

SECTION 5 - MITIGATION

5.0 INTRODUCTION

The Airport will mitigate for unavoidable impacts to wetlands and to rare species resulting from the implementation of the Preferred Alternative. The major resource impacted however is wetlands and the Airport's mitigation plan places a special focus on this resource.

Implementation of the Preferred Alternative will impact 8.8 acres of wetland by dredge and fill activity. These impacts are directly related to the need to construct the runways RSA to FAA standards. All dredge and fill impacts are to areas that are routinely mown and maintained as an herbaceous community.

Further from the runway, trees penetrating the runway's airspace will either be removed or lighted by obstruction lights to further reduce impacts. The obstructing trees adjacent to the railroad tracks and located to the side of the runway may be lighted with obstruction lights, pending the results of an ongoing FAA Airspace Analysis. If obstruction lighting is not approved, the obstructing trees will need to be removed. Trees located in the runway's approach surfaces will need to be removed; however these trees represent a small share of the estimated need to remove approximately 15.3 acres of trees in wetlands. In either case, following the removal of obstructions in these areas, the wetlands will remain as wetlands but removal of the taller trees will result in a shrub dominated wetland complex, which currently exists as a moderately dense community within the forest understory.

Further efforts are ongoing to more accurately define the quantity of tree clearing needed in order to further avoid and minimize impacts to the affected wetlands.

Proposed efforts to mitigate for impacts to rare species include the possible transplantation of plants, erection of exclusionary fencing near construction areas to prevent the migration of protected species on to the construction site, and conducting surveys of the construction site to identify and remove identified species to safer areas.

5.1 MITIGATION FOR WETLAND IMPACTS

The mitigation of wetland impacts is an expected component for any project that impacts wetlands. It must be well documented that mitigation is only an option to compensate for wetland impacts, when efforts have been made to (1) avoid the impacts and (2) the impacts have been minimized to the maximum extent practicable. Wetland impacts have been avoided and minimized to the extent possible through the process of developing the Preferred Alternative. The runway length analysis indicated that the aircraft using the runway need a total runway length of 6,800 feet for takeoff. The Airport, in consultation with pilots, the FAA and NHDOT/BA, determined that a runway length of 6,000 feet would be acceptable,

though not optimal, to accommodate the existing fleet of aircraft given the environmental constraints. As explained earlier in this report, the purpose for providing additional runway length for takeoff is to better serve the existing fleet of aircraft at the Airport. The additional runway length was not calculated to serve larger aircraft than those that can currently operate at the Airport.

The addition of 150 feet of runway at the Runway 14 end, and use of declared distances with a partially paved runway safety area at the Runway 32 end will provide a total length of 6,000 feet for takeoff when departing from the Runway 32 end, and 5,650 feet for landing on Runway 32. The separation distance between the runways and taxiways is prescribed by FAA regulations and can not be reduced further. Within these design constraints, the runway as positioned in the Preferred Alternative avoids wetland impacts as much as possible, and minimizes impacts to wetlands to the degree practicable.

The approach to mitigation of unavoidable wetland impacts has been recently undergoing a significant shift in emphasis within both the Army Corps of Engineers and NH Department of Environmental Services. Recognizing the combination of site constraints at the Airport and the lack of reasonable opportunities for mitigation on Airport property, coordination with the regulatory agencies resulted in a plan to provide off-site mitigation and wetland preservation.

5.1.1 Requirements for Mitigation

Mitigation requirements for wetland impacts occur at each level of wetland permitting. For this project, wetlands are regulated under the Section 404 (Army Corps of Engineers) process, NH DES Wetlands Permit, and City of Nashua Wetlands Permit. Each process has requirements for wetlands mitigation, and each has considerable discretionary authority as to how the mitigation is conceived, accepted, and ultimately approved. Therefore, precise guidelines for wetland mitigation do not exist.

The Army Corps of Engineers and EPA published their Final Rule on “Compensatory Mitigation for Losses of Aquatic Resources” on April 10, 2008 (73 Fed. Reg. 19,594), resulting from a 2004 congressional mandate to develop comprehensive regulations that establish equivalent standards and criteria for mitigation banks, in-lieu fee projects, and permittee-responsible wetland mitigation required pursuant to section 404 of the Clean Water Act. The new Federal criteria create a new hierarchy of compensatory mitigation focusing within a “watershed approach”, where projects within the same watershed are favored. The types of mitigation projects favored, in order of decreasing favorability, are as follows: (1) Mitigation Bank Credits; (2) In-lieu Fee Credits (ILF); (3) Permittee-Responsible Mitigation. In the absence of an approved Mitigation Bank (none exists in New Hampshire) or an ILF, “Permittee-responsible mitigation” became the available mitigation option. Within Permittee-Responsible Mitigation, a watershed perspective governs, along with consideration of “on-site,” “off-site,” “in-kind,” wetland replacement, as well as “out-of-kind” mitigation (e.g., restoration, enhancement, and/or preservation). The Northeast Region of the Army Corps of

Engineers has established “recommended ratios” for mitigation guidelines that relate to the type of wetland being impacted and the type of mitigation proposed. The ratios range from 2:1 areal replacement for restoration up to 15:1 for wetland preservation. Preservation is not a “last resort” option and may be the appropriate approach.

NHDES provides guidelines on wetland mitigation for unavoidable impacts, but no specific ratios of replacement or preservation are presented. Past history suggests that a case-by-case analysis approach is taken by NHDES, responding to the specific wetland impacts and the type of mitigation proposed. Based upon discussion for this project, it is expected that the ACOE and NHDES will work cooperatively to accept one mitigation approach for the project. In March of 2008, the NHDES entered a Memorandum of Understanding relative to the use and implementation of ILF, indicating their willingness to engage with the ACOE in a cooperative approach to wetland mitigation.

Under the City of Nashua wetland regulations, there is no specific ratio or prescription for mitigation of wetland impacts.

The mitigation of impacts to wetland resources associated with the runway reconstruction has been discussed at length with the regulatory authorities of ACOE and NHDES. Based upon input from these organizations, the proposed mitigation is discussed below.

5.1.2 On-Site Mitigation

In the process of reviewing potential mitigation strategies, the Airport first considered on-site alternatives such as converting current upland areas to wetlands. Based upon the limited areas of available upland and potential future Airport uses the on-site option was dismissed as impracticable. At three Natural Resource Agency Coordinating Committee (NRACC) meetings held in Concord, NH in 2007 and 2008 it was the consensus of the Committee members that the option of on-site mitigation was impracticable.

5.1.3 Off-Site Mitigation Options

An off-site mitigation strategy was considered and included meetings with the Hollis and Nashua Conservation Commissions to solicit their recommendations for parcels they considered appropriate for wetland conservation and preservation purposes. The municipalities were also asked to rate the parcels in priority order as an indication of the parcels importance to the Town and City. The City of Nashua identified parcels that were each of equal importance to the Conservation Commission, while the Town of Hollis identified parcels and provided a rating for high priority parcels. Priorities were also recommended by the NRACC that focused on the acquisition of parcels contributing to the welfare of the Pennichuck watershed or parcels that formed rational connections with other protected parcels, or both, should be considered first for selection.

Discussions with the Towns included the identification of parcels that would also qualify for wetland restoration or enhancement. However, as of the time of this writing none have been identified or recommended. The NRACC recommended that the search area be reduced in size so that the search could focus on parcels in closer proximity to the Airport. A “search box” of approximately two miles northwest of the Airport and one mile south was recommended by the NRACC. Upon review, the Airport selected a search box that is approximately four miles to the northwest, one mile to the north and two miles to the south of the runway. This is a much larger search area than recommended by the NRACC but the Airport feels that this provides it with the opportunity to find parcels in the Pennichuck watershed that are upstream from the Airport and therefore protection of these areas would be more beneficial than downstream parcels. This search area also provides an opportunity to more closely investigate protection possibilities in the Muddy Brook and Witches Brook area (see Figure 5-1).

The Airport completed a review of recommended parcels using aerial photographs, Geographical Information Systems (GIS), and other sources (i.e., the New Hampshire Wildlife Action Plan) to determine the suitability of the parcels for wetland preservation purposes. Site inspections were made on parcels that appeared suitable and where access was permitted.

Off-site mitigation is proposed in the form of preservation and protection of wetlands as a means to enhance the overall benefit to the ecosystem and particularly to the Pennichuck watershed area. The selected parcels were chosen on the basis of their: potential availability; location within specific habitat areas; location within wildlife migratory or habitat areas; proximity to other public lands; size; location within unfragmented habitat blocks; habitat features present; and their development status (areas with minimal or no site development). At the request of the NRACC the focus area for mitigation (see Figure 5-1) is associated with parcels within the Pennichuck watershed and riparian areas associated with Witches and Muddy Brook. The limits of the mitigation focus area include land 2 miles west of the Airport and up to 1 mile north and south of RW14-32.

Based upon these criteria, approximately 30 parcels were identified within the municipalities of Hollis and Nashua as matching all or some of the criteria, and many of these parcels were investigated for their wetland preservation potential. Twelve candidate sites were identified by the Airport for further investigation, and preliminary indications from NRACC suggest that this approach to mitigation will satisfactorily meet the needs for mitigation of impacts to wetland resources associated with the project. Additional details that could lead to the identification of the parcels cannot be published at this time due to the potential sensitivity of negotiations associated with land acquisition.

However, the twelve parcels identified comprise 133.7 acres in the aggregate. Of this acreage, approximately 52.7 are wetland and approximately 81 acres are wetland buffer representing a 15:1 ratio of protected land to disturbed wetland. The

ratio of protected wetland buffer to impacted wetlands is 9:1. Of the twelve parcels, seven are classified by the NH Fish and Wildlife “Wildlife Action Plan” as the “Highest Ranked Habitat (condition)” in New Hampshire and the remaining five parcels are ranked as “Supporting Landscapes”.

5.2 MITIGATION FOR RARE SPECIES IMPACTS

As discussed in Section 3 of this report, potential impacts to certain rare species may occur as a result of implementation of the preferred alternative. Methods of minimizing and, where impacts are unavoidable, mitigating impacts are discussed below.

5.2.1 State Listed species

Northern Blazing Star: The proposed work is located entirely outside of the known locations of these plants. Therefore, there will be no likelihood of adverse impact to them. Nevertheless, work will be coordinated with NH Natural Heritage Bureau (NHNHB) to minimize the possibility of any inadvertent impacts, potentially including separation of the area from the work zone by construction fencing.

Wild Lupine: This species of plant has not been documented at the Airport. A detailed survey of the work area will be conducted to confirm its absence. In the event that the species is present, the Airport will work with NHNHB so that individuals of this species are transplanted to other portions of the airfield with suitable soils and conditions, and these transplanted species monitored through the construction period. Potential habitat for this species on the Airport will not be minimized through implementation of the Preferred Alternative.

Eastern Hognose Snake: This species has never been documented at the Airport and it is an unlikely inhabitant, given the distance at which it was last observed in the area and the moderate habitat conditions available at the Airport. Even so, potential habitat for this species at the Airport will not be reduced through implementation of the Preferred Alternative. Construction and maintenance protocols to minimize possible impacts will be coordinated with NHNHB.

Potential mitigation may include a survey of the work areas to confirm the absence of the species and exclusionary fencing may be used to prevent animals from entering the work area.

Birds Foot Violet: This species of plant was observed to be present on-site. Implementation of the Preferred Alternative will disturb this species. Working with NHNHB, potential mitigation efforts may include the transplanting of individuals of this species to other portions of the airfield that exhibit suitable soils and conditions, and these transplanted species will be monitored for the period of construction.

5.2.2 State Tracked Species

Blandings Turtle: The relatively small wetland depression in the grassland along the woodland edge at the location of an observed Blandings turtle will be filled to allow for the relocation of the runway. The wetland adjacent to the wet meadow will remain with the removal of trees, turning what is currently a forested wetland into a wet meadow/shrub wetland. This conversion will likely enhance habitat for the Blanding's turtle in this area. Construction and maintenance protocols to minimize impacts will be coordinated with NHNHB.

Potential mitigation efforts may include installation of exclusionary fencing to prevent animals from entering the work area; and survey of the work area to temporarily remove/relocate any turtles that are present. The periodic maintenance of the area by brush mowing could pose periodic impacts and time of year restrictions on mowing to non-growing season periods will lessen the potential chance of impacts.

Spotted Turtle: Relative to the vast extent of habitat for this species located directly south and west of the Airport, it is likely that the limited habitat at the Airport is not vital to local populations of this species. Given the Airport's close proximity to these extensive habitat blocks and the moderate habitat located on the Airport, it is possible that the species may be present in some of the wetlands, particularly to the south and west of the Runway 14 end. These wetlands will not be impacted by implementation of the Preferred Alternative.

Construction and maintenance protocols to minimize impacts will be coordinated with NHNHB. Potential mitigation efforts for this species can be included in efforts to minimize impacts to other potential herptile species in the area (i.e. eastern hognose snake and Blandings turtle).