

# Potential Restoration Projects for Industri-plex Superfund Site

Town & Project Name	Restoration Category	# ac. wetlands created	# ac. wetlands restored	# ac. wetlands enhanced	# ac. pond restored	# ac. stream restored	# ac. upland protected	# wetland ac.-yrs	# pond ac.-yrs	# stream ac.-yrs	# upland ac.-yrs	total in # wetland ac.-yrs	project cost
<b>WOBURN</b>													
<b>Town Meadow Brook Complex</b>	TMB1: Wetland & Stream Restoration		1.06			0.25		12.2	0.0	0.9		12.5	\$90,000
	TMB2: Wetland & Stream Restoration		0.12			0.15		1.4	0.0	0.5		1.5	\$66,600
	TMB3: Wetlands Restoration		0.45					5.2	0.0	0.0		5.2	\$94,500
	TMB4: Wetland Creation/Water Quality Improvement	0.23				0.06		3.4	0.0	0.2		3.5	\$66,600
<b>Sucker Brook Complex</b>	SB1: Wetland & Pond Restoration, Wetland Creation	0.26	0.7		0.63			11.9	2.3	0.0		12.6	\$261,800
	SB2: Wetland Restoration & Creation	0.33	1.4					21.0	0.0	0.0		21.0	\$165,200
<b>Horn Pond</b>	HP1: Pond Restoration/Water Quality Improvement				108			0.0	129.7	0.0		40.5	\$90,000
	HP2: Pond Restoration/Water Quality Improvement				108			0.0	129.7	0.0		40.5	\$231,000
	HP3: Pond Restoration/Bank Vegetation				108			0.0	129.7	0.0		40.5	\$31,500
<b>Shaker Glen Brook</b>	SGB1: Land Acquisition, Stream Restoration & Wetland Creation	5				0.55	6	74.1	0.0	2.0	34.8	74.7	\$2,110,366
	SGB2: Wetland Enhancement			4				14.4	0.0	0.0		14.4	\$21,000
<b>Walkers Pond</b>	WaP1: Wetland Enhancement			16				57.7	0.0	0.0		57.7	\$30,360
	WaP2: Pond Restoration				10.5			0.0	37.8	0.0		11.8	\$40,200
<b>WINCHESTER</b>													
<b>Locke Farm</b>	LF1: Wetlands Enhancement			2				7.2	0	0		7.2	\$26,600
<b>WATERSHED-WIDE</b>													
<b>ABERJONA</b>	A1: Wetlands Enhancement			64				230.66	0	0		230.7	\$228,134
<b>TOTAL</b>		<b>5.82</b>	<b>3.73</b>	<b>86</b>	<b>335.13</b>	<b>1.01</b>	<b>6</b>	<b>439.1</b>	<b>429</b>	<b>3.6</b>	<b>34.8</b>	<b>574.3</b>	<b>\$ 3,553,860</b>

From original Industri-plex OU-2 Habitat Equivalency Analysis document

Hypothetical Ecological Benefits for Compensatory Actions:

Wetland Creation = 14.8 ac-yrs/ac

Wetland Restoration = 11.5 ac-yrs/ac

Wetland Enhancement = 3.6 ac-yrs/ac

Pond/Lake or River Restoration = 3.6 ac-yrs/ac

Upland Buffer Creation = 3.28 ac-yrs/ac

Pond/riverine to wetland habitat benefit comparison: 1 to 3.2 (based upon secondary production rates)

To convert pond/riverine acre-yrs to wetland acre-yrs, divide by 3.2 ac-yrs/ac

## Land Valuation Calculation

For calculating an ecological benefit for land protection, the compensatory gain was considered to be the benefit that is derived from protecting habitat that would otherwise be lost or have a reduction in service level due to development.

Equation:

% service value of undeveloped property – % service value same property after development = % service value for protection

Considering a scenario where the property would incur a relatively low level of development in two years if not protected:

Hypothetical value for undeveloped property (100% service level) for 30 years = 21.4 ac-yrs/ac

Hypothetical value for undeveloped property (100% service level) with low amount of development occurring (30% service level decrease) after two years and remaining at that service level for an additional 28 years = 15.6 ac-yrs/ac

$$21.4 \text{ ac-yrs/ac} - 15.6 \text{ ac-yrs/ac} = 5.8 \text{ ac-yrs/ac}$$

#### Exceptions to Using Hypothetical Values

All three projects for Horn Pond would together (not each project separately) equate to a 20% service increase.

The ac-yr/ac credit for each listed Horn Pond project, then, was calculated as 3.604 ac-yr/ac divided by 3 = 1.2 ac-yrs/ac

## General Project Descriptions

### WOBURN

#### **Town Meadow Brook Complex:**

- TMB1 (Wetlands and Stream Channel Restoration) – This project will restore the upper reach of Town Meadow Brook (a tributary to Horn Pond) and adjacent wetland behind the DPW building. Sediments will be excavated to restore hydrology, and non-native plants will be removed and replaced with native wetland species.
- TMB2 (Wetland and Stream Channel Restoration) – This project will improve the section of Town Meadow Brook along Library Field Park by removing accumulated sediment. Filled wetland areas at the northern end of Library Field Park will also be restored.
- TMB3 (Wetlands Restoration) – This project will restore filled wetlands along Town Meadow Brook at the southern end of Library Field Park.
- TMB4 (Wetland Creation/Water Quality Improvement) – This project will improve the water quality of a tributary to Horn Pond. The project involves installing a diversion structure at Woburn Parkway to remove particulate matter via a swirl separator. The treated water will discharge to a created wetland, followed by discharge to Town Meadow Brook, and eventually, Horn Pond.

#### **Sucker Brook Complex:**

- SB1 (Wetland Creation/Wetland and Pond Restoration) – This multi-tasked project is designed to improve the aquatic habitat in the Sucker Brook area. This project would involve the following activities: 1) install a siltation basin at the drain outlet from Route 3A to remove sediments that would otherwise enter a downstream wetland and pond; 2) dredge the accumulated silt out of the downstream wetland, remove invasive species, and plant native wetland species, 3) remove sediments from the downstream pond, install a floating aerator, and stabilize banks with plants, and 4) create a new wetland on the other side of the pond.
- SB2 (Wetland Creation/Wetland Restoration) – This project will improve the quality of another wetland in the Sucker Brook Complex by dredging accumulated silt, removing invasive species, and planting native wetland species. This project will also create a new wetland nearby.

#### **Horn Pond:**

- HP1 (Pond Restoration/Water Quality Improvement) – This project will improve the water quality of Horn Pond by retrofitting 4 sluice ways. The new sluice ways will have catch basins with deep sumps, grease hoods, and stormceptors to capture solids and hydrocarbons prior to stormwater discharge to the Pond. Additionally, drain outlets will be fitted with flared ends and rip rap splash pads to eliminate erosion.
- HP2 (Pond Restoration/Water Quality Improvement) – This project will increase the dissolved oxygen levels of Horn Pond, thereby improving the habitat for aquatic organisms. The work activities include installation of compressed air

blowers, electrical connections, supervisory control and data acquisition (SCADA) instrumentation and small bubble piping diffuser lines. This is expected to be a multi-year operation.

- HP3 (Pond Restoration/Bank Vegetation) – This project would involve hiring a consultant to develop and implement a vegetation maintenance plan for Horn Pond.

#### **Shaker Glen Brook:**

- SGB1 (Land Acquisition, Stream Restoration and Wetland Creation) – This proposed project is stream restoration and wetland creation work on the Shaker Glen parcel in Woburn. This parcel is an approximately 12-acre Russell Street property in Woburn that has been degraded over time by the dumping of trash. Shaker Glen Brook runs through the middle and north end of the property; at the south end of the property lies an old bowling alley foundation and parking lot where former wetlands once existed. For the restoration work to be implemented, the property would first need to be bought and put under protection in perpetuity by the Woburn Conservation Commission. The restoration work would include excavating the remains of the bowling alley and recreating the former wetland area, removing trash, and providing stream channel improvements. The value of protecting and restoring this residentially-zoned property is two-fold: 1) it would protect a reach of Shaker Glenn Brook and associated bordering vegetated wetlands, and 2) it would provide a contiguous expansion of the Shaker Glen Conservation Area located immediately upstream.
- SGB2 (Wetland Enhancement) – This project would involve removing invasive species from the adjacent Shaker Glen Conservation Area.

#### **Walkers Pond:**

- WP1 (Wetlands Enhancement) - This project would involve large-scale invasive species control at the wetland areas adjacent to the Pond.
- WP2: (Pond Restoration) – This project would involve harvesting invasive species from the Pond.

### WINCHESTER

#### **Locke Farm**

- LF1 (Wetlands Enhancement) – This project would provide supplemental plantings for the wetland at Locke Farm Conservation Area. Native plant species are needed to replace dead purple loosestrife at an approximate 2-acre area at the north end of the conservation parcel.

### ABERJONA WATERSHED

- A1 (Wetlands Enhancement) – This would be a large-scale invasives species control project at wetland areas along the Aberjona, covering approximately 64 acres. Plants targeted for herbicide-control include phragmites, purple loosestrife and oriental bittersweet.

# Restoration Project Map

