

Wetland Delineation Report and Subsurface Drainage Inventory

WETLAND DELINEATION REPORT

MIDLOTHIAN ROAD PROPERTY
LONG GROVE, LAKE COUNTY, ILLINOIS

PREPARED FOR:

Addison Real Estate, LLC
475 Arbor Drive
Lake Bluff, Illinois 60044

AUGUST 31, 2015

INTRODUCTION

A wetland delineation of the 16-acre Midlothian Road Property was conducted on July 20, 2015. The site is located south of Midlothian Road and Countryside Lake Drive intersection in the Village of Long Grove, Lake County, Illinois (Exhibit 1). The site is further located in Section 35, Township 44 North, Range 10 East. The property consists of agriculture land, upland and wetland. The property is bordered by agriculture fields to the east, Midlothian Road to the north, wetland to the west and is border by Indian Creek on the south.

EXISTING DATA

The United States Geological Survey (USGS) topographic map indicates a stream along the southern border of the property (Exhibit 2). The Lake County Wetland Inventory map indicates the presence of two wetlands on the project site (Exhibit 3), a portion of one is identified as Advanced Identification (ADID), ADID wetlands are considered High Quality Aquatic Resources (HQAR). The ADID Summary Sheet is provided as Exhibit 4. The National Wetland Inventory map indicates one mapped wetland (Exhibit 5). The wetland is classified as Palustrine Emergent Seasonally Flooded (PEMC) and Palustrine Unconsolidated Bottom Intermittently Exposed Excavated (PUBGx). The Flood Insurance Rate Map indicates mapped flood zone on the south side of the property (Exhibit 6). The USGS Hydrologic Atlas indicates Waters of the U.S. on the south side of the property (Exhibit 7). The NRCS County Soil Survey (Exhibit 8) indicates three mapped hydric soils on the property: Ashkum silty clay loam (232A), Houghton Muck (103A), and Peotone silty clay loam (1330A).

WETLAND DELINEATION

The wetland delineation was conducted July 20, 2015 by Steve Rauch (CWS-52) and Kelly Burdick (CWS-107) of Hey and Associates, Inc. using procedures outlined by the U. S. Army Corps of Engineers (USACE) in the 1987 "Corps of Engineers Wetlands Delineation Manual" and the 2012 "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0)". The entire project site was inspected, with areas of mapped hydric soils prioritized for investigation. If inspection revealed that wetland plant species comprised more than 50 percent of the plant cover, the suspected wetland was further examined for field indicators of hydric soil and hydrology. The USACE accepted field indicators of hydric soil include iron and manganese reduction, translocation, and accumulation, sulfate reduction, and organic matter accumulation. Necessary hydric soil indicators were field verified in the wetland areas. The USACE approved field indicators of wetland hydrology are recorded under field observations, primary indicators,

and secondary indicators. Field observations document the presence/absence of surface water, high water table, and saturation. Primary indicators requires only one indicator to be identified to meet wetland hydrology and a few examples of primary indicators include water marks, true aquatic plants, and oxidized rhizospheres on living roots. Secondary indicators require two indicators to be identified to meet wetland hydrology and a few examples of secondary indicators include drainage patterns, crayfish burrows, and FAC-Neutral test. Wetland hydrologic criteria were met in the area delineated as wetland.

A list of observed plant species in the wetland area was compiled and data were gathered to complete Corps jurisdictional dataforms. A native vegetative quality rating was calculated for wetland using the Chicago Region FQA Calculator version September 29, 2014 (Herman, B., Sliwinski, R. and S. Whitaker. 2013. Chicago Region FQA (Floristic Quality Assessment) Calculator. U. S. Army Corps of Engineers, Chicago, IL). The FQA method assigns to plant species a rating that reflects the fundamental conservatism that the species exhibits for natural habitats. A native species that exhibits specific adaptations to a narrow spectrum of the environment is given a high rating. Conversely, an introduced, ubiquitous species that exhibits adaptations to a broad spectrum of environmental variables is given a low rating. Utilizing this method, a Floristic Quality Index (FQI) is derived for a given area. The FQI is an indication of native vegetative quality for an area: generally 1-19 indicates low vegetative quality, 20-35 indicates high vegetative quality and above 35 indicates "Natural Area" quality.

The site does not contain any row crop agricultural fields therefore a farmed wetland determination is not included in this report.

RESULTS

Two wetlands totaling 2.15 acres were delineated on the property. The wetland boundaries are shown on an aerial photograph in Exhibit 9 as surveyed by R.E. Allen and Associates in August 2015. Lists of the observed plant species for the wetland areas are given in Exhibit 10. The USACE jurisdictional dataforms for upland and wetland areas are included as Exhibit 11. Representative color photographs of the upland and wetland areas are provided in Exhibit 12. Following is a table that summarizes the delineated wetlands:

Wetland	Area (acres)	FQI ¹	Native Mean C ²	HQAR ³	Wetland Type	Dominant Vegetation
1	0.44	13.28	2.56	no	wet meadow	reed canary grass (<i>Phalaris arundinacea</i>)
2	1.71	22.33	3.49	yes	wet meadow/floodplain forest	reed canary grass eastern cottonwood (<i>Populus deltoides</i>)

1 The Floristic Quality Index (FQI) is an indication of native vegetative quality for an area: generally 1-19 indicates low vegetative quality, 20-35 indicates high vegetative quality and above 35 indicates "Natural Area" quality.
2 The Native Mean C is an indication of native vegetative quality for an area. Areas with value of 3.5 or greater are considered high quality.
3 The Chicago District U.S. Army Corps of Engineers has designated various Waters of the United States to be high-quality aquatic resources (HQARs). This designation is based on the definitions found within the Regional Permit Program that became effective April 1, 2012.

Wetland 1 is a wet meadow that receives water by overland flow. It is of low functional value for water quality and habitat. Based on a wet meadow the FQA it is of low vegetative quality.

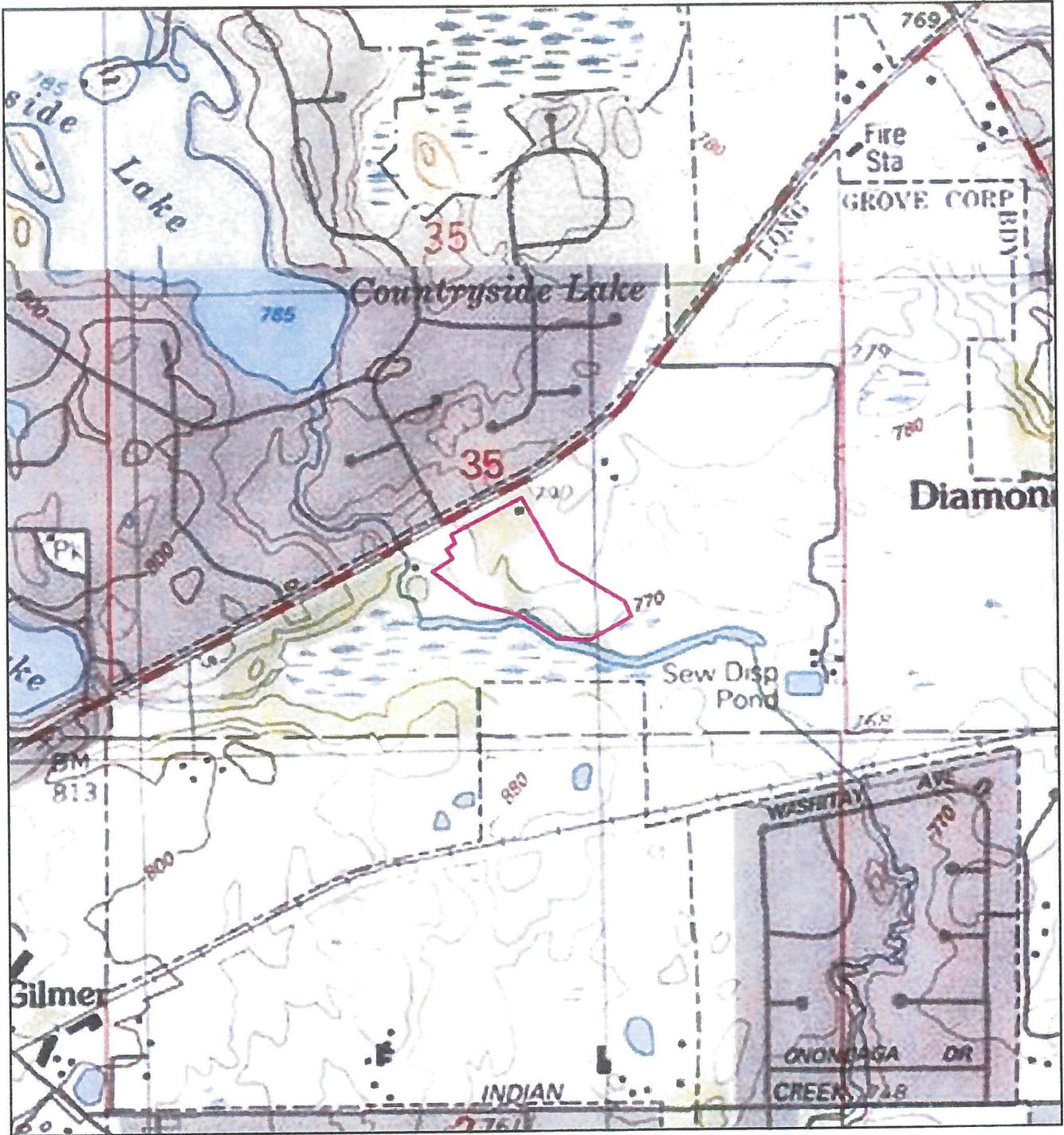
Wetland 2 is floodplain forest associated with Indian Creek. It is of moderate value for habitat and water quality. Based on the FQA it is of high vegetative quality.

There is one High Quality Aquatic Resources on the subject property and mapped on the southern adjacent property.

SUMMARY AND CONCLUSIONS

The wetland investigation of the project site resulted in two wetlands being delineated. Wetland 1 appears to have a hydrologic connection to Wetland 2, a water of the U.S., and therefore would likely be under the jurisdiction of the USACE. Wetland 2 is a water of the U. S., and therefore would likely be under the jurisdiction of the USACE.

Wetlands cannot be filled or otherwise impacted without permit authorization. Generally, impacts under 0.10-acre for USACE and isolated wetlands do not require mitigation of wetland losses. Any impacts over this acreage threshold will require mitigation at a minimum of 1.5:1. No work which would result in wetland impacts or wetland buffer impacts should be undertaken unless project authorization is first obtained.



Scale:



Project Number: 13-0373

Orientation:



Latest Revision: 8/5/2015

Legend:

 Project Boundary

Project Name:

Midlothian Road Property

Prepared for:

Addison Real Estate, LLC

Location Information:

Lake Zurich Quadrangle

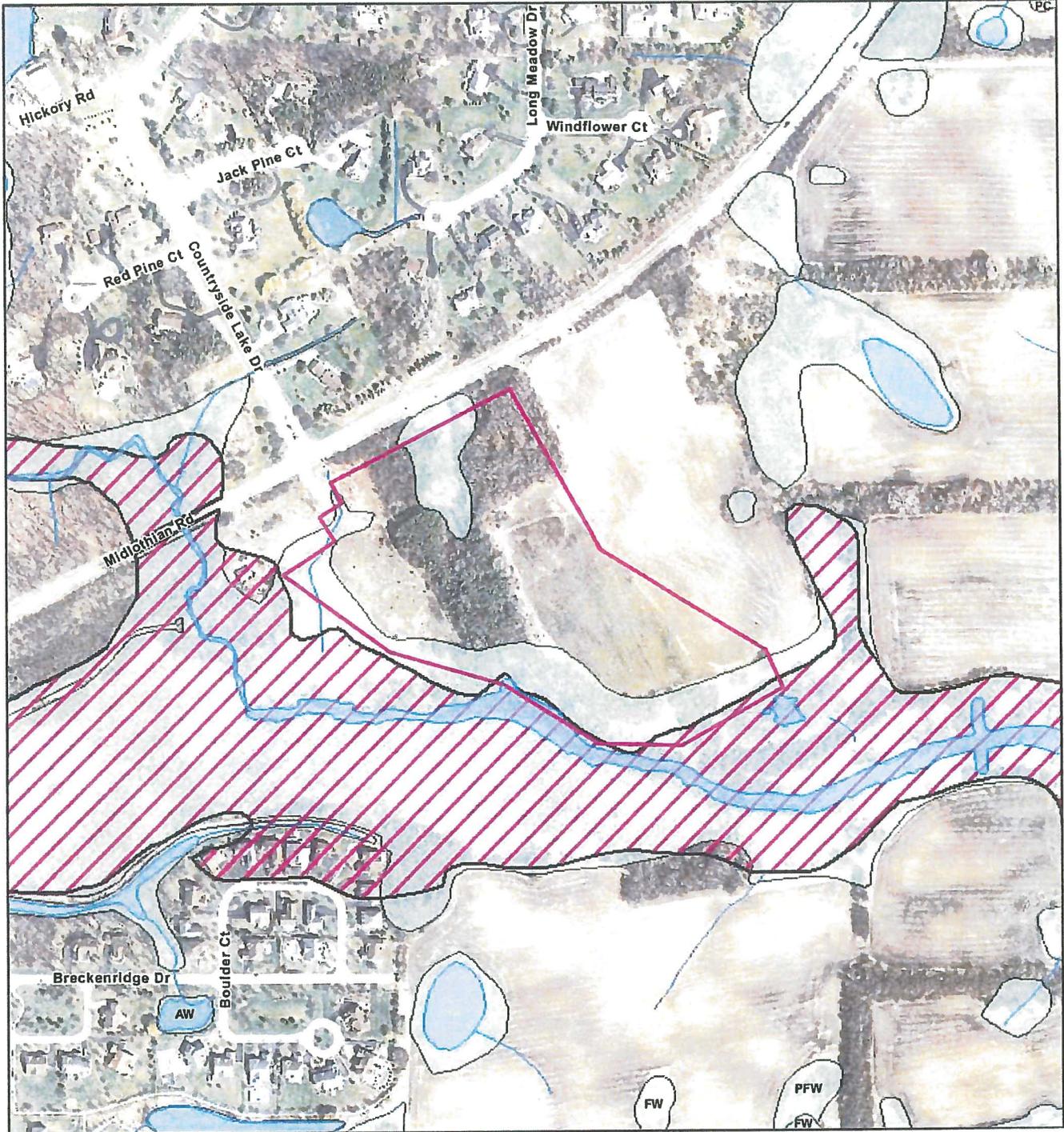
Exhibit Title:

U.S.G.S. Topographic Map

Exhibit:

2

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture



Scale:



Project Number: 13-0373

Prepared by:

Orientation:



Latest Revision: 8/5/2015

Legend:

-  Rivers and Streams
-  Lakes and Ponds
-  ADID Wetlands (1992)
-  LCWI
-  Project Boundary

Project Name:

Midlothian Road Property

Prepared for:

Addison Real Estate, LLC

LCWI Date:

2002

Exhibit Title:

Lake County Wetland Inventory 3

Exhibit:

Project Number: 13-0373

Project Name:
Midlothian Road Property

Hey and Associates, Inc.
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Exhibit Title:
ADID Summary

Exhibit:
4

Print | Save

ADID Site Number: 143

Acreage: 9.13

Name: Indian Creek/Killdeer Creek

Habitat: n

Water Quality: y

Threatened/Endangered Species: y

Illinois Natural Area Site: n

High Quality Plant Community: n

Stormwater Retention: n

Shoreline/Bank Stabilization: y

Sediment/Toxicant Retention: y

Nutrient Removal/Transformation: n



Scale:



Project Number: 13-0373

Orientation:



Latest Revision: 8/5/2015

Legend:

- National Wetland Inventory
- Project Boundary

Project Name:

Midlothian Road Property

Prepared for:

Addison Real Estate, LLC

NWI Date:

1980

Exhibit Title:

National Wetland Inventory

Exhibit:

5



Scale:



Project Number: 13-0373

Orientation:



Latest Revision: 8/5/2015

Legend:

- 100 Year Flood Zone
- Project Boundary

Project Name:

Midlothian Road Property

Prepared for:

Addison Real Estate, LLC

Panel #:

170970C0231K & 17097C0232K

Prepared by:

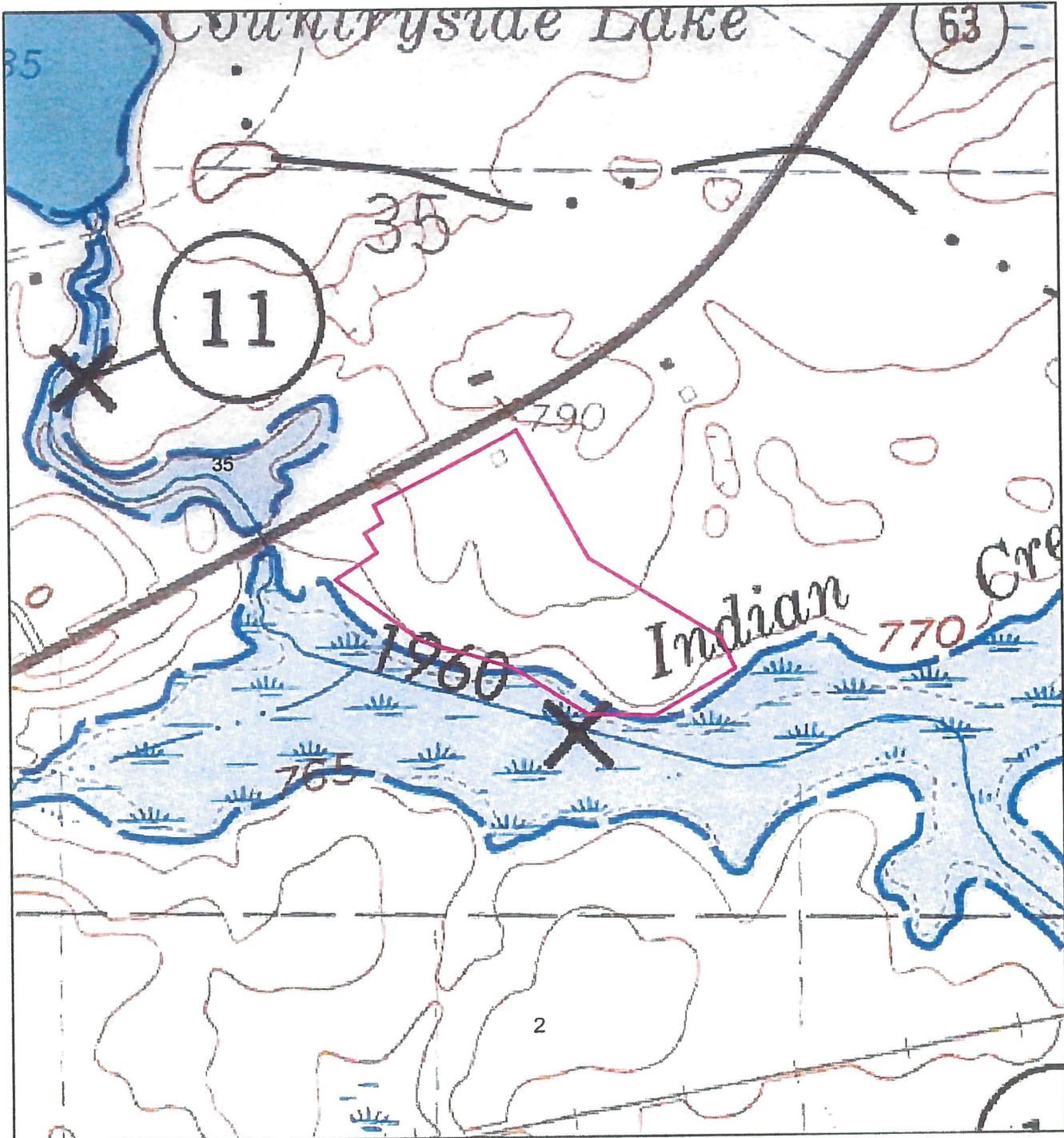
Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Exhibit Title:

Flood Insurance Rate Map

Exhibit:

6



Scale:



Project Number: 13-0373

Orientation:



Latest Revision: 8/5/2015

Legend:



Project Name:

Midlothian Road Property

Prepared for:

Addison Real Estate, LLC

Hydro Atlas Date:

1966

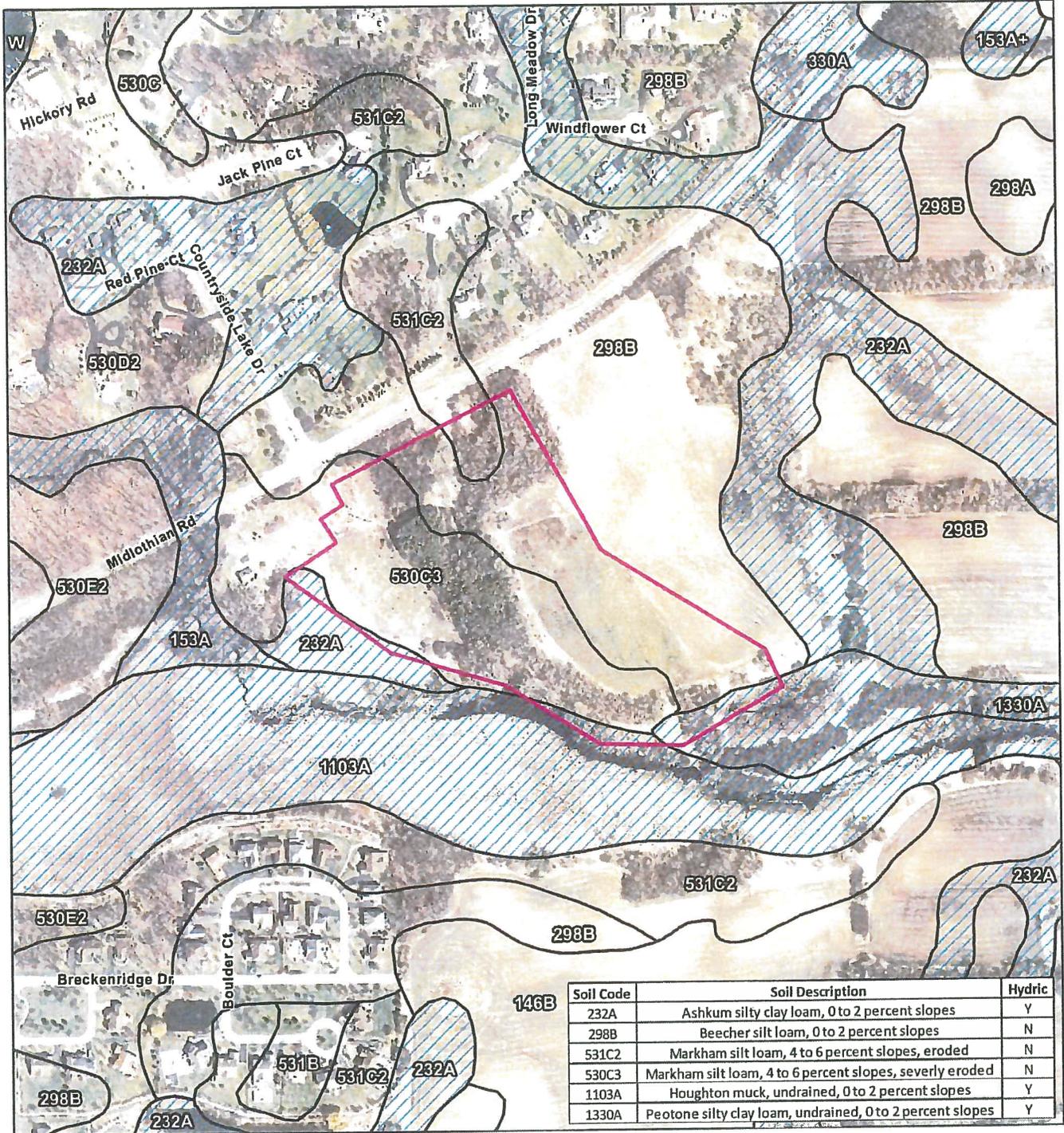
Exhibit Title:

U.S.G.S. Hydrologic Atlas

Exhibit:

7

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture



Scale:



Project Number: 13-0373

Orientation:



Latest Revision: 8/5/2015

Legend:

- Hydric Soils
- Soil Units
- Project Boundary

Project Name:

Midlothian Road Property

Prepared for:

Addison Real Estate, LLC

Soil Survey Date:

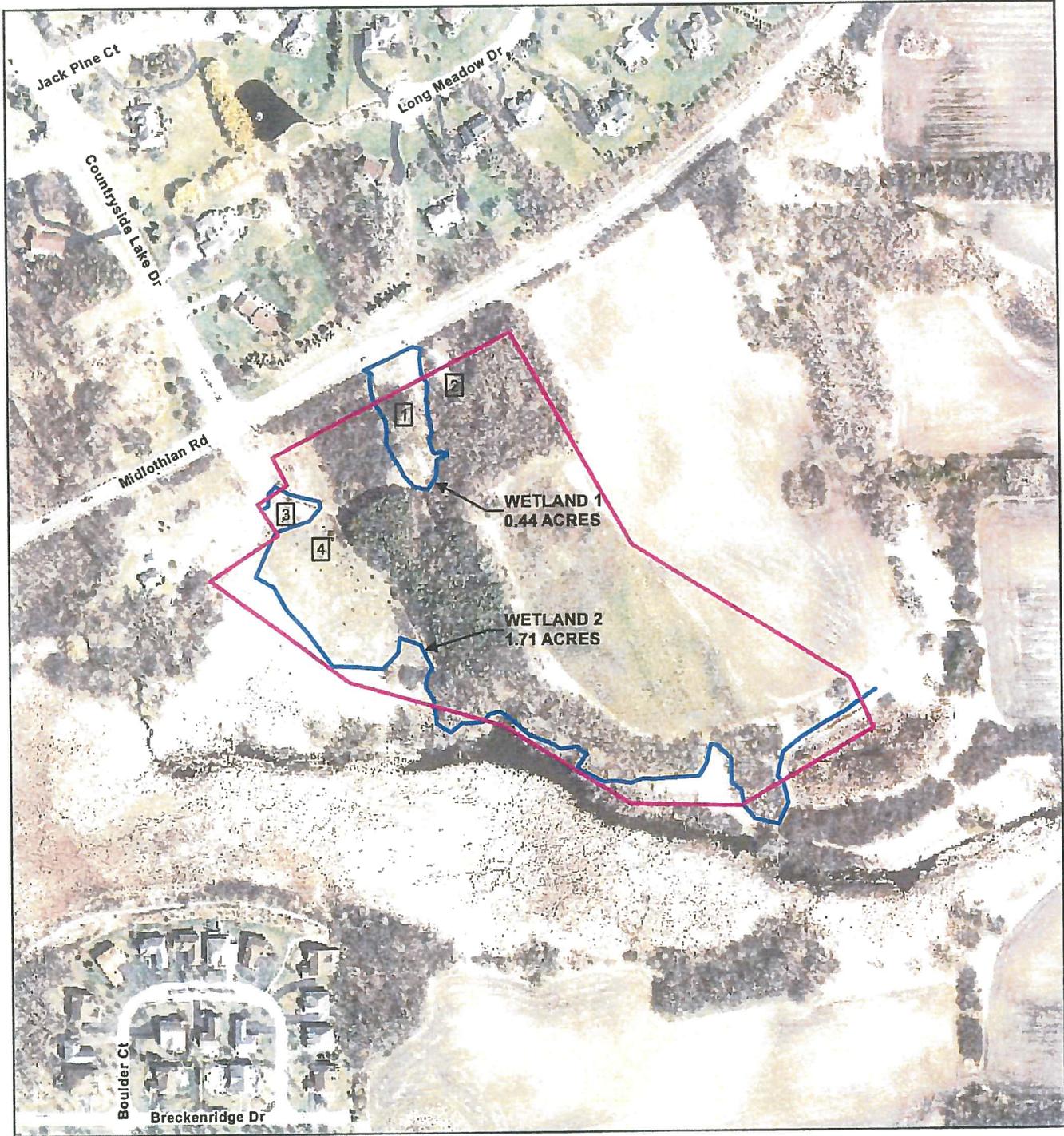
2004

Exhibit Title:

NRCS Soil Survey

Exhibit:

8



Scale:



Project Number: 13-0373

Orientation:



Latest Revision: 8/17/2015

Legend:

- x Data Point
- Surveyed Wetland Boundary
- Project Boundary

Project Name:

Midlothian Road Property

Prepared for:

Addison Real Estate, LLC

Aerial Date:

2014

Exhibit Title:

Wetland Boundary

Prepared by:

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Exhibit:

9

The following inventory, prepared by Hey and Associates, Inc., follows the nomenclature given in the National Wetland Plant List: Lichvar, R. W., M. Butterwick, N.C. Melvin, and W. N. Kirchner 2014. The National Wetland Plant List 2014 Update of Wetland Ratings. Phytoneuron 2014-41:1-42 and bio data/nomenclature follows Kartesz, J. T., 2013 Floristic Synthesis of North America. Version 1.0 Biota of North American Program.

Each species is provided with its database acronym and coefficient of conservatism (0 = weedy, 10 = conservative), and followed by its wetness coefficient (-2 = wet, +2 = dry), corresponding National Wetland Category (OBL = obligate wetland species, FACW = facultative wetland, FAC - facultative species, FACU = facultative upland, UPL = upland species), and physiognomy (A = annual, B = biennial, P = perennial, W = woody, H = herbaceous). Native taxa are those species believed to have been present in the Chicago region prior to settlement. Adventives, shown in ALL CAPS, include those species that have entered the region since European settlement and are therefore not integral to any pre-settlement community.

The information above the species list provides analysis of the vegetative quality of the site. It shows the total number of species present (species richness), the mean coefficient of conservatism (Mean C), the index (FQAI), and mean wetness; calculated separately for native species only and then including the adventive species (W/Adventives). The Mean C datum indicates the average coefficient of conservatism. The FQAI is derived by multiplying the Mean C by the square root of the number of species. If the FQAI of an area registers in the middle 30's or higher, one can be relatively certain that there is sufficient native character to be of rather profound environmental importance in terms of a regional natural area prospective. The wetness datum indicates the mean wetness coefficient for all species present, natives only and then with adventives. The table also provides the number of species in each physiognomic class, native versus adventive along with their percentage of the total inventory.

Source: Herman, B., Slivinski, R. and S. Whitaker. 2013. Chicago Region FQA (Floristic Quality Assessment) Calculator. U.S. Army Corps of Engineers, Chicago, IL. Version September 29, 2014

Project Number: 13-0373

Project Name:
Midlothian Road Property

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Exhibit Title: **Observed Wetland Species** Exhibit: **10**

SITE: Midlothian Road Property
LOCALE: Wetland 1
BY: Rauch and Burdick
DATE: July 20, 2015

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	2.56	SPECIES RICHNESS (ALL)	41
MEAN C (ALL SPECIES)	1.68	SPECIES RICHNESS (NATIVE)	27
MEAN C (NATIVE TREES)	2.50	% NON-NATIVE	0.34
MEAN C (NATIVE SHRUBS)	3.00	WET INDICATOR (ALL)	-0.32
MEAN C (NATIVE HERBACEOUS)	2.56	WET INDICATOR (NATIVE)	-0.48
FQAI (NATIVE SPECIES)	13.28	% HYDROPHYTE (MIDWEST)	0.68
FQAI (ALL SPECIES)	10.78	% NATIVE PERENNIAL	0.59
ADJUSTED FQAI	20.74	% NATIVE ANNUAL	0.07
% C VALUE 0	0.44	% ANNUAL	0.12
% C VALUE 1-3	0.32	% PERENNIAL	0.80
% C VALUE 4-6	0.22		
% C VALUE 7-10	0.02		

SPECIES ACRONYM	SPECIES NAME (NWPL/MOHLENBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	NC-NE WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
abuthe	Abutilon theophrasti	ABUTILON THEOPHRASTI	Velvetleaf	0	FACU	FACU		1 Forb	Annual	Adventive
acarho	Acalypha rhomboidea	Acalypha rhomboidea	Common Three-Seed-Mercury	0	FACU	FACU		1 Forb	Annual	Native
aceneg	Acer negundo	Acer negundo var. violaceum	Ash-Leaf Maple	0	FAC	FAC		0 Tree	Perennial	Native
ambart	Ambrosia artemisiifolia	Ambrosia artemisiifolia	Annual Ragweed	0	FACU	FACU		1 Forb	Annual	Native
ascinc	Asclepias incarnata	Asclepias incarnata	Swamp Milkweed	4	OBL	OBL		-2 Forb	Perennial	Native
barvul	Barbarea vulgaris	BARBAREA VULGARIS	Garden Yellow-Rocket	0	FAC	FAC		0 Forb	Biennial	Adventive
bidfro	Bidens frondosa	Bidens frondosa	Devil's-Pitchfork	1	FACW	FACW		-1 Forb	Annual	Native
consep	Calystegia sepium	Convolvulus sepium	Hedge False Bindweed	1	FAC	FAC		0 Forb	Perennial	Native
cirlut	Circaea canadensis	Circaea canadensis	Broad-Leaf Enchanter's-Nightshade	1	FACU	FACU		1 Forb	Perennial	Native
cirarv	Cirsium arvense	CIRSIIUM ARVENSE	Canadian Thistle	0	FACU	FACU		1 Forb	Perennial	Adventive
cirvul	Cirsium vulgare	CIRSIIUM VULGARE	Bull Thistle	0	FACU	FACU		1 Forb	Biennial	Adventive
corrac	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC		0 Shrub	Perennial	Native
cypesc	Cyperus esculentus	Cyperus esculentus	Chufa	0	FACW	FACW		-1 Sedge	Perennial	Native
diplac	Dipsacus laciniatus	DIPSACUS LACINIATUS	Cut-Leaf Teasel	0	UPL	FACU		2 Forb	Biennial	Adventive
epicol	Epilobium coloratum	Epilobium coloratum	Purple-Leaf Willowherb	3	OBL	OBL		-2 Forb	Perennial	Native
rhafra	Frangula alnus	RHAMNUS FRANGULA	Glossy False Buckthorn	0	FACW	FAC		-1 Shrub	Perennial	Adventive
glystr	Glyceria striata	Glyceria striata	Fowl Manna Grass	4	OBL	OBL		-2 Grass	Perennial	Native
helgro	Helianthus grosseserratus	Helianthus grosseserratus	Saw-Tooth Sunflower	2	FACW	FACW		-1 Forb	Perennial	Native
lontat	Lonicera tatarica	LONICERA TATARICA	Twinsters	0	FACU	FACU		1 Shrub	Perennial	Adventive

lycame	Lycopus americanus	Lycopus americanus	Cut-Leaf Water-Horehound	5 OBL	OBL	-2 Forb	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0 OBL	OBL	-2 Forb	Perennial	Adventive
parqui	Parthenocissus quinquefolia	Parthenocissus quinquefolia	Virginia-Creeper	2 FACU	FACU	1 Vine	Perennial	Native
polamp	Persicaria amphibia	Polygonum stipulaceum	Water Smartweed	4 OBL	OBL	-2 Forb	Perennial	Native
polper	Persicaria maculosa	POLYGONUM PERSICARIA	Lady's-Thumb	0 FACW	FAC	-1 Forb	Annual	Adventive
phaaru	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0 FACW	FACW	-1 Grass	Perennial	Adventive
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	2 FAC	FAC	0 Tree	Perennial	Native
rhacat	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0 FAC	FAC	0 Shrub	Perennial	Adventive
ribame	Ribes americanum	Ribes americanum	Wild Black Currant	7 FACW	FACW	-1 Shrub	Perennial	Native
rosmul	Rosa multiflora	ROSA MULTIFLORA	Rambler Rose	0 FACU	FACU	1 Shrub	Perennial	Adventive
samcan	Sambucus nigra ssp. canadensis	Sambucus canadensis	Black Elder	1 FACW	FACW	-1 Shrub	Perennial	Native
sciatv	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4 OBL	OBL	-2 Sedge	Perennial	Native
soldul	Solanum dulcamara	SOLANUM DULCAMARA	Climbing Nightshade	0 FAC	FAC	0 Vine	Perennial	Adventive
solalt	Solidago altissima	Solidago altissima	Tall Goldenrod	1 FACU	FACU	1 Forb	Perennial	Native
solgig	Solidago gigantea	Solidago gigantea	Late Goldenrod	4 FACW	FACW	-1 Forb	Perennial	Native
astsim	Symphotrichum lanceolatum	Symphotrichum lanceolatum	White Panicked American-Aster	3 FAC	FACW	0 Forb	Perennial	Native
astsag	Symphotrichum urophyllum	Aster sagittifolius	Arrow-Leaf Aster	5 UPL	UPL	2 Forb	Perennial	Native
tilame	Tilia americana	Tilia americana	American Basswood	5 FACU	FACU	1 Tree	Perennial	Native
typang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cattail	0 OBL	OBL	-2 Forb	Perennial	Adventive
ulmame	Ulmus americana	Ulmus americana	American Elm	3 FACW	FACW	-1 Tree	Perennial	Native
verhas	Verbena hastata	Verbena hastata	Simpler's-Joy	4 FACW	FACW	-1 Forb	Perennial	Native
vitrip	Vitis riparia	Vitis riparia	River-Bank Grape	2 FACW	FAC	-1 Vine	Perennial	Native

SITE: Midlothian Road Property
LOCALE: Wetland 2
BY: Rauch and Burdick
DATE: July 20, 2015

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	3.49	SPECIES RICHNESS (ALL)	53
MEAN C (ALL SPECIES)	2.70	SPECIES RICHNESS (NATIVE)	41
MEAN C (NATIVE TREES)	1.00	% NON-NATIVE	0.23
MEAN C (NATIVE SHRUBS)	2.75	WET INDICATOR (ALL)	-0.94
MEAN C (NATIVE HERBACEOUS)	3.82	WET INDICATOR (NATIVE)	-1.22
FQAI (NATIVE SPECIES)	22.33	% HYDROPHYTE (MIDWEST)	0.87
FQAI (ALL SPECIES)	19.64	% NATIVE PERENNIAL	0.64
ADJUSTED FQAI	30.68	% NATIVE ANNUAL	0.13
% C VALUE 0	0.28	% ANNUAL	0.13
% C VALUE 1-3	0.28	% PERENNIAL	0.83
% C VALUE 4-6	0.38		
% C VALUE 7-10	0.06		

SPECIES ACRONYM	SPECIES NAME (NWPL/MOHLNBROCK)	SPECIES (SYNONYM)	COMMON NAME	C VALUE	MIDWEST WET INDICATOR	WET INDICATOR (NUMERIC)	HABIT	DURATION	NATIVITY
aceneg	Acer negundo	Acer negundo var. violaceum	Ash-Leaf Maple	0	FAC	FAC	0 Tree	Perennial	Native
alisub	Alisma subcordatum	Alisma subcordatum	American Water-Plantain	4	OBL	OBL	-2 Forb	Perennial	Native
ambart	Ambrosia artemisiifolia	Ambrosia artemisiifolia elatior	Annual Ragweed	0	FACU	FACU	1 Forb	Annual	Native
apocan	Apocynum cannabinum	Apocynum sibiricum	Indian-Hemp	2	FAC	FAC	0 Forb	Perennial	Native
arcmin	Arctium minus	ARCTIUM MINUS	Lesser Burrdock	0	FACU	FACU	1 Forb	Biennial	Adventive
ascinc	Asclepias incarnata	Asclepias incarnata	Swamp Milkweed	4	OBL	OBL	-2 Forb	Perennial	Native
bidfro	Bidens frondosa	Bidens frondosa	Devil's-Pitchfork	1	FACW	FACW	-1 Forb	Annual	Native
boecyl	Boehmeria cylindrica	Boehmeria cylindrica drummondiana	Small-Spike False Nettle	2	OBL	OBL	-2 Forb	Perennial	Native
calcan	Calamagrostis canadensis	Calamagrostis canadensis	Bluejoint	3	OBL	OBL	-2 Grass	Perennial	Native
consep	Calystegia sepium	Convolvulus sepium	Hedge False Bindweed	1	FAC	FAC	0 Forb	Perennial	Native
cxlacu	Carex lacustris	Carex lacustris	Lakebank Sedge	6	OBL	OBL	-2 Sedge	Perennial	Native
cxstri	Carex stricta	Carex stricta	Uptight Sedge	5	OBL	OBL	-2 Sedge	Perennial	Native
cxtrlc	Carex trichocarpa	Carex trichocarpa	Hairy-Fruit Sedge	7	OBL	OBL	-2 Sedge	Perennial	Native
cxvulp	Carex vulpinoidea	Carex vulpinoidea	Common Fox Sedge	2	FACW	OBL	-1 Sedge	Perennial	Native
cirarv	Cirsium arvense	CIRSIUM ARVENSE	Canadian Thistle	0	FACU	FACU	1 Forb	Perennial	Adventive
corrac	Cornus racemosa	Cornus racemosa	Gray Dogwood	1	FAC	FAC	0 Shrub	Perennial	Native
diplac	Dipsacus laciniatus	LACINIATUS	Cut-Leaf Teasel	0	UPL	FACU	2 Forb	Biennial	Adventive
echcru	Echinochloa crus-galli	Echinochloa crus-galli	Large Barnyard Grass	0	FACW	FAC	-1 Grass	Annual	Native
solgra	Euthamia graminifolia	Solidago graminifolia; Solidago nuttallii	Flat-Top Goldentop	4	FACW	FAC	-1 Forb	Perennial	Native

rhafr	Frangula alnus	RHAMNUS FRANGULA	Glossy False Buckthorn	0 FACW	FAC	-1 Shrub	Perennial	Adventive
helgro	Helianthus groseserratus	Helianthus groseserratus	Saw-Tooth Sunflower	2 FACW	FACW	-1 Forb	Perennial	Native
impcap	Impatiens capensis	Impatiens capensis	Spotted Touch-Me- Not	3 FACW	FACW	-1 Forb	Annual	Native
irivir	Iris virginica var. shrevei	Iris virginica shrevei	Virginia Blueflag	5 OBL	OBL	-2 Forb	Perennial	Native
jundud	Juncus dudleyi	Juncus dudleyi	Dudley's Rush	4 FACW	FACW	-1 Forb	Perennial	Native
junnoo	Juncus nodosus	Juncus nodosus	Knotted Rush	6 OBL	OBL	-2 Forb	Perennial	Native
lemmio	Lemna minor	Lemna minor	Common Duckweed	5 OBL	OBL	-2 Forb	Annual	Native
lycame	Lycopus americanus	Lycopus americanus	Cut-Leaf Water- Horehound	5 OBL	OBL	-2 Forb	Perennial	Native
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0 OBL	OBL	-2 Forb	Perennial	Adventive
parqui	Parthenocissus quinquefolia	Parthenocissus quinquefolia	Virginia-Creeper	2 FACU	FACU	1 Vine	Perennial	Native
pensed	Penthorum sedoides	Penthorum sedoides	Ditch-Stonecrop	5 OBL	OBL	-2 Forb	Perennial	Native
polamp	Persicaria amphibia	Polygonum stipulaceum	Water Smartweed	4 OBL	OBL	-2 Forb	Perennial	Native
phaaru	Phalaris arundinacea	PHALARIS ARUNDINACEA	Reed Canary Grass	0 FACW	FACW	-1 Grass	Perennial	Adventive
phrausu	Phragmites australis ssp. australis	Phragmites australis	Common Reed	0 FACW	FACW	-1 Grass	Perennial	Adventive
pilpum	Pilea pumila	Pilea pumila	Canadian Clearweed	5 FACW	FACW	-1 Forb	Annual	Native
poapra	Poa pratensis	POA PRATENSIS	Kentucky Blue Grass	0 FAC	FACU	0 Grass	Perennial	Adventive
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	2 FAC	FAC	0 Tree	Perennial	Native
pruvulv	Prunella vulgaris ssp. vulgaris	PRUNELLA VULGARIS	Common Selfheal	0 FAC	FAC	0 Forb	Perennial	Adventive
ribame	Ribes americanum	Ribes americanum	Wild Black Currant	7 FACW	FACW	-1 Shrub	Perennial	Native
rosmul	Rosa multiflora	ROSA MULTIFLORA	Rambler Rose	0 FACU	FACU	1 Shrub	Perennial	Adventive
saglat	Sagittaria latifolia	Sagittaria latifolia	Duck-Potato	4 OBL	OBL	-2 Forb	Perennial	Native
saldis	Salix discolor	Salix discolor	Pussy Willow	2 FACW	FACW	-1 Shrub	Perennial	Native
salfra	Salix fragilis	SALIX FRAGILIS	Crack Willow	0 UPL	UPL	2 Tree	Perennial	Adventive
samcan	Sambucus nigra ssp. canadensis	Sambucus canadensis	Black Elder	1 FACW	FACW	-1 Shrub	Perennial	Native
sciacu	Schoenoplectus acutus	Scirpus acutus	Hard-Stem Club- Rush	6 OBL	OBL	-2 Sedge	Perennial	Native
sciatv	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4 OBL	OBL	-2 Sedge	Perennial	Native
scipen	Scirpus pendulus	Scirpus pendulus	Rufous Bulrush	4 OBL	OBL	-2 Sedge	Perennial	Native
erehie	Senecio hieracifolius	Erechtites hieracifolia	American Burnweed	2 FAC	FACU	0 Forb	Annual	Native
siusua	Sium suave	Sium suave	Hemlock Water- Parsnip	7 OBL	OBL	-2 Forb	Perennial	Native
solgig	Solidago gigantea	Solidago gigantea	Late Goldenrod	4 FACW	FACW	-1 Forb	Perennial	Native
spaeur	Sparganium eurycarpum	Sparganium eurycarpum	Broad-Fruit Burr- Reed	6 OBL	OBL	-2 Forb	Perennial	Native
spapec	Spartina pectinata	Spartina pectinata	Freshwater Cord Grass	4 FACW	FACW	-1 Grass	Perennial	Native
tytang	Typha angustifolia	Typha angustifolia	Narrow-Leaf Cat- Tail	0 OBL	OBL	-2 Forb	Perennial	Adventive
vitrip	Vitis riparia	Vitis riparia	River-Bank Grape	2 FACW	FAC	-1 Vine	Perennial	Native

Project Number: 13-0373

Project Name:
Midlothian Road Property

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Exhibit Title:
Jurisdictional Data Forms

Exhibit:
11

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Midlothian Road Property City/County: Long Grove/ Lake County Sampling Date: July 20, 2015
 Applicant/Owner: Addison Real Estate State: Illinois Sampling Point: DP 1- WL 1
 Investigator(s): Steve Rauch, Kelly Burdick Section, Township, Range: Section 35, T44N, R 10E
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): concave
 Slope (%): 0-2 Lat: 42.24526 Long: -88.032828 Datum: decimal degrees
 Soil Map Unit Name: Beecher silt loam (298B) NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation , soil , or hydrology significantly disturbed? N
 Are vegetation , soil , or hydrology naturally problematic? N Are "normal circumstances" present? Y
 (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 1</u>
Hydic soil present? <u>Y</u>	
Wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1					Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2					Total Number of Dominant Species Across all Strata: <u>2</u> (B)	
3					Percent of Dominant Species that are OBL, FACW, or FAC: <u>50.00%</u> (A/B)	
4						
5						
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>15</u>)				Prevalence Index Worksheet	
1					Total % Cover of:	
2					OBL species <u>0</u> x 1 = <u>0</u>	
3					FACW species <u>60</u> x 2 = <u>120</u>	
4					FAC species <u>0</u> x 3 = <u>0</u>	
5					FACU species <u>20</u> x 4 = <u>80</u>	
					UPL species <u>20</u> x 5 = <u>100</u>	
		<u>0</u>	= Total Cover		Column totals <u>100</u> (A) <u>300</u> (B)	
					Prevalence Index = B/A = <u>3.00</u>	
Herb stratum	(Plot size: <u>5</u>)				Hydrophytic Vegetation Indicators:	
1	<u>Phalaris arundinacea</u>	<u>60</u>	<u>Y</u>	<u>FACW</u>	<input type="checkbox"/> Rapid test for hydrophytic vegetation <input type="checkbox"/> Dominance test is >50% <input checked="" type="checkbox"/> Prevalence index is ≤3.0*	
2	<u>Dipsacus laciniatus</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic hydrophytic vegetation* (explain)	
3	<u>Solidago altissima</u>	<u>10</u>	<u>N</u>	<u>FACU</u>		
4	<u>Cirsium vulgare</u>	<u>10</u>	<u>N</u>	<u>FACU</u>		
5						
6						
7						
8						
9						
10						
		<u>100</u>	= Total Cover		*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
Woody vine stratum	(Plot size: <u> </u>)				Hydrophytic vegetation present? <u>Y</u>	
1						
2						
		<u>0</u>	= Total Cover			

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: DP 1- WL 1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-12	10YR 3/1	100					silty clay loam	
12-20	10 YR 3/1	75	10 YR 6/3	10	D	M	silty clay loam	
			10 YR 6/6	15	C	M		

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- 5 cm Mucky Peat or Peat (S3)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Loamy Mucky Mineral (F1)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- Coast Prairie Redox (A16) (LRR K, L, R)
- Dark Surface (S7) (LRR K, L)
- 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)
- Iron-Manganese Masses (F12) (LRR K, L, R)
- Very Shallow Dark Surface (TF12)
- Other (explain in remarks)

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric soil present? Y

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

Secondary Indicators (minimum of two required)

- | | | |
|--|---|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Aquatic Fauna (B13) | <input type="checkbox"/> Surface Soil Cracks (B6) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> True Aquatic Plants (B14) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input checked="" type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input checked="" type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Water Marks (B1) | <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Sediment Deposits (B2) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Drift Deposits (B3) | <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) | <input type="checkbox"/> Stunted or Stressed Plants (D1) |
| <input type="checkbox"/> Algal Mat or Crust (B4) | <input type="checkbox"/> Thin Muck Surface (C7) | <input checked="" type="checkbox"/> Geomorphic Position (D2) |
| <input type="checkbox"/> Iron Deposits (B5) | <input type="checkbox"/> Gauge or Well Data (D9) | <input checked="" type="checkbox"/> FAC-Neutral Test (D5) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | |
| <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) | | |
| <input type="checkbox"/> Water-Stained Leaves (B9) | | |

Field Observations:

Surface water present? Yes No Depth (inches): _____
 Water table present? Yes No Depth (inches): 18
 Saturation present? Yes No Depth (inches): surface
 (includes capillary fringe)

Wetland hydrology present? Y

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

SOIL

Sampling Point: DP 2- UPL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-24	10 YR 3/2	100					silt loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

<p>Hydric Soil Indicators:</p> <p><input type="checkbox"/> Histisol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5)</p> <p><input type="checkbox"/> 2 cm Muck (A10)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)</p>	<p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p>	<p>Indicators for Problematic Hydric Soils:</p> <p><input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R)</p> <p><input type="checkbox"/> Dark Surface (S7) (LRR K, L)</p> <p><input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R)</p> <p><input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R)</p> <p><input type="checkbox"/> Very Shallow Dark Surface (TF12)</p> <p><input type="checkbox"/> Other (explain in remarks)</p> <p> </p> <p>*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic</p>
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Restrictive Layer (if observed):	Hydric soil present? <u> N </u>
Type: _____	
Depth (inches): _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		
Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)
<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Gauge or Well Data (D9)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		
<input type="checkbox"/> Water-Stained Leaves (B9)		

Field Observations:		Wetland hydrology present? <u> N </u>
Surface water present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Water table present?	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation present? (includes capillary fringe)	Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Midlothian Road Property City/County: Long Grove/ Lake County Sampling Date: July 20, 2015
 Applicant/Owner: Addison Real Estate State: Illinois Sampling Point: DP 3- WL 2
 Investigator(s): Steve Rauch, Kelly Burdick Section, Township, Range: Section 35, T44N, R 10E
 Landform (hillslope, terrace, etc.): toeslope Local relief (concave, convex, none): concave
 Slope (%): 0-2 Lat: 42.244527 Long: -88.0337 Datum: decimal degrees
 Soil Map Unit Name: Markham silt loam (530C3) NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation , soil , or hydrology significantly disturbed? N
 Are vegetation , soil , or hydrology naturally problematic? N Are "normal circumstances" present? Y
SUMMARY OF FINDINGS (If needed, explain any answers in remarks.)

Hydrophytic vegetation present? <u>Y</u>	Is the sampled area within a wetland? <u>Y</u> If yes, optional wetland site ID: <u>Wetland 2</u>
Hydric soil present? <u>Y</u>	
Wetland hydrology present? <u>Y</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1					Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)	
2					Total Number of Dominant Species Across all Strata: <u>1</u> (B)	
3					Percent of Dominant Species that are OBL, FACW, or FAC: <u>100.00%</u> (A/B)	
4						
5						
		<u>0</u>	= Total Cover			
Sapling/Shrub stratum	(Plot size: <u>15</u>)				Prevalence Index Worksheet	
1					Total % Cover of:	
2					OBL species <u>90</u> x 1 = <u>90</u>	
3					FACW species <u>10</u> x 2 = <u>20</u>	
4					FAC species <u>0</u> x 3 = <u>0</u>	
5					FACU species <u>0</u> x 4 = <u>0</u>	
		<u>0</u>	= Total Cover		UPL species <u>0</u> x 5 = <u>0</u>	
		<u>0</u>	= Total Cover		Column totals <u>100</u> (A) <u>110</u> (B)	
		<u>0</u>	= Total Cover		Prevalence Index = B/A = <u>1.10</u>	
Herb stratum	(Plot size: <u>5</u>)				Hydrophytic Vegetation Indicators:	
1	<u>Lythrum salicaria</u>	<u>80</u>	<u>Y</u>	<u>OBL</u>	<u> </u> Rapid test for hydrophytic vegetation	
2	<u>Carex vulpinoidea</u>	<u>10</u>	<u>N</u>	<u>OBL</u>	<u>X</u> Dominance test is >50%	
3	<u>Phalaris arundinacea</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	<u>X</u> Prevalence index is ≤3.0*	
4					Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5					<u> </u> Problematic hydrophytic vegetation* (explain)	
6					*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7						
8						
9						
10						
		<u>100</u>	= Total Cover		Hydrophytic vegetation present? <u>Y</u>	
Woody vine stratum	(Plot size: <u>30</u>)					
1						
2						
		<u>0</u>	= Total Cover			

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-13	10 YR 3/1	100					silty clay loam	
13-24	10 YR 3/1	90	7.5 YR 3/1	10	C	M	silty clay loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input checked="" type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)		<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)		Indicators for Problematic Hydric Soils: <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)	
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*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u>Y</u>
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Remarks:

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Gauge or Well Data (D9) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input checked="" type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations: Surface water present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water table present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>12</u> Saturation present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>surface</u> (includes capillary fringe)	Wetland hydrology present? <u>Y</u>
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Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM - Midwest Region

Project/Site Midlothian Road Property City/County: Long Grove/ Lake County Sampling Date: July 20, 2015
 Applicant/Owner: Addison Real Estate State: Illinois Sampling Point: DP 4- upland
 Investigator(s): Steve Rauch, Kelly Burdick Section, Township, Range: Section 35, T44N, R 10E
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none
 Slope (%): 0-2 Lat: 42.244517 Long: -88.033542 Datum: decimal degrees
 Soil Map Unit Name: Marxham silt loam (530C3) NWI Classification: none

Are climatic/hydrologic conditions of the site typical for this time of the year? Y (If no, explain in remarks)
 Are vegetation _____, soil _____, or hydrology _____ significantly disturbed? N
 Are vegetation _____, soil _____, or hydrology _____ naturally problematic? N Are "normal circumstances" present? Y
 (If needed, explain any answers in remarks.)

SUMMARY OF FINDINGS

Hydrophytic vegetation present? <u>N</u>	Is the sampled area within a wetland? <u>N</u> If yes, optional wetland site ID: _____
Hydric soil present? <u>N</u>	
Wetland hydrology present? <u>N</u>	

Remarks: (Explain alternative procedures here or in a separate report.)

VEGETATION -- Use scientific names of plants.

Tree Stratum	(Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Status	Dominance Test Worksheet	
1 <u>Pinus strobus</u>		20	Y	FACU		Number of Dominant Species that are OBL, FACW, or FAC: <u>1</u> (A)
2 _____					Total Number of Dominant Species Across all Strata: <u>10</u> (B)	
3 _____					Percent of Dominant Species that are OBL, FACW, or FAC: <u>10.00%</u> (A/B)	
4 _____						
5 _____						
		20 = Total Cover				
Sapling/Shrub stratum	(Plot size: <u>15</u>)	Absolute % Cover	Dominant Species	Indicator Status	Prevalence Index Worksheet	
1 <u>Ulmus pumila</u>		20	Y	UPL		Total % Cover of:
2 <u>Juniperus virginiana</u>		10	Y	FACU	OBL species <u>0</u> x 1 = <u>0</u>	
3 _____					FACW species <u>0</u> x 2 = <u>0</u>	
4 _____					FAC species <u>10</u> x 3 = <u>30</u>	
5 _____					FACU species <u>80</u> x 4 = <u>320</u>	
		30 = Total Cover				UPL species <u>40</u> x 5 = <u>200</u>
						Column totals <u>130</u> (A) <u>550</u> (B)
						Prevalence Index = B/A = <u>4.23</u>
Herb stratum	(Plot size: <u>5</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic Vegetation Indicators:	
1 <u>Solidago altissima</u>		20	Y	FACU		_____ Rapid test for hydrophytic vegetation
2 <u>Solidago rigida</u>		20	Y	FACU	_____ Dominance test is >50%	
3 <u>Leucanthemum vulgare</u>		10	Y	UPL	_____ Prevalence index is ≤3.0*	
4 <u>Achillea millefolium</u>		10	Y	FACU	Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)	
5 <u>Solidago nemoralis</u>		10	Y	NI	_____ Problematic hydrophytic vegetation* (explain)	
6 <u>Aster sagittifolius</u>		10	Y	UPL	*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic	
7 <u>Fragaria virginiana</u>		10	Y	FAC		
8 _____						
9 _____						
10 _____						
		90 = Total Cover				
Woody vine stratum	(Plot size: <u>30</u>)	Absolute % Cover	Dominant Species	Indicator Status	Hydrophytic vegetation present?	
1 _____						<u>N</u>
2 _____						
		0 = Total Cover				

Remarks: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: DP 4- upland

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-24	10 YR 4/3	100					silt loam	

*Type: C = Concentration, D = Depletion, RM = Reduced Matrix, MS = Masked Sand Grains. **Location: PL = Pore Lining, M = Matrix

Hydric Soil Indicators: <input type="checkbox"/> Histisol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3)		<input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8)		Indicators for Problematic Hydric Soils: <input type="checkbox"/> Coast Prairie Redox (A16) (LRR K, L, R) <input type="checkbox"/> Dark Surface (S7) (LRR K, L) <input type="checkbox"/> 5 cm Mucky Peat or Peat (S3) (LRR K, L, R) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR K, L, R) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (explain in remarks)	
---	--	--	--	---	--

*Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? <u> N </u>
---	-----------------------------------

Remarks:

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)			Secondary Indicators (minimum of two required)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Stunted or Stressed Plants (D1)
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Gauge or Well Data (D9)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)		<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		
<input type="checkbox"/> Water-Stained Leaves (B9)					

Field Observations: Surface water present? Yes _____ No <u> X </u> Depth (inches): _____ Water table present? Yes _____ No <u> X </u> Depth (inches): _____ Saturation present? Yes _____ No <u> X </u> Depth (inches): _____ (includes capillary fringe)	Wetland hydrology present? <u> N </u>
--	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Photograph 1:

DP 1- Wetland 1 facing north



Photograph 2:

DP 2- upland facing east



Project Number: 13-0373

Project Name:
Midlothian Road Property

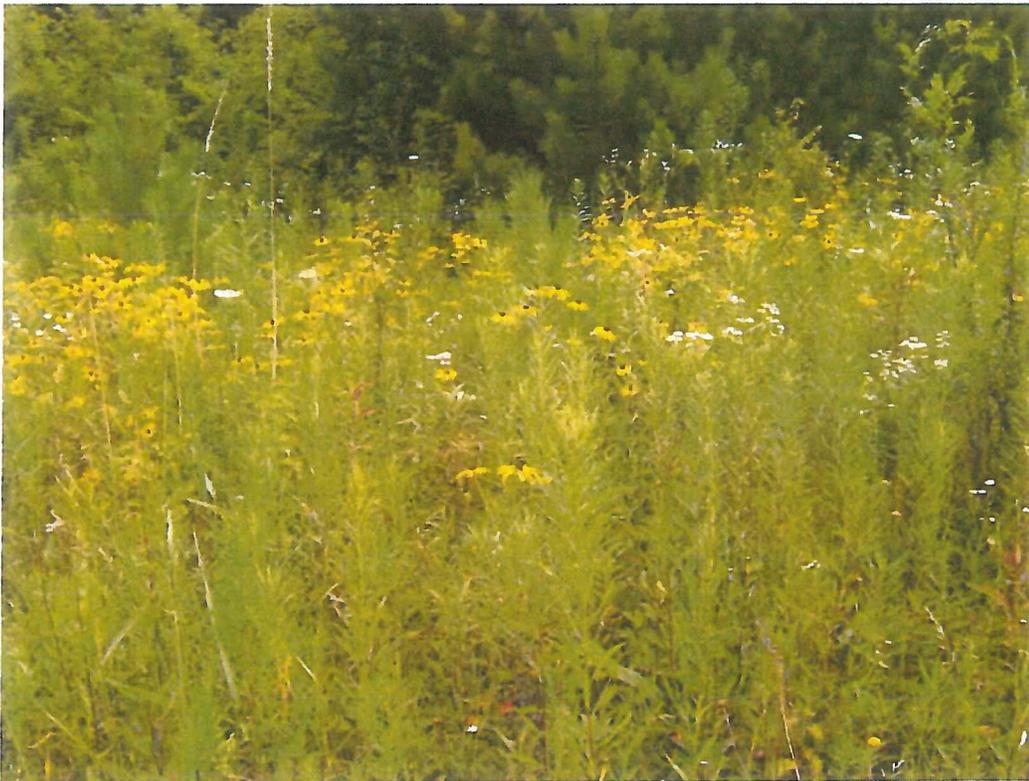
Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Exhibit Title: **Representative Photographs** Exhibit: **12**



Photograph 3:

DP 3- Wetland 2 facing south



Photograph 4:

DP 4- upland facing east

Project Number: 13-0373

Project Name:
Midlothian Road Property

Hey and Associates, Inc.
Engineering, Ecology and Landscape Architecture

Exhibit Title: **Representative Photographs** Exhibit: **12**



T43M - R10E - Section 35
Ela Township
Lake County, Illinois



LEGEND

- Shed Area
- Existing Contours
- Investigation Trench or Hand Probed Trench
- Existing Drain Tiles
- Data Point
- Data Identification Label (See Table below)

DATA POINT	SYMBOL	DESCRIPTION
A1	Yellow square	Hand Probed Trench
A2	Blue square	Investigation Trench
A3	Green square	Existing Drain Tile
A4	Red square	Shed Area
A5	Purple square	Existing Contour

GENERAL NOTES

1. THIS DRAWING IS A PRELIMINARY DESIGN AND SHOULD NOT BE USED FOR CONSTRUCTION WITHOUT THE APPROVAL OF THE ENGINEER.
2. THE CLIENT IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
3. THE ENGINEER'S LIABILITY IS LIMITED TO THE DESIGN AND CONSTRUCTION OF THE DRAINAGE SYSTEM.
4. THE CLIENT SHALL BE RESPONSIBLE FOR MAINTAINING THE DRAINAGE SYSTEM AND FOR ANY DAMAGE TO ADJACENT PROPERTIES.
5. THE ENGINEER SHALL NOT BE RESPONSIBLE FOR ANY DAMAGE TO ADJACENT PROPERTIES CAUSED BY THE DRAINAGE SYSTEM.

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Addison Real Estate
Midlothian Road Site
Long Grove, Illinois

Subsurface Drainage Inventory

PROJECT NO.	15-0373	SHEET NO.	1
ISSUANCE DATE	2/2016	DESIGNED BY	KJG/KMS
APPROVED BY	KJG	DATE	4/2016

Sheet 1 of 1

