

Chapter 6

ENVIRONMENTAL ANALYSIS

This chapter evaluates potential environmental impacts associated with airport improvement projects proposed during the short-term planning period, and is conducted pursuant to guidelines presented in FAA Order 5050.4A, Airport Environmental Handbook, and FAA Order 1050.1D, Policies and Procedures for Considering Environmental Impacts. These FAA documents are based on the general requirements for compliance with the 1969 National Environmental Policy Act (NEPA). This analysis does not replace the possible need for review pursuant to NEPA; rather, it provides a preliminary discussion of impact issues that will likely be a component of the submissions completed during the environmental permitting phase of projects proposed in the short term. The information contained in this chapter is intended to assist the airport in determining potential environmental impacts and associated permitting requirements for proposed improvement projects and whether significant environmental constraints may deter project completion for any of the proposed activities.

The environment consists of natural and human resources (i.e., soils, wetlands, flora, fauna, hydrology, historic structures, and numerous social factors) that can dictate the location and layout of development projects at an airport. This environmental analysis provides guidance and information regarding the extent of environmental impacts and level of permitting associated with those improvement projects proposed within the first five years of the airport-development program. Airport improvement projects proposed for the short term include the following:

- ❖ remove vegetative obstructions from FAR Part 77 surfaces,
- ❖ RSA improvements,
- ❖ install PAPI system and REILs for Runway 24,
- ❖ replace existing airport beacon with an FAA approved system,
- ❖ continue development of hangars as needed to fulfill demand, and
- ❖ construct an SRE building.

ENVIRONMENTAL IMPACTS REVIEW

This environmental analysis evaluates the 21 impact categories identified in FAA Order 5050.4A, Airport Environmental Handbook, that are required for FAA review of the airport-improvement projects proposed at Biddeford Municipal Airport.

Noise

FAA Order 5050.4A, Airport Environmental Handbook, states that, “No noise analysis is needed for proposals considering Design Group I and II airplanes at general aviation airports where forecast operations do not exceed 90,000 annual adjusted propeller operations or 700 annual adjusted jet operations.” The forecast for annual operations in the short term (through 2008) is expected to reach 34,240 and jet operations will only reach 100 per year, well below the threshold of 90,000 annual operations established by the FAA in Order 5050.4A. Consequently, a noise analysis is not required prior to constructing short-term airport improvement projects.

The noise analysis was performed using computer software known as the Integrated Noise Model (INM), version 6.1. This software was developed by the FAA and is approved for use to estimate noise exposure around airports. The INM computer program calculates noise exposure contours in the vicinity of airports by using a large database of aircraft flight performance and acoustic data along with airport-specific user-input data. INM utilizes flight track information, aircraft fleet mix, standard and user-defined aircraft profiles, and terrain as inputs. Aircraft profile and noise calculation algorithms are based on several guidance documents published by the Society of Automotive Engineers (SAE). These include the SAE AIR-1845 report "Procedure for the Calculation of Airplane Noise in the Vicinity of Airports" and others that address atmospheric absorption and noise attenuation. Inputs for the model include the following:

- ❖ Layout of the airport (e.g., length of runway and elevation of runway ends)
- ❖ Type of aircraft using the facility
- ❖ Number of operations within the specified time period
- ❖ Flight corridors used by the aircraft for take-offs, landings, touch-and-goes, and over flights

Outputs include noise “contours” which define areas of similar noise exposure, much the same way that ground contours define areas of equal altitude. These contours can be overlaid on a map or photo of the communities around the airport to depict the areas most impacted by the aircraft noise.

There are several different measurements to define noise exposure. The FAA has approved the use of the day-night average sound level (Ldn) for noise compatibility modeling around airports. The Ldn represents the average sound level in A-weighted decibels (sound exposure adjusted for the response of human hearing) for a 24-hour period. The Ldn metric also approximates the response of humans to nighttime noises by adding 10 decibels to all noise events (i.e., aircraft operations) between 10 p.m. and 7 a.m.

The FAA also provides guidance for recommended land uses within Ldn contours. Below 65 Ldn, all land uses are considered compatible. Above 65 Ldn, the compatibility of land uses depends on a variety of factors, including the Ldn at a specific location, type of land use, construction standards such as sound insulation, manmade or natural noise barriers, land use controls such as zoning or easements, and ambient noise levels.

While local municipalities generally do not have the authority to regulate the type or time of aircraft operations at the airport without complex studies and analysis, the FAA guidelines provide tools for local municipalities to develop compatible land uses surrounding airports. Table 6-1 presents FAA land use guidelines.

Table 6-1
Land Use Compatibility¹

Land Use (From SLUCM)	Yearly day/night average sound level (Ldn) in decibels ²					
	< 65	65-70	70-75	75-80	80-85	> 85
Residential						
◦ Residential, other than mobile homes and transient lodgings	Y	N(1)	N(1)	N	N	N
◦ Mobile home parks	Y	N	N	N	N	N
◦ Transient lodgings	Y	N(1)	N(1)	N	N	N
Public						
◦ Schools	Y	N(1)	N(1)	N	N	N
◦ Hospitals and nursing homes	Y	25	30	N	N	N
◦ Churches, auditoriums, and concert halls	Y	25	30	N	N	N
◦ Governmental services	Y	Y	25	N	N	N
◦ Transportation	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
◦ Parking	Y	Y	Y(2)	Y(3)	Y(4)	N
Commercial Use						
◦ Offices, business and professional	Y	Y	25	N	N	N
◦ Wholesale and retail - building materials, hardware and farm equipment	Y	Y	Y(2)	Y(3)	Y(4)	N
◦ Retail trade - general	Y	Y	25	N	N	N
◦ Utilities	Y	Y	Y(2)	Y(3)	Y(4)	N
◦ Communication	Y	Y	25	N	N	N
Manufacturing and Production						
◦ Manufacturing, general	Y	Y	Y(2)	Y(3)	Y(4)	N
◦ Photographic and optical	Y	Y	25	N	N	N
◦ Agriculture (except livestock) and forestry	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
◦ Livestock farming and breeding	Y	Y(6)	Y(7)	N	N	N

**Table 6-1
Land Use Compatibility¹**

Land Use (From SLUCM)	Yearly day/night average sound level (Ldn) in decibels ²					
	< 65	65-70	70-75	75-80	80-85	> 85
◦ Mining and fishing, resource production	Y	Y	Y	Y	Y	Y
Recreational						
◦ Outdoor sports arenas and spectator sports	Y	Y(5)	Y(5)	N	N	N
◦ Outdoor music shells, amphitheaters	Y	N	N	N	N	N
◦ Nature exhibits and zoos	Y	Y	N	N	N	N
◦ Amusements, parks, resorts and camps	Y	Y	N	N	N	N
◦ Golf courses, stables and water recreation	Y	Y	25	30	N	N

1. The designations contained in this table do not constitute a Federal determination that any use of land covered by the program is acceptable or unacceptable under Federal, State, or local law. The responsibility for determining the acceptable and permissible land uses and between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

2. Numbers in parentheses refer to notes (see Table 6-1 Notes)

Source: FAR Part 150, Appendix A, Table 1

Table 6-1 Legend Key

SLUCM Standard Land Use Coding Manual

Y (Yes) Land Use and related structures compatible without restrictions

N (No) Land Use and related structures are not compatible and should be prohibited

NLR Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure

25, 30, or 35 Land used and related structures generally compatible; measures to achieve NLR or 25, 30, or 35 dB must be incorporated into design and construction of structure

Night The time between the end of civil twilight and the beginning of morning civil twilight, as published in the American Air Almanac.

Table 6-1 Notes

(1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individuals approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction

requirements are often stated as 5, 10, 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.

- (2) Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
- (3) Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
- (4) Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.
- (5) Land use compatible provided special sound reinforcement systems are installed.
- (6) Residential buildings require an NLR of 25.
- (7) Residential buildings require an NLR of 30.
- (8) Residential buildings are not permitted.

The number of existing and forecasted aircraft operations was taken from Chapter 3. Flight corridors were modeled based on industry standards for operations at controlled airports. Since the Ldn is a 24 hour metric, the number of operations was broken down from annual to daily counts by dividing the annual figure by 365 and then applying the operational mix percentages.

The Land-Use Plan (Appendix B) presents the 65, 70, and 75 Ldn contours overlaid on a U.S.G.S. map.

An analysis of incompatible uses was performed by identifying structures within the contours. Table 6-2 summarizes the area of each contour and the incompatible uses contained within each contour. Under existing and forecasted conditions there are no known incompatible issues, in particular, the 65 and 70 Ldn contours do not encroach residential areas.

Table 6-2
Summary of Noise Exposure Analysis

Condition	Contour	Total Area	Off-Airport	Incompatible Uses
Existing 3,000' Runway Configuration	60	31.8	12.2	None
	65	16.3	2.1	None
	70	5.7	0.7	None

Area in acres

Source: Dufresne-Henry, Inc., analysis (see Land Use Plan in Appendix B)

Compatible Land Uses

According to the FAA Order 5050.4A, the compatibility of existing and planned land uses in airport vicinity is usually associated with the extent of potential aircraft noise impacts from the airport, as well as safety concerns related to aviation operations and the land under airport imaginary surfaces (i.e., FAR Part 77 surfaces).

To further ensure the compatibility of existing and planned land uses, FAA Order 5050.4A states, “The Land Use section of the EA shall include documentation to support the required sponsor’s assurance under Section 511 (a)(5) of the 1982 Airport Improvement Act that appropriate action, including adoption of zoning laws, has been or will be taken, to the extent reasonable to restrict 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. The assurance must be related to existing and planned land uses.”

Biddeford Municipal Airport is located within and subject to the city of Biddeford’s zoning regulations. Currently, the airport is zoned as Airport Industrial and Single Family Residential (see Land-Use Plan in Appendix B). The northeastern region of the airport is zoned as Single Family Residential; the remainder of the airport is zoned as Airport Industrial. Land south of the airport is zoned as General Industrial. Typically, land uses permitted within residential zoning districts are considered incompatible with those activities associated with an operating airport facility. Residential development in proximity to airports may potentially encounter noise impacts resulting from aviation operations. Furthermore, development areas within airport vicinity may pose potential safety hazards to aircraft operations. Land uses permitted within General Industrial zoning districts are considered compatible with those associated with an operating airport facility. Due to the location and extent of proposed projects it is not expected that land use incompatibility issues will result from short-term activities proposed in this AMPU.

To avoid potential noise impacts to residential areas, the city of Biddeford may consider modifying the residential zoning district in order to prevent or minimize additional residential

development within proximity to the airport. Residential areas and places of public assembly pose the greatest conflict with aviation activities. Amendments to this district, at least within the vicinity of airport property, would prevent further development of residential housing or the encroachment of any other land use considered incompatible with airport activities. In an effort to foster positive neighborly relations, the airport should attempt to maintain open dialogue with abutters, keeping them informed of proposed improvement and development projects.

Social Impacts

Social impacts are typically associated with large airport improvement projects that cause community disruption. Such disruptions include those actions that require the relocation of any residence or business, alter surface transportation patterns, or create an appreciable change in local employment. The airport intends to acquire approximately 14 aviation easements in order to remove existing vegetative obstructions to protected FAR Part 77 imaginary surfaces. The majority of parcels requiring easements are located under the Runway 24 approach surface. Several others are in the transition-approach and transitional surfaces along the airport's northern boundary.

Induced Socioeconomic Impacts

Induced socioeconomic impacts are usually associated with large airport improvement projects resulting in impacts to the surrounding community, including shifts in population patterns and changes in businesses and public service demand. Induced socioeconomic impacts resulting from airport improvement projects are typically insignificant, unless there are substantial impacts to other categories such as noise, land use, or direct social impacts. The projects proposed in the short term are not anticipated to result in any adverse socioeconomic impacts.

Air Quality

Section 176 (c) of the Clean Air Act Amendments of 1977 states in part that no federal agency shall engage in, support in any way, provide financial assistance for, or license, permit, or approve any activity that does not conform to a state implementation plan for meeting air quality standards after it has been approved or promulgated under Section 110 of the Clean Air Act. It is the FAA's responsibility to ensure that federal airport actions conform to state plans for controlling area-wide air pollution impacts.

FAA Order 5050.4A also stipulates that any general aviation airport projecting fewer than 180,000 operations annually does not require an air-quality analysis as part of an Environmental Assessment. The projected number of annual aircraft operations in the short term is anticipated to reach approximately 34,000 by 2008 (close to 38,000 operations are forecasted for the long term by 2021), which is significantly below the established threshold requiring an air quality

review. Impacts to air quality are not expected to result from airport improvement projects proposed in the short term.

Water Quality

Water quality standards are regulated at the federal, state, and local levels. The Federal Water Pollution Control Act of 1972, as amended by the Clean Water Act of 1977, provides the authority to establish water quality standards and control discharges into surface and subsurface water bodies. Section 402 of the Clean Water Act (33 UCS 1344) gives the U.S. Environmental Protection Agency authority to regulate certain high-priority storm water discharges. On September 29, 1995, the EPA published the Final National Pollution Discharge Elimination System (NPDES) Multi-Sector General Permit for Industrial Activities (60 FR 189). Under this regulation, airports are required to file a Notice of Intent (NOI) with the EPA and prepare a Storm Water Pollution Prevention Plan (SWPPP). This plan describes management techniques and practices implemented at an airport to minimize pollutants in storm water.

In March 2003, the Maine Department of Environmental Protection (MDEP) was delegated authority by the EPA to implement and regulate storm water discharges associated with industrial activities including construction activities disturbing one or more acres. MDEP regulates storm water discharges in accordance with the Maine Pollution Discharge Elimination System (MEPDES) program requirements. The submission of an NOI and the preparation of an Erosion and Sedimentation Control Plan are required under the MEPDES program for any construction project proposing the disturbance of one or more acres.

The protection of several surface water resources must be considered when planning airport development projects. An unnamed stream flows in a northerly direction approximately 1,500 feet from the southeastern edge of Runway 06-24. This stream flows first into Wilcox Pond and then into West Brook before discharging into the Saco River. Another unnamed stream is located approximately 1,500 feet from the northwest edge of Runway 06-24. This stream initially flows in a southerly direction before bending to the northwest and discharging into Thacher Brook. Thacher Brook drains into the Saco River. The Saco River is located approximately two miles north of the airport. Additionally, as stated in Chapter 2 (see *Wetlands*, Page 53), wetlands resources are also located on airport property.

Although impacts to the surface water bodies described above are unlikely to occur as a result from improvement projects proposed in the short term, several projects proposed in the short-term planning period could result in impacts to wetlands resources. Projects conducted in wetlands could potentially contribute to water quality impacts. These projects include the Runway 06 end RSA improvements, vegetative obstruction removal, and the installation of a precision approach path indicator lighting system on both runway ends. Potential water quality impacts can be avoided or minimized through compliance with federal, state and local permitting requirements, engineering design standards, and the implementation of erosion and sedimentation control best management practices (BMPs) during construction of the proposed

projects. Impacts to groundwater resources are not expected as a result from any of the proposed projects in the short term.

Department of Transportation Act, Section 4(f)

Section 4(f) of the Department of Transportation Act of 1966 requires that the Secretary of Transportation investigate all alternatives before impacting any publicly owned lands designated as public parks, recreation areas, wildlife or waterfowl refuges of national, state, or local significance, or land on an historic site of national, state, or local significance. As there are no Section 4(f) lands within the vicinity of the airport, impacts associated with proposed airport improvement projects in the short term are not expected.

Historic, Architectural, Archeological, and Cultural Resources

Two Federal laws apply to this category of impact. The National Historic Preservation Act of 1966 established the Advisory Council on Historic Preservation to advise to the President and Congress on historic preservation matters. The Archeological and Historic Preservation Act of 1974 provided for the survey, recovery, and preservation of significant scientific, historical, archeological, or paleontological data.

The Maine Historic Preservation Commission (MHPC) has determined that several short-term improvement projects involving areas outside of the immediate vicinity of the runway are likely to necessitate further archaeological survey prior to construction. Additionally, MHPC has requested the submission of photographs of any buildings over fifty years old located on or adjacent to the proposed project site, see letter dated October 9, 2002 located in Appendix C.

Proposed projects in the short-term that will require coordination with MHPC prior to construction include the vegetative obstruction removal project, the Runway 6 safety area project, and hangar development projects.

Biotic Communities

The natural environment of the airport and vicinity consists primarily of forested uplands, upland fields, and wetlands areas. Forested areas located along the perimeter of airport property are dominated by white pine (*Pinus strobus*) and mixed hardwood species, including gray birch (*Betula populifolia*) and red maple (*Acer rubrum*). Dominant vegetation identified in the wetlands includes cattails (*Typha* sp.), steeplebush (*Spirea tomentosa*), golden rod (*Solidago* sp.), speckled alder (*Alnus rugosa*), red maple and gray birch.

Flora - Impacts to flora communities in the short term will consist of habitat conversion. Forested upland areas may be cleared during the vegetative obstruction removal project and converted to grassy areas to be easily maintained as field. Obstruction removal activities conducted in wetlands will also result in habitat conversion. Forested wetlands cleared of obstructions will be maintained as scrub-shrub wetlands to prevent tree species from penetrating protected airspace above the airport. Improvements to the Runway 06 safety area could require filling wetland areas. These wetland areas will be filled, seeded with grass and maintained as field (safety area).

Fauna - Existing mowed areas provide habitat primarily for small mammals such as mice, shrews, and moles. These areas also provide foraging areas for predators such as foxes, weasels, hawks, and owls. Forested areas surrounding the airport provide suitable habitat for white tailed deer, fox and other small mammals. On-airport wetlands currently provide habitat for a number of song bird species. Significant impacts to wildlife communities are not anticipated as a result of projects proposed in the short-term planning period.

Endangered and Threatened Species

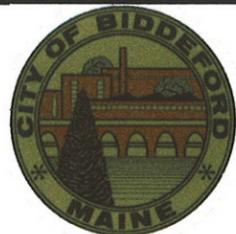
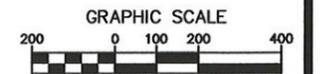
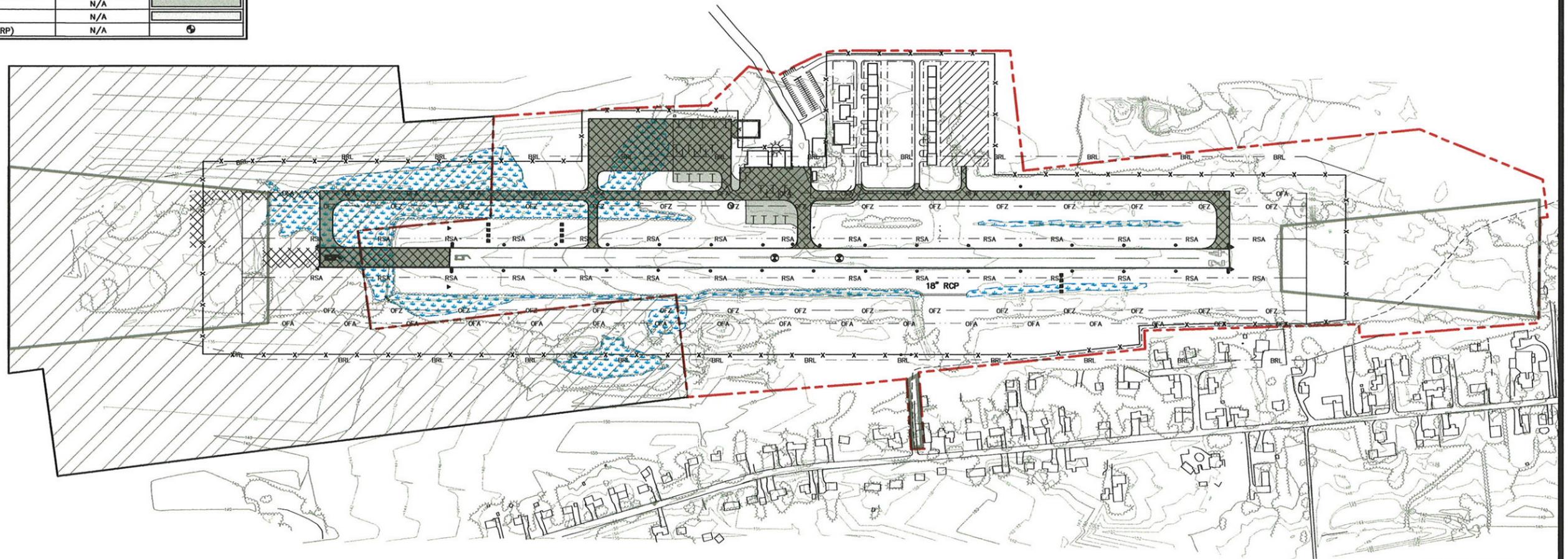
The Maine Department of Inland Fish and Wildlife, the Maine Department of Conservation and the U.S. Fish and Wildlife Service have been consulted to determine the presence of rare or endangered species or exemplary natural communities within the vicinity of the airport. These agencies did not indicate the presence of federal or state listed endangered or threatened species, nor are there any areas of critical habitat within the vicinity of the airport, see correspondence letters in Appendix C. Impacts to these resources, therefore, are not anticipated as a result of improvement projects proposed in the short term.

Wetlands

A sketch-level wetland delineation of airport property was prepared by Dufresne-Henry in 2002 (see Figure 6-A, Wetlands Plan). The sketch-level delineation provides a reasonably accurate depiction of on-airport wetland conditions and is intended for planning purposes only. A formal wetland delineation of all wetland areas on airport property will be necessary to determine the exact extent of wetland impacts associated with projects proposed in the short term.

As stated earlier (see *Water Quality*, Page 147) several improvement projects proposed within the short-term planning period could potentially involve wetlands impacts. Vegetative obstructions removed from wetlands will result in habitat conversion. Upon removal of taller tree species from forested wetlands, these areas will be maintained as scrub-shrub wetlands. Low growth species will be encouraged in an effort to prevent tree species from becoming obstructions to protected airspace. The grubbing of roots and soil grading will not be conducted as a component of vegetation removal from wetland resources.

LEGEND	EXISTING	PROPOSED
AIRPORT PROPERTY LINE	---	---
PROPERTY TO BE ACQUIRED	N/A	---
LEASE PROPERTY	///	N/A
PAVEMENT	▨	▨
TREE LINE	~	N/A
AVIGATION EASEMENT LINE		N/A
FENCE LINE	-x-x-x-	-x-x-x-
BUILDINGS	□	□
UTILITY POLE	○	N/A
REIL	*	*
VASI	□	N/A
PAPI	N/A	■
LIGHTED WIND CONE WITH SEGMENTED CIRCLE	○	○
OBJECT-FREE AREA (OFA)	N/A	---
OBJECT-FREE ZONE (OFZ)	N/A	---
RUNWAY SAFETY AREA (RSA)	N/A	---
BUILDING RESTRICTION LINE (BRL)	N/A	---
WETLANDS (SKETCHED)	▨	N/A
PAVEMENT TO BE REMOVED	N/A	▨
RUNWAY EXTENSION	N/A	▨
AIRPORT REFERENCE POINT (ARP)	N/A	⊙



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WETLANDS PLAN

DECEMBER 2003



FIGURE 6-A

Wetland impacts may also be associated with the Runway 06 RSA improvements and the installation of a PAPI lighting system adjacent to Runway 24. Impacts associated with these projects will likely involve filling approximately 10 acres of wetland areas. Any work proposed in wetlands will require a Natural Resources Protection Act (NRPA) permit issued by MDEP.

A Section 404 wetlands permit must be obtained from the U.S. Army Corps of Engineers (ACOE) for projects proposing the filling of wetlands. The preparation on an Environmental Assessment will also be required in order to address wetlands impacts associated with airport improvement projects. Formal wetlands delineation conducted in accordance with ACOE methodology will be required prior to the construction of proposed short-term projects in order to establish definitive wetlands boundaries and to determine the extent of impacts to wetlands resources.

Impacts to wetlands will be minimized through compliance with federal, state and local permitting requirements, engineering design standards, and the implementation of erosion and sedimentation control BMPs during construction of the proposed projects. Vegetation removal activities proposed in wetlands should be conducted during dry summer periods or during frozen winter conditions in order to avoid soil disturbances.

Mitigation may be required by state and/or federal agencies for impacts to wetlands resources, and typically involves one or more of the following measures:

- ❖ creation of new wetlands to compensate for the loss wetlands resulting from construction activities;
- ❖ repair, restoration, or enhancement of existing wetlands in a predetermined location in an effort to replicate wetlands functions and values exhibited by wetlands impaired by construction; and/or
- ❖ acquisition and protection in-perpetuity (i.e. conservation easement) of wetlands resources that exhibit similar functions and values of those wetlands impacted by construction activities.

Mitigation, if required, for wetlands impacts must be determined during the permitting process with state and federal agencies prior to the construction of short-term improvement projects.

Floodplains

The Federal Emergency Management Agency (FEMA) administers the National Flood Insurance Program. This program is designed to provide flood insurance for existing properties and to discourage additional development within 100-year floodplains. Flood Insurance Rate Maps prepared by FEMA indicate that the 100-year and 500-year floodplains do not encroach upon airport property (see Figure 6-B, FEMA Flood Map). Therefore, impacts to floodplains are not anticipated as a result of proposed short-term improvement projects.



KEY TO MAP

500-Year Flood Boundary	→	ZONE B
100-Year Flood Boundary	→	ZONE A1
Zone Designations*		ZONE A5
100-Year Flood Boundary	→	ZONE B
500-Year Flood Boundary	→	ZONE B
Base Flood Elevation Line With Elevation In Feet**	~~~~~	513
Base Flood Elevation in Feet Where Uniform Within Zone**		(EL 987)
Elevation Reference Mark		RM7x
Zone D Boundary	-----	
River Mile		•M1.5

**Referenced to the National Geodetic Vertical Datum of 1929

***EXPLANATION OF ZONE DESIGNATIONS**

ZONE	EXPLANATION
A	Areas of 100-year flood; base flood elevations and flood hazard factors not determined.
A0	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; average depths of inundation are shown, but no flood hazard factors are determined.
AH	Areas of 100-year shallow flooding where depths are between one (1) and three (3) feet; base flood elevations are shown, but no flood hazard factors are determined.
A1-A30	Areas of 100-year flood; base flood elevations and flood hazard factors determined.
A99	Areas of 100-year flood to be protected by flood protection system under construction; base flood elevations and flood hazard factors not determined.
B	Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. (Medium shading)
C	Areas of minimal flooding. (No shading)
D	Areas of undetermined, but possible, flood hazards.
V	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors not determined.
V1-V30	Areas of 100-year coastal flood with velocity (wave action); base flood elevations and flood hazard factors determined.



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FEMA FLOOD MAP

OCTOBER 2003



FIGURE 6-B

Coastal Zone Management

The Maine Coastal Program was created by the state and approved by National Oceanic and Atmospheric Administration (NOAA) in 1978¹. The program is administered by the Maine State Planning Office. A letter of concurrence with the federal consistency requirements (15 CFR Part 930) or a waiver is required for activities using federal funds located within the coastal zone. Biddeford Municipal Airport is not located within a coastal zone. Therefore, a letter of concurrence is not necessary for any of the proposed improvement projects as there will be no impacts to protected coastal zone resources.

Coastal Barriers

The Coastal Barriers Resources Act of 1982² prohibits, with some exceptions, federal financial assistance for development within the Coastal Barrier Resources System, which consists of undeveloped coastal barriers along the Atlantic and Gulf coasts. There are no coastal barriers identified in the vicinity of the airport, therefore, impacts to coastal barriers and associated resources will not occur.

Wild and Scenic Rivers

The Wild and Scenic River Act³ affords protection to those river areas eligible for inclusion in the National Wild and Scenic River System. Impacts to these resources are regulated by the National Park Service. Since there are no wild and scenic rivers listed in the national inventory in the vicinity of the airport, impacts from projects proposed in the 20-year planning period are not expected.

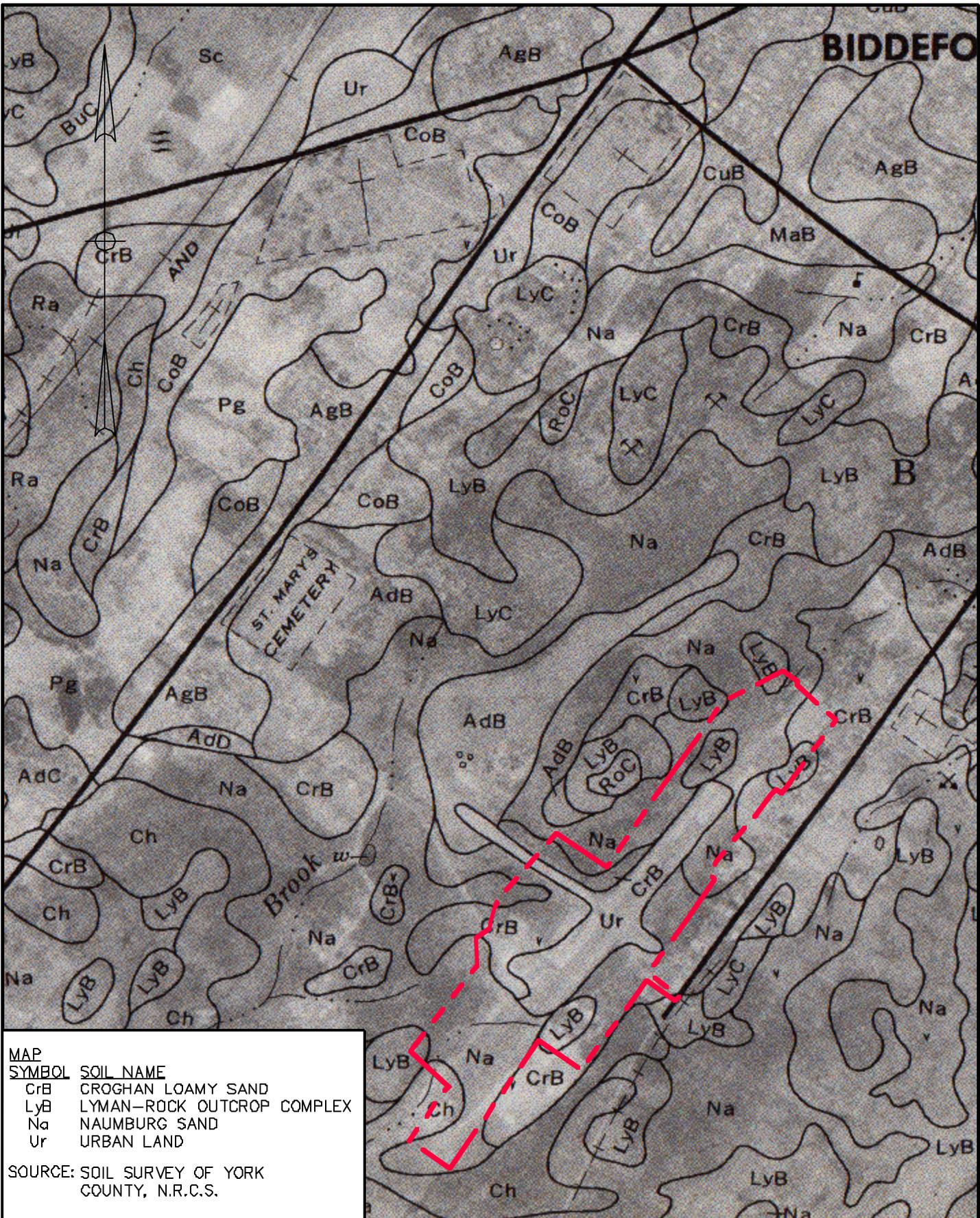
Farmland

The soil series have been mapped by the Natural Resource Conservation Service (NRCS) in the Soil Survey of York County, Maine. As stated in Section 2.11.2 Soils, of this AMPU, predominant soil series consist of Urban land (Ur), Croghan loamy sand (Cr), and Naumburg sand (Na) (see Figure 6-C, NRCS Soils Map)

¹ Pursuant to the Federal Coastal Zone Management Act of 1972

² Public Law 97-348

³ Public Law 90-542, as amended



MAP SYMBOL	SOIL NAME
CrB	CROGHAN LOAMY SAND
LyB	LYMAN-ROCK OUTCROP COMPLEX
Na	NAUMBURG SAND
Ur	URBAN LAND

SOURCE: SOIL SURVEY OF YORK COUNTY, N.R.C.S.

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NRCS SOILS MAP



BIDDEFORD

MAINE

Project No.	
Proj. Mgr.	
Scale	1:1000
Date	OCT. 2003
A	FIGURE 6-C

According to the Farmland Protection Policy Act, PL 97-98, “prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, and oilseed crops.” Authorization from the NRCS is required prior to the conversion of prime farmland soils for non-agricultural uses. As there are no prime farmland soils occurring in areas where short-term projects are proposed, impacts to farmland soils are not anticipated.

Energy and Natural Resources

Energy requirements associated with a proposed project generally fall into two categories: (1) those that relate to changed demands for stationary facilities (e.g., airfield lighting and terminal-building heating); and (2) those that involve the movement of air and ground vehicles. Projects will be examined to identify any proposed major changes in power and fuel consumption and supply. A precision approach path indicator (PAPI) lighting system and a runway end identifier lighting system (REILs) have been proposed for construction in the short term at the airport, however these projects will not have a significant demand on the existing energy supply, nor will there be any significant demand on any natural resource resulting from projects proposed in the short term.

Light Emissions

Light emissions refer to the potential for creating annoyances to residents in the vicinity of lighting installations. Lighting projects proposed in the short term include the installation of obstruction lights along the airport’s southern boundary and REILs to the approach of Runway 24. Runway 24 also proposes the installation of a PAPI system in the short term. The installation of a 60 foot segmented circle with a lighted wind cone is also proposed in the short term. Impacts to abutting land owners resulting from these upgrades are not expected. Lighting may also be used to illuminate identified vegetative obstructions to protected airspace. Potential impacts to abutters must be analyzed prior to installing obstruction lighting.

Solid Waste

The airport currently produces minimal amounts of solid waste. Solid waste generated at the airport is transported to the Biddeford Recycling/Transfer Station. Impacts to solid waste are not anticipated to result from the short-term development projects proposed at the airport.

Construction Impacts

Construction impacts have the potential to create undesirable environmental effects at the airport. These impacts typically are associated with noise from construction equipment, dust associated with earth-moving, air pollution from burning debris, and water pollution from soil disturbance and erosion. Generally, construction impacts are temporary and are eliminated when the project is completed. However, to ensure that avoidable impacts are minimized, it is important to consider potential effects of the construction process on adjacent protected resources.

Construction impacts can be substantially minimized by utilizing responsible design practices and implementing appropriate project scheduling and erosion and sedimentation control measures. It is recommended that construction specifications for projects proposed in the short term include the provisions of AC 150/5370, Standards for Specifying Construction of Airports.

Environmental Justice

Executive Order 12898 (February 11, 1994) requires agencies to achieve environmental justice as part of their mission by identifying and addressing disproportionately high and adverse human-health or environmental effects of its programs, policies, and activities on minority and low-income populations in the United States. Impacts to these populations are not anticipated from any of the proposed short-term airport improvement projects.

ENVIRONMENTAL IMPACTS SUMMARY

This subsection summarizes potential environmental impacts associated with the proposed development alternatives proposed in the short-term planning period. The following is a summary of potential impacts as they relate specifically to the impact categories established in FAA Order 5050.4A, Airport Environmental Handbook. Additional review of these impacts and associated projects, including the preparation of an Environmental Assessment, may be required prior to construction.

- ❖ Social – the airport will pursue 14 aviation easements; the obstruction removal project will require the acquisition of aviation easements to remove vegetative obstructions to protected airspace.
- ❖ Historical, Architectural, and Archeological – the obstruction removal project, Runway 06 RSA upgrade, and the hangar development project will require further coordination with the Maine Historical Preservation Commission.
- ❖ Wetlands – the obstruction removal project and Runway 06 RSA upgrade, the apron/taxiway expansion may impact 10 ± acres of wetlands areas.

JURISDICTIONAL AUTHORITIES, ACTIONS AND PERMITS

Environmental rules and regulations change frequently; before initiating any proposed airport improvement project, a thorough investigation of all current rules and regulations is necessary. The NEPA process, implemented through the FAA for all airport improvement projects, encompasses all environmental regulations at the federal level. The NEPA process requires all major federal actions (utilizing federal funds) that impact environmental resources to conduct an environmental assessment (EA). The following subsections summarize the jurisdictional authorities, actions and permits that apply to the short-term projects proposed at Biddeford Municipal Airport.

Table 6-1
Jurisdictional Authorities, Actions, and Permits
Proposed Airport Improvement Projects

Impact Category	Obstruction Removal	Runway 6 Safety Area	NAVAIDs	Hangar/SRE Building Development
Federal Environmental Assessment	Not Required	Required	Not Required	Not Required
Army Corps Section 404 Permit	Not Required	Required	Not Required	Not Required
SWPPP Facility Update	Not Required	Required	Not Required	Required
Maine NRPA Permit	Required	Required	Not Required	Not Required
Maine Erosion & Sedimentation Control Plan for Construction	Required	Required	Not Required	Required
Maine Site Location Permit Amendment / Modification	Required	Required	Not Required	Required

Federal Requirements

This section addresses issues pertaining to federal requirements at the airport.

- ❖ EA pursuant to NEPA regulations: In accordance with FAA Order 5050.4A, The Airport Environmental Handbook, Section 22, actions that normally require an EA include the following: (8) An airport development action that falls within the scope of Paragraph 24 or that involves any of the following: wetlands, coastal, or floodplains.”
- ❖ Clean Water Act Section 404, Wetlands Permit: The 404(b)(1) guidelines are substantive criteria used to evaluate discharge of dredged or fill material into waters (including wetlands) of the United States under Section 404 of the Clean Water Act. If any of the proposed projects identified in this AMPU result in soil disturbances such as dredging, filling, or grubbing and grading in wetlands, a Section 404 wetlands permit will be required. Section 404 wetlands permits are administered by the ACOE, often in conjunction with designated state environmental agencies.

State Requirements

Pursuant to a Site Location of Development Law (Site Law) 38 M.R.S.A. 481-490, a permit is required for projects involving three acres or more of new impervious surfaces.

- ❖ Pursuant to Natural Resource Protection Act (NRPA) 38 M.R.S.A. 480-A to 480-Z, a wetland permit is required for the disturbance of any wetland area.
- ❖ Erosion and Sedimentation Control Plan: As the proposed projects involve the cumulative disturbance of more than 1 acre, an NOI and Erosion and Sedimentation Control Plan will be required pursuant to regulations outlined in the MEPDES Multi-Sector General Permit for Construction Activities.

Local Requirements

Two specific governing bodies must be involved.

- ❖ City of Biddeford Planning Board Review
- ❖ Compliance with the City of Biddeford’s Shoreline Zoning Ordinance

VEGETATIVE OBSTRUCTION ANALYSIS

An obstruction analysis utilizing aerial photogrammetry was completed for the airport as part of this AMPU. The analysis was prepared in order to identify vegetative obstructions to protected airspace above the airport. The analysis included vegetation that is within 15 feet of penetrating

protected imaginary as this vegetation may become penetrations within the near future. Additionally, the obstruction analysis has been prepared for ultimate development conditions at the airport (for existing conditions see Figure 2-C, *Existing FAR Part 77 Airspace Analysis*, Page 25).

This scenario identified vegetative obstructions to FAR Part 77 surfaces based upon the preferred runway length of 3,500' runway. Results of this analysis identified approximately 113 acres of vegetative obstructions to protected airspace above the airport, of which approximately 75% are off-airport. The ultimate conditions are shown on the FAR Part 77 Analysis (see Appendix B). The majority of these obstructions occur within the transitional surfaces to Runway 06-24. Figure 2-C (Page 25) and the FAR Part 77 Airspace Analysis in Appendix B shows the areas and approximate obstructions in each surface.

In order to achieve full compliance with FAR Part 77 regulations, vegetative obstructions must be removed from protected air surfaces. As stated earlier in paragraph B.3, approximately 14 aviation easements and one parcel to be obtained in fee-simple must be acquired in order to successfully remove obstructions from FAR Part 77 surfaces. Aviation easements will allow the airport to manage vegetative obstructions located off airport property. In those instances where easements cannot be obtained, obstructions must be lighted in order to provide safe operating conditions at the airport.

Upon removal of obstructions located on airport property, upland areas will be grubbed of stumps, graded, and seeded with grass. These areas will then be maintained as field. Coordination with MDEP (including NRPA permitting) will be required prior to removing vegetative obstructions from wetlands. Vegetation shall be removed from wetlands during dry summer months or during frozen winter conditions in order to avoid soil disturbances. Grubbing and grading activities will not be conducted in wetlands. Low growth species will be encouraged in these areas in order to prevent taller tree species from becoming obstructions to protected airspace.