

Wetland Report

Fermi National Accelerator Laboratory – Minos Building
Batavia, Kane County, Illinois

Planning Resources Inc. Project No. PP1428-00

July 11, 2014



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Wetland Report

Fermi National Accelerator Laboratory – Minos Building

PP14028-00

Executive Summary

Planning Resources Inc. has completed a wetland delineation on an approximate 3.5-acre portion of Fermilab National Accelerator property in unincorporated Batavia, Kane County, Illinois. The 3.5-acre study area is part of a larger parcel that was disturbed in 2002 during construction of the adjacent Minos Building. The delineation was conducted in accordance with the U.S. Army Corps of Engineers (ACOE) Field Guide for Wetland Delineations (January 1987), ACOE Midwest Regional Supplement (August 2010), and with wetland provisions in the Kane County Stormwater Ordinance (August 2008).

One wetland (Wetland 1) was identified on-site. The wetland includes a constructed drainage swale that meets wetland criteria. An unnamed drainage way extends along the eastern limits of the study area. Wetland 1, including the constructed drainage swale, are hydrologically connected to the unnamed drainage way. The unnamed drainage way continues south to Indian Creek. Indian Creek is tributary to the Fox River; therefore, all the identified on-site water resources are potentially under ACOE jurisdiction. The regulatory status of the on-site, constructed drainage swale must be determined by the ACOE. Site development affecting regulated waters of the U.S. will require a Section 404 permit from the ACOE.

1.0 Project Location and Land Uses

Planning Resources Inc. (PRI) was contracted to perform a wetland delineation within an approximate 3.5-acre portion of the Fermi National Accelerator Laboratory property in unincorporated Batavia, Kane County, Illinois (**Exhibit 1**). The project area occurs east of Schwahn Road and south of Pine Street, in the vicinity of the existing Minos Building. The legal location is in the northwest quarter of Section 25, Township 39 North and Range 8 East of the Third Principal Meridian. More specifically, the site is centered around 41.83874° North Latitude and -88.26985° West Longitude. The site is located within the Fox River watershed.

2.0 Methodology

In preparation for the site visit, PRI reviewed the Natural Resources Conservation Service (NRCS) soil survey, National Wetlands Inventory (NWI) map, Kane County Wetland Map, Federal Emergency Management Agency (FEMA) Flood Hazard map, the U.S. Geologic Survey (USGS) hydrologic atlas, and aerial photography to determine the potential for hydric soils, presence of wetland habitats, hydrology patterns, and general site conditions. Following this in-house review, the site investigation and wetland delineation was conducted on June 12, 2014.

Planning Resources Inc. investigated the site for wetlands in accordance with methodology approved by the ACOE for identifying and delineating jurisdictional wetlands (U.S. Army Corps of Engineers 2010) and accepted by Kane County. This method outlines procedures for determining and documenting the presence of hydrophytic vegetation, hydric soils, and wetland hydrology. In most cases, all three parameters must be present before an area is considered wetland. **Appendix A** contains data sheets providing information documenting the three technical parameters. Pink flagging was placed along the

boundary of wetlands. The wetland boundaries were surveyed by Fermi National Accelerator Laboratory in order to determine exact sizes and locations.

Functional values are assessed through several established procedures. A Floristic Quality Assessment (FQA) is conducted to determine the relative vegetative quality of each wetland. Plant species native to the Chicago area are given numerical values (coefficients of conservatism) ranging from 0 to 10. Plant species that are very specific to natural communities rate higher values than those tolerant of a wider range of habitat conditions and disturbances. Taking into account the sum of the coefficients and the total number of species present, the native mean C-value and Floristic Quality Index (FQI) values are calculated. These values may be used to compare the relative quality of a given area. A wetland is considered Critical if the plant community has a native mean C-value of 3.5 or higher, or it has a native FQI of 20.0 or higher during a single-season assessment or, alternatively, if the community has an FQI value of 35.0 or higher during a three-season (i.e., spring, summer and fall) assessment. An FQA was conducted for the identified wetland to ascertain the relative vegetative quality. **Appendix B** contains a printout of the floristic inventory.

The potential presence of federal or state-listed threatened or endangered species is determined through coordination with the Illinois Department of Natural Resources (IDNR) and the U.S. Fish & Wildlife Service (USFWS). Wetlands containing federal or state- threatened or endangered species are classified as High Quality Aquatic Resources (HQARs). Coordination with IDNR was initiated by submission of an EcoCAT Report and, and the USFWS's list of endangered/threatened species for Kane County and potential on-site habitat was reviewed. The EcoCAT results indicate that multiple protected resources may be in the vicinity of the project location (**Appendix C**). The IDNR will evaluate the project and respond by August 7, 2014, with a request for additional information or to terminate consultation. No suitable habitat for federally-listed species was found within the project area (**Appendix C**). The IDNR response is generally valid for a two-year period and the USFWS review is generally valid for one year.

The site was reviewed for the potential presence of HQARs as referenced in the ACOE Chicago District Regional Permit Program. HQARs include Advanced Identification (ADID) sites, bogs, ephemeral pools, dune and swale complexes, fens, forested wetlands, sedge meadows, seeps, streams rated A or B in the Illinois Biological Stream Characterization Study, wet prairies, wetlands supporting federal or Illinois endangered or threatened species and wetlands with a FQI of 20 or greater or a mean C-value of 3.5 or greater.

3.0 Existing Conditions

3.1 Existing Mapping

The USGS topographic map does not show any water resources within the site (**Exhibit 2**). The County Wetland Map shows High Habitat Value Wetland along the eastern portion of the site (**Exhibit 3**). The FEMA Flood hazard map does not show floodway or floodplain within the site (**Exhibit 4**). Mapped soils for the site include Drummer silty clay loam (152A) and Wauconda silt loam (697A) (**Exhibit 5**). The Drummer soil series is considered hydric in Kane County. The USGS hydrologic atlas does not show historic flooding within the site (**Exhibit 6**). The NWI map (**Exhibit 7**) does not show wetland within the site.

3.2 Uplands

Vegetated upland areas within the study area generally consist of newly planted turf grass and old field vegetation.

3.3 Wetlands

One wetland was identified within the study area as described below.

Wetland 1 — Wetland 1 is part of a larger wetland complex that extends off-site to the east and south. The off-site wetland includes an excavated channel that is tributary to Indian Creek. The on-site portion of Wetland 1 includes a constructed drainage swale that extends from Schwahn Road, south of the existing Minos Building, and to the excavated channel. The Kane County Wetland Map (**Exhibit 3**) identifies the eastern portion of Wetland 1 as High Habitat Value Wetland.

A review of historic aerial photographs from the years 1999, 2002, and 2005 (**Appendix D**) indicate that the swale was not present in 1999 prior to development of the Minos Building. In 2002 the majority of the study area is occupied by construction activity and appears to be thoroughly graded. The constructed drainage swale is clearly visible in the 2005 aerial photograph. The onsite portion of Wetland 1, including the constructed drainage swale is approximately 0.8 acre in on-site size. The off-site portions of Wetland 1 that extend to the east and south, are estimated to be greater than 1 acre in size.

Wetland 1 is mapped within Drummer silty clay loam (152A), a hydric soil (**Exhibit 5**). The soil exhibited hydric soil field indicator F6 (Redox Dark Surface). Surface water, high water table, soil saturation, sparsely vegetated concave surface, water stained leaves, drainage patterns, and the FAC-Neutral test indicate the presence of wetland hydrology within Wetland 1. The dominant plant species was reed canary grass (*Phalaris arundinacea*). The FQA produced a native mean C-value of 2.8 and a native FQA of 17.9 (**Appendix B**). Wildlife species were not observed during the wetland investigation. Wetland functions include wildlife habitat and foraging, sediment trapping, floristic diversity, aquatic habitat, and groundwater recharge.

3.4 Buffers

Under the Chicago District's Regional Permit Program, upland buffers of native plants are required adjacent to all created, restored, enhanced or preserved waters of the U.S. Created buffers should be established on 6:1 or gentler slopes. A 100-foot buffer is required adjacent to HQARs. A 50-foot buffer is required adjacent to Waters of the U.S. that are not classified as wetland. A 30-foot buffer is required adjacent to wetlands from 0.25 acre up to 0.5 acre. A 50-foot buffer is required adjacent to wetlands over 0.5 acre.

The portion of Wetland 1 that extends along the tributary will likely be considered a HQAR because it is identified as a High Habitat Value Wetland on the County Wetland Map. A 100-foot buffer is required for HQARs. The swale portion of Wetland 1 may not require a buffer because it was constructed for storm water management. The ACOE must make a determination regarding the jurisdictional status of the identified areas.

The existing wetland buffer generally consists of old field and turf vegetation to the west and forest vegetation to the east. On-site wetland buffer functions include wildlife habitat and foraging, floristic diversity, soil stabilization, filtering of stormwater runoff, and rainfall interception.

3.5 Summary of Regulated Areas

One wetland (Wetland 1) was identified within the project area. Wetland 1 shares a direct surface connection to the Fox River, a regulated Waters of the U.S. Therefore, Wetland 1 likely falls under ACOE jurisdiction. A western extension of Wetland 1 consists of a drainage swale that appears to have been constructed specifically for storm water conveyance. The swale was constructed around 2002 and may not be regulated by the ACOE as wetland. The ACOE must make a final determination regarding regulatory status of the identified areas. Since part of the wetland is identified as ADID on the county wetland map, regulated wetland areas may require a 100-foot buffer. If all water resources are avoided by site development, an ACOE permit would not be required and ACOE buffer requirements would not apply. The approximate location of Wetland 1 is identified on **Exhibit 8. Table 1** summarizes key characteristics of the identified wetland.

**Table 1.
Summary of Wetland 1.**

Site	Size, Onsite (ac)	Maps Showing this Feature	Mapped Soil Series	Dominant Vegetation	ACOE Buffer (ft)	Anticipated Regulatory Authority ¹
Wetland 1	0.8	County Wetland Map	Drummer silty clay loam (152A)	<i>Phalaris arundinacea</i> , C-value = 2.8 FQI = 17.9	100	ACOE

¹: Anticipated regulatory authority subject to confirmation by ACOE.

Site development that involves discharging dredge or fill material within Waters of the U.S. requires a permit from the ACOE. Projects impacting 1.0 acre or less of wetland may qualify for a Regional Permit. An Individual Permit would be required for projects that impact more than 1.0 acre of wetland or that otherwise do not meet conditions of the Regional Permit Program. Wetland impacts more than 0.1 acre would require compensatory mitigation under the Regional Permit program. A discussion of the measures taken to avoid and/or minimize impacts to wetland and other waters of the U.S. is a required element of the ACOE permit application. All remaining, created, restored or enhanced waters of the U.S. and adjacent buffers are to be permanently preserved and protected through a deed restriction or conservation easement. Best Management Practices must be incorporated into the project design.

4.0 References

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1, U.S. Army Corps of Engineer Waterways Experiment Station, Vicksburg, MS. 100 pp. Plus appendices.

Kane County. 2008. Kane County Stormwater Ordinance. August 2008. Kane County Stormwater Management Committee, Environmental and Building Management Division. 78 pp. plus appendices.

Lichvar, R.W. 2012. The National Wetland Plant List. ERDC/CRREL TR-12-11. Hanover, NH: U.S. Army Corps of Engineers, Cold Regions Research and Engineering Laboratory.

Swink, Floyd and Gerould Wilhelm. 1994. Plants of the Chicago Region. 4th ed. Indianapolis: Indiana Academy of Science. 921 pp.

U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region (Version 2.0), ed. J.S. Wakely, R.W. Lichvar, and C.V. Noble. EDRC/EL TR-10-16. Vicksburg, MS: U.S. Army Corps of Engineer Research and Development Center.

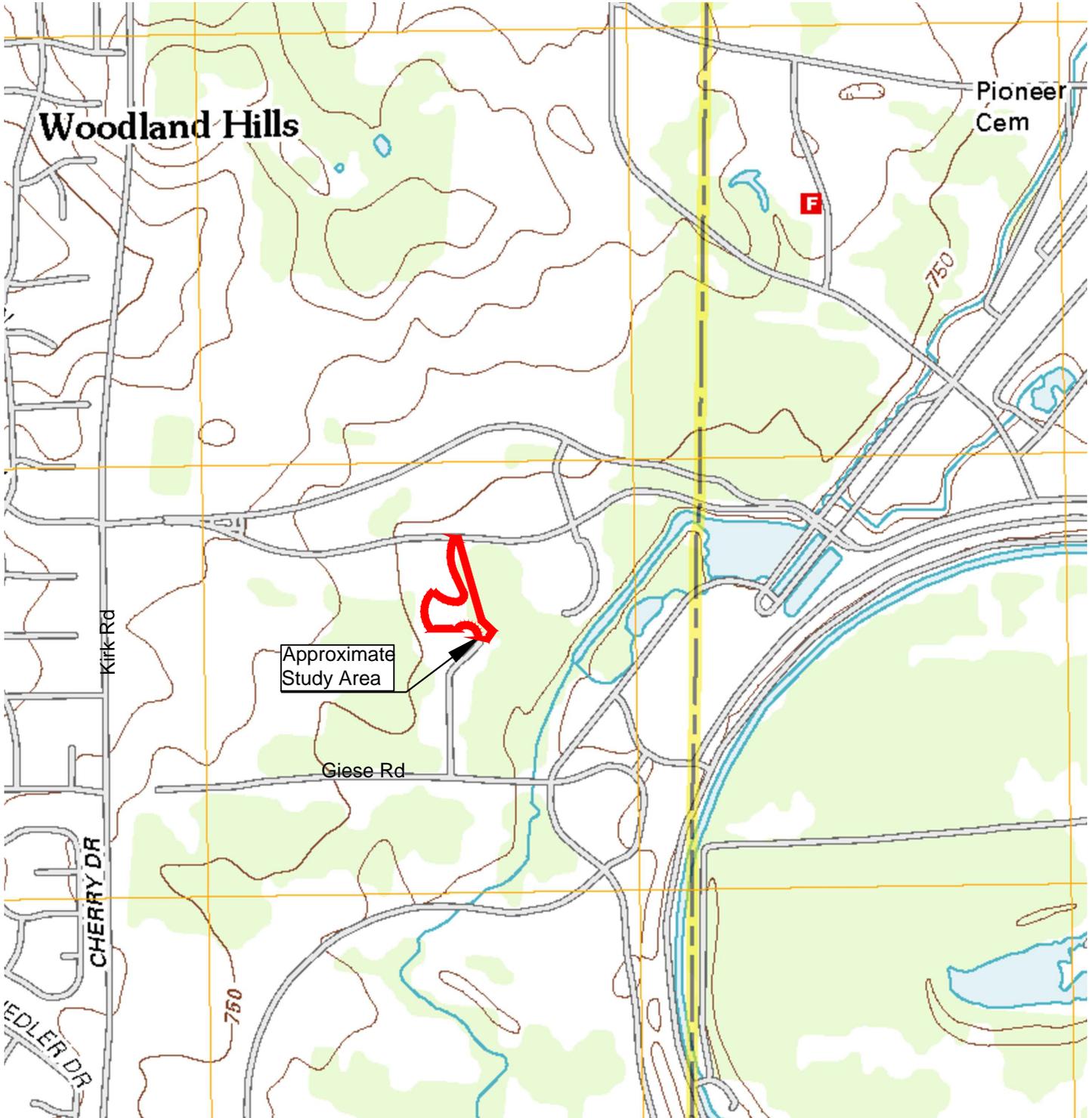
U.S. Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS). Web Soil Survey of Kane County, Illinois. <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

U.S. Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS). 2010. Field Indicators of Hydric Soils in the United States, Version 7.0. G.W. Hurt and L.M. Vasilas (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

Exhibits & Site Photographs

Location Map

Exhibit 1

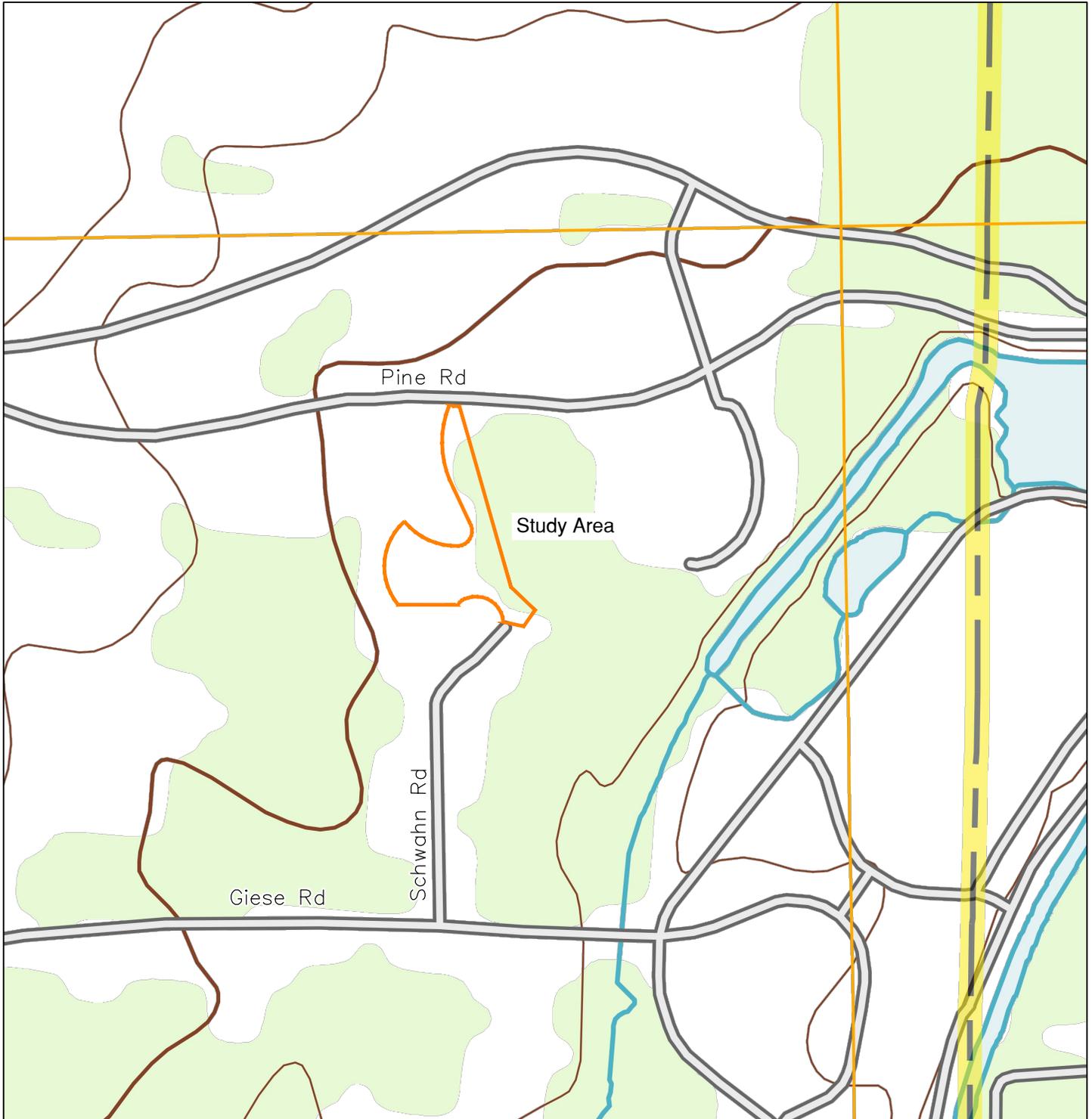


Project Name: Fermilab - Minos Building (PP14028-00)
Scale: NTS
Location: T39N, R8E, S25
Source: MAP FROM USGS National Map Viewer

Study Area Boundary  

USGS Topographic Map

Exhibit 2



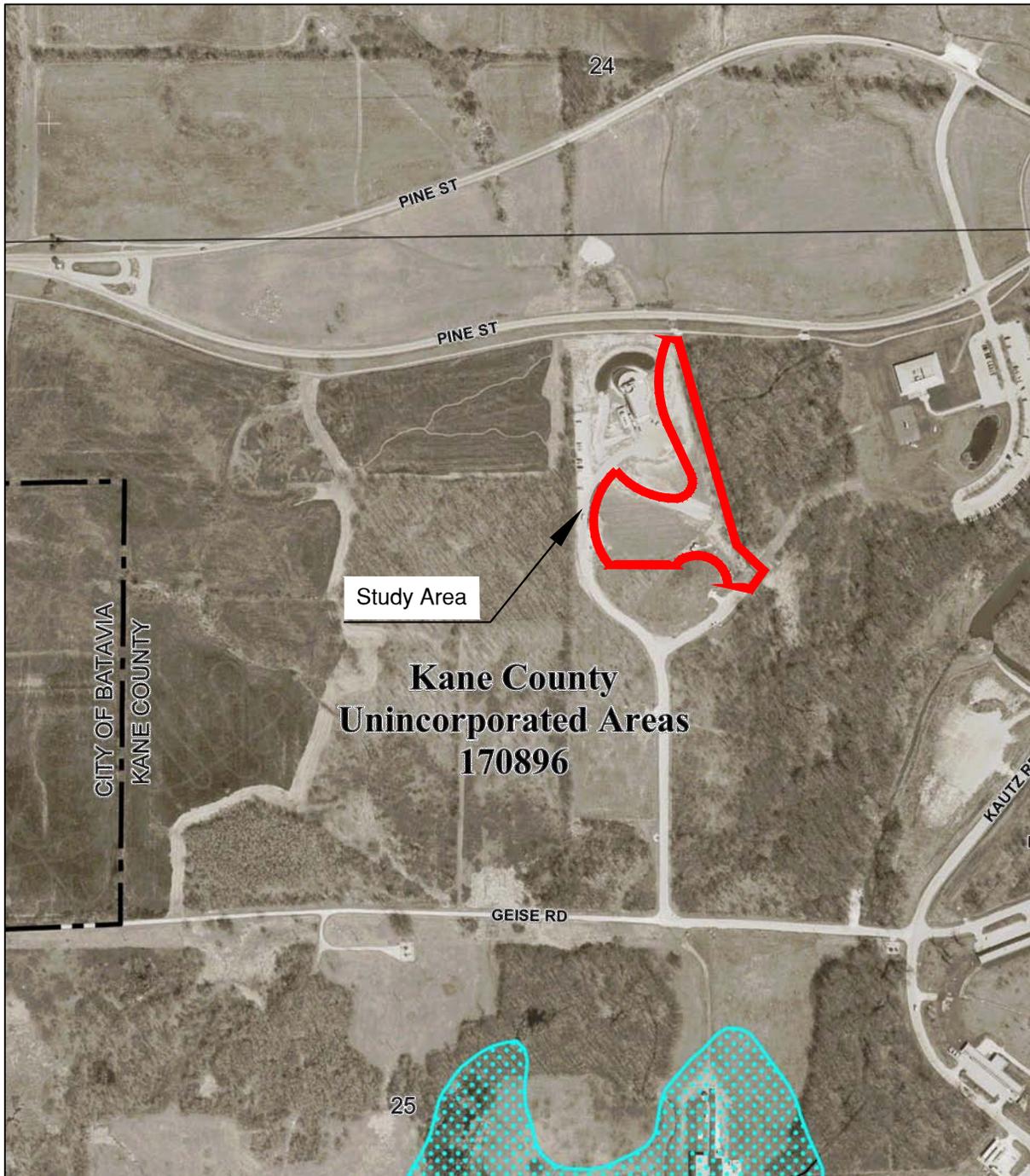
Project Name: Fermilab - Minos Building
(PP14028-00)
Scale: 1"=500'
Location: T39N, R8E, S25
Source: MAP FROM USGS National Map Viewer
(Aurora North, IL Quadrangle)

Study Area Boundary



FEMA Flood Hazard Map

Exhibit 4



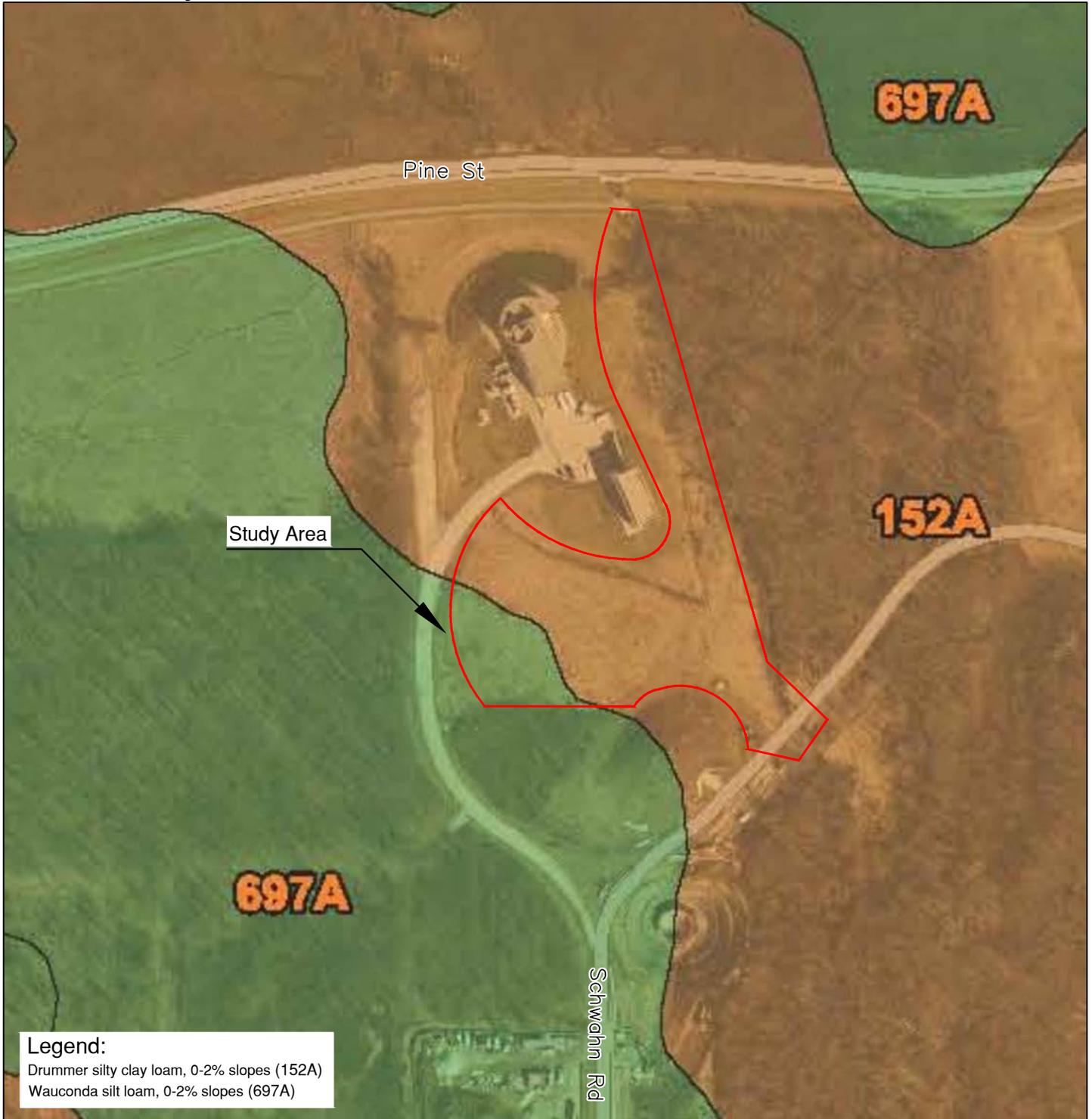
Project: Fermilab - Minos Building
(PP14028-00)
Scale: 1"= 500'
Location: T39N, R8E, S25
Panel: 17089C0334H
Source: FEMA Regulatory Flood Map
Date: Revised August 3, 2009

Study Area Boundary
Special Flood Hazard Areas



Natural Resources Conservation Service Soil Survey

Exhibit 5



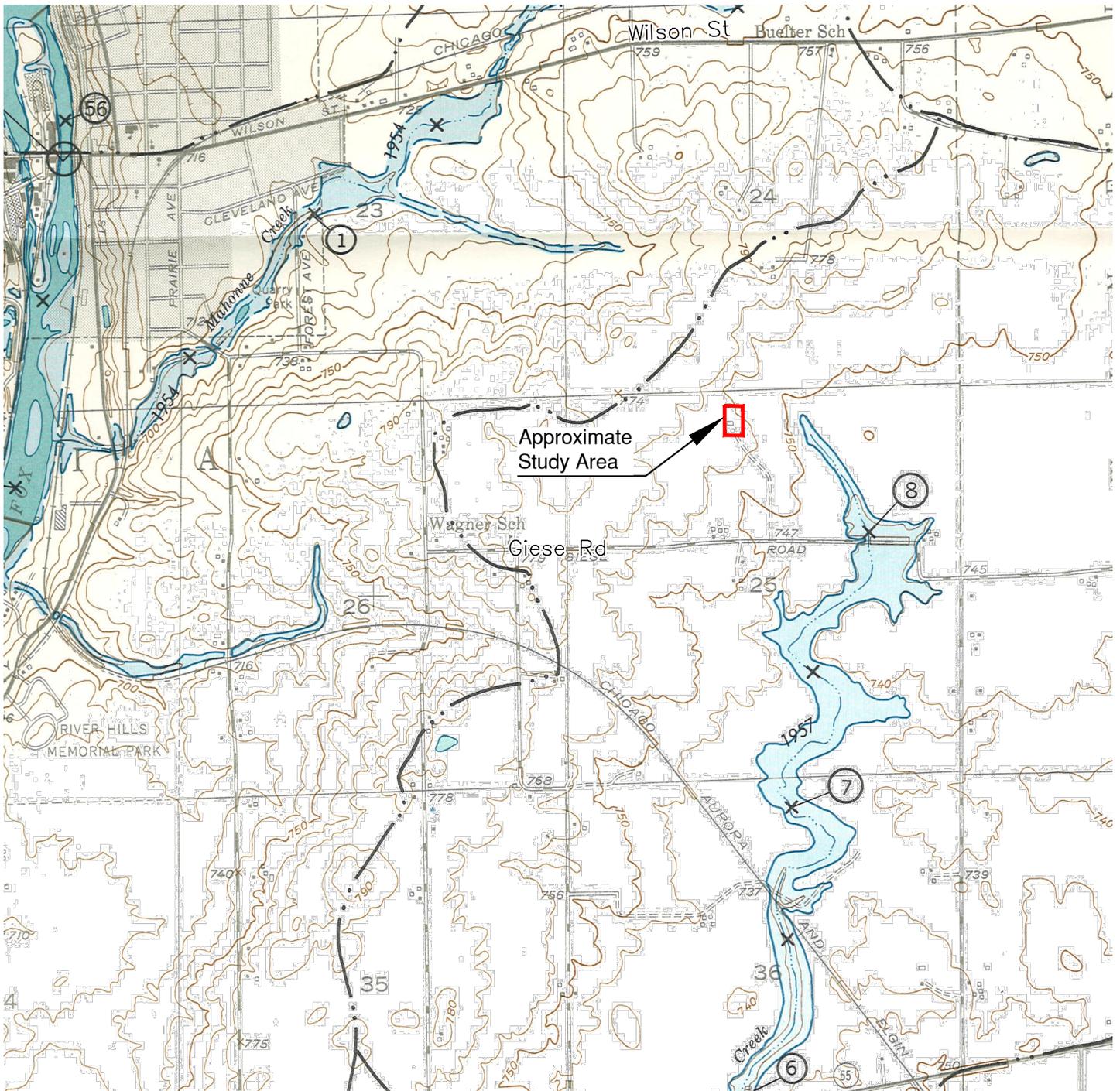
Legend:
 Drummer silty clay loam, 0-2% slopes (152A)
 Wauconda silt loam, 0-2% slopes (697A)

Project: Fermilab - Minos Building (PP14028-00)
 Scale: 1"= 200'
 Location: T39N, R8E, S25
 County: Kane County
 Source: Natural Resources Conservation Service
 Web Soil Survey

Study Area Boundary

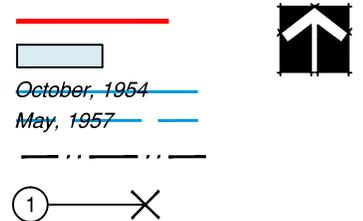
- Hydric (100%)
- Predominately Hydric (66%-99%)
- Partially Hydric (33%- 65%)
- Predominately Non-hydric (1%-32%)
- Non-hydric
- Not Rated or Not Available
- Soil Survey Lines





Project Name: Fermilab - Minos Building
 (PP14028-00)
 Scale: 1"= 2000'
 Location: T39N, R8E, S25
 Quadrangle: Aurora North, Illinois
 Source: U.S. Geologic Survey (1963)

Study Area Boundary
 Area Flooded
 Boundary of 1954 Flood
 Boundary of 1957 Flood
 Drainage Divide
 River mile measured
 along stream channel



National Wetlands Inventory

Exhibit 7



Project Name: Fermilab - Minos Building (PP14028-00)
Scale: 1"=200'
Location: T39N, R8E, S25
Quadrangle: Aurora North, Illinois
Source: U.S. Fish & Wildlife Service

Study Area Boundary 





Project Name: Fermilab - Minos Building (PP14028-00)
 Scale: 1"=150'
 Location: T39N, R8E, S25
 Delineation Date: June 14, 2014
 Aerial: Google Earth, June 2014

Study Area Boundary	
Surveyed Wetland	
Estimated Offsite Wetland	
Data Point	 .1





1. Wetland 1. Sample Point 1 (wetland), facing northeast.



2. Wetland 1. Sample Point 2 (upland), facing southwest.



3. Wetland 1. Sample Point 3 (upland), facing northwest.



4. Wetland 1. Sample Point 4 (wetland), facing northwest.



5. Wetland 1. Sample Point 5 (upland), facing north.



6. Wetland 1. Sample Point 6 (wetland), facing north.



7. Wetland 1. Overview from southern portion of study area, facing north.



8. Wetland 1. Overview from northern portion of study area, facing south.



8. Swale portion of Wetland 1, facing southeast.



2. Upland portion of study area, facing west.

Appendix A

DATA FORMS ROUTINE ON-SITE DETERMINATION METHOD

This investigation for identifying jurisdictional wetlands was conducted utilizing methodology approved by the U.S. Army Corps of Engineers in 2008 (Environmental Laboratory 2008). The methodology determines the presence of wetlands by evaluating three criteria: The presence of hydrophytic vegetation, hydric soils, and wetland hydrology. The definition of a wetland is satisfied when all three criteria are met.

Vegetation

The dominant plant species were recorded at each data point generally following the “50/20 rule”. Each species is assigned a wetland category status based upon U.S. Fish and Wildlife Services designations (Reed 1988). The categories are based on a given species' likelihood of occurring in wetland areas and are designated as follows:

Indicator Plant Category	Indicator Symbol	Definition
Obligate Wetland	OBL	Plants that occur almost always (estimated probability >99%) in wetlands under natural conditions, but which may also occur rarely in non-wetlands.
Facultative Wetlands	FACW	Plants that usually occur in wetlands (estimated probability 67% to 99%), but occasionally are found in non-wetlands.
Facultative	FAC	Plants with a similar likelihood (estimated probability 34% to 66%) of occurring in both wetlands and non-wetlands.
Facultative Upland	FACU	Plants that usually occur in non-wetlands (estimated probability 67% to 99%) but occasionally are found in wetlands.
Obligate Upland	UPL	Plants that occur almost always (estimated probability >99%) in non-wetlands under natural conditions, but which may also occur rarely in wetlands.

Under current wetland delineation procedures, if more than 50 percent of the dominant plant species are FAC, FACW or OBL, then the wetland vegetation criterion is met.

Hydric Soils

Hydric soils exhibit certain morphological properties which can be readily observed in the field. A series of 18-inch-deep core samples were analyzed at each data point, and described on corresponding data sheets. Soil characteristics such as dark chroma, high organic content, depth to water table, gley occurrence, and redoximorphic features often indicate hydric soils. Soils are classified in accordance with the U.S. Department of Agriculture Soil Taxonomy, Agriculture Handbook AH-436. Where sampling points verify the presence of hydric soils, this criterion is met.

Hydrology

A site meets the hydrologic criterion when there is permanent or recurring inundation, or soil saturation for a significant period (usually a week or more during the growing season). Since visual observation is often not possible during the drier seasons, the presence of water lines, water-stained vegetation, water scoured areas, and morphological plant adaptations can be used to indicate seasonal flooding.

Appendix B

Floristic Quality Assessment

The following inventory, prepared by Planning Resources Inc., follows the nomenclature given in *Plants of the Chicago Region* (Swink and Wilhelm 1994). Each species is preceded by its coefficient of conservatism (0 = weedy, 10 = conservative), and followed by its wetness coefficient (-5 = wet, +5 = dry) and corresponding National Wetland Category (OBL = obligate wetland species, FAC = facultative species, UPL = upland species). Common names are those employed by Swink and Wilhelm. 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 settlement and are therefore not integral to any natural community. The mean C-value indicates the mean coefficient of conservatism for all species present, native and with adventives. The Index is derived by multiplying the mean C-value by the square root of the number of taxa. If the Floristic Quality Index (FQI) of an area registers in the middle 30s or higher, one can be relatively certain that there that there is sufficient native character to be of rather profound environmental importance in terms of a regional natural area perspective. The Wetness datum indicates the mean wetness coefficient for all species present, native and with adventives. The table in the upper right hand corner indicates the number of species in each physiognomic class, along with their percentage of the total inventory.

Fermi Lab - Minos Building

6/12/2014

Fermi Lab

Kane

Illinois

USA

FQA DB Region: Chicago Region

FQA DB Publication Year: 1994

FQA DB Description: Swink, F. and G. Wilhelm. 1994. Plants of the Chicago Region, 4th ed., Indiana Academy of Science, Indianapolis, 921 p.

Practitioner: Pat Hickey

Latitude:

Longitude:

Weather Notes:

Duration Notes:

Community Type Notes:

Other Notes:

Private/Public: Private

Conservatism-Based Metrics:

Total Mean C:	1.8
Native Mean C:	2.8
Total FQI:	14.5
Native FQI:	17.9
Adjusted FQI:	22.2
% C value 0:	43.1
% C value 1-3:	30.8
% C value 4-6:	24.6
% C value 7-10:	1.5
Native Tree Mean C:	2.5
Native Shrub Mean C:	1.3
Native Herbaceous Mean C:	3

Species Richness:

Total Species:	65	
Native Species:	41	63.10%
Non-native Species:	24	36.90%

Species Wetness:

Mean Wetness:	-0.4
Native Mean Wetness:	-1.6

Physiognomy Metrics:

Tree:	5	7.70%
Shrub:	7	10.80%
Vine:	4	6.20%
Forb:	32	49.20%
Grass:	11	16.90%
Sedge:	5	7.70%
Rush:	0	0%
Fern:	1	1.50%
Bryophyte:	0	0%

Duration Metrics:

Annual:	5	7.70%
Perennial:	55	84.60%
Biennial:	5	7.70%
Native Annual:	3	4.60%
Native Perennial:	37	56.90%
Native Biennial:	1	1.50%

Species:

Scientific Name	Family	Acronym	Native?	C	W	Physiognomy	Duration	Common Name
Acer saccharinum	n/a	ACESAI	native		0	-3 tree	perennial	silver maple
Agrostis alba	n/a	AGRALA	non-native		0	-3 grass	perennial	redtop
Alisma subcordatum	n/a	ALISUB	native		4	-5 forb	perennial	common water plantain
Alliaria petiolata	n/a	ALLPET	non-native		0	0 forb	biennial	garlic mustard
Apocynum cannabinum	n/a	APOCAN	native		4	0 forb	perennial	indian hemp

Asclepias syriaca	n/a	ASCSYR	native	0	5 forb	perennial	common milkweed
Aster lateriflorus	n/a	ASTLAT	native	4	-2 forb	perennial	side-flowering aster
Aster pilosus	n/a	ASTPIL	native	0	2 forb	perennial	hairy aster
Aster simplex	n/a	ASTSIS	native	3	-5 forb	perennial	panicked aster
Bidens frondosa	n/a	BIDFRO	native	1	-3 forb	annual	common beggars ticks
Bromus inermis	n/a	BROINE	non-native	0	5 grass	perennial	hungarian brome
Carex cristatella	n/a	CXCRIS	native	4	-4 sedge	perennial	crested oval sedge
Carex lacustris	n/a	CXLACU	native	6	-5 sedge	perennial	common lake sedge
Carex vulpinoidea	n/a	CXVULP	native	2	-5 sedge	perennial	brown fox sedge
Cirsium arvense	n/a	CIRARV	non-native	0	5 forb	perennial	field thistle
Conium maculatum	n/a	CONMAC	non-native	0	-3 forb	biennial	poison hemlock
Cornus racemosa	n/a	CORRAC	native	1	-2 shrub	perennial	gray dogwood
Dactylis glomerata	n/a	DACGLO	non-native	0	3 grass	perennial	orchard grass
Daucus carota	n/a	DAUCAR	non-native	0	5 forb	biennial	queen annes lace
Eleocharis erythropoda	n/a	ELEERY	native	2	-5 sedge	perennial	red-rooted spike rush
Equisetum arvense	n/a	EQUARV	native	0	0 fern	perennial	horsetail
Erigeron strigosus	n/a	ERISTR	native	5	5 forb	biennial	daisy fleabane
Festuca elatior	n/a	FESELA	non-native	0	2 grass	perennial	tall fescue
Festuca rubra	n/a	FESRUB	non-native	0	1 grass	perennial	red fescue
Fraxinus pennsylvanica subintegerrima	n/a	FRAPES	native	1	0 tree	perennial	green ash
Galium aparine	n/a	GALAPA	native	1	3 forb	annual	annual bedstraw
Geum canadense	n/a	GEUCAN	native	1	0 forb	perennial	wood avens
Glyceria striata	n/a	GLYSTR	native	4	-3 grass	perennial	fowl manna grass
Helianthus grosseserratus	n/a	HELGRO	native	2	-2 forb	perennial	sawtooth sunflower
Hordeum jubatum	n/a	HORJUB	non-native	0	-1 grass	perennial	squirrel-tail grass
Impatiens capensis	n/a	IMPCAP	native	3	-3 forb	annual	orange jewelweed
Lonicera tatarica	n/a	LONTAT	non-native	0	5 shrub	perennial	tartarian honeysuckle
Lycopus americanus	n/a	LYCAME	native	5	-5 forb	perennial	common water horehound
Melilotus officinalis	n/a	MELLOF	non-native	0	3 forb	biennial	yellow sweet clover
Panicum virgatum	n/a	PANVIR	native	5	-1 grass	perennial	switch grass
Parthenocissus quinquefolia	n/a	PARQUI	native	2	1 vine	perennial	virginia creeper
Penstemon digitalis	n/a	PENDIG	native	4	1 forb	perennial	foxglove beard tongue
Phalaris arundinacea	n/a	PHAARU	non-native	0	-4 grass	perennial	reed canary grass
Phleum pratense	n/a	PHLPRA	non-native	0	3 grass	perennial	timothy
Poa pratensis	n/a	POAPRA	non-native	0	1 grass	perennial	kentucky blue grass
Quercus bicolor	n/a	QUEBIC	native	6	-4 tree	perennial	swamp white oak
Rhamnus cathartica	n/a	RHACAT	non-native	0	3 shrub	perennial	common buckthorn
Rhus radicans	n/a	RHURAD	native	2	-1 vine	perennial	poison ivy
Robinia pseudoacacia	n/a	ROBPSE	non-native	0	4 tree	perennial	black locust
Rosa multiflora	n/a	ROSMUL	non-native	0	3 shrub	perennial	multiflora rose
Rubus occidentalis	n/a	RUBOCC	native	2	5 shrub	perennial	black raspberry
Rumex crispus	n/a	RUMCRI	non-native	0	-1 forb	perennial	curly dock
Salix interior	n/a	SALINT	native	1	-5 shrub	perennial	sandbar willow
Sambucus canadensis	n/a	SAMCAN	native	1	-2 shrub	perennial	elderberry
Sanicula gregaria	n/a	SANGRE	native	2	-1 forb	perennial	clustered black snakeroot
Scirpus pendulus	n/a	SCIPEN	native	4	-5 sedge	perennial	red bulrush
Sium suave	n/a	SIUSUA	native	7	-5 forb	perennial	tall water parsnip
Smilax lasioneura	n/a	SMILAS	native	5	5 vine	perennial	common carrion flower
Solidago altissima	n/a	SOLALT	native	1	3 forb	perennial	tall goldenrod
Solidago gigantea	n/a	SOLGIG	native	4	-3 forb	perennial	late goldenrod
Sonchus uliginosus	n/a	SONULI	non-native	0	1 forb	perennial	common sow thistle
Taraxacum officinale	n/a	TAROFF	non-native	0	3 forb	perennial	common dandelion
Thalictrum dasycarpum	n/a	THADAD	native	5	-2 forb	perennial	purple meadow rue
Trifolium hybridum	n/a	TRIHYP	non-native	0	1 forb	perennial	alsike clover
Typha angustifolia	n/a	TYPANG	native	1	-5 forb	perennial	narrow-leaved cattail
Ulmus americana	n/a	ULMAME	native	3	-2 tree	perennial	american elm
Verbena hastata	n/a	VERHAS	native	4	-4 forb	perennial	blue vervain
Vicia villosa	n/a	VICVIL	non-native	0	5 forb	annual	winter vetch
Vitis riparia	n/a	VITRIP	native	2	-2 vine	perennial	riverbank grape
Xanthium strumarium	n/a	XANSTR	non-native	0	0 forb	annual	cocklebur

Appendix C

Threatened & Endangered Species Coordination

July 9, 2014

Project Name: Fermi National Accelerator Laboratory (PP14028-00)

County: Kane, IL

Site Description:

Planning Resources Inc. (PRI) was contracted by Fermi National Accelerator Laboratory to perform a wetland delineation within an approximate 3.5-acre portion of the Fermi National Accelerator Laboratory property in unincorporated Batavia, Kane County, Illinois. The project area occurs east of Schwahn Road and south of Pine Street, in the vicinity of the existing Minos Building. The legal location is in the northwest quarter of Section 25, Township 39 North and Range 8 East of the Third Principal Meridian. More specifically, the site is centered around 41.83874° North Latitude and -88.26985° West Longitude. The site is located within the Fox River watershed.

The study area generally consists of turf grass, a grassed drainage swale, old field vegetation and wetland. The existing Minos Building is located immediately north and west of the study area. Expansion of the Minos Building into the study area is proposed.

Threatened and Endangered Species Review:

Planning Resources Inc. reviewed the United States Fish and Wildlife Service (USFWS) technical assistance website for federally listed threatened and endangered species. The USFWS identifies one species that is currently listed as endangered and one species that has been proposed for listing as endangered within Kane County. Attached is the list of Kane County federally listed species and a brief description of their habitats as provided in USFWS factsheets. A brief evaluation of the potential effect site development may have on the listed species is provided below.

Eastern Prairie Fringed Orchid – No suitable habitat for the Eastern Prairie Fringed Orchid exists on the property. The entire property was mass graded in 2002. No wetlands with suitable habitat will be impacted by site development. No known associates of the orchid were observed during the field inspection. The project will have no effect on the species.

Northern Long Eared Bat – The project area does not contain trees that may provide potential roosting or foraging habitat for the Northern Long-Eared Bat. Therefore, the project will have no effect on the species.

USFWS Kane County Species List 2014

Species	Status	Habitat
Eastern prairie fringed orchid <i>(Platanthaera leucophaea)</i>	Endangered	The Eastern prairie fringed orchid occurs in a wide variety of habitats, from mesic prairie to wetlands such as sedge meadows, marsh edges, even bogs. It requires full sun for optimum growth and flowering and a grassy habitat with little or no woody encroachment. A symbiotic relationship between the seed and soil fungi, called mycorrhizae, is necessary for seedlings to become established. This fungi helps the seeds assimilate nutrients in the soil.
Northern Long-Eared Bat <i>(Myotis septentrionalis)</i>	Proposed	<p>The northern long-eared bat is a medium-sized bat about 3 to 3.7 inches but with a wingspan of 9 to 10 inches. Its fur color can be medium to dark brown on the back and tawny to pale-brown on the underside.</p> <p>During summer, northern long-eared bats roost singly or in colonies underneath bark, in cavities, or in crevices of both live and dead trees. This bat seems opportunistic in selecting roosts, using tree species based on suitability to retain bark or provide cavities or crevices. It has also been found, rarely, roosting in structures like barns and sheds.</p> <p>Breeding occurs in late summer/fall and females store sperm until spring when the sperm fertilizes the eggs. Pregnant females migrate to summer areas where they roost in small colonies and give birth to a single pup. Maternity colonies, with young, generally have 30 to 60 bats, although larger maternity colonies have been observed. Most females within a maternity colony give birth around the same time, which may occur from late May or early June to late July, depending where the colony is located within the species' range. Young bats start flying by 18 to 21 days after birth. Adult northern long-eared bats can live up to 19 years.</p>

Applicant: Planning Resources Inc.
Contact: Scott Kuykendall
Address: 402 W. Liberty
Wheaton, IL 60187

IDNR Project Number: 1500275
Date: 07/08/2014
Alternate Number: PP14028

Project: Fermilab-Minos Building
Address: South of Pine Street and north of Geise Road., Batavia

Description: Construction of a new research building south of the main Minos Research facility on the larger Fermilab property.

Natural Resource Review Results

Consultation for Endangered Species Protection and Natural Areas Preservation (Part 1075)

The Illinois Natural Heritage Database shows the following protected resources may be in the vicinity of the project location:

- Fermilab INAI Site
- Black-Crowned Night Heron (*Nycticorax nycticorax*)
- Loggerhead Shrike (*Lanius ludovicianus*)
- Osprey (*Pandion haliaetus*)
- Upland Sandpiper (*Bartramia longicauda*)

An IDNR staff member will evaluate this information and contact you within 30 days to request additional information or to terminate consultation if adverse effects are unlikely.

Location

The applicant is responsible for the accuracy of the location submitted for the project.



County: Kane

Township, Range, Section:
39N, 8E, 25

**IL Department of Natural Resources
Contact**
Keith Shank
217-785-5500
Division of Ecosystems & Environment

Local or State Government Jurisdiction
Chicago District-Army Corps of Engineers
Keith Wozniak
231 South LaSalle Street
Suite 1500
Chicago, Illinois 60604

Disclaimer

The Illinois Natural Heritage Database cannot provide a conclusive statement on the presence, absence, or condition of natural resources in Illinois. This review reflects the information existing in the Database at the time of this inquiry, and should not be regarded as a final statement on the site being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are encountered during the project's implementation, compliance with applicable statutes and regulations is required.

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Appendix D

Historic Aerial Photographs (1999, 2002, 2005)

