ES executive summary

New Bedford Regional Airport Improvements Project

Final Environmental Impact Statement/ Final Environmental Impact Report

Massachusetts Aeronautics Commission

January 2009
EOEA #10316

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Executive Summary

ES.1 Overview

The Federal Aviation Administration (FAA) has determined that the proposed project, identified by the City of New Bedford Airport Commission (the Sponsor) to meet FAA safety requirements, requires FAA to prepare an Environmental Impact Statement (EIS) under the *National Environmental Policy Act* (NEPA). FAA has prepared this Final Environmental Impact Statement (FEIS) to identify alternatives to the Sponsor's proposed project and to document the potential environmental effects associated with the construction and operation of proposed safety improvements to the Airport. Based on this FEIS, FAA will issue a Record of Decision (ROD) that contains findings on the alternatives and environmental effects, and a decision on whether FAA may or may not provide the approvals and federal actions necessary to facilitate the proposed project.

The improvements proposed by the Sponsor also require preparation of an Environmental Impact Report (EIR) under the *Massachusetts Environmental Policy Act* (MEPA) because of the potential environmental impacts, requirements for state permits, and potential funding by the Massachusetts Aeronautics Commission (MAC). Based on this Final Environmental Impact Report (FEIR), MAC will prepare a Section 61 Finding that contains findings on the alternatives and environmental effects, and a decision on whether MAC and other state agencies may or may not provide the approvals and state actions necessary to facilitate the proposed project.

ES.2 Project Description

The proposed project is limited to providing safety improvements for the primary runway, Runway 5-23.[1] Alternatives were evaluated that would meet the project purpose while minimizing impacts to sensitive environmental resources such as wetlands, state-listed rare species, and the Acushnet Cedar Swamp State Reservation.

1 Note that the New Bedford Regional Airport has two runways, Runway 5-23 and Runway 14-32. Runway 5-23 operates as two runways (Runway 5, for approaches from the south and departures to the north, and Runway 23, for approaches from the north and departures to the south) which have different airspace and navigational aids.

Other projects evaluated in previous MEPA documents, including safety improvements to Runway 14-32, access changes, a new Airport Rescue and Firefighting (ARFF) facility, and new general aviation (GA) facilities, are unlikely to be funded within the next five years and are therefore not part of this planning process. However, this document evaluates all of these projects as part of the cumulative impacts of anticipated and required airport improvements. The Airport expects to prepare a Master Plan Update in 2011 that will evaluate the need for these and other improvements and facilities, and plan for their implementation. A separate NEPA/MEPA environmental review will be conducted for the Master Plan Update.

The proposed project evaluated in this FEIS/FEIR would reconstruct the existing primary Runway 5-23 to meet FAA safety standards. Chapter 3 of this document provides a more detailed description of the proposed project. The currently-proposed alternative was refined in response to public and agency comments on the DEIS, and does not differ substantially in environmental impact from the Runway Safety Standard Alternative (RSSA) evaluated in the DEIS. The FAA has therefore not prepared a Supplemental DEIS for this project.

Specific elements of the Preferred Alternative include:

- Reconstructing each end of Runway 5-23 to retain 5,000 feet of usable runway length in either direction, with a total pavement length of 5,400 feet, and constructing a 1,000-foot long, 400-foot wide Runway Safety Area at each end. This includes:
  - Shifting RW 5 south by approximately 200 feet;
  - Constructing a new 1,000-foot long, 400-foot wide turf RSA at the RW 5 end;
  - Adding 200 feet of pavement at the north end of Runway 23;
  - Constructing a 1,000-foot RSA for the end of RW 23, including 400 feet of runway pavement and 600 feet of turf;
- Removing the existing VASI lights on RW 23;
- Installing Precision Approach Path Indicators (PAPIs) on RW 23;
- Relocating the MALSR on the ends of RW 5 and RW 23;
- Relocating or replacing the localizer on the RW 23 end;
- Extending Taxiway A to the RW 23 end;
- Extending Taxiway A to match the new RW 5 end;
- Clearing vegetation in accordance with a new Vegetation Management Plan to maintain FAA-required approach surfaces and visibility;

- Installing a new perimeter safety fence at the RW 5 end to reduce wildlife (deer and coyote) incursions onto the airfield;
- Constructing a drainage system at each runway end to control and treat stormwater runoff in accordance with the Massachusetts Stormwater Policy Standards; and
- Constructing compensatory wetland and flood storage areas in accordance with the requirements of the Massachusetts Wetlands Protection Act regulations.

ES.3 Project History and Changes

A Draft Environmental Impact Statement/Draft Environmental Impact Report[2] (DEIS/DEIR) was released for public review in 2005, and the Secretary's Certificate was issued on April 29, 2005. In response to comments on the DEIS/DEIR by the public and by state and federal agencies, the Sponsor modified the project's purpose, need, and proposed activities. In accordance with the Massachusetts Environmental Policy Act (MEPA) Regulations (301 Code of Massachusetts Regulations (CMR) 11.10), the proponent filed a Notice of Project Change (NPC) on February 26, 2007 that responded to the Secretary's Certificate on the DEIR. The NPC included all relevant information requested by the scope outlined in the Certificate on the DEIR. On April 6, 2007, the Secretary issued a Certificate allowing the proponent to prepare a Final Environmental Impact Report (FEIR), and a scope detailing the requirements for that FEIR.

The purpose of the New Bedford Regional Airport Improvements Project was originally defined in the 1995 Environmental Notification Form (ENF) and 1998 Purpose and Need Statement[3] as, "To develop the New Bedford Regional Airport to serve the air cargo demand in Southeastern Massachusetts." Since that time, the aviation context in the region has changed significantly. As reported in the DEIS/DEIR and NPC, an evaluation of these and other current trends such as the continued growth in passenger demand, changes in the use of New England's airports, and population growth in Southeastern Massachusetts, emphasized the need to improve, but not expand, airport facilities. The purpose of the project has evolved because of environmental concerns and issues, and because of changing financial constraints.

The Preferred Alternative in the DEIS/DEIR (February 2005) was the Airport Improvement Alternative (AIA). The AIA proposed runway and taxiway extensions,

2 United States Department of Transportation, Federal Aviation Administration, et al., *New Bedford Regional Airport Improvements Project Draft Environmental Impact Statement, Draft Environmental Impact Report, and Draft Section 4(f) Evaluation*, February 2005.

3 *New Bedford Regional Airport Improvements Project; Purpose and Need Statement. 1998.* Submitted to the Army Corps of Engineers (USACE). Appendix C of the DEIS/DEIR contains copies of correspondence with the USACE accepting the Project's purpose.

airside facility and runway lighting improvements, and terminal and parking upgrades. Impacts were evaluated for three alternatives: the AIA, the Runway Standard Safety Alternative (RSSA), and the No-Action Alternative. The RSSA focused on safety area improvements only.

The Notice of Project Change was developed by the City of New Bedford after considering the comments on the DEIS/DEIR. The City decided to reject the AIA but continue to advance the necessary safety improvements. The revised purpose of and need for proposed activities was defined in the NPC as to enhance the safety of aircraft and passengers using New Bedford Regional Airport by improving the RSAs for Runways (RW) 5-23 and 14-32 to meet FAA safety standards. The purpose of the project was also defined as to provide aircraft hangar, apron, and support facilities for passenger, corporate jet, and General Aviation users in order to meet current and future aviation demand.

Three new Runway Safety Area (RSA) alternatives were developed that focused on enhancing the safety of the Airport and meeting FAA safety standards while minimizing potential impacts to the environment. The NPC fully described and evaluated these safety alternatives. To minimize wetland impacts, each of the NPC alternatives included relocating part of New Plainville Road to an underpass beneath the Runway 23 (north) Runway Safety Area.

Following the public review of the Notice of Project Change, the City of New Bedford determined that it was not reasonable or practicable to construct the New Plainville Road tunnel due to funding constraints, and that the tunnel was not fiscally prudent. In addition, the proponent has determined that, due to funding constraints, the proposed project would be limited to providing safety improvements of the primary runway, Runway 5-23. Safety improvements are important because the New Bedford Regional Airport is a Non-Hub Primary commercial service airport, as defined in the 2009-2013 *National Plan of Integrated Airport Systems* (NPIAS) prepared by FAA. The NPIAS cites, as one of FAA's guiding principles, that "airports shall be safe and efficient, located at optimum sites, and developed and maintained to appropriate standards."

ES.4 Public Involvement

The FAA, MAC, and the Sponsor conducted a public outreach program for the proposed project to obtain information relevant to the study from local, regional, county, state and federal agencies, and to keep local officials, elected officials, community members, and other interested parties informed about the project. The public outreach program included a scoping meeting, public information meetings, meetings with elected officials, public notifications, and a project website (http://www.newbedfordairport.com). The complete FEIS/FEIR and appendices are available on the website.

When the DEIS/DEIR was published, the FAA conducted a public hearing and public information meetings. Information related to the project was available through public notifications and a project website. The public comment period yielded many comments regarding the alternatives analyzed in the DEIS/DEIR. These comments and FAA's responses are included as Appendix C.

The FAA used the coordination conducted as part of the DEIS/DEIR as the basis for outreach during the FEIS/FEIR. This has involved coordination with local government, elected officials, and agencies, as well as non-governmental organizations and other interested parties. Outreach during the preparation of this FEIS/FEIR has included discussions with the City of New Bedford's mayor, Mayor Scott Lang, the New Bedford City Council, and the New Bedford Conservation Commission, as well as other interested parties such as the New Bedford Chamber of Commerce and the New Bedford CEO Group. The proponent has also coordinated with the Humane Society of the United States, the Massachusetts Audubon Society, Sierra Club, and the Coalition for Buzzards Bay, as well as local, state, and federal resource and regulatory agencies.

This FEIS/FEIR has been made available for public review and comment as required by MEPA and NEPA. A notice of availability was published in the Federal Register on January 23, 2009, and in the Environmental Monitor on January 23, 2009. A public information meeting/workshop is scheduled during the public review period to provide information on the proposed project and enable the public to ask questions about potential impacts.

ES.5 Purpose and Need

The purpose of the project is **to enhance the safety of aircraft and passengers using New Bedford Regional Airport by improving the Runway Safety Areas for RW 5-23 to meet FAA safety standards.** This has been accepted by the Corps of Engineers as the Basic Project Purpose for the Section 404 Permit. The New Bedford Regional Airport does not currently meet FAA standards for runway safety areas (RSAs) and does not have adequate RSAs for any of its runway ends. Improving the RSAs on Runway 5-23 would fulfill a public need to improve the safety and operational efficiency of the Airport. Providing adequate safety areas is critical for the safe operation of aircraft and protection of the public. The FAA has also placed the highest importance on enhancing safety at commercial airports to support construction of standard safety areas.[4] FAA regulations also require that airports take actions to enhance safety where wildlife can cause damage to aircraft. FAA regulations for airports (14 CFR Part 139, Section 139.337) require airports to take immediate action to alleviate wildlife hazards where wildlife of a size or numbers capable of causing strikes resulting in substantial damage are observed to have

4 Federal Aviation Administration. Fact Sheet. *Engineered Materials Arresting System (EMAS)*. Released December 12, 2006. http://www.faa.gov/news/fact_sheets/news_story.cfm?newsId=6279.

access to any aircraft movement area. The FAA Advisory Circular *Hazardous Wildlife Attractants On or Near Airports,*[5] requires airports receiving federal funding to implement standards and practices to comply with Part 139.

The construction of standard RSAs is needed to meet FAA's safety standards established for the protection of aircraft, pilots, and passengers operating at New Bedford Airport, and to allow the long-term continued operation of the Airport. Operations at the Airport have increased in recent years. This is due primarily to increased corporate jet activity and increases in flight training activity[6]. With the increase of corporate jet operations, there are larger and faster aircraft using the Airport. The increase in flight training has increased the use of the Airport by inexperienced pilots. These changes in operations emphasize the need for improved safety areas that protect aircraft and passengers in the event of an overshoot of the runway on landing or takeoff, or an aborted takeoff. There is also a need for the Airport to implement wildlife control measures, such as deer exclusion fencing, to meet FAA safety standards for hazardous wildlife.

The runway pavement condition at the Airport also continues to deteriorate. Because funding for runway improvement depends on an airport's compliance with FAA standards, if the RSAs are not improved the airfield pavements would not be reconstructed and would continue to deteriorate, affecting the safe operation of aircraft at the Airport.

The proposed project would require a variance from strict compliance with the MA DEP Wetlands Protection Act regulations. According to state regulations, a variance can only be issued if it is necessary to accommodate an overriding community, regional, state, or national interest or that it is necessary to avoid a taking (310 CMR 10.05(10)).

This project would fulfill an overriding public interest of all who fly into and out of the Airport. The public interest served is safety. Safety improvements to the runway ends would reduce the potential for harm to passengers, Airport employees, and surrounding community members. Safety areas reduce the risk of damage to aircraft, and injury to persons inside the aircraft, should the aircraft undershoot, overshoot, or veer off the runway[7]. They also provide additional safety during less than ideal weather conditions, when it is more likely that aircraft may need the additional distance that a standard RSA provides in order to land. This is particularly important given the use of New Bedford Airport for flight training and the large number of inexperienced, trainee pilots.

5 AC 150/5200-33B, August 28, 2007.
6 Although operations are currently lower than projected, Bridgewater State College will initiate a flight training program in January, 2009. With this project, airport operations are expected to exceed 100,000 in 2009.
7 For example, a business jet crossed Route 28 in Hyannis when landing on a wet runway. The Barnstable County Airport did not have adequate RSAs at that time.

The proposed project also includes installing a perimeter safety fence to prevent deer, coyotes, and other hazardous wildlife from having access to the airfield. Because deer and coyotes are capable of causing substantial damage to aircraft and risk to pilots and passengers, the perimeter fence also would fulfill the overriding public interest of airport safety.

ES.6 Alternatives Considered

Two alternatives are evaluated in this FEIS/FEIR: the No-Action Alternative and the Preferred Alternative.

ES.6.1 The No-Action Alternative

The No-Action Alternative leaves the Airport in its existing configuration (Figure ES-1). No runway improvements would occur and no support facilities would be constructed. Because the Airport would not meet FAA's design criteria, this alternative assumes that the Airport would no longer receive FAA funding for future improvements. Only the maintenance-related projects shown on the Airport's currently approved FAA Capital Improvement Program (CIP) would be completed. These projects include crack sealing the airfield pavement and vegetation management to keep the Airport operational. This alternative does not fulfill the proposed project's purpose but is presented to establish a future baseline in relation to which the proposed project and its alternatives can be described and analyzed and, against which its potential environmental impacts and mitigation measures can be assessed.

ES.6.2 The Preferred Alternative

The Preferred Alternative (Figure ES-2) includes enhancing the RSAs at each end of Runway 5-23. These enhancements are required before any other runway improvements can be implemented. This alternative also includes the components of the No-Action Alternative, including limited maintenance projects identified in the Airport's currently approved CIP. The Preferred Alternative would not increase Airport capacity or result in additional passengers, aircraft operations, or based aircraft. The preliminary cost estimate for the Preferred Alternative is approximately $16.1 million. The Preferred Alternative was described in Section ES.2.

The Preferred Alternative is practicable to construct, and would fulfill the purpose and need of the project by providing adequate safety areas for the runway ends. This alternative would not change the operations of the Airport, or its ability to support based aircraft. Because the Airport's capacity would not change, the operations would remain at the same levels as in the No-Action Alternative.

ES.6.3 Other Alternatives Considered

Three airport development alternatives were evaluated in the DEIS/DEIR: the Airport Improvements Alternative (AIA), the Runway Safety Standards Alternative (RSSA), and the No-Action Alternative. The AIA proposed airport expansion while the RSSA alternative proposed only improvements to the RSAs. Table ES-1 summarizes the DEIS/DEIR alternatives. The DEIS/DEIR analysis was based on a different project purpose: "To improve airport facilities in the Southeastern Massachusetts area in order to enhance the Southeastern Massachusetts region's aviation capacity, and to accommodate the long-term aviation demand in southeast Massachusetts for passenger traffic, corporate jet traffic, air cargo, and general aviation traffic over the next 20 years." Since the DEIS/DEIR, the FAA has re-evaluated the purpose of, and need for, the proposed expansion.

Based on the comments received during the public review of the DEIS/DEIR and the CWA Section 404 Permit, the City of New Bedford determined that the environmental impacts of the AIA, particularly of the Runway 5-23 extension, were significant and outweighed the benefit to aviation. The City therefore decided to move forward only with alternatives that address the safety deficiencies of the Airport.

Following the public review of the DEIS/DEIR, the proponent and the FAA identified the RSSA as the preferred alternative. However, because of the magnitude of the wetland impacts, and because the RSSA would impact the Acushnet Cedar Swamp State Reservation, three additional alternatives were developed that further reduced wetland impacts associated with improvements to the RSA for RW 5-23 and that would avoid the Acushnet swamp. The Notice of Project Change described these alternatives and evaluated their environmental impacts. Table ES-1 summarizes the three NPC alternatives.

The three alternatives differed from the original RSSA proposal in the DEIS/DEIR by providing different design concepts for RW 5-23 safety areas. All of these alternatives would require that a section of New Plainville Road be placed in a tunnel because it is not practicable to relocate New Plainville Road around the end of RW 23 without impacting the Acushnet Cedar Swamp (Section 4(f) land) located just north of airport property. The Acushnet Cedar Swamp has been designated a National Natural Landmark by the Department of the Interior, and is protected under MGL Chapter 97. The southeastern corner of the reservation is designated as a Unique Resource Zone, which requires the highest level of protection and is under a conservation restriction that prohibits alteration of the Reservation.

Table ES-1 Comparison of Alternatives Evaluated and Dismissed

		DEIS/DEIR		NPC		
Impacts	No-Action	AIA	RSSA	Alternative 1	Alternative 2	Alternative 3
Noise	Operations increase, noise is offset by replacement of older, noisier planes	Significant noise impacts – 23 residences will experience 65 dB or greater	Similar to No-Action, no significant impacts	No significant noise impact	No significant noise impact	No significant noise impact
Water Quality	No new impacts to water quality, no improvement to water quality	Increase in impervious area, improved drainage system	Reduction in impervious area, improved drainage system	Improved drainage system	Improved drainage system	Improved drainage system
Wetlands and Waterways (Fill)	No fill	34.66 acres	7.44 acres	5.16 acres	3.82 acres	3.82 acres
Threatened and Endangered Species	No new impacts to special status species	Impact 1.88 acres of Coastal swamp amphipod habitat, 25.77 acres of American bittern habitat	Impact 0.06 acres of Coastal swamp amphipod habitat, 4.86 acres of American bittern habitat	Impact 0.72 acres of coastal swamp amphipod	No loss of habitat used by the coastal swamp amphipod or four-toed salamander	No loss of habitat used by the coastal swamp amphipod or four-toed salamander
Floodplains	No impact	30 acres, 4,664 cubic yards	7.5 acres, 607 cubic yards	1.5 acres, 1,605 cubic yards	1.5 acres, 1,643 cubic yards	1.5 acres, 1,643 cubic yards
Acushnet Cedar Swamp State Reservation	No acquisition or alteration	2.08 ac land acquisition; road would be relocated and result in the loss of 44 acres of wetlands	Acquisition for vegetation management and relocated new Plainville Road would be required	No acquisition or alteration	No acquisition or alteration	No acquisition or alteration

The cost analysis presented in the NPC estimated that the New Plainville Road tunnel would cost approximately $10 million to construct. Following the public review of the NPC, the City of New Bedford and the FAA determined that none of the NPC alternatives were practicable to construct due to the cost of the tunnel, conservatively estimated at $10 million. Funding available for the Runway 5-23 Safety Improvements has been capped by the FAA at $15 million, which is not sufficient to construct any of the alternatives identified in the NPC.

After determining that the NPC alternatives were not practicable to construct based on cost, the proponent developed a series of modifications to the DEIS/DEIR Runway Safety Standards Alternative (RSSA) that met these criteria:

- Fully complied with FAA safety standards;
- Were practicable to construct based on cost;
- Did not require relocating or tunneling New Plainville Road; and
- Maintained a paved runway length of 5,000 feet.

Twenty-two modifications of the RSSA alternative were developed and reviewed. These included modifications that would install a standard 1,000-foot RSA on each runway end; install a 1,000-foot RSA on the RW 5 end only; minimize wetland

impacts by reducing runway length or RSA length; and use an Engineered Materials Arresting System (EMAS) on one or both ends.

The evaluation of these alternatives considered construction costs, runway length, and wetland impacts. The FAA eliminated alternatives from further consideration that did not meet federal safety area standards applicable to the New Bedford Regional Airport. Based on these criteria, one alternative (Alternative 4E) was selected as the proponent's Preferred Alternative. This alternative was advanced from conceptual design to a 30 percent engineering design in order to fully evaluate environmental impacts.

ES.7 Environmental Consequences

Chapter 4, *Affected Environment and Environmental Consequences,* of this FEIS/FEIR describes the existing environmental conditions within the area potentially affected by the proposed project and the environmental consequences of each reasonable alternative considered (No-Action Alternative and the Preferred Alternative). The discussion of environmental consequences includes the environmental impacts of the alternatives and any adverse environmental effects that cannot be avoided. Information provided under each impact category includes consideration of direct and indirect effects and their significance; cumulative effects; possible conflicts between the proposed project and the objectives of federal, regional, state, tribal, and local land use plans and policies; applicable permit or license requirements; and the status of interagency coordination.

For each category, each reasonable alternative is compared to the No-Action Alternative to determine the effect (beneficial or adverse) of the alternative. Where a reasonable alternative would result in an environmental impact, the FEIS/FEIR provides an analysis of whether that impact is significant, based on FAA guidance on impact thresholds for significant adverse effects provided in *FAA Order 1050.1E*, *Appendix A* and summarized in Table ES-2.

As shown in Table ES-3, the analysis provided in the DEIS/DEIR showed that several resources are not present within the Airport or adjacent study area (historical and archaeological resources, hazardous materials, wild and scenic rivers, farmland soils, federally-listed endangered species), or are not affected by the proposed project (land use, social and economic resources, air quality, environmental justice populations, Section 4(f) properties). These resources are therefore not evaluated in this FEIS/FEIR.

Table ES-2 Impact Thresholds for Significant Adverse Effects

Impact Category[1]	Impact Threshold: Significant Adverse Effects
Air Quality	Proposed project would result in emissions of pollutants that would exceed National Ambient Air Quality Standards.
Coastal Resources	State determination that the proposed project would not be consistent with the Coastal Zone Management Plan.
Compatible Land Use	Proposed project would result in a significant noise impact over a noise-sensitive area within the 65 dB Day-Night Average Sound Level (DNL) contour.
Construction Impacts	Construction would create significant impacts that could not be mitigated.
Department of Transportation Act, Section 4(f)	The proposed project would involve more than a minimal physical use of a Section 4(f) property or would substantially impair the 4(f) property, and where mitigation measures would not eliminate or reduce the effects below this threshold.
Farmlands	Significant impacts are determined by the Natural Resource Conservation Service (NRCS) Form AD 1006 method. The proposed project would result in the loss of farmland with a Form 1006 score higher than 200.
Endangered and Threatened Species	Determination by the US Fish and Wildlife Service or National Marine Fisheries Service that the proposed project would be likely to jeopardize the continued existence of a federally-listed species, or result in the destruction or adverse modification of federally-designated critical habitat.
Floodplains	The proposed project would result in notable adverse impacts to natural and beneficial floodplain values.
Hazardous Materials and Solid Waste	The proposed project could not be designed to meet the applicable local, state, tribal, or federal regulations on hazardous or solid waste management.
Historical, Architectural, Archaeological and Cultural Resources	An effect on a property listed or eligible for listing on the National Register of Historic Places may be considered a significant impact, depending on the nature and magnitude of the effect.
Light Emissions and Visual Impacts	The proposed project would have an adverse effect on human activity or the use or characteristics of properties protected under Section 4(f) that could not be mitigated.
Noise	The proposed project would cause noise-sensitive areas to experience an increase in noise of DNL 1.5 dB or more at or above DNL 65 dB, when compared to the No-Action Alternative.
Environmental Justice, Children's Health and Safety	The proposed project would have disproportionately high and adverse human health or environmental effects on minority or low-income populations or disproportionate health and safety risks to children.
Socio-economic Impacts	The proposed project may have a significant effect if it results in extensive relocation of residents; extensive relocation of community business that would create severe economic hardship for the community; disruption of local traffic patterns that would substantially reduce the LOS of roads serving the Airport and surrounding communities; or a substantial loss in the community tax base.
Water Quality	The proposed project would exceed state water quality standards, result in water quality problems that could not be avoided or mitigated, or would have difficulty in obtaining required permits.
Wetlands	The proposed project would adversely affect the function of a wetland to protect municipal water supplies or sole source aquifers; would substantially alter the hydrology needed to maintain wetlands; would threaten public health, safety or welfare by substantially reducing a wetland's ability to retain floodwaters; would adversely affect wildlife habitat or fish habitat; or would be incompatible with state wetland strategies.
Wild and Scenic Rivers	No specific thresholds have been developed. Significance is determined in consultation with the Department of the Interior.

Source: *FAA Order 1050.1E*

1 Not all of these categories were considered potentially significant for the proposed project. Some were eliminated from consideration in the scoping process.

Table ES-3 Comparison of the Environmental Consequences of the No-Action Alternative and the Preferred Alternative

Category	No-Action Alternative	Preferred Alternative
Noise	Continued minor increase in aircraft noise from growth in Airport operations, but no residential receptors would be exposed to incompatible sound levels	No significant impact. Noise changes do not exceed FAA criteria. Minor increases or decreases in noise in some areas.
Land Use	No impact.	No significant impact. Land acquisition is required for airspace protection. Noise levels at sensitive receptors would not exceed FAA criteria.
Social and Economic	No impact.	Minor beneficial impact associated with construction jobs and spending.
Air Quality	No impact.	No impact.
Environmental Justice	No impact.	No disproportionate significant impact to minority or low-income populations, or to children's health and safety risk.
Water Quality	No change from existing.	No significant impact. The Preferred Alternative would meet all state Stormwater Quality Standards. Water quality would be improved by implementing BMPs that would not be employed under the No-Action Alternative. Mitigation measures would be implemented to reduce temporary construction impacts.
Section 4(f) Properties	No direct or constructive use.	No direct or constructive use.
Historical and Archaeological Resources	No impact.	No impact.
Biotic Communities	No impact.	Loss of a small amount of common habitat types, conversion of some forested areas to shrub-dominated communities to eliminate airspace obstructions.
Endangered and Threatened Species	No impact. Vegetation management conducted in compliance with turtle protective measures.	Minor loss of upland habitat potentially used by Eastern box turtles. Mitigation measures would enhance habitat values and protect turtles from incidental mortality. Perimeter fence would allow turtle passage.
Wetlands and Waterways	No impact.	Unavoidable loss of 7.33 acres of federal and state wetland would be fully mitigated with no loss of area or function.
Floodplains	No impact.	No significant impact. Placing fill in the 100-year floodplain would be mitigated and would not affect flood levels or duration.
Surface Transportation	Intersection level-of-service likely to degrade to unacceptable levels at seven intersections due to regional growth in vehicular traffic.	No change in LOS.
Hazardous Materials and Solid Waste	No impact.	No impact. Construction is not anticipated to encounter contaminated soils or groundwater, and would not generate solid waste.

Table ES-3 Comparison of the Environmental Consequences of the No-Action Alternative and the Preferred Alternative (continued)

Category	No-Action Alternative	Preferred Alternative
Construction Impacts	No impact.	No significant impacts. Temporary minor increases in noise, air quality emissions, temporary minor adverse effects on water quality, and construction traffic impacts would be mitigated by use of appropriate BMPs.
Cumulative Impacts	The No-Action Alternative would not result in a serious deterioration of environmental functions or exceed applicable significant thresholds.	The combination of the action's impacts with other impacts would not result in a serious deterioration of environmental functions or exceed applicable significant thresholds.

ES.7.1 Noise

Changes in noise were assessed by comparing the noise levels for the future No-Action Alternative with the noise levels predicted for the Preferred Alternative and calculating the change in noise associated with each alternative (see Section 4.2, *Noise*, of this FEIS/FEIR). *FAA Order 1050.1E* stipulates that a significant noise impact would occur if analysis shows that the proposed action would cause noise-sensitive areas to experience an increase in noise of DNL 1.5 dB or more, at or above DNL 65 dB noise exposure when compared to the future No-Action Alternative. The Federal Interagency Committee on Noise (FICON) recommended that less than significant noise level changes also be identified for noise sensitive locations exposed to proposed project-related increases. FICON recommended reporting any changes of DNL 3 dB or more between the 60 and 65 dB DNL contour and 5 dB changes between the 45 and 60 dB contour. While these recommendations only apply to cases where the significant threshold (1.5 dB or more DNL) is met or exceeded, they are included in this DEIS/DEIR in response to comments raised by the public.

The resulting DNL contours and analysis show that no significant impact would occur with the Preferred Alternative (Figure ES-3). The slight shift in the runway thresholds for Runway 5-23 would not change the noise contours or noise levels, and there would be no increase in aircraft operations in comparison to the No-Action Alternative.

ES.7.2 Water Quality

The Airport lies within the Paskamanset River watershed. Both construction of the proposed project and future Airport operations may potentially affect water quality. Stormwater runoff from the project would eventually discharge to the Paskamanset and could also provide recharge to the local aquifer.

The Preferred Alternative would result in a 1.4-acre increase in impervious surfaces at the Airport, approximately 0.7 acres at each end of Runway 5-23. This increase in

pavement would not increase pollutant discharges, as the runway and taxiway surfaces are not sanded or salted, and are used only by aircraft and occasionally maintenance equipment. See Section 4.3, *Water Quality*, of this FEIS/FEIR for an analysis of potential impacts on water quality. These improvements would be designed and implemented in accordance with the Massachusetts Stormwater Management Policy standards and would be designed to meet state water quality standards.

There are no public drinking water supply wells close to the Airport. The closest public drinking water supply wells are owned by the Town of Dartmouth and the Airport is located nearly 3.3 miles north of the Dartmouth well fields. The Airport is not within the ground water recharge area for the wells and would not directly affect the drinking water supply. A long, indirect pathway from the Airport to the Dartmouth wells was identified as a remote possible pathway. However, it is highly unlikely that any potential future contaminants from the Airport would reach the wells because any contaminants would be chemically transformed along this long, remote pathway.

ES.7.3 Wetlands and Waterways

As described in Section 4.4, *Wetlands and Waterways*, of this FEIS/FEIR the Airport property is surrounded by forested, scrub-shrub, and emergent wetlands to the west, north and south, with pockets of residential and commercial activities clustered along its eastern boundary. The Acushnet Cedar Swamp (approximately 1,000 acres) is north of the Airport and is owned and managed by the Massachusetts Department of Conservation and Recreation. The Apponagansett Swamp, west and south of the Airport, is an extensive wetland and riverine system that is drained by the Paskamanset River.

Twenty-two wetlands that met the federal wetland definition were identified and delineated in the Local Study Area. These wetlands total more than 514 acres and range in size from less than one acre to over 400 acres. State-regulated Bordering Vegetated Wetland (BVW) occurs in ten wetlands within the Study Area.

The No-Action Alternative would not result in new wetland impacts but would require continued vegetation management in approximately 180 acres of wetlands, consistent with the Order of Conditions issued by the New Bedford Conservation Commission.

The Preferred Alternative would place fill in two wetlands for a total direct impact of 7.33 acres. The majority of this fill would be to construct the RSA at the Runway 5 end (7 acres; 95 percent of total impact). Vegetation management would include new areas that were not cleared during the initial implementation of the vegetation management plan and that would not be cleared for the No-Action Alternative. An additional 22 acres of wetlands would be cleared of any individual trees that are

likely to exceed the height limits. The perimeter fence would require that 2.9 acres of wetlands be cleared and maintained.

The Preferred Alternative would affect biological communities through the placement of fill in wetlands, additional tree clearing in defined vegetation management areas, and grading in previously-disturbed upland areas (see Section 4.4, *Wetlands*, of this FEIS/FEIR). Neither alternative would affect uncommon or unique plant or wildlife communities, and would not require vegetation management or alteration of Atlantic white cedar swamp communities. The loss of wetland habitat would be minimal in relation to the large expanses of wetlands in the Apponogansett Swamp and the Acushnet Cedar Swamp, and would not affect the continued use of these areas by wildlife populations.

Avoidance of all direct wetland impacts would only be possible by implementing the No-Action Alternative. The extensive alternatives analysis conducted demonstrated that the Preferred Alternative is the only practicable alternative. Minimization of wetland impacts was accomplished by narrowing the RSA width to 400 feet, and by incorporating non-standard taxiway alignments at each runway end.

Wetland mitigation has been proposed that conforms to the guidelines developed by the USACE[8] and MA DEP[9] and meets the performance standards contained in the Massachusetts *Wetlands Protection Act Regulations* to the maximum extent practicable. Replacement wetlands within the same watershed would provide a 2:1 replacement (on an area basis) for filled wetlands. The filled stream channel would be replaced with a new channel 1.3 times the length of the existing channel. Additional mitigation includes permanent preservation of approximately 55 acres of wetlands and uplands bordering the Paskamansett River, and restoring riparian buffers and banks in New Bedford's Buttonwoods Park.

ES.7.4 Floodplains

The Paskamanset River and its associated floodplain (Apponagansett Swamp) and areas northwest of New Plainville Road (Acushnet Cedar Swamp) are mapped by the Federal Emergency Management Agency (FEMA) as areas subject to the 100-year flood, with the base flood elevations and flood hazard factors not determined by FEMA. The FEMA-mapped 100-year floodplain areas within Apponagansett Swamp surround the Airport to the west and south, but do not encroach on the terminal areas or the runways. The estimated existing 100-year floodplain elevation (base flood) in the immediate vicinity of the Runway 5 end is 59.53 feet (see Section 4.5, *Floodplains*, of this FEIS/FEIR).

8 *Regulatory Guidance Letter, Number 02-2, Guidance on Compensatory Mitigation projects for Aquatic Resource Impacts under the Corps Regulatory Program Pursuant to Section 401 of the Clean Water Act and Section 10 of the Rives and Harbors Act of 1899*, USACE, December 24, 2002.

9 *Massachusetts Inland Wetland Replication Guidelines*, Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Wetlands and Waterways Program, March 2002.

The Preferred Alternative would require construction of the Runway 5 RSA within the 100-year floodplain. This alternative would impact a surface area of approximately 11.7 acres of floodplain (footprint of fill in existing 100-year floodplain). The RSA would be grassed and would not result in an increase of impervious surfaces within the 100-year floodplain. The Preferred Alternative would not increase the flood elevations in the two-year, five-year, 25-year, 50-year, or 100-year flood events, and would not have significant impacts on flood flows and/or flood elevations.

The Preferred Alternative would result in only minor impacts to natural and beneficial floodplain values. There are no critical actions presently occurring or proposed in the floodplain; there would be no barriers to floodflow passage.

ES.7.5 Threatened and Endangered Species

No federally-listed species were identified to occur in the Study Area. State-listed species identified on or in the vicinity of the Airport include the eastern box turtle (*Terrapene carolina*, State-listed Species of Special Concern), attenuated bluet (*Enallagma daeckii*, State-listed Species of Special Concern), Massachusetts clam shrimp (*Limnadia lenricularis*, State-listed Species of Special Concern), pale green pinion moth (*Lithophane viridipallens*, State-listed Species of Special Concern), swamp oats (S*phenopholis pensylvania*, State-listed threatened), and coastal swamp amphipod (*Synurella chamberlaini*, State-listed species of Special Concern). Surveys for the Massachusetts clam shrimp, pale green pinion moth, attenuated bluet damselfly, and swamp oats did not reveal any evidence of these species on Airport property (within local Study Area). The Massachusetts Natural Heritage and Endangered Species Program (NHESP) has indicated that the population of swamp oats *(Sphenopholis pensylvanica)* in the Apponagansett Swamp would not be directly impacted by the extension of Runway 5-23.

The Preferred Alternative would result in unavoidable direct and indirect impacts to rare species habitats of the eastern box turtle. Some areas of upland habitat potentially used as turtle nesting habitat would be disturbed by the construction of some elements of the Preferred Alternative. The proposed vegetation management plan would enhance eastern box turtle habitat by converting forested areas to more-favorable open and shrub-dominated habitats.

Mitigation measures, including avoidance and minimization of impacts, have been evaluated. Additional mitigation measures to protect rare species during construction and to provide long-term habitat enhancement and protection have been identified in consultation with the NHESP. Refer to Section 4.6, *Threatened and Endangered Species*, of this FEIS/FEIR for a detailed discussion of impacts on rare species and their habitats.

ES.7.6 Cumulative Impacts

Under NEPA (40 CFR 1508.7), cumulative impacts are defined as "the impact on the environment which results from the incremental impact of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions." The analysis of cumulative impacts for each affected resource examined whether the incremental effect of the proposed project would result in a serious deterioration of the resource, cause the cumulative effect to exceed any regulatory threshold or threshold of significant adverse effect, or affect the structure or function of the human community within the Study Area. The analysis shows that the proposed project, in the context of recent or anticipated projects, would not adversely affect the natural, built, or social environment. The combination of the action's impacts with other impacts would not result in a serious deterioration of environmental functions or exceed applicable significant thresholds.

ES.7.7 Construction Impacts

Resources that may be affected during construction include noise, air quality, water quality, biotic communities, threatened and endangered species, and wetlands.

Anticipated temporary/transient proposed project-related impacts during construction, and anticipated mitigation measures are summarized below and are described for each resource in Chapter 4 of this FEIS/FEIR):

- A temporary increase in proposed project-related noise levels would occur during the construction of the proposed safety improvements. Minimization measures to reduce temporary impacts would include measures to reduce noise from construction vehicle operations, vehicle loading/unloading, and routing construction vehicles on non-residential streets.
- Temporary air quality impacts could result from direct emissions from construction equipment and trucks, and from fugitive dust emissions from earthwork. These impacts would affect only the immediate vicinity of the construction sites and access routes. Mitigation measures include specifying truck routes, establishing staging areas for equipment and materials, and utilizing construction equipment that comply with emission standards. Best Management Practices (BMPs) would be implemented to minimize the impacts from fugitive dust, including street sweeping and tire washes for trucks leaving the site.
- Water quality impacts (soil erosion, deposition of sediment in Airport waterways, discharge of iron-contaminated water) would be minimized by implementing sediment and erosion controls and appropriately designed dewatering measures during construction phases of the proposed project.

- Subsurface contamination or waste materials encountered during construction would be first identified and then mitigated by conducting preliminary investigations; contaminated soil and groundwater management; asphalt paving and demolition debris management techniques; erosion and sedimentation controls; construction worker health and safety planning; assessment and remediation of known releases; and other BMPs.
- Noise may temporarily impact wildlife; however, mitigation measures would be implemented if warranted, and the noise would not result in significant adverse effects to biotic communities.
- Construction may result in temporary, short-term impacts to the habitat of state-listed wildlife species due to temporary changes to water quality caused by increased erosion and sedimentation and operation of construction equipment. Mitigation measures could include employing BMPs, such as sediment traps and silt fences, to prevent water quality degradation; monitoring during construction; temporarily relocating turtles, if necessary; and erecting exclusion fencing to protect the turtles.

ES.8 Mitigation Measures

Potential permanent impacts resulting from construction of the Preferred Alternative would be mitigated to the extent practicable (see Chapter 5, *Mitigation Summary,* of this FEIS/FEIR). Table ES-4 summarizes the mitigation measures associated with the proposed project.

Table ES-4 Project Mitigation Commitments

Environmental Categories	Mitigation Measure	Approximate Cost	Implementation Schedule	Implementation Responsibility
Noise	Consider forming a Noise Working Group.	NA[1]	Completion of construction	City of New Bedford
	Reevaluate the noise environment, and the need for additional mitigation, in 2021 or when annual operations exceed 118,000.	NA	Approximately 2021	City of New Bedford
Water Quality	Prepare a SWPPP.	NA	Prior to construction	City of New Bedford
	Implement all aspects of the SWPPP including recommendations in annual updates based on new or improved procedures or changes to operations.	NA	Ongoing	City of New Bedford
	Update the Operation and Maintenance (O&M) plan in the SWPPP to include a detailed outline of inspection and cleaning schedules for stormwater management practices, including detention areas and deep sump catch basins.	NA	Prior to construction	City of New Bedford
	Construct stormwater infiltration basins in accordance with MA DEP standards.	Included in construction cost	During construction of each project	City of New Bedford
Wetlands	Replace lost wetland area and function by creation of new wetlands or by restoration of historically filled wetlands, at a 2:1 replacement:/loss ratio.	$3.86 million	During construction	City of New Bedford
	Monitor compensatory wetlands for success.	$50,000	5-year period following construction	City of New Bedford
	Monitor wetlands within the vegetation management area for invasive plant species, and implement an invasive species control plan.	Included in Vegetation Management Costs	5-year period following completion of vegetation management	City of New Bedford
Floodplains	Provide compensatory flood storage.	Included in wetland mitigation cost	During construction	City of New Bedford
Threatened and Endangered Species				
Coastal Swamp Amphipod	Create new pools and ponds in wetland mitigation areas where coastal swamp amphipod are located.	Included in wetland mitigation costs	During construction	City of New Bedford
Eastern Box Turtle	Protect animals by installing and maintaining exclusion fencing, and by searching the construction areas and removing animals. Relocate turtles on a temporary basis if nesting activities are adversely impacted.	$100,000	During construction	City of New Bedford

1 Not Available

Note: As mitigation is not required for ground transportation, air quality, socio-economic impacts, environmental justice, children's health and safety risks, Section 4(f) resources, biotic communities, coastal resources, wild and scenic rivers, farmland, natural resources, light emissions, and energy supply, these resource categories are not included in Table ES-4.

ES.9 Permits and Approvals

FAA directives require that this FEIS/FEIR include evidence and required consultation to support any determinations applicable to the potential of federal funding. FAA determinations that may be required for the proposed project include:

- Consistency with existing plans for development of the area;
- Finding of Non-Applicability with respect to Clean Air Act Conformity; and
- Determination under Department of Transportation Section 4(f) Policy on Lands, Wildlife and Waterfowl refuges, and Historic sites.

The Preferred Alternative would require local, state, and federal agency permits or approvals, as listed in Table ES-5, as these alternatives would result in disturbance of land, and impacts to water resources, and threatened and endangered species habitat.

Table ES-5
Possible Permits or Approvals

Agency	Approval or Permit
FAA	Airport Layout Plan (ALP) approval NEPA Record of Decision Section 4(f) Determination Section 106 Finding Federal funding approval
U.S. Army Corps of Engineers	Section 404 Permit
U.S. Environmental Protection Agency Region I	NPDES Permit for stormwater discharges and construction period
MA DEP	Variance, MA Wetlands Protection Act Section 401 Water Quality Certificate
MAC	State funding approval Section 61 Finding
MA Natural Heritage and Endangered Species Program	Conservation and Management Permit
MA Coastal Zone Management Office	CZM Consistency Determination

Acronyms

AIA – Airport Improvement Alternative
ALP – Airport Layout Plan
BMP – Best Management Practice
CFR – Code of Federal Regulations
CIP – Capital Improvement Program
CMR – Code of Massachusetts Regulations
dB – decibel
DEIR – Draft Environmental Impact Report
DEIS – Draft Environmental Impact Statement
DNL – Day – Night Sound Level
EMAS – Engineered Materials Arresting System
ENF – Environmental Notification Form
EOEA – Executive Office of Environmental Affairs
FAA – Federal Aviation Administration
FEIR – Final Environmental Impact Report
FEIS – Final Environmental Impact Statement
FEMA – Federal Emergency Management Agency
MAC – Massachusetts Aeronautics Commission
MA DCR – Massachusetts Department of Conservation and Recreation
MA DEP – Massachusetts Department of Environmental Protection
MALSR – Medium Intensity Approach Light System with Runway Alignment Indicator Lights
MEPA – Massachusetts Environmental Policy Act
MGL – Massachusetts General Laws
NEPA – National Environmental Policy Act
NHESP – Natural Heritage and Endangered Species Program
NPDES – National Pollutant Discharge Elimination System
NPIAS – National Plan of Integrated Airport Systems
O&M – Operations and Maintenance
ROD – Record of Decision
RPZ – Runway Protection Zone
RSA – Runway Safety Area
RSSA – Runway Safety Standard Alternative
RW – Runway
SDEIR – Supplemental Draft Environmental Impact Report
SWPPP – Storm Water Pollution Prevention Plan
VASI – Visual Approach Slope Indicator
VMP – Vegetation Management Plan

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Figures

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