

Chapter 7.0 – Environmental Review

The purpose of this chapter is to conduct a general assessment of the environmental effects of the preferred alternatives described for all the projects in the 20-year planning period and to define the potential extent of future environmental analyses that is needed to implement the airfield improvements ultimately shown on the ALP.

This overall environmental review, while not a formal environmental assessment (EA), will consider the environmental elements described in FAA Advisory Circular 150/5070-6A, FAA Order 5050.4B, Airport Environmental Handbook, and relevant Rhode Island environmental regulations and procedures. Unless otherwise identified as “Categorically Exempt” per Federal Aviation Administration Order 5050.4B, Section 602, an EA will be conducted for the projects on the ALP that are anticipated to be implemented in the short-term (5 year) planning period. This section will also define any “Categorically Exempt” improvements as defined by FAA Order 5050.4B, as well as identify any possible mitigation measures or modifications to the ALP to avoid, minimize or mitigate environmental impacts.

An EA is scheduled for 2010 for those projects identified in the Phase 1 short-term planning period.

This Chapter includes the following sections:

- Section 7.1 – Noise Impacts
- Section 7.2 – Land Use
- Section 7.3 – Air Quality
- Section 7.4 – Water Quality
- Section 7.5 – U.S. Department of Transportation Act Section 4(f) Lands
- Section 7.6 – Historic, Architectural, Archaeological, and Cultural Resources
- Section 7.7 – Biotic Communities
- Section 7.8 – Threatened or Endangered Species of Flora and Fauna
- Section 7.9 – Wetlands
- Section 7.10 – Floodplains
- Section 7.11 – Coastal Zone Management
- Section 7.12 – Coastal Barriers
- Section 7.13 – Wild and Scenic Rivers
- Section 7.14 – Farmland
- Section 7.15 – Energy Supply and Natural Resources
- Section 7.16 – Light Emissions
- Section 7.17 – Solid Waste Impact
- Section 7.18 – Environmental Justice
- Section 7.19 – Summary

The following is an overview of the environmental consequences for each of the impact areas listed above. Environmental consequences for all three phases of the proposed projects are summarized here. The subsequent EA to be completed on Phase I of the work will address each category in more detail with respect to Phase I and in accordance with FAA Advisory Circular 150/5070-6A, FAA Order 5050.4B, Airport Environmental Handbook, and relevant Rhode Island environmental regulations and procedures.

Phase I projects will consist of the following:

- Conducting an Aeronautical Study to accurately assess the Localizer Performance with Vertical Guidance (LPV) obstruction removal requirements;
- Establishing a LPV Approach to improve the instrument approach minimum decision height for Runway 5;
- Clearing the Runway Visibility Zone (RVZ) by relocating the Fuel Farm and aircraft parking locations. Relocate six (6) aircraft tie downs to the front of the old terminal building. Ultimately the tie-downs in front of the old terminal will be moved to the new aircraft apron proposed in Phase II;
- Construct a Snow Removal Equipment Building (SRE) to store and maintain the snow removal equipment. The snow removal equipment is currently kept outdoors. The SRE building will increase the useful life of this equipment, facilitate maintenance and ultimately protect the RIAC investment;
- Constructing an Access Road to Connect Lower and Upper Level Terminal Areas – This project is needed to bring more utility and functionality between the two terminal areas;
- Improving the Airport Wastewater Utility System – This project was recommended in the 2007 RIAC study to improve the wastewater connection to the airport. It provides a public sewer connection from the airport to the Lincoln public sewer at Powder Hill Road;
- Constructing Aircraft T-hangars (Phase 1) – This project provides for one 10 unit t-hangar facilities and will accommodate the need for based aircraft hangar storage through 2020. This project will be instituted if private investment funds are available

7.1 Noise Impacts

Aircraft noise is often one of the most significant environmental issues associated with large commercial airports. Because this issue is so important, standard noise models have been developed to analyze the effects of aircraft noise on land both on and off the airport. Although to a lesser extent, disturbances from aircraft noise can also become an issue at general aviation airports. Assessing noise from smaller aircraft is more difficult to predict because methodologies are less precise. Nonetheless these concerns are taken very seriously and various measures are available to address these problems.

With respect to North Central State Airport, the projects proposed in this master plan are not designed to generate any changes in the type, size or number of aircraft operating to or from the Airport. The improvements are primarily to improve the reliability and safety of the existing infrastructure. As a result significant noise impacts are not anticipated. However noise impacts will be evaluated as part of the subsequent Environmental Assessment (EA) process.

During construction, short term increases in noise levels associated with standard construction activities will occur in the project areas during standard daylight working hours due to the use of equipment that may include bulldozers, loaders, and dump trucks. Increased noise levels are only expected on a temporary basis, and are not expected to occur beyond the project's completion. Some change in noise patterns on the airport could occur as a result of the potential construction of new T-hangars, development of the SRE, and relocation of the fuel farm near the Runway 33 end adjacent to Limerock Road. This area of the airport has not previously seen any development.

7.2 Land Use

All the projects are located on Airport property and are consistent with aviation uses. The projects are not growth inducing and will not have land use ramifications, such as disruption of communities or relocation. Some minor changes in traffic patterns may occur as a result of constructing new T-hangars that would be accessible via Limerock Road on the south end of the Airport and Albion Road (Route 123) on the northeast side of the Airport. Any increase in traffic volume along these streets is expected to be on the order of a dozen additional vehicles per day. Consequently, no potential adverse effect is anticipated.

7.3 Air Quality

An air quality assessment for long term impacts is not required for proposed projects that will not increase the current SFZ operations numbers above FAA thresholds. The FAA thresholds are based on an understanding that small airports with limited operations like SFZ have been found to have essentially no impact on air quality.

The proposed projects would have a potential, albeit temporary, effect on air quality as a result of use of fresh asphalt necessary for construction of expanded taxiways and parking areas. Additional construction vehicle traffic and activity would also have a temporary impact on air quality resulting from fugitive dust emissions as well as short-term emission of air pollutants originating as the by-product of construction equipment fuel combustion during the construction and demolition phases. Air pollutant emissions would be minimized by the relatively short duration of the proposed projects and the limited amount of earth disturbance associated with the demolition phases of the projects. In addition, air quality impacts are not expected to extend beyond the immediate vicinity of each project area and no impacts are expected following completion of the projects.

The appropriate mitigation measures identified in FAA AC 1505370-10, *Standards for Specifying Construction at Airports*, should be followed during the proposed projects. In addition, FAA specifications included in *Temporary Air and Water Pollution, Soil Erosion, and Siltation Control* should be included in the project contract documents to ensure that construction impacts to air quality be minimized.

7.4 Water Quality

Any new development, such as the construction of new t-hangars will require that water runoff be properly collected and treated. As such, any new development projects at SFZ requires consultation with federal, state, and local agencies with respect to water quality. The coordination process requires that a description of the proposed development be sent to the appropriate agencies requesting a determination of water quality impacts. This coordination will occur for the Phase I projects during the EA process.

7.4.1 Surface Water

Section 401 of the Federal Clean Water Act (1972) requires applicants for Federal permits for projects that result in a discharge to waters (including wetlands) of the State of Rhode Island to obtain a State Water Quality Certification (WQC). Projects that fall under the U.S. Army Corps of Engineers (USACOE) Programmatic General Permit (PGP) and require a RI Department of Environmental Management (DEM) Freshwater Wetlands Act (FWA) permit receive the WQC through the PGP review process. For projects that require a so-called individual permit from the USACOE and a DEM FWA permit, the WQC will be

issued through the FWA review process.

Applicable activities that likely will require a State Water Quality Certification (WQC) include those involving any filling of wetlands and/or the waters of the State of Rhode Island. The proposed projects potentially impacting the wetlands include:

- Aircraft apron development east of Taxiway "B"
- Partial parallel taxiway connecting Taxiway "A" with Runway 15
- T-hangars immediately north of Taxiway "A" at the Runway 33 end
- SRE building
- Fuel farm relocation

The locations of wetlands in these areas are shown on Figure 7.1. The potential impacts of the preferred alternative on wetlands are discussed below in Section 7.9. Since erosion controls will be maintained throughout the duration of the proposed projects, adverse impacts to surface water are not expected to occur during or following completion of the proposed projects.

7.4.2 Ground Water

The septic system located on the airfield is not in conflict with the proposed projects. RIAC is currently considering replacement of the Individual Sewage Disposal System (ISDS), which would be conducted separately from the preferred alternative projects. The proposed projects will result in an increase in the amount of disturbed lands to approximately 20 acres over the 20 year planning period. Proper erosion controls will be maintained throughout the duration of the proposed projects and therefore the proposed projects will not result in the discharge of water or pollutants to groundwater.

The final design of the proposed airport projects must take groundwater protection into account and ensure that all state and local groundwater protection regulations are followed or exceeded.

7.4.3 Drinking Water

North Central Airport is located within the Drinking Water Reservoir System for the City of Woonsocket Water Division. There is one non-community wellhead protection area (WHPA) in proximity to the airport, north of the airport and the George Washington Highway (Rhode Island Route 116) in Smithfield. However, the proposed projects are not expected to have any impacts on drinking water supply. No road salt or other deicing agents are used on paved areas of North Central Airport and there will be no change in the use of petroleum or other chemicals in paved areas or other areas of the airport other than the relocation of the fuel farm. Increased impervious surface at North Central Airport could result in slightly less direct recharge to underlying subsurface materials. Based on the lack of significant adverse effects to surface water and groundwater described in Sections 7.4.1 and 7.4.2, no significant adverse impacts to drinking water on the Airport property or its vicinity are anticipated as a result of the proposed preferred alternative projects.

7.4.4 Stormwater

Construction projects that disturb one acre or more of land and where stormwater runoff drains to waters of

the United States are required to seek coverage under a Rhode Island Pollutant Discharge Elimination System (RIPDES) permit. To receive coverage under the permit, an applicant must complete and certify a Notice of Intent (NOI) and implement a Storm Water Pollution Prevention Plan (SWPPP) to control sedimentation and erosion during construction. Upon completion of the project, the applicant must complete and submit a one-page Notice of Termination (NOT) certifying that disturbed soils at the construction site are stabilized, temporary erosion and sediment control measures have been removed and all stormwater discharges associated with the construction activity have been eliminated.

Airport operations are regulated by the EPA under the National Pollutant Discharge Elimination System (NPDES) authorized by Section 402 of the Clean Water Act. The NPDES permit program controls water pollution by regulating "point sources," i.e., pipes, man-made ditches and so on, that discharge pollutants into waters of the United States. The State of Rhode Island is authorized by the EPA to administer this program within Rhode Island, and the DEM Office of Water Resources is the administering authority within Rhode Island. Accordingly, consistent with this authority, RIDEM has issued its own general permit for industrial activity. Specific activities at North-Central Airport subject to NPDES include aircraft maintenance, cleaning and deicing activities, among others.

Original development of the Airport property and the subsequent construction of additional facilities and support structures altered the site's natural hydrology by installation of runways, buildings, parking areas, etc. Slight additional alterations to stormwater flow at the Airport will result from the preferred alternative, including increasing the amount of impervious surface by construction of the following:

- Partial parallel taxiway from Runway 15-33 to the existing Taxiway "A"
- Conventional Hangar east of the Runway 23 end
- Aircraft apron development east of Taxiway "B"
- T-hangars, a SRE Building
- Relocation of the fuel farm to an area north of Taxiway "A" at the Runway 33 end
- New automobile access road connecting existing parking areas.

Construction of these features would require construction of new storm drainage best management practices and modification of the SFZ SWPPP. The total area of new impervious surface would be approximately 20 acres if the preferred alternative were implemented over the 20 year planning period. The Phase I projects would result in approximately 7 acres of new impervious surface. Engineering controls to eliminate the potential effects of increased impervious surface, including increased peak stormwater runoff, would be considered in design of the preferred alternative projects.

7.5 U.S. Department of Transportation Act Section 4(f) Land

No adverse impacts to Section 4(f)/6(f) properties (publicly owned parks, recreation areas or wildlife refuges) will occur as a result of the preferred alternative and, therefore, no measures to mitigate potential impacts resulting from the proposed action appear warranted.

7.6 Historic, Architectural, Archaeological, and Cultural Resources

According to the 2001 Airport Layout Plan update, there is an archaeological site just north of the Runway 15 end; however, none of the preferred alternative projects are expected to affect this site.

Effects on cultural resources within the Airport can result from project-related activities such as facility operations, modifications to project facilities, or other project-related ground-disturbing activities. The type and level of effects on cultural resources can vary widely, depending upon the setting, size, and visibility of the resource, as well as whether there is public knowledge about the location of the resource.

A field inspection of the Airport prior to implementation of the preferred alternative will involve a walkover, photographic documentation of the existing conditions at SFZ including all buildings, and a review of documentation available at the facility regarding the land-use history at the facility (e.g., cut and fill areas, documented depth of disturbance, etc.) and development through time.

Following the site visit and a review of the findings, research will be conducted at the RIHPHC and the Rhode Island Historical Society (RIHS) to develop historic and prehistoric contexts of the SFZ vicinity. After compiling and interpreting the field inspection and background research findings, the consultant will meet with the RIHPHC to discuss potential cultural resource impacts and possible mitigation alternatives. This would be conducted as part of a Phase I Survey conducted as part of the EA process and will be coordinated with local tribal representatives with the FAA according to Section 106.

7.7 Biotic Communities

The Airport consists of previously cleared and developed lands, runways, roads, and support structures. The majority of the vegetation found within the developed area of the Airport consists of mowed grasslands. Although there are natural habitats including managed grasslands and wetlands within and surrounding the airport property, the proposed projects would be largely confined to developed areas of the Airport, thereby avoiding large impacts on natural areas.

Wildlife species that congregate around the Airport are typically highly mobile and may be temporarily displaced or disturbed during construction and demolition activities. However, potential impacts to biotic communities are not expected to be adverse.

7.8 Threatened or Endangered Species of Flora and Fauna

According to the U.S. Fish and Wildlife Service (FWS), no Federally-listed or proposed, threatened or endangered species are known to occur on airport grounds. Based on a letter provided by the FWS in response to an inquiry by Berger, preparation of a Biological Assessment or further consultation under Section 7 of the Endangered Species Act is not required. A copy of the letter is included in Appendix.

The DEM has identified no species of concern located in the airport vicinity: Wildlife regularly observed at North Central Airport according to airport personnel includes various birds, deer, fox, coyote, and raccoons. The proposed projects are not expected to have adverse effects on threatened or endangered species.

7.9 Wetlands

Work in wetland areas in Rhode Island is regulated by the DEM's *Rules and Regulations Governing the Administration and Enforcement of the Freshwater Wetlands Act* (1998). Under those regulations, a proposed project or activity which may alter freshwater wetlands requires a permit from DEM. Altering or

filling of wetlands is administered on the federal level by the U.S. Environmental Protection Agency and U.S. Army Corps of Engineers.

Based on the wetlands edge delineation for North Central State Airport prepared by Thalmann Engineering Co. in 2006 and other state and local wetland mapping, there are several wetland areas in the vicinity of the airport, primarily along the perimeter of the airfield and along the northwest and southeast boundaries of the airport property. Figure 7.1 shows wetland areas proximate to North Central Airport based on this delineation. Figure 7.1 also indicates the presence of wetland areas in the vicinity of the airport, as provided on the RIGIS web site.

As stated above in Section 7.4.1, the proposed preferred alternative projects that would be located directly within areas of delineated wetlands include:

- Upgrade of the airport approach system;
- Aircraft apron development east of Taxiway "B";
- Partial parallel taxiway connecting Taxiway "A" with Runway 15;
- T-hangars immediately north of Taxiway "A" at the Runway 33 end;
- SRE building; and
- Fuel farm relocation

The locations of wetlands in these areas are shown on Figure 7.1.

DEM regulates a 50 foot perimeter wetland (i.e. buffer zone) around wetlands (swamps, marshes, bogs, ponds); and 100- and 200-foot riverbank wetlands (i.e. buffer zone) adjacent to rivers and streams depending on their width. When the mean channel width is less than ten feet, the riverbank wetland is 100 feet. When the mean channel width is ten feet or more, the riverbank wetland is 200 feet. Based on these criteria, the proposed projects would not be located within wetland buffer zones, but the delineation and confirmation of wetlands in the vicinity of specific projects should be reviewed during the EA process.

7.10 Floodplains

According to the FEMA Flood Insurance Rate Maps for the Towns of Smithfield (1991) and the Town of Lincoln (1982), there are no FEMA designated 100-year floodplains or flood hazard areas on or in proximity to North Central Airport.

The addition of about 20 acres of new impervious area over the 20 year planning period (about 7 acres during Phase I) as part of the preferred alternative could have potential effects on the occurrence and frequency of flooding on both the airport property and downstream. As stated in Section 7.4.4 engineering controls would be implemented to eliminate the potential effects of increased impervious surface, including increased peak stormwater runoff as part of the preferred alternative projects. Airport drainage as it relates to these new projects should be reviewed and assessed as part of an subsequent environmental process.

7.11 Coastal Zone Management

The Rhode Island Coastal Resources Management Council (CRMC) does not have jurisdiction over activities at North Central Airport since there are no coastal features are located within 200 feet of the

Airport. Moreover, none of the projects appear to fall under CRMC review and therefore the preferred alternatives will not have an effect on the coastal environment.

7.12 Coastal Barriers

Since North Central Airport is not located within a coastal zone area, the preferred alternative is therefore exempt from review under the Coastal Barriers Resource Act of 1982 (PL. 97-348) which prohibits most federally financed projects from occurring within the Coastal Barriers Resource System along the Atlantic or Gulf coasts. The proposed projects will not have a significant effect on coastal barriers.

7.13 Wild and Scenic Rivers

Since there are no rivers, including rivers designated by The Wild and Scenic Rivers Act, in Rhode Island or the Airport vicinity, the preferred alternative will not have any significant effect on Wild and Scenic Rivers.

7.14 Farmland

The Federal Farmland Protection Act is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assists in ensuring that Federal programs are administered to be compatible with state and local government, and private programs and policies to protect farmland.

Farmland is broken into the following categories by the Federal Farmland Protection Policy Act: prime farmland, unique farmland, and land of statewide or local importance. Prime farmland (Paxton and Woodbridge soils) exists within the Airport property, along the perimeter of the developed areas. The locations of these soils with respect to the proposed project areas are shown on Figure 7.2.

If it is determined that the preferred alternative may affect soils protected under the Federal Farmland Protection Act, it may be necessary to contact the U.S. Natural Resources Conservation Service (NRCS) for completion of a Farmland Conversion Impact Rating Form. Based on the impact rating score developed by the NRCS, the NRCS may recommend consideration of alternate project sites. The need for completing this form is contingent on the local zoning within the proposed project area since prime farmland does not include land already in or committed to urban development. Areas zoned for commercial, industrial, or high-density residential use may be exempt from this requirement.

7.15 Energy Supply and Natural Resources

The use of energy to support the preferred alternative would largely involve the use of additional fuels in construction and demolition machinery. The proposed airport improvement program does not require use of unusual materials in short supply; therefore, energy supplies and natural resources are not affected by the proposed airport improvement program.

7.16 Light Emissions

Changes to airport lighting associated with the preferred alternative could occur as a result of the upgrade of the approach lighting system from a MALSF to a MALSR, and the addition of new taxiway lighting and apron/security lighting. In the development of the preferred alternative, special care should be taken to ensure that light emissions do not impact adjacent properties or appropriate mitigation measures are considered by using appropriately shielded lights and other measures.

7.17 Solid Waste Impact

Waste disposal during project implementation will be managed separately from normal airport solid waste management operations. There will be temporary solid waste management issues during potential demolition of the Old Terminal Building. The preferred alternative will not significantly increase long term solid waste volumes; therefore, solid wastes are not expected to be affected by the proposed airport improvement program.

7.18 Environmental Justice

The development on the Airport has few if any off-airport impacts. In addition, there are no known areas of minority and/or low-income residents in the airport vicinity. Therefore, environmental justice requirements as described in the U.S. Department of Transportation *Order to Address Environmental Justice in Minority Populations and Low-Income Populations* are not applied here.

7.19 Summary

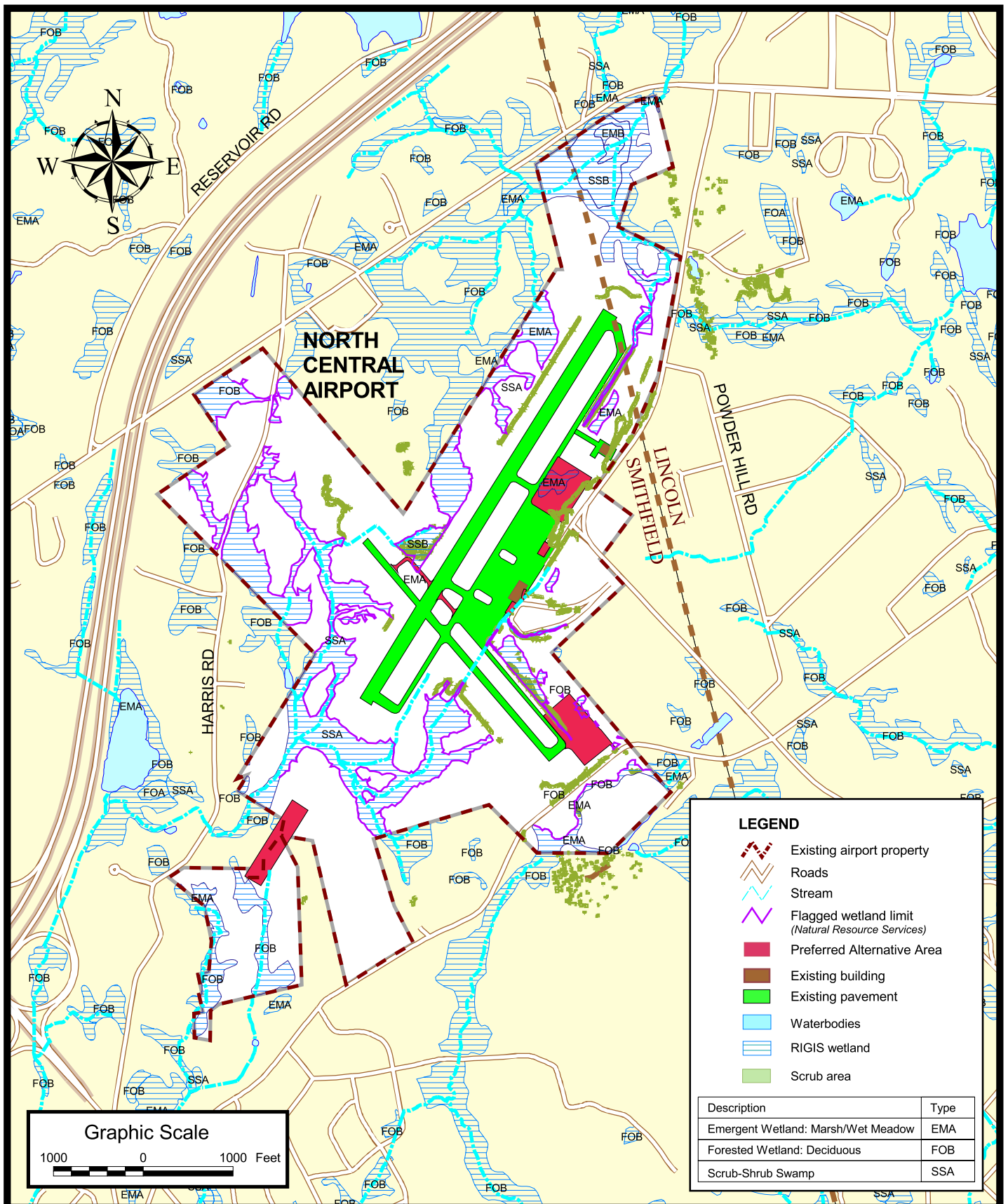
The recommended projects for the 20 year planning period do not appear to have a significant impact on the surrounding community or environment. There will be a need, however, to complete coordination with federal, state, and local agencies when the recommended projects are initially designed. This coordination can be done on a per-project basis or as a group, and will most likely be in the form of an Environmental Assessment. An Environmental Assessment will be conducted for each of the three project phases.

A summary of the recommendations identified as a result of this analysis are as follows:

1. R.I. Water Quality Certification (WQC) and R.I. Department of Environmental Management (DEM) permit will be required for activities in or adjacent to wetland areas.
2. Engineering Controls should be incorporated as part of the preferred alternative project design to eliminate the potential effects of increased peak stormwater runoff resulting from increased impervious surface.
3. State Water Pollution Prevention Plan (SWPPP) should be modified prior to construction activities to control sedimentation and erosion during construction.
4. R.I. Historical Preservation & Heritage Commission (HP&HC) and R.I. Historical Society field inspection and research should be conducted to identify potential cultural resources sites within the project vicinity prior to implementation of the preferred alternative.

5. U.S. Natural Resources Conservation Service (NRCS) should be contacted to determine if the preferred alternative may affect soils protected under Federal Farmland Protection Act and if it is it may be necessary to complete a Farmland Conversion Impact Rating Form.

These recommendations should be incorporated as part of the follow-on EA for the Phase I Implementation Plan identified in the AMP.



NORTH CENTRAL AIRPORT MASTER PLAN

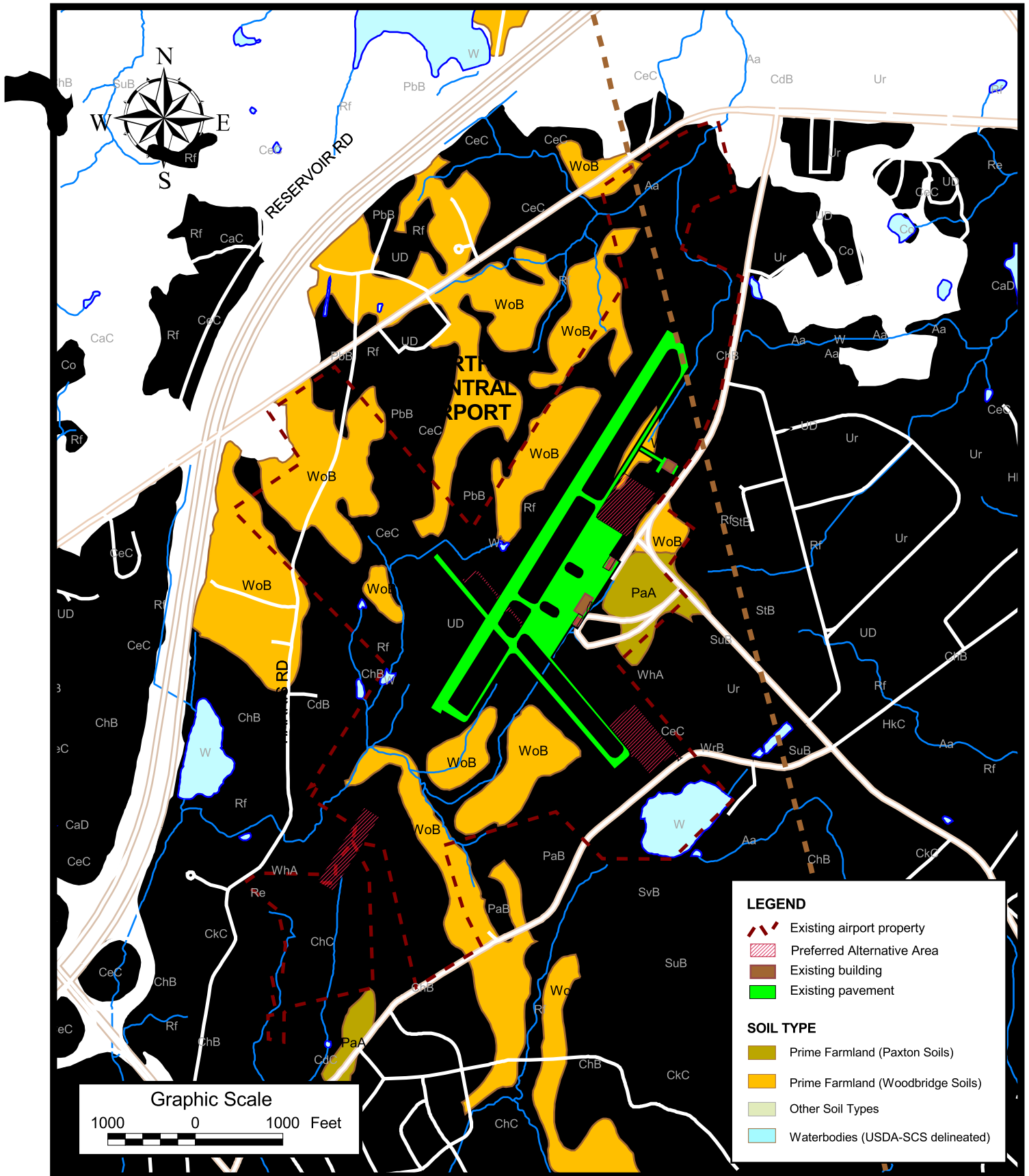
**Figure 7.1:
WETLAND LOCATION MAP**



The Louis Berger Group, Inc.



Rhode Island Airport Corporation



LEGEND

- Existing airport property
- Preferred Alternative Area
- Existing building
- Existing pavement

SOIL TYPE

- Prime Farmland (Paxton Soils)
- Prime Farmland (Woodbridge Soils)
- Other Soil Types
- Waterbodies (USDA-SCS delineated)

Graphic Scale
 1000 0 1000 Feet

NORTH CENTRAL AIRPORT MASTER PLAN

**Figure 7.2:
 FARMLAND PROTECTION
 POLICY ACT SOILS**



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