

TRANSMITTAL

To: Bureau of Design and Environment
Attention: Matthew J. Sunderland
From: Illinois Natural History Survey
Regarding: Wetland Mitigation Monitoring

Title and Location

Title: FAU 5822 (Milan Beltway)
Location: Green Rock site Phase I - 1.6 km (0.74 mi) southwest of Green Rock
Job Number: P-92-096-84 (BDE Seq. No. 67)
Section Number: 1-3
County: Henry
IDOT District: District 2

Survey Conducted By: Scott Wiesbrook (soils and hydrology)
Dave Ketzner, Brian Wilm, and Jason Zylka
(vegetation and hydrology)
Illinois Natural History Survey
1816 South Oak Street
Champaign, Illinois 61820
(217) 265-0368 (Wiesbrook)

Date Conducted: July 5, 2006

Project Summary:

For the first year we monitored the site created for wetland impact mitigation for FAU 5822 (Milan Beltway), Green Rock site, Phase I in Henry County. The site was completed and all trees planted by spring 2006. The attached report includes information detailing monitoring methods and results. The status of the created wetland site is discussed. The created wetland site is marked on the DOQ included with this report.

Signed: _____

Dr. Allen E. Plocher
INHS/IDOT Project Coordinator

Signed: _____

Dr. Edward J. Heske
INHS/IDOT Project Principal Investigator

Date: _____

Date: _____

WETLAND MITIGATION SITE MONITORING REPORT FAU 5822 (Milan Beltway) Henry County – Green Rock Site, Phase I

Introduction

This report details monitoring of the wetland mitigation site created to compensate for impacts associated with FAU 5822 (Milan Beltway) in Henry County. The site consists of approximately 16.88 ha (41.69 ac) of wetland creation/restoration (IDOT 2002). The wetland creation site is located 1.6 km (0.74 mi) southwest of Green Rock, IL, north and west of the crossing of I-74 over Mosquito Creek. The legal location is SW/4, NE/4, and SE/4, NW/4 Section 16, T. 17 N., R. 1 E. The project area lies within the United States Geological Survey Mississippi River hydrologic unit 07090007, Green River. The site was completed and all trees planted by spring 2006. On-site monitoring was conducted on July 5, 2006.

This report discusses the goals, objectives, and performance criteria for the mitigation project, the methods used for monitoring the site, monitoring results, and discussion and recommendations based on the results. Methods and results are discussed by performance criteria for each goal.

Goals, Objectives, and Performance Standards

Goals, objectives, and performance standards follow those specified in the Conceptual Wetland Compensation Plan (IDOT, 2002) developed for this site. Performance criteria are based on those specified in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987), *Illinois Wetland Restoration and Creation Guide* (Admiraal et al. 1997), and in *Guidelines for Developing Mitigation Proposals* (USACE 1993). Each goal should be attained by the end of the 5-year monitoring period. Goals, objectives, and performance criteria are listed below.

Project goal 1: The created wetland community should be a jurisdictional wetland as defined by current federal standards.

Objective: The created wetland should compensate for the loss of 16.73 ha (41.31 ac) of wetland.

Performance criteria:

- a. Predominance of hydrophytic vegetation: More than 50% of the dominant plant species must be hydrophytic.
- b. Occurrence of hydric soils: Hydric soil characteristics should be present, or conditions favorable for hydric soil formation should persist at the site.
- c. Presence of wetland hydrology: The area must be either permanently or periodically inundated at average depths less than 2 m (6.6 ft) or have soils that are saturated to the surface for at least 12.5% of the growing season.

Project goal 2: The created wetland plant community should meet standards for planted species survival and floristic composition.

Objectives: Planting trees will create a forested wetland. Other herbaceous vegetation will be allowed to colonize the site naturally.

Performance criteria:

- a. Planted species survivorship: At least 136 planted trees per hectare should be established and living by the end of the five year monitoring period.
- b. Native species composition: At least 50% of the plants present should be non-weedy, native, perennial species.
- c. Dominance of vegetation: None of the three most dominant plant species may be non-native or weedy species, such as cattails, sandbar willow, or reed canary grass (IDOT 2002).

Methods

Project goal 1**a. Predominance of hydrophytic vegetation**

The method for determining dominant vegetation at a wetland site is described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and further explained in the *Federal Manual for Identifying and Delineating Jurisdictional Wetlands* (Federal Interagency Committee for Wetland Delineation 1989). It is based on aerial coverage estimates for individual plant species. Each of the dominant plant species is then assigned its wetland indicator status rating (Reed 1988). Any plant rated facultative or wetter, *i.e.*, FAC, FAC+, FACW, and OBL, is considered a hydrophyte. A predominance of wetland vegetation in the plant community exists if more than 50% of the dominant species present are hydrophytic. Since the survival of planted hydrophytic trees and shrubs on non-wetlands (*i.e.* yards) is well documented, these species were excluded from calculations of percentage of dominant hydrophytic species.

b. Occurrence of hydric soils

The soil was sampled in order to monitor hydric soil development. Soil profile morphology including horizon color, texture, and structure was described at various points throughout the site. Additionally, the presence, type, size, and abundance of redoximorphic features were noted. Hydric soils may develop slowly, and characteristics may not be apparent during the first several years after project construction. In the absence of hydric soil indicators at the end of the five-year monitoring period, hydrologic data could be used as corroborative evidence that conditions favorable for hydric soil formation persist at the site.

c. Presence of wetland hydrology

Illinois State Geological Survey (ISGS) personnel installed twelve soil-zone monitoring wells, two deeper wells, a river gauge, and a rain gauge at the site in the spring of 2006 (Fucciolo et al. 2006). Locations for these sites can be found in the ISGS annual report for 2006 (Fucciolo et al. 2006). Water-level data was collected beginning in March 2006.

Project goal 2**a. Planted species survivorship**

In order to create floodplain forest, tree saplings were planted at the compensation site. According to the Conceptual Wetland Compensation Plan (IDOT, 2002) developed for this site, the number of trees to be planted at the site is listed in Table 1, which follows:

Table 1. Tree species planted in the created wetland (Final planting date spring 2006).

Species	Common Name	Number
<i>Acer saccharum</i>	Sugar maple	10
<i>Carya illinoensis</i>	Pecan	970
<i>Fraxinus pennsylvanica</i>	Green ash	970
<i>Malus</i> “Adirondack”	Adirondack crabapple	10
<i>Malus</i> “Prairiefire”	Prairiefire crabapple	15
<i>Platanus occidentalis</i>	Sycamore	971
<i>Quercus bicolor</i>	Swamp white oak	982
<i>Quercus palustris</i>	Pin oak	972
TOTAL		4900

All of the trees were to be balled and burlapped 4.4-5.1 cm (1.75-2 in) caliper trees, except the *Carya illinoensis*, which were bare root two year old seedlings. Survivorship and density of planted trees was determined through a census of the created wetland. All live trees were counted. Dead trees were counted but not identified by species.

Tree survival was calculated as the number live trees per hectare: Total number of live planted stems counted/total hectares at site (16.88 ha).

b. Native Species Composition

A complete list of plant species present was compiled. This was used to determine the number and percentage of species present that are non-weedy, native, perennials.

In addition, the Floristic Quality Assessment (Taft et al. 1997) was applied to the plant community at the site to evaluate floristic quality and nativity. The assessment methodology is used to identify natural areas and facilitate floristic comparisons among sites. This technique is part of the procedure for the long-term monitoring of natural areas and the monitoring of restored or created wetlands (Swink and Wilhelm 1994). The basis of the method is that each native plant species is assigned a conservatism coefficient (C) ranging from 0 to 10. Individual conservatism coefficients are ranks of species behavior and reflect the committee’s (Taft et al. 1997) confidence level for a taxon's correspondence to anthropogenic disturbances. Coefficient values range from 0 to 10, with all adventive species given a coefficient of 0. Plant species assigned 0 have low affinities for natural areas, whereas those assigned 10 have very high affinities. When a complete species list is assembled for a wetland site, the overall average conservatism coefficient (\bar{c}) and a site floristic quality index (FQI) can be calculated. The \bar{c} is calculated by summing the coefficients of conservatism (ΣC) and dividing by the total number of native species (N). The FQI is then calculated by dividing the ΣC by the square root of N. These values provide a measure of site floristic quality. Floristic quality index (FQI) values less than 5 indicate that the area is extremely weedy or in an early successional stage (Swink and Wilhelm 1994). FQI values between 20 and 35 ($\bar{c} = 3.0$) indicate that the area has evidence of native character and can be considered a botanical asset. FQI values between 35 and 50 ($\bar{c} = 3.5$) indicate that the area has significant native character.

c. Dominance of vegetation

Plant species dominance was determined as in project goal 1, a. Predominance of hydrophytic vegetation. The method for determining dominant vegetation at a wetland site is described in the

Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory 1987) and further explained in the *Federal Manual for Identifying and Delineating Jurisdictional Wetlands* (Federal Interagency Committee for Wetland Delineation 1989).

Results

Project goal 1

a. Predominance of hydrophytic vegetation

Dominant plant species for the mitigation site in 2006 are shown in Table 2. One of the three dominant species is rated OBL, FACW, FAC+, or FAC and is hydrophytic. This results in only 33% of the dominants being hydrophytic, which does not meet the minimum project goal of >50%.

Table 2. Dominant plant species by stratum and wetland indicator status.

Dominant Plant Species	Stratum	Indicator Status
1. <i>Lolium perenne</i>	Herb	FACU
2. <i>Phalaris arundinacea</i>	Herb	FACW+
3. <i>Poa pratensis</i>	Herb	FAC-

b. Occurrence of hydric soils

Soils examined at the site were found to be relatively undisturbed. Conditions this year during multiple site visits were not conducive to good soil mapping. The site was extremely dry, making it difficult to get reliably representative undisturbed samples. It appeared that hydric soil indicators are present on the west side of this site (Figure 1), while on the east side they may be. Since the vegetation and hydrology both did not meet the criteria, we were not overly concerned with the soils this year. Next year we should be able to better report on the soils at this site. Table 3 below presents a soil description of a typical pedon located within the west side of this site that we were able to sample this year:

Table 3. Description of the soils at the site.

Depth	Matrix Color	Concentrations	Depletions	Texture	Structure
0-23 cm (0-9 in)	10YR 3/1	Few 10YR 4/6 and common 7.5YR 4/4	None	Silty clay loam	Medium granular
23-91 cm (9-36+ in)	10YR 3/1 with 10YR 6/1 strata	Common 7.5YR 4/4 and common 10YR 4/4	None	Silty clay loam	Medium granular and blocky

c. Presence of wetland hydrology

The ISGS estimated that “the total area of created wetland that conclusively satisfied wetland hydrology criteria in 2006 is 0.0 ac (0.0 ha)” (Figure 2) (Fucciolo, et al. 2006). More information is available in the *Milan Beltway, Green Rock, Wetland Compensation Site* report (ibid).

Based on field evidence observed during our on-site visits, the majority of this site does not exhibit indicators of wetland hydrology. At this time we estimate that none of the site currently has wetland hydrology.

FAU 5822, Green Rock Phase I
Mitigation site monitoring
Henry County



0 400 800 Feet

scale 1:4800
1 inch=400 ft

0 100 200 Meters

⊕ Photo station
□ Project boundary



01/07

Figure 1.

Milan Beltway, Green Rock Wetland Compensation Site (FAU 5822)

Estimated Areal Extent of 2006 Wetland Hydrology

based on data collected between September 1, 2005 and September 1, 2006

Map based on USGS digital orthophotograph, Coal Valley NE quarter quadrangle

produced from 4/14/98 aerial photography (ISGS 2006)

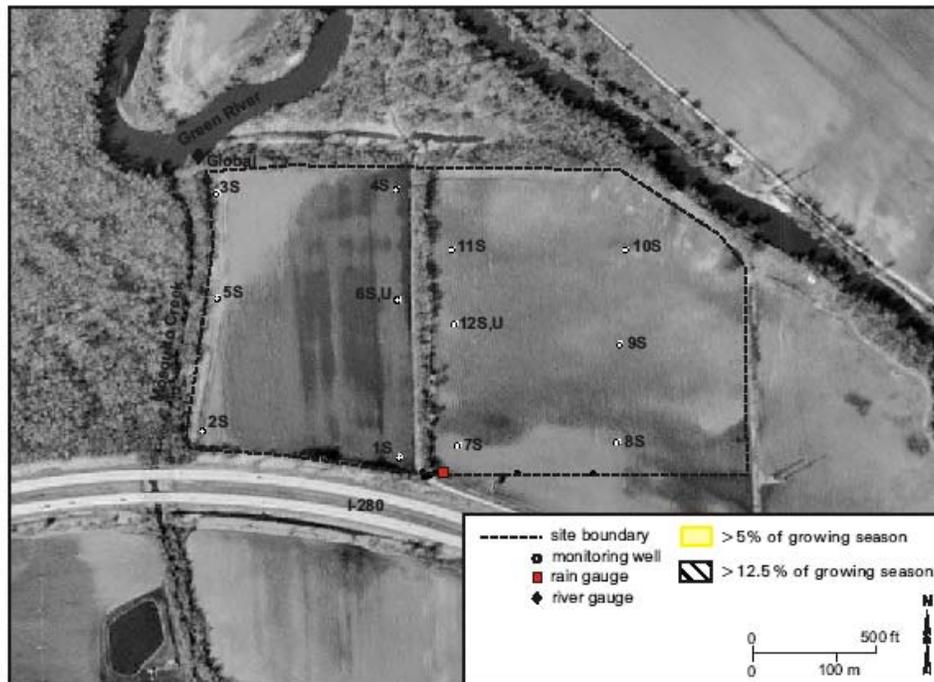


Figure 2.

Project goal 2

a. Planted species survivorship

Table 4 shows the results of the census. There were only minor discrepancies between the numbers of trees reported as planted and the number of live trees counted. The major discrepancy noticed this year was that the number of swamp white oaks found was about one-third of those reported as planted. However, many overcup and white oak were found which were not reported as planted, and we feel this was simply a result of confusion at the nursery. These trees can look similar when small and immature, and were probably simply mistaken for swamp white oaks. When we group all of the oaks that were not pin oaks into a *Quercus* spp. category (Table 4), we arrive at much more reasonable numbers in terms of survival. Table 4 also shows the percent survival for the trees. These figures were calculated both by species and overall for all species in the entire site. More than 86% of the trees reported planted were counted.

Table 4. Number of trees counted and percent tree survival (by species).

Species	Common Name	Number Planted	Number Counted	% Survival.
<i>Acer saccharum</i>	Sugar maple	10	0	0.0
<i>Carya illinoensis</i>	Pecan	970	527	54.3
<i>Fraxinus pennsylvanica</i>	Green ash	970	975	100.5
<i>Malus</i> “Adirondack”	Adirondack crabapple	10	0	0.0
<i>Malus</i> “Prairiefire”	Prairiefire crabapple	15	0	0.0
<i>Platanus occidentalis</i>	Sycamore	971	969	99.8
<i>Quercus palustris</i>	Pin oak	972	937	96.4
<i>Quercus</i> spp.*	Swamp white, white, and overcup oak	982	812	82.7
TOTAL		4900	4220	86.1

* For survival analysis, we grouped all of the oak species that were not pin oaks.

Therefore, there were 4220 live trees counted during the census over 16.88 ha. This results in a trees per hectare number of 250, easily exceeding the stated project goal (>136 trees per hectare).

b. Native species composition

This site has 64.5% non-weedy, native, annual and perennial species. Therefore, it meets the requirement for native species composition (>50%). It is normal, however, for a site to begin very weedy and develop more native character over time, so this site may be expected to increase in native species composition over time and should easily exceed the stated project goal.

Two FQI values were also calculated for this site from the species lists included in Appendix A. The first FQI value is calculated from only species which became established on the site naturally; the second FQI value includes the planted trees. The FQI value is 9.2 with a \bar{c} value of 1.5 when only naturally established vegetation is considered, and 13.0 and 2.0 respectively when the planted trees are included. Therefore this site is of fair natural quality.

c. Dominance of vegetation

This site does not meet the performance criteria for dominance of vegetation. All three of the dominant species (Table 2) are non-native and weedy.

Photography stations were established in areas chosen to give maximum representation of the site. Locations of the photography stations can be seen in Figure 1 (page 6). Photographs were taken from the permanent photography stations established in 2006 and are in Appendix B of this report.

Discussion

After this first monitoring season, this site shows some progress toward forested wetland establishment. All standards for Project Goal 1 have not been met, as this site is not a jurisdictional wetland. There is no evidence to support that this site will comply with this goal in the future, although this year was slightly drier than average. Two of the three standards for Project Goal 2 have been met, and as the vegetative succession proceeds, this site may comply with that goal by the end of the monitoring period.

None of this site satisfies the wetland criteria; therefore, we believe this site is not a wetland. Current wetland acreage at this site is estimated to be 0.0 ac (0.0 ha), corresponding to that area determined by the ISGS to possess wetland hydrology. This estimate will be refined in future years as more hydrologic data is gathered.

The vegetation is not hydrophytic nor does it meet the dominance criteria for native non-weedy species, although it does meet the native species composition requirement. The planted trees exhibited excellent survival, and should meet the planted species performance criteria at the end of the monitoring period. There are still a large number of species at each site that have very low coefficients of conservatism (C). This is common on disturbed and early successional sites and is not a cause for concern at this time. It is likely that as succession progresses, more conservative species will become established on the site.

Currently, the primary concerns for this site are establishing non-weedy, native dominant hydrophytic vegetation, hydric soils, and wetland hydrology. An estimate of current wetland acreage is 0.0 ac (0.0 ha), corresponding to that area determined by the ISGS to possess wetland hydrology.

Literature Cited

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Appendix A
Wetland Determination Forms

ROUTINE ONSITE WETLAND DETERMINATION

Site 1 (page 1 of 5)

Field Investigators: Wiesbrook, Ketzner, Wilm, and Zylka

Date: July 5, 2006

Project Name: FAU 5822 (Milan Beltway Green Rock Site)

Section No.: 1-3

State: Illinois

County: Henry

Applicant: IDOT Dist. 2

Area Name: Non-native grassland

Legal Description: SW/4, NE/4 and SE/4, NW/4, Section 16, T. 17 N., R. 1 E

Location: This non-wetland occupies both the east and west sides of the site.

Do normal environmental conditions exist at this area? Yes: No:

Has the vegetation, soils, or hydrology been significantly disturbed? Yes: No:

VEGETATION

Dominant Plant Species	Stratum	Indicator Status
1. <i>Lolium perenne</i>	Herb	FACU
2. <i>Phalaris arundinacea</i>	Herb	FACW+
3. <i>Poa pratensis</i>	Herb	FAC-

Percentage of dominant species that are OBL, FACW, FAC+, or FAC: 33%

Hydrophytic vegetation: Yes: No:

Rationale: Fewer than 50% of the dominants are OBL, FACW, FAC+, or FAC.

SOILS

Series and phase: NRCS mapped as Sawmill, Radford, Elburn, and Plano. East side not sampled well due to extremely dry conditions; west side appears to be Sawmill (Cumulic Endoaquoll)

On Henry County hydric soils list? Yes: No:

Is the soil a histosol? Yes: No:

Histic epipedon present? Yes: No:

Redox Concentrations? Yes: No: Color: 7.5YR 4/4, 10YR 4/6, and 4/4

Redox Depletions? Yes: No: Color: N/A

Matrix color: 10YR 3/1 over strata of 10YR 3/1 and 6/1

Other indicators: None.

Hydric soils? Yes: No:

Rationale: The Natural Resources Conservation Service identifies Sawmill silty clay loam as a Cumulic Endoaquoll which is poorly drained. This soil possesses redox concentrations within a low chroma matrix, which indicates saturated or reduced conditions for extended duration. Therefore, the soil at this site meets the hydric soil criterion. This soil meets NRCS hydric soil indicator F3 – Depleted matrix.

ROUTINE ONSITE WETLAND DETERMINATION

Site 1 (page 2 of 5)

Field Investigators: Wiesbrook, Ketzner, Wilm, and Zylka

Date: July 5, 2006

Project Name: FAU 5822 (Milan Beltway Green Rock Site)

Section No.: 1-3

State: Illinois

County: Henry

Applicant: IDOT Dist. 2

Area Name: Non-native grassland

Legal Description: SW/4, NE/4 and SE/4, NW/4, Section 16, T. 17 N., R. 1 E

Location: This non-wetland occupies both the east and west sides of the site.

HYDROLOGY

Inundated: Yes: No: X

Depth of standing water: N/A

Depth to saturated soil: >0.91 m (36 in)

Overview of hydrological flow through the system: This area is hydrologically influenced by overflow from the Green River and Mosquito Creek, sheet flow from surrounding uplands, some directed drainage from Interstate 280/74, and precipitation. Water leaves the area via evapotranspiration, possible groundwater recharge, and drainage into the creek and river.

Size of watershed: 2596 km² (1003 mi²) for the Green River at Geneseo, IL (Wicker, et al. 1996)

Other field evidence observed: The ISGS estimated that this area did not meet the wetland hydrology criteria (for a normal year, see Fucciolo et al. 2006). No hydrologic indicators were observed.

Wetland hydrology: Yes: No: X

Rationale: Field evidence cited above and ISGS data indicate that this area is not inundated or saturated for a sufficient duration to satisfy the wetland hydrology criterion.

DETERMINATION AND RATIONALE:

Is the area a wetland? Yes: No: X

Rationale: While hydric soil is present, dominant hydrophytic vegetation and wetland hydrology are absent at this area; therefore, we determined that this area is not a wetland.

ROUTINE ONSITE WETLAND DETERMINATION

Site 1 (page 3 of 5)

Field Investigators: Wiesbrook, Ketzner, Wilm, and Zylka
Project Name: FAU 5822 (Milan Beltway Green Rock Site)
State: Illinois

Date: July 5, 2006

Section No.: 1-3

County: Henry

Applicant: IDOT Dist. 2

Area Name: Non-native grassland

Legal Description: SW/4, NE/4 and SE/4, NW/4, Section 16, T. 17 N., R. 1 E

Location: This non-wetland occupies both the east and west sides of the site.

SPECIES LIST

Scientific name	Common name	Stratum	Wetland indicator status	Coefficient of conservatism#
<i>Abutilon theophrasti</i>	velvet-leaf	herb	FACU-	*
<i>Acer negundo</i>	box elder	herb	FACW-	1
<i>Agropyron repens</i>	quack grass	herb	FACU	*
<i>Amaranthus retroflexus</i>	rough pigweed	herb	FACU+	*
<i>Amaranthus tuberculatus</i>	tall waterhemp	herb	OBL	1
<i>Ambrosia artemisiifolia</i>	common ragweed	herb	FACU	0
<i>Ambrosia trifida</i>	giant ragweed	herb	FAC+	0
<i>Apocynum sibiricum</i>	Indian hemp	herb	FAC+	2
<i>Asclepias syriaca</i>	common milkweed	herb	UPL	0
<i>Aster ontarionis</i>	Ontario aster	herb	FAC	4
<i>Aster simplex</i>	panicled aster	herb	FACW	3
<i>Bromus commutatus</i>	hairy brome	herb	UPL	*
<i>Calystegia sepium</i>	American bindweed	herb	FAC	1
<i>Cardaria draba</i>	hoary cress	herb	UPL	*
<i>Carduus nutans</i>	musk bristle thistle	herb	UPL	*
<i>Chamaesyce maculata</i>	nodding spurge	herb	FACU-	0
<i>Chenopodium album</i>	lamb's quarters	herb	FAC-	*
<i>Cichorium intybus</i>	chickory	herb	UPL	*
<i>Cirsium arvense</i>	Canada thistle	herb	FACU	*
<i>Cirsium vulgare</i>	bull thistle	herb	FACU-	*
<i>Conyza canadensis</i>	horseweed	herb	FAC-	0
<i>Cuscuta sp.</i>	dodder	herb	-	-
<i>Cynanchum laeve</i>	blue vine	herb	FAC	1
<i>Cyperus strigosus</i>	straw-colored flatsedge	herb	FACW	0
<i>Datura stramonium</i>	jimsonweed	herb	FACU-	*
<i>Daucus carota</i>	Queen Anne's lace	herb	UPL	*
<i>Echinochloa muricata</i>	barnyard grass	herb	OBL	0
<i>Elymus virginicus</i>	Virginia wild rye	herb	FACW-	4
<i>Eragrostis pectinacea</i>	Carolina love grass	herb	FAC	0
<i>Erigeron annuus</i>	annual fleabane	herb	FAC-	1
<i>Helianthus tuberosus</i>	Jerusalem artichoke	herb	FAC	3
<i>Hordeum jubatum</i>	squirrel-tail	herb	FAC+	*
<i>Lactuca serriola</i>	prickly lettuce	herb	FAC	*
<i>Lolium perenne</i>	crested rye grass	herb	FACU	*
<i>Lotus corniculatus</i>	birdsfoot-trefoil	herb	FAC-	*
<i>Medicago lupulina</i>	black medic	herb	FAC-	*
<i>Medicago sativa</i>	alfalfa	herb	UPL	*

Species list continued on next page.

ROUTINE ONSITE WETLAND DETERMINATION

Site 1 (page 4 of 5)

Field Investigators: Wiesbrook, Ketzner, Wilm, and Zylka
Project Name: FAU 5822 (Milan Beltway Green Rock Site)
State: Illinois

Date: July 5, 2006

Section No.: 1-3

County: Henry

Applicant: IDOT Dist. 2

Area Name: Non-native grassland

Legal Description: SW/4, NE/4 and SE/4, NW/4, Section 16, T. 17 N., R. 1 E

Location: This non-wetland occupies both the east and west sides of the site.

SPECIES LIST (Cont.)

Scientific name	Common name	Stratum	Wetland indicator status	Coefficient of conservatism#
<i>Melilotus alba</i>	white sweet clover	herb	FACU	*
<i>Melilotus officinalis</i>	yellow sweet clover	herb	FACU	*
<i>Oenothera biennis</i>	evening primrose	herb	FACU	1
<i>Oxalis stricta</i>	yellow wood sorrel	herb	FACU	0
<i>Phalaris arundinacea</i>	reed canary grass	herb	FACW+	*
<i>Phleum pratense</i>	Timothy	herb	FACU	*
<i>Phyla lanceolata</i>	fog-fruit	herb	OBL	1
<i>Plantago lanceolata</i>	narrow-leaved plantain	herb	FAC	*
<i>Plantago rugelii</i>	red-stalked plantain	herb	FAC	0
<i>Poa pratensis</i>	Kentucky bluegrass	herb	FAC-	*
<i>Polygonum amphibium</i>	water smartweed	herb	OBL	3
<i>Polygonum lapathifolium</i>	currtop lady's thumb	herb	FACW+	0
<i>Polygonum pensylvanicum</i>	giant smartweed	herb	FACW+	1
<i>Polygonum persicaria</i>	spotted lady's thumb	herb	FACW	*
<i>Polygonum sp.</i>	smart weed	herb	-	-
<i>Populus deltoides</i>	eastern cottonwood	herb	FAC+	2
<i>Portulaca oleracea</i>	purslane	herb	FAC-	*
<i>Potentilla norvegica</i>	rough cinquefoil	herb	FAC	0
<i>Potentilla simplex</i>	common cinquefoil	herb	FACU-	3
<i>Rorippa islandica</i>	marsh yellow cress	herb	OBL	4
<i>Rorippa sylvestris</i>	creeping yellow cress	herb	OBL	*
<i>Rumex altissimus</i>	pale dock	herb	FACW-	2
<i>Rumex crispus</i>	curly dock	herb	FAC+	*
<i>Setaria faberi</i>	giant foxtail	herb	FACU+	*
<i>Setaria glauca</i>	pigeon grass	herb	FAC	*
<i>Sida spinosa</i>	prickly sida	herb	FACU	*
<i>Sisymbrium loeselii</i>	tall hedge mustard	herb	UPL	*
<i>Solanum carolinense</i>	horse nettle	herb	FACU-	0
<i>Solidago gigantea</i>	late goldenrod	herb	FACW	3
<i>Sonchus asper</i>	prickly sowthistle	herb	FAC	*
<i>Stachys tenuifolia</i>	slenderleaf betony	herb	OBL	5
<i>Taraxacum officinale</i>	common dandelion	herb	FACU	*
<i>Thlaspi arvense</i>	field penny cress	herb	UPL	*
<i>Tragopogon dubius</i>	goat's beard	herb	UPL	*
<i>Trifolium hybridum</i>	alsike clover	herb	FAC-	*
<i>Trifolium pratense</i>	red clover	herb	FACU+	*

Species list continued on next page.

ROUTINE ONSITE WETLAND DETERMINATION

Site 1 (page 5 of 5)

Field Investigators: Wiesbrook, Ketzner, Wilm, and Zylka **Date:** July 5, 2006
Project Name: FAU 5822 (Milan Beltway Green Rock Site) **Section No.:** 1-3
State: Illinois **County:** Henry **Applicant:** IDOT Dist. 2
Area Name: Non-native grassland
Legal Description: SW/4, NE/4 and SE/4, NW/4, Section 16, T. 17 N., R. 1 E
Location: This non-wetland occupies both the east and west sides of the site.

SPECIES LIST (Cont.)

Scientific name	Common name	Stratum	Wetland indicator status	Coefficient of conservatism#
<i>Tripsacum dactyloides</i>	gama grass	herb	FAC+	4
<i>Ulmus americana</i>	American elm	herb	FACW-	5
<i>Verbascum thapsus</i>	woolly mullein	herb	UPL	*
<i>Xanthium strumarium</i>	cocklebur	herb	FAC	0

Coefficient of Conservatism (Taft et al. 1997) + weedy native or non-native species, (pn) *non-native species
 $FQI = \sum C/\sqrt{N} = 55/\sqrt{36} = 9.2$ $\bar{C} = \sum C/N = 55/36 = 1.5$

**Planted Saplings
SPECIES LIST**

Scientific name	Common name	Stratum	Wetland indicator status	Coefficient of conservatism#
<i>Carya illinoensis</i>	pecan	sapling(p)	FACW	6
<i>Fraxinus pennsylvanica</i>	green ash	sapling(p)	FACW	2
<i>Platanus occidentalis</i>	sycamore	sapling(p)	FACW	3
<i>Quercus bicolor</i>	swamp white oak	sapling(p)	FACW+	7
<i>Quercus lyrata</i>	overcup oak	sapling(p)	OBL	7
<i>Quercus palustris</i>	pin oak	sapling(p)	FACW	4

Coefficient of Conservatism (Taft et al. 1997) (p) planted species
 $*FQI = \sum C/\sqrt{N} = 84/\sqrt{42} = 13.0$ $*\bar{C} = \sum C/N = 84/42 = 2.0$

*These calculations include the complete species list above, as well as the planted trees.

Determined by: Scott Wiesbrook (soils and hydrology)
 Dave Ketzner, Brian Wilm, and Jason Zylka
 (vegetation and hydrology)
 Illinois Natural History Survey
 1816 South Oak Street
 Champaign, Illinois 61820
 (217) 265-0368 (Wiesbrook)

Appendix B

Photographs of Wetland Mitigation Sites



Picture 1. Facing west from photostation 1 (located on east side of east area).



Picture 2. Facing south from photostation 2 (located northern side of east area).



Picture 3. Facing northeast from photostation 3 (located on southwest corner of east area).



Picture 4. Facing northwest from photostation 4 (located on southeast corner of west area).



Picture 5. Facing east from photostation 5 (located on west side of west area).



Picture 6. Facing southwest from photostation 6 (located on northeast corner of west area).