Wetland Mitigation Monitoring Report

Project Site:

North Chicago Wetland Mitigation Site, Lake County, Illinois

IDOT Sequence Number: 13406

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Project Summary

A first-year monitoring survey was conducted at the North Chicago Wetland Mitigation Site in Lake County, Illinois. Introductory information, goals, objectives, performance criteria, methods, and results and discussion are presented in this report. Recommendations are suggested where appropriate. Quantitative vegetation sampling results and a printout of the digital orthoquad (DOQ) showing wetland boundaries and sampling points are also included. Quantitative survey results can be found in Appendix A, species lists in Appendices B and C, figures in Appendix D, and photographs in Appendix E.

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Cover Photo: Site D, a high quality sedge meadow at the North Chicago Wetland Mitigation Site.

Wetland Mitigation Monitoring Report for the North Chicago Wetland Mitigation Site, Lake County, Illinois

Introduction

First-year wetland monitoring was conducted on June 18-19 and August 20-23, 2012 at the North Chicago Wetland Mitigation Site. This project is located within the Chicago River watershed (Hydrologic Unit Code 07120003) south of Illinois Route 137 (Buckley Road), between Illinois Route 43 (Waukegan Road) and U.S. Route 41 (Skokie Highway) in North Chicago, Lake County, Illinois (Appendix D, Figure 1). The legal description of its location is W¼, Section 7 and NW¼, Section 18, T. 44 N., R. 12 E. The project site originally comprised 160 acres, however, after the approved two acre development at the northwest corner of the site and the further transfer of seven acres to the city of North Chicago, the site now comprises 151 acres (IDOT 2010). The Illinois State Toll Highway Authority (ISTHA) plans to use approximately 80 acres in the northern part of the property for wetland mitigation credits while the Illinois Department of Transportation (IDOT) plans to use the remaining 71 acres of the site for wetland mitigation needed as the result of various highway projects, including Illinois Route 47 (FAP 326), Kreutzer Road to Reed Road (IDOT 2010).

The mitigation site is located within the Morainal Section of the Northeastern Morainal Natural Division of Illinois (Schwegman et al. 1973). This natural division is the region of most recent glacial activity in Illinois. Approximately thirty acres of wetland have previously been mapped at the site (Plocher et al. 2006). The northern portion of the site was historically cultivated in row crops while the southern portion of the site was never farmed (IDOT 2010). Taft (2006), however, noted the presence of fence rows and other vegetation patterns in the southern three quarters of the site and suggested that the area may have been pastured. The IDOT purchased the site in 1966 for a proposed relocation of U.S. Route 41. This project was never completed and they have retained ownership ever since.

Numerous investigations and reports pertaining to the North Chicago Wetland Mitigation Site have been performed over the past several years. The Illinois State Geological Survey (ISGS) has monitored hydrology at North Chicago (Fucciolo and Miller 1995, Miner 2000, Miner and Fucciolo 2006) while the Illinois Natural History Survey (INHS) has monitored the biological attributes at the site (Phillips et al. 1995, Phillips 1996, DeWalt and Wetzel 1996, Taft 1996, Enstrom 2006, Taft 2006a, Taft 2006b, Kuhns and Phillips 2007, Taft and Kron 2011,). Furthermore, numerous reports on the wetlands and wetland restoration potential have been written by the INHS Wetland Science Program (Plocher et al. 1995, Plocher et al. 2006, Plocher and Taft 2010). These reports are available on the internet at www.dot.il.gov/environment.html.

Numerous highly conservative plant species are presently known or were historically reported from the North Chicago Mitigation Site. In order to preserve the valuable seed bank at the site, no excavation or wetland creation is planned for the area. Instead the mitigation work will concentrate on the enhancement of wetland and upland areas throughout mitigation site. Specific project level objectives include:

- Eliminate non-native species, including, but not limited to buckthorns (*Rhamnus cathartica* and *R. frangula*), honeysuckle (*Lonicera maackii*), purple loosestrife (*Lythrum salicaria*), and reed canary grass (*Phalaris arundinacea*).
- Reduce cover and density of aggressive native plant species [cattails (*Typha* spp.), gray dogwood (*Cornus racemosa*), box elder (*Acer negundo*), and cottonwood (*Populus deltoides*) in selected areas.
- Increase the cover and density of matrix and conservative native plant species in prairie and wetland communities (IDOT 2010).

As a result of the proposed activities, IDOT hopes to improve waterfowl habitat, amphibian and reptile habitat, and provide potentially suitable habitat for state and federally listed species (IDOT 2010).

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

Goals, Objectives, and Performance Standards

Goals, objectives, and performance standards for the North Chicago Wetland Mitigation Site follow those specified in the Wetland Compensation Plan developed for this site (IDOT 2010). Performance standards 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). The project goals should be attained by the end of the 5-year monitoring period. Goals, objectives, and performance standards are listed below.

Project goal 1: Native Plant Species Establishment – The wetlands at the North Chicago Mitigation Site should emulate natural wetlands; that is, they should be dominated by and composed of mostly native plants.

Objective: By removing non-native species, including, but not limited to buckthorns (*Rhamnus cathartica* and *R. frangula*), honeysuckle (*Lonicera maackii*), purple loosestrife (*Lythrum salicaria*), and reed canary grass (*Phalaris arundinacea*) and planting native species the North Chicago Wetland Mitigation Site will be dominated by and composed of mostly native vegetation.

Performance standards:

a. Eighty percent or more of the dominant plant species occurring within each wetland enhancement area (i.e., within each individual wetland) should be native hydrophytes at the end of the 5-year monitoring period.
b. None of the three most dominant plant species in any of the wetland community zones may be non-native species or weedy species, including, but not limited to narrow-leaved cattail (*Typha angustifolia*), hybrid cattail (*Typha* x *glauca*), common reed grass (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), sandbar willow (*Salix interior*), or reed canary grass (*Phalaris arundinacea*), unless otherwise indicated on the approved mitigation plan. Furthermore, these species shall not cumulatively comprise more than 5% of the total percent cover (not relative cover) for each community.
c. A minimum number of native perennial species proposed for establishment shall be present within each plant community to meet certification standards, as follows: marsh, minimum of 15 native perennial species; sedge meadow/wet prairie, minimum of 35 native perennial species.
d. At least 50% of the required minimum number of species shall occur at a 10% frequency or greater, within each plant community zone or area. Multiple transects within a given plant community may be combined for this frequency analysis.
e. The native perennial species within each wetland plant community shall represent at least 80% of the total dominance measure. A lower percent native perennial species of the total dominance measure may be acceptable if it is demonstrated with transect data that the remaining dominance percentage is by native annual and biennial wetland plant species and the FQI and mean C standards are exceeded.

Project goal 2: Floristic Quality – The floristic quality of the wetland enhancement areas (i.e, within each individual wetland) should trend upward over the course of the 5-year monitoring period. Floristic quality shall be measured in terms of each site's FQI as described by Swink and Wilhelm (1994).

Objectives: By removing non-native species and planting native species the floristic quality should improve throughout the North Chicago Wetland Mitigation Site.

Performance standards:

a. The floristic quality within individual wetlands should trend upward over the course of the 5-year monitoring period.
b. A native mean coefficient of conservatism (native mean C value) of greater than or equal to 3.5 shall be achieved in each separate vegetated plant community (e.g. sedge meadow/wet prairie and marsh), and as measured over the entire mitigation site area.
c. The native floristic quality index value (native FQI) shall be greater than or equal to 20 in each separate vegetated community zone and as measured over the entire mitigation site.

Methods

Monitoring at the North Chicago Wetland Mitigation Site has been conducted since 1996. This report documents the first in a series of five annual reports detailing the vegetation change after site management (primarily shrub removal) activities. INHS Wetland Science Program personnel will monitor wetland plant communities while INHS Biotic Studies Program will assess the terrestrial plant communities. Furthermore, the Illinois State Geological Survey (ISGS) will continue monitoring hydrology at selected locations throughout the mitigation area.

Wetland plant communities present at the North Chicago Wetland Mitigation Site will be evaluated annually, with special interest given to marsh and sedge meadow communities. Plant species lists will be compiled for each individual wetland site and for the mitigation site as a whole. Nomenclature and nativity of plant species will be determined by consulting Swink and Wilhem (1994). Plant growth form (perennial, biennial, or annual) will be determined by consulting Taft et al. (1997). Weedy species, for the purposes of this report, are defined as all non-native species and any native species assigned a Coefficient of Conservatism(C) of 0 or 1 (Swink and Wilhem 1994). Species given a C value of 0-1 correspond to Grime's ruderal species (Grime 1974, Grime et al. 1988) or species which are adapted to frequent or severe disturbances (Taft et al. 1997). Individuals not identifiable to species level will not be used in classification into native, non-weedy, or perennial species categories unless all members of the individual's genera known in the Chicago Region of Illinois (Swink and Wilhelm 1994) have identical values for that category.

Dominant plant species will be determined annually, both by wetland plant community and for all wetland sites within the North Chicago Wetland Mitigation Area. Dominant plant species for marsh and sedge meadow communities will be determined each year based on quantitative vegetation sampling (method described below). The method for determining dominant vegetation at a wetland site is described in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (U.S. Army Corps of Engineers 2010) 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 across the site as a whole. Dominant species for each strata present will be evaluated using the 50/20 Rule, "Dominant species are the most abundant plant species (when ranked in descending order of abundance and cumulatively totaled) that immediately exceed 50% of the total dominance measure for the stratum, plus any additional species comprising 20% or more of the total dominance measure for the stratum" (FICWD 1989, Tiner 1999). Each dominant plant species will be assigned a wetland indicator status rating (Lichvar and Kartesz 2012). Any plant rated facultative or wetter (i.e. FAC, FACW, or OBL) will be considered a hydrophyte.

Sample design and vegetation sampling protocol are the same as those used by the INHS Biotic Studies Program to assess the terrestrial vegetation. The description of sample design and vegetation sampling protocol below are taken from Taft et al. (2010), however, this report will only document work conducted by the INHS Wetland Science Program. Terrestrial vegetation

sampling results will be submitted in a separate report by the INHS Biotic Studies Program (under the direction of Dr. John Taft).

Sample Design

A stratified vegetation sampling design was utilized with 10 parallel transects running west to east, each separated by 500-ft (152 m) intervals. Five sample points were established on each transect separated by 250 ft (76 m) (the furthest north transect had four sample points). This array provided 49 sampling stations including 37 in non-wetland terrestrial vegetation and 12 in areas previously determined to be jurisdictional wetlands (Plocher et al. 1996) (Appendix D, Figure 6). An additional eight terrestrial sample points and five wetland sample points were established primarily in the southern half of the study area (Appendix D, Figure 6), for a total of 62 vegetation sample plots. Specific plot location with the additional targeted sampling was determined randomly.

Vegetation Sampling

Vegetation in wetland habitats was sampled with 25-m^2 (5m x 5m) sampling plots with ground layer quadrats (1-m^2 [1m x 1m]) nested within. The baseline point for all sample plots was the southwest corner of the shrub/sapling plots, corresponding to the geographic coordinates associated with plot locations. Plot sides were oriented along cardinal directions (the southern boundary runs W-E at 90°). Composition, stem density, and percent canopy cover of shrub/saplings (all woody stems > 1-m tall and < 10 cm dbh) were sampled within the 25-m^2 plots (n=17). Trees (woody stems ≥ 10 cm dbh), very scarce in the study area, were sampled within 200-m^2 (14.14 m x 14.14 m) sample plots (n= 17) anchored at the SW corner of the shrub plot.

Ground layer vegetation was sampled with 3 quadrats nested within each shrub/sapling plot (total of 51 quadrats at 17 sample points), with quadrat placement in the northwest and northeast corners and one in the plot center. Data from the 3 nested quadrats was averaged to obtain a score for each sampling point (n=17). Data collected from each quadrat included species presence and percent cover for each species occurrence estimated with a modified Daubenmire cover-class scale (0-1%, 1-5%, 5-25%, 25-50%, 50-75%, 95-100%) (Daubenmire 1959, Bailey and Poulton 1968). All species rooted within each quadrat frame was recorded to species including woody species < 1-m tall.

Data Analysis

Species abundance is measured by Importance Value (IV 100). Ground layer species IV is calculated as the sum of the relative frequency and relative cover divided by two; shrub/sapling stratum IV is calculated as the sum of relative frequency and density; and tree layer IV is calculated as the sum of relative density and basal area.

Floristic Quality Assessment

A meandering search through each wetland site was conducted and all species observed were recorded. Each native plant species was assigned a “coefficient of conservatism” (C) (Swink and Wilhelm 1994), a subjective rating of species fidelity to undegraded natural communities,

ranging from zero to ten. Conservative species - those more likely to be found in "pristine" natural areas - were assigned high numbers, whereas non-conservative species - those that occur in anthropogenically disturbed areas - were given lower numbers. Non-native species and those not identifiable to species level were not assigned a rating. The Floristic Quality Index (FQI) is computed as FQI = (mean C) X (√N), where mean C is the mean coefficient of conservatism for all native plant species at a site and N is the total number of native plant species at the site. In very general terms, higher FQI values for plant communities indicate more similarity to "pristine" natural areas, as compared to those communities with lower FQI values. Botanical nomenclature follows *Plants of the Chicago Region* (Swink and Wilhelm 1994).

Results and Discussion

Wetland Plant Communities

Five wetland plant community types were recorded including: forested wetland (n=3), marsh (n=8), sedge meadow (n=8), wet meadow (n=6), and wet shrubland (n=4). Table 1 provides summary results for each wetland plant community type. Mean C and FQI scores given in Table 1 are for combined species list for each community. Average mean C and FQI scores for each wetland plant community are discussed below. Complete quantitative vegetation sampling results for marsh and sedge meadow communities is included in Appendix A while Figure 5 in Appendix D provides a cover type map for the North Chicago Wetland Mitigation Site.

Table 1. Summary results, including area, number of total species, number of native species, mean C, FQI, for wetland plant community types present at the North Chicago Wetland Mitigation Site, Lake County, Illinois.

Community Type	Sites	Area (ac)	Total Spp.	Native Spp.	Mean C[1]	FQI[1]
Forested Wetland (n=3)	L, O, Q	0.78	71	58	4.1	31.1
Marsh (n=8)	A, C, E, K, R, T, Y, Z	19.42	224	165	3.7	47.5
Sedge Meadow (n=8)	D, F, G, H, I, J, P, S	6.28	167	146	4.4	53.6
Wet Meadow (n=6)	U, W, X, AA, AB, AC	0.88	120	89	3.4	31.7
Wet Shrubland (n=4)	B, M, N, V	1.30	139	110	3.8	39.8
Combined (n=29)	All Sites	28.65	278	210	4.2	60.9

[1] Mean C and FQI scores given in the table are for combined species lists for each plant community. Average mean C and FQI scores for each wetland plant community is given below.

Floristic Composition

In all, 278 taxa of vascular plants were recorded from the twenty-nine wetlands at the North Chicago Wetland Mitigation Site (Appendix C). Included among these are 210 native taxa (78.4%) (Table 1). The marsh community had the greatest number of species recorded with 224 of the 278 (80.6%) total species. However, this community is by far the largest wetland community in terms of area, occupying 19.42 ac (67.8%). The sedge meadow community also exhibited high plant species diversity with 167 total taxa (146 native, 87.4%). All other

communities also possessed good plant species diversity, especially considering their much smaller area.

Sixty-seven conservative taxa [defined here as plant taxa given a coefficient of conservatism (C) score of 6 or greater in Swink and Wilhelm (1994)] were present at the North Chicago Wetland Mitigation Site. Most notable among these is bearded wheat grass (*Agropyron trachycaulum*), an Illinois threatened species. This species is listed as *Elymus trachycaulus* by the Illinois Endangered Species Protection Board (Illinois Endangered Species Protection Board 2011). Other noteworthy taxa include: willow aster (*Aster praealtus*), prairie Indian plantain (*Cacalia plantaginea*), Bicknell's sedge (*Carex bicknellii*), dark-scaled sedge (*Carex buxbaumii*), fen star sedge (*Carex sterilis*), rattlesnake master (*Eryngium yuccifolium*), sweet grass (*Hierochloe odorata*), narrow-leaved loosestrife (*Lysimachia quadriflora*), and marsh blue violet (*Viola cucullata*). These taxa all have CC scores of 9 or 10, indicative of species only found in pristine habitats (Taft et al. 1997). Three other Illinois threatened and endangered species have previously been recorded from the North Chicago Wetland Mitigation Site [round-leaved serviceberry (*Amelanchier sanguinea*), small sundrops (*Oenothera perennis*), and marsh speedwell (*Veronica scutellata*)]. None of these species were observed in 2012 by the INHS Wetland Science Program.

Table 2. Conservative plant [coefficient of conservatism (C) value ≥ 6] species found in wetlands at the North Chicago Wetland Mitigation Site, Lake County, Illinois.

Scientific Name[1]	Common Name	Wetland Indicator Status[2]	C[3]
Agrimonia parviflora	swamp agrimony	FACW	7
Agropyron trachycaulum[4]	bearded wheat grass	FACU	8
Allium cernuum	nodding wild onion	FACU	7
Asclepias purpurascens	purple milkweed	FACU	8
Asclepias sullivantii	Sullivant's milkweed	UPL	8
Aster praealtus	willow aster	FACW	9
Aster puniceus	bristly aster	OBL	8
Cacalia plantaginea	prairie Indian plantain	FAC	10
Carex annectens var. *xanthocarpa*	small yellow fox sedge	FACW	7
Carex bebbii	Bebb's oval sedge	OBL	6
Carex bicknellii	Bicknell's sedge	FACU	10
Carex buxbaumii	dark-scaled sedge	OBL	9
Carex frankii	bristly cattail sedge	OBL	8
Carex lacustris	common lake sedge	OBL	6
Carex sartwellii	running marsh sedge	FACW	6
Carex sterilis	fen star sedge	OBL	10
Carex tenera	narrow-leaved oval sedge	FACW	8
Carex trichocarpa	hairy-fruited lake sedge	OBL	7
Cicuta maculata	water hemlock	OBL	6
Comandra umbellata	bastard toad-flax	FACU	7
Cornus obliqua	pale dogwood	FACW	6
Eryngium yuccifolium	rattlesnake master	FAC	9

Galium tinctorium	stiff bedstraw	OBL	8
Geum aleppicum var. *strictum*	yellow avens	FACW	7
Glyceria septentrionalis	floating manna grass	OBL	8
Hierochloe odorata	sweet grass	No indicator	9
Juncus acuminatus	sharp-fruited rush	OBL	6
Juncus effusus	common rush	OBL	7
Lathyrus palustris	marsh vetchling	FACW	8
Liatris pycnostachya	prairie blazing star	FAC	8
Liatris spicata	marsh blazing star	FAC	6
Lobelia spicata	pale spiked lobelia	FAC	6
Ludwigia polycarpa	false loosestrife	OBL	6
Lycopus uniflorus	northern bugle weed	OBL	7
Lysimachia quadriflora	narrow-leaved loosestrife	OBL	9
Lythrum alatum	winged loosestrife	OBL	7
Mimulus ringens	monkey flower	OBL	6
Onoclea sensibilis	sensitive fern	FACW	8
Oxypolis rigidior	cowbane	OBL	7
Phlox glaberrima ssp. *interior*	smooth phlox	FACW	8
Pilea fontana	bog clearweed	FACW	7
Polygonum punctatum	smartweed	OBL	6
Potamogeton foliosus	leafy pondweed	OBL	7
Proserpinaca palustris var. *crebra*	mermaid weed	OBL	6
Pycnanthemum tenuifolium	slender mountain mint	FAC	7
Ranunculus flabellaris	yellow water buttercup	OBL	7
Ranunculus pensylvanicus	bristly crowfoot	OBL	6
Ranunculus sceleratus	cursed crowfoot	OBL	6
Ribes americanum	wild black currant	FACW	7
Rosa palustris	swamp rose	OBL	7
Rosa setigera	Illinois rose	FACU	7
Salix bebbiana	beaked willow	FACW	8
Salix glaucophylloides	blue-leaf willow	FACW	7
Salix humilus	priairie willow	FACU	6
Salix petiolaris	meadow willow	OBL	7
Sanicula canadensis	Canadian black snakeroot	FACU	7
Sanicula marilandica	black snakeroot	FACU	6
Scirpus acutus	hard-stemmed bulrush	OBL	6
Scirpus cyperinus	wool grass	OBL	6
Senecio pauperculus	balsam ragwort	FAC	6
Sium suave	water parsnip	OBL	7
Solidago riddellii	Riddell's goldenrod	OBL	7
Spiraea alba	meadowsweet	FACW	7
Thalictrum revolutum	waxy meadow rue	FAC	6
Veronicastrum virginicum	culver's root	FAC	7
Viola cucullata	marsh blue violet	OBL	9
Zizia aurea	golden Alexander's	FAC	7

[1] Scientific Name is that used in Swink and Wilhelm (1994), [2] Wetland Indicator Status taken from Lichvar and Kartesz (2012), [3] Coefficient of conservatism (C) scores are from Swink and Wilhelm (1994), [4] Illinois threatened species (Illinois Endangered Species Protection Board 2011).

Wetland Site Summary

In all, twenty-nine wetlands were studied at the North Chicago Wetland Mitigation Site. For a complete species list and dominant species for each individual wetland site see Appendix B. Appendix C contains a combined species list for all wetland sites and Appendix D, Figure 1 shows the location of all wetland sites at the North Chicago Wetland Mitigation Site. Although the same areas were studied, the number of sites is down from forty-eight sites recorded by Plocher et al. (2006). Following removal of the dense shrub layer that covered much of the mitigation area, connections between previous sites are now evident and many sites have been combined. Also, several wet shrubland and forested wetland sites from Plocher et al. (2006) were located between marsh sites. After shrub and/or tree removal it is apparent that these sites are part of larger marsh communities.

Table 3 provides summary statistics for all wetland sites at the North Chicago Wetland Mitigation Site. Most wetland sites were relatively small, with all but two sites, both marshes (Sites K and T), being less than 2.0 ac. Eighteen sites are smaller than 0.5 ac. Site K (10.92 ac), however, comprises more than one-third of the total wetland area at the mitigation site.

Several wetland sites may be considered representative of good to high natural quality with mean C scores averaging 3.7 (range = 1.6 to 4.8) and FQI scores averaging 24.8 (range = 8.3 to 41.5). Two sites (Sites F and K) had FQI scores over 40 while seven additional sites (Sites A, D, G, H, J, M, P) had FQI scores between 30 and 40. One-quarter of the marsh sites (average = 22.6), three-fourths of the sedge meadow sites (average = 31.8), and one-quarter of the wet shrubland sites (average = 26.0) had FQI scores ≥ 30.0. No forested wetlands or wet meadows had FQI scores ≥ 30.0, however, five did have FQI scores over 20.0. Mean C scores were also uniformly high with nine sites (Sites D, F, G, H, I, J, O, P, AB) having mean C scores ≥ 4.0 and eleven additional sites (Sites A, B, C, E, K, L, M, N, Q, S, W) having mean C scores between 3.5 and 4.0. All eight sedge meadow sites and all three forested wetland sites had mean C scores ≥ 3.5. Half of the marsh sites, one-third of the wet meadow sites, and three-fourths of the wet shrubland sites also had mean C scores ≥ 3.5. In all, only nine sites had mean C scores under 3.5 and only two sites, Sites U and Z, had values indicative of low natural quality.

Total and native species richness values were also representative of good to high natural quality. Total species ranged from a low of 28 species at Site E to a high of 152 species at Site K, an extremely large marsh site (average = 58). Likewise, native species richness values were at their lowest and highest at the same two sites (Average = 46). Sites in the south portion of the study area were especially diverse and composed of many conservative plant species. Table 3 provides a summary of all wetland sites present at the North Chicago Wetland Mitigation Site.

Table 3. 2012 summary table of North Chicago Wetland Mitigation Site wetlands, Lake County, Illinois.

Site	Community	Area (ac)	Total Spp.	Native Spp.	Mean C[1]	FQI[2]
A	Marsh	1.26	79	64	3.9	31.0
B	Wet Shrubland	0.06	47	39	3.9	24.5
C	Marsh	0.49	37	30	3.8	20.8
D	Sedge Meadow	1.98	56	52	4.2	30.4
E	Marsh	0.18	28	22	3.7	17.3
F	Sedge Meadow	0.99	109	95	4.1	40.3
G	Sedge Meadow	1.05	73	67	4.7	38.8
H	Sedge Meadow	0.49	50	42	4.8	31.3
I	Sedge Meadow	0.12	37	33	4.5	25.6
J	Sedge Meadow	0.63	69	61	4.3	33.5
K	Marsh	10.92	152	116	3.9	41.5
L	Forested Wetland	0.29	36	30	3.8	20.6
M	Wet Shrubland	0.57	83	65	3.8	30.8
N	Wet Shrubland	0.45	62	53	3.6	26.1
O	Forested Wetland	0.33	35	30	4.1	22.5
P	Sedge Meadow	0.48	50	47	4.4	30.0
Q	Forested Wetland	0.16	44	34	3.7	21.4
R	Marsh	1.59	47	39	3.1	19.2
S	Sedge Meadow	0.54	45	40	3.9	24.3
T	Marsh	3.17	89	66	3.2	25.8
U	Wet Meadow	0.17	52	28	2.0	10.8
V	Wet Shrubland	0.22	60	45	3.4	22.7
W	Wet Meadow	0.10	46	37	3.6	22.0
X	Wet Meadow	0.19	42	33	3.3	19.1
Y	Marsh	1.63	56	39	2.7	17.0
Z	Marsh	0.17	49	27	1.6	8.3
AA	Wet Meadow	0.07	39	30	3.2	17.5
AB	Wet Meadow	0.23	50	42	4.1	26.8
AC	Wet Meadow	0.12	46	36	3.2	19.2

[1] coefficient of conservatism (C) values from Swink and Wilhelm (1994). [2] FQI scores according to methodology in Swink and Wilhelm (1994).

Results versus Goals, Objectives and Performance Standards

Project Goal #1 – Native Plant Species Establishment

Performance Standard A. Eighty percent or more of the dominant plant species occurring within each wetland enhancement area (i.e., within each individual wetland) should be native hydrophytes at the end of the 5-year monitoring period.

Sixteen sites (B, D, F, G, H, I, J, L, M, O, P, Q, R, S, T, Z) satisfied performance standard A while thirteen sites (A, C, E, K, N, U, V, W, X, Y, AA, AB, AC) failed to satisfy this performance standard. All three (100%) forested wetland sites (L, O, Q) and all eight (100%) sedge meadow sites (D, F, G, H, I, J, P, S) satisfied this performance standard, while only three (37.5%) marsh sites (R, T, Z),

two (50%) wet shrubland sites (B, M), and zero (0%) wet meadow sites satisfied the performance standard.

In all, five non-native species were responsible for sites failing to meet this performance standard. They are reed canary grass (*Phalaris arundinacea*), purple loosestrife (*Lythrum salicaria*), red top (*Agrostis alba*), glossy buckthorn (*Rhamnus frangula*), and perennial rye grass (*Lolium perenne*). Reed canary grass was a dominant species at nine sites (A, B, C, M, N, U, X, Y, AC), purple loosestrife and red top were dominant at four sites each (purple loosestrife – A, E, K, V; red top – N, W, AA, AB), glossy buckthorn was dominant at two sites (N, Q), and perennial rye grass was dominant at one site (AA).

Performance Standard B. None of the three most dominant plant species in any of the wetland community zones (marsh and sedge meadow) may be non-native species or weedy species, including, but not limited to narrow-leaved cattail (*Typha angustifolia*), hybrid cattail (*Typha* x *glauca*), common reed grass (*Phragmites australis*), purple loosestrife (*Lythrum salicaria*), sandbar willow (Salix interior), or reed canary grass (*Phalaris arundinacea*), unless otherwise indicated on the approved mitigation plan. Furthermore, these species shall not cumulatively comprise more than 5% of the total percent cover (not relative cover) for each community.

Only marsh and sedge meadow communities were sampled using a stratified vegetation sampling design. Dominant species in the marsh community at the North Chicago Wetland Mitigation Site are listed in descending order of importance in Table 4. For a complete list of sampling results from the marsh community see Appendix A. The three most dominant plant species in North Chicago Wetland Mitigation Site marsh community were narrow-leaved cattail (*Typha angustifolia*), smartweed (*Polygonum punctatum*), and Canada clearweed (*Pilea pumila*). While all three taxa are considered native to the Chicago Region, narrow-leaved cattail has a C value of 1 and therefore is considered a weedy species (Swink and Wilhelm 1994). This performance standard is not satisfied for the marsh community at the North Chicago Wetland Mitigation Site.

Table 4. Dominant plant species in North Chicago Wetland Mitigation Site marsh community, Lake County, Illinois.

Species		Average Cover	Relative Cover	Frequency	Relative Frequency	IV
Typha angustifolia	Perennial	32.8636	37.1404	1.0000	7.3826	22.2615
Polygonum punctatum	Annual	8.0000	9.0411	0.5455	4.0268	6.5340
Pilea pumila	Annual	8.6212	9.7432	0.3636	2.6846	6.2139
Lythrum salicaria	Perennial	2.8939	3.2705	0.7273	5.3691	4.3198
Phragmites australis	Perennial	4.9242	5.5651	0.0909	0.6711	3.1181
Erigeron annuus	Biennial	3.8182	4.3151	0.1818	1.3423	2.8287
Bidens frondosa	Annual	1.3182	1.4897	0.5455	4.0268	2.7583
Leersia oryzoides	Perennial	1.4394	1.6267	0.4545	3.3557	2.4912

Dominant species in the sedge meadow community at the North Chicago Wetland Mitigation Site are listed in descending order of importance in Table 5. For a complete list of sampling results from the sedge meadow community see Appendix A. The three most dominant plant species in North Chicago Wetland Mitigation Site sedge meadow community were common tussock sedge (*Carex stricta*), blue joint grass (*Calamagrostis canadensis*), and purple loosestrife (*Lythrum salicaria*). While common tussock sedge and blue joint grass are considered characteristic sedge meadow species, the highly invasive purple loosestrife is a weedy species (Swink and Wilhelm 1994). This performance standard is not satisfied for the sedge meadow community at the North Chicago Wetland Mitigation Site.

Table 5. Dominant plant species in North Chicago Wetland Mitigation Site sedge meadow community, Lake County, Illinois.

Species		Average Cover	Relative Cover	Frequency	Relative Frequency	IV
Carex stricta	Perennial	55.2778	53.0525	1.0000	5.4545	29.2535
Calamagrostis canadensis	Perennial	6.8611	6.5849	0.6667	3.6364	5.1106
Lythrum salicaria	Perennial	3.9722	3.8123	0.8333	4.5455	4.1789
Typha latifolia	Perennial	5.4167	5.1986	0.3333	1.8182	3.5084
Typha angustifolia	Perennial	5.1667	4.9587	0.3333	1.8182	3.3884
Lycopus uniflorus	Perennial	1.7500	1.6796	0.8333	4.5455	3.1125
Polygonum amphibium/coccineum	Perennial	1.6944	1.6262	0.6667	3.6364	2.6313

Performance Standard C. A minimum number of native perennial species proposed for establishment shall be present within each plant community to meet certification standards, as follows: marsh, minimum of 15 native perennial species; sedge meadow/wet prairie, minimum of 35 native perennial species.

As mentioned previously, nearly all sites possessed good to high plant species diversity. The stated performance standard (C) for native perennial species establishment was satisfied by all but one sedge meadow site, Site I. This site was extremely small with only 0.12 ac within the project area. Although small and despite the fact that this site barely failed to satisfy performance standard C (33 native perennial species were established), the site does seem to possess good plant species diversity as indicated by its mean C score of 4.5 and FQI value of 25.6.

Performance Standard D. At least 50% of the required minimum number of species shall occur at a 10% frequency or greater, within each plant community zone or area. Multiple transects within a given plant community may be combined for this frequency analysis.

This performance standard was evaluated using data from quantitative vegetation sampling throughout the mitigation area (Appendix A). Marsh and sedge meadow communities are the only communities in which this performance standard applies. Both marsh and sedge meadow

communities satisfied this performance standard. The marsh community had twenty-nine native perennial species recorded at a frequency ≥ 10% while the sedge meadow community had forty-nine native perennial species recorded at ≥ 10% frequency.

Performance Standard E. The native perennial species within each wetland plant community shall represent at least 80% of the total dominance measure. A lower percent native perennial species of the total dominance measure may be acceptable if it is demonstrated with transect data that the remaining dominance percentage is by native annual and biennial wetland plant species and the FQI and mean C standards are exceeded.

Again, this performance standard was evaluated using data from quantitative vegetation sampling in marsh and sedge meadow communities (Appendix A). The marsh community failed to satisfy this performance standard since native perennial species represented only 68.2% of the total dominance measure. Several important species in the marsh community, including four of the dominant species [smartweed (*Polygonum punctatum*), Canada clearweed (*Pilea pumila*), annual fleabane (*Erigeron annuus*), and common beggar's ticks (*Bidens frondosa)*] are either annual or biennial. Furthermore, another dominant species, purple loosestrife (*Lythrum salicaria*), is non-native. The sedge meadow community, however, satisfied this performance standard with native perennial species representing 86.4% of the dominance measure. Purple loosestrife was the only dominant species in the sedge meadow community that was not a native perennial species.

Project Goal #2 – Floristic Quality

Performance Standard A. The floristic quality within individual wetlands should trend upward over the course of the 5-year monitoring period.

Since this is the first of the 5-year monitoring period this performance standard could not be assessed in this report. This standard will, however, be evaluated as the site develops over the 5-year monitoring period.

Performance Standard B. A native mean coefficient of conservatism (native mean C value) of greater than or equal to 3.5 shall be achieved in each separate vegetated plant community (e.g. sedge meadow/wet prairie and marsh), and as measured over the entire mitigation site area.

The mean C value for the entire mitigation area is 4.2 so the second part of performance standard B is satisfied in 2012. Furthermore, twenty (69.0%) individual wetland sites (A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, S, W, AB) satisfied this performance standard while nine sites (R, T, U, V, X, Y, Z, AA, AC) failed (Table 3). The average mean C score for all wetland sites at the North Chicago Wetland Mitigation Site is 3.7 (Range = 1.6 to 4.8). These values are indicative of good to high natural quality overall. Forested wetlands (n=3) averaged 3.9 for mean C (Range = 3.7 to 4.1), marshes (n= 8) averaged 3.2 (Range = 1.6 to 3.9), sedge meadows (n=8) averaged 4.4 (Range = 3.9 to 4.8), wet meadows (n=6) averaged 3.2 (Range = 2.0 to 4.1), and wet shrublands (n=4) averaged 3.7 (Range = 3.4 to 3.9). All nine sites that failed to satisfy this

performance standard were located in the north quarter to one-third of the mitigation area. The average mean C score for sites in the north half of the North Chicago Wetland Mitigation Site is 3.4 while the average mean C score for sites in the south half is 4.2. As mentioned previously by Taft (1996) sites in the north part of the mitigation area have more of a disturbance history.

Performance Standard C. The native floristic quality index value (native FQI) shall be greater than or equal to 20 in each separate vegetated community zone and as measured over the entire mitigation site.

The FQI for the entire mitigation area is 60.9 so the second part of performance standard C is satisfied in 2012. Furthermore, twenty-one (72.4%) individual wetland sites (A, B, C, D, F, G, H, I, J, K, L, M, N, O, P, Q, S, T, V, W, AB) satisfied this performance standard while eight sites (E, R, U, X, Y, Z, AA, AC; 4 marshes and 4 wet meadows) failed. The average FQI score for all wetland sites at the North Chicago Wetland Mitigation Site is 24.8 (Range = 8.3 to 41.5). These values are indicative of good natural quality overall. Forested wetlands (n=3) averaged 21.5 (Range = 20.6 to 22.5), marshes (n=8) averaged 22.6 (Range = 8.3 to 41.5), sedge meadows (n=8) averaged 31.8 (Range = 24.4 to 40.3), wet meadows (n=6) averaged 19.3 (Range = 10.8 to 26.9), and wet shrublands (n=4) averaged 26.0 (Range = 22.7 to 30.8). Again, seven of the eight sites that failed to satisfy performance standard C are located in the north half of the mitigation area. The average FQI score for sites in the north half of the North Chicago Wetland Mitigation Site is 21.4 while the FQI score for sites in the south half is 30.5.

Summary of success and failure for each performance standard is provided in Tables 6 and 7. Table 6 provides actual performance versus the required performance standards for all parts of the project goals that apply to individual wetland sites while Table 7 provides the same for project goals that apply to wetland plant communities.

Table 6. Summary table of performance versus the required standard for project goals applicable to individual wetland sites, North Chicago Wetland Mitigation Site, Lake County, Illinois (+ sign means the required standard was achieved, - sign means the site failed to meet the required standard).

Site	Community Type	Goal 1 Standard A[1]	Goal 1 Standard C[2]	Goal 2 Standard A[3]	Goal 2 Standard B[4]	Goal 2 Standard C[5]
A	Marsh	- (50%)	+ (56)	NA	+ (3.9)	+ (31.0)
B	Wet Shrubland	+ (80%)	NA (35)	NA	+ (3.9)	+ (24.5)
C	Marsh	- (50%)	+ (25)	NA	+ (3.8)	+ (20.8)
D	Sedge Meadow	+ (100%)	+ (43)	NA	+ (4.2)	+ (30.4)
E	Marsh	- (50%)	+ (22)	NA	+ (3.7)	- (17.3)
F	Sedge Meadow	+ (100%)	+ (87)	NA	+ (4.1)	+ (40.3)
G	Sedge Meadow	+ (100%)	+ (63)	NA	+ (4.7)	+ (38.8)
H	Sedge Meadow	+ (100%)	+ (41)	NA	+ (4.8)	+ (31.3)
I	Sedge Meadow	+ (100%)	- (33)	NA	+ (4.5)	+ (25.6)

J	Sedge Meadow	+ (100%)	+ (59)	NA	+ (4.3)	+ (33.5)
K	Marsh	- (67%)	+ (100)	NA	+ (3.9)	+ (41.5)
L	Forested Wetland	+ (100%)	NA (26)	NA	+ (3.8)	+ (20.6)
M	Wet Shrubland	+ (83%)	NA (61)	NA	+ 3.8)	+ (30.8)
N	Wet Shrubland	- (57%)	NA (45)	NA	+ (3.6)	+ (26.1)
O	Forested Wetland	+ (100%)	NA (27)	NA	+ (4.1)	+ (22.5)
P	Sedge Meadow	+ (100%)	+ (45)	NA	+ (4.4)	+ (30.0)
Q	Forested Wetland	+ (80%)	NA (28)	NA	+ (3.7)	+ (21.4)
R	Marsh	+ (100%)	+ (31)	NA	- (3.1)	- (19.2)
S	Sedge Meadow	+ (100%)	+ (37)	NA	+ (3.9)	+ (24.3)
T	Marsh	+ (100%)	+ (55)	NA	- (3.2)	+ (25.8)
U	Wet Meadow	- (0%)	NA (19)	NA	- (2.0)	- (10.8)
V	Wet Shrubland	- (67%)	NA (43)	NA	- (3.4)	+ (22.7)
W	Wet Meadow	- (75%)	NA (34)	NA	+ (3.6)	+ (22.0)
X	Wet Meadow	- (50%)	NA (31)	NA	- (3.3)	- (19.1)
Y	Marsh	- (50%)	+ (31)	NA	- (2.7)	- (17.0)
Z	Marsh	+ (100%)	+ (16)	NA	- (1.6)	- (8.3)
AA	Wet Meadow	- (50%)	NA (24)	NA	- (3.2)	- (17.5)
AB	Wet Meadow	- (67%)	NA (39)	NA	+ (4.1)	+ (26.8)
AC	Wet Meadow	- (0%)	NA (32)	NA	- (3.2)	- (19.2)

[1] Required ≥ 80% of dominant species should be native hydrophytes. [2] Required minimum number of native perennial species established at wetland sites: marsh ≥ 15, sedge meadow ≥ 35. [3] Floristic quality should trend upward. Since this is year 1 of monitoring this standard is NA. [4] Required mean C value to be ≥ 3.5. [5] Required FQI score to be ≥ 20.0.

Table 7. Summary table of performance versus the required standard for project goals applicable to wetland plant communities, North Chicago Wetland Mitigation Site, Lake County, Illinois (+ sign means the required standard was achieved, - sign means the site failed to meet the required standard).

Community Type	Goal 1 Standard B[1]	Goal 1 Standard D[2]	Goal 1 Standard E[3]
Forested Wetland	NA	NA	NA
Marsh	-	+ (29 spp.)	- (68.2%)
Sedge Meadow	-	+ (49 spp.)	+ (86.4%)
Wet Meadow	NA	NA	NA
Wet Shrubland	NA	NA	NA

[1] None of the 3 most dominant species should be non-native or weedy. [2] At least 50%of the required minimum number of species (marsh = 15 native perennials, sedge meadow = 35 native perennials) shall be present at ≥ 10% frequency. [3] Native perennials within the marsh and sedge meadow plant communities shall represent at least 80% of the dominance measure.

Management Recommendations

Overall, the wetland sites at the North Chicago Wetland Mitigation Site possess good to high natural quality. This rating is based on several established metrics including native mean C and FQI as well as native and total species richness values (Swink and Wilhelm 1994). Many conservative plant species are present throughout the mitigation area including at least one Illinois state listed species [bearded wheat grass (*Agropyron trachycaulum*). Three other Illinois threatened and endangered species have previously been recorded from the North Chicago Wetland Mitigation Site [round-leaved serviceberry (*Amelanchier sanguinea*), small sundrops (*Oenothera perennis*), and marsh speedwell (*Veronica scutellata*)]. None of these species were observed in 2012 by the INHS Wetland Science Program but are still likely to be present. See the upcoming report by Dr. John Taft of the INHS Biotic Studies Program for more information on these rare species. A directed effort will be made by the INHS Wetland Science Program in the coming years to relocate rare species populations, at least when they are associated with wetland sites.

The main management concern at the North Chicago Wetland Mitigation Site continues to be the control of non-native or other weedy invasive species. Management of invasive shrub species, including but not limited to control of common buckthorn (*Rhamnus cathartica*), glossy buckthorn (*Rhamnus frangula*), non-native honeysuckles [mostly Amur honeysuckle (*Lonicera maackii*) and showy fly honeysuckle (*Lonicera* X *bella*)], has been conducted over the past few years and continues to be an ongoing effort. Continued management, in the form of herbicide and prescribed burns, are already planned. Care should be taken to limit impacts to native shrub species especially the state threatened round-leaved serviceberry (*Amelanchier sanguinea*). This continued management should go a long way in insuring the continued presence of high quality wetlands and conservative species at the North Chicago Wetland Mitigation Site. Furthermore, the reintroduction of prescribed burns to this area may stimulate a resurgence of species from the seedbank, species that previously were suppressed by the dense weedy shrub layer.

The main invasive problems in wetland communities at the North Chicago Wetland Mitigation Site are narrow-leaved cattail (*Typha angustifolia*), common reed grass (*Phragmites australis*), reed canary grass (*Phalaris arundinacea*), and purple loosestrife (*Lythrum salicaria*). Both reed canary grass and purple loosestrife are considered non-native species in Swink and Wilhelm (1994), however, all four of these are very aggressive species that, as they expand, will result in the reduction of overall species diversity. These taxa should be controlled when possible. Likewise, the common cattail (*Typha latifolia*) should be controlled, at least in certain situations. The aggressive common cattail has become very abundant in a few of the sedge meadow sites, even to the point that they almost have the appearance of marshes. These sites, however, continue to have the characteristic sedge meadow species [especially common tussock sedge (*Carex stricta*) and running marsh sedge (*Carex sartwellii*)] beneath the invading cattails.

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APPENDIX A

Quantitative Vegetation Sampling Results

Table 1. North Chicago Wetland Mitigation Site – Marsh Community. Dominant species are in bold.

Species	Growth form	Average Cover	Relative Cover	Frequency	Relative Frequency	IV
Typha angustifolia	**Perennial**	**32.8636**	**37.1404**	**1.0000**	**7.3826**	**22.2615**
Polygonum punctatum	**Annual**	**8.0000**	**9.0411**	**0.5455**	**4.0268**	**6.5340**
Pilea pumila	**Annual**	**8.6212**	**9.7432**	**0.3636**	**2.6846**	**6.2139**
Lythrum salicaria	**Perennial**	**2.8939**	**3.2705**	**0.7273**	**5.3691**	**4.3198**
Phragmites australis	**Perennial**	**4.9242**	**5.5651**	**0.0909**	**0.6711**	**3.1181**
Erigeron annuus	**Biennial**	**3.8182**	**4.3151**	**0.1818**	**1.3423**	**2.8287**
Bidens frondosa	**Annual**	**1.3182**	**1.4897**	**0.5455**	**4.0268**	**2.7583**
Leersia oryzoides	**Perennial**	**1.4394**	**1.6267**	**0.4545**	**3.3557**	**2.4912**
Calamagrostis canadensis	Perennial	2.6061	2.9452	0.2727	2.0134	2.4793
Erechtites hieracifolia	Annual	0.2121	0.2397	0.6364	4.6980	2.4689
Typha latifolia	Perennial	3.4848	3.9384	0.0909	0.6711	2.3047
Eupatorium maculatum	Perennial	2.1364	2.4144	0.2727	2.0134	2.2139
Mentha arvensis	Perennial	2.0606	2.3288	0.1818	1.3423	1.8355
Solidago graminifolia	Perennial	1.3788	1.5582	0.2727	2.0134	1.7858
Solidago canadensis	Perennial	1.1818	1.3356	0.2727	2.0134	1.6745
Carex stricta	Perennial	1.6818	1.9007	0.1818	1.3423	1.6215
Solidago gigantea	Perennial	1.4545	1.6438	0.1818	1.3423	1.4931
Helianthus grosseserratus	Perennial	0.6364	0.7192	0.2727	2.0134	1.3663
Aster puniceus	Perennial	1.0000	1.1301	0.1818	1.3423	1.2362
Viola cucullata	Perennial	0.3182	0.3596	0.2727	2.0134	1.1865
Viburnum lentago	Perennial	0.2879	0.3253	0.2727	2.0134	1.1694
Impatiens capensis	Annual	0.2121	0.2397	0.2727	2.0134	1.1266
Lycopus americanus	Perennial	0.1970	0.2226	0.2727	2.0134	1.1180
Verbena hastata	Perennial	0.1364	0.1541	0.2727	2.0134	1.0838
Lycopus uniflorus	Perennial	0.1212	0.1370	0.2727	2.0134	1.0752
Polygonum amphibium/coccineum	Perennial	0.5606	0.6336	0.1818	1.3423	0.9879
Rhamnus frangula	Perennial	0.4697	0.5308	0.1818	1.3423	0.9366
Carex pellita	Perennial	0.3636	0.4110	0.1818	1.3423	0.8766
Eupatorium perfoliatum	Perennial	0.1970	0.2226	0.1818	1.3423	0.7824
Aster simplex	Perennial	0.1818	0.2055	0.1818	1.3423	0.7739
Scirpus atrovirens	Perennial	0.1818	0.2055	0.1818	1.3423	0.7739
Cornus racemosa	Perennial	0.1818	0.2055	0.1818	1.3423	0.7739
Senecio pauperculus	Perennial	0.1818	0.2055	0.1818	1.3423	0.7739
Pycnanthemum virginianum	Perennial	0.1818	0.2055	0.1818	1.3423	0.7739
Parthenocissus quinquefolia	Perennial	0.1818	0.2055	0.1818	1.3423	0.7739
Boehmeria cylindrica	Perennial	0.1818	0.2055	0.1818	1.3423	0.7739
Glyceria striata	Perennial	0.1061	0.1199	0.1818	1.3423	0.7311
Sanicula canadensis	Biennial	0.1061	0.1199	0.1818	1.3423	0.7311
Cirsium arvense	Perennial	0.0303	0.0342	0.1818	1.3423	0.6883
Zizia aurea	Perennial	0.0303	0.0342	0.1818	1.3423	0.6883
Scutellaria lateriflora	Perennial	0.5606	0.6336	0.0909	0.6711	0.6524
Phalaris arundinacea	Perennial	0.4545	0.5137	0.0909	0.6711	0.5924
Polygonum hydropiper	Annual	0.1818	0.2055	0.0909	0.6711	0.4383

Convolvulus sepium	Perennial	0.0909	0.1027	0.0909	0.6711	0.3869
Agrostis perennans	Perennial	0.0909	0.1027	0.0909	0.6711	0.3869
Polygonum persicaria	Annual	0.0909	0.1027	0.0909	0.6711	0.3869
Scirpus fluviatilis	Perennial	0.0909	0.1027	0.0909	0.6711	0.3869
Aster lateriflorus	Perennial	0.0909	0.1027	0.0909	0.6711	0.3869
Asclepias incarnata	Perennial	0.0909	0.1027	0.0909	0.6711	0.3869
Lythrum alatum	Perennial	0.0909	0.1027	0.0909	0.6711	0.3869
Cornus obliqua	Perennial	0.0909	0.1027	0.0909	0.6711	0.3869
Rhamnus cathartica	Perennial	0.0909	0.1027	0.0909	0.6711	0.3869
Allium cernuum	Perennial	0.0909	0.1027	0.0909	0.6711	0.3869
Geum canadense	Perennial	0.0303	0.0342	0.0909	0.6711	0.3527
Galium tinctorium	Perennial	0.0303	0.0342	0.0909	0.6711	0.3527
Alisma subcordatum	Perennial	0.0303	0.0342	0.0909	0.6711	0.3527
Cicuta maculata	Biennial	0.0152	0.0171	0.0909	0.6711	0.3441
Juncus dudleyi	Perennial	0.0152	0.0171	0.0909	0.6711	0.3441
Prunella vulgaris var. lanceolata	Perennial	0.0152	0.0171	0.0909	0.6711	0.3441
Rumex crispus	Perennial	0.0152	0.0171	0.0909	0.6711	0.3441
Carex sp. (Section Ovales)	Perennial	0.0152	0.0171	0.0909	0.6711	0.3441
Fragaria virginiana	Perennial	0.0152	0.0171	0.0909	0.6711	0.3441
Monarda fistulosa	Perennial	0.0152	0.0171	0.0909	0.6711	0.3441
Setaria faberi	Annual	0.0152	0.0171	0.0909	0.6711	0.3441
Epilobium coloratum	Perennial	0.0152	0.0171	0.0909	0.6711	0.3441
Fraxinus pennsylvanica var. *subintegerrima*	Perennial	0.0152	0.0171	0.0909	0.6711	0.3441
Chrysanthemum leucanthemum var. *pinnatifidum*	Perennial	0.0152	0.0171	0.0909	0.6711	0.3441
		88.4848	100.0000	13.5455	100.0000	100.0000
Bare Ground		1.7576				
Litter		56.2273				

Table 2. North Chicago Wetland Mitigation Site – Sedge Meadow Community. Dominant species are in bold.

Species	Growth Form	Average Cover	Relative Cover	Frequency	Relative Frequency	IV
Carex stricta	**Perennial**	**55.2778**	**53.0525**	**1.0000**	**5.4545**	**29.2535**
Calamagrostis canadensis	**Perennial**	**6.8611**	**6.5849**	**0.6667**	**3.6364**	**5.1106**
Lythrum salicaria	**Perennial**	**3.9722**	**3.8123**	**0.8333**	**4.5455**	**4.1789**
Typha latifolia	**Perennial**	**5.4167**	**5.1986**	**0.3333**	**1.8182**	**3.5084**
Typha angustifolia	**Perennial**	**5.1667**	**4.9587**	**0.3333**	**1.8182**	**3.3884**
Lycopus uniflorus	**Perennial**	**1.7500**	**1.6796**	**0.8333**	**4.5455**	**3.1125**
Polygonum amphibium/coccineum	**Perennial**	**1.6944**	**1.6262**	**0.6667**	**3.6364**	**2.6313**
Helianthus grosseserratus	Perennial	1.8611	1.7862	0.5000	2.7273	2.2567
Lycopus americanus	Perennial	0.5833	0.5599	0.6667	3.6364	2.0981
Bidens frondosa	Annual	0.3056	0.2933	0.6667	3.6364	1.9648
Eupatorium maculatum	Perennial	1.1667	1.1197	0.5000	2.7273	1.9235
Aster puniceus	Perennial	2.1111	2.0261	0.3333	1.8182	1.9222
Solidago gigantea	Perennial	1.8333	1.7595	0.3333	1.8182	1.7889
Carex sartwellii	Perennial	1.8333	1.7595	0.3333	1.8182	1.7889
Verbena hastata	Perennial	0.3611	0.3466	0.5000	2.7273	1.5369
Scirpus fluviatilis	Perennial	2.2500	2.1594	0.1667	0.9091	1.5343
Proserpinaca palustris var. *crebra*	Perennial	2.1111	2.0261	0.1667	0.9091	1.4676
Erechtites hieracifolia	Annual	0.0833	0.0800	0.5000	2.7273	1.4036
Aster simplex	Perennial	1.0278	0.9864	0.3333	1.8182	1.4023
Leersia oryzoides	Perennial	0.6667	0.6398	0.3333	1.8182	1.2290
Solidago graminifolia	Perennial	0.5000	0.4799	0.3333	1.8182	1.1490
Carex pellita	Perennial	0.5000	0.4799	0.3333	1.8182	1.1490
Galium tinctorium	Perennial	0.3611	0.3466	0.3333	1.8182	1.0824
Scutellaria lateriflora	Perennial	0.2222	0.2133	0.3333	1.8182	1.0157
Juncus dudleyi	Perennial	0.1944	0.1866	0.3333	1.8182	1.0024
Prunella vulgaris var. *lanceolata*	Perennial	0.0556	0.0533	0.3333	1.8182	0.9358
Sagittaria latifolia	Perennial	0.0556	0.0533	0.3333	1.8182	0.9358
Apocynum cannabinum	Perennial	0.8333	0.7998	0.1667	0.9091	0.8544
Parthenocissus quinquefolia	Perennial	0.8333	0.7998	0.1667	0.9091	0.8544
Aster lateriflorus	Perennial	0.8333	0.7998	0.1667	0.9091	0.8544
Phalaris arundinacea	Perennial	0.5000	0.4799	0.1667	0.9091	0.6945
Convolvulus sepium	Perennial	0.3611	0.3466	0.1667	0.9091	0.6278
Eleocharis erythropoda	Perennial	0.1944	0.1866	0.1667	0.9091	0.5479
Vitis riparia	Perennial	0.1667	0.1600	0.1667	0.9091	0.5345
Solidago canadensis	Perennial	0.1667	0.1600	0.1667	0.9091	0.5345
Cornus racemosa	Perennial	0.1667	0.1600	0.1667	0.9091	0.5345
Hierochloe odorata	Perennial	0.1667	0.1600	0.1667	0.9091	0.5345
Equisetum arvense	Perennial	0.1667	0.1600	0.1667	0.9091	0.5345
Rhamnus frangula	Perennial	0.1667	0.1600	0.1667	0.9091	0.5345
Ribes americanum	Perennial	0.1667	0.1600	0.1667	0.9091	0.5345
Mentha arvensis	Perennial	0.1667	0.1600	0.1667	0.9091	0.5345
Lonicera X *bella*	Perennial	0.1667	0.1600	0.1667	0.9091	0.5345

Cirsium arvense	Perennial	0.1667	0.1600	0.1667	0.9091	0.5345
Carex lacustris	Perennial	0.1667	0.1600	0.1667	0.9091	0.5345
Cicuta maculata	Biennial	0.0556	0.0533	0.1667	0.9091	0.4812
Ranunculus sceleratus	Annual	0.0556	0.0533	0.1667	0.9091	0.4812
Viola cucullata	Perennial	0.0278	0.0267	0.1667	0.9091	0.4679
Geum canadense	Perennial	0.0278	0.0267	0.1667	0.9091	0.4679
Agrostis perennans	Perennial	0.0278	0.0267	0.1667	0.9091	0.4679
Potentilla norvegica	Annual	0.0278	0.0267	0.1667	0.9091	0.4679
Pycnanthemum virginianum	Perennial	0.0278	0.0267	0.1667	0.9091	0.4679
Sanicula canadensis	Biennial	0.0278	0.0267	0.1667	0.9091	0.4679
Oxalis stricta	Perennial	0.0278	0.0267	0.1667	0.9091	0.4679
Rudbeckia hirta	Perennial	0.0278	0.0267	0.1667	0.9091	0.4679
Rubus occidentalis	Perennial	0.0278	0.0267	0.1667	0.9091	0.4679
Rosa blanda	Perennial	0.0278	0.0267	0.1667	0.9091	0.4679
Ratibida pinnata	Perennial	0.0278	0.0267	0.1667	0.9091	0.4679
Solanum dulcamara	Perennial	0.0278	0.0267	0.1667	0.9091	0.4679
Asclepias incarnata	Perennial	0.0278	0.0267	0.1667	0.9091	0.4679
Solanum americanum	Annual	0.0278	0.0267	0.1667	0.9091	0.4679
unknown grass	NA	0.0278	0.0267	0.1667	0.9091	0.4679
Eupatorium serotinum	Perennial	0.0278	0.0267	0.1667	0.9091	0.4679
Pilea fontana	Annual	0.0278	0.0267	0.1667	0.9091	0.4679
		104.1944	100.0000	18.3333	100.0000	100.0000
Bare Ground		1.0556				
Litter		34.0833				

Table 3. North Chicago Wetland Mitigation Site – All sampling points combined. Dominant species are in bold.

Species	Growth Form	Average Cover	Relative Cover	Frequency	Relative Frequency	IV
Typha angustifolia	**Perennial**	**23.0882**	**24.5543**	**0.7647**	**5.0193**	**14.7868**
Carex stricta	**Perennial**	**20.5980**	**21.9060**	**0.4706**	**3.0888**	**12.4974**
Lythrum salicaria	**Perennial**	**3.2745**	**3.4824**	**0.7647**	**5.0193**	**4.2509**
Polygonum punctatum	**Perennial**	**5.1765**	**5.5052**	**0.3529**	**2.3166**	**3.9109**
Pilea pumila	**Perennial**	**5.5784**	**5.9326**	**0.2353**	**1.5444**	**3.7385**
Calamagrostis canadensis	**Perennial**	**4.1078**	**4.3687**	**0.4118**	**2.7027**	**3.5357**
Typha latifolia	**Perennial**	**4.1667**	**4.4312**	**0.1765**	**1.1583**	**2.7948**
Bidens frondosa	**Perennial**	**0.9608**	**1.0218**	**0.5882**	**3.8610**	**2.4414**
Eupatorium maculatum	**Annual**	**1.7941**	**1.9080**	**0.3529**	**2.3166**	**2.1123**
Erechtites hieracifolia	Perennial	0.1667	0.1772	0.5882	3.8610	2.0191
Leersia oryzoides	Perennial	1.1667	1.2407	0.4118	2.7027	1.9717
Lycopus uniflorus	Annual	0.6961	0.7403	0.4706	3.0888	1.9145
Phragmites australis	Perennial	3.1863	3.3886	0.0588	0.3861	1.8873
Helianthus grosseserratus	Perennial	1.0686	1.1365	0.3529	2.3166	1.7265
Erigeron annuus	Perennial	2.4706	2.6275	0.1176	0.7722	1.6998
Polygonum amphibium/coccineum	Annual	0.9608	1.0218	0.3529	2.3166	1.6692
Solidago gigantea	Perennial	1.5882	1.6891	0.2353	1.5444	1.6167
Solidago graminifolia	Perennial	1.0686	1.1365	0.2941	1.9305	1.5335
Lycopus americanus	Annual	0.3333	0.3545	0.4118	2.7027	1.5286
Aster puniceus	Perennial	1.3922	1.4806	0.2353	1.5444	1.5125
Mentha arvensis	Perennial	1.3922	1.4806	0.1765	1.1583	1.3194
Verbena hastata	Perennial	0.2157	0.2294	0.3529	2.3166	1.2730
Solidago canadensis	Perennial	0.8235	0.8758	0.2353	1.5444	1.2101
Aster simplex	Biennial	0.4804	0.5109	0.2353	1.5444	1.0276
Carex pellita	Perennial	0.4118	0.4379	0.2353	1.5444	0.9912
Viola cucullata	Perennial	0.2157	0.2294	0.2353	1.5444	0.8869
Scirpus fluviatilis	Perennial	0.8529	0.9071	0.1176	0.7722	0.8397
Scutellaria lateriflora	Perennial	0.4412	0.4692	0.1765	1.1583	0.8137
Parthenocissus quinquefolia	Biennial	0.4118	0.4379	0.1765	1.1583	0.7981
Rhamnus frangula	Perennial	0.3627	0.3858	0.1765	1.1583	0.7720
Carex sartwellii	Perennial	0.6471	0.6881	0.1176	0.7722	0.7302
Viburnum lentago	Perennial	0.1863	0.1981	0.1765	1.1583	0.6782
Cornus racemosa	Perennial	0.1765	0.1877	0.1765	1.1583	0.6730
Galium tinctorium	Perennial	0.1471	0.1564	0.1765	1.1583	0.6573
Impatiens capensis	Perennial	0.1373	0.1460	0.1765	1.1583	0.6521
Pycnanthemum virginianum	Perennial	0.1275	0.1355	0.1765	1.1583	0.6469
Phalaris arundinacea	Perennial	0.4706	0.5005	0.1176	0.7722	0.6363
Juncus dudleyi	Perennial	0.0784	0.0834	0.1765	1.1583	0.6209
Sanicula canadensis	Perennial	0.0784	0.0834	0.1765	1.1583	0.6209
Cirsium arvense	Perennial	0.0784	0.0834	0.1765	1.1583	0.6209
Prunella vulgaris var. *lanceolata*	Perennial	0.0294	0.0313	0.1765	1.1583	0.5948
Proserpinaca palustris var. *crebra*	Perennial	0.7451	0.7924	0.0588	0.3861	0.5893
Aster lateriflorus	Perennial	0.3529	0.3754	0.1176	0.7722	0.5738

Convolvulus sepium	Perennial	0.1863	0.1981	0.1176	0.7722	0.4852
Eupatorium perfoliatum	Annual	0.1275	0.1355	0.1176	0.7722	0.4539
Scirpus atrovirens	Biennial	0.1176	0.1251	0.1176	0.7722	0.4487
Senecio pauperculus	Perennial	0.1176	0.1251	0.1176	0.7722	0.4487
Boehmeria cylindrica	Perennial	0.1176	0.1251	0.1176	0.7722	0.4487
Agrostis perennans	NA	0.0686	0.0730	0.1176	0.7722	0.4226
Glyceria striata	Perennial	0.0686	0.0730	0.1176	0.7722	0.4226
Asclepias incarnata	Perennial	0.0686	0.0730	0.1176	0.7722	0.4226
Cicuta maculata	Perennial	0.0294	0.0313	0.1176	0.7722	0.4017
Geum canadense	Perennial	0.0294	0.0313	0.1176	0.7722	0.4017
Sagittaria latifolia	Annual	0.0196	0.0209	0.1176	0.7722	0.3965
Zizia aurea	Perennial	0.0196	0.0209	0.1176	0.7722	0.3965
Apocynum cannabinum	Perennial	0.2941	0.3128	0.0588	0.3861	0.3494
Polygonum hydropiper	Perennial	0.1176	0.1251	0.0588	0.3861	0.2556
Eleocharis erythropoda	Perennial	0.0686	0.0730	0.0588	0.3861	0.2295
Vitis riparia	Perennial	0.0588	0.0626	0.0588	0.3861	0.2243
Polygonum persicaria	Annual	0.0588	0.0626	0.0588	0.3861	0.2243
Hierochloe odorata	Perennial	0.0588	0.0626	0.0588	0.3861	0.2243
Equisetum arvense	Perennial	0.0588	0.0626	0.0588	0.3861	0.2243
Ribes americanum	Annual	0.0588	0.0626	0.0588	0.3861	0.2243
Lonicera X *bella*	Annual	0.0588	0.0626	0.0588	0.3861	0.2243
Carex lacustris	Perennial	0.0588	0.0626	0.0588	0.3861	0.2243
Lythrum alatum	Perennial	0.0588	0.0626	0.0588	0.3861	0.2243
Cornus obliqua	Annual	0.0588	0.0626	0.0588	0.3861	0.2243
Rhamnus cathartica	Perennial	0.0588	0.0626	0.0588	0.3861	0.2243
Allium cernuum	Annual	0.0588	0.0626	0.0588	0.3861	0.2243
Alisma subcordatum	Perennial	0.0196	0.0209	0.0588	0.3861	0.2035
Ranunculus sceleratus	Annual	0.0196	0.0209	0.0588	0.3861	0.2035
Potentilla norvegica	Perennial	0.0098	0.0104	0.0588	0.3861	0.1983
Rumex crispus	Perennial	0.0098	0.0104	0.0588	0.3861	0.1983
Carex sp. (Section Ovales)	Perennial	0.0098	0.0104	0.0588	0.3861	0.1983
Fragaria virginiana	Perennial	0.0098	0.0104	0.0588	0.3861	0.1983
Monarda fistulosa	Perennial	0.0098	0.0104	0.0588	0.3861	0.1983
Oxalis stricta	Perennial	0.0098	0.0104	0.0588	0.3861	0.1983
Rudbeckia hirta	Perennial	0.0098	0.0104	0.0588	0.3861	0.1983
Rubus occidentalis	Perennial	0.0098	0.0104	0.0588	0.3861	0.1983
Rosa blanda	Perennial	0.0098	0.0104	0.0588	0.3861	0.1983
Ratibida pinnata	Perennial	0.0098	0.0104	0.0588	0.3861	0.1983
Solanum dulcamara	Perennial	0.0098	0.0104	0.0588	0.3861	0.1983
Solanum americanum	Perennial	0.0098	0.0104	0.0588	0.3861	0.1983
unknown grass	Perennial	0.0098	0.0104	0.0588	0.3861	0.1983
Eupatorium serotinum	Perennial	0.0098	0.0104	0.0588	0.3861	0.1983
Setaria faberi	Perennial	0.0098	0.0104	0.0588	0.3861	0.1983
Epilobium coloratum	NA	0.0098	0.0104	0.0588	0.3861	0.1983
Pilea fontana	Perennial	0.0098	0.0104	0.0588	0.3861	0.1983
Fraxinus pennsylvanica var. *subintegerrima*	Perennial	0.0098	0.0104	0.0588	0.3861	0.1983
Chrysanthemum leucanthemum var.	Perennial	0.0098	0.0104	0.0588	0.3861	0.1983

pinnatifidum						
		94.0294	100.0000	15.2353	100.0000	100.0000
Bare Ground		1.5098				
Litter		48.4118				

APPENDIX B

Wetland Plant Species List

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site A, 2012 - Marsh

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Leersia oryzoides	**rice cut grass**	**H**	**OBL**	**4**
Lythrum salicaria*	**purple loosestrife**	**H**	**OBL**	**-**
Phalaris arundinacea*	**reed canary grass**	**H**	**FACW**	**-**
Typha latifolia	**broad-leaved cattail**	**H**	**OBL**	**1**
Agrimonia gryposepala	tall agrimony	H	FACU	2
*Agrostis alba**	red top	H	FACW	-
Alisma subcordatum	common water plantain	H	OBL	4
Anemone virginiana	tall anemone	H	FACU	5
Asclepias incarnata	swamp milkweed	H	OBL	4
Aster lateriflorus	side-flowering aster	H	FACW	4
Aster sagittifolius var. *drummondii*	Drummond's aster	H	UPL	2
Aster simplex	panicled aster	H	FAC	3
Bidens frondosa	common beggar's ticks	H	FACW	1
Carex bebbii	Bebb's oval sedge	H	OBL	6
Carex cristatella	crested oval sedge	H	FACW	4
Carex hystericina	porcupine sedge	H	OBL	5
Carex pellita	wooly sedge	H	OBL	4
Carex stipata	common fox sedge	H	OBL	3
Carex tenera	narrow-leaved oval sedge	H	FACW	8
Carex vulpinoidea	brown fox sedge	H	FACW	2
Cicuta maculata	water hemlock	H	OBL	6
*Cirsium arvense**	field thistle	H	FACU	-
Convolvulus sepium	American bindweed	H	FAC	1
Crataegus mollis	downy hawthorn	H	FAC	2
Erechtites hieracifolia	fireweed	H	FAC	2
Eupatorium maculatum	spotted Joe Pye weed	H	OBL	4
Eupatorium perfoliatum	common boneset	H	OBL	4
Fraxinus pennsylvanica var. *subintegerrima*	green ash	S,T	FACW	1
Geum aleppicum var. strictum	yellow avens	H	FACW	7
Glyceria striata	fowl manna grass	H	OBL	4
Helianthus grosseserratus	sawtooth sunflower	H	FACW	2
Impatiens capensis	spotted touch-me-not	H	FACW	3
Iris virginica var. shrevei	southern blue flag	H	OBL	5
Juncus acuminatus	sharp-fruited rush	H	OBL	6
Juncus dudleyi	Dudley's rush	H	FACW	4
Liatris spicata	marsh blazing star	H	FAC	6
Lobelia spicata	pale spiked lobelia	H	FAC	6
*Lonicera x bella**	showy fly honeysuckle	S	FACU	-
Lycopus uniflorus	nothern bugle weed	H	OBL	7
Lythrum alatum	winged loosestrife	H	OBL	7
*Melilotus alba**	white sweet clover	H	FACU	-
Mentha arvensis var. *villosa*	wild mint	H	FACW	5
Panicum implicatum	panic grass	H	FAC	2
Parthenocissus quinquefolia	Virginia creeper	H,W	FACU	2
Penstemon digitalis	foxglove beard tongue	H	FAC	4

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site A, 2012 - Marsh

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Phlox glaberrima ssp. *interior*	smooth phlox	H	FACW	8
Pilea pumila	Canada clearweed	H	FACW	5
*Poa pratensis**	Kentucky blue grass	H	FAC	-
Polygonum hydropiper	water pepper	H	OBL	2
Polygonum punctatum	smartweed	H	OBL	6
Prunella vulgaris var. *lanceolata*	self-heal	H	FAC	0
Prunus virginiana	common choke cherry	H	FACU	3
Pycnanthemum virginianum	common mountain mint	H	FACW	5
Ranunculus sceleratus	cursed crowfoot	H	OBL	6
Ratibida pinnata	yellow coneflower	H	UPL	4
*Rhamnus cathartica**	common buckthorn	H,S	FAC	-
*Rhamnus frangula**	glossy buckthorn	S	FACW	-
Rubus sp.	blackberry	H	-	
Rudbeckia hirta	black-eyed Susan	H	FACU	1
*Rumex crispus**	curly dock	H	FAC	-
Sagittaria latifolia	common arrowhead	H	OBL	4
*Salix alba**	white willow	T	FACW	-
Salix amygdaloides	peach-leaved willow	T	FACW	5
Salix sp.	willow	T	-	
Sanicula marilandica	black snakeroot	H	FACU	6
Scirpus atrovirens	dark green rush	H	OBL	4
Scirpus pendulus	red bulrush	H	OBL	4
Scirpus validus var. creber	soft-stem bulrush	H	OBL	5
*Solanum dulcamara**	bittersweet nightshade	H	FAC	-
Solidago canadensis	Canada goldenrod	H	FACU	1
Solidago gigantea	late goldenrod	H	FACW	4
Sphenopholis intermedia	slender wedge grass	H	UPL	4
Thalictrum revolutum	waxy meadow rue	H	FAC	6
*Trifolium pratense**	red clover	H	FACU	-
Typha angustifolia	narrow-leaved cattail	H	OBL	1
Typha x *glauca*	hybrid cattail	H	OBL	1
Verbena hastata	blue vervain	H	FACW	4
Viburnum lentago	nannyberry	H,S	FAC	5
Vitis riparia	riverbank grape	H,W	FACW	2

*Non-native species Dominant species are in bold at the top of the species list Mean C = 3.9
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 31.0

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site B, 2012 – Wet Shrubland

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Carex stipata	**common fox sedge**	**H**	**OBL**	**3**
Fraxinus pennsylvanica* var. *subintegerrima	**green ash**	H,**S,**T	**FACW**	**1**
Leersia oryzoides	**rice cut grass**	**H**	**OBL**	**4**
Phalaris arundinacea*	**reed canary grass**	**H**	**FACW**	**-**
Typha angustifolia	**narrow-leaved cattail**	**H**	**OBL**	**1**
Agrimonia gryposepala	tall agrimony	H	FACU	2
*Agrostis alba**	red top	H	FACW	-
Alisma subcordatum	common water plantain	H	OBL	4
Apocynum cannabinum	dogbane	H	FAC	4
Asclepias incarnata	swamp milkweed	H	OBL	4
Aster lateriflorus	side-flowering aster	H	FACW	4
Aster praealtus	willow aster	H	FACW	9
Calamagrostis canadensis	blue joint grass	H	OBL	3
Carex granularis	pale sedge	H	FACW	4
Carex stricta	common tussock sedge	H	OBL	5
Cicuta maculata	water hemlock	H	OBL	6
Convolvulus sepium	American bindweed	H	FAC	1
Equisetum arvense	common horsetail	H	FAC	0
Erigeron annuus	annual fleabane	H	FACU	0
Eupatorium maculatum	spotted Joe Pye weed	H	OBL	4
Eupatorium perfoliatum	common boneset	H	OBL	4
Geum aleppicum var. *strictum*	yellow avens	H	FACW	7
Glyceria striata	fowl manna grass	H	OBL	4
Impatiens capensis	spotted touch-me-not	H	FACW	3
Juncus dudleyi	Dudley's rush	H	FACW	4
Lobelia spicata	pale spiked lobelia	H	FAC	6
Lythrum alatum	winged loosestrife	H	OBL	7
*Lythrum salicaria**	purple loosestrife	H	OBL	-
Mentha arvensis var. *villosa*	wild mint	H	FACW	5
Parthenocissus quinquefolia	Virginia creeper	H,W	FACU	2
Phlox glaberrima ssp. *interior*	smooth phlox	H	FACW	8
*Poa pratensis**	Kentucky blue grass	H	FAC	-
Pycnanthemum virginianum	common mountain mint	H	FACW	5
Ranunculus sceleratus	cursed crowfoot	H	OBL	6
*Rhamnus cathartica**	common buckthorn	S	FAC	-
Sagittaria latifolia	common arrowhead	H	OBL	4
Scirpus pendulus	red bulrush	H	OBL	4
Solidago canadensis	Canada goldenrod	H	FACU	1
Solidago gigantea	late goldenrod	H	FACW	4
*Solidago sempervirens**	seaside goldenrod	H	FACW	-
Sphenopholis intermedia	slender wedge grass	H	UPL	4
Thalictrum revolutum	waxy meadow rue	H	FAC	6
*Trifolium hybridum**	alsike clover	H	FACU	-
Typha latifolia	broad-leaved cattail	H	OBL	1
Verbena hastata	blue vervain	H	FACW	4
Viburnum lentago	nannyberry	S	FAC	5

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site B, 2012 – Wet Shrubland

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
*Viburnum opulus**	European high-bush cranberry	H,S	FAC	-

*Non-native species Dominant species are in bold at the top of the species list Mean C = 3.9
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 24.5

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site C, 2012 - Marsh

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Phalaris arundinacea*	**reed canary grass**	**H**	**FACW**	**-**
Typha angustifolia	**narrow-leaved cattail**	**H**	**OBL**	**1**
Alisma subcordatum	common water plantain	H	OBL	4
Calamagrostis canadensis	blue joint grass	H	OBL	3
Carex bebbii	Bebb's oval sedge	H	OBL	6
Carex cristatella	crested oval sedge	H	FACW	4
Carex granularis	pale sedge	H	FACW	4
Carex pellita	wooly sedge	H	OBL	4
Carex stipata	common fox sedge	H	OBL	3
Carex stricta	common tussock sedge	H	OBL	5
Carex vulpinoidea	brown fox sedge	H	FACW	2
*Chenopodium album**	lamb's quarters	H	FACU	-
Cicuta maculata	water hemlock	H	OBL	6
*Cirsium arvense**	field thistle	H	FACU	-
Convolvulus sepium	American bindweed	H	FAC	1
Epilobium coloratum	cinnamon willow herb	H	OBL	3
Erigeron annuus	annual fleabane	H	FACU	0
Eupatorium maculatum	spotted Joe Pye weed	H	OBL	4
Fraxinus pennsylvanica var. *subintegerrima*	green ash	H,S,T	FACW	1
Glyceria striata	fowl manna grass	H	OBL	4
Helianthus grosseserratus	sawtooth sunflower	H	FACW	2
Hierochloe odorata	sweet grass	H		9
Impatiens capensis	spotted touch-me-not	H	FACW	3
Juncus dudleyi	Dudley's rush	H	FACW	4
Leersia oryzoides	rice cut grass	H	OBL	4
Lonicera x *bella**	showy fly honeysuckle	S	FACU	-
*Lythrum salicaria**	purple loosestrife	H	OBL	-
Mentha arvensis var. *villosa*	wild mint	H	FACW	5
Penstemon digitalis	foxglove beard tongue	H	FAC	4
Ranunculus sceleratus	cursed crowfoot	H	OBL	6
*Rhamnus cathartica**	common buckthorn	S,T	FAC	-
Sanicula canadensis	Canadian black snakeroot	H	FACU	7
Solidago gigantea	late goldenrod	H	FACW	4
*Sonchus arvensis**	field sow thistle	H	FACU	-
Verbena hastata	blue vervain	H	FACW	4
Viburnum lentago	nannyberry	H,S	FAC	5
Vitis riparia	riverbank grape	W	FACW	2

*Non-native species Dominant species are in bold at the top of the species list Mean C = 3.8
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 20.8

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site D, 2012 – Sedge Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Calamagrostis canadensis	**blue joint grass**	**H**	**OBL**	**3**
Carex stricta	**common tussock sedge**	**H**	**OBL**	**5**
*Achillea millefolium**	common milfoil	H	FACU	-
Alisma subcordatum	common water plantain	H	OBL	4
Asclepias incarnata	swamp milkweed	H	OBL	4
Aster praealtus	willow aster	H	FACW	9
Aster puniceus	bristly aster	H	OBL	8
Bidens frondosa	common beggar's ticks	H	FACW	1
Carex buxbaumii	dark-scaled sedge	H	OBL	9
Carex pellita	wooly sedge	H	OBL	4
Carex sartwellii	running marsh sedge	H	FACW	6
Cicuta maculata	water hemlock	H	OBL	6
Cornus obliqua	pale dogwood	S	FACW	6
Epilobium coloratum	cinnamon willow herb	H	OBL	3
Erechtites hieracifolia	fireweed	H	FAC	2
Erigeron annuus	annual fleabane	H	FACU	0
Eupatorium maculatum	spotted Joe Pye weed	H	OBL	4
Eupatorium perfoliatum	common boneset	H	OBL	4
Fraxinus pennsylvanica var. *subintegerrima*	green ash	T	FACW	1
Galium obtusum	wild madder	H	FACW	5
Geum aleppicum var. *strictum*	yellow avens	H	FACW	7
Glyceria striata	fowl manna grass	H	OBL	4
Helianthus grosseserratus	sawtooth sunflower	H	FACW	2
Impatiens capensis	spotted touch-me-not	H	FACW	3
Juncus dudleyi	Dudley's rush	H	FACW	4
Lycopus americanus	common water horehound	H	OBL	5
Lycopus uniflorus	nothern bugle weed	H	OBL	7
Lythrum alatum	winged loosestrife	H	OBL	7
*Lythrum salicaria**	purple loosestrife	H	OBL	-
Mentha arvensis var. *villosa*	wild mint	H	FACW	5
Parthenocissus quinquefolia	Virginia creeper	H	FACU	2
Penstemon digitalis	foxglove beard tongue	H	FAC	4
Phlox glaberrima ssp. *interior*	smooth phlox	H	FACW	8
Pilea fontana	bog clearweed	H	FACW	7
Polygonum amphibium var. stipulaceum	water knotweed	H	OBL	4
Polygonum pensylvanicum	pinkweed	H	FACW	0
Pycnanthemum virginianum	common mountain mint	H	FACW	5
Ranunculus sceleratus	cursed crowfoot	H	OBL	6
*Rhamnus cathartica**	common buckthorn	S	FAC	-
Rorippa palustris var. *fernaldiana*	marsh yellow cress	H	OBL	4
Rubus idaeus var. *strigosus*	red raspberry	H	FACU	3
Rudbeckia hirta	black-eyed Susan	H	FACU	1
Salix discolor	pussy willow	S	FACW	2
Salix petiolaris	meadow willow	S	OBL	7
Scutellaria lateriflora	mad-dog skullcap	H	OBL	5

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site D, 2012 – Sedge Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Solidago canadensis	Canada goldenrod	H	FACU	1
Solidago graminifolia	grass-leaved goldenrod	H	FACW	4
*Sonchus arvensis**	field sow thistle	H	FACU	-
Spartina pectinata	prairie cord grass	H	FACW	4
Thalictrum revolutum	waxy meadow rue	H	FAC	6
Tradescantia ohiensis	common spiderwort	H	FACU	2
Typha angustifolia	narrow-leaved cattail	H	OBL	1
Typha latifolia	broad-leaved cattail	H	OBL	1
Verbena hastata	blue vervain	H	FACW	4
Vernonia fasciculata	common ironweed	H	FACW	5
Viburnum lentago	nannyberry	S	FAC	5

*Non-native species Dominant species are in bold at the top of the species list Mean C = 4.2
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 30.4

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site E, 2012 - Marsh

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Lythrum salicaria*	**purple loosestrife**	**H**	**OBL**	**-**
Typha latifolia	**broad-leaved cattail**	**H**	**OBL**	**1**
Agrimonia gryposepala	tall agrimony	H	FACU	2
Allium cernuum	nodding wild onion	H	FACU	7
Apocynum cannabinum	dogbane	H	FAC	4
Asclepias incarnata	swamp milkweed	H	OBL	4
Aster praealtus	willow aster	H	FACW	9
Calamagrostis canadensis	blue joint grass	H	OBL	3
Carex stricta	common tussock sedge	H	OBL	5
Cornus obliqua	pale dogwood	S	FACW	6
Fraxinus pennsylvanica var. *subintegerrima*	green ash	H,S	FACW	1
Glyceria striata	fowl manna grass	H	OBL	4
Juncus dudleyi	Dudley's rush	H	FACW	4
Lonicera x *bella**	showy fly honeysuckle	S	FACU	-
*Phalaris arundinacea**	reed canary grass	H	FACW	-
Pycnanthemum virginianum	common mountain mint	H	FACW	5
*Rhamnus cathartica**	common buckthorn	S	FAC	-
*Rhamnus frangula**	glossy buckthorn	S	FACW	-
Rudbeckia hirta	black-eyed Susan	H	FACU	1
Solidago canadensis	Canada goldenrod	H	FACU	1
Solidago gigantea	late goldenrod	H	FACW	4
Solidago graminifolia	grass-leaved goldenrod	H	FACW	4
*Solidago sempervirens**	seaside goldenrod	H	FACW	-
Thalictrum revolutum	waxy meadow rue	H	FAC	6
Tradescantia ohiensis	common spiderwort	H	FACU	2
Typha angustifolia	narrow-leaved cattail	H	OBL	1
Viburnum lentago	nannyberry	S	FAC	5
Vitis riparia	riverbank grape	H,W	FACW	2

*Non-native species Dominant species are in bold at the top of the species list Mean C = 3.7
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 17.3

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site F, 2012 – Sedge Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Carex stricta	**common tussock sedge**	**H**	**OBL**	**5**
Typha latifolia	**broad-leaved cattail**	**H**	**OBL**	**1**
*Acer ginnala**	amur maple	T	UPL	-
*Achillea millefolium**	common milfoil	H	FACU	-
*Agrostis alba**	red top	H	FACW	-
Ambrosia artemisiifolia var. *elatior*	common ragweed	H	FACU	0
Apocynum cannabinum	dogbane	H	FAC	4
Asclepias incarnata	swamp milkweed	H	OBL	4
Asclepias purpurascens	purple milkweed	H	FACU	8
Aster lateriflorus	side-flowering aster	H	FACW	4
Aster praealtus	willow aster	H	FACW	9
Aster puniceus	bristly aster	H	OBL	8
Aster sagittifolius var. *drummondii*	Drummond's aster	H	UPL	2
Bidens frondosa	common beggar's ticks	H	FACW	1
Calamagrostis canadensis	blue joint grass	H	OBL	3
Carex annectens var. *xanthocarpa*	small yellow fox sedge	H	FACW	7
Carex granularis	pale sedge	H	FACW	4
Carex hystericina	porcupine sedge	H	OBL	5
Carex lacustris	common lake sedge	H	OBL	6
Carex pellita	wooly sedge	H	OBL	4
Carex sartwellii	running marsh sedge	H	FACW	6
Carex vulpinoidea	brown fox sedge	H	FACW	2
*Cirsium arvense**	field thistle	H	FACU	-
*Cirsium vulgare**	bull thistle	H	FACU	-
Cornus obliqua	pale dogwood	H,S	FACW	6
Cornus racemosa	gray dogwood	H,S	FAC	1
Eleocharis acicularis	needle spike rush	H	OBL	2
Eleocharis erythropoda	red-rooted spike rush	H	OBL	2
Equisetum arvense	common horsetail	H	FAC	0
Erechtites hieracifolia	fireweed	H	FAC	2
Erigeron annuus	annual fleabane	H	FACU	0
Eupatorium maculatum	spotted Joe Pye weed	H	OBL	4
Eupatorium perfoliatum	common boneset	H	OBL	4
Eupatorium serotinum	late boneset	H	FAC	0
Fragaria virginiana	wild strawberry	H	FACU	1
Fraxinus pennsylvanica var. *subintegerrima*	green ash	S,T	FACW	1
Galium tinctorium	stiff bedstraw	H	OBL	8
Geum aleppicum var. *strictum*	yellow avens	H	FACW	7
Glyceria septentrionalis	floating manna grass	H	OBL	8
Glyceria striata	fowl manna grass	H	OBL	4
Helianthus grosseserratus	sawtooth sunflower	H	FACW	2
Hierochloe odorata	sweet grass	H		9
Iris virginica var. *shrevei*	southern blue flag	H	OBL	5
Juncus dudleyi	Dudley's rush	H	FACW	4
Leersia oryzoides	rice cut grass	H	OBL	4
Lobelia spicata	pale spiked lobelia	H	FAC	6

Species list is continued on the next page ….

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site F, 2012 – Sedge Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Lonicera x *bella**	showy fly honeysuckle	S	FACU	-
Ludwigia polycarpa	false loosestrife	H	OBL	6
Lycopus americanus	common water horehound	H	OBL	5
Lycopus uniflorus	nothern bugle weed	H	OBL	7
Lythrum alatum	winged loosestrife	H	OBL	7
*Lythrum salicaria**	purple loosestrife	H	OBL	-
Mentha arvensis var. villosa	wild mint	H	FACW	5
Monarda fistulosa	wild bergamot	H	FACU	4
Onoclea sensibilis	sensitive fern	H	FACW	8
Oxalis stricta	common wood sorrel	H	FACU	0
Parthenocissus quinquefolia	Virginia creeper	H,W	FACU	2
Penstemon digitalis	foxglove beard tongue	H	FAC	4
Penthorum sedoides	ditch stonecrop	H	OBL	5
*Phalaris arundinacea**	reed canary grass	H	FACW	-
Phlox glaberrima ssp. *interior*	smooth phlox	H	FACW	8
*Poa pratensis**	Kentucky blue grass	H	FAC	-
Polygonum amphibium var. *stipulaceum*	water knotweed	H	OBL	4
Populus deltoides	eastern cottonwood	H	FAC	2
Potentilla simplex	common cinquefoil	H	FACU	4
Proserpinaca palustris var. crebra	mermaid weed	H	OBL	6
Prunella vulgaris var. *lanceolata*	self-heal	H	FAC	0
Pycnanthemum virginianum	common mountain mint	H	FACW	5
Ranunculus flabellaris	yellow water buttercup	H	OBL	7
Ranunculus sceleratus	cursed crowfoot	H	OBL	6
Ratibida pinnata	yellow coneflower	H	UPL	4
*Rhamnus cathartica**	common buckthorn	S	FAC	-
*Rhamnus frangula**	glossy buckthorn	H,S	FACW	-
Ribes americanum	wild black currant	H	FACW	7
Rorippa palustris var. *fernaldiana*	marsh yellow cress	H	OBL	4
Rosa blanda	early wild rose	H	FACU	5
Rubus occidentalis	black raspberry	H	UPL	2
Rudbeckia hirta	black-eyed Susan	H	FACU	1
*Rumex crispus**	curly dock	H	FAC	-
Sagittaria latifolia	common arrowhead	H	OBL	4
Salix amygdaloides	peach-leaved willow	H	FACW	5
Salix discolor	pussy willow	S	FACW	2
Sambucus canadensis	common elder	S	FACW	1
Sanicula canadensis	Canadian black snakeroot	H	FACU	7
Scirpus acutus	hard-stemmed bulrush	H	OBL	6
Scirpus atrovirens	dark green rush	H	OBL	4
Scirpus fluviatilis	river bulrush	H	OBL	4
Scirpus pendulus	red bulrush	H	OBL	4
Scirpus validus var. *creber*	soft-stem bulrush	H	OBL	5
Scutellaria lateriflora	mad-dog skullcap	H	OBL	5
Senecio pauperculus	balsam ragwort	H	FAC	6
Sium suave	water parsnip	H	OBL	7

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site F, 2012 – Sedge Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Solanum americanum	black nightshade	H	FACU	0
*Solanum dulcamara**	bittersweet nightshade	H	FAC	-
Solidago canadensis	Canada goldenrod	H	FACU	1
Solidago gigantea	late goldenrod	H	FACW	4
Solidago graminifolia	grass-leaved goldenrod	H	FACW	4
Spartina pectinata	prairie cord grass	H	FACW	4
Sphenopholis intermedia	slender wedge grass	H	UPL	4
Stachys tenuifolia var. *hispida*	marsh hedge nettle	H	OBL	5
*Taraxacum officinale**	common dandelion	H	FACU	-
Thalictrum revolutum	waxy meadow rue	H	FAC	6
Tradescantia ohiensis	common spiderwort	H	FACU	2
Typha angustifolia	narrow-leaved cattail	H	OBL	1
Ulmus americana	American elm	H	FACW	3
Verbena hastata	blue vervain	H	FACW	4
Viburnum lentago	nannyberry	S	FAC	5
Vitis riparia	riverbank grape	H,W	FACW	2
Zizia aurea	golden Alexanders	H	FAC	7

*Non-native species Dominant species are in bold at the top of the species list Mean C = 4.1
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 40.3

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site G, 2012 – Sedge Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Calamagrostis canadensis	**blue joint grass**	**H**	**OBL**	**3**
Carex stricta	**common tussock sedge**	**H**	**OBL**	**5**
Cornus obliqua	**pale dogwood**	**S**	**FACW**	**6**
Solidago graminifolia	**grass-leaved goldenrod**	**H**	**FACW**	**4**
*Agrostis alba**	red top	H	FACW	-
Allium cernuum	nodding wild onion	H	FACU	7
Apocynum cannabinum	dogbane	H	FAC	4
Asclepias incarnata	swamp milkweed	H	OBL	4
Asclepias purpurascens	purple milkweed	H	FACU	8
Asclepias syriaca	common milkweed	H	FACU	0
Aster novae-angliae	New England aster	H	FACW	4
Aster praealtus	willow aster	H	FACW	9
Aster puniceus	bristly aster	H	OBL	8
Bidens frondosa	common beggar's ticks	H	FACW	1
Cacalia plantaginea	prairie Indian plantain	H	FAC	10
Carex buxbaumii	dark-scaled sedge	H	OBL	9
Carex granularis	pale sedge	H	FACW	4
Carex sartwellii	running marsh sedge	H	FACW	6
Carex sterilis	fen star sedge	H	OBL	10
Carex stipata	common fox sedge	H	OBL	3
Cicuta maculata	water hemlock	H	OBL	6
Cirsium discolor	pasture thistle	H	FACU	2
Cornus racemosa	gray dogwood	S	FAC	1
Eleocharis erythropoda	red-rooted spike rush	H	OBL	2
Erigeron annuus	annual fleabane	H	FACU	0
Eryngium yuccifolium	rattlesnake master	H	FAC	9
Eupatorium maculatum	spotted Joe Pye weed	H	OBL	4
Eupatorium perfoliatum	common boneset	H	OBL	4
Fraxinus pennsylvanica var. *subintegerrima*	green ash	HT	FACW	1
Geum aleppicum var. *strictum*	yellow avens	H	FACW	7
Glyceria striata	fowl manna grass	H	OBL	4
Helianthus grosseserratus	sawtooth sunflower	H	FACW	2
Iris virginica var. *shrevei*	southern blue flag	H	OBL	5
Juncus dudleyi	Dudley's rush	H	FACW	4
Lathyrus palustris	marsh vetchling	H	FACW	8
Liatris spicata	marsh blazing star	H	FAC	6
Lobelia spicata	pale spiked lobelia	H	FAC	6
Lycopus americanus	common water horehound	H	OBL	5
Lycopus uniflorus	nothern bugle weed	H	OBL	7
Lysimachia quadriflora	narrow-leaved loosestrife	H	OBL	9
*Lythrum salicaria**	purple loosestrife	H	OBL	-
Mentha arvensis var. *villosa*	wild mint	H	FACW	5
Penstemon digitalis	foxglove beard tongue	H	FAC	4
Phlox glaberrima ssp. *interior*	smooth phlox	H	FACW	8
Populus tremuloides	quaking aspen	S	FAC	4
Potentilla simplex	common cinquefoil	H	FACU	4

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site G, 2012 – Sedge Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Pycnanthemum virginianum	common mountain mint	H	FACW	5
*Rhamnus cathartica**	common buckthorn	HS	FAC	-
*Rhamnus frangula**	glossy buckthorn	HS	FACW	-
Rosa carolina	pasture rose	HS	FACU	5
Rudbeckia hirta	black-eyed Susan	H	FACU	1
Salix discolor	pussy willow	HS	FACW	2
Salix humilis	prairie willow	S	FACU	6
Salix petiolaris	meadow willow	HS	OBL	7
Salix sp.	willow	S		-
Scirpus atrovirens	dark green rush	H	OBL	4
Scirpus pendulus	red bulrush	H	OBL	4
Scutellaria lateriflora	mad-dog skullcap	H	OBL	5
Senecio pauperculus	balsam ragwort	H	FAC	6
Silphium terebinthinaceum	prairie dock	H	FAC	5
Solidago canadensis	Canada goldenrod	H	FACU	1
Solidago gigantea	late goldenrod	H	FACW	4
*Sonchus arvensis**	field sow thistle	H	FACU	-
Spartina pectinata	prairie cord grass	H	FACW	4
Spiraea alba	meadowsweet	S	FACW	7
Thalictrum revolutum	waxy meadow rue	H	FAC	6
Tradescantia ohiensis	common spiderwort	H	FACU	2
Typha angustifolia	narrow-leaved cattail	H	OBL	1
Typha latifolia	broad-leaved cattail	H	OBL	1
Verbena hastata	blue vervain	H	FACW	4
Veronicastrum virginicum	culver's root	H	FAC	7
Vitis riparia	riverbank grape	H	FACW	2
Zizia aurea	golden Alexanders	H	FAC	7

*Non-native species Dominant species are in bold at the top of the species list Mean C = 4.7
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 38.8

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site H, 2012 – Sedge Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Carex stricta	**common tussock sedge**	**H**	**OBL**	**5**
Cornus obliqua	**pale dogwood**	**S**	**FACW**	**6**
*Achillea millefolium**	common milfoil	H	FACU	-
*Agrostis alba**	red top	H	FACW	-
Apocynum cannabinum	dogbane	H	FAC	4
Asclepias incarnata	swamp milkweed	H	OBL	4
Aster praealtus	willow aster	H	FACW	9
Aster puniceus	bristly aster	H	OBL	8
Calamagrostis canadensis	blue joint grass	H	OBL	3
Carex buxbaumii	dark-scaled sedge	H	OBL	9
Carex sartwellii	running marsh sedge	H	FACW	6
*Cirsium arvense**	field thistle	H	FACU	-
Erigeron annuus	annual fleabane	H	FACU	0
Galium tinctorium	stiff bedstraw	H	OBL	8
Geum aleppicum var. *strictum*	yellow avens	H	FACW	7
Geum laciniatum	rough avens	H	FACW	5
Helianthus grosseserratus	sawtooth sunflower	H	FACW	2
*Hypericum perforatum**	common St. John's-wort	H	FACU	-
Juncus dudleyi	Dudley's rush	H	FACW	4
Liatris spicata	marsh blazing star	H	FAC	6
Ludwigia polycarpa	false loosestrife	H	OBL	6
Lycopus americanus	common water horehound	H	OBL	5
Lycopus uniflorus	nothern bugle weed	H	OBL	7
Lythrum alatum	winged loosestrife	H	OBL	7
*Lythrum salicaria**	purple loosestrife	H	OBL	-
Penstemon digitalis	foxglove beard tongue	H	FAC	4
*Phalaris arundinacea**	reed canary grass	H	FACW	-
Phlox glaberrima ssp. *interior*	smooth phlox	H	FACW	8
*Poa pratensis**	Kentucky blue grass	H	FAC	-
Populus deltoides	eastern cottonwood	H	FAC	2
Populus tremuloides	quaking aspen	H,T	FAC	4
Potentilla simplex	common cinquefoil	H	FACU	4
Pycnanthemum virginianum	common mountain mint	H	FACW	5
*Rhamnus frangula**	glossy buckthorn	H	FACW	-
Salix discolor	pussy willow	S	FACW	2
Salix humilis	prairie willow	S	FACU	6
Salix petiolaris	meadow willow	S	OBL	7
Scirpus pendulus	red bulrush	H	OBL	4
Senecio pauperculus	balsam ragwort	H	FAC	6
Sium suave	water parsnip	H	OBL	7
Solidago canadensis	Canada goldenrod	H	FACU	1
Solidago gigantea	late goldenrod	H	FACW	4
Solidago graminifolia	grass-leaved goldenrod	H	FACW	4
Spartina pectinata	prairie cord grass	H	FACW	4
Sphenopholis intermedia	slender wedge grass	H	UPL	4
Spiraea alba	meadowsweet	S	FACW	7
Tradescantia ohiensis	common spiderwort	H	FACU	2

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site H, 2012 – Sedge Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Typha latifolia	broad-leaved cattail	H	OBL	1
Verbena hastata	blue vervain	H	FACW	4
Vitis riparia	riverbank grape	H	FACW	2

*Non-native species Dominant species are in bold at the top of the species list Mean C = 4.8
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 31.3

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site I, 2012 – Sedge Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Carex stricta	**common tussock sedge**	**H**	**OBL**	**5**
Scirpus pendulus	**red bulrush**	**H**	**OBL**	**4**
Solidago gigantea	**late goldenrod**	**H**	**FACW**	**4**
Asclepias incarnata	swamp milkweed	H	OBL	4
Aster puniceus	bristly aster	H	OBL	8
Aster simplex	panicled aster	H	FAC	3
Cacalia plantaginea	prairie Indian plantain	H	FAC	10
Calamagrostis canadensis	blue joint grass	H	OBL	3
Carex cristatella	crested oval sedge	H	FACW	4
Carex vulpinoidea	brown fox sedge	H	FACW	2
*Cirsium arvense**	field thistle	H	FACU	-
Comandra umbellata	bastard toad-flax	H	FACU	7
Convolvulus sepium	American bindweed	H	FAC	1
Cornus obliqua	pale dogwood	H,S	FACW	6
Eleocharis erythropoda	red-rooted spike rush	H	OBL	2
Eupatorium maculatum	spotted Joe Pye weed	H	OBL	4
Geum aleppicum var. *strictum*	yellow avens	H	FACW	7
Glyceria striata	fowl manna grass	H	OBL	4
Helianthus grosseserratus	sawtooth sunflower	H	FACW	2
Juncus dudleyi	Dudley's rush	H	FACW	4
Leersia oryzoides	rice cut grass	H	OBL	4
Lycopus americanus	common water horehound	H	OBL	5
Lysimachia quadriflora	narrow-leaved loosestrife	H	OBL	9
*Lythrum salicaria**	purple loosestrife	H	OBL	-
Panicum sp.	panic grass	H	-	
Penstemon digitalis	foxglove beard tongue	H	FAC	4
Phlox glaberrima ssp. *interior*	smooth phlox	H	FACW	8
Prunella vulgaris var. *lanceolata*	self-heal	H	FAC	0
Pycnanthemum virginianum	common mountain mint	H	FACW	5
*Rhamnus frangula**	glossy buckthorn	S	FACW	-
Rudbeckia hirta	black-eyed Susan	H	FACU	1
Scirpus atrovirens	dark green rush	H	OBL	4
Senecio pauperculus	balsam ragwort	H	FAC	6
Silphium terebinthinaceum	prairie dock	H	FAC	5
Solidago graminifolia	grass-leaved goldenrod	H	FACW	4
Typha latifolia	broad-leaved cattail	H	OBL	1
Zizia aurea	golden Alexanders	H	FAC	7

*Non-native species Dominant species are in bold at the top of the species list Mean C = 4.5
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 25.6

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site J, 2012 – Sedge Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Aster puniceus	**bristly aster**	**H**	**OBL**	**8**
Carex sartwellii	**running marsh sedge**	**H**	**FACW**	**6**
Carex stricta	**common tussock sedge**	**H**	**OBL**	**5**
*Achillea millefolium**	common milfoil	H	FACU	-
*Agrostis alba**	red top	H	FACW	-
Alisma subcordatum	common water plantain	H	OBL	4
Andropogon gerardii	big bluestem	H	FAC	5
Apocynum cannabinum	dogbane	H	FAC	4
Asclepias incarnata	swamp milkweed	H	OBL	4
Asclepias purpurascens	purple milkweed	H	FACU	8
Asclepias syriaca	common milkweed	H	FACU	0
Aster lateriflorus	side-flowering aster	H	FACW	4
Aster novae-angliae	New England aster	H	FACW	4
Aster praealtus	willow aster	H	FACW	9
Calamagrostis canadensis	blue joint grass	H	OBL	3
Carex bebbii	Bebb's oval sedge	H	OBL	6
Carex granularis	pale sedge	H	FACW	4
Carex pellita	wooly sedge	H	OBL	4
Carex vulpinoidea	brown fox sedge	H	FACW	2
Cicuta maculata	water hemlock	H	OBL	6
Cornus obliqua	pale dogwood	S	FACW	6
Eleocharis erythropoda	red-rooted spike rush	H	OBL	2
Erigeron annuus	annual fleabane	H	FACU	0
Eupatorium maculatum	spotted Joe Pye weed	H	OBL	4
Eupatorium perfoliatum	common boneset	H	OBL	4
Fragaria virginiana	wild strawberry	H	FACU	1
Fraxinus pennsylvanica var. *subintegerrima*	green ash	H,S	FACW	1
Geum aleppicum var. *strictum*	yellow avens	H	FACW	7
Glyceria striata	fowl manna grass	H	OBL	4
Helianthus grosseserratus	sawtooth sunflower	H	FACW	2
Iris virginica var. *shrevei*	southern blue flag	H	OBL	5
Juncus dudleyi	Dudley's rush	H	FACW	4
Juncus sp.	rush	H		-
Lathyrus palustris	marsh vetchling	H	FACW	8
Leersia oryzoides	rice cut grass	H	OBL	4
Liatris spicata	marsh blazing star	H	FAC	6
Lobelia spicata	pale spiked lobelia	H	FAC	6
Lycopus americanus	common water horehound	H	OBL	5
*Lythrum salicaria**	purple loosestrife	H	OBL	-
Mentha arvensis var. *villosa*	wild mint	H	FACW	5
Onoclea sensibilis	sensitive fern	H	FACW	8
Oxypolis rigidior	cowbane	H	OBL	7
Penstemon digitalis	foxglove beard tongue	H	FAC	4
*Phalaris arundinacea**	reed canary grass	H	FACW	-
Phlox glaberrima ssp. *interior*	smooth phlox	H	FACW	8
Potentilla simplex	common cinquefoil	H	FACU	4

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site J, 2012 – Sedge Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Pycnanthemum virginianum	common mountain mint	H	FACW	5
Ratibida pinnata	yellow coneflower	H	UPL	4
*Rhamnus frangula**	glossy buckthorn	H,S	FACW	-
Rosa blanda	early wild rose	S	FACU	5
Rubus sp.	blackberry	H		-
Rudbeckia hirta	black-eyed Susan	H	FACU	1
*Rumex crispus**	curly dock	H	FAC	-
Sagittaria latifolia	common arrowhead	H	OBL	4
Scirpus atrovirens	dark green rush	H	OBL	4
Scirpus pendulus	red bulrush	H	OBL	4
Scutellaria lateriflora	mad-dog skullcap	H	OBL	5
Senecio pauperculus	balsam ragwort	H	FAC	6
Solidago canadensis	Canada goldenrod	H	FACU	1
Solidago gigantea	late goldenrod	H	FACW	4
Solidago graminifolia	grass-leaved goldenrod	H	FACW	4
Solidago rigida	rigid goldenrod	H	FACU	4
Spartina pectinata	prairie cord grass	H	FACW	4
Typha angustifolia	narrow-leaved cattail	H	OBL	1
Typha latifolia	broad-leaved cattail	H	OBL	1
Verbena hastata	blue vervain	H	FACW	4
Viburnum lentago	nannyberry	S	FAC	5
Viola sororia	common blue violet	H	FAC	3
Vitis riparia	riverbank grape	H,W	FACW	2

*Non-native species Dominant species are in bold at the top of the species list Mean C = 4.3
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 33.5

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site K, 2012 - Marsh

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Lythrum salicaria*	**purple loosestrife**	**H**	**OBL**	**-**
Typha angustifolia	**narrow-leaved cattail**	**H**	**OBL**	**1**
Typha latifolia	**broad-leaved cattail**	**H**	**OBL**	**1**
Acer negundo	box elder	H,S	FAC	0
Acer saccharinum	silver maple	T	FACW	0
*Achillea millefolium**	common milfoil	H	FACU	-
Agrimonia parviflora	swamp agrimony	H	FACW	7
*Agropyron repens**	quack grass	H	FACU	-
*Agrostis alba**	red top	H	FACW	-
Agrostis perennans	autumn bent grass	H	FAC	3
Alisma subcordatum	common water plantain	H	OBL	4
Allium cernuum	nodding wild onion	H	FACU	7
Ambrosia artemisiifolia var. *elatior*	common ragweed	H	FACU	0
Apocynum cannabinum	dogbane	H	FAC	4
Asclepias incarnata	swamp milkweed	H	OBL	4
Asclepias purpurascens	purple milkweed	H	FACU	8
Asclepias syriaca	common milkweed	H	FACU	0
Aster lateriflorus	side-flowering aster	H	FACW	4
Aster novae-angliae	New England aster	H	FACW	4
Aster praealtus	willow aster	H	FACW	9
Aster puniceus	bristly aster	H	OBL	8
Aster simplex	panicled aster	H	FAC	3
*Barbarea vulgaris**	winter cress	H	FAC	-
Bidens connata	purple-stemmed tickseed	H	OBL	5
Bidens frondosa	common beggar's ticks	H	FACW	1
Boehmeria cylindrica	false nettle	H	OBL	2
Calamagrostis canadensis	blue joint grass	H	OBL	3
Carex atherodes	hairy-leaved lake sedge	H	OBL	5
Carex bebbii	Bebb's oval sedge	H	OBL	6
Carex cristatella	crested oval sedge	H	FACW	4
Carex frankii	bristly cattail sedge	H	OBL	8
Carex granularis	pale sedge	H	FACW	4
Carex hystericina	porcupine sedge	H	OBL	5
Carex normalis	spreading oval sedge	H	FACW	5
Carex pellita	wooly sedge	H	OBL	4
Carex sp.	sedge	H	-	
Carex stricta	common tussock sedge	H	OBL	5
Carex vulpinoidea	brown fox sedge	H	FACW	2
*Centaurium pulchellum**	showy centaury	H	FACU	-
Ceratophyllum demersum	coontail	H	OBL	5
Chrysanthemum leucanthemum var. *pinnatifidum**	ox-eye daisy	H	UPL	-
Cicuta maculata	water hemlock	H	OBL	6
*Cirsium arvense**	field thistle	H	FACU	-
*Cirsium vulgare**	bull thistle	H	FACU	-
Convolvulus sepium	American bindweed	H	FAC	1
Cornus obliqua	pale dogwood	H,S	FACW	6

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site K, 2012 - Marsh

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Cornus racemosa	gray dogwood	H,S	FAC	1
Crataegus mollis	downy hawthorn	T	FAC	2
Crataegus sp.	hawthorn	S		-
*Dactylis glomerata**	orchard grass	H	FACU	-
*Dipsacus laciniatus**	cut-leaved teasel	H	UPL	-
Eleocharis acicularis	needle spike rush	H	OBL	2
Eleocharis erythropoda	red-rooted spike rush	H	OBL	2
Epilobium coloratum	cinnamon willow herb	H	OBL	3
Equisetum arvense	common horsetail	H	FAC	0
Erechtites hieracifolia	fireweed	H	FAC	2
Erigeron annuus	annual fleabane	H	FACU	0
Eupatorium maculatum	spotted Joe Pye weed	H	OBL	4
Eupatorium perfoliatum	common boneset	H	OBL	4
Fragaria virginiana	wild strawberry	H	FACU	1
Fraxinus pennsylvanica var. *subintegerrima*	green ash	H,S,T	FACW	1
Galium tinctorium	stiff bedstraw	H	OBL	8
Geum aleppicum var. *strictum*	yellow avens	H	FACW	7
Geum canadense	white avens	H	FAC	1
Geum laciniatum	rough avens	H	FACW	5
Glyceria septentrionalis	floating manna grass	H	OBL	8
Glyceria striata	fowl manna grass	H	OBL	4
Helenium autumnale	sneezeweed	H	FACW	5
*Helianthus annuus**	common sunflower	H	FACU	-
Helianthus grosseserratus	sawtooth sunflower	H	FACW	2
*Hordeum jubatum**	squirrel-tail grass	H	FAC	-
Impatiens capensis	spotted touch-me-not	H	FACW	3
*Iris pseudacorus**	tall yellow iris	H	OBL	-
Iris virginica var. *shrevei*	southern blue flag	H	OBL	5
Juncus dudleyi	Dudley's rush	H	FACW	4
Juncus sp.	rush	H		-
*Lactuca serriola**	prickly lettuce	H	FACU	-
Leersia oryzoides	rice cut grass	H	OBL	4
Lemna minor	small duckweed	H	OBL	5
Liatris pycnostachya	prairie blazine star	H	FAC	8
Liatris spicata	marsh blazing star	H	FAC	6
Lobelia spicata	pale spiked lobelia	H	FAC	6
Lonicera x *bella**	showy fly honeysuckle	S	FACU	-
Lycopus americanus	common water horehound	H	OBL	5
Lycopus uniflorus	nothern bugle weed	H	OBL	7
Lythrum alatum	winged loosestrife	H	OBL	7
Mentha arvensis var. *villosa*	wild mint	H	FACW	5
Monarda fistulosa	wild bergamot	H	FACU	4
*Myosoton aquaticum**	giant chickweed	H	FACW	-
Onoclea sensibilis	sensitive fern	H	FACW	8
Oxalis stricta	common wood sorrel	H	FACU	0
Panicum sp.	panic grass	H		-

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site K, 2012 - Marsh

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Parthenocissus quinquefolia	Virginia creeper	H,W	FACU	2
Penstemon digitalis	foxglove beard tongue	H	FAC	4
*Phalaris arundinacea**	reed canary grass	H	FACW	-
Phlox glaberrima ssp. *interior*	smooth phlox	H	FACW	8
Phragmites australis	common reed	H	FACW	1
Pilea pumila	Canada clearweed	H	FACW	5
Plantago rugelii	red-stalked plantain	H	FAC	0
*Poa pratensis**	Kentucky blue grass	H	FAC	-
Polygonum amphibium var. *stipulaceum*	water knotweed	H	OBL	4
Polygonum hydropiper	water pepper	H	OBL	2
Polygonum pensylvanicum	pinkweed	H	FACW	0
*Polygonum persicaria**	lady's thumb	H	FACW	-
Polygonum punctatum	smartweed	H	OBL	6
Potamogeton foliosus	leafy pondweed	H	OBL	7
Potentilla simplex	common cinquefoil	H	FACU	4
Prunella vulgaris var. *lanceolata*	self-heal	H	FAC	0
Prunus virginiana	common choke cherry	H	FACU	3
Pycnanthemum virginianum	common mountain mint	H	FACW	5
Ranunculus sceleratus	cursed crowfoot	H	OBL	6
*Rhamnus cathartica**	common buckthorn	H,S	FAC	-
*Rhamnus frangula**	glossy buckthorn	H,S	FACW	-
Rhus glabra	smooth sumac	S	UPL	1
Rorippa palustris var. *fernaldiana*	marsh yellow cress	H	OBL	4
*Rosa multiflora**	Japanese rose	S	FACU	-
Rudbeckia hirta	black-eyed Susan	H	FACU	1
*Rumex crispus**	curly dock	H	FAC	-
Sagittaria latifolia	common arrowhead	H	OBL	4
*Salix alba**	white willow	T	FACW	-
Salix amygdaloides	peach-leaved willow	S,T	FACW	5
Salix discolor	pussy willow	S	FACW	2
Salix interior	sandbar willow	S,T	FACW	1
Sambucus canadensis	common elder	S	FACW	1
Sanicula marilandica	black snakeroot	H	FACU	6
Scirpus atrovirens	dark green rush	H	OBL	4
Scirpus fluviatilis	river bulrush	H	OBL	4
Scirpus pendulus	red bulrush	H	OBL	4
Scirpus validus var. *creber*	soft-stem bulrush	H	OBL	5
Scutellaria lateriflora	mad-dog skullcap	H	OBL	5
Senecio pauperculus	balsam ragwort	H	FAC	6
*Setaria faberi**	giant foxtail	H	FACU	-
Silphium terebinthinaceum	prairie dock	H	FAC	5
*Solanum dulcamara**	bittersweet nightshade	H,W	FAC	-
Solidago canadensis	Canada goldenrod	H	FACU	1
Solidago gigantea	late goldenrod	H	FACW	4
Solidago graminifolia	grass-leaved goldenrod	H	FACW	4
*Sonchus arvensis**	field sow thistle	H	FACU	-

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site K, 2012 - Marsh

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Spartina pectinata	prairie cord grass	H	FACW	4
Sphenopholis intermedia	slender wedge grass	H	UPL	4
Tradescantia ohiensis	common spiderwort	H	FACU	2
*Trifolium pratense**	red clover	H	FACU	-
*Valeriana officinalis**	garden heliotrope	H		-
Verbena hastata	blue vervain	H	FACW	4
Veronica peregrina	purslane speedwell	H	FACW	0
Viburnum lentago	nannyberry	H,S	FAC	5
*Viburnum opulus**	European high-bush cranberry	S	FAC	-
*Viburnum recognitum**	smooth arrowwood	H,S	FAC	-
Viola cucullata	marsh blue violet	H	OBL	9
Viola sororia	common blue violet	H	FAC	3
Vitis riparia	riverbank grape	H,W	FACW	2
Zizia aurea	golden Alexanders	H	FAC	7

*Non-native species Dominant species are in bold at the top of the species list Mean C = 3.9
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 41.5

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site L, 2012 – Forested Wetland

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Bidens frondosa	**common beggar's ticks**	**H**	**FACW**	**1**
Cicuta maculata	**water hemlock**	**H**	**OBL**	**6**
Cornus obliqua	**pale dogwood**	**S**	**FACW**	**6**
Erechtites hieracifolia	**fireweed**	**H**	**FAC**	**2**
Glyceria septentrionalis	**floating manna grass**	**H**	**OBL**	**8**
Salix nigra	**black willow**	**T**	**OBL**	**4**
Alisma subcordatum	common water plantain	H	OBL	4
Asclepias incarnata	swamp milkweed	H	OBL	4
Calamagrostis canadensis	blue joint grass	H	OBL	3
Carex cristatella	crested oval sedge	H	FACW	4
*Cirsium arvense**	field thistle	H	FACU	-
Cornus racemosa	gray dogwood	S	FAC	1
Eleocharis erythropoda	red-rooted spike rush	H	OBL	2
Iris virginica var. *shrevei*	southern blue flag	H	OBL	5
Juncus dudleyi	Dudley's rush	H	FACW	4
Ludwigia polycarpa	false loosestrife	H	OBL	6
Lycopus americanus	common water horehound	H	OBL	5
*Lythrum salicaria**	purple loosestrife	H	OBL	-
Mentha arvensis var. *villosa*	wild mint	H	FACW	5
Penthorum sedoides	ditch stonecrop	H	OBL	5
*Phalaris arundinacea**	reed canary grass	H	FACW	-
Phragmites australis	common reed	H	FACW	1
Polygonum pensylvanicum	pinkweed	H	FACW	0
Populus deltoides	eastern cottonwood	S	FAC	2
Ranunculus flabellaris	yellow water buttercup	H	OBL	7
*Rhamnus cathartica**	common buckthorn	S	FAC	-
*Rhamnus frangula**	glossy buckthorn	S	FACW	-
Salix amygdaloides	peach-leaved willow	S	FACW	5
*Setaria faberi**	giant foxtail	H	FACU	-
Sium suave	water parsnip	H	OBL	7
Solidago graminifolia	grass-leaved goldenrod	H	FACW	4
Spartina pectinata	prairie cord grass	H	FACW	4
Typha angustifolia	narrow-leaved cattail	H	OBL	1
Typha latifolia	broad-leaved cattail	H	OBL	1
Verbena hastata	blue vervain	H	FACW	4
Vitis riparia	riverbank grape	H	FACW	2

*Non-native species Dominant species are in bold at the top of the species list Mean C = 3.8
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 20.6

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site M, 2012 – Wet Shrubland

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Carex vulpinoidea	**brown fox sedge**	**H**	**FACW**	**2**
Cornus obliqua	**pale dogwood**	**S**	**FACW**	**6**
Fraxinus pennsylvanica* var. *subintegerrima	**green ash**	H,**S**,T	**FACW**	**1**
Helianthus grosseserratus	**sawtooth sunflower**	**H**	**FACW**	**2**
Phalaris arundinacea*	**reed canary grass**	**H**	**FACW**	**-**
Scirpus pendulus	**red bulrush**	**H**	**OBL**	**4**
*Achillea millefolium**	common milfoil	H	FACU	-
*Agropyron repens**	quack grass	H	FACU	-
*Agrostis alba**	red top	H	FACW	-
Alisma subcordatum	common water plantain	H	OBL	4
Ambrosia artemisiifolia var. *elatior*	common ragweed	H	FACU	0
Apocynum cannabinum	dogbane	H	FAC	4
Asclepias incarnata	swamp milkweed	H	OBL	4
Asclepias purpurascens	purple milkweed	H	FACU	8
Asclepias sullivantii	prairie milkweed	H	UPL	8
Asclepias syriaca	common milkweed	H	FACU	0
Aster praealtus	willow aster	H	FACW	9
Bidens frondosa	common beggar's ticks	H	FACW	1
Carex bicknellii	Bicknell's sedge	H	FACU	10
Carex cristatella	crested oval sedge	H	FACW	4
Carex granularis	pale sedge	H	FACW	4
Carex hystericina	porcupine sedge	H	OBL	5
Carex normalis	spreading oval sedge	H	FACW	5
Carex pellita	wooly sedge	H	OBL	4
Carex sartwellii	running marsh sedge	H	FACW	6
Carex stricta	common tussock sedge	H	OBL	5
Chrysanthemum leucanthemum var. *pinnatifidum**	ox-eye daisy	H	UPL	-
*Cirsium vulgare**	bull thistle	H	FACU	-
Cornus racemosa	gray dogwood	S	FAC	1
Crataegus mollis	downy hawthorn	S	FAC	2
*Daucus carota**	Queen Anne's lace	H	UPL	-
Eleocharis erythropoda	red-rooted spike rush	H	OBL	2
Equisetum arvense	common horsetail	H	FAC	0
Erigeron annuus	annual fleabane	H	FACU	0
Eupatorium perfoliatum	common boneset	H	OBL	4
*Festuca elatior**	tall fescue	H	FACU	-
Fragaria virginiana	wild strawberry	H	FACU	1
Geum laciniatum	rough avens	H	FACW	5
Glyceria septentrionalis	floating manna grass	H	OBL	8
*Hypericum perforatum**	common St. John's-wort	H	FACU	-
Juncus dudleyi	Dudley's rush	H	FACW	4
Leersia oryzoides	rice cut grass	H	OBL	4
Liatris spicata	marsh blazing star	H	FAC	6
Lobelia spicata	pale spiked lobelia	H	FAC	6
Ludwigia polycarpa	false loosestrife	H	OBL	6

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site M, 2012 – Wet Shrubland

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Lycopus americanus	common water horehound	H	OBL	5
Lythrum alatum	winged loosestrife	H	OBL	7
*Lythrum salicaria**	purple loosestrife	H	OBL	-
*Melilotus alba**	white sweet clover	H	FACU	-
Mentha arvensis var. *villosa*	wild mint	H	FACW	5
Panicum implicatum	panic grass	H	FAC	2
Penthorum sedoides	ditch stonecrop	H	OBL	5
Plantago rugelii	red-stalked plantain	H	FAC	0
*Poa pratensis**	Kentucky blue grass	H	FAC	-
Populus deltoides	eastern cottonwood	H,S	FAC	2
Prunella vulgaris var. *lanceolata*	self-heal	H	FAC	0
Prunus virginiana	common choke cherry	H,S	FACU	3
Ratibida pinnata	yellow coneflower	H	UPL	4
*Rhamnus cathartica**	common buckthorn	S	FAC	-
*Rhamnus frangula**	glossy buckthorn	S	FACW	-
Rosa palustris	swampy rose	H,S	OBL	7
Rosa setigera	Illinois rose	H,S	FACU	7
Rudbeckia hirta	black-eyed Susan	H	FACU	1
*Rumex crispus**	curly dock	H	FAC	-
Salix amygdaloides	peach-leaved willow	S,T	FACW	5
Scirpus atrovirens	dark green rush	H	OBL	4
Senecio pauperculus	balsam ragwort	H	FAC	6
Solidago canadensis	Canada goldenrod	H	FACU	1
Solidago gigantea	late goldenrod	H	FACW	4
Solidago graminifolia	grass-leaved goldenrod	H	FACW	4
Solidago rigida	rigid goldenrod	H	FACU	4
Spartina pectinata	prairie cord grass	H	FACW	4
Sphenopholis intermedia	slender wedge grass	H	UPL	4
*Trifolium campestre**	low hop clover	H	UPL	-
*Trifolium hybridum**	alsike clover	H	FACU	-
*Trifolium pratense**	red clover	H	FACU	-
Typha angustifolia	narrow-leaved cattail	H	OBL	1
Typha latifolia	broad-leaved cattail	H	OBL	1
Ulmus americana	American elm	S	FACW	3
Verbena hastata	blue vervain	H	FACW	4
Viburnum lentago	nannyberry	S	FAC	5
Viola sororia	common blue violet	H	FAC	3
Vitis riparia	riverbank grape	W	FACW	2

*Non-native species Dominant species are in bold at the top of the species list Mean C = 3.8
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 30.8

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site N, 2012 – Wet Shrubland

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Agrostis alba*	**red top**	**H**	**FACW**	**-**
Carex stricta	**common tussock sedge**	**H**	**OBL**	**5**
Cicuta maculata	**water hemlock**	**H**	**OBL**	**6**
Erechtites hieracifolia	**fireweed**	**H**	**FAC**	**2**
Fraxinus pennsylvanica* var. *subintegerrima	**green ash**	H,**S,**T	**FACW**	**1**
Phalaris arundinacea*	**reed canary grass**	**H**	**FACW**	**-**
Rhamnus frangula*	**glossy buckthorn**	H,**S**	**FACW**	**-**
Alisma subcordatum	common water plantain	H	OBL	4
Ambrosia artemisiifolia var. *elatior*	common ragweed	H	FACU	0
Asclepias incarnata	swamp milkweed	H	OBL	4
Aster lateriflorus	side-flowering aster	H	FACW	4
Aster simplex	panicled aster	H	FAC	3
Bidens frondosa	common beggar's ticks	H	FACW	1
Calamagrostis canadensis	blue joint grass	H	OBL	3
Carex annectens var. *xanthocarpa*	small yellow fox sedge	H	FACW	7
Carex cristatella	crested oval sedge	H	FACW	4
Carex lacustris	common lake sedge	H	OBL	6
Carex vulpinoidea	brown fox sedge	H	FACW	2
*Cirsium arvense**	field thistle	H	FACU	-
Cornus obliqua	pale dogwood	S	FACW	6
Echinochloa crusgalli	spiny barnyard grass	H	OBL	0
Epilobium coloratum	cinnamon willow herb	H	OBL	3
Erigeron annuus	annual fleabane	H	FACU	0
Erigeron canadensis	horseweed	H	FACU	0
Eupatorium maculatum	spotted Joe Pye weed	H	OBL	4
Eupatorium perfoliatum	common boneset	H	OBL	4
Geum laciniatum	rough avens	H	FACW	5
Glyceria septentrionalis	floating manna grass	H	OBL	8
Helianthus grosseserratus	sawtooth sunflower	H	FACW	2
Iris virginica var. *shrevei*	southern blue flag	H	OBL	5
Leersia oryzoides	rice cut grass	H	OBL	4
Ludwigia polycarpa	false loosestrife	H	OBL	6
Lycopus americanus	common water horehound	H	OBL	5
Lythrum alatum	winged loosestrife	H	OBL	7
*Lythrum salicaria**	purple loosestrife	H	OBL	-
Mentha arvensis var. *villosa*	wild mint	H	FACW	5
Mimulus ringens	monkey flower	H	OBL	6
Panicum capillare	old witch grass	H	FAC	1
Parthenocissus quinquefolia	Virginia creeper	H	FACU	2
Penthorum sedoides	ditch stonecrop	H	OBL	5
Phragmites australis	common reed	H	FACW	1
Polygonum amphibium var. *stipulaceum*	water knotweed	H	OBL	4
*Polygonum persicaria**	lady's thumb	H	FACW	-
*Rhamnus cathartica**	common buckthorn	H,S	FAC	-
Rudbeckia hirta	black-eyed Susan	H	FACU	1

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site N, 2012 – Wet Shrubland

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Salix amygdaloides	peach-leaved willow	H,S	FACW	5
Salix interior	sandbar willow	S	FACW	1
Salix nigra	black willow	T	OBL	4
Scirpus cyperinus	wool grass	H	OBL	6
Scirpus fluviatilis	river bulrush	H	OBL	4
Scirpus validus var. *creber*	soft-stem bulrush	H	OBL	5
Scutellaria lateriflora	mad-dog skullcap	H	OBL	5
*Setaria faberi**	giant foxtail	H	FACU	-
*Solanum dulcamara**	bittersweet nightshade	H	FAC	-
Solidago canadensis	Canada goldenrod	H	FACU	1
Solidago graminifolia	grass-leaved goldenrod	H	FACW	4
Spartina pectinata	prairie cord grass	H	FACW	4
Typha angustifolia	narrow-leaved cattail	H	OBL	1
Ulmus americana	American elm	S	FACW	3
Verbena hastata	blue vervain	H	FACW	4
Viburnum lentago	nannyberry	S	FAC	5
Vitis riparia	riverbank grape	H,W	FACW	2

*Non-native species Dominant species are in bold at the top of the species list Mean C = 3.6
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 26.1

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site O, 2012 – Forested Wetland

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Carex trichocarpa	**hairy-fruited lake sedge**	**H**	**OBL**	**7**
Ranunculus flabellaris	**yellow water buttercup**	**H**	**OBL**	**7**
Salix amygdaloides	**peach-leaved willow**	**T**	**FACW**	**5**
Salix nigra	**black willow**	**T**	**OBL**	**4**
Scirpus cyperinus	**wool grass**	**H**	**OBL**	**6**
*Agrostis alba**	red top	H	FACW	-
Ambrosia artemisiifolia var. *elatior*	common ragweed	H	FACU	0
Bidens frondosa	common beggar's ticks	H	FACW	1
Carex cristatella	crested oval sedge	H	FACW	4
Carex pellita	wooly sedge	H	OBL	4
Carex stricta	common tussock sedge	H	OBL	5
*Cirsium arvense**	field thistle	H	FACU	-
Cornus obliqua	pale dogwood	S	FACW	6
Erechtites hieracifolia	fireweed	H	FAC	2
Fraxinus pennsylvanica var. *subintegerrima*	green ash	H	FACW	1
Glyceria septentrionalis	floating manna grass	H	OBL	8
Iris virginica var. *shrevei*	southern blue flag	H	OBL	5
Juncus dudleyi	Dudley's rush	H	FACW	4
*Lythrum salicaria**	purple loosestrife	H	OBL	-
Penthorum sedoides	ditch stonecrop	H	OBL	5
*Phalaris arundinacea**	reed canary grass	H	FACW	-
Proserpinaca palustris var. *crebra*	mermaid weed	H	OBL	6
Pycnanthemum virginianum	common mountain mint	H	FACW	5
*Rhamnus frangula**	glossy buckthorn	H	FACW	-
Rosa palustris	swampy rose	S	OBL	7
Salix interior	sandbar willow	S	FACW	1
Scirpus acutus	hard-stemmed bulrush	H	OBL	6
Scirpus atrovirens	dark green rush	H	OBL	4
Senecio pauperculus	balsam ragwort	H	FAC	6
Solidago canadensis	Canada goldenrod	H	FACU	1
Spartina pectinata	prairie cord grass	H	FACW	4
Typha angustifolia	narrow-leaved cattail	H	OBL	1
Typha latifolia	broad-leaved cattail	H	OBL	1
Verbena urticifolia	white vervain	H	FAC	5
Vitis riparia	riverbank grape	H	FACW	2

*Non-native species Dominant species are in bold at the top of the species list Mean C = 4.1
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 22.5

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site P, 2012 – Sedge Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Carex stricta	**common tussock sedge**	**H**	**OBL**	**5**
Eupatorium maculatum	**spotted Joe Pye weed**	**H**	**OBL**	**4**
Apocynum cannabinum	dogbane	H	FAC	4
Asclepias incarnata	swamp milkweed	H	OBL	4
Aster novae-angliae	New England aster	H	FACW	4
Aster praealtus	willow aster	H	FACW	9
Aster puniceus	bristly aster	H	OBL	8
Aster simplex	panicled aster	H	FAC	3
Bidens frondosa	common beggar's ticks	H	FACW	1
Calamagrostis canadensis	blue joint grass	H	OBL	3
Carex cristatella	crested oval sedge	H	FACW	4
Carex pellita	wooly sedge	H	OBL	4
Cicuta maculata	water hemlock	H	OBL	6
Cornus obliqua	pale dogwood	H,S	FACW	6
Eleocharis erythropoda	red-rooted spike rush	H	OBL	2
Epilobium coloratum	cinnamon willow herb	H	OBL	3
Eupatorium perfoliatum	common boneset	H	OBL	4
Fraxinus pennsylvanica var. *subintegerrima*	green ash	S	FACW	1
Geum canadense	white avens	H	FAC	1
Geum laciniatum	rough avens	H	FACW	5
Helianthus grosseserratus	sawtooth sunflower	H	FACW	2
Iris virginica var. *shrevei*	southern blue flag	H	OBL	5
Juncus dudleyi	Dudley's rush	H	FACW	4
Ludwigia polycarpa	false loosestrife	H	OBL	6
Lycopus americanus	common water horehound	H	OBL	5
Lycopus uniflorus	nothern bugle weed	H	OBL	7
Lythrum alatum	winged loosestrife	H	OBL	7
*Lythrum salicaria**	purple loosestrife	H	OBL	-
Mimulus ringens	monkey flower	H	OBL	6
Oxypolis rigidior	cowbane	H	OBL	7
Penthorum sedoides	ditch stonecrop	H	OBL	5
*Phalaris arundinacea**	reed canary grass	H	FACW	-
Polygonum amphibium var. *stipulaceum*	water knotweed	H	OBL	4
*Rhamnus frangula**	glossy buckthorn	H,S	FACW	-
Salix amygdaloides	peach-leaved willow	S	FACW	5
Salix bebbiana	beaked willow	S	FACW	8
Salix glaucophylloides	blue-leaf willow	S	FACW	7
Salix interior	sandbar willow	S	FACW	1
Scirpus acutus	hard-stemmed bulrush	H	OBL	6
Scirpus atrovirens	dark green rush	H	OBL	4
Scirpus cyperinus	wool grass	H	OBL	6
Scirpus pendulus	red bulrush	H	OBL	4
Senecio pauperculus	balsam ragwort	H	FAC	6
Solidago canadensis	Canada goldenrod	H	FACU	1
Solidago gigantea	late goldenrod	H	FACW	4

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site P, 2012 – Sedge Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Solidago graminifolia	grass-leaved goldenrod	H	FACW	4
Spartina pectinata	prairie cord grass	H	FACW	4
Typha latifolia	broad-leaved cattail	H	OBL	1
Verbena hastata	blue vervain	H	FACW	4
Vitis riparia	riverbank grape	H,W	FACW	2

*Non-native species Dominant species are in bold at the top of the species list Mean C = 4.4
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 30.0

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site Q, 2012 – Forested Wetland

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Rhamnus frangula*	**glossy buckthorn**	H**S**	**FACW**	**-**
Salix amygdaloides	**peach-leaved willow**	**T**	**FACW**	**5**
Salix nigra	**black willow**	**T**	**OBL**	**4**
Solidago graminifolia	**grass-leaved goldenrod**	**H**	**FACW**	**4**
Typha angustifolia	**narrow-leaved cattail**	**H**	**OBL**	**1**
*Achillea millefolium**	common milfoil	H	FACU	-
Agropyron trachycaulum	bearded wheat grass	H	FACU	8
*Agrostis alba**	red top	H	FACW	-
Alisma subcordatum	common water plantain	H	OBL	4
Ambrosia artemisiifolia var. *elatior*	common ragweed	H	FACU	0
Asclepias incarnata	swamp milkweed	H	OBL	4
Aster simplex	panicled aster	H	FAC	3
Bidens frondosa	common beggar's ticks	H	FACW	1
Chrysanthemum leucanthemum var. *pinnatifidum**	ox-eye daisy	H	UPL	-
Cicuta maculata	water hemlock	H	OBL	6
*Cirsium vulgare**	bull thistle	H	FACU	-
Cornus obliqua	pale dogwood	S	FACW	6
*Dipsacus laciniatus**	cut-leaved teasel	H	UPL	-
Eleocharis erythropoda	red-rooted spike rush	H	OBL	2
Erechtites hieracifolia	fireweed	H	FAC	2
Erigeron canadensis	horseweed	H	FACU	0
Eupatorium maculatum	spotted Joe Pye weed	H	OBL	4
Helianthus grosseserratus	sawtooth sunflower	H	FACW	2
Iris virginica var. *shrevei*	southern blue flag	H	OBL	5
Juncus dudleyi	Dudley's rush	H	FACW	4
Leersia oryzoides	rice cut grass	H	OBL	4
Liatris spicata	marsh blazing star	H	FAC	6
Lycopus uniflorus	nothern bugle weed	H	OBL	7
*Lythrum salicaria**	purple loosestrife	H	OBL	-
*Melilotus alba**	white sweet clover	H	FACU	-
Mentha arvensis var. *villosa*	wild mint	H	FACW	5
Onoclea sensibilis	sensitive fern	H	FACW	8
*Phalaris arundinacea**	reed canary grass	H	FACW	-
Phragmites australis	common reed	H	FACW	1
Polygonum amphibium var. *stipulaceum*	water knotweed	H	OBL	4
Polygonum pensylvanicum	pinkweed	H	FACW	0
*Polygonum persicaria**	lady's thumb	H	FACW	-
Salix eriocephala	heart-leaved willow	S	FACW	5
Scirpus atrovirens	dark green rush	H	OBL	4
Scirpus pendulus	red bulrush	H	OBL	4
Solidago canadensis	Canada goldenrod	H	FACU	1
Verbena hastata	blue vervain	H	FACW	4
Viburnum lentago	nannyberry	S	FAC	5
Vitis riparia	riverbank grape	W	FACW	2

*Non-native species Dominant species are in bold at the top of the species list Mean C = 3.7
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 21.4

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site R, 2012 - Marsh

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Phragmites australis	**common reed**	**H**	**FACW**	**1**
Salix interior	**sandbar willow**	**S**	**FACW**	**1**
Typha angustifolia	**narrow-leaved cattail**	**H**	**OBL**	**1**
Allium cernuum	nodding wild onion	H	FACU	7
Ambrosia trifida	giant ragweed	H	FAC	0
Asclepias incarnata	swamp milkweed	H	OBL	4
Bidens frondosa	common beggar's ticks	H	FACW	1
Calamagrostis canadensis	blue joint grass	H	OBL	3
Carex cristatella	crested oval sedge	H	FACW	4
Carex pellita	wooly sedge	H	OBL	4
*Cirsium arvense**	field thistle	H	FACU	-
Cornus obliqua	pale dogwood	S	FACW	6
Echinochloa crusgalli	spiny barnyard grass	H	OBL	0
Epilobium coloratum	cinnamon willow herb	H	OBL	3
Erechtites hieracifolia	fireweed	H	FAC	2
Erigeron annuus	annual fleabane	H	FACU	0
Erigeron canadensis	horseweed	H	FACU	0
Eupatorium maculatum	spotted Joe Pye weed	H	OBL	4
Helianthus grosseserratus	sawtooth sunflower	H	FACW	2
Juncus dudleyi	Dudley's rush	H	FACW	4
Leersia oryzoides	rice cut grass	H	OBL	4
Lonicera x *bella**	showy fly honeysuckle	H	FACU	-
Lycopus americanus	common water horehound	H	OBL	5
*Lythrum salicaria**	purple loosestrife	H	OBL	-
Oxypolis rigidior	cowbane	H	OBL	7
Panicum capillare	old witch grass	H	FAC	1
*Phalaris arundinacea**	reed canary grass	H	FACW	-
Polygonum amphibium var. *stipulaceum*	water knotweed	H	OBL	4
Polygonum pensylvanicum	pinkweed	H	FACW	0
Pycnanthemum virginianum	common mountain mint	H	FACW	5
*Rhamnus cathartica**	common buckthorn	H	FAC	-
*Rhamnus frangula**	glossy buckthorn	H,S	FACW	-
Sagittaria latifolia	common arrowhead	H	OBL	4
Salix amygdaloides	peach-leaved willow	T	FACW	5
Salix nigra	black willow	T	OBL	4
Scirpus atrovirens	dark green rush	H	OBL	4
Scirpus validus var. *creber*	soft-stem bulrush	H	OBL	5
*Setaria faberi**	giant foxtail	H	FACU	-
Solidago canadensis	Canada goldenrod	H	FACU	1
Solidago graminifolia	grass-leaved goldenrod	H	FACW	4
Stachys palustris var. *homotricha*	woundwort	H	FACW	5
Typha latifolia	broad-leaved cattail	H	OBL	1
Ulmus americana	American elm	T	FACW	3
Verbena hastata	blue vervain	H	FACW	4
Viburnum lentago	nannyberry	H,S	FAC	5
Vitis riparia	riverbank grape	H	FACW	2

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site R, 2012 - Marsh

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism

*Non-native species Dominant species are in bold at the top of the species list Mean C = 3.1
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 19.2

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site S, 2012 – Sedge Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Calamagrostis canadensis	**blue joint grass**	**H**	**OBL**	**3**
Carex stricta	**common tussock sedge**	**H**	**OBL**	**5**
Helianthus grosseserratus	**sawtooth sunflower**	**H**	**FACW**	**2**
Solidago graminifolia	**grass-leaved goldenrod**	**H**	**FACW**	**4**
*Agrostis alba**	red top	H	FACW	-
Agrostis perennans	autumn bent grass	H	FAC	3
Apocynum cannabinum	dogbane	H	FAC	4
Asclepias incarnata	swamp milkweed	H	OBL	4
Aster puniceus	bristly aster	H	OBL	8
Aster simplex	panicled aster	H	FAC	3
Bidens frondosa	common beggar's ticks	H	FACW	1
Cicuta maculata	water hemlock	H	OBL	6
Convolvulus sepium	American bindweed	H	FAC	1
Cornus obliqua	pale dogwood	S	FACW	6
Crataegus mollis	downy hawthorn	T	FAC	2
Eupatorium maculatum	spotted Joe Pye weed	H	OBL	4
Eupatorium perfoliatum	common boneset	H	OBL	4
Galium tinctorium	stiff bedstraw	H	OBL	8
Geum canadense	white avens	H	FAC	1
Glyceria striata	fowl manna grass	H	OBL	4
Juncus dudleyi	Dudley's rush	H	FACW	4
Juncus torreyi	Torrey's rush	H	FACW	4
Lycopus americanus	common water horehound	H	OBL	5
Lycopus uniflorus	nothern bugle weed	H	OBL	7
*Lythrum salicaria**	purple loosestrife	H	OBL	-
Mentha arvensis var. *villosa*	wild mint	H	FACW	5
Oxypolis rigidior	cowbane	H	OBL	7
Parthenocissus quinquefolia	Virginia creeper	H	FACU	2
*Phalaris arundinacea**	reed canary grass	H	FACW	-
Phragmites australis	common reed	H	FACW	1
Polygonum amphibium var. *stipulaceum*	water knotweed	H	OBL	4
Potentilla norvegica	rough cinquefoil	H	FAC	0
Prunella vulgaris var. *lanceolata*	self-heal	H	FAC	0
Pycnanthemum virginianum	common mountain mint	H	FACW	5
Solidago canadensis	Canada goldenrod	H	FACU	1
Solidago gigantea	late goldenrod	H	FACW	4
Solidago riddellii	Riddell's goldenrod	H	OBL	7
*Sonchus arvensis**	field sow thistle	H	FACU	-
Spartina pectinata	prairie cord grass	H	FACW	4
Typha angustifolia	narrow-leaved cattail	H	OBL	1
*Valeriana officinalis**	garden heliotrope	H		-
Verbena hastata	blue vervain	H	FACW	4
Viburnum lentago	nannyberry	S	FAC	5
Viola cucullata	marsh blue violet	H	OBL	9
Vitis riparia	riverbank grape	H	FACW	2

*Non-native species Dominant species are in bold at the top of the species list Mean C = 3.9
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 24.3

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site T, 2012 - Marsh

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Typha angustifolia	**narrow-leaved cattail**	**H**	**OBL**	**1**
*Achillea millefolium**	common milfoil	H	FACU	-
*Agrostis alba**	red top	H	FACW	-
Alisma subcordatum	common water plantain	H	OBL	4
Allium cernuum	nodding wild onion	H	FACU	7
Ambrosia artemisiifolia var. *elatior*	common ragweed	H	FACU	0
Andropogon gerardii	big bluestem	H	FAC	5
Asclepias incarnata	swamp milkweed	H	OBL	4
Asclepias syriaca	common milkweed	H	FACU	0
Aster praealtus	willow aster	H	FACW	9
Bidens frondosa	common beggar's ticks	H	FACW	1
Calamagrostis canadensis	blue joint grass	H	OBL	3
Carex cristatella	crested oval sedge	H	FACW	4
Carex hystericina	porcupine sedge	H	OBL	5
Carex molesta	field oval sedge	H	FAC	2
Carex pellita	wooly sedge	H	OBL	4
*Cirsium arvense**	field thistle	H	FACU	-
Cirsium discolor	pasture thistle	H	FACU	2
*Cirsium vulgare**	bull thistle	H	FACU	-
Convolvulus sepium	American bindweed	H	FAC	1
Cornus obliqua	pale dogwood	H,S	FACW	6
Crataegus crus-galli	cock-spur hawthorn	H	FAC	2
Cyperus strigosus	long-scaled nut sedge	H	FACW	1
*Daucus carota**	Queen Anne's lace	H	UPL	-
Echinochloa crusgalli	spiny barnyard grass	H	OBL	0
Eleocharis erythropoda	red-rooted spike rush	H	OBL	2
Elymus canadensis	Canada wild rye	H	FACU	4
Erechtites hieracifolia	fireweed	H	FAC	2
Erigeron annuus	annual fleabane	H	FACU	0
Erigeron canadensis	horseweed	H	FACU	0
Eupatorium maculatum	spotted Joe Pye weed	H	OBL	4
Eupatorium perfoliatum	common boneset	H	OBL	4
*Festuca elatior**	tall fescue	H	FACU	-
Geum canadense	white avens	H	FAC	1
Helianthus grosseserratus	sawtooth sunflower	H	FACW	2
*Hypericum perforatum**	common St. John's-wort	H	FACU	-
*Ipomoea lacunosa**	small morning glory	H	FACW	-
Iris virginica var. *shrevei*	southern blue flag	H	OBL	5
Juncus dudleyi	Dudley's rush	H	FACW	4
Juncus effusus	common rush	H	OBL	7
Juncus torreyi	Torrey's rush	H	FACW	4
Leersia oryzoides	rice cut grass	H	OBL	4
Lonicera x *bella**	showy fly honeysuckle	S	FACU	-
Lycopus americanus	common water horehound	H	OBL	5
*Lythrum salicaria**	purple loosestrife	H	OBL	-
*Melilotus alba**	white sweet clover	H	FACU	-
Monarda fistulosa	wild bergamot	H	FACU	4

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site T, 2012 - Marsh

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Oxalis stricta	common wood sorrel	H	FACU	0
Oxypolis rigidior	cowbane	H	OBL	7
*Phalaris arundinacea**	reed canary grass	H	FACW	-
Phragmites australis	common reed	H	FACW	1
Plantago rugelii	red-stalked plantain	H	FAC	0
*Poa compressa**	Canadian blue grass	H	FACU	-
*Poa pratensis**	Kentucky blue grass	H	FAC	-
Polygonum hydropiper	water pepper	H	OBL	2
Polygonum pensylvanicum	pinkweed	H	FACW	0
Potentilla norvegica	rough cinquefoil	H	FAC	0
Prunella vulgaris var. *lanceolata*	self-heal	H	FAC	0
Pycnanthemum tenuifolium	slender mountain mint	H	FAC	7
Ratibida pinnata	yellow coneflower	H	UPL	4
*Rhamnus cathartica**	common buckthorn	H,S	FAC	-
*Rhamnus frangula**	glossy buckthorn	H,S	FACW	-
*Rumex crispus**	curly dock	H	FAC	-
Sagittaria latifolia	common arrowhead	H	OBL	4
*Salix alba**	white willow	T	FACW	-
Salix amygdaloides	peach-leaved willow	H,T	FACW	5
Salix eriocephala	heart-leaved willow	S	FACW	5
*Salix fragilis**	crack willow	T	FAC	-
Salix interior	sandbar willow	H,S	FACW	1
Salix nigra	black willow	H	OBL	4
Scirpus atrovirens	dark green rush	H	OBL	4
Scirpus cyperinus	wool grass	H	OBL	6
Scirpus pendulus	red bulrush	H	OBL	4
*Setaria faberi**	giant foxtail	H	FACU	-
*Setaria glauca**	pigeon grass	H	FAC	-
Solidago canadensis	Canada goldenrod	H	FACU	1
Solidago gigantea	late goldenrod	H	FACW	4
Solidago graminifolia	grass-leaved goldenrod	H	FACW	4
Solidago juncea	early goldenrod	H	UPL	5
*Sonchus arvensis**	field sow thistle	H	FACU	-
Spartina pectinata	prairie cord grass	H	FACW	4
Stachys tenuifolia var. *hispida*	marsh hedge nettle	H	OBL	5
Teucrium canadense	germander	H	FACW	3
*Trifolium hybridum**	alsike clover	H	FACU	-
Typha latifolia	broad-leaved cattail	H	OBL	1
Verbena hastata	blue vervain	H	FACW	4
Verbena urticifolia	white vervain	H	FAC	5
Viburnum lentago	nannyberry	S	FAC	5
Vitis riparia	riverbank grape	H	FACW	2

*Non-native species Dominant species are in bold at the top of the species list Mean C = 3.2
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 25.8

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site U, 2012 – Wet Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Phalaris arundinacea*	**reed canary grass**	**H**	**FACW**	**-**
Acnida altissima	tall waterhemp	H	OBL	0
*Agropyron repens**	quack grass	H	FACU	-
*Agrostis alba**	red top	H	FACW	-
Ambrosia trifida	giant ragweed	H	FAC	0
Andropogon gerardii	big bluestem	H	FAC	5
Asclepias incarnata	swamp milkweed	H	OBL	4
Aster pilosus	hairy aster	H	FACU	0
*Barbarea vulgaris**	winter cress	H	FAC	-
Bidens frondosa	common beggar's ticks	H	FACW	1
Carex cristatella	crested oval sedge	H	FACW	4
Carex hystericina	porcupine sedge	H	OBL	5
Carex molesta	field oval sedge	H	FAC	2
Carex pellita	wooly sedge	H	OBL	4
Carex sp.	sedge	H		-
Carex vulpinoidea	brown fox sedge	H	FACW	2
*Cirsium arvense**	field thistle	H	FACU	-
*Cirsium vulgare**	bull thistle	H	FACU	-
Crataegus pruinosa	frosted hawthorn	T	UPL	5
Cyperus esculentus	field nut sedge	H	FACW	0
Cyperus strigosus	long-scaled nut sedge	H	FACW	1
*Daucus carota**	Queen Anne's lace	H	UPL	-
*Dipsacus laciniatus**	cut-leaved teasel	H	UPL	-
Echinochloa crusgalli	spiny barnyard grass	H	OBL	0
Erigeron annuus	annual fleabane	H	FACU	0
Erigeron canadensis	horseweed	H	FACU	0
*Festuca elatior**	tall fescue	H	FACU	-
Festuca sp.	fescue	H		-
*Hypericum perforatum**	common St. John's-wort	H	FACU	-
Juncus tenuis	path rush	H	FAC	0
Leersia oryzoides	rice cut grass	H	OBL	4
*Lolium perenne**	perennial rye grass	H	FACU	-
Lycopus americanus	common water horehound	H	OBL	5
*Lythrum salicaria**	purple loosestrife	H	OBL	-
*Melilotus alba**	white sweet clover	H	FACU	-
Penthorum sedoides	ditch stonecrop	H	OBL	5
*Phleum pratense**	timothy	H	FACU	-
Plantago rugelii	red-stalked plantain	H	FAC	0
*Poa pratensis**	Kentucky blue grass	H	FAC	-
Polygonum pensylvanicum	pinkweed	H	FACW	0
*Polygonum persicaria**	lady's thumb	H	FACW	-
Polygonum sp.	smartweed	H		-
Prunella vulgaris var. *lanceolata*	self-heal	H	FAC	0
*Rhamnus cathartica**	common buckthorn	H	FAC	-
Rorippa palustris var. *fernaldiana*	marsh yellow cress	H	OBL	4
Rudbeckia hirta	black-eyed Susan	H	FACU	1
*Rumex crispus**	curly dock	H	FAC	-

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site U, 2012 – Wet Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Scirpus pendulus	red bulrush	H	OBL	4
*Setaria glauca**	pigeon grass	H	FAC	-
Solidago canadensis	Canada goldenrod	H	FACU	1
*Taraxacum officinale**	common dandelion	H	FACU	-
*Trifolium hybridum**	alsike clover	H	FACU	-

*Non-native species Dominant species are in bold at the top of the species list Mean C = 2.0
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 10.8

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site V, 2012 – Wet Shrubland

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Cornus obliqua	**pale dogwood**	**S**	**FACW**	**6**
Lythrum salicaria*	**purple loosestrife**	**H**	**OBL**	**-**
Typha angustifolia	**narrow-leaved cattail**	**H**	**OBL**	**1**
*Achillea millefolium**	common milfoil	H	FACU	-
*Agrostis alba**	red top	H	FACW	-
Asclepias incarnata	swamp milkweed	H	OBL	4
Aster novae-angliae	New England aster	H	FACW	4
Aster pilosus	hairy aster	H	FACU	0
Aster praealtus	willow aster	H	FACW	9
Aster sagittifolius var. *drummondii*	Drummond's aster	H	UPL	2
Aster simplex	panicled aster	H	FAC	3
Carex cristatella	crested oval sedge	H	FACW	4
Carex granularis	pale sedge	H	FACW	4
Carex hystericina	porcupine sedge	H	OBL	5
Carex vulpinoidea	brown fox sedge	H	FACW	2
*Cirsium arvense**	field thistle	H	FACU	-
Convolvulus sepium	American bindweed	H	FAC	1
Crataegus crus-galli	cock-spur hawthorn	S	FAC	2
*Daucus carota**	Queen Anne's lace	H	UPL	-
*Dipsacus laciniatus**	cut-leaved teasel	H	UPL	-
Epilobium coloratum	cinnamon willow herb	H	OBL	3
Erigeron annuus	annual fleabane	H	FACU	0
Erigeron canadensis	horseweed	H	FACU	0
Eupatorium altissimum	tall boneset	H	UPL	0
Fragaria virginiana	wild strawberry	H	FACU	1
Geum canadense	white avens	H	FAC	1
Glyceria striata	fowl manna grass	H	OBL	4
Helianthus grosseserratus	sawtooth sunflower	H	FACW	2
Iris virginica var. *shrevei*	southern blue flag	H	OBL	5
Juncus dudleyi	Dudley's rush	H	FACW	4
Lonicera x *bella**	showy fly honeysuckle	S	FACU	-
Lycopus americanus	common water horehound	H	OBL	5
Lythrum alatum	winged loosestrife	H	OBL	7
*Melilotus alba**	white sweet clover	H	FACU	-
Monarda fistulosa	wild bergamot	H	FACU	4
Parthenocissus quinquefolia	Virginia creeper	H	FACU	2
*Phalaris arundinacea**	reed canary grass	H	FACW	-
Populus deltoides	eastern cottonwood	H	FAC	2
Prunella vulgaris var. *lanceolata*	self-heal	H	FAC	0
*Rhamnus cathartica**	common buckthorn	H,S	FAC	-
*Rhamnus frangula**	glossy buckthorn	H,S	FACW	-
Sagittaria latifolia	common arrowhead	H	OBL	4
*Salix alba**	white willow	T	FACW	-
Salix amygdaloides	peach-leaved willow	H	FACW	5
Salix bebbiana	beaked willow	S	FACW	8
Salix eriocephala	heart-leaved willow	S	FACW	5
*Salix fragilis**	crack willow	T	FAC	-

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site V, 2012 – Wet Shrubland

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Scirpus pendulus	red bulrush	H	OBL	4
Senecio pauperculus	balsam ragwort	H	FAC	6
Solidago canadensis	Canada goldenrod	H	FACU	1
Solidago gigantea	late goldenrod	H	FACW	4
Solidago graminifolia	grass-leaved goldenrod	H	FACW	4
Solidago riddellii	Riddell's goldenrod	H	OBL	7
Typha latifolia	broad-leaved cattail	H	OBL	1
Verbena hastata	blue vervain	H	FACW	4
Verbena urticifolia	white vervain	H	FAC	5
Viburnum lentago	nannyberry	S	FAC	5
*Viburnum opulus**	European high-bush cranberry	S	FAC	-
*Viburnum recognitum**	smooth arrowwood	S	FAC	-
Vitis riparia	riverbank grape	H,W	FACW	2

*Non-native species Dominant species are in bold at the top of the species list Mean C = 3.4
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 22.7

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site W, 2012 – Wet Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Agrostis alba*	**red top**	**H**	**FACW**	**-**
Calamagrostis canadensis	**blue joint grass**	**H**	**OBL**	**3**
Helianthus grosseserratus	**sawtooth sunflower**	**H**	**FACW**	**2**
Solidago graminifolia	**grass-leaved goldenrod**	**H**	**FACW**	**4**
Acer saccharinum	silver maple	T	FACW	0
Ambrosia artemisiifolia var. *elatior*	common ragweed	H	FACU	0
Asclepias incarnata	swamp milkweed	H	OBL	4
Aster novae-angliae	New England aster	H	FACW	4
Aster praealtus	willow aster	H	FACW	9
Bidens frondosa	common beggar's ticks	H	FACW	1
Carex annectens var. *xanthocarpa*	small yellow fox sedge	H	FACW	7
Carex cristatella	crested oval sedge	H	FACW	4
Carex hystericina	porcupine sedge	H	OBL	5
*Convolvulus arvensis**	field bindweed	H	UPL	-
Cornus obliqua	pale dogwood	S	FACW	6
*Daucus carota**	Queen Anne's lace	H	UPL	-
*Dipsacus laciniatus**	cut-leaved teasel	H	UPL	-
Epilobium coloratum	cinnamon willow herb	H	OBL	3
Erigeron annuus	annual fleabane	H	FACU	0
Eupatorium altissimum	tall boneset	H	UPL	0
Fraxinus pennsylvanica var. *subintegerrima*	green ash	H,S	FACW	1
Geum canadense	white avens	H	FAC	1
Geum laciniatum	rough avens	H	FACW	5
Glyceria striata	fowl manna grass	H	OBL	4
Iris virginica var. *shrevei*	southern blue flag	H	OBL	5
Juncus dudleyi	Dudley's rush	H	FACW	4
Juncus torreyi	Torrey's rush	H	FACW	4
Leersia oryzoides	rice cut grass	H	OBL	4
Lycopus americanus	common water horehound	H	OBL	5
Lythrum alatum	winged loosestrife	H	OBL	7
*Lythrum salicaria**	purple loosestrife	H	OBL	-
Mentha arvensis var. *villosa*	wild mint	H	FACW	5
Parthenocissus quinquefolia	Virginia creeper	H,W	FACU	2
*Phalaris arundinacea**	reed canary grass	H	FACW	-
*Poa pratensis**	Kentucky blue grass	H	FAC	-
*Rhamnus cathartica**	common buckthorn	S	FAC	-
Scirpus atrovirens	dark green rush	H	OBL	4
Scirpus pendulus	red bulrush	H	OBL	4
Solidago canadensis	Canada goldenrod	H	FACU	1
Solidago gigantea	late goldenrod	H	FACW	4
Spartina pectinata	prairie cord grass	H	FACW	4
Verbena hastata	blue vervain	H	FACW	4
Veronicastrum virginicum	culver's root	H	FAC	7
Viburnum lentago	nannyberry	H	FAC	5
Vitis riparia	riverbank grape	H,W	FACW	2
*Xanthium strumarium**	cocklebur	H	FAC	-

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site W, 2012 – Wet Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism

*Non-native species Dominant species are in bold at the top of the species list Mean C = 3.6
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 22.0

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site X, 2012 – Wet Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Phalaris arundinacea*	**reed canary grass**	**H**	**FACW**	**-**
Solidago graminifolia	**grass-leaved goldenrod**	**H**	**FACW**	**4**
*Agrostis alba**	red top	H	FACW	-
Allium cernuum	nodding wild onion	H	FACU	7
Ambrosia artemisiifolia var. *elatior*	common ragweed	H	FACU	0
Asclepias incarnata	swamp milkweed	H	OBL	4
Aster puniceus	bristly aster	H	OBL	8
Aster simplex	panicled aster	H	FAC	3
Carex cristatella	crested oval sedge	H	FACW	4
Carex vulpinoidea	brown fox sedge	H	FACW	2
*Cirsium arvense**	field thistle	H	FACU	-
*Cirsium vulgare**	bull thistle	H	FACU	-
Convolvulus sepium	American bindweed	H	FAC	1
Cornus obliqua	pale dogwood	H	FACW	6
*Dipsacus laciniatus**	cut-leaved teasel	H	UPL	-
Epilobium coloratum	cinnamon willow herb	H	OBL	3
Erigeron annuus	annual fleabane	H	FACU	0
Eupatorium altissimum	tall boneset	H	UPL	0
Fraxinus pennsylvanica var. *subintegerrima*	green ash	H,T	FACW	1
Geum canadense	white avens	H	FAC	1
Glyceria striata	fowl manna grass	H	OBL	4
Helianthus grosseserratus	sawtooth sunflower	H	FACW	2
Juncus dudleyi	Dudley's rush	H	FACW	4
Lycopus americanus	common water horehound	H	OBL	5
Lythrum alatum	winged loosestrife	H	OBL	7
*Lythrum salicaria**	purple loosestrife	H	OBL	-
Mentha arvensis var. *villosa*	wild mint	H	FACW	5
Penthorum sedoides	ditch stonecrop	H	OBL	5
*Poa pratensis**	Kentucky blue grass	H	FAC	-
Prunella vulgaris var. *lanceolata*	self-heal	H	FAC	0
*Rhamnus cathartica**	common buckthorn	H,S	FAC	-
Rudbeckia hirta	black-eyed Susan	H	FACU	1
*Rumex crispus**	curly dock	H	FAC	-
Salix amygdaloides	peach-leaved willow	H	FACW	5
Scirpus atrovirens	dark green rush	H	OBL	4
Scirpus pendulus	red bulrush	H	OBL	4
Solidago canadensis	Canada goldenrod	H	FACU	1
Solidago gigantea	late goldenrod	H	FACW	4
Spartina pectinata	prairie cord grass	H	FACW	4
Verbena hastata	blue vervain	H	FACW	4
Viburnum lentago	nannyberry	S	FAC	5
Vitis riparia	riverbank grape	H	FACW	2

*Non-native species Dominant species are in bold at the top of the species list Mean C = 3.3
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 19.1

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site Y, 2012 - Marsh

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Phalaris arundinacea*	**reed canary grass**	**H**	**FACW**	**-**
Typha angustifolia	**narrow-leaved cattail**	**H**	**OBL**	**1**
*Agrostis alba**	red top	H	FACW	-
Alisma triviale	American water plantain	H	OBL	4
Ambrosia artemisiifolia var. *elatior*	common ragweed	H	FACU	0
Apocynum cannabinum	dogbane	H	FAC	4
Asclepias incarnata	swamp milkweed	H	OBL	4
*Atriplex patula**	fat-hen saltbush	H	FACW	-
Bidens frondosa	common beggar's ticks	H	FACW	1
Carex cristatella	crested oval sedge	H	FACW	4
Carex pellita	wooly sedge	H	OBL	4
Carex vulpinoidea	brown fox sedge	H	FACW	2
Chrysanthemum leucanthemum var. *pinnatifidum**	ox-eye daisy	H	UPL	-
*Cirsium arvense**	field thistle	H	FACU	-
Cyperus sp.	nut sedge	H		-
*Daucus carota**	Queen Anne's lace	H	UPL	-
*Diplachne acuminata**	salt meadow grass	H	OBL	-
*Dipsacus laciniatus**	cut-leaved teasel	H	UPL	-
Echinochloa crusgalli	spiny barnyard grass	H	OBL	0
Eleocharis erythropoda	red-rooted spike rush	H	OBL	2
Epilobium ciliatum	northern willow herb	H	FACW	3
Erechtites hieracifolia	fireweed	H	FAC	2
Erigeron annuus	annual fleabane	H	FACU	0
Fragaria virginiana	wild strawberry	H	FACU	1
Fraxinus pennsylvanica var. *subintegerrima*	green ash	T	FACW	1
Helianthus grosseserratus	sawtooth sunflower	H	FACW	2
Iris virginica var. *shrevei*	southern blue flag	H	OBL	5
Juncus dudleyi	Dudley's rush	H	FACW	4
Juncus torreyi	Torrey's rush	H	FACW	4
Leersia oryzoides	rice cut grass	H	OBL	4
Lycopus americanus	common water horehound	H	OBL	5
*Lythrum salicaria**	purple loosestrife	H	OBL	-
*Medicago lupulina**	black medic	H	FACU	-
Oxalis stricta	common wood sorrel	H	FACU	0
Phragmites australis	common reed	H	FACW	1
Plantago rugelii	red-stalked plantain	H	FAC	0
Polygonum amphibium var. *stipulaceum*	water knotweed	H	OBL	4
*Polygonum persicaria**	lady's thumb	H	FACW	-
Populus deltoides	eastern cottonwood	H	FAC	2
Prunella vulgaris var. *lanceolata*	self-heal	H	FAC	0
Ranunculus pensylvanicus	bristly crowfoot	H	OBL	6
*Rhamnus cathartica**	common buckthorn	H	FAC	-
*Rhamnus frangula**	glossy buckthorn	H	FACW	-
Rorippa palustris var. *fernaldiana*	marsh yellow cress	H	OBL	4

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site Y, 2012 - Marsh

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
*Rumex crispus**	curly dock	H	FAC	-
Scirpus fluviatilis	river bulrush	H	OBL	4
Scirpus pendulus	red bulrush	H	OBL	4
Scirpus pungens	chairmaker's rush	H	OBL	5
Scirpus validus var. *creber*	soft-stem bulrush	H	OBL	5
Solidago canadensis	Canada goldenrod	H	FACU	1
Solidago graminifolia	grass-leaved goldenrod	H	FACW	4
*Solidago sempervirens**	seaside goldenrod	H	FACW	-
Verbena hastata	blue vervain	H	FACW	4
Viola sororia	common blue violet	H	FAC	3
Vitis riparia	riverbank grape	H	FACW	2
*Xanthium strumarium**	cocklebur	H	FAC	-

*Non-native species Dominant species are in bold at the top of the species list Mean C = 2.7
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 17.0

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site Z, 2012 - Marsh

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Typha angustifolia	**narrow-leaved cattail**	**H**	**OBL**	**1**
*Agropyron repens**	quack grass	H	FACU	-
*Agrostis alba**	red top	H	FACW	-
Alisma subcordatum	common water plantain	H	OBL	4
Ambrosia artemisiifolia var. *elatior*	common ragweed	H	FACU	0
*Barbarea vulgaris**	winter cress	H	FAC	-
Bidens frondosa	common beggar's ticks	H	FACW	1
Carex molesta	field oval sedge	H	FAC	2
*Chenopodium album**	lamb's quarters	H	FACU	-
Chrysanthemum leucanthemum var. *pinnatifidum**	ox-eye daisy	H	UPL	-
*Cirsium arvense**	field thistle	H	FACU	-
Cornus obliqua	pale dogwood	H	FACW	6
*Coronilla varia**	crown vetch	H	UPL	-
Cyperus esculentus	field nut sedge	H	FACW	0
*Daucus carota**	Queen Anne's lace	H	UPL	-
*Digitaria ischaemum**	smooth crab grass	H	FACU	-
Echinochloa crusgalli	spiny barnyard grass	H	OBL	0
Erechtites hieracifolia	fireweed	H	FAC	2
Erigeron annuus	annual fleabane	H	FACU	0
Erigeron canadensis	horseweed	H	FACU	0
Eupatorium altissimum	tall boneset	H	UPL	0
Gleditsia triacanthos	honey locust	H	FACU	2
Helianthus grosseserratus	sawtooth sunflower	H	FACW	2
Helianthus tuberosus	Jerusalem artichoke	H	UPL	3
*Lythrum salicaria**	purple loosestrife	H	OBL	-
*Medicago lupulina**	black medic	H	FACU	-
*Melilotus alba**	white sweet clover	H	FACU	-
Oenothera biennis	common evening primrose	H	FACU	0
Panicum dichotomiflorum	fall panicum	H	FACW	0
*Phalaris arundinacea**	reed canary grass	H	FACW	-
Plantago rugelii	red-stalked plantain	H	FAC	0
*Poa compressa**	Canadian blue grass	H	FACU	-
Polygonum lapathifolium	curttop lady's thumb	H	FACW	0
*Polygonum persicaria**	lady's thumb	H	FACW	-
Populus deltoides	eastern cottonwood	H	FAC	2
*Portulaca oleracea**	purslane	H	FACU	-
*Rhamnus cathartica**	common buckthorn	H	FAC	-
*Rhamnus frangula**	glossy buckthorn	H	FACW	-
*Rumex crispus**	curly dock	H	FAC	-
Salix amygdaloides	peach-leaved willow	H,S	FACW	5
Scirpus pendulus	red bulrush	H	OBL	4
Scirpus validus var. *creber*	soft-stem bulrush	H	OBL	5
*Setaria faberi**	giant foxtail	H	FACU	-
*Setaria glauca**	pigeon grass	H	FAC	-
Solanum americanum	black nightshade	H	FACU	0
Solidago canadensis	Canada goldenrod	H	FACU	1

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site Z, 2012 - Marsh

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
*Sonchus asper**	prickly sow thistle	H	FACU	-
Typha latifolia	broad-leaved cattail	H	OBL	1
Vitis riparia	riverbank grape	H	FACW	2

*Non-native species Dominant species are in bold at the top of the species list Mean C = 1.6
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 8.3

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site AA, 2012 – Wet Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Agrostis alba*	**red top**	**H**	**FACW**	**-**
Helianthus grosseserratus	**sawtooth sunflower**	**H**	**FACW**	**2**
Lolium perenne*	**perennial rye grass**	**H**	**FACU**	**-**
Apocynum cannabinum	dogbane	H	FAC	4
Asclepias incarnata	swamp milkweed	H	OBL	4
Bidens frondosa	common beggar's ticks	H	FACW	1
Carex annectens var. *xanthocarpa*	small yellow fox sedge	H	FACW	7
Carex pellita	wooly sedge	H	OBL	4
Cornus obliqua	pale dogwood	H	FACW	6
*Daucus carota**	Queen Anne's lace	H	UPL	-
Eleocharis erythropoda	red-rooted spike rush	H	OBL	2
Erechtites hieracifolia	fireweed	H	FAC	2
Erigeron annuus	annual fleabane	H	FACU	0
Glyceria striata	fowl manna grass	H	OBL	4
Leersia oryzoides	rice cut grass	H	OBL	4
Lythrum alatum	winged loosestrife	H	OBL	7
*Lythrum salicaria**	purple loosestrife	H	OBL	-
Mimulus ringens	monkey flower	H	OBL	6
Panicum capillare	old witch grass	H	FAC	1
*Phalaris arundinacea**	reed canary grass	H	FACW	-
*Poa pratensis**	Kentucky blue grass	H	FAC	-
Populus deltoides	eastern cottonwood	H	FAC	2
Prunella vulgaris var. *lanceolata*	self-heal	H	FAC	0
*Rhamnus cathartica**	common buckthorn	H	FAC	-
Rorippa palustris var. *fernaldiana*	marsh yellow cress	H	OBL	4
Rudbeckia hirta	black-eyed Susan	H	FACU	1
*Rumex crispus**	curly dock	H	FAC	-
Salix amygdaloides	peach-leaved willow	H	FACW	5
Scirpus pendulus	red bulrush	H	OBL	4
Senecio pauperculus	balsam ragwort	H	FAC	6
Solanum americanum	black nightshade	H	FACU	0
*Solanum dulcamara**	bittersweet nightshade	H	FAC	-
Solidago graminifolia	grass-leaved goldenrod	H	FACW	4
Typha angustifolia	narrow-leaved cattail	H	OBL	1
Typha latifolia	broad-leaved cattail	H	OBL	1
Ulmus americana	American elm	H	FACW	3
Verbena hastata	blue vervain	H	FACW	4
Viburnum lentago	nannyberry	H,S	FAC	5
Vitis riparia	riverbank grape	H,W	FACW	2

*Non-native species Dominant species are in bold at the top of the species list Mean C = 3.2
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 17.5

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site AB, 2012 – Wet Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Agrostis alba*	**red top**	**H**	**FACW**	**-**
Helianthus grosseserratus	**sawtooth sunflower**	**H**	**FACW**	**2**
Scirpus pendulus	**red bulrush**	**H**	**OBL**	**4**
Allium cernuum	nodding wild onion	H	FACU	7
Ambrosia artemisiifolia var. *elatior*	common ragweed	H	FACU	0
Andropogon gerardii	big bluestem	H	FAC	5
Apocynum cannabinum	dogbane	H	FAC	4
Asclepias incarnata	swamp milkweed	H	OBL	4
Bidens frondosa	common beggar's ticks	H	FACW	1
Carex cristatella	crested oval sedge	H	FACW	4
*Cirsium arvense**	field thistle	H	FACU	-
Cornus obliqua	pale dogwood	H	FACW	6
*Dactylis glomerata**	orchard grass	H	FACU	-
Epilobium coloratum	cinnamon willow herb	H	OBL	3
Erigeron annuus	annual fleabane	H	FACU	0
Eupatorium perfoliatum	common boneset	H	OBL	4
Glyceria striata	fowl manna grass	H	OBL	4
Iris virginica var. *shrevei*	southern blue flag	H	OBL	5
Juncus dudleyi	Dudley's rush	H	FACW	4
Juncus torreyi	Torrey's rush	H	FACW	4
Leersia oryzoides	rice cut grass	H	OBL	4
Liatris spicata	marsh blazing star	H	FAC	6
Lonicera x *bella**	showy fly honeysuckle	H	FACU	-
Lycopus americanus	common water horehound	H	OBL	5
Lythrum alatum	winged loosestrife	H	OBL	7
*Lythrum salicaria**	purple loosestrife	H	OBL	-
Mentha arvensis var. *villosa*	wild mint	H	FACW	5
Oxypolis rigidior	cowbane	H	OBL	7
Panicum implicatum	panic grass	H	FAC	2
*Phleum pratense**	timothy	H	FACU	-
Phlox glaberrima ssp. *interior*	smooth phlox	H	FACW	8
*Poa pratensis**	Kentucky blue grass	H	FAC	-
Populus deltoides	eastern cottonwood	H	FAC	2
Prunella vulgaris var. *lanceolata*	self-heal	H	FAC	0
Pycnanthemum virginianum	common mountain mint	H	FACW	5
Ratibida pinnata	yellow coneflower	H	UPL	4
*Rumex crispus**	curly dock	H	FAC	-
Salix amygdaloides	peach-leaved willow	H	FACW	5
Salix glaucophylloides	blue-leaf willow	H	FACW	7
Salix nigra	black willow	S	OBL	4
Salix petiolaris	meadow willow	H,S	OBL	7
Solidago canadensis	Canada goldenrod	H	FACU	1
Solidago gigantea	late goldenrod	H	FACW	4
Solidago graminifolia	grass-leaved goldenrod	H	FACW	4
Solidago riddellii	Riddell's goldenrod	H	OBL	7
Typha angustifolia	narrow-leaved cattail	H	OBL	1
Verbena hastata	blue vervain	H	FACW	4

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site AB, 2012 – Wet Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Viburnum lentago	nannyberry	H	FAC	5
Vitis riparia	riverbank grape	H	FACW	2
Zizia aurea	golden Alexanders	H	FAC	7

*Non-native species Dominant species are in bold at the top of the species list Mean C = 4.1
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 26.8

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site AC, 2012 – Wet Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Phalaris arundinacea*	**reed canary grass**	**H**	**FACW**	**-**
*Agrostis alba**	red top	H	FACW	-
Alisma subcordatum	common water plantain	H	OBL	4
Ambrosia artemisiifolia var. *elatior*	common ragweed	H	FACU	0
Apocynum cannabinum	dogbane	H	FAC	4
Asclepias incarnata	swamp milkweed	H	OBL	4
Aster novae-angliae	New England aster	H	FACW	4
Aster simplex	panicled aster	H	FAC	3
Bidens frondosa	common beggar's ticks	H	FACW	1
Carex annectens var. *xanthocarpa*	small yellow fox sedge	H	FACW	7
Carex cristatella	crested oval sedge	H	FACW	4
Carex pellita	wooly sedge	H	OBL	4
Carex vulpinoidea	brown fox sedge	H	FACW	2
Chrysanthemum leucanthemum var. *pinnatifidum**	ox-eye daisy	H	UPL	-
Cornus obliqua	pale dogwood	H,S	FACW	6
*Daucus carota**	Queen Anne's lace	H	UPL	-
Echinochloa crusgalli	spiny barnyard grass	H	OBL	0
Epilobium coloratum	cinnamon willow herb	H	OBL	3
Erechtites hieracifolia	fireweed	H	FAC	2
Fraxinus pennsylvanica var. *subintegerrima*	green ash	H	FACW	1
Geum laciniatum	rough avens	H	FACW	5
Glyceria striata	fowl manna grass	H	OBL	4
Helianthus grosseserratus	sawtooth sunflower	H	FACW	2
Juncus dudleyi	Dudley's rush	H	FACW	4
Juncus torreyi	Torrey's rush	H	FACW	4
Lycopus americanus	common water horehound	H	OBL	5
Lythrum alatum	winged loosestrife	H	OBL	7
*Lythrum salicaria**	purple loosestrife	H	OBL	-
*Malus sieboldii**	Japanese crab apple	H	UPL	-
Mentha arvensis var. *villosa*	wild mint	H	FACW	5
Oxalis stricta	common wood sorrel	H	FACU	0
Penstemon digitalis	foxglove beard tongue	H	FAC	4
*Poa pratensis**	Kentucky blue grass	H	FAC	-
*Polygonum persicaria**	lady's thumb	H	FACW	-
Prunella vulgaris var. *lanceolata*	self-heal	H	FAC	0
*Rhamnus cathartica**	common buckthorn	H,S	FAC	-
Rosa blanda	early wild rose	S	FACU	5
Rudbeckia hirta	black-eyed Susan	H	FACU	1
*Rumex crispus**	curly dock	H	FAC	-
Scirpus pendulus	red bulrush	H	OBL	4
Solidago canadensis	Canada goldenrod	H	FACU	1
Solidago graminifolia	grass-leaved goldenrod	H	FACW	4
Typha angustifolia	narrow-leaved cattail	H	OBL	1
Ulmus americana	American elm	H	FACW	3
Verbena hastata	blue vervain	H	FACW	4

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site **Sequence No: 13406**
Site AC, 2012 – Wet Meadow

Scientific Name	Common Name	Strata	Wetland Indicator Status	Coefficient of Conservatism
Viola sororia	common blue violet	H	FAC	3

*Non-native species Dominant species are in bold at the top of the species list Mean C = 3.2
H = Herb, T = Tree, S = Sapling/Shrub, W = Woody Vine FQI = 19.2

APPENDIX B

Full Site Plant Species List

Project Title: North Chicago Wetland Mitigation Site, page 1 of 6 **Sequence No: 13406**

Scientific Name	Common Name	Wetland Indicator Status	Coefficient of Conservatism
*Acer ginnala**	amur maple	UPL	-
Acer negundo	box elder	FAC	0
Acer saccharinum	silver maple	FACW	0
*Achillea millefolium**	common milfoil	FACU	-
Acnida altissima	tall waterhemp	OBL	0
Agrimonia gryposepala	tall agrimony	FACU	2
Agrimonia parviflora	swamp agrimony	FACW	7
*Agropyron repens**	quack grass	FACU	-
Agropyron trachycaulum	bearded wheat grass	FACU	8
*Agrostis alba**	red top	FACW	-
Agrostis perennans	autumn bent grass	FAC	3
Alisma subcordatum	common water plantain	OBL	4
Alisma triviale	American water plantain	OBL	4
Allium cernuum	nodding wild onion	FACU	7
Ambrosia artemisiifolia var. *elatior*	common ragweed	FACU	0
Ambrosia trifida	giant ragweed	FAC	0
Andropogon gerardii	big bluestem	FAC	5
Anemone virginiana	tall anemone	FACU	5
Apocynum cannabinum	dogbane	FAC	4
Asclepias incarnata	swamp milkweed	OBL	4
Asclepias purpurascens	purple milkweed	FACU	8
Asclepias sullivantii	prairie milkweed	UPL	8
Asclepias syriaca	common milkweed	FACU	0
Aster lateriflorus	side-flowering aster	FACW	4
Aster novae-angliae	New England aster	FACW	4
Aster pilosus	hairy aster	FACU	0
Aster praealtus	willow aster	FACW	9
Aster puniceus	bristly aster	OBL	8
Aster sagittifolius var. *drummondii*	Drummond's aster	UPL	2
Aster simplex	panicled aster	FAC	3
*Atriplex patula**	fat-hen saltbush	FACW	-
*Barbarea vulgaris**	winter cress	FAC	-
Bidens connata	purple-stemmed tickseed	OBL	5
Bidens frondosa	common beggar's ticks	FACW	1
Boehmeria cylindrica	false nettle	OBL	2
Cacalia plantaginea	prairie Indian plantain	FAC	10
Calamagrostis canadensis	blue joint grass	OBL	3
Carex annectens var. *xanthocarpa*	small yellow fox sedge	FACW	7
Carex atherodes	hairy-leaved lake sedge	OBL	5
Carex bebbii	Bebb's oval sedge	OBL	6
Carex bicknellii	Bicknell's sedge	FACU	10
Carex buxbaumii	dark-scaled sedge	OBL	9
Carex cristatella	crested oval sedge	FACW	4
Carex frankii	bristly cattail sedge	OBL	8
Carex granularis	pale sedge	FACW	4
Carex hystericina	porcupine sedge	OBL	5

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site, page 2 of 6 **Sequence No: 13406**

Scientific Name	Common Name	Wetland Indicator Status	Coefficient of Conservatism
Carex lacustris	common lake sedge	OBL	6
Carex molesta	field oval sedge	FAC	2
Carex normalis	spreading oval sedge	FACW	5
Carex pellita	wooly sedge	OBL	4
Carex sartwellii	running marsh sedge	FACW	6
Carex sp.	sedge		-
Carex sterilis	fen star sedge	OBL	10
Carex stipata	common fox sedge	OBL	3
Carex stricta	common tussock sedge	OBL	5
Carex tenera	narrow-leaved oval sedge	FACW	8
Carex trichocarpa	hairy-fruited lake sedge	OBL	7
Carex vulpinoidea	brown fox sedge	FACW	2
*Centaurium pulchellum**	showy centaury	FACU	-
Ceratophyllum demersum	coontail	OBL	5
*Chenopodium album**	lamb's quarters	FACU	-
Chrysanthemum leucanthemum var. *pinnatifidum**	ox-eye daisy	UPL	-
Cicuta maculata	water hemlock	OBL	6
*Cirsium arvense**	field thistle	FACU	-
Cirsium discolor	pasture thistle	FACU	2
*Cirsium vulgare**	bull thistle	FACU	-
Comandra umbellata	bastard toad-flax	FACU	7
*Convolvulus arvensis**	field bindweed	UPL	-
Convolvulus sepium	American bindweed	FAC	1
Cornus obliqua	pale dogwood	FACW	6
Cornus racemosa	gray dogwood	FAC	1
*Coronilla varia**	crown vetch	UPL	-
Crataegus crus-galli	cock-spur hawthorn	FAC	2
Crataegus mollis	downy hawthorn	FAC	2
Crataegus pruinosa	frosted hawthorn	UPL	5
Crataegus sp.	hawthorn		-
Cyperus esculentus	field nut sedge	FACW	0
Cyperus sp.	nut sedge		-
Cyperus strigosus	long-scaled nut sedge	FACW	1
*Dactylis glomerata**	orchard grass	FACU	-
*Daucus carota**	Queen Anne's lace	UPL	-
*Digitaria ischaemum**	smooth crab grass	FACU	-
*Diplachne acuminata**	salt meadow grass	OBL	-
*Dipsacus laciniatus**	cut-leaved teasel	UPL	-
Echinochloa crusgalli	spiny barnyard grass	OBL	0
Eleocharis acicularis	needle spike rush	OBL	2
Eleocharis erythropoda	red-rooted spike rush	OBL	2
Elymus canadensis	Canada wild rye	FACU	4
Epilobium ciliatum	northern willow herb	FACW	3
Epilobium coloratum	cinnamon willow herb	OBL	3
Equisetum arvense	common horsetail	FAC	0
Erechtites hieracifolia	fireweed	FAC	2

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site, page 3 of 6 **Sequence No: 13406**

Scientific Name	Common Name	Wetland Indicator Status	Coefficient of Conservatism
Erigeron annuus	annual fleabane	FACU	0
Erigeron canadensis	horseweed	FACU	0
Eryngium yuccifolium	rattlesnake master	FAC	9
Eupatorium altissimum	tall boneset	UPL	0
Eupatorium maculatum	spotted Joe Pye weed	OBL	4
Eupatorium perfoliatum	common boneset	OBL	4
Eupatorium serotinum	late boneset	FAC	0
*Festuca elatior**	tall fescue	FACU	-
Festuca sp.	fescue		-
Fragaria virginiana	wild strawberry	FACU	1
Fraxinus pennsylvanica var. *subintegerrima*	green ash	FACW	1
Galium obtusum	wild madder	FACW	5
Galium tinctorium	stiff bedstraw	OBL	8
Geum aleppicum var. *strictum*	yellow avens	FACW	7
Geum canadense	white avens	FAC	1
Geum laciniatum	rough avens	FACW	5
Gleditsia triacanthos	honey locust	FACU	2
Glyceria septentrionalis	floating manna grass	OBL	8
Glyceria striata	fowl manna grass	OBL	4
Helenium autumnale	sneezeweed	FACW	5
*Helianthus annuus**	common sunflower	FACU	-
Helianthus grosseserratus	sawtooth sunflower	FACW	2
Helianthus tuberosus	Jerusalem artichoke	UPL	3
Hierochloe odorata	sweet grass		9
*Hordeum jubatum**	squirrel-tail grass	FAC	-
*Hypericum perforatum**	common St. John's-wort	FACU	-
Impatiens capensis	spotted touch-me-not	FACW	3
*Ipomoea lacunosa**	small morning glory	FACW	-
*Iris pseudacorus**	tall yellow iris	OBL	-
Iris virginica var. *shrevei*	southern blue flag	OBL	5
Juncus acuminatus	sharp-fruited rush	OBL	6
Juncus dudleyi	Dudley's rush	FACW	4
Juncus effusus	common rush	OBL	7
Juncus sp.	rush		-
Juncus tenuis	path rush	FAC	0
Juncus torreyi	Torrey's rush	FACW	4
*Lactuca serriola**	prickly lettuce	FACU	-
Lathyrus palustris	marsh vetchling	FACW	8
Leersia oryzoides	rice cut grass	OBL	4
Lemna minor	small duckweed	OBL	5
Liatris pycnostachya	prairie blazine star	FAC	8
Liatris spicata	marsh blazing star	FAC	6
Lobelia spicata	pale spiked lobelia	FAC	6
*Lolium perenne**	perennial rye grass	FACU	-
Lonicera x *bella**	showy fly honeysuckle	FACU	-
Ludwigia polycarpa	false loosestrife	OBL	6

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site, page 4 of 6 **Sequence No: 13406**

Scientific Name	Common Name	Wetland Indicator Status	Coefficient of Conservatism
Lycopus americanus	common water horehound	OBL	5
Lycopus uniflorus	nothern bugle weed	OBL	7
Lysimachia quadriflora	narrow-leaved loosestrife	OBL	9
Lythrum alatum	winged loosestrife	OBL	7
*Lythrum salicaria**	purple loosestrife	OBL	-
*Malus sieboldii**	Japanese crab apple	UPL	-
*Medicago lupulina**	black medic	FACU	-
*Melilotus alba**	white sweet clover	FACU	-
Mentha arvensis var. *villosa*	wild mint	FACW	5
Mimulus ringens	monkey flower	OBL	6
Monarda fistulosa	wild bergamot	FACU	4
*Myosoton aquaticum**	giant chickweed	FACW	-
Oenothera biennis	common evening primrose	FACU	0
Onoclea sensibilis	sensitive fern	FACW	8
Oxalis stricta	common wood sorrel	FACU	0
Oxypolis rigidior	cowbane	OBL	7
Panicum capillare	old witch grass	FAC	1
Panicum dichotomiflorum	fall panicum	FACW	0
Panicum implicatum	panic grass	FAC	2
Panicum sp.	panic grass		-
Parthenocissus quinquefolia	Virginia creeper	FACU	2
Penstemon digitalis	foxglove beard tongue	FAC	4
Penthorum sedoides	ditch stonecrop	OBL	5
*Phalaris arundinacea**	reed canary grass	FACW	-
*Phleum pratense**	timothy	FACU	-
Phlox glaberrima ssp. *interior*	smooth phlox	FACW	8
Phragmites australis	common reed	FACW	1
Pilea fontana	bog clearweed	FACW	7
Pilea pumila	Canada clearweed	FACW	5
Plantago rugelii	red-stalked plantain	FAC	0
*Poa compressa**	Canadian blue grass	FACU	-
*Poa pratensis**	Kentucky blue grass	FAC	-
Polygonum amphibium var. *stipulaceum*	water knotweed	OBL	4
Polygonum hydropiper	water pepper	OBL	2
Polygonum lapathifolium	curttop lady's thumb	FACW	0
Polygonum pensylvanicum	pinkweed	FACW	0
*Polygonum persicaria**	lady's thumb	FACW	-
Polygonum punctatum	smartweed	OBL	6
Polygonum sp.	smartweed		-
Populus deltoides	eastern cottonwood	FAC	2
Populus tremuloides	quaking aspen	FAC	4
*Portulaca oleracea**	purslane	FACU	-
Potamogeton foliosus	leafy pondweed	OBL	7
Potentilla norvegica	rough cinquefoil	FAC	0
Potentilla simplex	common cinquefoil	FACU	4
Proserpinaca palustris var. *crebra*	mermaid weed	OBL	6

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site, page 5 of 6 **Sequence No: 13406**

Scientific Name	Common Name	Wetland Indicator Status	Coefficient of Conservatism
Prunella vulgaris var. lanceolata	self-heal	FAC	0
Prunus virginiana	common choke cherry	FACU	3
Pycnanthemum tenuifolium	slender mountain mint	FAC	7
Pycnanthemum virginianum	common mountain mint	FACW	5
Ranunculus flabellaris	yellow water buttercup	OBL	7
Ranunculus pensylvanicus	bristly crowfoot	OBL	6
Ranunculus sceleratus	cursed crowfoot	OBL	6
Ratibida pinnata	yellow coneflower	UPL	4
*Rhamnus cathartica**	common buckthorn	FAC	-
*Rhamnus frangula**	glossy buckthorn	FACW	-
Rhus glabra	smooth sumac	UPL	1
Ribes americanum	wild black currant	FACW	7
Rorippa palustris var. fernaldiana	marsh yellow cress	OBL	4
Rosa blanda	early wild rose	FACU	5
Rosa carolina	pasture rose	FACU	5
*Rosa multiflora**	Japanese rose	FACU	-
Rosa palustris	swampy rose	OBL	7
Rosa setigera	Illinois rose	FACU	7
Rubus idaeus var. strigosus	red raspberry	FACU	3
Rubus occidentalis	black raspberry	UPL	2
Rubus sp.	blackberry		-
Rudbeckia hirta	black-eyed Susan	FACU	1
*Rumex crispus**	curly dock	FAC	-
Sagittaria latifolia	common arrowhead	OBL	4
*Salix alba**	white willow	FACW	-
Salix amygdaloides	peach-leaved willow	FACW	5
Salix bebbiana	beaked willow	FACW	8
Salix discolor	pussy willow	FACW	2
Salix eriocephala	heart-leaved willow	FACW	5
*Salix fragilis**	crack willow	FAC	-
Salix glaucophylloides	blue-leaf willow	FACW	7
Salix humilis	prairie willow	FACU	6
Salix interior	sandbar willow	FACW	1
Salix nigra	black willow	OBL	4
Salix petiolaris	meadow willow	OBL	7
Salix sp.	willow		-
Sambucus canadensis	common elder	FACW	1
Sanicula canadensis	Canadian black snakeroot	FACU	7
Sanicula marilandica	black snakeroot	FACU	6
Scirpus acutus	hard-stemmed bulrush	OBL	6
Scirpus atrovirens	dark green rush	OBL	4
Scirpus cyperinus	wool grass	OBL	6
Scirpus fluviatilis	river bulrush	OBL	4
Scirpus pendulus	red bulrush	OBL	4
Scirpus pungens	chairmaker's rush	OBL	5
Scirpus validus var. creber	soft-stem bulrush	OBL	5
Scutellaria lateriflora	mad-dog skullcap	OBL	5

Species list is continued on the next page …

Project Title: North Chicago Wetland Mitigation Site, page 6 of 6 **Sequence No: 13406**

Scientific Name	Common Name	Wetland Indicator Status	Coefficient of Conservatism
Senecio pauperculus	balsam ragwort	FAC	6
*Setaria faberi**	giant foxtail	FACU	-
*Setaria glauca**	pigeon grass	FAC	-
Silphium terebinthinaceum	prairie dock	FAC	5
Sium suave	water parsnip	OBL	7
Solanum americanum	black nightshade	FACU	0
*Solanum dulcamara**	bittersweet nightshade	FAC	-
Solidago canadensis	Canada goldenrod	FACU	1
Solidago gigantea	late goldenrod	FACW	4
Solidago graminifolia	grass-leaved goldenrod	FACW	4
Solidago juncea	early goldenrod	UPL	5
Solidago riddellii	Riddell's goldenrod	OBL	7
Solidago rigida	rigid goldenrod	FACU	4
*Solidago sempervirens**	seaside goldenrod	FACW	-
*Sonchus arvensis**	field sow thistle	FACU	-
*Sonchus asper**	prickly sow thistle	FACU	-
Spartina pectinata	prairie cord grass	FACW	4
Sphenopholis intermedia	slender wedge grass	UPL	4
Spiraea alba	meadowsweet	FACW	7
Stachys palustris var. *homotricha*	woundwort	FACW	5
Stachys tenuifolia var. *hispida*	marsh hedge nettle	OBL	5
*Taraxacum officinale**	common dandelion	FACU	-
Teucrium canadense	germander	FACW	3
Thalictrum revolutum	waxy meadow rue	FAC	6
Tradescantia ohiensis	common spiderwort	FACU	2
*Trifolium campestre**	low hop clover	UPL	-
*Trifolium hybridum**	alsike clover	FACU	-
*Trifolium pratense**	red clover	FACU	-
Typha angustifolia	narrow-leaved cattail	OBL	1
Typha latifolia	broad-leaved cattail	OBL	1
Typha x *glauca*	hybrid cattail	OBL	1
Ulmus americana	American elm	FACW	3
*Valeriana officinalis**	garden heliotrope		-
Verbena hastata	blue vervain	FACW	4
Verbena urticifolia	white vervain	FAC	5
Vernonia fasciculata	common ironweed	FACW	5
Veronica peregrina	purslane speedwell	FACW	0
Veronicastrum virginicum	culver's root	FAC	7
Viburnum lentago	nannyberry	FAC	5
*Viburnum opulus**	European high-bush cranberry	FAC	-
*Viburnum recognitum**	smooth arrowwood	FAC	-
Viola cucullata	marsh blue violet	OBL	9
Viola sororia	common blue violet	FAC	3
Vitis riparia	riverbank grape	FACW	2
*Xanthium strumarium**	cocklebur	FAC	-
Zizia aurea	golden Alexanders	FAC	7

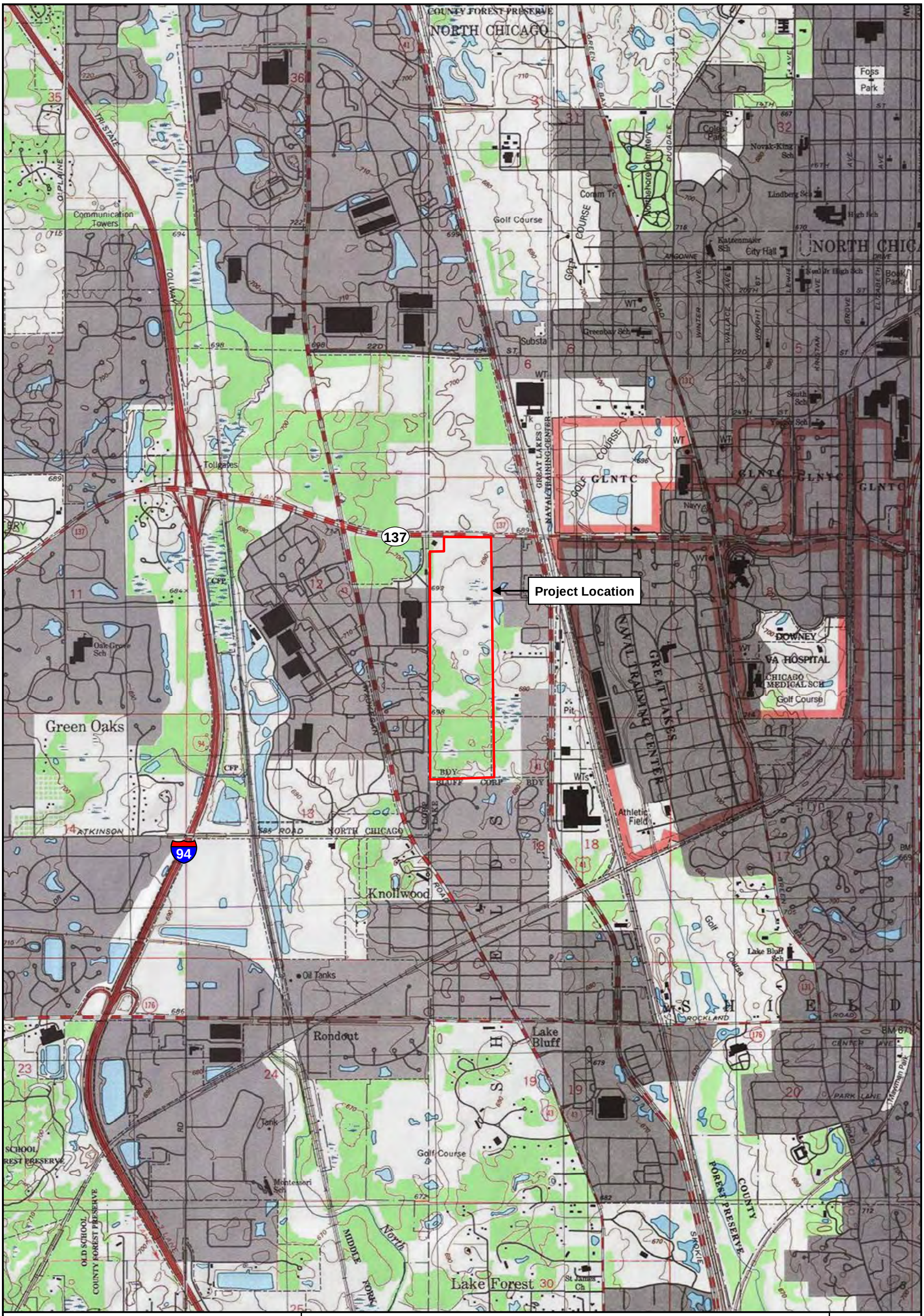
*Non-native species

Mean C = 4.2
FQI = 60.9

APPENDIX D

Figures

Figure 1 – Project Location Map
Figure 2 – Wetland Delineation Map
Figure 3 – ISGS 2011 Wetland Hydrology Map
Figure 4 – Soils Map
Figure 5 – Cover Type Map
Figure 6 – Stratified Vegetation Sampling Map



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ILLINOIS NATURAL HISTORY SURVEY
PRAIRIE RESEARCH INSTITUTE

Wetland Science Program
1816 South Oak Street
Champaign, Illinois 61820

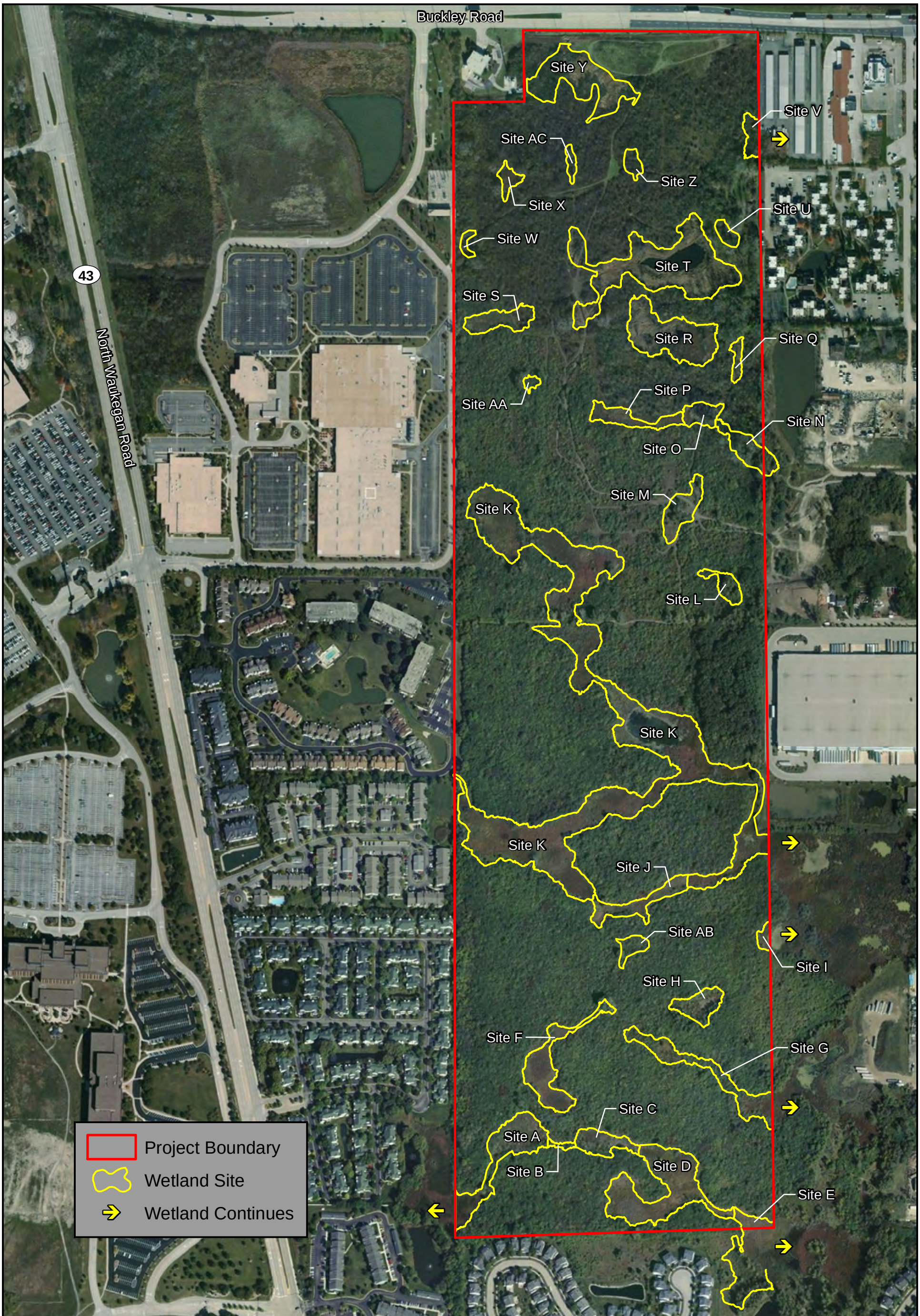
Figure 1
Project Location Map
North Chicago Wetland Mitigation Site
Lake County

Seq. No: 13406

Meters 0 500
Feet 0 2,000

December 2012

N W E S



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ILLINOIS NATURAL HISTORY SURVEY
PRAIRIE RESEARCH INSTITUTE

Wetland Science Program
1816 South Oak Street
Champaign, Illinois 61820

Figure 2
Wetland Delineation Map
North Chicago Wetland Mitigation Site
Lake County

Seq. No: 13406

Meters 0 100
Feet 0 400

December 2012

N W E S

North Chicago Wetland Mitigation Site (IL 56/IL47, FAP 326)

Wells Meeting Wetland Hydrology Criteria

September 1, 2011 through August 31, 2012

Map based on 2012 Farm Service Agency digital orthophotography, Lake County, Illinois (USDA-FSA 2012)

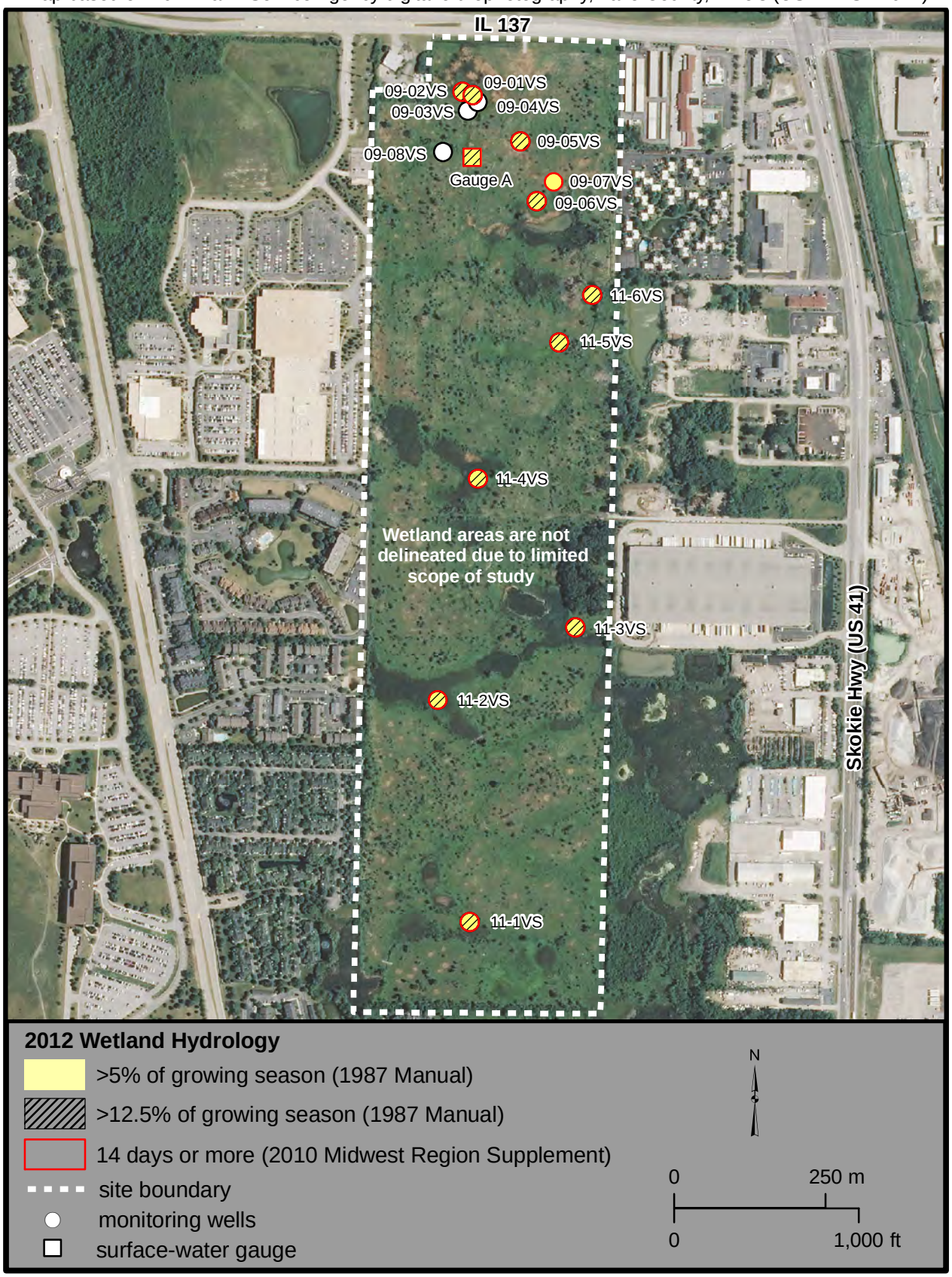

Figure 3. 2012 Illinois State Geological Survey wetland hydrology figure for the North Chicago Wetland Mitigation Site (Miner et al. 2012).

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PRAIRIE RESEARCH INSTITUTE

Wetland Science Program
1816 South Oak Street
Champaign, Illinois 61820

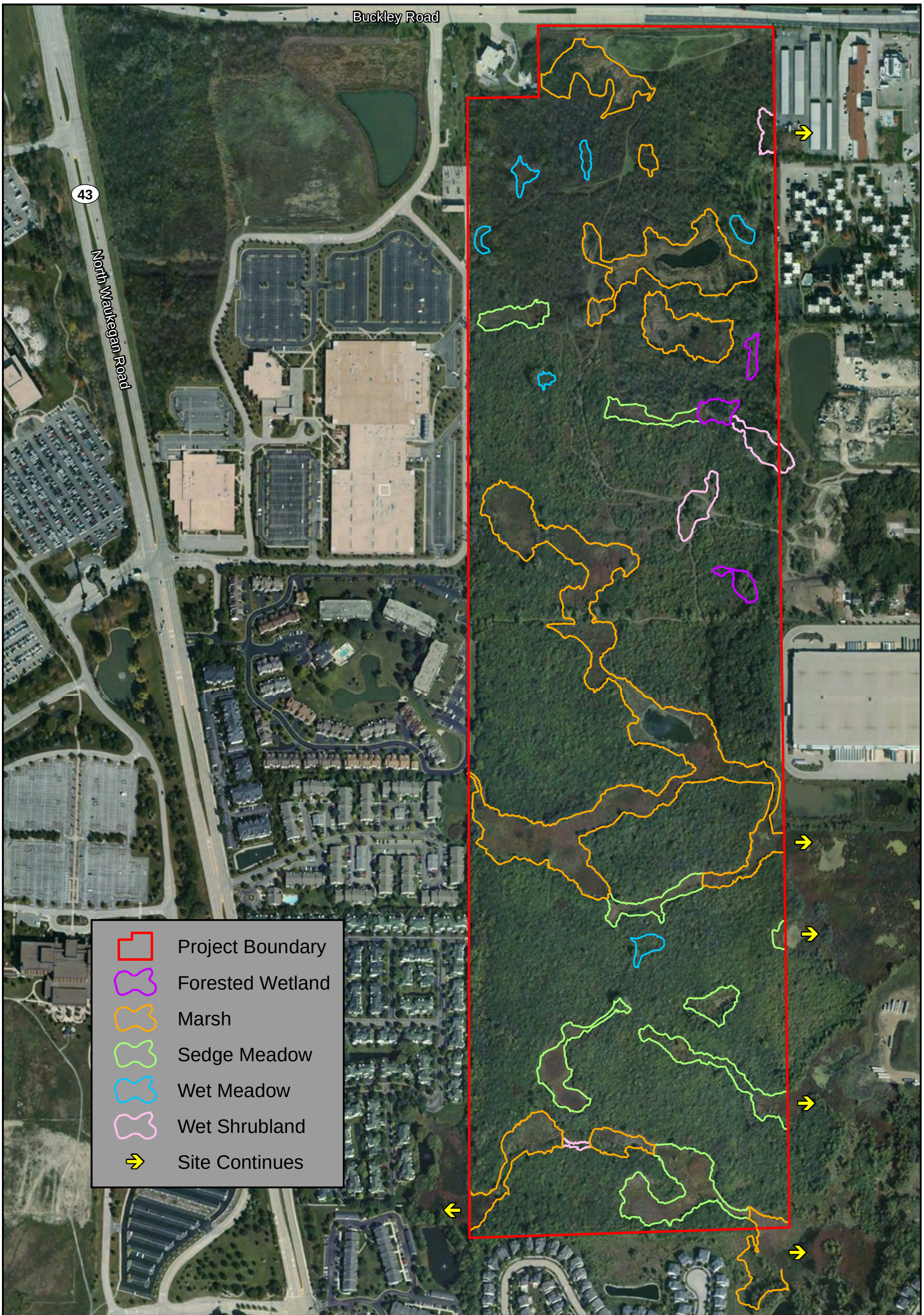
Figure 4
Soil Survey Map
North Chicago Wetland Mitigation Site
Lake County

Seq. No: 13406

Meters 0 200
Feet 0 600

December 2012

N W E S



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ILLINOIS NATURAL HISTORY SURVEY
PRAIRIE RESEARCH INSTITUTE

Wetland Science Program
1816 South Oak Street
Champaign, Illinois 61820

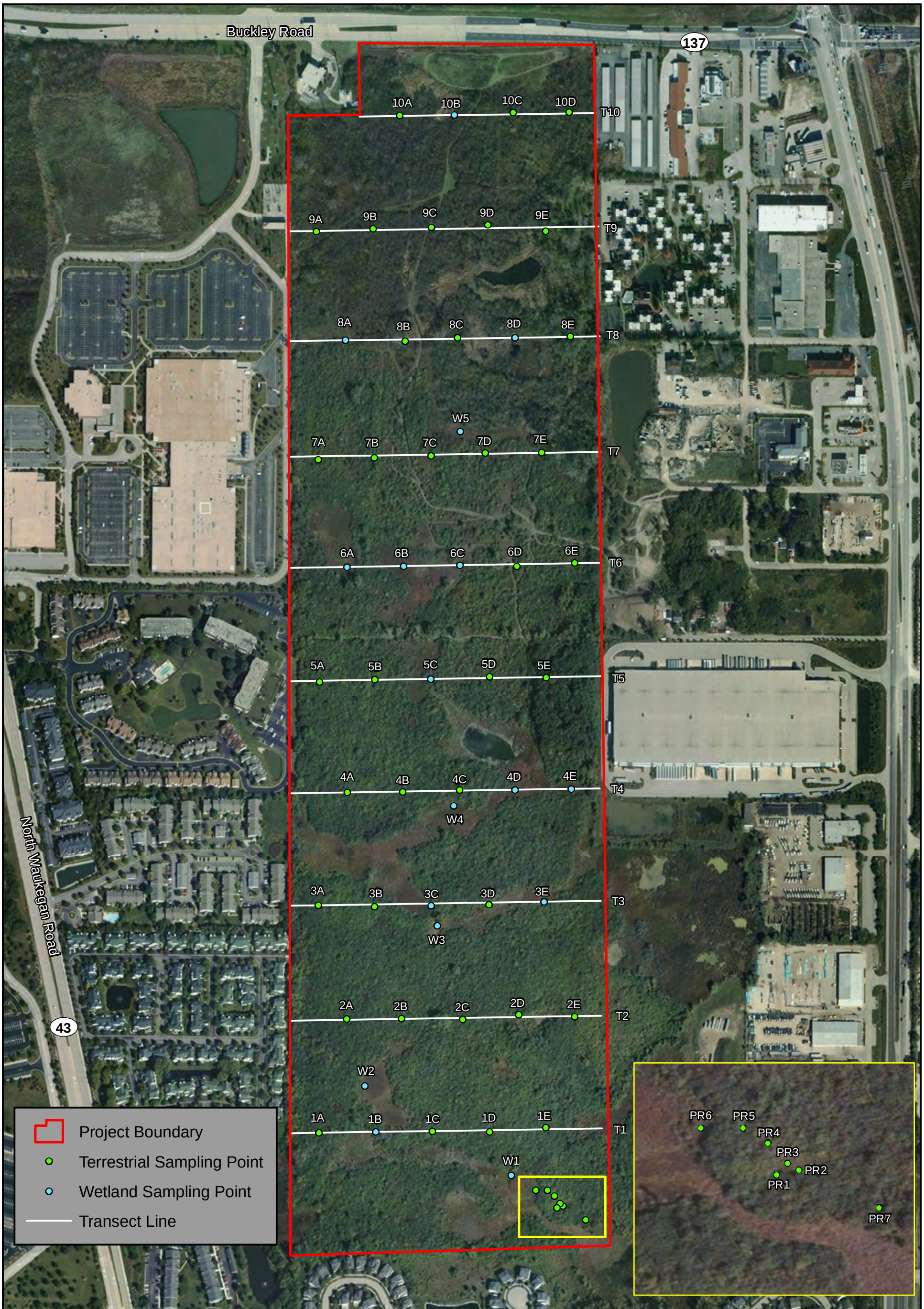
Figure 5
Cover Type Map
North Chicago Wetland Mitigation Site
Lake County

Seq. No: 13406

Meters 0 100
Feet 0 400

December 2012

N W E S



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Wetland Science Program
1816 South Oak Street
Champaign, Illinois 61820

Figure 6
Stratified Vegetation Sampling Grid Map
North Chicago Wetland Mitigation Site
Lake County

Seq. No: 13406

Meters 0 100
Feet 0 400

December 2012

N W E S

APPENDIX E

Photographs of Wetland Mitigation Site

Photo 1. Sampling point 1B, photo from southwest corner toward northeast corner.

Photo 2. Sampling point 3C, photo from southwest corner toward northeast corner.

Photo 3. Sampling point 3E, photo from southwest corner toward northeast corner.

Photo 4. Sampling point 4D, photo from southwest corner toward northeast corner.

Photo 5. Sampling point 4E, photo from southwest corner toward northeast corner.

Photo 6. Sampling point 5C, photo from southwest corner toward northeast corner.

Photo 7. Sampling point 6B, photo from southwest corner toward northeast corner.

Photo 8. Sampling point 6C, photo from southwest corner toward northeast corner.

Photo 9. Sampling point 8A, photo from southwest corner toward northeast corner.

Photo 10. Sampling point 8D, photo from southwest corner toward northeast corner.

Photo 11. Sampling point 10B, photo from southwest corner toward northeast corner.

Photo 12. Sampling point W2, photo from southwest corner toward northeast corner.

Photo 13. Sampling point W3, photo from southwest corner toward northeast corner.

Photo 14. Sampling point W4, photo from southwest corner toward northeast corner.

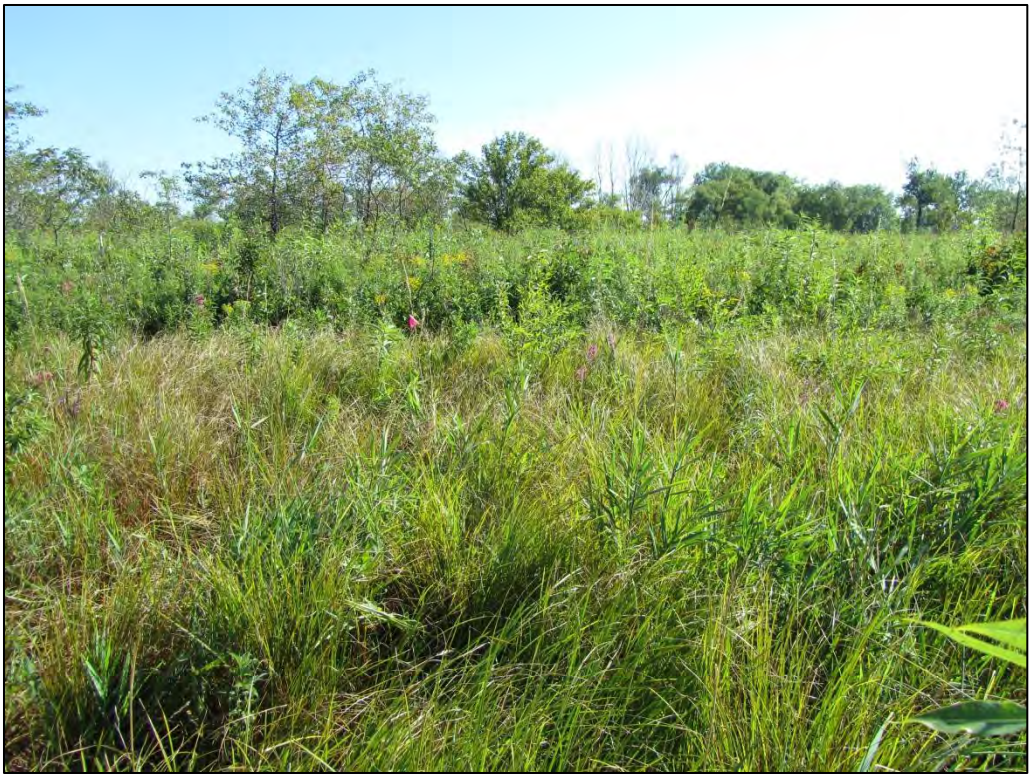

Photo 15. Sampling point W5, photo from southwest corner toward northeast corner.