives for Hangar No. 1, including shifting Runway 16-34 south, laterally shifting Runway 16-34, relocating Hangar No. 1, and partially demolishing Hangar No. 1. Shifting the Runway south was feasible, but it was not found to be prudent because it would result in significant wetlands impacts (approximately 32 acres at the Runway 34 End) that could not be mitigated under the USACE New England District recommended wetlands mitigation guidelines. Because of the magnitude of direct impacts to commercial businesses and residences along Post Road, the existing Sundlund Passenger Terminal, and other historical properties, a major realignment of Runway 16-34 either to the east or to the west is feasible, but not prudent. Relocating one of the historic structures, Hangar No. 1, may not be feasible due to the size and mass of the structure. Relocating Hangar No. 1 to a location outside of the eligible airport historic district would remove the Hangar from its historical setting on T.F. Green

Airport. Therefore, this option is not prudent. Partial demolition was feasible, but found not to be prudent because of the destruction of important historical features of the building. FAA investigated avoidance alternatives for the Rhode Island State Terminal which included constructing the Integrated Cargo Facility at different locations at the Airport. The locations, however, were feasible, but not prudent for safety reasons and due to community disruption and the effects on the natural environment.

In addition to the Section 4(f) historic resources, the Project will result in physical use of one recreational resource, Winslow Park. The Project will require acquiring 21 acres and most of the active recreational facilities in Winslow Park. Winslow Park lies within the RPZ under the No-Action Alternative and under the Project. The Airport Design Standards (FAA Advisory Circular 150/5300-13) recommend against land uses, such as public ballfields, that constitute a congregation of people in the RPZ. For this reason, the ballfields will be removed from the RPZ under the No-Action Alternative and under the Project. To remove the park from the RPZ, Runway 5-23 would have to be shifted approximately 730 feet to the north of the existing runway location and extended north to a total length of 8,700 feet. This shift would result in significant community and environmental impacts, including direct impacts to the Hoxsie residential neighborhood. It would also result in impacts to wetlands north of existing Airport Road, including Buckeye Brook and Spring Green Brook. Therefore, this avoidance alternative was feasible, but deemed to be not prudent. Shifting the runway to the east would directly impact commercial businesses and residences along Post Road and the existing Sundlund Passenger Terminal.

As summarized above, review of the alternatives evaluated in FEIS Chapter 3, *Alternatives Analysis*, indicates that there are no prudent and feasible alternatives to the use of these Section 4(f) and Section 6(f) resources. Additionally, there is no alternative that meets the purpose and need and also minimizes the impacts to Section 4(f) resources and Section 6(f) resources to a greater extent than the Project. Specifically, in terms of Section 4(f) resources, the Project is superior to Alternative B2 in that it does not necessitate a physical or constructive use of Hangar No. 2 and it also results in less visual obstruction to the Rhode Island State Airport Terminal than Alternative B2. Although Alternative B2 does not necessitate changes to the landscaping surrounding the Rhode Island State Airport Terminal the way the Project does, given the Project's lack of a physical or constructive use of Hangar No. 2, and the superior visibility to the Rhode Island State Airport Terminal, the Project should be considered to have less of a significant impact on Section 4(f) and Section 6(f) resources than Alternative B2. Additionally, alternatives that would not have met the purpose and need as well as the Project, such as Alternatives B3 North and B3 South, would have virtually identical impacts to Section 4(f) and Section 6(f) resources as Alternative B2 and the Project, respectively, so there would be no benefit to Section 4(f) and Section 6(f) resources if these alternatives had been selected over the Project. Therefore, FAA finds that there is no prudent and feasible alternative to using that land and the Project includes all possible planning to minimize the use of these properties.

FAA has coordinated with the public and agencies having jurisdiction concerning the affected properties to determine site significance and to evaluate feasible mitigation measures to meet Section 4(f) requirements. The agencies involved in the coordination include City of Warwick, RISHPO, NITHPO, RIDEM, and the National Park Service. A Memorandum of Agreement resulting from these consultations appears in Attachment B, *Section 106 Memorandum of Agreement*, to this ROD.

**12.11 FAA has given this proposal the independent and objective evaluation required by the Council on Environmental Quality (40 C.F.R. Section 1506.5).**

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As documented in the FEIS and this ROD, FAA has engaged in a lengthy and extensive process related to the screening and selection of the viable alternatives that best fulfilled the identified purposes and needs for development of the Sponsor's airport. The process included FAA selecting a consultant/contractor through a competitive process to assist in conducting the environmental process, which included identifying the Project purpose, screening reasonable alternatives, fully discovering and disclosing potential environmental impacts, and developing appropriate mitigation measures. FAA directed the technical analysis provided in the DEIS and FEIS for the Project. From its inception, FAA has taken a strong leadership role in the environmental evaluation of the Project and has maintained its objectivity.

**12.12 For this Project, which involves encroachment on a floodplain, there is no practicable alternative to development of the Project. The Proposed Action conforms to all applicable State and/or local Floodplain protection standards (Executive Order 11988).**

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Executive Order 11988 establishes a policy to avoid construction within a 100-year floodplain where practicable and, where avoidance is not practicable, to ensure that the construction design minimizes potential harm to or within the floodplain. U.S. Department of Transportation Order 5650.2, Floodplain Management and Protection, contains the Department's implementing procedures to fulfill the requirements of the Executive Order.

The Project will cause a significant encroachment to 2.3 acres within the 100-year FEMA-designated coastal floodplain, with a net loss of 726 cubic yards of flood storage. Disturbance of the 100-year floodplain is necessary to construct the Runway 34 RSA. These floodplain impacts will not create a high probability of loss of human life or likely have substantial, encroachment-associated costs or damage, including interrupting aircraft service or loss of a vital transportation facility. If unmitigated, however, the Project's floodplain impacts would create a notable adverse impact on natural and beneficial floodplain values, including the natural moderation of floods, groundwater recharge, and water quality maintenance. Given that the impacted floodplains lie to the south of Runway 34, any alternative that proposed a shift of Runway 16-34 any farther south than what is called for in the Project would create even greater impacts to floodplains. Furthermore, shifting Runway 16-34 farther to the north, as is contemplated in

Alternative B2, would require taking an additional 22 commercial land parcels and 22 businesses, resulting in unacceptable socioeconomic impacts. Therefore, while Alternative B2 would have a slightly smaller impact to floodplains (0.5 acres and 233 cubic yards) than the Project, the socioeconomic impacts created by Alternative B2 render this alternative impracticable. Concerning shifts of Runway 16-34 to the west or to the east, a shift to the west would not create less impact to floodplains than the Project. Shifting the runway to the east would directly impact additional commercial businesses along Airport Road and the existing rental car servicing area. Shifting the runway to either the east or the west would not be practicable because it would also require significant changes to the surrounding taxiways. For these reasons, alternatives that would shift Runway 16-34 farther to the south, north, east, or west of the position proposed under the Project are not practicable.

Minimization efforts were undertaken and for unavoidable impacts, measures incorporated into the Runway 34 design to minimize floodplain impact include the use of EMAS at the Runway 16 and 34 Ends, thereby shortening the total length of each RSA from 1,000 feet to 600 feet. Runway 16-34 was also shifted nearly 100 feet north to minimize floodplain impacts at the Runway 34 End. Impacts were further minimized by steepening the side slopes along the limits of the RSA and Taxiway C from a horizontal ratio of 4 to 1 to a ratio of 3 to 1. FEIS Chapter 6 and Section 10, *Mitigation*, of this ROD discuss these considerations.

Compensation will be incorporated into the Project design. These floodplain impacts will be mitigated by providing flood storage within the Airport property to prevent flood impacts downstream of the Project, in accordance with RIDEM regulations. There is ample area available on the Airport for RIAC to mitigate the Project's floodplain impacts, and floodplain impacts will be mitigated as described in Section 10.8, *Wetlands and Waterways*, of this ROD. With mitigation, the Project conforms to RIDEM's floodplain protection standards.

It is FAA's finding that these operational and economic considerations outweigh the negligible difference in floodplain impacts between the Project and Alternative B2. There is no practicable alternative to the Project's encroachment of 2.3 acres into the 100-year floodplain.

**12.13 The implementation of the Project is consistent with the approved coastal zone management program and the Coastal Zone Management Act (16 U.S.C. 1451-1464).**

The Project would have no direct impacts to any coastal resources because the Project Area does not contain any coastal resources, however, the southern portion of the Project Area is within the watershed of Greenwich Bay and is, therefore, subject to the jurisdiction of the Rhode Island Coastal Resources Management Council (RICRMC) and the goals of the Greenwich Bay Special Area Management Plan (SAMP). RICRMC will make a consistency

determination on the Project once the USACE Section 404 permitting process is advanced and RIAC demonstrates that the Project will comply with the Greenwich Bay SAMP, as discussed below.

FAA has reviewed the RICRMC consistency requirements and has demonstrated in the FEIS that the Project is consistent with the applicable requirements of the Rhode Island Coastal Resources Management Program (CRMP), as described herein. The Project will be designed to comply with applicable state standards relating to the areas under RICRMC jurisdiction.

To address CRMP Section 300.6 Stormwater Management for Large Projects, the Project will comply with the requirements of the most recent version of the Rhode Island Stormwater Design and Installation Standards Manual for the stormwater design. The Airport's Stormwater Pollution Prevention Plan will be updated to ensure the proper maintenance and operating procedures are followed for the system in keeping with the requirements of the Manual. RICRMC will be provided with a copy of all documents provided to RIDEM relating to stormwater and other information requested for consistency review.

Greenwich Bay SAMP Section 120.2 — Improve Greenwich Bay's Water Quality, which indicates that RIAC should "implement Best Management Practices (BMPs) to reduce storm water discharge volume and nitrogen and bacteria concentrations," will be implemented according to SAMP Section 470.5B.17, which identifies recommended actions for meeting the goal of improved water quality within Greenwich Bay. RIAC will implement BMPs to reduce storm water discharge volume and nitrogen and bacteria concentrations as part of the design and implementation of the Project.

Greenwich Bay SAMP Section 120.3 — Maintain High Quality Fish and Wildlife Habitat indicates that RIAC should "preserve remaining freshwater wetlands in the Greenwich Bay watershed" to maintain fish and wildlife habitat in the Greenwich Bay watershed. The measures needed to accomplish this action are addressed as part of Greenwich Bay SAMP Section 390.5B.5 — Airport Impacts on Wetlands, which indicates that RIAC "should examine the impacts from any proposed expansion proposal on Greenwich Bay's tidal and freshwater wetlands and mitigate for any impacts within the watershed." Project impacts on wetlands and proposed mitigation for these impacts have been evaluated in detail as part of the FEIS. The Project specific mitigation described in FEIS Chapter 6, *Mitigation*, and summarized in Section 10, *Mitigation*, of this ROD will meet this SAMP objective.

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## 13 Decision and Order

This FAA decision is based upon a comparative examination of environmental impacts, operational, and economic factors for each of the alternatives in the EIS. The FEIS provides a fair and full discussion of the impacts, including any significant impacts. The EIS process included appropriate planning and design for avoidance, minimization, and compensation of impacts, as required by NEPA, the CEQ regulations, other special purpose environmental laws, and FAA Environmental Orders.

The Project is comprised of safety and efficiency elements that advance FAA's statutory mission of providing the safest, most efficient aerospace system in the world, as described in Section 2, *Overview of the Project*, of this ROD. T.F. Green Airport plays a critical part in the New England Regional Airport System. The efficiency of the Regional Airport System depends in part on the ability of RIAC to minimize passenger migration from T.F. Green Airport to Logan Airport. There is strong demand for West Coast service from the overlapping T.F. Green and Logan Airport service areas, and the existing airfield facilities at T.F. Green Airport do not fully optimize the potential for airlines to initiate non-stop West Coast service. The Project will enhance the ability for airlines to initiate service to the West Coast from T. F. Green Airport, thereby avoiding an over-reliance on Logan Airport.

FAA has determined that environmental and other relevant concerns presented by interested agencies and citizens have been addressed in the FEIS and, where appropriate, the ROD. There are no outstanding environmental issues within FAA jurisdiction to be studied or NEPA requirements that have not been met. In making this determination, FAA must decide whether to approve the federal actions necessary for Project implementation. FAA approval signifies that applicable federal requirements relating to airport development planning have been met and would permit the Sponsor to proceed with development and possibly receive funds for eligible items. Not approving these actions would prevent the Sponsor from proceeding with airport development.

For reasons summarized earlier in this ROD, supported by disclosures and analysis presented in detail in the FEIS, FAA has determined that the Sponsor's Project, described as the Preferred Alternative, is reasonable, feasible, and prudent with respect to both federal and Sponsor goals and objectives. Consistent with FAA's mission of providing for the safe and efficient use of the national airspace,<sup>22</sup> the purpose of the Project is to enhance airport safety and enhance the efficiency of the Airport and the New England Regional Airport System. An FAA decision to take the actions and approvals requested by the Sponsor is consistent with FAA's statutory mission and policies. This decision is supported by the environmental findings and conclusions presented in the FEIS and ROD.

I have fully and carefully considered FAA's goals and objectives as to aeronautical aspects of the proposed development and related activities at T.F. Green Airport as discussed in the FEIS and its Appendices. These include purpose and need for this Project, alternative means of achieving these

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22 49 U.S.C. Section 40103.

objectives, the environmental impacts of the alternatives, the mitigation necessary to preserve and enhance the environment, national transportation policies within which FAA operates, and the costs and benefits of achieving the purpose and need in terms of efficiency and fiscally responsible expenditures of federal funds.

While this decision neither grants federal funding nor constitutes a funding commitment, it does fulfill the environmental analysis prerequisites for federal funding determinations to be made. FAA will review funding requests upon receipt from the Sponsor of a timely application for federal grant-in-aid and FAA will make funding decisions in accordance with established procedures and applicable statutory requirements.

Accordingly, pursuant to the authority delegated to me by the Administrator of FAA, I find that the actions summarized in this ROD are reasonably supported and approved. For those actions, I hereby direct that action be taken, together with the necessary related and collateral actions, to carry out the agency decisions discussed more fully in sections of this ROD, including:

- Approval of a revised Airport Layout Plan (ALP) under 49 U.S.C. Section 47107(a)(16) and determinations under 49 U.S.C. Section 47106 and 47107 pertaining to FAA funding of airport development;
- Approval under 49 U.S.C. Section 47107 *et seq.* of Project eligibility for federal grant-in-aid funds under Section 47104 as well as approval, under 49 U.S.C. Section 40117, of an application to impose and use Passenger Facility Charges;
- Determination and actions under 49 U.S.C. Section 44718 (14 CFR Part 77) evaluating obstructions to navigable airspace;
- Determination and actions, under 49 U.S.C. Sections 40103(b) and 44701, designing, developing, approving, and implementing new air traffic control, airspace management, flight procedures, and other rules or terms and conditions for the safe and efficient use, as well as management, of the navigable airspace;
- Approval for relocation and/or upgrade of various navigational aids;
- Determination that the Project is in conformance, for environmental purposes only, with federal grant eligibility and other requirements, pursuant to 14 C.F.R. Parts 77, 150, 152, 157, and 169; and
- Review and subsequent approval of an amended Airport Certification Manual (under 14 CFR Part 139) for T.F. Green Airport.

Based upon the EIS record of this Project, I certify, as prescribed by 49 U.S.C. 44502(b), that implementation of the Proposed Project is reasonably necessary for use in air commerce.



Amy Lind Corbett, FAA New England Regional Administrator



Date of Approval

**Right of Appeal**

This ROD presents the Federal Aviation Administration's final decision and approvals for the actions identified, including those taken under the provisions of Title 49 of the United States Code, Subtitle VII, Parts A and B. This decision constitutes a final order of the Administrator subject to review by the Courts of Appeals of the United States in accordance with provisions of 49 U.S.C. Section 46110. Any party seeking to stay the implementation of this ROD must file an application with FAA prior to seeking judicial relief, as provided in Rule 18(a), Federal Rules of Appellate Procedure.

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## ATTACHMENT A

# RESPONSES TO COMMENTS ON THE FEIS

The FAA received five comment letters with a total of 34 new substantive comments on the FEIS. Comment letters were received from USACE, USEPA, RIHPHC, the Warwick Historical Cemetery Commission, and the City of Warwick. FAA carefully considered each of the comments. The comment letters and summaries of the comments and FAA's responses are provided below.

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REPLY TO  
ATTENTION OF

DEPARTMENT OF THE ARMY  
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS  
696 VIRGINIA ROAD  
CONCORD, MASSACHUSETTS 01742-2751

August 17, 2011

Regulatory Division  
CENAE-R-PEB  
Permit Number: NAE-2002-1925

Richard Doucette  
Federal Aviation Administration  
12 New England Executive Park  
Burlington, MA 01803

Dear Mr. Doucette:

We have reviewed the Federal Aviation Administration's (FAA) Final Environmental Impact Statement (FEIS) for the T.F. Green Airport Improvement Project located in Warwick, Rhode Island proposed by the Rhode Island Airport Corporation. We previously commented on the Draft Environmental Impact Statement (DEIS) in a letter dated October 18, 2010.

We appreciate the time and effort the FAA and its consulting team has spent during the multi-year evaluation process. You have invited agency and public input and comment on a wide range of project issues.

Through this continuing review, several modifications to reduce impacts have been accomplished. Impacts to wetlands under Alternative B4 have been minimized to 5.0 acres and approximately 840 linear feet of waterways. Can these wetlands and waterways impacts be further minimized? Is the final mitigation package for replacing or otherwise mitigating the lost functions and values of the 5.0 acres of wetlands complete? My Regulatory Division staff would like to meet with you and the FAA's consultants to review this plan when it is ready.

1-1

Again, we appreciate the opportunity to review this project and look forward to continued close coordination. Please contact Michael Elliott of my staff at (978) 318-8131 if you have any questions.

Sincerely,

Robert J. DeSista  
Chief, Permits & Enforcement Branch  
Regulatory Division

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**Letter 1: U.S. Army Corps of Engineers**

Comment 1-1

Through this continuing review, several modifications to reduce impacts have been accomplished. Impacts to wetlands under Alternative B4 have been minimized to 5.0 acres and approximately 840 linear feet of waterways. Can these wetlands and waterways impacts be further minimized? Is the final mitigation package for replacing or otherwise mitigating the lost functions and values of the 5.0 acres of wetlands complete? My Regulatory Division staff would like to meet with you and the FAA's consultants to review this plan when it is ready.

*Response*

As the Project design is further refined through the final design process, RIAC will continue to work with USACE through the Clean Water Act Section 404 permit process to attempt to further minimize impacts to wetlands and waterways and finalize the mitigation package.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 1  
5 POST OFFICE SQUARE, SUITE 100  
BOSTON, MA 02109-3912

August 2, 2011

Richard Doucette  
Federal Aviation Administration, New England Regional Office  
12 New England Executive Park  
Burlington, MA 01803

Re: Final Environmental Impact Statement for the T.F. Green Airport Improvement Program, Rhode Island (CEQ#20110213)

Dear Mr. Doucette:

The Environmental Protection Agency-New England Region (EPA) has reviewed the Federal Aviation Administration's (FAA) Final Environmental Impact Statement (FEIS) for safety and efficiency improvements at the T.F. Green Airport in Warwick, Rhode Island. This letter provides our comments on the FEIS in accordance with the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act.

2-1 EPA's comments on the DEIS requested that the FAA address deficiencies and concerns related to wetland impacts and mitigation, water and air quality impacts, and environmental justice. While we have no further comment on the FEIS regarding those issues, we anticipate continued involvement with the project through the Corps of Engineers' Clean Water Act Section 404 process.

We appreciate the time the FAA and its consulting team spent throughout the NEPA process inviting agency and public input and discussion on a range of project issues. Thank you for the opportunity to comment on the FEIS. Please contact Timothy Timmermann (617-918-1025) of EPA's Office of Environmental Review with any comments or questions.

Sincerely,

H. Curtis Spalding  
Regional Administrator

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**Letter 2: U.S. Environmental Protection Agency**

Comment 2-1

EPA's comments on the DEIS requested that the FAA address deficiencies and concerns related to wetland impacts and mitigation, water and air quality impacts, and environmental justice. While we have no further comment on the FEIS regarding those issues, we anticipate continued involvement with the project through the Corps of Engineers' Clean Water Act Section 404 process.

*Response*

Thank you for your comment. FAA and RIAC will continue to involve EPA through the Clean Water Act Section 404 permit process.



STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS  
HISTORICAL PRESERVATION & HERITAGE COMMISSION

Old State House • 150 Benefit Street • Providence, R.I. 02903-1209

TEL (401) 222-2678      FAX (401) 222-2968  
TTY (401) 222-3700      Website [www.preservation.ri.gov](http://www.preservation.ri.gov)

25 August 2011

Mr. Richard Doucette  
Environmental Program Manager  
Federal Aviation Administration  
New England Region  
12 New England Executive Park  
Burlington, MA 01803-5299

Re: Final Environmental Impact Statement/Final 4(f) Evaluation  
T.F. Green Airport Improvement Program  
Warwick, Rhode Island

[This letter is a revision of a letter dated 27 July 2011]

Dear Mr. Doucette:

The Rhode Island Historical Preservation and Heritage Commission staff has reviewed the Final Environmental Impact Statement/ Final 4(f) Evaluation (FEIS) for the T.F. Green Airport Improvement Program. The FEIS identifies three alternatives: No Action; B2; and B4. B4 is identified as the Preferred Alternative. We have evaluated the FEIS with regard to its identification of historic and archaeological resources within the areas of potential effect, the assessment of potential direct and indirect impacts presented by the three alternatives and the proposed mitigation for those effects.

**Identification of Historic and Archaeological Resources**

3-1 | It is our conclusion that the FEIS adequately identifies the known historic and archaeological resources with the Area of Potential Effect for direct impacts for these three alternatives (APE)

The historic architectural resources that have been identified in the APE for direct impacts include the Rhode Island State Airport Terminal, which is listed on the National Register of Historic Places, as well as Hangar No. 1 and Hangar No. 2. All three buildings and the associated airfield setting are contributing resources in the Hillsgrove State Airport Historic District which the FAA and RIHP&HC have determined to be eligible for the National Register by consensus.

3-2 | The archaeological resources include one archaeological site, RI -2416 (Double L Site) in the APE for direct impacts for Alternative B2. Further Phase II is still needed to determine whether this site is eligible for the National Register of Historic Places. In addition, the corridor of the Fully Relocated Airport Road is in an area of high to moderate archaeological sensitivity, but no archaeological survey work has been done due to a lack of owner permission. We note that the FEIS in ES4.9.1 et seq. should reference that there are potentially other areas that would require

assessment for cultural resources due to the need for wetland mitigation measures under Alternatives B2 and B4.

There are four historic cemeteries identified within the APE for direct impacts for these alternatives - Warwick Historic Cemetery (WHC) 26, 76, 77, and 78. The protection of historic cemeteries is under Rhode General Law 23-18-1 et seq. and the reference in ES 4.9 should be corrected accordingly. In ES 4.9.1, ES 4.9.3, Chapter 4.7.2.4 and Chapter 5.8.2.1, the statement that the boundaries of WHC 26 or the other three cemeteries have been confirmed is not correct. As referenced in our June 16, 2011 letter to you, further work is needed to confirm the limits of all four of these cemeteries.

#### **Evaluation of Impacts to Historic and Archaeological Resources**

It is our conclusion that there would be no effect to the identified historic and archaeological resources under the No Action Alternative. We also concur that there will be no significant impacts to historic and archaeological resources in the APE for indirect impacts for Alternatives B2 and B4. Alternatives B2 and B4 would have adverse effects in the APE for direct impacts as follows.

We concur with the FEIS finding that both Alternatives B2 and B4 would have an adverse effect on the Hillsgrove State Airport Historic District through the demolition of Hangar No. 1 and modifications to runways and taxiways at the northern end of the airfield. Both alternatives would also adversely affect the setting of the Terminal and Hangar No. 2. Under Alternative B2, the proposed Fully Relocated Airport Road would have a visual impact on the Rhode Island State Airport Terminal (Operations Building), Hangar No. 2, and the proposed Historic District. The relocation would limit the public's view of the historic setting, resulting in an adverse effect because of the alteration of the historic setting. Alternative B4 would have a direct impact on the landscaping of the Rhode Island State Airport Terminal resulting in an adverse effect to this property. In addition, the split Integrated Cargo Facility would alter the historic setting and block the public view and access to the Terminal from Airport Road.

With regard to archaeological resources, Alternative B4 will have no effect on any known resources, though any potential wetland mitigation areas would need to be evaluated to determine if supplemental cultural resource investigations might be warranted. Alternative B2 has the potential to affect significant sites, including the Double L site, and any such sites that might be within in the relocated Airport Road corridor or potential wetland mitigation areas. A determination of effect for these unsurveyed locations cannot be made until additional archaeology is completed.

One historical cemetery may be affected by Alternative B2, WHC 26. Four historical cemeteries may be affected by Alternative B4, WHC 26, WHC 76, WHC 77 and WHC 78. All four

3-6 | cemeteries require machine-assisted archaeological boundary delineations to determine whether unmarked graves may be present, as referenced in our June 17, 2011 letter to you. Chapter 4.7.2.4 should be corrected accordingly.

**Proposed Mitigation for Historic and Archaeological Resource Impacts**

3-7 | The FEIS identifies the need to develop mitigation for impacts to resources that cannot be avoided. The development of mitigation measures would need to be undertaken with the input of the consulting parties and other interested parties, including the City of Warwick.

3-8 | With regard to the impacts to the Hillsgrove State Airport Historic District, we agree that archival documentation of Hangar 1 and the other affected areas in the historic district would be appropriate. The Historic American Buildings Survey/Historic American Engineering Record should be consulted to determine if Hangar No. 1 and the district are appropriate subjects for their archives; otherwise, the Rhode Island Historic Resources Archive would be the repository. Hangar No. 1 should also be assessed to determine whether the salvage of significant architectural fabric could provide additional mitigation. The development of a long-term commitment to preservation of the remaining resources in the historic district and public interpretation of the historic district through an exhibit and/or electronic format are also suitable mitigation measures. It would also be appropriate to investigate mitigation measures that would address the loss of public view and access to the Terminal, potentially through a program for public access.

3-9 | With regard to archaeological resources, we concur that if significant archaeological resources are found following Phase I/II investigations within potential wetland mitigation areas (Alts B2 and B4), the relocated Airport Road corridor (Alt. B2) or at the Double L site (Alt. B2), and avoidance is not feasible, the FAA will need to consult further with the Rhode Island Historical Preservation and Heritage Commission (RIHP&HC) and Narragansett Indian Tribe Historic Preservation Office (NITHPO) to determine how to address the potential impacts. A data recovery program is one possible measure that could mitigate the adverse effect. Similarly, in the event that unanticipated and potentially significant archaeological sites are encountered during construction, FAA will need to consult further with RIHP&HC, NITHPO, and the Advisory Council on Historic Preservation (ACHP) on appropriate measures to address potential impacts.

3-10 | With regard to historic cemeteries, following archaeological boundary definitions for the four cemeteries to better characterize potential impacts, we concur that all measures dealing with potential impacts to cemeteries must be developed in consultation with the City of Warwick. Should there be impacts that need to be mitigated, the possible mitigation measures that are mentioned include laying headstones flat or relocating the cemetery. Another measure that should be included for consideration is creating a memorial outside of the area of impact.

In summary, it is our conclusion that with the addition of the information on the need for wetland mitigation archeology and the corrections to the discussion of cemeteries referenced above, the FEIS will provide a thorough and accurate statement on the TF Green Airport Improvement Program's identification, evaluation and mitigation of impacts to historic and cultural resources. These comments are provided in accordance with Section 106 of the National Historic Preservation Act. If you have any questions, please contact Jeffrey Emidy, Project Review Coordinator of this office.

Very truly yours,



Edward F. Sanderson  
Executive Director  
State Historic Preservation Officer

Cc: Susan Nichols, VHB  
John Brown, NITHPO  
Mark Carruolo, Warwick Director of Planning  
Robert Kunz, Warwick Historic District Commission Chair

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## Letter 3: Rhode Island Historical and Preservation and Heritage Commission

### Comment 3-1

It is our conclusion that the FEIS adequately identifies the known historic and archaeological resources with the Area of Potential Effect for direct impacts for these alternatives (APE).

#### *Response*

FAA, RIAC, and RISHPO have executed a Memorandum of Agreement (MOA) to mitigate project impacts, as required under the National Historic Preservation Act. The MOA can be found in Attachment B to this ROD.

### Comment 3-2

The archaeological resources include one archaeological site, RI-2416 (Double L Site) in the Area of Potential Effect (APE) for direct impacts for Alternative B2. Further Phase II is still needed to determine whether this site is eligible for the National Register of Historic Places. In addition, the corridor of the Fully Relocated Airport Road is in the area of high to moderate archaeological sensitivity, but no archaeological survey work has been done due to a lack of owner permission. We note that the FEIS in ES 4.9.1 *et seq.* should reference that there are potentially other areas that would require assessment for cultural resources due to the need for wetland mitigation measures under Alternatives B2 and B4.

#### *Response*

FAA and RIAC committed to additional Phase II site examination of the Double L site (RI 2416) and Phase I(c) archaeological survey of Fully Relocated Airport Road if Alternative B2 were selected as the Preferred Alternative. Alternative B4 has been selected as the Preferred Alternative, therefore, impacts to the Double L Site will be avoided and Fully Relocated Airport Road is not a component of Alternative B4. Therefore, additional archaeological investigations of these two elements is not warranted. Section 10.6.1 and Table 10-1 of the ROD require RIAC to conduct archaeological investigations in areas of proposed direct impacts that have not previously been surveyed and specifically mention the wetland mitigation areas. Stipulation V of the MOA includes the same requirement. The MOA can be found in Attachment B to this ROD.

### Comment 3-3

In ES 4.9.1, ES 4.9.3, Chapter 4.7.2.4 and Chapter 5.8.2.1, the statement that the boundaries of the WHC 26 or the other three cemeteries have been confirmed is not correct. As referenced in our June 16, 2011 letter to you, further work is needed to confirm the limits of all four of these cemeteries.

#### *Response*

We acknowledge that the exact boundaries of the historical cemeteries have not been fully defined. This has been corrected in the ROD and noted in the errata sheet to the FEIS. Three of

the four cemeteries that may be impacted under Alternative B4 are located on private property. The only cemetery which will likely be impacted by airport construction is WHC 26. Prior to any disturbance in the area around the cemeteries, additional investigations will be undertaken to determine the boundaries in consultation with the Cemetery Commission, as required by Warwick ordinance and specifically committed to in Stipulation VI of the MOA among FAA, RIAC, and the Rhode Island State Historic Preservation Office. The MOA can be found in Attachment B to this ROD.

Comment 3-4

It is our conclusion that there would be no effects to the identified historic and archaeological resources under the No Action Alternative. We also concur that there will be no significant impacts to historic and archaeological resources in the APE for indirect impacts for Alternatives B2 and B4. Alternatives B2 and B4 would have adverse effects in the APE for direct impacts as follows.

*Response*

Comment noted.

Comment 3-5

With regard to archaeological resources, Alternative B4 will not affect any known resources, though any potential wetland mitigation areas would need to be evaluated to determine if supplemental cultural resource investigations might be warranted. Alternative B2 has the potential to affect significant sites, including the Double L site, and any such sites that might be within in the relocated Airport Road corridor or potential wetland mitigation areas. A determination of effect for these un-surveyed locations cannot be made until additional archaeology is completed.

*Response*

Alternative B4 has been selected as the Preferred Alternative, therefore, impacts to the Double L Site will be avoided and Fully Relocated Airport Road is not a component of Alternative B4. Therefore, additional archaeological investigations of these two elements is not warranted. Section 10.6.1 and Table 10-1 of the ROD require RIAC to conduct archaeological investigations in areas of proposed direct impacts that have not previously been surveyed and specifically mention the wetland mitigation areas. Stipulation V of the MOA includes the same requirement. The MOA can be found in Attachment B to this ROD.

Comment 3-6

One historical cemetery may be affected by Alternative B2, WHC 26. Four historical cemeteries may be affected by Alternative B4, WHC 26, WHC 76, WHC 77 and WHC 78. All four cemeteries require machine-assisted archaeological boundary delineations to determine whether unmarked graves may be present, as referenced in our June 17, 2011 letter to you. Chapter 4.7.2.4 should be corrected accordingly.

*Response*

This has been corrected in the ROD and noted in the errata sheet to the FEIS. Three of the four cemeteries that may be impacted under Alternative B4 are located on private property. Once proposed impacts have been clearly defined through more detailed design, machine-assisted archaeological investigations will be conducted to define the boundaries of each of these cemeteries and assess the potential impacts as included in Stipulation VI of the MOA. Machine-assisted archaeological investigations have been conducted at WHC 26. FAA is currently in consultation with NITHPO and the Warwick Historical Cemetery Commission regarding these results.

Comment 3-7

The FEIS identifies the need to develop mitigation for the impacts to resources that cannot be avoided. The development of mitigation measures would need to [be] undertaken with the input of the consulting parties and other interested parties, including the City of Warwick.

*Response*

FAA and RIAC, in consultation with the appropriate parties, including the RIHPHC, NITHPO, and the City of Warwick, through the Warwick Historical Cemetery Commission, will implement the provisions of the MOA to mitigate for significant impacts to historical resources.

Comment 3-8

With regard to impacts to the Hillsgrove State Airport Historic District, we agree that archival documentation of Hangar 1 and the other affected areas in the historic district would be appropriate. The Historic American Buildings Survey/Historic American Engineering Record should be consulted to determine if Hangar No. 1 and the district are appropriate subjects for their archives; otherwise, the Rhode Island Historic Resources Archive would be the repository. Hangar No. 1 should also be assessed to determine whether the salvage of significant architectural fabric could provide additional mitigation. The development of a long-term commitment to preservation of the remaining resources in the historic district and public interpretation of the historic district through an exhibit and/or electronic format are also suitable mitigation measures. It would also be appropriate to investigate mitigation measures that would address the loss of public view and access to the Terminal, potentially through a program for public access.

*Response*

Stipulation I of the MOA requires FAA and RIAC to consult with the Historic American Buildings Survey/ Historic American Engineering Record (HABS/HAER) to determine if Hangar No. 1 and the eligible airport historic district are appropriate subjects for their archives. If HABS/HAER determines that the resources are not appropriate subjects, RISHPO will be consulted to determine if Hangar No. 1 and/or the eligible airport district are appropriate subjects and documentation shall be prepared for RISHPO to meet Rhode Island Historical Resources Archive standards. The MOA can be found in Attachment B to this ROD. Stipulation III of the MOA requires RIAC to prepare, in consultation with RISHPO, an inventory of significant architectural items or features that might be salvaged from Hangar No. 1 before the demolition of the building. Stipulation III also requires RIAC to provide an opportunity for local and regional historical museums, historical societies, or other public organizations to express an interest in significant salvageable architectural items or features for interpretation purposes and permanent display accessible to the public. Stipulation II of the MOA requires RIAC, in consultation with the RISHPO, to develop a display that interprets the historical significance of the eligible airport historic district for the public and includes details of what should be included in the display. FAA and RIAC will investigate measures to address the loss of public view and access to the Terminal, and will determine if a program of public access is appropriate.

Comment 3-9

Similarly, in the event that unanticipated and potentially significant archaeological sites are encountered during construction, FAA will need to consult further with RIHP&HC, NITHPO, and the Advisory Council on Historic Preservation (ACHP) on appropriate measures to address potential impacts.

*Response*

Stipulation VII of the MOA addresses unanticipated discoveries and requires RIAC to promptly notify FAA, RISHPO, NITHPO, and ACHP and submit to these parties a report evaluating the resource for purposes of determining eligibility for listing in the National Register.

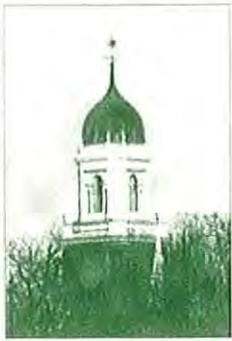
Comment 3-10

With regard to historic cemeteries, following archaeological boundary definitions for the four cemeteries to better characterize potential impacts, we concur that all measures dealing with potential impacts to cemeteries must be developed in consultation with the City of Warwick. Should there be impacts that need to be mitigated, the possible mitigation measures that are mentioned include laying headstones flat or relocating the cemetery. Another measure that should be included for consideration is creating a memorial outside of the area of impact.

*Response*

Stipulation VI of the MOA requires RIAC, per Rhode Island General Law 23-18-11 *et seq.* and Chapter 12 of the Code of Ordinances of the City of Warwick, to consult with the Warwick Historical Cemetery Commission to address potential impacts to the four historic cemeteries. The MOA further stipulates that if project impacts occur within, or within 25 feet of, any cemetery, RIAC will consult with the Warwick Historical Cemetery Commission to develop measures to avoid or mitigate the Project impacts. The MOA can be found in Attachment B to this ROD.

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CITY OF WARWICK  
PLANNING DEPARTMENT

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WARWICK, RI 02886-7191

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SCOTT AVEDISIAN  
Mayor

MARK CARRUOLO  
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Office of Planning

Office of Community  
Development

Office of Landscape  
Architecture

Planning Board

Warwick Station  
Redevelopment Agency

Zoning Board

Conservation Commission

Harbor Management  
Commission

Historic District  
Commission

Historic Cemetery  
Commission

July 18, 2011

Mr. Richard Doucette  
Environmental Program Manager  
US Dept of Transportation Federal Aviation Administration  
12 New England Executive Park  
Burlington, MA 01803

Dear Mr. Doucette:

Thank you for attending and participating in the July 5, 2011 Warwick Historical Cemetery Commission (WHCC) meeting. It was important that the Commissioners be able to ask their questions of both you and Kevin Dillon. This helped the Commissioners to better understand the process and proposals that the Federal Aviation Administration (FAA) and the RI Airport Corporation (RIAC) are working on and how they may affect Warwick's historical cemeteries.

During this meeting, a motion was passed that this letter be sent to you as a response to the EIS for the B4 runway expansion of TF Green Airport. We are requesting the following information and further studies. Many of these concerns were mentioned in the June 20, 2011 letter to you from both William DePasquale and me. As was reiterated several times during the meeting, both the FAA and the RIAC plan on working with the WHCC to resolve the WHCC concerns.

### Cemetery #26, Peter Freeman Lot

There were two Native American areas of concern that were observed within 40 feet of the burial of Charles E. Bacon. The Commissioners asked that Anemone Mars be contacted to determine if she wants these areas of concern to be included in the Cemetery boundary. Alan Leveillee of the Public Archeology Lab has been in contact with her and they are scheduled to meet this week to discuss this matter.

If Ms. Mars does include these areas in the cemetery, the Commissioners would like an archeological mechanical topsoil removal investigation to continue out to 25 feet from these areas of concern.

If Ms. Mars does not wish to include these areas in the cemetery, the Commission would like the archeological mechanical topsoil removal investigation to continue out to 25 feet from the Cemetery boundary line illustrated on the PAL map (figure 3).

There is still a question as to whether the obelisk monument and other headstones will need to be removed. It is our understanding that this cemetery will be in the object free area. We have recently been informed that an object free area is not a legislated mandatory requirement, but rather more of a guidance document/ FAA suggested element. If this proves to be the case, the WHCC will require that the cemetery head stones remain intact for their cultural and social significance.

4-1

4-2



 The City of Warwick is committed to the promotion of fair housing and equal program access regardless of age, race, sex, national origin or physical handicap.

 Printed on recycled paper with non-toxic inks.

**Cemetery #76 William J. Cole Lot**

This cemetery was investigated using Ground Penetrating Radar (GPR). According to page 7 of the Ground Penetrating Survey "GPR is a non-intrusive investigation technique and may not fully detect all subsurface features depending upon site-specific conditions."

The GPR results for this cemetery revealed anomalies in an area of disturbance. The Commissioners have asked that further study be conducted on these anomalies.

**Cemetery # 77 Northup Lot**

This cemetery was investigated with GPR. The map provided as figure 5 illustrates several anomalies in a row that could represent additional grave shafts. The Commissioners have asked that further study be conducted on these anomalies.

4-3

**Cemetery #78 Howard-Remington Lot**

This cemetery was investigated with GPR. Many anomalies are evident between Main Avenue and the existing headstones. The Commissioners request that this area be stripped to further study these anomalies using archeological mechanical topsoil removal.

The Commissioners understand that the RI Airport Corporation does not want to invest additional money on this project until the Record of Decision is issued by the FAA and that will be in August or September, however we contend a proper record of decision on this matter cannot be completed to NEPA and CEQ standards without first disclosing all probable historic impacts. To this end, the existing physical analysis and ground penetrating radar exposed uncertainties as to the boundaries and contents of the cemetery not included within the FEIS. Considering these facts it cannot be assumed that the disclosures included with the FEIS as to extent of cemeteries boundaries cannot be considered to be probably accurate.

As discussed during the WHCC meeting, this document will state that the actual boundaries of the cemeteries listed above will be determined to the satisfaction of the WHCC, and that WHCC approval is needed prior to any disturbance within 25 feet of any cemetery.

4-4

The Commissioners would also like the RIAC to provide a right of way to the cemeteries and immediate public access to all of the above cemeteries upon the completion of the runway expansion and Main Avenue realignment project.

I look forward to working with you on this project. If you have any questions, I can be reached at 738-2000 ext 6286.

Sincerely,



Susan W. Cabeceiras, Planning Dept liaison  
Warwick Historical Cemetery Commission

Cc: Mayor Avedisian  
William DePasquale  
Camille Vella-Wilkinson  
Anemone Mars, Narragansett Tribal Historic Preservation Office  
Kevin Dillon, RI Airport Corporation  
Brenda Pope, RI Airport Corporation  
Paul Robinson, State Historic Preservation & Heritage Commission  
Jay Waller, Public Archeology Lab  
Peter Mair, Public Archeology Lab  
David Matteson

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## Letter 4: Warwick Historical Cemetery Commission

### Comment 4-1

There were two Native American areas of concern that were observed within 40 feet of the burial of Charles E. Bacon. The Commissioners asked that Anemone Mars be contacted to determine if she wants these areas of concern to be included in the Cemetery boundary. If Ms. Mars does include these areas in the cemetery, the Commissioners would like an archeological mechanical topsoil removal investigation to continue out to 25 feet from these areas of concern. If Ms. Mars does not wish to include these areas in the cemetery, the Commission would like the archeological mechanical topsoil removal investigation to continue out to 25 feet from the Cemetery boundary line illustrated on the PAL map (Figure 3).

### *Response*

FAA has been in regular contact with the Narragansett Indian Tribal Historic Preservation Office (NITHPO) throughout the development of the EIS. This communication will be ongoing throughout the implementation of the various airport improvements, as needed. The Narragansett's interests and concerns will be given full consideration in FAA's decisions, as required by the executed Section 106 Memorandum of Agreement (MOA) and by RIAC, as required by Rhode Island law and Warwick Ordinance, as per Stipulation VI of the MOA. The MOA can be found in Attachment B to this ROD.

### Comment 4-2

There is still a question as to whether the obelisk monument and other headstones will need to be removed. It is our understanding that this cemetery will be in the object free area. We have recently been informed that an object free area is not a legislated mandatory requirement, but rather more of a guidance document/FAA suggested element. If this proves to be the case, the WHCC will require that the cemetery head stones remain intact for their cultural and social significance.

### *Response*

WHC 26 is located in the Object Free Area, and in the Part 77 Primary Surface. The Object Free Area is designated by FAA Advisory Circular 150/5300-13 - Airport Design. Part 77 is the FAA regulation pertaining to clear airspace around airports. Compliance with this Advisory Circular and regulation are mandatory for airports accepting FAA funds. There is very limited ability to vary from these requirements. Any such variance will require RIAC to show an "acceptable level of safety," which may not be possible to provide. Stipulation VI of the MOA among FAA, RIAC, and RISHPO requires RIAC, per Rhode Island General Law 23-18-11 *et seq.* and Chapter 12 of the Code of Ordinances of the City of Warwick, to continue to consult with the Warwick Historical Cemetery Commission to address potential impacts to the historical cemeteries located within the area of direct project impacts and to consult with the Cemetery Commission to develop measures to avoid or mitigate the Project impacts.

Comment 4-3

Regarding Cemeteries #76, 77 and 78 (paraphrased): These cemeteries were investigated with GPR. The GPR results revealed anomalies in each cemetery and as a result, the Commissioners ask that further study be conducted on these anomalies prior to the Record of Decision.

The Commissioners understand that the RI Airport Corporation does not want to invest additional money on this project until the Record of Decision is issued by the FAA and that will be in August or September, however we contend a proper record of decision on this matter cannot be completed to NEPA and CEQ standards without first disclosing all probable historic impacts. To this end, the existing physical analysis and ground penetrating radar exposed uncertainties as to the boundaries and contents of the cemetery not included within the FEIS. Considering these facts it cannot be assumed that the disclosures included with the FEIS as to extent of cemeteries boundaries cannot be considered to be probably accurate.

*Response*

Sufficient information to definitely determine the exact footprint of the Project and, therefore, the impact of the Project on Cemeteries 76, 77, and 78 is not available at this time. These cemeteries are located on private property.

The potential impacts to these cemeteries can be more clearly defined when the design of the Project is further advanced. These studies will not be performed prior to the ROD, but will be completed prior to any disturbance in the area around the cemeteries. The analysis conducted is sufficient for the Record of Decision because FAA and RIAC have committed in a Memorandum of Agreement (MOA) with the Rhode Island State Historic Preservation Office to determine the boundaries of the cemeteries in consultation with the Cemetery Commission, as required by Rhode Island General Law 23-18-11 *et seq.* and Chapter 12 of the Code of Ordinances of the City of Warwick (see Stipulation VI of the MOA). The MOA can be found in Attachment B to this ROD.

Comment 4-4

The Commissioners would also like the RIAC to provide a right of way to the cemeteries and immediate public access to all of the cemeteries upon the completion of the Runway expansion and Main Avenue realignment project.

*Response*

We understand the Commission's desire for public access to these public resources. FAA will carefully review any proposal by RIAC to allow the general public to access airport property. FAA will make whatever safety determinations are necessary to safeguard the flying public as well as visitors to the Airport's property.

EXECUTIVE CHAMBER

CITY OF WARWICK



RHODE ISLAND

August 3, 2011

SCOTT AVEDISIAN  
MAYOR

Mr. Richard Doucette  
Environmental Program Manager  
Federal Aviation Administration  
New England Region  
12 New England Executive Park  
Burlington, MA 01803

**RE: City of Warwick Objection - FEIS /Consideration -Record of Decision (ROD)  
Final Draft Environmental Impact Study Statement (FEIS) for T.F. Green Airport (PVD) -Warwick  
Rhode Island dated July 2011**

Dear Mr. Doucette:

I have reviewed the Final Draft Environmental Impact Statement (FEIS) along with its "Responses to Comments" appendices for T.F. Green Airport (PVD) located in the City of Warwick, Rhode Island dated July 2011 prepared by Vanasse Hangen Brustlin, Inc., (VHB) for the Federal Aviation Administration (FAA).

**Introduction**

The City of Warwick finds the FEIS and its response to public comments to be incomplete and noncompliant with the procedural standards of National Environmental Policy Act (NEPA) Policies & Guidance and the Council on Environmental Quality Guidelines. The progression of this study is also inconsistent with the principles of NEPA as the process presented is incomplete with the CEQ promulgated regulations [40 CFR Parts 1500-15081] implementing NEPA. The study's outmoded data and inaccurate analysis creates a false need for Preferred Build Option B4, which will unnecessarily, adversely impact the host community.

The FEIS did adequately address a small number of components presented within the City of Warwick's 1,750 page broad range analysis and commentary on the DEIS, but in aggregate it falls short of sufficient amendments, updates and analysis that are crucial in order to conform with NEPA and CEQ promulgated regulations. It also does not remove or sufficiently minimize critical detriments to our community from Option B4. **Except for those issues described herein as being suitably addressed, this correspondence is merely a summary of the apparent shortcomings of the FEIS and is intended to be the official statement of objection by the City of Warwick to the issuance of an affirmative record of decision for the Preferred Build Option B4.** Specific reference to the FEIS's deficiencies are described in detail in our record of objections filed with the FAA against the DEIS and should be referenced for reconsideration.

**Overview – FEIS Incomplete/Inadequate**

The FEIS presentation of environmental impacts is unreasonably narrow and does not present creditable data or study of existing, cumulative impacts from years of federally-funded airport improvement projects. The segmented discussion of land use, environmental and fiscal impacts and an outright failure to consider long-term social and health concerns raised by the City results in less than full disclosure regarding the extent of Option B4's impact on the community, denying the general public and host community meaningful opportunity to understand the immediate and long-term effects of the proposed action or to sufficiently and thoroughly discuss measures for their mitigation.

As with the DEIS, the FEIS does not provide adequate study of strategies to limit the destruction of affordably priced, single family homes or consider remedies for those residents whose properties are not eligible for the noise compatibility program funding but will be severely, adversely affected by a growing airport infrastructure and operations, with decreased quality of life and decreased property values. Long-term impacts on the City from the Rhode Island Airport Corporation's cumulative property takings and real estate value destruction are simply disregarded from meaningful analysis. The FEIS's simple reference, cataloging and deceptive and skewed economic impact statement are not sufficient means to disclose to the public the significant, adverse impacts, as required by NEPA/CEQ guidelines.

Most notable are the issues ignored in the FEIS that pose increasing danger to the host community both in the immediate and long term such as: air toxins, noise, environmental degradation, value destruction, erosion of tax base, traffic congestion, fragmentation of neighborhoods and bifurcation of the City's road/service system. These subjects are either not addressed because of a lack of regulatory threshold or are merely carefully compartmentalized as individual actions with minimal impact, when their cumulative or collective impact on the community should be assessed.

Just as apparent is this study's refusal to recognize the marked transformation, changing fundamentals and altered market strategies that have changed the air service industry. The fiscal and market challenges have resulted in improved and more efficient fleet utilization with the use of more fuel-efficient, capable aircraft and higher load factors that have often resulted in consolidation, elimination of service routes and reduced seat availability, all of which are drastic changes from this FEIS' assumptive database, which relies on four-year-old information.

The FEIS' failure to properly account for these alterations in air service creates a misleading database and skewed statements that promote and support outmoded assumptions of service and need. This is an apparent attempt to promote Option B4, an unnecessary build action based on obsolete fleet utilization, aircraft and a nonexistent non-stop long haul market at T.F. Green Airport. It also is based on a smaller catchment area and lower load factors that are not, in 2011, considered cost effective by the air carriers in developing their future market service plans.

The study also lacks a legitimate cost benefit study of construction and job creation, as well as the long-term comparative cost benefit of other alternatives, and the ability to fund the mitigation associated with those alternatives in the context of the prolonged economic downturn throughout the country.

### **Response to Public/City Comment**

As with the DEIS, the FEIS generally disregards the City of Warwick's commentary regarding full disclosure of the scope and breadth of adverse health effects placed on the host community. Our repeated requests for a study of air toxins, black carbon and particulate matter go ignored. Environmental/water quality degradation, wetlands/resource protection, infrastructure, historic resources and housing are parceled off individually and apportioned to the appropriate regulating agencies, implying that their "sign off" is a note of compliance that trumps the broader and more complex issues raised by the host community.

The FEIS does little to address the City's and public's comments on asymmetrical noise contours, home acquisition inequities and divergent flight departure paths. No progress was made in addressing "logical breaks" within neighborhoods to improve the continuity of place and aid in providing City services. As presented, the FEIS simply relies on the random land acquisition program that will insure that fragmented destruction of neighborhoods will continue unabated.

The City's repeated requests for an update of the assumptive database and fleet utilization have gone largely unanswered, as was its appeal to reexamine alternative build options that were more in harmony with the community and today's air service marketplace. The FEIS continues with its firm and stubborn disregard to integrate real world challenges into the infrastructure needs assessment and ignores fiscal constraints, plummeting aircraft operations, reduced seat capacity, increased load factors, consolidated route selection and wholesale strategic business plan changes such as Southwest Airlines' entrance into Boston's Logan International Airport.

The NEPA statute mandates that an EIS should "build off" public and official City commentary as opposed to responding as a mere "exercise" in satisfying the public hearing requirement. Ignoring this regulation, this FEIS simply reiterates the DEIS' outmoded analysis and findings, offering only a perfunctory response in the form of reference to minimum regulatory thresholds and simplistic citation of the DEIS' obsolete data, design aircraft and spurious assumptions of service. The responses offered in the FEIS to the myriad citizen, business and City

comments are generally fragmentary and at times repetitive, lacking deliberative, equitable and contemplative consideration of prevailing market and economic constraints while not improving upon its deficiency in cumulative impact assessment from multiple airport improvement projects completed over the last two decades. Inquiries regarding long term environmental degradation, nuisances, public health, quality of life, social, land use and fiscal impacts are either dismissed outright without complete, fair and equitable assessment or are brushed off with reference to inadequate and disjointed mitigation strategies. The deficiencies in the document are acute and the volume of new information and analysis needed are so apparent that amending the DEIS would be more appropriate than considering changes to the FEIS.

### **Lack of Disclosure and Inadequate Mitigation**

This FEIS does not fully disclose the extent of immediate, long-term and cumulative adverse impacts imposed by Option B4 on: neighborhood fragmentation, real-estate value destruction, historic cemetery resources, eroding tax base, long term impacts on the City's services and finances, bifurcated land use and infrastructure, traffic congestion and environmental and health impacts on children using John Wickes School playground. At the same time, it excludes from meaningful examination health impacts associated with exposure of ambient air toxin/fine particulate matter and noise exposure on the community and social justice consequences on the low to moderate income population dependent on affordably priced single-family housing that will be permanently removed without just replacement or mitigation.

The FEIS relies upon a narrow interpretation of Federal Aviation Administration (FAA) guidance documents air quality and noise exposure on the community and offers only a half-hearted noise mitigation program and an Integrated Noise model that dilutes individual figures in a time weighted analysis (INM) or, in the case of Air Quality, a dispersion model that uses a larger pool of air pollutant sources (dispersion) as reasoned "mitigation" for adverse impacts imposed by the preferred build option. Following several persistent appeals by the City, the FEIS did update the Integrated Noise Model (INM) software which resulted in a larger area of noise exposure within the most elevated of noise contours. However, the FEIS remains unclear as to how this larger noise exposure was compared against other practicable build alternatives that would have avoided or minimized this significant noise impact. The FEIS did not take advantage of the study's flaws brought to light by the City to take a "fresh look" at the validity of the outmoded assumptions, data and analysis that was based on a previous air service marketplace that did not have to address reduced federal funding, ever increasing fuel and operating cost along with a constrained economy that exists today and most believe will extend into the planning horizon of this EIS.

5-1 | The FEIS does improve upon its wetland impact/mitigation associated with the 16/34 runway safety enhancements by reducing total wetland impacts. Nevertheless, the mitigation falls short of addressing the full scope of the City's commentary in managing, measuring and assessing mitigation performance and how effective those measures would be to lessen the adverse impacts cited in the study. The FEIS does address the mitigation proposed for complying with Section 4(f) requirements with its relocation of Winslow Park to the Lakeshore Drive area but falls short of disclosing important details that may cause conflict such as noise, lighting, traffic and connectivity concerns with the adjacent neighborhood which itself may require some form of mitigation.

### **Changes in the Air Service Market at PVD**

The FEIS fails to acknowledge, appropriately account for, or adjust to the substantive changes in the air service market and service at T.F. Green Airport (PVD) that have taken place since the DEIS' 2007-based analysis, even with slight modifications, was completed. Moreover, the FEIS still does not account for, or acknowledge, the fiscal realities confronting the State, airport operator and future funding of discretionary airport projects.

The City of Warwick has long requested an update of the air service market, air carrier aircraft utilization, seat availability and service trends as fundamental factors in assessing future infrastructure needs at PVD in a manner that is in harmony with the host community's needs and cost effective.

Instead, the FEIS holds firm to its antiquated 2007 assumptive database and operational growth/service data offering the same unsubstantiated, optimistic assumptions of operational increases that were present in a time of growth. These growth assumptions are statistically at odds with recent years of declining passenger traffic at PVD and future trends in this air service market that has seen erosion from PVD to Logan International Airport.

### **Runway Length**

At T.F. Green Airport, runway length is a very minor factor in determining an air carrier's service plans. It is much more likely that the airlines' cost-per-emplanement (per-passenger cost of using the airport), market catchment, demand and efficiency are the determinants in an air carriers' decision to schedule and establish new origin and destination service routes than the length of the main runway. These "real" market forces were present in July 2011 when Southwest Airlines announced that they would eliminate four daily flights to and from Philadelphia because of low performance. In this case performance is also related to meeting regional demand with Southwest Airlines' service from Logan, a factor that contradicts many of the DEIS' growth-based premises, a fact that is simply ignored within this FEIS. In spite of the contemporary and fundamental changes in the air service industry, the FEIS downplays these dramatic changes as affecting the 2007 projected assumptions of service and operations all but discounting the entrance of Southwest Airlines into Boston Logan International Airport market and its long term impact on assumed growth of operations, loss of passenger seats and erosion of service destinations at T.F. Green Airport.

### **Design Aircraft**

Despite the City of Warwick's persistent pleas, the FEIS continues to use the aberrant and fuel inefficient B767-300 with a Pratt and Whitney JT9D-7R4D/7R4E engine configuration as the design aircraft for this study. The City can only conclude that including this outdated model as the basis for analysis is simply to skew the analytical calculation of runway length to support the B4 Option and support the claim of efficiency improvement, as it is assumed that this outdated, inefficient aircraft requires the longest runway length supported by this FEIS. These calculations are made even though the market proves that this large, old, fuel-consuming aircraft will not be the aircraft used at PVD in the future. Aircraft that will be used, predominately B737 or A320, would be effortlessly accommodated by the City's proposed, practicable alternative 8,300 lf runway 5/23.

### **Outright Change in the Project's "Purpose and Need"**

The City's repeated requests to amend the purpose and need to reflect today's pared down project have gone unaddressed. The fact is the original purpose and need has been quietly changed to that of a claim of efficiency and safety as the last means of support for these costly infrastructure improvements. The project's original, and oft-stated intent, to provide runway infrastructure to capture the long-haul, nonstop market at T.F. Green, was based upon the 2004 and 2007 operational forecasts/service that were shown to be an embarrassing illusion of grandeur that is not supported by current and future air service operational data.

### **The Preferred Build Alternative B4 Does Not Represent the Least Damaging Cost Effective Practicable Alternative**

Early on in the DEIS process, the FAA preselected alternative B4 as the preferred alternative and "backed into" the data and analysis necessary to support this option. The FEIS continues with the DEIS' premature removal of a less damaging, practicable alternative. In aggregate, the City judges the FEIS to be substandard with respect to its failure to consider practicable alternative build options that would meet the stated safety and efficiency needs with less cost and adverse impact and that are more realistic in light of the fiscal limitations of the airport operator, reduced allocation of federal resources and growing fuel and operating costs of the air carriers that reflect current and future trends in air service at T.F. Green Airport.

While the City's commentary has long raised these issues the FEIS does not reassess practicable, less costly alternatives such as that offered by the City – an 8,300 lf runway 5/23 that would be a viable option that meets today's and future airports needs with less overall adverse impact on the community than the preferred build option.

Presented with a proper independent update of design aircraft, aircraft fleet usage and amended service routes and seat capacity the analysis would find that the 8,300 lf runway 5/23 alternative would provide nearly the same efficiency and long haul service in today's market than that established in the original purpose and need developed years ago while saving \$15 million not including reduced mitigation costs and a smaller footprint of incompatibility.

This 8,300 alternative is also more affordable and in line with the ability of the airport operator to bond for the improvements to complete runway 5/23 while reducing the overall project impacts on area land use, housing, social, fiscal and historic cemetery resources and lessening the overall adverse environmental and noise exposure on the host community.

## Objection

Even as the purpose of an EIS is to "provide full and fair discussion of significant environmental impacts and [to] inform the decision-makers and the public of the reasonable alternatives which would avoid or minimize adverse impacts" CEQ PART 1502--ENVIRONMENTAL IMPACT STATEMENT, it appears the FAA made its mind up a long time ago to change from independent arbiter of the proposal guided by NEPA and CEQ federal regulations, to an advocate for the B4 Option, which primarily fulfills the goals of the New England/Boston Region of the FAA, no matter the impact on the local community or the cost benefit and effectiveness of the proposal in this time of scarce federal funding

While we in the host City appreciate the areas of amendments contained within the FEIS, the City is deeply concerned that the Final Draft DEIS does not adequately disclose the full extent of adverse impacts on public health, quality of life, fiscal and environmental harm from Option B4. In areas where the DEIS has determined significant impact will occur the FEIS does not appropriately mitigate the impact on a cumulative basis or adjust existing mitigation programs to correct known deficiencies such as those contained in the land acquisition and airport noise mitigation programs.

In spite of hundreds of pages of comments and concerns submitted by the City and its citizenry over the last decade (masterplan, scoping and DEIS) very few substantive changes have been made to the FEIS. Glaring omissions regarding noise impact, air toxins, children's health, land use fragmentation, fiscal impact, housing and social burdens are summarily dismissed except to address those minimal threshold requirements and regulations required by law. The study's long-term and cumulative impact analyses are fragmented and provide no substantive information on real, measurable impacts to disclose to the community, its citizens and businesses. The FEIS does not contain sufficient supplementary information or substantive review of current data and conditions to assess practicable alternatives and avoidance measures. Nor does the document fully disclose the entirety of adverse impacts or explain the manner in which the mitigation strategies used will minimize these impacts.

We contend that the Final EIS dated July 2011 does not satisfy the purposes of an EIS as it does not sufficiently disclose all adverse impacts resulting from the selection of the preferred alternative and fails in its assessment of reasonable and practicable avoidance measures while proposing deficient mitigation based on erroneous and outmoded data and assumptions, service, markets and fleet utilization.

Based upon our record of objections contained within in the DEIS as well as the aforesaid review of the Final EIS and consistent with the Council on Environmental Quality (CEQ) and National Environmental Policy Act (NEPA) the City of Warwick objects to the issuance of a record of decision (ROD) supporting the preferred alternative B4 in this final environmental impact statement (FEIS) as the issuance of a ROD cannot/did not adequately:

- 5-2 | ➤ Disclose the extent of immediate, long-term and cumulative adverse impacts imposed by the Option B4 on neighborhood fragmentation, real-estate value destruction, bifurcated land use and infrastructure, traffic congestion and environmental impacts on children using John Wickes School playground, and excludes from meaningful examination health impacts associated with exposure of ambient air toxin/fine particulate matter and noise exposure on the community.
- 5-3 |
- 5-4 | ➤ Disclose the entirety of adverse impacts placed on the community and as such the FEIS cannot state that all practicable means of avoidance and minimization of harm were completed hence mitigation measures adopted within the FEIS are assumed to be inclusive.
- 5-5 | ➤ Mitigate or study the long term fiscal, infrastructure and services consequences on the host community's eroding tax base and real estate value destruction resulting from past, present and future land acquisitions and noise mitigation projects.

Cannot/did not adequately:

- 5-6 |    ✧ Identify the full extent and boundaries of environmental impact and historic cemetery resources making it impossible to determine the extent of the effect on the environment and cemeteries. As such, it is impossible to determine if the mitigation proposed is sufficient or if avoidance/minimization was achieved.
- 5-7 |    ✧ Consider the larger macro issues raised by the host community concerning environmental/water quality degradation, wetlands/resource protection, infrastructure, historic resources and housing. These issues were parceled off individually “signed off” by appropriate regulating agencies, indicating that their approval trumps the concerns raised by the host community.
- 5-8 |    ✧ Defend the use of imperfect regulatory thresholds for air quality and noise exposure on the community offering only a clumsy noise mitigation program and unsettled Integrated Noise model that dilutes individual figures in a time weighted analysis (INM) or in the case of Air Quality a dispersion model that uses a larger pool of air pollutant sources (dispersion) as reasoned “mitigation” for adverse impacts imposed by the preferred build option.
- 5-9 |    ✧ Determine how the larger noise exposure resulting from the update the Integrated Noise Model (INM) software was compared against other practicable build alternatives that would have avoided or minimized this significant noise impact.
- 5-10 |    ✧ Explain why the mitigation measures proposed were selected and how monitoring and enforcement would assure success of the adopted mitigation.
- 5-11 |    ✧ Explain how it will address the social and environmental justice concerns relating to how the removal of affordably priced, single-family homes will affect the low-to-moderate income population. The study acknowledges it would require \$3.7 million in subsidies to developers in order to build new rental and homeownership units serving the same price point to house displaced families – funds that neither the FAA nor RIAC have promised to disburse.
- 5-12 |    ✧ Satisfactorily address the public comments or discuss resolution of objections from business interests, city officials and the general public.
- 5-13 |    ✧ Find compliance with Section 640 of the State Guide Plan considering that, as of this writing, the Rhode Island Division of State Planning has not amended the State Guide Plan language that changes the State Airport from a medium-haul to a long-haul airport.
- 5-14 |    ✧ Amend the “purpose and need” that has changed from a stated primary need to accommodate long-haul nonstop flights to the west coast, to limited “on paper” efficiency improvements that are falsely based on the use of large, obsolete, fuel-inefficient aircraft to obtain the “loss of passengers” argument associated with not selecting preferred build option B4.
- 5-15 |    ✧ Explain the decision of supporting the preferred build option B4 when the analysis lacks appropriate consideration of substantive changes in the air service market, air carrier’s business strategies, updated fleet utilization, data and fiscal constraints that were not factored into the selection of the preferred alternative.
- 5-16 |    ✧ Consider a complete study of practicable alternatives that are environmentally and fiscally more prudent than the preferred alternative B4 considering today’s air service market is provided for by the air carriers in a very different manner than that present when the purpose and need was first being developed from 2005-2007.
- 5-17 |    ✧ Consider removal of the aberrant and fuel inefficient B767-300 with a Pratt and Whitney JT9D-7R4D/7R4E engine configuration as the design aircraft for this study. This outdated, inefficient aircraft requires the longest runway length supported by this FEIS even though the market proves that this large old fuel consuming aircraft will not be the aircraft flown to support the assumed growth at PVD which will be predominately B737 or A320 that is effortlessly accommodated by the City’s practicable alternative 8,300 lf runway 5/23.
- 5-18 |    ✧ Determine that the preferred alternative B4 poses the least adverse impact because the FEIS does not appropriately consider a practicable alternative offered by the host community, (namely, 8,300 lf. R5/23) as

5-18 |

an avoidance measure that complies with today's stated modified purpose and need of safety and efficiency.

Should you have any questions or comments regarding this matter please contact William J DePasquale Jr., AICP, Planning Director, at (401) 738-2000, ext 6297.

Sincerely,

A handwritten signature in black ink, appearing to read "Scott Avedisian". The signature is fluid and cursive, with a large initial "S" and a long, sweeping underline.

Scott Avedisian  
Mayor

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## Letter 5: City of Warwick

### Comment 5-1

The FEIS does address the mitigation proposed for complying with Section 4(f) requirements with its relocation of Winslow Park to the Lakeshore Drive area but falls short of disclosing important details that may cause conflict such as noise, lighting, traffic and connectivity concerns with the adjacent neighborhood which itself may require some form of mitigation.

### *Response*

Based upon FAA and RIAC's meeting with the City of Warwick Planning Department on January 20, 2011, FAA evaluated access and parking, noise, and wetlands impacts at the Cedar Swamp Road site, which is provided Appendix J of the FEIS. A preliminary evaluation of wetlands impacts also concludes that there would be no impacts to wetlands at the proposed park relocation site. Appendix J provides a preliminary evaluation of vehicular, bicycle, and pedestrian access modes to the proposed park. Based upon input from the City of Warwick at the January 20, 2011, meeting, RIAC redesigned the primary access to the park to originate from Airport Road instead of Lakeshore Drive to minimize traffic and traffic noise impacts on residential areas. The outdoor recreational activities at Cedar Swamp Road would be compatible with anticipated noise levels under the Project. RIAC's final selection of this site over another site was, to a great extent, based upon a preference expressed by the City of Warwick.

### Comment 5-2

Disclose the extent of immediate, long-term and cumulative adverse impacts imposed by the Option B4 on neighborhood fragmentation, real-estate value destruction, bifurcated land use and infrastructure, traffic congestion.

### *Response*

FAA Order 5100.38 provides guidance on how FAA may consider additional properties eligible for noise mitigation: "...projects within DNL 65 dB may be expanded beyond the DNL 65 dB contour to include a reasonable additional number of otherwise ineligible parcels contiguous to the project area, if necessary to achieve equity in the neighborhood. Neighborhood or street boundary lines may help determine what is reasonable, in addition to numbers of properties." As described in Chapter 6, *Mitigation*, of the FEIS and Section 10, *Mitigation*, of the ROD, in order to avoid neighborhood fragmentation, this concept of "neighborhood equity," also referred to as "neighborhood rounding," has been applied where FAA identified some residential parcels outside the DNL 70 dB noise contour as eligible for federal noise mitigation funding (voluntary participation in a land acquisition program) as part of the FEIS. This includes homes where any portion of the lot is within the DNL 70 dB noise contour, homes that would have been the few remaining residences on the block (or

dead-end street) after the Project, or homes that would be left isolated or surrounded by non-residential land use.

Comment 5-3

Environmental impacts of children using John Wickes School playground and excludes from meaningful examination health impacts associated with exposure of ambient air toxin/fine particulate matter and noise exposure on the community.

*Response*

Please refer to Volume 4 of the FEIS and to response to Comment C-002-0019 for noise assessment and to Comment C-002-0599 for air quality impacts regarding John Wickes School.

Comment 5-4

Disclose the entirety of adverse impacts placed on the community and as such the FEIS cannot state that all practicable means of avoidance and minimization of harm were completed hence mitigation measures adopted within the FEIS are assumed to be inclusive

*Response*

Chapter 5, *Environmental Consequences*, of the FEIS discloses the adverse impacts placed on the community, as required by NEPA and Chapter 6, *Mitigation*, identifies measures to mitigate for all adverse impacts. For example, under the Project, sound insulation will be provided for eligible residences that would experience a noise increase of at least DNL 1.5 dB at or above DNL 65 dB compared to the No-Action Alternative, and for residences exposed to noise levels between DNL 65 dB and 69.9 dB. Under the Project, there would be acquisition of residences exposed to noise levels of DNL 70 dB and above on a voluntary basis. In addition, based upon direct impacts to the existing Winslow Park, RIAC will develop a new park in the vicinity of Cedar Swamp Road that will include the same facilities to those impacted.

Comment 5-5

Mitigate or study the long term fiscal, infrastructure and services consequences on the host community's eroding tax base and real estate value destruction resulting from past, present and future land acquisitions and noise mitigation projects.

*Response*

Please refer to Chapter 5, *Environmental Consequences*, of the FEIS, where land acquisitions are addressed with regard to noise, land use, and socioeconomic impacts and cumulative impacts are addressed for each of these types of impacts. Also, please see responses to DEIS Comments C-002-0147 through C-002-0152 in the FEIS, which address fiscal, infrastructure, and services consequences. Previous land acquisition is listed in FEIS Chapter 4, *Affected Environment*, in Table 4-2 and in greater detail in the DEIS Land Use Technical Report in Table 3-1. Additional analysis of cumulative impacts can be found in the DEIS *Social and Socioeconomic*,

*Environmental Justice, and Children's Health and Safety Risks Technical Report, in Section 5.3.4.1, Social Cumulative Impacts, through Section 5.3.4.3 Economic Cumulative Impacts.*

Comment 5-6

Identify the full extent and boundaries of environmental impact and historic cemetery resources making it impossible to determine the extent of the effect on environment and cemeteries. As such, it is impossible to determine if the mitigation proposed is sufficient or if avoidance/minimization was achieved.

*Response*

Sufficient information to definitely determine the exact footprint of the Project and, therefore, the impact of the Project on Cemeteries 76, 77, and 78 is not available at this time. Three of the four cemeteries that may potentially be impacted under Alternative B4 are located on private property. The fourth, Cemetery 26, is located on Airport property. While the boundaries of Cemetery 26 have been defined (see Section 4.7.2.4 of the FEIS), additional work remains to define the boundaries of the other cemeteries to the satisfaction of the Warwick Historical Cemetery Commission. The potential impacts to these cemeteries can be more clearly defined when the design of the Project is further advanced. These studies will not be performed prior to the ROD, but will be completed prior to any disturbance in the area around the cemeteries, as committed to in Stipulation VI of the MOA among FAA, RIAC, and RISHPO. The MOA can be found in Attachment B to this ROD.

Comment 5-7

Consider the larger macro issues raised by the host community concerning environmental/water quality degradation, wetlands/resource protection, infrastructure, historic resources and housing. These issues were parceled off individually "signed off" by appropriate regulating agencies indicating that their approval trumps the concerns raised by the community

*Response*

Chapter 5, *Environmental Consequences*, of the FEIS discloses adverse impacts placed on the community, as required by NEPA. During the development of the EIS, FAA worked with a Coordination Group of agencies with jurisdiction over various resources. This effort helped craft an EIS that better protected those resources. As documented in Chapter 8, *Coordination and Consultation*, of the FEIS and summarized in Section 8, *Public and Agency Involvement*, of the ROD, the community, including the City of Warwick, had many opportunities to voice their concerns. The EIS fully complies with the requirement of NEPA for addressing environmental consequences and providing opportunities for public involvement.

Comment 5-8

Defend the use of imperfect regulatory thresholds for air quality and noise exposure on the community offering only a clumsy noise mitigation program and unsettled Integrated Noise model that dilutes individual figures in a time weighted analysis (INM) or in the case of Air Quality a

dispersion model that uses a larger pool of air pollutant sources (dispersion) as reasoned "Mitigation" for adverse impacts imposed by the preferred build option.

***Response***

Air quality is governed by state and federal requirements. Congress enacted the federal Clean Air Act (CAA), which requires USEPA to set National Ambient Air Quality Standards (NAAQS), under 40 CFR Part 50, as thresholds for pollutants considered harmful to public health and the environment. The Emissions and Dispersion Modeling System (EDMS) is FAA's required methodology for performing air quality analysis modeling for aviation sources. USEPA accepted EDMS as a formal EPA preferred guideline model in 1993. EDMS also offers the capability to model other airport emission sources that are not aviation-specific, such as power plants, fuel storage tanks, and ground access vehicles. FAA requires that the air quality analysis be prepared using the most recent EDMS model available at the start of the environmental analysis process. USEPA and RIDEM approved the Air Quality Protocol analysis, methodology, and results.

FAA requires use of the Integrated Noise Model (INM) to determine noise levels and impacts. In 1979 the Federal Interagency Committee on Urban Noise (FICUN) was formed to develop federal policy and guidance on noise. Members included USEPA, FAA, Department of Defense (DOD), and Department of Housing and Urban Development (HUD). In June 1980, FICUN issued its report entitled Guidelines for Considering Noise in Land Use Planning and Control. This report established the federal government's DNL 65 dB standard and related guidelines. The Aviation Safety and Noise Abatement Act of 1979 adopted the DNL metric and the 65 dB land use compatibility guideline. In 1991, FAA and USEPA initiated the Federal Interagency Committee on Noise (FICON) to review technical and policy issues related to assessment of noise impacts around airports. Membership included representatives from DOD, DOT, HUD, Department of Justice, Department of Veteran's Affairs, and the Council on Environmental Quality. With respect to DNL, FICON found that there are no new descriptors or metrics of sufficient scientific standing to substitute for the present DNL cumulative noise exposure metric. FICON reaffirmed the methodology employing DNL as the noise exposure metric and appropriate dose-response relationships to determine community noise impacts.

**Comment 5-9**

Determine how the larger noise exposure resulting from the update of the Integrated Noise Model (INM) software was compared against other practicable build alternatives that would have avoided or minimized this significant noise impact.

***Response***

The noise analysis was updated in the FEIS for Alternatives B4 (the Project) and B2. Overall, the noise impacts are slightly less than reported in the DEIS. This was due not only to the use of updated INM, but also the updated forecast. The noise exposure impacts for both of these alternatives are shown in Tables 5-110 and 5-111 of the DEIS and Tables 5-131 and 5-132 of the

FEIS. While Alternative B-2 would result in fewer housing units being impacted by noise than Alternative B4, Alternative B2 would result in a far greater number of residential acquisitions for the full relocation of Airport Road. Alternative B2 would also displace a greater number of businesses than Alternative B4, as well as the related jobs, personal income, business revenue, state sales and income tax revenue, and local property tax revenue.

The results of the updated noise analysis are summarized in Section 3.9.3.2 of the FEIS. Footnote 139 in this section (page 3-44) reports that FAA reanalyzed Alternative B3 South with a Runway 5-23 extension to 8,300 feet under the FEIS forecast conditions and determined that the potential for significant noise impacts was substantially the same as Alternative B4. This analysis was conducted using the updated INM.

Comment 5-10

Explain why the mitigation measures proposed were selected and how monitoring and enforcement would assure success of the adopted mitigation.

*Response*

Chapter 6, *Mitigation*, of the FEIS describes why mitigation measures are proposed. To facilitate the monitoring and success of proposed mitigation measures, FAA will impose special grant conditions on RIAC and will review with RIAC annually the EIS mitigation implementation.

Comment 5-11

Explain how it will address the social and environmental justice concerns relating to how the removal of affordably priced, single-family homes will affect the low-to-moderate income population. The study acknowledges it would require \$3.7 million in subsidies to developers in order to build new rental and homeownership units serving the same price point to house displaced families- funds that neither FAA nor RIAC have promised to disburse.

*Response*

While the EIS acknowledges in the *Social and Socioeconomic, Environmental Justice, and Children's Health and Safety Risks Technical Report* appended to the DEIS that subsidies would be needed if developers were to build new rental and homeownership units serving the same price points as the housing units that would be acquired, it also notes that subsidies are not required for mitigation. In addition, as stated in the FEIS (Volume 5) in response to the City's Comment C-002-0016 on the DEIS, the total reduction in both affordable and market rate housing units in Warwick equals 0.37 percent of the estimated total housing stock in Warwick, as concluded in the revised Affordable Housing Analysis in Appendix G.2 to the FEIS. USEPA stated in its September 10, 2010, comment letter on the DEIS that it was satisfied with FAA's environmental justice methodology and findings in the EIS.

Comment 5-12

Satisfactorily address the public comments or discuss resolution of objections from business interest city officials and the general public.

*Response*

Volumes 3 and 4 of the FEIS contain responses from FAA to all comments submitted on the DEIS, including oral comments and written comments from agencies, NGOs, state officials, community members, and the City of Warwick.

Comment 5-13

Find compliance with Section 640 of the State Guide Plan considering that, as of this writing, the Rhode Island Division of State Planning has not amended the State Guide Plan language that changes the State airport from a medium-haul to a long-haul airport.

*Response*

The Project is consistent with the general goals and policies of the MPO, the State Guide Plan and with the September 15, 2011 Element 640 of the Guide Plan, the State Airport System Plan. Specifically, the Project is consistent with the Guide Plan's goals for an airport system that is safe, efficient, meets applicable FAA design standards, and meets current and projected demand within the context of the natural, social, and economic environment.

Comment 5-14

Amend the "purpose and need" that has changed from a stated primary need to accommodate long-haul nonstop flights to the west coast, to limited "on paper" efficiency improvements that are falsely based on the use of large obsolete, fuel-inefficient aircraft to obtain the "loss of passengers" argument associated with not selecting preferred build option B4.

*Response*

The purpose and need statement as shown in Chapter 2, *Purpose and Need*, of the EIS and in Section 5, *Purpose and Need*, of this ROD has not changed since November 8, 2005, when it received the concurrence of the Inter-Agency/Tribal Coordination Group.

Comment 5-15

Explain the decision of supporting the preferred build option B4 when the analysis lacks appropriated consideration of substantive changes in the air market, air carrier's business strategies, updated fleet utilization, data and fiscal constraints that were not factored into the selection of the preferred alternative.

*Response*

The analysis of Alternatives B4 and B2 used updated information that accounted for the substantive changes in the airline industry. The DEIS recognized the shifts in aviation activity

at T.F. Green and across the nation, as illustrated in DEIS Section 2.2.1.2 and Appendix D.2. FAA updated its forecast of future operations and passengers in the DEIS to reflect a decrease in future aviation activity at T.F. Green Airport. When the forecasts were developed, it was predicted that T.F. Green Airport would have 8.9 million passengers in 2020. In the DEIS, that number was reduced to 6.6 million. The downward trend in aviation activity continued between 2009 and 2010 and, as a result, FAA again updated its forecasts for 2020. The FEIS estimated that T.F. Green Airport would see 5.8 million passengers in 2020 with no improvements; see FEIS Page 2-6, Table 2-2, and Appendix E.1. The DEIS and FEIS forecasts take into account changes in the market, business strategies, and reflects the current economic situation. In a related effort, FAA re-examined its fleet mix assumptions using data from 2009. It found the 2009 data was consistent with the assumptions used in 2004, as noted in the DEIS, Appendix D at page D.2-11. This information can be found in FEIS Chapter 2, *Purpose and Need*, and in Appendix E of the FEIS. As indicated in Chapter 2, FAA performed updated environmental analyses in the FEIS with a forecast scenario consistent with the most recent FAA aviation forecast available at the time of the analysis.

Comment 5-16

Consider a complete study of practicable alternatives that are environmentally and fiscally more prudent than the preferred alternative B4 considering today's air service market is provided for by the air carriers in a very different manner than that present when the purpose and need was first being developed from 2005-2007.

*Response*

The evaluation of the changing market did not change the purpose and need, as indicated in Chapter 2, *Purpose and Need*, and Appendix E of the FEIS, nor did it change the results of the alternatives analysis, which is documented in Chapter 3, *Alternatives Analysis*, of the FEIS.

Comment 5-17

Consider removal of the aberrant and fuel inefficient B767-300 with a Pratt and Whitney JT9d-7R4D/7R4E engine configuration as the design aircraft for this study. This outdated, inefficient aircraft requires the longest runway length supported by this FEIS even though the market proves that this large old fuel consuming aircraft will not be the aircraft flown to support the assumed growth at PVD which will be predominately b737 or A320 that is effortlessly accommodated by the City's practicable alternative 8,300 lf Runway 5/23.

*Response*

Starting in 2005 and continuing through this ROD, FAA followed Advisory Circular 150/5325-4B and considered all West-Coast capable aircraft when determining the runway length requirements for T.F. Green Airport. The B767-300 was identified as the critical design aircraft meaning it required the longest takeoff and landing runway length requirements of all the West-Coast capable aircraft. The B767-300 requires a 10,700-foot runway length. The B767-300 was one of many other aircraft that were considered in the runway length determinations. As

FAA worked through the planning and NEPA processes, it became clear that a 10,700-foot runway was not practicable or appropriate because of the significant environmental and community impacts. Starting in 2009, FAA began to focus its consideration for runway length on the four most probable aircraft that were West-Coast capable (considering recent trends in the airline industry), the A319, A320, B737-700, and B737-800. These aircraft all require less runway length than the B767-300 (see Chart 2-5 on page 2-26 of the FEIS). As this chart demonstrates, the Airbus aircraft can operate on a runway length of less than 8,700 feet, but the Boeing aircraft require at least 8,700 feet and in some cases more than 8,700 feet. The discussion of the B767-300 is part of the history of this project, but is not a defining aircraft in selecting the Project, a runway extension of 8,700 feet.

Comment 5-18

Determine that the preferred alternative B4 poses the least adverse impact because the FEIS does not appropriately consider a practicable alternative offered by the host community, (namely, 8,300 lf R5/23) as an avoidance measure that complies with today's stated modified purpose and need of safety and efficiency.

*Response*

Alternative B3 (the 8,300-foot runway extension alternative) was evaluated during Level 5, Step 3, of the alternatives screening. In Level 5, Step 3, Alternatives B4 and B3 South were developed. Alternative B3 South was eliminated because while it had substantially similar impacts to Alternative B4, it did not meet the purpose and need as fully as Alternative B4. Please refer to FEIS Chapter 3, *Alternatives Analysis*.

## ATTACHMENT B

# SECTION 106 MEMORANDUM OF AGREEMENT

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**MEMORANDUM OF AGREEMENT  
AMONG THE FEDERAL AVIATION ADMINISTRATION,  
RHODE ISLAND STATE HISTORIC PRESERVATION OFFICE, AND  
RHODE ISLAND AIRPORT CORPORATION**

**REGARDING THE THEODORE FRANCIS GREEN AIRPORT  
IMPROVEMENT PROGRAM**

**WHEREAS**, the Rhode Island Airport Corporation (RIAC) is proposing the Theodore Francis Green Airport (T.F. Green Airport) Improvement Program (undertaking); and

**WHEREAS**, the undertaking seeks to enhance safety and efficiency at T.F. Green Airport, and consists generally of safety improvements to Runway 16-34; extending Runway 5-23; expansion of the passenger terminal and fuel farm; and construction of a new cargo facility, terminal gates, parking facilities, and on and off Airport roadway improvements (“Project”); and

**WHEREAS**, the Federal Aviation Administration (FAA) is supplying funding and approvals for the undertaking and is the lead federal agency pursuant to the National Environmental Policy Act of 1969 (NEPA, 42 USC § 4321 et seq.) and is responsible for compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966 (16 USC § 470f) and its implementing regulations 36 CFR part 800; and

**WHEREAS**, the FAA has established the undertaking’s area of potential effect (APE) pursuant to 36 CFR § 800.16(d) as depicted on Attachment A; and

**WHEREAS**, the FAA, in consultation with the Rhode Island Historical Preservation and Heritage Commission (RIHPHC), which is the State Historic Preservation Office (SHPO) for Rhode Island, has determined that the following buildings and structures are eligible for listing in the National Register of Historic Places (National Register) as a historic district: the State Terminal Building (individually listed in the National Register in 1983), Hangar 1 and Hangar 2 (each determined to be individually eligible for listing in the National Register in 2008), the remaining sections of the original Runway/Taxiway Complex, the Engine 8 Fire Station, and Hangar 3 (all contributing resources, not individually eligible for the National Register), and Hangar at 596 Airport Road (a non-contributing building), collectively referred to for purposes of this Memorandum of Agreement as the “Hillsgrove State Airport Historic District” or the “eligible airport historic district” (Attachment B); and

**WHEREAS**, if the Preferred Alternative (Alternative B4) is selected, FAA determined the undertaking will have an adverse effect, as defined in 36 CFR § 800.5(a), on the State Terminal Building, Hangar 1, and the eligible airport historic district, and no adverse effect on Hangar 2; and

**WHEREAS**, the adverse effect consists of changes to the setting of the historic State Terminal building, the removal of Hangar 1, and further alterations to the original pattern of the runways and taxi ways; and

**WHEREAS**, FAA has consulted with the RISHPO pursuant to 36 CFR § 800, regulations implementing Section 106 of the National Historic Preservation Act of 1966, as amended (16 USC 470f), and the RISHPO concurs with the FAA's determination of effect; and

**WHEREAS**, pursuant to Section 101(d)(6)(B) of NHPA, FAA has consulted with the Narragansett Indian Tribe, represented by the Narragansett Indian Tribal Historic Preservation Officer (NITHPO) regarding potential impacts to archaeological properties of cultural significance; and

**WHEREAS**, RIAC has participated in the consultation and has been invited to be a signatory to this Memorandum of Agreement (Agreement); and

**WHEREAS**, RIAC and the FAA have, as of the date of this Agreement, performed archaeological identification and evaluation surveys with respect to potential belowground historic properties that may be impacted by the Project, which surveys are described in archaeological reports included in Attachment C of this Agreement, and have determined that the Project may also affect currently unidentified historic properties in areas that have not been subject to prior cultural resource investigations. Such areas may include, but are not limited to, areas that may be impacted by design modifications, wetland mitigation sites, and areas of staging; and

**WHEREAS**, RIAC and the FAA have identified four historic cemeteries (Warwick Historical Cemeteries 26, 76, 77, and 78) that do not meet National Register criteria for eligibility but may be impacted by the Project and have committed to addressing these impacts through state and local regulations protecting historic cemeteries, specifically, Rhode Island General Law 23-18-11 *et seq.* and Chapter 12 of the Code of Ordinances of the City of Warwick; and

**WHEREAS**, in accordance with 36 CFR § 800.6(a)(1), FAA has notified the Advisory Council on Historic Preservation (ACHP) of its adverse effect determination and the ACHP has chosen not to participate in the consultation pursuant to 36 CFR § 800.6(a)(1)(iii); and

**WHEREAS**, FAA and RIAC have informed and involved the public through public meetings conducted as part of the NEPA review process to solicit comment on the undertaking, including its potential effects on historic properties;

**NOW, THEREFORE**, FAA, RISHPO and RIAC agree that the following stipulations will be implemented in order to mitigate the adverse effect of the undertaking on historic properties.

## STIPULATIONS

### I. HISTORIC RESOURCES ARCHIVE DOCUMENTATION

The FAA and RIAC will consult with the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) to determine if Hangar 1 and the eligible airport historic district are appropriate subjects for their archives. If Hangar 1 and/or the eligible airport historic district are appropriate subjects;

RIAC will prepare appropriate HABS/HAER documentation of the eligible airport historic district. The documentation will be completed by a qualified professional who meets the standards and regulations provided in the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* [48 FR 190 (1983)], and shall include a narrative report, large format photographs, and other graphic materials, all prepared to meet archival standards. Unless otherwise agreed to by HABS/HAER or RISHPO, the FAA shall ensure that all documentary recording is completed and accepted prior to the initiation of construction, and that copies of this documentation are made available to the appropriate federal, state and local archives designated by HABS/HAER or RISHPO.

If HABS/HAER determines that the resources are not appropriate subjects, the RISHPO may determine that that Hangar 1 and/or the eligible airport district are appropriate subjects and documentation shall be prepared for the RISHPO to meet Rhode Island Historical Resources Archive standards.

### II. INTERPRETIVE DISPLAY

RIAC, in consultation with the RISHPO, shall develop a display that interprets the historical significance of the eligible airport historic district for the public. The display will be in a panel format and will incorporate images of historic views, plans, and/or historic documents; archival documentation photographs; and narrative information describing the history and significance of the airport. Themes that will be addressed will include, but may not be limited to, the events leading up to the establishment of the Hillsgrove State Airport as the first state airport in the nation, its use by the military during World War II and the Cold War; significant events in its physical evolution over time, including information about the T.F. Green Airport Improvement Program; and the architectural and engineering significance of the buildings and structures within the eligible airport historic district.

Prior to the production of the display, RIAC will forward a design plan to the RISHPO that provides an outline of the content to be included, specifications for the fabrication of the display panel(s), and a proposed location where the display will be installed within the main terminal at T.F. Green. Upon approval of the design plan, RIAC will produce a draft of the display in an appropriate format and submit it to RISHPO for review and comment. Upon the approval of the draft, or subsequent drafts as necessary, RISHPO will notify RIAC of its acceptance of the display and RIAC shall proceed with its fabrication and installation.

RIAC shall also develop an electronic version of the interpretive display for publication and viewing on the internet. RIAC will consult with the RISHPO on the format of the presentation and the appropriate web site for the presentation.

### **III. ARCHITECTURAL SALVAGE**

Before the demolition of Hangar 1, RIAC shall, in consultation with the RISHPO, prepare an inventory of significant architectural items or features that might be salvaged from the building. The inventory will be compiled by a qualified professional who meets the standards and regulations provided in the Secretary of the Interior's *Standards and Guidelines for Archaeology and Historic Preservation* [48 FR 190 (1983)]. It will consist of a list of the items or features along with photographs and a site plan showing their location within the building. Subject to federal grant, state property and purchasing requirements, and subject to the consent of the property owner, the Rhode Island Department of Transportation, RIAC shall provide an opportunity for local and regional historical museums, historical societies, or other public organizations to express an interest in significant salvageable architectural items or features for interpretation purposes and permanent display accessible to the public. RIAC shall compile a list of organizations to be contacted in consultation with the RISHPO.

### **IV. ONGOING REVIEW**

The FAA and RIAC shall continue coordination with the RISHPO throughout the course of this project. The RISHPO will be afforded the opportunity to review plans for all phases of the project to ensure that the effects of the project on historic resources are minimized or mitigated.

### **V. PROTECTION OF ARCHAEOLOGICAL RESOURCES**

FAA shall consult with the RISHPO and NITHPO to develop appropriate archaeological surveys to identify archaeological sites and evaluate their significance and eligibility to the National Register in areas of potential effect that have not been previously surveyed. If a site is determined eligible for listing in the National Register, FAA will further coordinate with RISHPO and NITHPO to review avoidance and/or mitigation options in accordance with Stipulation VII below.

### **VI. HISTORIC CEMETERIES**

Per Rhode Island General Law 23-18-11 *et seq.* and Chapter 12 of the Code of Ordinances of the City of Warwick, RIAC shall continue to consult with the Warwick Historic Cemeteries Commission to address potential impacts to four (4) historic cemeteries (Warwick Historical Cemeteries 26, 76, 77, and 78) located within the area of direct project impacts. The limits of each cemetery that may be impacted will be defined through archaeological investigations and the location of project impacts viz. a viz. cemetery boundaries will be assessed. If project impacts occur within, or within 25 feet of, any cemetery RIAC will consult with the Warwick Historic Cemeteries Commission to develop measures to avoid or mitigate the project impacts.

### **VII. UNANTICIPATED DISCOVERIES**

In the event that previously unidentified historic or archaeological resources are discovered which may be affected by the Project in accordance with the criteria of Adverse Effect under 36 CFR Part 800, the RIAC shall promptly notify the FAA, RISHPO, and NITHPO, and shall submit to these parties a report evaluating the resource for purposes of determining eligibility for listing in the National Register.

The FAA, RISHPO, NITHPO, and RIAC will consult promptly on the eligibility of the resources and the FAA will promptly determine whether such resources are historically significant under 36 CFR Part 800. If an affirmative determination is made by FAA, RIAC shall promptly thereafter submit to the FAA, RISHPO and concurring parties a written report describing the nature of the effects which the Project will have on the historic properties, measures to resolve effects to such properties, and measures to resolve adverse effects which RIAC proposes to include as part of the Project's design and engineering documents.

RIAC shall ensure that in responding to previously unidentified discoveries, the protocol developed in consultation with RISHPO attached hereto at Attachment C is followed.

RIAC shall ensure in that if any human remains or unmarked human burials are identified during construction activities associated with the undertaking, work will cease immediately and the procedures under Rhode Island General Law (R.I.G.L.) 23-18-11 et. seq. will be implemented, as further described in Attachment E. RIAC shall insure that in responding to the discovery of any such human remains, the protocol developed in consultation with RISHPO and NITHPO attached hereto at Attachment E is followed.

## **VIII. DISPUTE RESOLUTION**

Should any signatory to this MOA object at any time during the term of this MOA to any actions proposed or the manner in which the terms of this MOA are implemented, FAA shall consult with such party to resolve the objection. If FAA determines that the objection cannot be resolved, FAA will:

- A. Forward all documentation relevant to the dispute, including the FAA's proposed resolution, to the ACHP. The ACHP shall provide FAA with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, FAA shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the ACHP and signatories, and provide them with a copy of this written response. FAA will then proceed according to its final decision.
- B. If the ACHP does not provide its advice regarding the dispute with the thirty (30) day time period. FAA may make a final decision on the dispute and proceed accordingly. Prior to reaching a final decision, FAA shall prepare a written response that takes into account any timely comments regarding the dispute from the signatories and concurring parties to the MOA, and provide them and the ACHP with a copy of such written response.

- C. FAA's responsibility to carry out all other actions subject to the terms of the MOA that are not the subject of the dispute remain unchanged.

## **IX. AMENDMENTS**

This MOA may be amended when such an amendment is agreed to in writing by all signatories. The amendment will be effective on the date a copy signed by all of the signatories is filed with the ACHP.

## **X. DURATION**

This MOA will expire if its terms are not carried out within five (5) years from the date of its execution. Prior to such time, FAA may consult with the other signatories to reconsider the terms of the MOA and amend it in accordance with Stipulation IX above.

## **XI. TERMINATION**

If any signatory to this MOA determines that its terms will not or cannot be carried out, that party shall immediately consult with the other parties to attempt to develop an amendment per Stipulation VII above. If within thirty (30) days (or other time period agreed to by all signatories) an amendment cannot be reached, any signatory may terminate the MOA upon written notification to the other signatories.

Once the MOA is terminated, and prior to work continuing on the undertaking, FAA must either (a) execute an MOA pursuant to 36 CFR § 800.6 or (b) request, take into account, and respond to the comments of the ACHP under 36 CFR § 800.7. FAA shall notify the signatories as to the course of action it will pursue.

**APPROVAL AND SIGNATURE PAGE FOR  
MEMORANDUM OF AGREEMENT**

**AMONG THE FEDERAL AVIATION ADMINISTRATION,  
RHODE ISLAND STATE HISTORIC PRESERVATION OFFICE, AND  
RHODE ISLAND AIRPORT CORPORATION**

**REGARDING THE THEODORE FRANCIS GREEN AIRPORT  
IMPROVEMENT PROGRAM**

Execution of this MOA by the FAA, RISHPO and RIAC and the implementation of its terms evidence that the FAA has taken into account the effects of the undertaking on historic properties and afforded the ACHP an opportunity to comment.

**FEDERAL AVIATION ADMINISTRATION**

By: Bryon H. Rakoff Date: 5/5/11  
Bryon H. Rakoff  
Acting Airports Division Manager

**RHODE ISLAND STATE HISTORIC PRESERVATION OFFICE**

By: Edward F. Sanderson Date: 5/9/2011  
Edward F. Sanderson  
Executive Director/State Historic Preservation Officer

**RHODE ISLAND AIRPORT CORPORATION**

By: Kevin A. Dillon Date: 5/18/2011  
Kevin A. Dillon A.A.E  
President and CEO

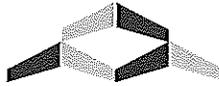
## List of Attachments

- A. *Area of Potential Effect (APE), Theodore Francis Green Airport Improvement Program*
- B. *Hillsgrove State Airport Determination of Eligibility Documentation*
- C. *Phase I(c) Archaeological Survey: T.F. Green Airport Improvement Program Environmental Impact Statement, Warwick, Rhode Island* (Leveillee and Mair, 2007, PAL Report No. 1751.01-1). Prepared for the Federal Aviation Authority, Burlington, MA and the Rhode Island Airport Corporation, Warwick, RI. *Phase II Archaeological Site Examination: Double L and Striped Feather Sites, T.F. Green Airport Improvement Program Environmental Impact Statement, Warwick, Rhode Island* (Leveillee et. al. 2008, PAL Report No. 1751.02). Prepared for the Federal Aviation Authority, Burlington, MA and the Rhode Island Airport Corporation, Warwick, RI.
- D. *Unanticipated Discoveries Plan for the Theodore Francis Green Airport Improvement Program.*
- E. *Procedures Guiding the Discovery of Unmarked Burials and Human Remains for the Theodore Francis Green Airport Improvement Program.*

# ATTACHMENT C

## AIRPORT SPONSOR CERTIFICATION

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## Rhode Island Airport Corporation

September 21, 2011

Mr. Richard Doucette  
Environmental Program Manager  
Federal Aviation Administration  
12 New England Executive Park  
Burlington, MA 01803

Re: T. F. Green Airport

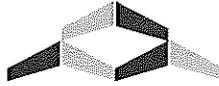
Dear Mr. Doucette:

On behalf of the Rhode Island Airport Corporation, I hereby certify that the attached letter was sent to Rhode Island Statewide Planning on September 21, 2011.

Sincerely,

Kevin A. Dillon, A.A.E.  
President and CEO

Attachment



## Rhode Island Airport Corporation

September 21, 2011

Mr. Jared L. Rhodes II  
Chief, Statewide Planning Program  
One Capital Hill  
Providence, RI 02908

Re: T. F. Green Airport

Dear Mr. Rhodes,

As required by the National Environmental Policy Act, this letter is being sent to notify Rhode Island Statewide Planning that the Master Plan and draft Airport Layout Plan reflecting the FEIS are available for review. An electronic copy may also be provided. Please contact Ann Clarke at (401) 691-2419 if you have further questions or require any further information regarding this matter.

Sincerely,

Kevin A. Dillon, A.A.E.  
President and CEO