



October 10, 2015

To: Lori Sommer
NH DES Wetlands Bureau
PO Box 95
Concord, NH 03302

CC: Steven Rickerich, Ransom Consulting, Inc.
Michael Mates, Pease Development Authority
David Keddell, US Army Corps of Engineers

From: Adele Fiorillo, NHCWS, PWS

Re: NH DES File #2012-001052 & 2012-1060
Second Year Monitoring Report

Introduction

This report outlines the second year monitoring results following completion of the mitigation design at the Pease Golf Course, located in the Towns of Newington and Greenland and the City of Portsmouth, New Hampshire. This report is in accordance with the conditions of the New Hampshire Department of Environmental Services (DES) permit dated December 6, 2012 and was prepared on behalf of the Pease Development Authority (PDA). Mitigation activities were completed on September 26, 2013, and included stream channel and bank restoration, pond expansion, and wetland creation. First year monitoring initiated on August 27, 2014 and was completed on September 16, 2014 following completion of the remedial actions to repair a portion of the stream bank as outlined in a letter from Normandeau Associates dated August 12, 2014. This report summarizes monitoring results for the second monitoring year. Monitoring was completed in September 2015.

Second Year Monitoring Results

Monitoring Results

During a September 2015 visit the overall health of planted shrubs appeared to be high. Although no shrub counts were conducted in the fall of 2015, the total number of shrubs on initial visual inspection appeared significantly higher than during the 2014 visit.

Several native shrubs have established themselves in the wetland, including speckled alder (*Alnus incana*), red maple (*Acer rubrum*), and staghorn sumac (*Rhus typhina*). As long as these species do not interfere with golf course operations, they will provide additional cover and stream bank stability.

Erosion control measures along the stream channel and pond edges seem to have been effective, and no significant erosion was noted around the ponds.

Invasive Species

Small amounts of Purple Loosestrife continue to occur in the wetland mitigation area (WM-13A). This infestation is sparse and continued control by hand pulling is likely to be effective. Several invasive species have established within the upland stream buffer (multiflora rose, autumn olive, bella honeysuckle), but they are unlikely to encroach on the wetland. These shrubs are providing additional bank stability so no action is recommended at this time. No invasive species were noted growing in the pond areas and, other than continued monitoring for invasive species, no additional actions are needed.

Remedial Actions

No additional remedial actions are recommended at this time. The majority of the planted shrubs have established themselves, and invasive species control measures have been effective. However, hand-removal of encroaching purple loosestrife plants within the wetland mitigation area and adjacent upland should continue.


In compliance with Permit #2012-01052/1060, one additional year of monitoring is to be conducted; a Third Year Monitoring Report will be submitted in Fall of 2016.


Monitoring Photo log



		Date: 9-8-15
	Photographer: Benjamin Griffith	
	Comments: Stream bank restoration with planted shrubs along the bank to the left and right	
		Date: 9-8-15
	Photographer: Benjamin Griffith	
	Comments: Healthy Silky Dogwood near pond edge	

	Date: 9-8-15
	Photographer: Benjamin Griffith
	Comments: Wetland mitigation area with dense herbaceous vegetation
	Date: 9-8-15
	Photographer: Benjamin Griffith
	Comments: Healthy chokeberry with fruit clusters

	Date: 9-8-15
	Photographer: Benjamin Griffith
	Comments: Pioneer sumacs in streambank restoration
	Date: 9-8-15
	Photographer: Benjamin Griffith
	Comments: Healthy Sand Cherry along stream bank

	Date: 9-8-15
	Photographer: Benjamin Griffith
	Comments: Purple Loosestrife invading wetland mitigation area

	Date: 9-8-15
	Photographer: Benjamin Griffith
	Comments: Pond 1

	Date: 9-8-15
	Photographer: Benjamin Griffith
	Comments: Pond 2
	Date 9-8-15
	Photographer: Benjamin Griffith
	Comments: Pond 3