

**MDOT Reconstruction Project:  
Route 2, Dixfield (PIN 10015.00)  
Preliminary Wetland Compensation Site Search Summary  
May 2006**

## **I. Introduction**

The Maine Department of Transportation (MDOT) is proposing to reconstruct a 2.74 mile section of U.S. Route 2 in Dixfield, Oxford County (PIN 10015.00). The project runs adjacent to Newton Brook and its numerous tributaries. MDOT staff delineated wetland resources on the project.

MDOT has prepared this report to provide Maine Department of Environmental Protection (MDEP) and Army Corps of Engineers (Corps) staff with preliminary information on project impacts and to request guidance on the compensation requirements for the project. MDOT proposes to meet with the regulatory and commenting agencies on site to review the wetland impacts along the project and to discuss the options available to provide appropriate compensation for the proposed impacts.

## **II. Wetland Impacts**

The proposed project design has avoided and minimized impacts by following the existing horizontal alignment as much as possible, steepening the slopes of fills, and using retainers adjacent to wetlands to minimize the impacts associated with the fills. After avoidance and minimization measures were applied, MDOT staff determined that a total of approximately 7,508 square meters (80,817 square feet) of MDEP and Corps jurisdictional wetlands in 25 areas would be impacted by this project.

Approximately 3695 square meters (39,776 square feet) of the impacted forested wetland and related stream corridor riparian vegetation are MDEP wetlands of special significance under Chapter 310 MDEP Wetland Protection Rules.

## **III. Functions and Values**

Wetland functions and values were determined by MDOT staff using the descriptive approach described in the Corps Highway Methodology Supplement. The principal functions of the forested wetlands and riparian vegetation are wildlife habitat. Secondary functions are sediment/toxicant retention, nutrient removal, and fishery aquatic habitat.

#### IV. Compensation Required

The proposed project will impact MDEP and Corps jurisdictional wetlands. Wetland impacts associated with this project exceed the MDEP compensation thresholds as described in Chapter 310 MDEP Wetland Protection Rules.

Table 1 summarizes the amount of compensation required (in square meters and square feet) under Chapter 310.

Table 1. Required Compensation

	$M^2$	$Ft^2$
Impacts to MDEP wetlands of special significance. (2:1 ratio required)	3,695 (7,390)	39,776 (79,552)
Impacts to MDEP wetlands not of special significance. (1:1 ratio required)	3,813	41,044
<b>Total Compensation Required</b>	<b>11,203</b>	<b>120,596 (2.76 ac)</b>

#### V. Preliminary Compensation Site Search

MDOT staff conducted a preliminary search for potential wetland compensation opportunities and evaluated site suitability to compensate for impacts associated with the proposed project in accordance with Chapter 310 of the MDEP Wetland Protection Rules. Areas along Route 2 in the vicinity of the proposed project were screened first. MDOT conducted a cursory site search of the project vicinity to identify and briefly characterize potential off-site compensation opportunities in the towns of Dixfield, Carthage, Mexico, Andover, Jay and Newry.

Potential compensation sites were identified and evaluated for feasibility using USGS 7.5 minute topographic maps, the SCS Soil Survey for Oxford County, NWI maps, aerial photographs, project plans and cross-sections, contacts with individuals at MDEP, Maine Department of Inland Fisheries and Wildlife (MDIF&W), the Natural Resources Conservation Service (NRCS), Trout Unlimited, and the Volunteer Lake Monitoring Program that have knowledge of potential sites in this area. A brief field reconnaissance of some sites was completed, however, no detailed on-site field investigations were conducted.

## **VI. Preliminary Site Search Results and Discussion**

A total of six potential compensation sites were identified and evaluated. A site map will be provided at the May IAM for mitigation site location and orientation. The only on-site area offering restoration potential is the Newton Brook Rest Area in Dixfield. There were no other on-site mitigation options namely because the proposed project largely follows the existing horizontal alignment. The five compensation site options investigated off-site are described below, and each site can stand alone to meet the compensation requirements of this project. In addition, the DEP In Lieu Fee Program will most likely begin in fall '06, so this option will be available for agency consideration.

## **VII. Recommendations**

MDOT is providing this information to MDEP and the Corps to document MDOT's efforts to date in identifying compensation sites for the unavoidable impacts associated with the Route 2 project. MDOT proposes to meet with the agencies to review the information presented, and schedule a site visit for agency review.

**Site 1:**



**Site Name:** Bailey Sites

**Location:** Andover

**Owner:** Brian Bailey

**Existing Conditions:** Proposed sites are located on active agricultural fields that are bisected by the Ellis River. These fields run adjacent to the river and have spotty deciduous riparian development. In two locations, the river is causing severe embankment loss during high flows. As a result, the suspended sediment/soils are affecting fisheries habitat and water quality in the Ellis River. Owner has been working with Candi Benwitz from NRCS on solutions to his land loss/erosion problems.

**Mitigation Potential:** Two locations on the Bailey property need stabilization. Both sites are similar in their needs. NRCS has developed plans for this repair work and is looking for financial assistance. The largest site is approx 350' long by 150' wide. It is actively eroding and losing about 30' of farm field per year. The mitigation design is based on soil stabilization and improved fish and wildlife habitat. The design combines an initial channel alignment modification with low cost, flow redirection rock structures and biotechnical measures to accomplish: a) a shift of the stream thalweg away from the eroding bank, b) increase channel roughness with the establishment of woody vegetation on the bank, c) reduce near bank velocity and create pools, and d) establish woody riparian plantings for improved wildlife protection and thermal shading.

**Site 2:**



**Site Name:** Newton Brook Rest Area

**Location:** Route 2, Dixfield

**Owner:** MaineDOT

**Existing Conditions:** This site is located on Route 2 adjacent to Newton Brook. This rest area provides parking, picnic tables and outhouse facilities to the traveling public. The site has lost most of the under story riparian plantings, but maintains an established over story of evergreen and deciduous trees. It appears that there is active foot traffic along the embankment of Newton Brook. There is a what appears to be, small gravel portage boat launch at the northern end of the rest area. The brook often floods up to and sometimes over Route 2 in this area during spring melt and severe storm events. Repeatedly, the brook washes out portions of the rest area parking lot.

**Mitigation Potential:** This project will restore the riparian under story along Newton Brook and provide public access points at specific locations. Large natural rock bollards will be placed to direct ice flows away from the new plantings. There appears to be a possibility to eliminate the portage boat launch at the northern end of the parking lot where storm water enters and floods the parking lot. Natural rock bollards will again be installed along with riparian vegetation in this area.

**Site 3:**



**Site Name:** Bear River Site  
**Location:** Newry  
**Owner:** Robert Chadbourne

**Existing Conditions:** This site is a large cut bank on the Bear River near the confluence with the Androscoggin River. The site is approximately 600' long and is migrating approximately .6 feet per year toward Route 26. The road is roughly 110' from top of bank. The bank appears to be relatively stable with minimal undercutting. Embankment angle of repose has no vegetation established.

**Mitigation Potential:** Restoration work will consist of installing riprap on the downstream 200 feet of eroded bank, as this appears to be the area changing most rapidly. Work will include re-grading the top of the bank back to a 1.5:1 or flatter slope, and install native stoloniferous vegetation on the upper areas of the eroded slope.

**Site 4:**



**Site Name:** Hall Farm Site

**Location:** East Dixfield

**Owner:** Dick Hall

**Existing Conditions:** Located where Potash Brook crosses Route 2 through a large culvert and empties into Seven Mile Stream. This culvert is conveyance for Potash Brook under Route 2 and acts as a cattle pass to grazing land on the opposite side of the road. A substantial amount of eroded material has deposited in the culvert. Periodic maintenance has been necessary to clean out the pipe. Water quality issues are of concern, and NRCS has made several attempts to correct the situation.

**Mitigation Potential:** Mitigation will consist of eliminating the use of the cattle pass by installing a farm well near the outbuildings for cattle use. This would also include stabilizing the eroded embankments along Potash Brook with vegetated riprap. NRCS is currently negotiating with Mr. Hall on this proposed restoration project.

**Site 5:**



**Site Name:** Sevenmile Stream Site

**Location:** North Jay

**Owner:** Unknown

**Existing Conditions:** Located in North Jay on Route 17. This site was recommended by Jeff Varricchione of MDEP and consists of an area where gravel was mined out of Sevenmile Stream. The area currently appears to have lost much of its fish habitat, with evidence of channel aggradation, degradation, widening and planimetric adjustments. There are no undercut banks, deep pools, or shading/cover present in this area.

**Mitigation Type:** Mitigation work will consist of re-grading the eroded embankment to a 3:1 slope in this 300 foot reach, and planting native stoloniferous vegetation. Work will also include the installation of J-hook vane structures or pool diggers to encourage deepening the channel to provide habitat for fish and aquatic invertebrates.

**Site 6:**



**Site Name:** Sunday River

**Location:** Newry

**Owner:** Outward Bound

**Existing Conditions:** Located on the Sunday River Road. This site was recommended by the Sunday River Watershed Assessment Study, and consists of an area where excessive river bank erosion is occurring on an outside bend. The area has lost much of its riparian habitat and is currently threatening the road. The river is over widened in this location with a high width to depth ratio.

**Mitigation Type:** Mitigation work will consist of providing permanent stabilization of the river embankment in this 400 ft reach. This would include: installing J-hook vane structures to move the thalweg away from the river/road embankment; using bioengineering techniques; narrowing the channel to enhance sediment transport; and restoring the riparian plantings.



