State of Rhode Island
Coastal Resources Management Council

MEMORANDUM

To: Grover Fugate, CRMC Executive Director

From: James Boyd, CRMC Coastal Policy Analyst

Date: May 8, 2012

Re: T.F. Green Airport Improvement Program – Staff Findings and Recommendation for Coastal Zone Management Federal Consistency Review; CRMC File 2012-01-027

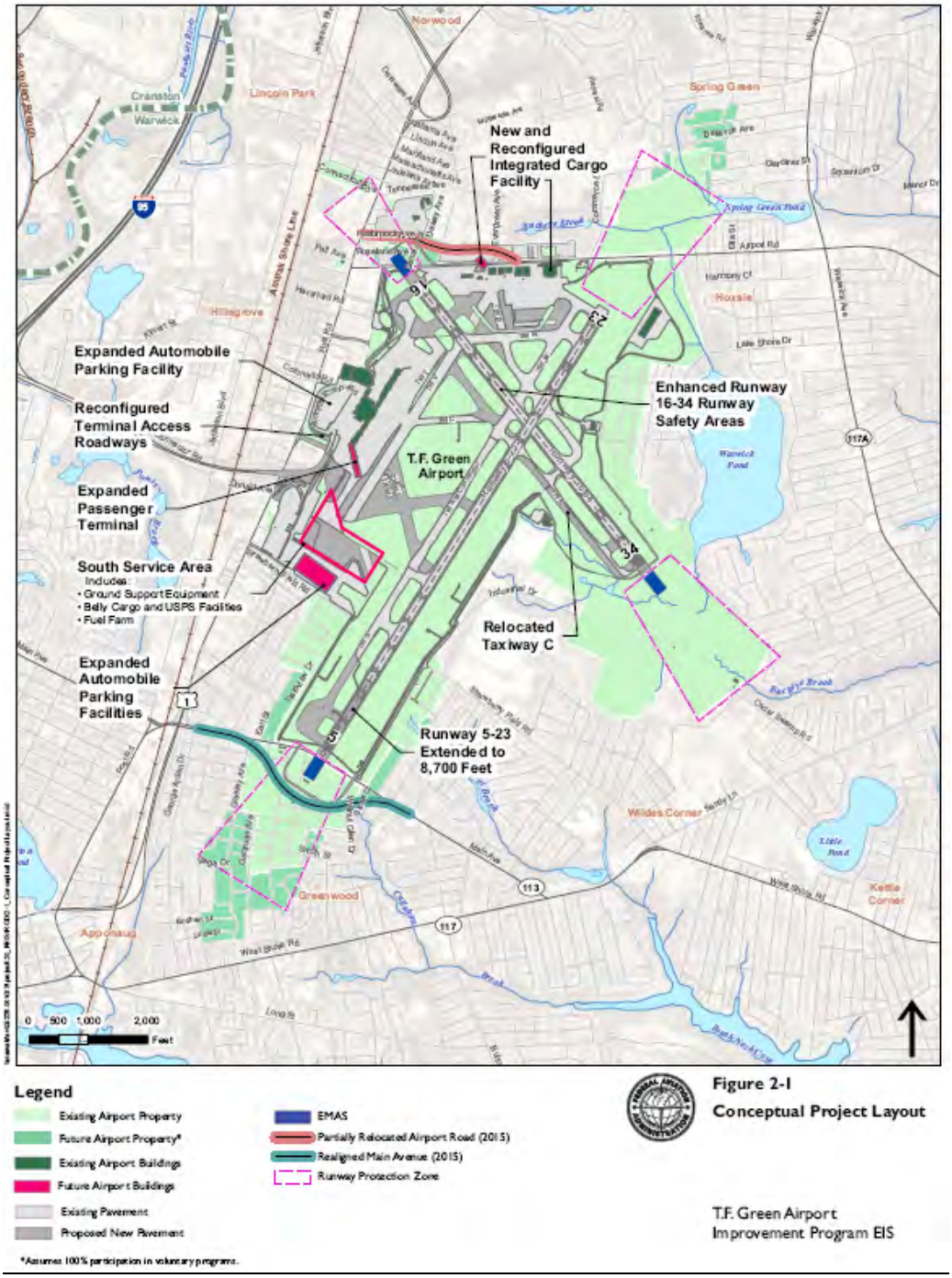
Introduction

The Rhode Island Airport Corporation (RIAC) has proposed the T.F. Green Airport Improvement Program project located within the City of Warwick and described in the Final Environmental Impact Statement (FEIS) issued by the Federal Aviation Administration (FAA) in July 2011. The FAA subsequently issued a Record of Decision (ROD) on September 23, 2011 based upon the FEIS and all relevant documentation comprising the entire Environmental Impact Statement record. Based upon its review the FAA selected Alternative B4 as the preferred Airport Improvement Program project (hereafter referred to as the Project). The Project is shown below in Figure 2-1 obtained from the ROD.

The improvements of the Project consist primarily of extending Runway 5-23 approximately 1530 feet south for a total runway length of 8700 feet and the relocation of Main Avenue to the south to facilitate the extension at the Runway 5 end. In addition, Runway 16-34 safety enhancements will require a partial relocation of Airport Road 100 feet north of the current intersection with Post Road to accommodate the installation of engineered materials arresting system (EMAS). EMAS will also be installed at the Runway 5 end to reduce the degree of relocation needed for Main Avenue. The safety improvements to the Runway 34 end, which include EMAS, necessitate the placement of fill material into approximately 5.0 acres of freshwater wetlands that form the headwaters for Buckeye Brook. The proposed wetland fill activity triggers both federal (USACE) and state (RIDEM) wetland permit requirements.

The RIAC filed a federal Section 404 permit application with the U.S. Army Corps of Engineers (USACE) in July 2011 to alter and fill approximately 5.0 acres of federal jurisdictional wetlands and waterways located within the Project area at the Runway 34 end. Consequently, the Project is subject to CRMC Federal Consistency review authority pursuant to the federal Coastal Zone Management Act (CZMA), 16 USC §§ 1451-1464, and the CZMA's implementing regulations at 15 CFR Part 930 Subpart D. After filing the USACE application, the RIAC then filed a federal consistency certification with the USACE for the Project pursuant to 15 CFR Part 930 Subpart D and furnished same to the Coastal Resources Management Council (CRMC).

The CRMC as the State's authorized coastal zone management agency must make a determination as to whether the proposed T.F. Green Airport Improvement Program project complies with and will be conducted in a manner consistent with the enforceable policies of the State's coastal program. The CRMC issued a public notice on January 24, 2012 that was published in the Providence Journal inviting interested parties to submit written comments no later than February 29, 2012 as to whether the project is consistent with the enforceable policies of the Rhode Island coastal resources management program. The CRMC received comments from the City of Warwick and from Richard Langseth, and prepared a response document.



Project Background and History

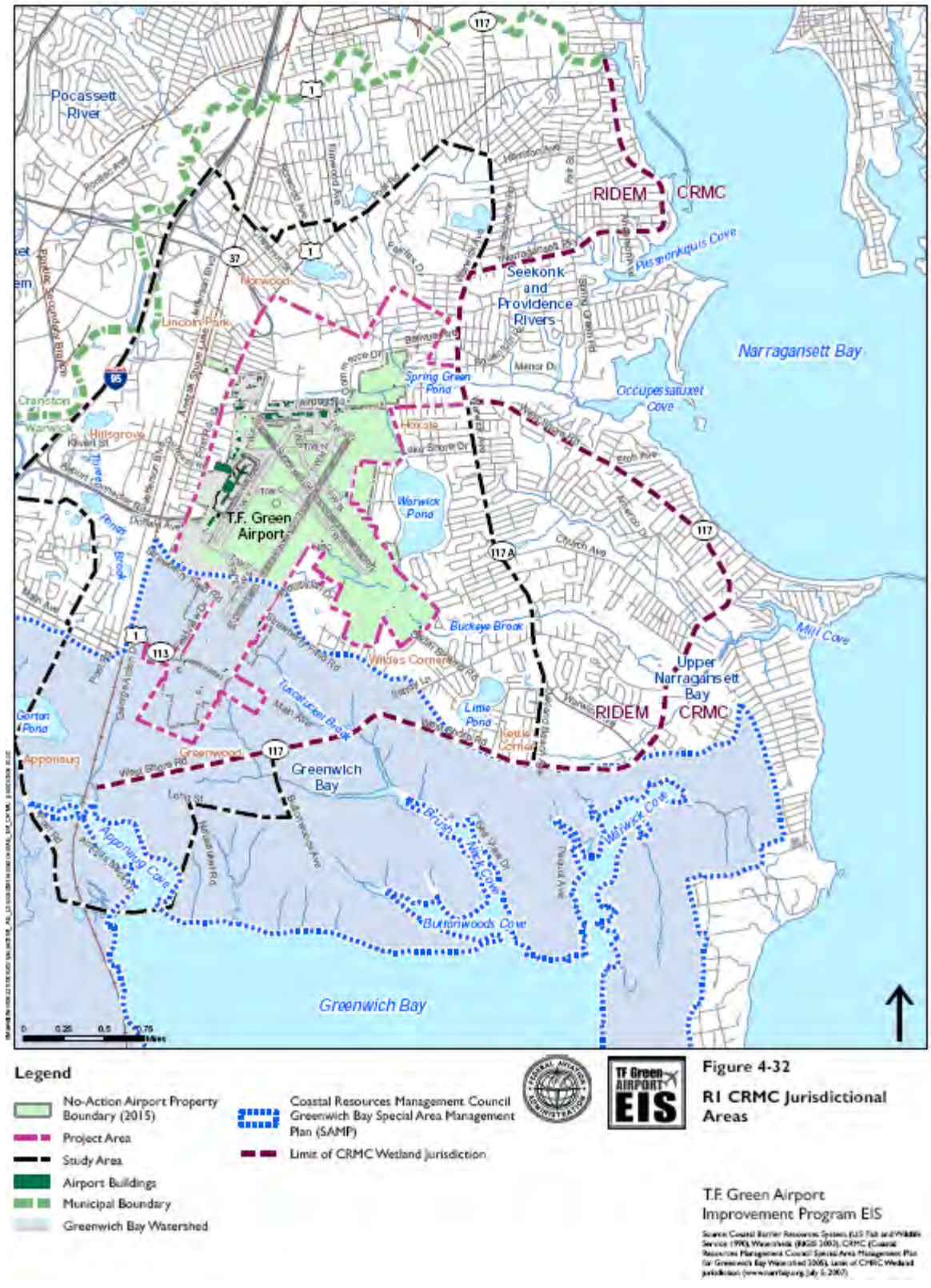
The RIAC is proposing an improvement program for T.F. Green Airport, the purpose of which is to provide facilities that would conform to current FAA airport design standards to enhance airport safety and the efficiency of the Airport, as well as the New England Regional Airport System, to more fully meet the current and anticipated demand for aviation services. The T.F. Green Airport Improvement Program evaluated in the FEIS includes safety projects (enhancement of Runway 16-34 Runway Safety Areas (RSAs); removal of Hangar No. 1; relocation of Taxiway C) and efficiency projects (extend Runway 5-23; expand passenger terminal and parking facilities; construct new ground support equipment facilities, new belly cargo facility and new fuel farm facilities; construct a new Integrated Cargo Facility; and reconfigure terminal access roadways). See FEIS at 1-1.

Based on its review of the proposed T.F. Green Airport Improvement Program the FAA in compliance with the National Environmental Policy Act (NEPA) determined that a Draft Environmental Impact Statement (DEIS) was necessary due to the potential for significant environmental impacts. The NEPA process and DEIS was initiated in 2002 and then re-initiated in 2005 after consideration of long-term airport operations. The DEIS was completed and filed in July 2010 and the Final Environmental Impact Statement was issued by the FAA in July 2011. The FAA then issued a Record of Decision (ROD) on September 23, 2011 based upon the FEIS and all relevant documentation comprising the EIS record. As noted in the ROD, the FAA selected Alternative B4 as the preferred Airport Improvement Program project. See ROD at 1.

In November 2011 the Warwick City Council filed an appeal of the FAA ROD with the U.S. Circuit Court of Appeals for the District of Columbia. In the interim, the Warwick City Council and the RIAC have entered into preliminary terms of an agreement and have prepared a draft Memorandum of Understanding (MOU) that when finalized and executed by the parties would result in the withdrawal of the City's appeal of the ROD. In a letter dated April 6, 2012 the FAA advised the RIAC that it approves of the terms and conditions of the MOU. As part of the MOU the RIAC agrees, among other items, to fund water quality monitoring in area streams and water bodies that may be impacted by activities at the airport.

Basis for CRMC Jurisdiction

The Project is located within a coastal community, the City of Warwick, but does not involve any construction activity or alterations within tidal waters of the state or on a coastal shoreline feature or its 200-foot contiguous area. The alteration of freshwater wetlands associated with the Project does not involve freshwater wetlands in the vicinity of the coast. **Therefore, the CRMC will not be issuing a State Assent for the proposed Project**. The southern portion of the Project area, however, namely the improvements associated with the extension of Runway 5 and the relocation of Main Avenue, lie within the Greenwich Bay watershed. The CRMC and RIDEM freshwater wetlands jurisdictional areas and the extent of the Project within the Greenwich Bay watershed are shown below in Figure 4-32 obtained from the FEIS. State jurisdiction for freshwater wetland alterations associated with the Project fall under the exclusive jurisdiction of the RIDEM. However, because the Project is located within a coastal community and a federal Section 404 permit is required, the CRMC has consistency review authority in this matter pursuant to the CZMA and its implementing regulations at 15 CFR Part 930 Subpart D.


Pocassett River
RIDEM
CRMC
Pawtuxet Cove
Seekonk and Providence Rivers
Narragansett Bay
Spring Green Pond
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Hoxsie
Warwick Pond
T.F. Green Airport
Buckeye Brook
Mill Cove
Upper Narragansett Bay
Tusket Ekett Brook
Lime Pond
Greenwich Bay
Warwick Cove
Apponaug Cove
Buttonwoods Cove
Legend
No-Action Airport Property Boundary (2015)
Project Area
Study Area
Airport Buildings
Municipal Boundary
Greenwich Bay Watershed
Coastal Resources Management Council Greenwich Bay Special Area Management Plan (SAMP)
Limit of CRMC Wetland Jurisdiction
Figure 4-32
RI CRMC Jurisdictional Areas
T.F. Green Airport Improvement Program EIS

Requirements for Project Consistency with the CZM Program

As noted above, the Project requires a federal permit, the USACE Section 404 permit, which is one of the federal permits listed in Table 2 of the CRMC's Federal Consistency Manual. Accordingly, the Project is subject to Subpart D of the CZMA's implementing regulations for federal consistency, which contains provisions "to ensure that any required federal license or permit activity affecting any coastal use or resource is conducted in a manner consistent with the approved management program." See 15 CFR § 930.50.

In accordance with the federal requirements of 15 CFR § 930.57(b), RIAC submitted a letter to the USACE stating that "after duly assessing impacts associated with the Improvement Program through the EIS process, and understanding the enforceable policies of state and federal regulatory agencies having permitting authority over the Improvement Program, RIAC hereby certifies that the T.F. Green Airport Improvement Program complies with the enforceable policies of Rhode Island's approved Coastal Zone Management Program, and will be conducted in a manner consistent with such program." See RIAC letter to USACE dated November 22, 2011 at 2.

Findings

The Staff findings herein pertain to a discussion of the enforceable policy provisions of the RI Coastal Resources Management Plan that are applicable to the Project. The Greenwich Bay Special Area Management Plan (SAMP) was adopted by the CRMC in May 2005 and was federally approved by NOAA in August 2007, and thence became part of the State's approved Coastal Zone Management Program. The SAMP contains five key primary goals for Greenwich Bay that are articulated in Section 120. And, within each of the five goal sections an associated table lists priority actions intended to achieve the specified SAMP goal. In this matter, two of the SAMP goals and their applicable priority actions specifically pertain to the T.F. Green Airport expansion proposal. As noted in the RIAC consistency certification letter, the CRMC had previously advised RIAC of the two specific applicable sections within the Greenwich Bay SAMP that the Project must comply with as follows.

Section 390.5B.5 is a priority action to meet the Greenwich Bay SAMP goal 120.3 - Maintain high quality fish and wildlife habitat in the Greenwich Bay watershed. The priority action pertaining specifically to the airport reads as follows:

> The Rhode Island Airport Corporation should examine the impacts from any expansion proposal on Greenwich Bay's tidal and freshwater wetlands and mitigate for any impacts within the watershed. Due to surficial geology and potential groundwater flow impacts from the airport may extend beyond the surface watershed.

As detailed within the FEIS, there are no direct impacts (*i.e.*, alteration of or fill material placed within) to any coastal or freshwater wetlands ***within*** the Greenwich Bay watershed as a result of the Project. However, approximately 5.0 acres of freshwater wetland alterations are necessary to construct the Project and are located at the Runway 34 end, which is located within RIDEM freshwater wetland jurisdiction and the watershed of Buckeye Brook (see Figure 4-32). Nevertheless, in accordance with federal and state requirements, mitigation is proposed to offset the significant wetland impacts. As stated within the 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." See ROD at 61. In addition, the "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." *Id.*

As to potential groundwater impacts from the Project, the FEIS examines this issue within Section 5.17 - Hazardous Materials, Pollution Prevention, and Solid Waste, and concludes that none of the alternatives "will result in the generation of additional hazardous materials or solid waste. Alternatives B2 and B4 (the Project) would result in an overall net benefit related to hazardous materials and solid waste because RIAC would close and remediate known or previously unidentified USTs (underground storage tanks) impacted by program elements as part of the demolition activity. Demolition debris from the structures on acquired land would be disposed of at an appropriately licensed landfill." See FEIS at 5-267. In addition, Section 10.12 of the ROD states that 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." See ROD at 52. And, the ROD states that appropriate mitigation in accordance with all applicable regulations will be undertaken if any contaminated soil or groundwater is encountered during construction of the Project. *Id.* at 53. Moreover, RIAC operations are in compliance with RIDEM *Rules and Regulations for Hazardous Waste Management*. See FEIS at 4-73.

Based on these facts, there are no direct impacts to Greenwich Bay's tidal and freshwater wetlands as a result of the Project. Additionally, the proposed remediation of known or previously identified USTs and hazardous materials discovered during construction of the Project and compliance with state rules governing hazardous wastes will protect local groundwater resources. There are, however, potential indirect impacts from the Project to tidal and freshwater wetlands within the Greenwich Bay watershed, namely due to stormwater discharges to Tuscatucket Brook, which empties into Brushneck Cove. These potential impacts and the proposed mitigation actions for the Project are detailed in the findings below in regard to water quality.

Section 470.5B.17 is a priority action to meet the Greenwich Bay SAMP goal 120.2 - Improve Greenwich Bay's water quality so that it is a safe place to fish and swim. The priority action pertaining specifically to the airport reads as follows:

> The Rhode Island Airport Corporation should examine impacts from any expansion proposal on Greenwich Bay water quality, including the effects on stormwater runoff volume and quality and groundwater flow. Based on surficial geologic maps (See Appendix C) and potential groundwater flow, airport activities outside the watershed could affect Greenwich Bay water quality. Any expansion plans should address the use of BMPs that:

- Reduce nitrogen and bacteria concentrations
- Eliminate from reaching surface or groundwater other pollutants used at the airport, such as deicing chemicals
- Provide for a reduction in runoff volume and increase in water quality

The FEIS examines potential water quality impacts from the Project in Section 5.11 and includes an analysis of cumulative water quality impacts in Section 5.11.6. The FEIS indicates that there would be no significant water quality impacts and specifically states that the "Project will be designed to meet water quality standards. Stormwater management systems will be designed (during the final design stage) to meet stormwater standards, mitigating the impacts resulting from increases to impervious surfaces from either Alternative B2 or B4. Alternative B2 and B4 would each decrease roadway and parking areas in the Tuscatucket Brook, and Brush Neck Cove watersheds, thereby decreasing potential pollutants entering downstream waterbodies." See FEIS at 5-210.

The Project will be required to meet the standards of the recently revised *Rhode Island Stormwater Design and Installation Standards Manual*, which includes using best management practices (BMPs) that reduce pollutants in stormwater runoff. Standard 3.2.3 of the state stormwater manual requires BMPS to achieve the following minimum average pollutant removal efficiencies: 85% removal of total suspended solids (TSS), 60% removal of pathogens, 30% removal of total phosphorus (TP) for discharges to freshwater systems, and 30% removal of total nitrogen (TN) for discharges to saltwater or tidal systems. According to the FEIS in Appendix A, a conceptual design for the stormwater management system was completed to evaluate the initial size and potential location for BMPs for the Project to meet the stormwater manual requirements. A more detailed analysis and design will be completed in preparation for submitting applications to the RIDEM RIPDES and RIDEM Freshwater Wetlands programs for compliance with Standard 3.2.3 of the state stormwater manual. See FEIS Appendix A at A-41. Potential stormwater BMP locations for the Project are shown in Figure 5-43 of the FEIS.

An analysis of pollutant loads for the No-action Alternative and the Project (Alternative B4) was completed in Section 5.11 of the FEIS. Potential average annual pollutant loads were calculated using Schueler's (1987) Simple Method without the removal expected from the installation of BMPs. Table 5-111 shows the average annual pollutant loadings for the No-Action Alternative. It should be noted that the cumulative loadings calculated for Brushneck Cove are incorrect and likely due to a spreadsheet formula error. It appears that the cumulative loading is a combination of both Mill Cove and Brushneck Cove loadings. The cumulative loading for Brushneck Cove, however, can be determined by the sum of Tuscatucket Brook and Callahan Brook watershed loadings. Table 5-118 of the FEIS shows the average annual pollutant loadings for the Project. Using the corrected cumulative loadings for Brushneck Cove for the No-Action Alternative and comparing them to the Project shows no net change for nitrogen and a slight decrease for bacteria. **Nevertheless, it is important to note that the pollutant loadings for nitrogen and bacteria are expected to decrease significantly due to the required installation of BMPs as part of the Project to meet the minimum average pollutant removal efficiencies required by Standard 3.2.3 of the RI Stormwater Manual (*i.e.*, 30% reduction for nitrogen and 60% reduction for bacteria)**. According to Table 5-118 there is an overall 0.3% reduction in the

annual pollutant loadings to Brushneck Cove, a tributary to Greenwich Bay, as compared to the No-Action Alternative. See FEIS at 5-219.

In regard to aircraft deicing chemical use at the airport, the FEIS provides an impact analysis in Section 5.11.4 with additional information in Appendix Section A.1.14. Table 5-115 in the FEIS shows the historic and projected use of aircraft deicing fluid (propylene glycol). The airport is currently using less deicing fluid as compared to the average annual usage from 2004 to 2006 due to the completion of a consolidated glycol dispensing and blending facility in 2009. RIAC expects that the use of this new facility will reduce overall propylene glycol use as compared to historic use by up to 30% in future years. See FEIS at 5-213. The potential impacts from glycol-impacted stormwater runoff from the airport have been a water quality concern for sometime, especially in Buckeye Brook, which is not located within the Greenwich Bay watershed. The discharge of such stormwater is regulated by the RIDEM through the RIPDES permit program.

RIDEM is the state-delegated authority for the federal Environmental Protection Agency (EPA) National Pollution Discharge Elimination System permit and establishes state water quality standards based on the federal Clean Water Act and EPA guidance. In November 2004 RIDEM issued RIPDES permit No. RI0021598 to RIAC authorizing the discharge of stormwater associated with (industrial) activities conducted at the airport. The RIPDES permit was subsequently appealed by RIAC in December 2004 seeking a stay of certain conditions of the permit. In February 2009 RIAC and RIDEM executed a Memorandum of Agreement, and in August 2009 RIAC submitted to the RIDEM a Stormwater Pollution Prevention Plan (SWPPP) describing how stormwater at the airport is managed through a variety of structural stormwater controls and management practices that reduce the amount of pollutants, including aircraft deicing chemicals, discharged from the site into local water bodies.

In March 2011 RIAC submitted to the RIDEM a conceptual design report for a propylene glycol (airport deicing fluid) impacted stormwater and snow melt collection, storage and treatment system. Then in November 2011 RIAC submitted to the RIDEM a more advanced 30% design report that included a design for the discharge of treated effluent from the airport deicing fluid treatment system into the Warwick Sewer Authority sanitary sewer system. This long-term deicer management system is being designed for the Airport's terminal and cargo areas and will prevent the discharge of deicing fluid impacted stormwater runoff to surface waters when the concentration of propylene glycol exceeds specified thresholds (2950 ppm for the terminal ramp and 1000 ppm for the cargo ramp). RIDEM has determined that based on the historical data, the system is designed to collect on average 60% of the deicing fluid applied, which meets or exceeds the average collection efficiencies associated with centralized deicing pads across the country.

Recently (January 2012), RIAC and RIDEM entered into a Consent Agreement that requires the RIAC, among other conditions, to: (1) comply with the 2009 Stormwater Pollution Prevention Plan; (2) submit to RIDEM by June 12, 2012 an application for an Order of Approval for the propylene glycol collection, storage and treatment system with a minimum 90% design; (3) complete construction and begin operation of the propylene glycol collection, storage and treatment system by October 13, 2014; (4) the operation of mobile collection units and glycol recovery vehicles at secondary deicing locations; and (5) abide by the terms and conditions of

RIPDES Permit RI0021598. Until the propylene glycol collection, storage and treatment system is operational in October 2014 RIAC must manage deicing fluid application and collection under the terms and conditions of the 2009 Stormwater Pollution Prevention Plan.

Deicing fluids are applied to aircraft prior to takeoff at the terminal and cargo facilities, which do not have stormwater outfalls that discharge into the Greenwich Bay watershed. There is, however, a secondary deicing area located near the Runway 5 end that discharges stormwater through Outfall 10 into Tuscatucket Brook. See FEIS at 5-221 and Figure 4-27. The secondary deicing areas are used only under limited, extreme weather circumstances when additional deicing may be required. Catch basin inserts will continue to be utilized at secondary deicing locations and GRV (glycol recovery vehicles) will collect glycol-impacted stormwater and transfer it to storage tanks for onsite treatment and discharge to the sewer. See FEIS Appendix A at 4-47. In addition, Stipulation B.4.a.(1)(vii)c of the RIPDES stormwater discharge permit (RI0021598), states "[p]rocedures for ensuring that aircraft deicing fluids (ADFs) do not enter the storm drainage system near secondary deicing areas. Catch basin inserts in secondary deicing areas shall remain closed during deicing events. The inserts may be opened once the deicing fluids have been collected." See RIPDES Permit No. RI0021598 at 16. Based on these conditions, the RIPDES permit prohibits the discharge of deicing fluids into catch basins and storm drains at secondary deicing areas. Therefore, the implementation of these RIDEM requirements will prevent the direct discharges of deicing fluids from airport operations into the receiving waters of the Greenwich Bay watershed.

The RIDEM-issued draft RIPDES stormwater discharge permit and the associated RIDEM Fact Sheet can be accessed at the DEM web pages at the following URL: http://www.dem.ri.gov/programs/benviron/water/permits/ripdes/pdfs/tfgreen.pdf.

As to mitigation methods to minimize or prevent potential groundwater impacts from the Project due to construction and operation activities the FEIS states the following:

> The relocated fuel farm and expanded terminal would include spill prevention control measures to prevent the contamination of groundwater or surface water with fuel products. See FEIS at 5-212.
>
> An accidental release of hydraulic fluid, or fuel during refueling could have the potential to contaminate soil, groundwater, and surface water. Spill containment procedures, including limiting the areas in which fueling could be performed, would be implemented to minimize this risk. *Id*. at 220.
>
> Discharge to waters of the state and groundwater would need to comply with RIPDES Regulations. *Id*. at 260.

As to the issue of providing for a reduction in stormwater runoff volume, the Project will have a cumulative net increase of 12.2 acres of new impervious areas within the Greenwich Bay watershed as a result of the extension of Runway 5-23, the relocation of Main Avenue, and the construction of new parking and taxiway areas. See Table 5-119 in FEIS at 5-223. However, as indicated above, all new impervious surfaces will require the construction of new BMPs to

manage stormwater runoff in accordance with the current standards of the *Rhode Island Stormwater Design and Installation Standards Manual*. Standard 3.2.2 of the manual requires groundwater recharge to maintain base-flow at pre-development recharge levels to the maximum extent practicable. The Project has preliminary stormwater BMPs that include proposed surface infiltration basins and subsurface infiltration chambers intended to achieve the groundwater recharge stormwater manual standard. See FEIS Figure 5-43.

In regard to mitigation for any potential water quality impacts, the ROD states in section 10.9 that "[t]he 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." See ROD at 51. Further, in reference to the above manual the RIAC consistency certification letter states that "every component of the Improvement Program will be designed in compliance with the Manual." See RIAC letter to USACE dated November 22, 2011 at 3.

Accordingly, based on these facts, the Project will be designed and constructed to incorporate best management practices (BMPs) that will result in a reduction of nitrogen and bacteria concentrations; eliminate from reaching surface or groundwater other pollutants used at the airport, such as deicing chemicals; and provide for a reduction in runoff volume and increase in water quality to receiving waters that discharge into Greenwich Bay.

Section 10 of the ROD summarizes the mitigation measures necessary to address any significant adverse impacts that cannot be avoided. In regard to coastal resources, the ROD states "[t]he 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. See ROD at 51. These measures will address and mitigate for any potential indirect impacts, primarily water quality issues that may result from the Project.

Recommendation

In summary, given the above facts the Project would appear to be consistent with Greenwich Bay SAMP Sections 390.5B.5 and 470.5B.17. Accordingly, based on the information provided within the FEIS and the ROD, as well as the supplemental information from RIDEM regarding the RIPDES stormwater discharge permit for RIAC, it is Staff opinion that the proposed Project will comply with and be conducted in a manner consistent with the applicable enforceable policies of the Rhode Island Coastal Resources Management Program.