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March 28, 2008

CERTIFICATE OF THE SECRETARY OF ENERGY & ENVIRONMENTAL AFFAIRS
ON THE
DRAFT ENVIRONMENTAL IMPACT REPORT

PROJECT NAME:	George D. Harlow Field 20-Year Airport Improvement Plan
PROJECT MUNICIPALITY:	Marshfield
PROJECT WATERSHED:	Weymouth & Weir
EEA NUMBER:	13499
PROJECT PROPONENT:	Marshfield Airport Commission
DATE NOTICED IN MONITOR:	February 20, 2008

Pursuant to the Massachusetts Environmental Policy Act (G. L. c. 30, ss. 61-62H) and Section 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that the Draft Environmental Impact Report (DEIR) submitted for this project **adequately and properly complies** with MEPA and its implementing regulations. The Proponent may prepare and submit the Final Environmental Impact Report (FEIR) for MEPA review.

Project Description

As outlined in the DEIR, the project consists of a 20-year program of projected improvements to the George D. Harlow Field airport (the "Airport"), to be performed as program funding permits. The project site is a municipally owned general aviation airport on an approximately 170-acre parcel in Marshfield that mainly serves corporate, business and recreational flyers. The Airport has one paved runway, 3,001 feet in length and 75 feet in width, with a full-length parallel taxiway. The Airport is under the care and custody of the Marshfield Airport Commission pursuant to Chapter 90 of the General Laws.

The Airport is surrounded by extensive wetland systems that border along both Bass Creek and Green Harbor River. Bass Creek flows along the northern end of the airfield and

Green Harbor River flows along the southern end of the airfield. Both rivers come to a confluence 1,800 feet southeast of the airfield before flowing toward Green Harbor. Between the confluence of these two river systems are large wetland systems that extend, in some areas to the edge of the runway. The Airport and surrounding lands are within the Coastal Zone of the Commonwealth.

The project site and abutting areas are located within Priority and Estimated Habitat for the Eastern Box Turtle, as indicated in the 12th Edition of the Massachusetts Natural Heritage Atlas. The Airport abuts the Daniel Webster Wildlife Sanctuary, a 530-acre site under the control of Mass Audubon that has been designated as an Important Bird Area (IBA). In addition, Mass Audubon recently acquired additional abutting land to the west of the airport. Portions of the Mass Audubon land will be directly impacted by the airport's Vegetation Management Program.

In 2000, the Airport commissioned an Airport Master Plan Update (AMPU) in response to concerns with the Airport's aging infrastructure. The Airport's sole runway, Runway 6-24 and its parallel taxiway, are in deteriorating condition and have exceeded their design lives of 20 years, having been last reconstructed in 1983 (runway) and 1972 (taxiway). The Airport, the Federal Aviation Administration (FAA) and the Massachusetts Aeronautics Commission (MAC) provided funding for the AMPU and the DEIR. The purpose of the AMPU was to identify those facilities in need of improvement, identify conditions that are not in conformance with FAA design and safety standards, and recommend strategies to improve the identified deficiencies.

The proposed improvements outlined in the DEIR include projects directly related to the safe operations of aircraft (referred to as Airside Improvements) and projects not directly related to the safe operation of aircraft (referred to as Landside Improvements). The proposed activities are designed to improve safety and security; achieve standard runway-to-taxiway separation and taxi widths; provide runway lighting systems; extend the runway and the taxiway; and construct new hangar facilities and associated aprons. The project also involves the acquisition of adjacent land and residential properties; vegetation management to clear protected air space; and the installation of stormwater management facilities. The proposed Preferred Alternative will result in impacts to 2.26 acres of Bordering Vegetated Wetlands (BVW) and 1.81 acres of Riverfront Area; 128 acres of tree clearing in wetlands; creation of 5.2 acres of new impervious surface; and the addition of approximately 8,000 cubic yards of fill in a regulatory floodway.

Jurisdiction

The project is subject to review and preparation of a mandatory EIR pursuant to the following sections of the MEPA regulations: 301 CMR 11.03(3)(a)(1)(a) because the project will result in the alteration of more than an acre of BVW and 301 CMR 11.03(3)(a)(2) because the project requires a Variance from the Wetlands Protection Act (WPA). The project also meets the following ENF review thresholds: 301 CMR 11.03(2)(b)(2) because the project will result in a "take" of rare species protected pursuant to the Massachusetts Endangered Species Act (MESA, MGL c. 131A); and 301 CMR 11.03(6)(b)(3) because the project proposes the expansion of an existing runway at an airport.

The project requires the following permits and/or approvals: Environmental Assessment and a Section 404 Permit from the U.S. Army Corps of Engineers (USACE); a National Pollutant Discharge Elimination System (NPDES) Permit from the U.S. Environmental Protection Agency (EPA); 401 Water Quality Certification, a Variance from the MA Wetlands Protection Act (WPA) and a Superceding Order of Conditions (SOC) from the Department of Environmental Protection (MassDEP); a Conservation & Management Permit from the Natural Heritage and Endangered Species Program (NHESP); Federal Consistency Review by the Office of Coastal Zone Management (CZM); review by the Massachusetts Historical Commission (MHC); an Order of Conditions from the Marshfield Conservation Commission; and a Floodplain Special Permit and an Inland Wetland Special Permit from the Town of Marshfield. Because the Proponent is seeking financial assistance from MAC, MEPA jurisdiction is broad and extends to all aspects of the project that have the potential to cause significant Damage to the Environment.

Review of the DEIR

The purpose of MEPA review is to ensure that a project Proponent studies feasible alternatives to a proposed project; fully discloses environmental impacts of a proposed project; and incorporates all feasible means to avoid, minimize, or mitigate Damage to the Environment as defined by the MEPA statute. I have fully examined the record before me, including but not limited to the Scope issued on May 9, 2005; the DEIR filed in response; and the comments entered into the record. I find that the DEIR is sufficiently responsive to the requirements of the MEPA regulations and the Scope to meet the regulatory standard for adequacy. While I am allowing the project to proceed to a FEIR, I note that outstanding issues related to project alternatives, wetland and flood plain impacts, vegetation management, and rare species still exist. The Scope for the FEIR is outlined below.

SCOPE

General

The Proponent should prepare the FEIR in accordance with the guidelines contained in Section 11.07 of the MEPA regulations, as modified by this Certificate. The FEIR should include a copy of this Certificate and of each comment received. The Proponent should circulate the FEIR to those who commented on the DEIR, to any state and federal agencies from which the Proponent will potentially seek permits or approvals, and to Town of Marshfield officials. A copy of the FEIR should be made available for public review at the Marshfield Public Library.

In order to ensure that the issues raised by commenters are addressed, the FEIR should include a response to comments. This directive is not intended to, and shall not be construed to, enlarge the scope of the FEIR beyond what has been expressly identified in the initial scoping Certificate or this Certificate.

Alternatives

The DEIR contained a discussion of aviation requirements that are driving proposed improvements. According to the Proponent, aircraft operational safety and federal and state funding eligibility are directly related to compliance with standards. To determine which standards apply to a runway, a design aircraft is selected and an Airport Reference Code (ARC) is determined. An airport's design airplane is the most demanding aircraft using the airport regularly that places the most stringent requirements on the physical layout of the airport. The Citation II was chosen as the design airplane for the George D. Harlow airport, because of the airplanes regularly using the Airport, it is the most demanding in terms of its operating and physical characteristics. The proposed improvements outlined in the DEIR were developed in response to requirements based on the Citation II as the design aircraft and its corresponding ARC. Under current conditions, the Airport does not meet the corresponding minimum FAA standards with respect to:

- Runway 24 Runway Safety Area (RSA)
- Runway to taxiway separation
- Clear (obstruction free) Part 77 and Terminal Instrument Procedures (TERPS) surfaces
- Runway length
- Taxiway pavement widths
- Taxiway holdlines

The DEIR contained a discussion of seven development alternatives for meeting FAA standards and their associated environmental and aviation consequences. The range of alternatives was selected to provide a "building block" approach from the no-action alternative to gradually implementing all improvements recommended in the AMPU. Each of the alternatives was analyzed for potential impacts to wetland resources area, rare species habitat and cultural resources, in addition to its ability to enable the Airport to achieve compliance with design and safety standards. The following alternatives are presented:

- Alternative 1: No-Action. This alternative is presented to establish a baseline from which the impacts of other alternatives may be compared. This alternative presents the fewest environmental impacts but does not meet the Proponent's purpose or need.
- Alternative 2: Existing Runway-to-Taxiway Separation and Standard RSAs. In this alternative, the current non-standard runway and taxiway configurations would be maintained. Standard RSAs would be constructed at both runway ends.
- Alternative 3: Standard Separation through Runway Relocation, Pavement Widening & Standard RSAs. This alternative presents a scenario in which the standard runway-to-taxiway separation is achieved through a widening of the runway and taxiway pavement widths and a relocation of the runway centerline 15 feet to the east of its current location. Standard RSAs would also be constructed at each runway end. Both Alternative 2 and 3 do not comply with the Proponent's goal to avoid impacts to the 100-foot wetland buffer zone and the Inner Riparian Riverfront Area of Bass Creek and the Green Harbor River.
- Alternative 4: Standard Separation & RSAs, and 190' Runway Shift. This alternative presents a scenario in which the standard runway-to-taxiway separation is achieved as in

Alternative 3 and standard RSAs are provided at both ends. This alternative also shifts 190 feet of runway from the Runway 24 end to the Runway 6 end to lessen impacts on Bass Creek. The parallel taxiway is also extended by 190 feet to meet the extended Runway 6 end. This alternative presents the fewest impacts to wetlands and rare species as compared to Alternatives 5 and 6; however it does not address the Airport's need for additional runway length.

- Alternative 5: Standard Separation, Runway Shift and Runway Extension. This alternative builds upon Alternative 4 and adds 336 feet of runway length by extending the Runway 6 end to a point where the Runway 6 end RSA is 100 feet from the bank of the Green Harbor River and outside of the river's Inner Riparian Zone.
  Alternative 6: Standard Separation, Runway Shift, Runway Extension, Paved RSAs, and Declared Distances. This alternative presents a scenario that builds upon the improvements proposed in Alternative 5 however in this case RSAs are paved and declared distances are utilized. Alternative 6 is the Proponent's Preferred Alternative. Alternatives 5 and 6 would result in greater BVW impacts than Alternative 4, but provides a needed increase in runway length and Accelerate-Stop Distance Available (ASDA). The difference between Alternative 5 and Alternative 6 is the paving of the RSAs and the use of declared distances to achieve the maximum ASDA practicable.

The DEIR does not provide an adequate explanation of which activities are required for compliance with applicable safety standards for current airport functions versus those that are related to an expansion of airport facilities to enhance capacity for future projected uses. The FEIR should provide clarification on this issue. The Proponent should present an alternative that includes only those activities that must be implemented to comply with applicable safety standards for the airport as currently configured. Following comments from CZM, the existing conditions alternative should be discussed in the context of the Airport's role in regional airport service in relation to other airports such as Plymouth Municipal Airport in order to determine if a reduced scope of work and impacts could accommodate less demanding aircraft usage.

Stormwater

The project will result in an increase of 4.8 acres of impervious surface for a total of 19.4 acres of impervious surface at the site. In response to the Certificate on the ENF, the DEIR contained a detailed stormwater management report for the project. Stormwater runoff from runway and taxiway areas will be treated by structural Best Management Practices (BMPs) including shallow grass swales and extended detention basins with sediment forebays. Runoff from construction of a new snow removal equipment building, two hangars, two T-hangars and reconstruction of the access road will be treated with BMPs before being allowed to discharge into adjacent wetlands. Roof runoff from new buildings will be infiltrated in leaching trenches to the greatest extent possible. The DEIR contained plans illustrating the proposed stormwater management system.

The Proponent provided a discussion in the DEIR of how the project would comply with MassDEP's Stormwater Management Policy (SMP). Drainage calculations and pre- and post-construction runoff rates supported the Proponent's assertion that the project will comply with the SMP. The DEIR also contained a draft Operations and Maintenance Plan for both structural

and non-structural BMPs. The proposed stormwater management system should be updated in the FEIR to incorporate revisions to the SMP which were incorporated into the WPA regulations effective January 2, 2008.

The Airport has a Stormwater Pollution Prevention Plan (SWPPP) and a Spill Prevention Control and Countermeasure (SPCC) Plan in place. These two plans provide a series of BMPs, emergency spill response, and inspection and monitoring schedules to help the Airport prevent or minimize the risk of contamination to stormwater. Aircraft fueling areas should be identified on plans submitted with the FEIR. A copy of the SPCC should be included in the FEIR.

Stormwater from the Airport enters both the Green Harbor River and Bass Creek, which are currently experiencing accelerated eutrophication due to limited tidal exchange and flushing caused chiefly by a dike and tide gates located between the rivers and Cape Cod Bay. The proposed stormwater management system has been designed to remove nutrients from runoff so that eutrophication is not exacerbated. I note that the Town of Marshfield is currently working with CZM and other partners on the Green Harbor Restoration Program, with the goal of increasing tidal exchange between the Green Harbor River and Green Harbor for water quality and ecological benefits. As project and mitigation plans associated with the Airport's Master Plan proceed, the Proponent should coordinate with restoration project partners to ensure that proposed mitigation is consistent with ongoing restoration efforts and that where, appropriate, complementary efforts are pursued.

Wetlands

The Preferred Alternative will directly impact approximately 2.26 acres of BVW, 6.62 acres of buffer zone, and 1.81 acres of Riverfront Area. Of the 2.26 acres of BVW impact, approximately 1.93 acres will be the result of construction of the required RSAs along the sides of the runway and at each runway end. The direct loss of 2.26 acres of BVW will be mitigated through the construction of two wetland replication areas. These wetland replication areas will total approximately 4.6 acres and consist of a 2.1 +/- acre area located to the southeast of the end of Runway 6 (Replication Area A) and a 2.5 +/- acre area located to the south of the end of Runway 24 (Replication Area B). These areas will provide a replication ratio of approximately 2:1. The DEIR contained a draft planting list for each replication area. The replication areas must be constructed in accordance with MassDEP's *Massachusetts Inland Wetland Replication Guidelines*. The Proponent should discuss plans for monitoring the success of replication areas in the FEIR.

The DEIR included a discussion of vegetation clearing proposed in conjunction with Part 77 and TERPS obstruction removal. Part 77 and TERPS airspace surfaces are required to be kept clear of man-made and natural obstructions. According to the DEIR these are currently obstructed by a combination of vegetation and man-made structures. 134.7 acres of tree clearing are proposed; 128 acres of the clearing will be in wetlands. Portions of tree clearing activities are already covered by the Airport's existing Vegetation Management Plan (VMP) and an Order of Conditions issued by the Marshfield Conservation Commission for tree removal in wetland areas pursuant to the limited project provisions of the Wetlands Protection Act at 310 CMR 10.53(3)(n). Newly proposed tree clearing in wetlands that is the result of a relocated runway

centerline, a shift in the runway location or an addition to the runway length are not eligible for relief under the limited project provisions. The Proponent should clarify in the FEIR what tree clearing work in wetlands currently takes place at the existing facility, and what additional areas are proposed as part of the Master Plan improvements. This discussion should also include the amount of clearing necessary to meet safety standards for the existing facility and the proposed facility.

The FEIR should present a discussion of measures that will be taken to ensure that the Vegetation Management Program does not result in the spread of invasive plant species. Existing stands of Phragmites and other invasives should be removed before additional tree clearing operations proceed. The Proponent should work with Mass Audubon to develop a comprehensive approach to invasives management at the Airport and the Sanctuary as part of the overall mitigation package for the project.

The DEIR contained a discussion of how the project would comply with performance standards for required wetlands permits. The filling of 2.26 acres of wetlands and impacts not covered under the limited project provisions of the WPA will require permitting under a Variance from MassDEP. The Proponent asserts in the DEIR that the project is able to meet the requirements of the WPA regulations at 310 CMR 10.05(10), which outline findings that the Commissioner of MassDEP must make before granting a variance. According to the DEIR:

- There are no reasonable conditions or alternatives that would allow the project to proceed in compliance with the regulations. The alternatives evaluation documents the lack of practicable alternatives that would reduce wetland impacts and meet the purpose of the project;
- Proposed wetland mitigation mitigates the loss of flood storage and provides greater than 2:1 replacement of BVW resources impacted by the proposed action. These mitigation measures will allow the project to be conditioned so as to contribute to the interests of the WPA; and, The proposed project is being undertaken for the purpose of enhancing public safety through compliance with FAA and MAC requirements and sound airport design practices. The Proponent asserts that the project constitutes an "overriding community, regional, state or national interest" and is necessary for the future safe operation of the Airport.

Floodplain and Coastal Flooding

Almost the entire Airport is located within the 100-year floodplain. The Town of Marshfield Flood Insurance Rate Map (FIRM) has been revised since the review of the ENF and established the 100-year floodplain elevation at 10 National Geodetic Vertical Datum (NGVD). Except for a few small exceptions, the entire Airport property lies at or below elevation 10' MSL.

The Proponent states that impacts to floodplain will be minimal since all proposed improvements are proposed at or near existing elevations. The landside improvements are all to be constructed at grade and are not expected to displace flood storage on the property. The runway, RSA and parallel taxiway reconstruction projects will displace approximately 8,000 cubic yards of flood storage volume. Plans submitted with the FEIR indicate that this area of fill

is directly adjacent to the low-lying residential subdivision located at Old Country Lane, Woodbine Road and Gratto Road. The FEIR should include a discussion of the impact of the fill on the residential area and the impact of displacing and diverting inland flooding. The Proponent should note specific comments from CZM on this issue.

The lost flood storage will be mitigated through the construction of the infield area between the runway and parallel taxiway where this area will be graded so that it will act as a detention pond that will ultimately drain into the sedimentation and infiltration basins. The Proponent will create a biofilter swale in each infield area. To provide flood storage, the swale will be constructed so that it is four feet in width and one foot deep for the entire 2,500 feet of swale. This will provide approximately 10,000 cubic feet of flood water storage. The Proponent should clarify in the FEIR how the hydraulically constricted nature of the floodplain in this area will affect the loss and replacement of flood storage volume.

The FEIR should also describe how proposed structures will be designed to meet state building standards for construction in a flood zone area. The Proponent should note other specific comments submitted by the Department of Conservation and Recreation (DCR) Flood Hazard Management Program (FHMP).

Rare Species

During the review of the ENF, NHESP indicated that the following state-protected rare species occur in the vicinity of the project site: Eastern Box Turtle (*Terrapene carolina*) and Spotted Turtle (*Clemmys guttata*). As of July 2006, the Spotted Turtle is no longer a state-listed species. NHESP also noted that the Least Bittern (*Ixobrychus exilis*), Common Moorhen (*Gallinula chloropus*) and Sharp-shinned Hawk (*Accipiter striatus*) are documented in the vicinity of the subject property, but that the proposed project does not appear to impact habitat for these species. The Proponent should note comments from Mass Audubon regarding potential adverse impacts to bird habitat resulting from vegetation clearing activities.

In response to guidance from NHESP, the Proponent undertook a survey of the site to determine potential habitat areas related to nesting, breeding, overwintering, migration and aestivating for the Eastern Box Turtle. The results of the survey were summarized in the DEIR. In general, the Airport and surrounding forested and shrub-scrub communities primarily to the south of the airfield offer excellent habitat for the Eastern Box Turtle. In its comments on the DEIR, NHESP states that it appears that the project will result in a prohibited "take" of the Eastern Box Turtle and require a MESA Conservation and Management Permit per (321 CMR 10.23).

The Proponent outlined a proposed series of measures that would be implemented to mitigate for adverse impacts to Eastern Box Turtle habitat in the DEIR. The following measures are proposed:

- Replicate lost nesting habitat: 206,710 sf of new nesting habitat will be created to mitigate for the 2.05 acres of impact to good nesting areas.

- Restore temporary impacts to nesting areas: All temporary impacts to both nesting and limited nesting areas will be mitigated through the restoration of disturbed areas after construction.
- Enhance areas of existing, low quality nesting habitat: 88,862 sf of limited nesting areas will be enhanced to serve as fully functional nesting habitat. The enhanced turtle nesting areas will mitigate for the 3.23 acres of permanent impact to limited nesting areas.
- Exclude turtles from work areas prior and during construction: The Proponent will implement strategies to avoid and minimize impacts to Eastern Box Turtle during construction including erecting exclusionary barriers, pre-construction surveys, relocation of found specimens, regular monitoring, and education for on-site workers.
- Conserve adjacent private parcel: The Airport has proposed a Property Exchange Plan between the Airport and Mass Audubon, owners of the Daniel Webster Wildlife Sanctuary. In the FEIR, the Proponent should provide an update on its consultation with Mass Audubon regarding a possible land transfer or easement over portions of the Sanctuary land.

The Proponent will also implement the following measures during Airport operations to help maintain current nesting habitat suitability and improve nesting conditions:

- Avoid mowing the RSA when turtles are most likely to be present, especially during the middle two weeks of June;
- Adopt as policy the current practice of not applying fertilizers or other soil amendments to the RSAs as part of routine maintenance;
- Adopt a policy to reseed RSAs with low density, warm season grasses if any future projects create a need for reseeding;
- Continue to support Airport management practices that limit food sources that attract nest predators and that restrict unauthorized access to the Airport by the public.

NHESP has indicated that the proposed mitigation plan will likely require modification pending additional rare species consultation. NHESP has requested additional information regarding the documentation of turtles on-site, their use of nesting habitats, and potential impacts to nesting and non-nesting habitats. The Proponent should continue to work with NHESP to resolve MESA issues for the site and to develop adequate mitigation measures. The FEIR should include a revised draft Eastern Box Turtle conservation plan developed in consultation with NHESP staff. The Proponent should also consult with NHESP regarding possibly modifying existing and proposed perimeter fencing around the Airport to have a small gap several inches high between the bottom of the fence and the ground surface to enhance turtle mobility.

Historic and Archaeological Resources

In its comments on the ENF, the Massachusetts Historical Commission (MHC) has indicated that a recorded archaeological site (MHC #19-PL-426) is located at the Airport. MHC requested that an intensive (locational) archaeological survey be conducted for the project to locate, identify and evaluate any significant historic or archaeological resources that may be affected by the proposed project. During March 2007, an archaeological Phase 1A reconnaissance survey was conducted at the site. The survey covered the entire airport, with a special focus on areas that are planned for disturbance. According to the DEIR, the Proponent

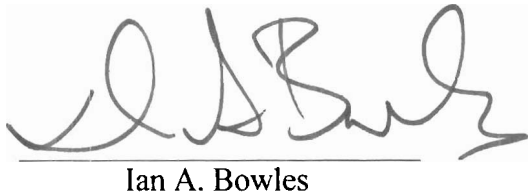
will next conduct an intensive (locational) archaeological survey per 950 CMR 70 in areas of moderate to high archaeological sensitivity. The Proponent should continue to consult with MHC regarding future survey work and should provide an update on impacts and mitigation related to archaeological resources in the FEIR.

Construction Period Impacts

The DEIR contained a detailed discussion of construction phasing, and potential construction period impacts and mitigation. Construction of the runway, parallel taxiway and RSAs is scheduled to occur in 2012. Potential impacts and mitigation related to air quality, water quality, noise and wildlife were discussed. Where practicable, the Proponent will participate in MassDEP's Clean Construction Initiative.

Mitigation

The DEIR included a draft Section 61 Finding for use by state agencies that provided an overview of project impacts and mitigation. In the FEIR, the Proponent should prepare a separate Section 61 Finding for each state permit required for the project for review by the applicable state agency. The draft Section 61 Findings should be expanded to include a clear commitment to mitigation, an estimate of the individual costs of the proposed mitigation, and the identification of the parties responsible for implementing the mitigation. The FEIR should provide a schedule for the implementation of the mitigation, based on the construction phases of the project. The Section 61 Findings will be included with all state permits issued for this project, and will be considered binding upon the proponent as mitigation commitments.



March 28, 2008
Date

Ian A. Bowles

Comments received:

2/21/2008	Massachusetts Historical Commission
3/18/2008	Department of Conservation and Recreation
3/18/2008	Division of Fisheries & Wildlife, Natural Heritage and Endangered Species Program
3/20/2008	Mass Audubon
3/21/2008	Department of Environmental Protection, Southeast Regional Office
3/21/2008	Office of Coastal Zone Management

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