ENCAP INCORPORATED

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TRANSMITTAL LETTER

TO: **W-T Group**	**DATE:** June 11, 2019
2675 Pratum Avenue	**PROJECT:** Lake Villa Apartments
Hoffman Estates, Illinois 60192	
ATTN: **Mr. Christian Kalischefski**	**ENCAP Project #** 18-1001B

We are sending you:	**Date of Enclosed Materials**	**# of Copies**
REVISED - 2019 Wetland Delineation Report	June 11, 2019	PDF

CC:	**Date of Enclosed Materials**	**# of Copies**
Mr. Matt Ackerman, W-T Group		PDF

Via: ☐ **UPS Ground** ☐ **UPS Overnight** ☐ **U.S. Mail** ☒ **Electronic**

THESE ARE TRANSMITTED AS CHECKED BELOW:

☐ **For Approval** ☐ **As Requested** ☒ **For your review** ☒ **For your use**

REMARKS: _____

Signed: Kate McMahon

REVISED WETLAND DELINEATION REPORT

LAKE VILLA APARTMENTS

LAKE VILLA TOWNSHIP, LAKE COUNTY, ILLINOIS

Prepared for:	Mr. Christian Kalischefski W-T Group 2675 Pratum Avenue Hoffman Estates, IL 60192
Date Prepared:	December 6, 2018
Date Revised:	June 11, 2019
ENCAP, Inc. Project #:	18-1001B

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REVISED WETLAND DELINEATION REPORT

Lake Villa Apartments / W-T Group

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Attachments

REVISED WETLAND DELINEATION REPORT
Dated June 11, 2019

Project Name and Client: Lake Villa Apartments / W-T Group

Project Number: 18-1001B

Location: Illinois, Lake County, Lake Villa Township, Village of Lake Villa, T46N R10E, NE ¼ of Section 28
Latitude 42.439706; Longitude -88.063952

Date of Site Visit: November 15, 2018 & May 15, 2019

Field Investigators: K. McMahon, CWS #C-176 & K. Smit

EXECUTIVE SUMMARY

The project area (approximately 5.3 acres in size) is located within the Village of Lake Villa, Lake County, Illinois (Exhibit A: Location Map). The project area, as presented in this report, represents the property limits investigated by ENCAP, Inc. for the presence of regulated surface water resources. These limits do not necessarily reflect the boundaries of any proposed development activities. The project area is generally bounded by the Lake Tower Crossing development to the north, the Painted Lakes residential area and a detention basin to the south and west, and North Deep Lake Road to the east. The project area is located within the Sequoit Creek watershed, a sub-watershed of the Fox River.

The project area consists mostly of turf grass. A few mature trees are scattered along the northern boundary. The southwestern and southern portions of the project area include percentages of a larger wetland and its associated upland buffer. The subdivision loops to the south and west of the site were constructed between 1994-1998. The parking lot and commercial development to the north of the site began construction in the summer of 2005.

One wetland totaling approximately 11 acres (approximately 0.093 acres on-site) was identified extending onto the project area. Wetland boundaries were identified and staked using methods sanctioned by the United States Army Corps of Engineers. Wetland acreages provided in this report are estimations; a survey of the staked wetland boundaries must be performed in order to obtain exact size and location information.

Basic information regarding wetland regulations may be found in the Regulatory Statement portion of this report. Briefly, the U.S. Army Corps of Engineers (USACE) regulates all Waters of the United States that are currently or historically navigable and all wetlands that are connected to or associated with these waterways. In Lake County, isolated wetlands are regulated through implementation of a countywide watershed development ordinance. It appears that the wetland identified on site is likely jurisdictional and regulated by the USACE. The wetland appears to connect to Sequoit Creek west of the project area, which eventually connects to Lake Marie and the Fox River to the northwest. Lake County will also regulate the 50-foot buffer associated with Wetland 1 through implementation of Lake County's Watershed Development Ordinance.

Based on a November 19, 2018 review of the U.S. Fish and Wildlife Service (USFWS) technical assistance website, sensitive (federally threatened or endangered) plant or animal species habitat are not located on or adjacent to the project area and the proposed project will have "no effect" on those species (see attached USFWS Review Summary). Further consultation with this agency is not required for a Section 404 Permit from the USACE.

According to the Illinois Department of Natural Resources (IDNR), the following protected resources may be in the vicinity of the project location: Deep Lake INAI Site, Loon Lake INAI Site, Sun Lake INAI Site, Sun Lake Nature Preserve, King Rail (*Rallus elegans*), and the Least Bittern (*Ixobrychus exilis*). Formal consult was initiated with the IDNR and was subsequently terminated. Please see the attached correspondence for additional information.

PROJECT PURPOSE

The purpose of the site visit was to identify regulated surface water resources on, or within 100 feet of the project area. A floodplain determination was not included as part of our investigation. On-site wetland areas encountered were delineated using standard methods sanctioned by the United States Army Corps of Engineers in the Corps of Engineers Wetlands Delineation Manual (1987) and 2010 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Midwest Region. Plant observations were made for calculating the Coefficient of Conservatism (ĉ) and Floristic Quality Index (FQI) for each wetland plant community using the Wilhelm method (Swink and Wilhelm, 1994). Observations also were made to determine if wetlands present within the project area were high-quality aquatic resources based on the Lake County Watershed Development Ordinance. Observed wildlife and evaluation of resource quality are also reported as required by the Chicago District USACE.

METHODS

1987 USACE Wetland Delineation Manual and 2010 Midwest Regional Supplement.

Prior to the site visit, a preliminary site evaluation is performed using aerial photography and natural resource mapping. Potential wetland areas identified by these resources are evaluated in the field to determine if they meet the requirements for a wetland based on the USACE parameters of vegetation, hydrology, and soils. In general, positive indication of each of the three parameters must be demonstrated to classify an area as wetland. Each of these parameters is discussed below.

- **Vegetation** – Three vegetative indicators are applied to plant communities in order to determine if the hydrophytic vegetation criterion is met.
  1. More than 50% of the dominant plant species across all strata must be hydrophytic (water tolerant). The U.S. Fish Wildlife Service has prepared a regional list of plants occurring in wetlands which assigns the plant species different indicators. Wetland plants fall into three indicator classes based on differing tolerances to water level and soil saturation. These indicators are rated obligate wetland (OBL), facultative wetland (FACW), or facultative (FAC). Dominant plant species are recorded at sample points within investigated areas.
  2. The prevalence index is 3.0 or less. The prevalence index is a weighted-average wetland indicator status of all plant species in a sampling plot. Each indicator status category is given a numeric value (OBL = 1, FACW = 2, FAC = 3, FACU = 4, and UPL = 5) and weighting is by abundance. A prevalence index of 3.0 or less indicates that hydrophytic vegetation is present. The prevalence index is used to determine whether hydrophytic vegetation is present on sites where indicators of hydric soil and wetland hydrology are present but the vegetation initially fails the dominance test.
  3. The plant community passes either the dominance test (Indictor 1) or the prevalence index (Indicator 2) after reconsideration of the indicator status of certain plant species that exhibit morphological adaptations for life in wetlands. Common morphological adaptations include but are not limited to adventitious roots, multi-stemmed trunks, shallow root systems developed on or near the soil surface, and buttressing in tree species. To apply this indicator, these morphological features must be observed on more than 50% of the individuals of a FACU species living in an area where indicators of hydric soil and wetland hydrology are present.

- **Hydrology** – To be considered a wetland, an area must have 14 or more consecutive days of flooding or ponding, or a water table 12 inches or less below the soil surface, during the growing season at a minimum frequency of 5 years in 10. Wetland hydrology indicators are divided into four groups as described below:
  - **Group A** – indicators are based on the direct observation of surface water or groundwater during a site visit.
  - **Group B** – consists of evidence that the site is subject to flooding or ponding, although it may not be inundated currently. These indicators include water marks, drift deposits, sediment deposits, and similar features.
  - **Group C** – consists of other evidence that the soil is saturated currently or was saturated recently. Some of these indicators, such as oxidized rhizopheres surrounding living roots and the presence of reduced iron or sulfur in the soil profile, indicate that the soil has been saturated for an extended period.

- **Group D** – consists of landscape and vegetation characteristics that indicate contemporary rather than historical wet conditions. These indicators include stunted or stressed plants, geomorphic position, and the FAC-neutral test.

Wetland hydrology indicators are intended as one-time observations of site conditions that are sufficient evidence of wetland hydrology. Within each group, indicators are divided into two categories – *primary* and *secondary*. One primary indicator from any group is sufficient to conclude that wetland hydrology is present. In the absence of a primary indicator, two or more secondary indicators from any group are required to conclude that wetland hydrology is present.

- **Soils** - To be considered a wetland, an area must contain hydric soil. Hydric soils are formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic (lacking oxygen) conditions in the upper part. Soils generally, but not always, will develop indicators that are formed predominantly by the accumulation or loss of iron, manganese, sulfur, or carbon compounds in a saturated and anaerobic environment. The most current edition of the United States Department of Agriculture, Natural Resource Conservation Service *Field Indicators of Hydric Soils in the United States* is used for identification of hydric soils. Field indicators of hydric soils include but are not limited to the presence of any of the following: histic epipedon, sulfidic odor, at least 2 centimeters of muck, depleted matrix, and/or redoximorphic features. Field indicators are usually examined in the top 24 inches of the soil. Soil colors are determined using *Munsell Soil Color Charts*.

Areas meeting these three criteria are staked in the field for surveying purposes. Boundaries are demarcated in the field with pink flagged pin stakes labeled "WETLAND DELINEATION." Staked boundaries are mapped on an aerial photograph included in this report. Approximate off-site wetland boundaries are identified on the aerial photograph and were determined using available aerial photographs, wetland maps, and field observation.

MAP REVIEW

- The **National Wetlands Inventory** identifies *a seasonally flooded, persistent, emergent palustrine* wetland, PEM1C, outside the southwest portion of the project area (Exhibit B).

- The **Lake County Advanced Identification of Aquatic Resources (ADID)** identifies wetland along the southern boundary of the project area (Exhibit C).

- The **Soil Map** identifies the following soils within the project area: Zurich and Ozaukee silt loams, 2 to 4 percent slopes (840B), Zurich and Ozaukee silt loams, 4 to 6 percent slopes, eroded (840C2), Ozaukee silt loam, 6 to 12 percent slopes, eroded (530D2), and Grays and Markham silt loams, 2 to 4 percent slopes (979B). None of these soils are considered predominantly hydric in Lake County (Exhibit D).

- The **2018 United States Geologic Survey (USGS) Topographic Map** does not identify any surface drainage within or adjacent to the project area, but it does identify an open water pond outside the southwest portion of the project area (Exhibit E).

- The **Flood Insurance Rate Map** identifies the project area outside the 500-year floodplain (Exhibit F).

- The **U.S.G.S. Hydrologic Atlas** identifies no areas of historic flooding within the project area (Exhibit G).

- The **Illinois State Historic Preservation Office (ISHPO) Historic Architectural Resources Geographic Information System (HARGIS) Map** does not identify any mapped historic archaeological remains or properties within the vicinity of the project area (Exhibit H).

SPECIFIC DESCRIPTION OF IDENTIFIED WATER RESOURCES

Wetland 1. This wetland (approximately 11 acres in total size and approximately 0.093 acres in on-site size) is located within the southern portion of the project area. A portion of Wetland 1 appears to be utilized by the surrounding subdivision as a stormwater detention basin and may have been a past mitigation project (see attached Painted Lakes Subdivision-Natural Resource Exhibit). Wetland 1 connects to a larger wetland complex to the west through a culvert southwest of the project area. Water flows into Wetland 1 through two culverts; one that runs east/west from under N Deep Lake Road and a second culvert to the west that comes from the north. Wetland 1 consists of emergent and marsh habitats, open water portions, as well as a seep that originates from a hillside and may be associated with an old field tile. No waterfowl or amphibian species were observed while at the project area. The buffer surrounding the wetland appears to be a higher quality upland prairie dominated by native grasses and *Silphium* species; this area appears to have been planted with native vegetation as part of the previous off-site mitigation project.

Wetland 1 appears to be federally jurisdictional and therefore under the jurisdiction of the U.S. Army Corps of Engineers. Wetland 1 connects to an off-site wetland associated with Sun Lake (an ADID site) to the west through a culvert under Painted Lakes Boulevard. This wetland connects to Sequoit Creek and its associated wetlands to the northwest. It eventually flows into Lake Marie to the northwest, which connects to the Fox River. Lake County will also regulate the 50-foot buffer associated with Wetland 1 through implementation of a Watershed Development Ordinance. Based on the definition of a high-quality aquatic resource noted in Appendix L of the Lake County Watershed Development Ordinance, Wetland 1 would not be considered a high quality aquatic resource.

The Lake County Wetland Inventory identifies Wetland 1 as **Wetland.** Six sample points were established within and adjacent to Wetland 1 to characterize the vegetation, soils, and hydrology at various plant communities within the on-site and directly adjacent portions of the wetland (Exhibit I: Aerial Photograph). The on-site and directly off-site wetland boundaries were demarcated with 20 pink flagged pin stakes.

The on-site portion of Wetland 1 was primarily vegetated by Emory's sedge (*Carex emoryi*), Common tussock sedge (*Carex stricta*), Sandbar willow (*Salix interior*), Cup plant (*Silphium perfoliatum*), Prairie dock (*Silphium terebinthinaceum*), and Reed canary grass (*Phalaris arundinacea*). The mapped soil series are Zurich and Ozaukee silt loams, 4 to 6 percent slopes, eroded (840C2) and Ozaukee silt loam, 6 to 12 percent slopes, eroded (530D2), both non-hydric soils. For Sample Point A, USDA field indicators A11: Depleted Below Dark Surface and F6: Redox Dark Surface provided evidence of hydric soil. For Sample Point C, USDA field indicators A11: Depleted Below Dark Surface and F3: Depleted Matrix provided evidence of hydric soil. For Sample Point I, USDA field indicator F6: Redox Dark Surface provided evidence of hydric soils. Surface water, high water table, saturation, algal mat or crust, water-stained leaves, drainage patterns, crayfish burrows, geomorphic position, and a positive FAC-neutral test provided evidence of persistent hydrology (See Wetland Determination Data Forms).

The native mean Coefficient of Conservatism ($\hat{c}$) for the on-site portion of Wetland 1 was 2.71, and the native Floristic Quality Index (FQI) of Wetland 1 was 15.09 (see attached Floristic Quality Data). These values indicate a moderate quality plant community.

ADDITIONAL AREAS INVESTIGATED FOR WETLAND STATUS

Three additional vegetated sites located within the project area were examined to determine if they satisfied wetland criteria. None of these sites so qualified; therefore, they are referred to as Investigated Areas in this report. Each area is briefly described herein and USACE data forms are provided to support our negative findings (See USACE data forms).

Investigated Area 1. This investigated area is located in the west central portion of the project area (Exhibit I: Aerial Photograph – Sample Point E). This area was investigated because it contained a mixture of hydrophytic and upland vegetation.

Investigated Area 1 was primarily vegetated by Reed Canary Grass (*Phalaris arundinacea*). The mapped soil series is Zurich and Ozaukee silt loams, 4 to 6 percent slopes, eroded (840C2), a non-hydric soil. USDA field indicators F6: Redox Dark Surface and F7: Depleted Dark Surface provided evidence of hydric soil. Evidence of persistent hydrology was not observed (See Wetland Determination Data Forms).

Based on the non-persistent hydrology, Investigated Area 1 does not qualify as wetland.

Investigated Area 2. This investigated area is located in the western portion of the project area (Exhibit I: Aerial Photograph – Sample Point F). This area was investigated because it was identified on an Illinois State Historic Preservation Office Map as a drainageway.

The on-site portion of Investigated Area 2 was primarily vegetated by Kentucky Blue Grass (*Poa pratensis*). The mapped soil series is Grays and Markham silt loams, 2 to 4 percent slopes (979B), a non-hydric soil. USDA field indicators F6: Redox Dark Surface and F7: Depleted Dark Surface provided evidence of hydric soil. Evidence of persistent hydrology was not observed (See Wetland Determination Data Forms).

Based on the non-persistent hydrology, Investigated Area 2 does not qualify as wetland.

Investigated Area 3. This investigated area is located in the central portion of the project area (Exhibit I: Aerial Photograph – Sample Point G). This area was investigated because it contained a mixture of hydrophytic and upland vegetation.

Investigated Area 3 was primarily vegetated by Reed canary grass and Kentucky bluegrass (*Poa pratensis*). The mapped soil series is Zurich and Ozaukee silt loams, 4 to 6 percent slopes, eroded (840C2), a non-hydric soil. USDA field indicator F6: Redox Dark Surface provided evidence of hydric soil. Evidence of persistent hydrology was not observed (See Wetland Determination Data Forms).

Based on the non-persistent hydrology, Investigated Area 3 does not qualify as wetland.

REGULATORY STATEMENT

Federal Regulations: The deposition of dredged or fill materials into federally jurisdictional wetlands or Waters of the United States is regulated by the USACE under Section 404 of the Clean Water Act.

The Chicago District USACE has implemented a Regional Permit Program (RPP), replacing the previous Nationwide Permit Program. Generally, the RPP authorizes up to 0.10 acre of low quality wetland to be filled without mitigation. Low quality wetland impacts totaling between 0.10 acre and 1.0 acres may qualify for a Regional Permit with compensatory wetland mitigation. Under the RPP, total wetland impacts in excess of 1.0 acre or any single crossing greater than 0.25 acre will not qualify for a Regional Permit and will require an Individual Permit.

Projects qualifying for a Regional Permit must also establish and/or enhance an upland buffer of native plants (or other appropriate vegetation approved by the District) adjacent to all created, restored, enhanced or preserved waters of the U.S., including wetlands. Created buffers should be established on 6:1 or gentler slopes. Minimum buffer widths are as follows:

- For any waters of the U.S. that do not qualify as wetland (e.g., lakes, rivers, ponds, etc.) the buffer shall be a minimum of 50 feet from the Ordinary High water Mark (OHWM);
- For any jurisdictional wetland from 0.25 acres and up to 0.50 acre, the buffer shall be a minimum of 30 feet;
- For any jurisdictional wetland over 0.50 acre, the buffer shall be a minimum of 50 feet; and
- For any waters of the U.S. determined to be a high-quality aquatic resource, the buffer shall be a minimum of 100 feet.

The District may allow buffer widths below the above-required minimums. It shall be incumbent on the applicant to demonstrate that no practicable alternatives are available that would not impact the required buffer widths.

Under the regulations, secondary impacts (both on-site and off-site) from filling also must be evaluated. Mitigation may be required at a higher rate if a project will significantly alter wetland functions such as stormwater detention, water filtration, sediment trapping, and/or wildlife habitat.

Before mitigation will be approved, reasonable proof that avoidance or minimization of wetland impacts has been attempted must be provided to the USACE.

A USACE permit is not required if the wetlands are avoided and construction erosion near a wetland is controlled.

Lake County Watershed Development Ordinance: The Lake County Watershed Development Ordinance regulates the development of all areas within the county. Plans for development must include provisions for stormwater conveyance, and conservation of streams and channels, lakes, ponds, or wetlands that exist on the site. A soil erosion and sediment control plan must be provided. Buffer areas are required for all areas defined as “Waters of the U.S.” including isolated wetlands, lakes and ponds. Buffer areas are divided into 2 types, linear buffers and water body buffers.

Linear buffers will be designated along both sides of all channels meeting the definition of "Waters of the U.S" or "Isolated Waters of Lake County". Minimum buffer widths are as follows:

- When the linear water body has a watershed greater than 20 acres but less than 1.0 square mile, the minimum buffer width will be 50 feet on each side of the linear water body;
- When the linear water body has a watershed greater than 1.0 square mile, the minimum buffer width will be 30 feet on each side of the linear water body;
- Linear high-quality aquatic resources and streams with an Index of Biotic Integrity (IBI) greater than forty (40) shall have a minimum *buffer* width of one hundred (100) feet on each side of the *channel*. (Initial IBI based on IEPA Illinois Water Quality Report, biannual. A site-specific IBI assessment may override this report.).

Water body buffers will encompass all non-linear bodies of water meeting the definition of "Waters of the United States" or "Isolated Waters of Lake County". . Minimum buffer widths are as follows:

- For water bodies and wetlands greater than 1/3 acre but less than 1.0 acre in size, the minimum buffer width is 30 feet;
- For water bodies and wetlands greater than 1.0 acre but less than 2.5 acres in size, the minimum buffer width is 40 feet;
- For water bodies and wetlands greater than 2.5 acres in size, the minimum buffer width is 50 feet;
- Non-linear high quality aquatic resources shall have a minimum buffer width of 100 feet.

Mitigation for impacts to isolated wetlands is required within Lake County for:

A. *Wetland impacts* greater than or equal to one-tenth (0.10) acre of *Isolated Waters of Lake County* including those that are *high-quality aquatic resources* (HQAR).

B. For single-lot, single-family residences, provided the activity is a single and complete project: *Wetland impacts* greater than one-quarter (0.25) acre of *Isolated Waters of Lake County* or one-tenth (0.10) acre of *Isolated Waters of Lake County* that are *high-quality aquatic resources*.

Mitigation shall provide for the replacement of the Wetland environment lost to development at the following proportional rates (i.e. creation acreage to wetland acreage):

- For wetland impacts to areas that are not high-quality aquatic resources under Categories I, II and III, a minimum of 1.5:1 mitigation ratio or a minimum 1:1 mitigation ratio for fully certified wetland mitigation bank credits;
- A minimum of 3:1 for wetland impacts that are high-quality aquatic resources
- A minimum of 6:1 for wetland impacts that are high-quality forested wetlands as defined in Appendix L.
- For wetland impacts to open waters that are not high-quality aquatic resources under Categories I, II, and III, a minimum of 1:1 mitigation ratio shall be required.

Illinois Department of Natural Resources Agency Action Plans for Interagency Wetlands Policy Act of 1989: The Illinois Interagency Wetlands Policy Act of 1989 is intended to ensure that there is no overall net loss of the State's existing wetland acres or their functional values resulting from State-supported activities. The Act charges State agencies with a further duty to

“preserve, enhance and create wetlands where necessary to increase the quality and quantity of the State’s wetland resource base.”

The Interagency Wetlands Policy Act of 1989 states that any construction, land management or other activity performed by, or for which financial assistance is administered or provided by, a State agency that will result in an adverse impact to a wetland shall be subject to compliance. This includes, but is not limited to the following:

- The alteration, removal, excavation, or dredging of soil, sand, gravel, minerals, organic matter, vegetation, or naturally occurring minerals of any kind from a wetland;
- The discharge or deposit of fill material or dredged material in a wetland;
- The alteration of existing drainage characteristics, sedimentation patterns, or flood retention characteristics of a wetland;
- The disturbance of water level or water table of a wetland;
- The destruction or removal of plant life that would alter the character of a wetland, except for activities undertaken in accordance with the Illinois Noxious Weed Act;
- The transfer of State owned wetlands to any entity other than another state agency; and
- Other actions that cause or may cause adverse wetland impacts.

The Act is to be implemented through a State Wetland Mitigation Policy. The State Wetland Mitigation Policy requires preservation of wetlands as the primary objective. Where adverse wetland impacts are unavoidable, progressive levels of compensation based upon the level of impact to the existing wetland and the location of compensation wetlands are required.

Archaeological Survey Requirements: An archaeological survey may be required before a Section 404 permit will be issued for wetland impacts. The U.S. Army Corps of Engineers will make this determination as part of the permit application review. The archaeological survey must cover all areas of the project area, not wetlands only. If you already have a letter from the Illinois State Historic Preservation Office (ISHPO) stating an archaeological survey is required, you should act on it because the USACE will support this notification.

RECOMMENDATIONS

One wetland totaling approximately 0.093 acres on site was identified on the project area. The U.S. Army Corps of Engineers has the final authority in determining the jurisdictional status of the wetland identified on site; however, due to its connection to off-site jurisdictional waterways, it is highly likely that Wetland 1 will be considered USACE jurisdictional. Lake County will also regulate the 50-foot buffer associated with Wetland 1 through implementation of a Watershed Development Ordinance.

Any impacts to jurisdictional wetland, Waters of the U.S., or associated buffers will require U.S. Army Corps of Engineers and Lake County notification. ENCAP, Inc. can assist you with permit applications, agency negotiations, wetland design plans, and mitigation plans which may be applicable to your project. The wetland consultant should be involved during the planning and design stages of the project to avoid complications with the agencies after the plan has been drafted. Proper planning regarding wetlands can reduce delays caused by the permitting process and costly changes in site plans.

If all wetland areas can be avoided by development, it is highly recommended to submit for a Letter of No Objection (LONO) from the USACE. This coordination will be required as part of the stormwater permit from the Lake County Stormwater Management Commission.

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Painted Lakes Subdivision-Natural Resource Exhibit

PAINTED LAKES SUBDIVISION

BEING A SUBDIVISION OF PART OF SECTION 28, IN TOWNSHIP 46 NORTH, RANGE 10, EAST OF THE THIRD PRINCIPAL MERIDIAN, IN THE VILLAGE OF LAKE VILLA, LAKE COUNTY, ILLINOIS.

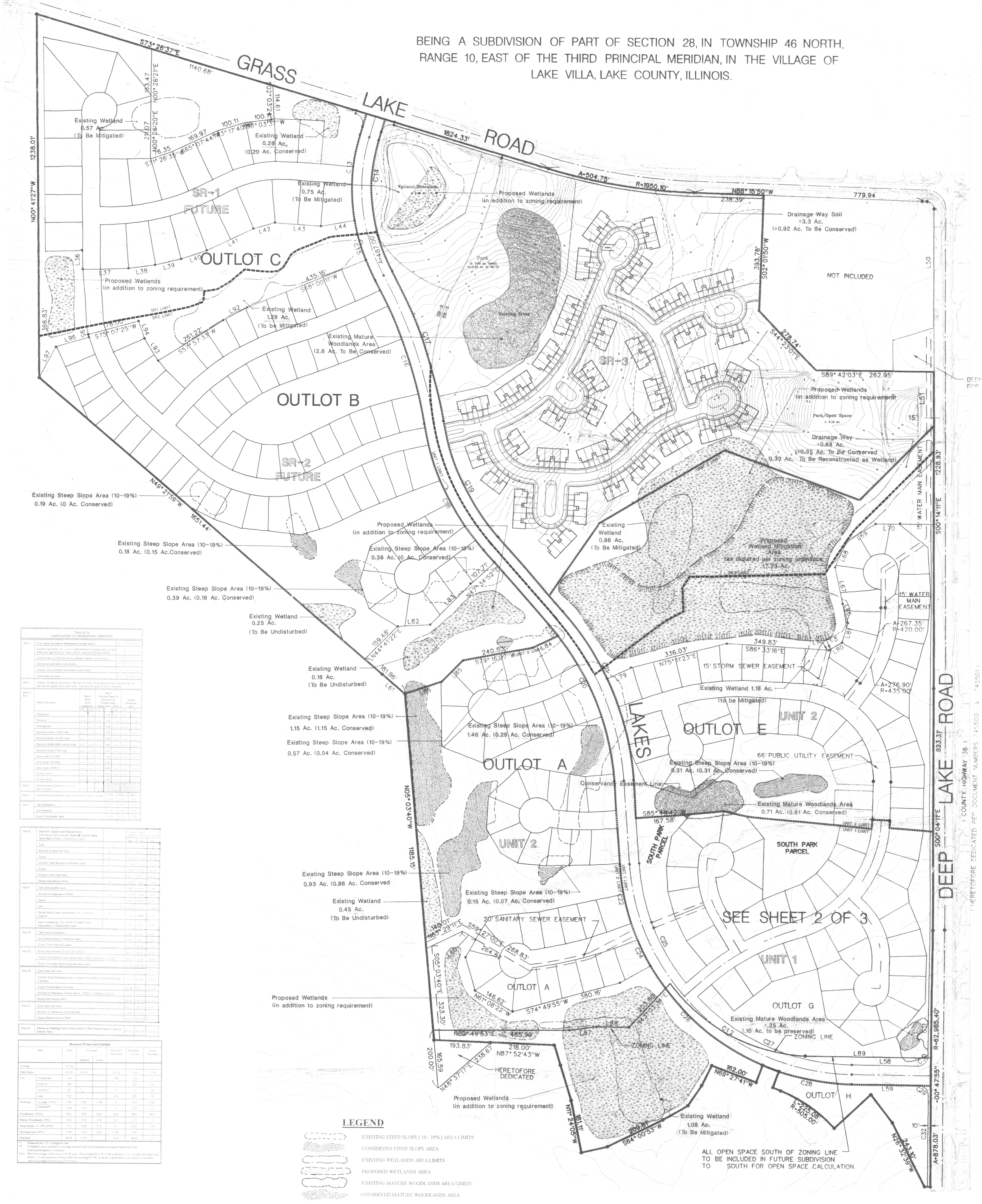


Table 5.3 D
CALCULATION OF RESIDENTIAL INTENSITY

Step 1	Enter gross site area as determined by actual survey.						
	Subtract land within the existing or future right-of-way of varying roads or land within the right-of-way of major utilities (minimum 50-foot width).						
	Subtract land cut off from use by railroad, highway, or waterbody.						
	Subtract all land within waterbodies.						
	Subtract land previously dedicated as open space.						
	Equals base site area.						
Step 2	Measure all natural resources in the base site area. If resources overlap, measure the one that has the highest open space ratio. This gives the area of land in resource.						
Step 3 & 4	Natural Resource	Step 3 Enter Acres measured		Step 4 Multiply Land in Resource by District Open Space Ratio (OSR)		Equals Protection Land	
		base	actual	base	actual	base	actual
	Floodplains			1.00			
	Wetlands			1.00			
	Drainageways			0.40			
	Shoreline Buffer +15% slope	N.A.		1.05			
	Shoreline Buffer 10-15% slope	N.A.		0.90			
	Shoreline Buffer 0-9% wooded slope	N.A.		0.80			
	Shoreline Buffer 0-9% slope	N.A.		0.70			
	Steep slopes (15-19%)			0.40			
	Steep slopes (20-30%)			0.70			
	Steep slope (30%+)			0.90			
	Forests, mature			0.80			
	Forests, young			0.40			
Step 5	Total Resource Land equals sum of Step 3 subtotal.						
Step 6	Total Resource Protection Land equals sum of Step 4 subtotal.						
Step 7	Take Floodplains						
	Add Wetlands						
	Equals Unbuildable Land						
Step 8	Step 8-9 Cluster and Planned Only Use Column that matched Multi-A District Open Space Ratio (Table 1, Subsection 5.2.C).			Open Space Ratio (enter decimal)			
				base	actual	base	actual
	Take						
	Multiply by Base Site Area	x					
	Equals	=					
	Subtract Total Resource Protection Land	-					
	Equals	=					
	Divide by Base Site Area	÷					
	Equals Adjustment Factor	=					
Step 9	Take Unbuildable Land						
	Multiply by Adjustment Factor	x					
	Equals	=					
	Add	+					
	Equals Initial Land Adjustment, use 0 if value is negative.	=					
	Land Adjustment. Use lower of Initial Land Adjustment or Unbuildable Land.						
Step 10	Take Land Adjustment.						
	Add Total Resource Protection Land.						
	Equals Total Protected Land.						
Step 11	Enter base site area (Table 5.3.D, Step 1).						
	Multiply by minimum open space ratio (Table 1, Subsection 5.2.C).						
	Equals minimum district required open space.						
Step 12	Enter Base Site Area.						
	Subtract Total Protected Land or product from Step 11 above whichever is greater.						
	Equals Net Buildable Site Area.						
	Multiply by Maximum Density Factor (Table 1, Subsection 5.2.C).						
	Equals Site Density Yield.						
Step 13	Enter Base Site Area.						
	Multiply by Maximum Gross Density.						
	Equals District Density Yield.						
Step 14	Maximum Dwelling Units equals smaller of Site Density Yield or District Density Yield.						

Resource Protection Schedule

Item		Total	Protected required	Protected actual	Provided This Phase	Provided to Date	To Be Provided
Acreage		157.60					
Open Space		60.19	60.19		19.74	52.41	7.78
Lots	townhomes	134			134	134	0
	8,000 sf	189			0	123	66
	12,000 sf	29			0	0	29
	total	352			134	257	95
Wetlands	existing (100%)	6.86	6.86	1.08	0	0.45	0.63
	mitigated*	7.23	7.23		0	7.23	0
Floodplains (100%)		N/A	N/A	N/A	N/A	N/A	N/A
Mature Woodlands (70%)		3.56	2.50	3.31	2.6	0.71	0
Steep Slopes, 10-19% (40%)		5.71	2.28	3.02	0	2.67	0.35
Drainageways (40%)		3.98	1.60	1.60	0.92	1.60	0
Parkland		18.32	6.73		12.63	18.32	0

* Required per 1.25:1 mitigation rate
** Floodplain areas correlate to existing wetlands and will be protected/mitigated under that land protect/mitigated as wetlands.
Note: The total acreage of the site is 164.68 acres. This includes R.O.W. to the centerline of Grass Lake and Deep Lake Roads. For the purposes of these tables the existing R.O.W. in Grass Lake & Deep Lake Roads is excluded the total acreage is shown as 157.60 acres.

LEGEND

- EXISTING STEEP SLOPE (10 - 19%) AREA LIMITS
- CONSERVED STEEP SLOPE AREA
- EXISTING WETLANDS AREA LIMITS
- PROPOSED WETLANDS AREA
- EXISTING MATURE WOODLANDS AREA LIMITS
- CONSERVED MATURE WOODLANDS AREA

north

Revisions
5-30-95
6-15-95
6-27-95
6-30-95
7-10-95
8-28-95
10-19-95
11-22-95
12-11-95
12-19-95
1-9-96
7-5-96

Job No. 2095
Scale 1"=100'
Date 04-28-95

Centex Homes
2401 W. Hassell Rd., Ste. 1542
Hoffman Estates, IL 60195
(708) 882-7330

Natural Resource Exhibit

Painted Lakes Subdivision– SR-3 Multi-Family
Lake Villa, Illinois

JEN LAND DESIGN, INC.
PLANNING • LANDSCAPE ARCHITECTURE
5507 N.Cumberland, Ste.406 Chicago,IL 60656 • 312/763-3320

USFWS Section 7 Consultation Review Summary – Updated June 11, 2019

ENCAP INCORPORATED

2585 Wagner Ct.
DeKalb, IL 60115
Phone: 815.748.4500
Fax: 815.748.4255
www.encapinc.net

Original Review: November 19, 2018

Updated Review: June 11, 2019

U.S. Fish and Wildlife Service
Chicago Illinois Field Office
230 South Dearborn St., Suite 2938
Chicago, IL 60604-1507

Re: USFWS Review Summary - Section 7 Endangered Species Act Consultation
Project: Lake Villa Apartments, located in Illinois, Lake County, Lake Villa Township, Unincorporated Lake Villa, T46N R10E Section 28; Latitude 42.439706 N; Longitude - 88.063952 W
ENCAP, Inc. project # 18-1001B
Client: W-T Group

The project area consists of approximately 5.3 acres of turf grass with a small percentage of an approximately 11-acre wetland and its associated buffer extending onto the southern portion of the property. The proposed project includes the construction of a mixed use residential and commercial development.

ENCAP, Inc. carefully reviewed the U.S. Fish and Wildlife Service (USFWS) technical assistance website on November 19, 2018 and then again on June 11, 2019, for federally listed threatened and endangered species. According to the website, 7 species are listed and may be present in Lake County: the Northern long-eared bat, Piping plover, Rufa Red knot, Karner blue butterfly, Rusty patched bumble bee, Eastern prairie fringed orchid, and Pitcher's thistle.

Three major types of habitat exist within the project area. The majority of the site consists of turf grass which provides little functional habitat. A row of planted trees are scattered along the northern boundary, however, no large, mature trees that provide suitable bat habitat were identified on-site during the field investigation. The southwestern and southern portions of the project area include percentages of a larger wetland complex that appeared to be mostly vegetated by Cattails (*Typha* spp.). The wetland has a native mean C-value of 2.71 and a native FQI of 15.09. The wetland buffer consists of a slope vegetated by prairie species, dominated by *Silphium* spp., little and big bluestem, and Indian grass. The site does not include wide open sandy beach with little vegetation or coastal habitats, lakeshore dunes, and no wild lupine *(Lupinus perennis)* over sandy soils were identified during the site investigation. Additionally, the site is located within the historical range of the Rusty Patched Bumble Bee (RPBB), however, consistent with current guidance, no further consultation shall be required regarding the RPBB species.

The Lake Villa Apartments project area does not contain suitable habitats for the Rufa Red Knot, Eastern Prairie Fringed Orchid, Karner Blue Butterfly, Northern long-eared bat, Piping plover, Rusty patched bumble bee, or Pitcher's thistle. ENCAP, Inc. concludes that the proposed project will have 'no effect' on the listed species, their habitats, or designated critical habitat.

Kathryn McMahon, WPIT, CWS
Ecological Consultant
ENCAP, Inc.

IDNR EcoCAT Natural Resources Review Results-Termination

Illinois Department of
Natural Resources
One Natural Resources Way Springfield, Illinois 62702-1271
www.dnr.illinois.gov
JB Pritzker, Governor
Wayne A. Rosenthal, Director

January 31, 2019

Mr. Christopher Slykas
2675 Pratum Avenue
Hoffman Estates, IL 60192

RE: Khayat Fuel Station
Endangered Species Consultation Program
EcoCAT Review #1906742
Lake County

Dear Mr. Slykas:

The Department has received your submission for this project for the purposes of consultation pursuant to the *Illinois Endangered Species Protection Act* [520 ILCS 10/11], the *Illinois Natural Areas Preservation Act* [525 ILCS 30/17], and Title 17 *Illinois Administrative Code* Part 1075. Additionally, the Department may offer advice and recommendations for species covered under the *Fish & Aquatic Life Code* [515 ILCS 5, *et seq.*]; the *Illinois Wildlife Code* [520 ILCS 5, *et seq*.]; and the *Herptiles-Herps Act* [510 ILCS 69].

The proposed action consists of construction of a new gas station on the northern corner of Grass Lake Road and a mixed-use commercial/residential lot on the southern part of the site off of Deep Lake Road. Additional site improvements include new underground utilities, a new access drive connection to Deep Lake Road, two new access drive connections to Grass Lake Road and a stormwater detention basin. Total disturbed area is approximately 8.2 acres.

EcoCAT has indicated records for the state-listed **least bittern (*Ixobrychus exilis*)** and **king rail (*Rallus elegans*)** in the vicinity of the project. The Department recommends any work that falls within 50 feet of a wetland be completed outside of nesting/fledging season of April 15th to August 15th to avoid potential impacts to these and other wetland birds. The Department also recommends maintaining a vegetated buffer of 50 feet around all wetlands post-construction as a conservation measure.

Given the above recommendations are adopted, the Department has determined that impacts are unlikely. <u>In accordance with 17 Ill. Adm. Code 1075.40(h), please notify the Department of your decision regarding these recommendations.</u>

Consultation on the part of the Department is closed unless W-T Group desires additional information or advice related to this proposal. Consultation for Part 1075 is valid for two years unless new information becomes available which was not previously considered; the proposed action is modified; or additional species, essential habitat, or Natural Areas are identified in the vicinity. If the action has not been implemented within two years of the date of this letter, or any of the above listed conditions develop, a new consultation is necessary.

The natural resource review reflects the information existing in the Illinois Natural Heritage Database at the time of the project submittal and should not be regarded as a final statement on the project being considered, nor should it be a substitute for detailed site surveys or field surveys required for environmental assessments. If additional protected resources are unexpectedly encountered during the project's implementation, the applicant must comply with the applicable statutes and regulations.

Please contact Mr. Brad Hayes of this office at 217-782-0031 or bradley.hayes@illinois.gov for additional information on this review, or if providing a response to this correspondence.

Thank you,

Nathan Grider
Manager, Consultation Services
Office of Realty & Capital Planning
Illinois Dept. of Natural Resources
One Natural Resources Way
Springfield, IL 62702-1271
nathan.grider@illinois.gov
Phone: (217) 557-0483

Floristic Quality Data Sheets – Updated May 15, 2019

SITE: Lake Villa Apartments
LOCALE: Wetland 1
BY: K. McMahon & K. Smit
NOTES: 05.15.2019

CONSERVATISM-BASED METRICS		ADDITIONAL METRICS	
MEAN C (NATIVE SPECIES)	2.71	SPECIES RICHNESS (ALL)	43
MEAN C (ALL SPECIES)	1.95	SPECIES RICHNESS (NATIVE)	31
MEAN C (NATIVE TREES)	2.00	% NON-NATIVE	0.28
MEAN C (NATIVE SHRUBS)	1.00	WET INDICATOR (ALL)	-0.63
MEAN C (NATIVE HERBACEOUS)	3.08	WET INDICATOR (NATIVE)	-0.71
FQAI (NATIVE SPECIES)	15.09	% HYDROPHYTE (MIDWEST)	0.81
FQAI (ALL SPECIES)	12.81	% NATIVE PERENNIAL	0.63
ADJUSTED FQAI	23.01	% NATIVE ANNUAL	0.09
% C VALUE 0	0.40	% ANNUAL	0.09
% C VALUE 1-3	0.33	% PERENNIAL	0.88
% C VALUE 4-6	0.28		
% C VALUE 7-10	0.00		

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
acocal	Acorus calamus	Acorus calamus	Single-Vein Sweetflag	0	OBL	OBL	-2	Forb	Perennial	Adventive
alisub	Alisma subcordatum	Alisma subcordatum	American Water-Plantain	3	OBL	OBL	-2	Forb	Perennial	Native
ambtri	Ambrosia trifida	Ambrosia trifida	Great Ragweed	0	FAC	FAC	0	Forb	Annual	Native
ascinc	Asclepias incarnata	Asclepias incarnata	Swamp Milkweed	3	OBL	OBL	-2	Forb	Perennial	Native
barvul	Barbarea vulgaris	BARBAREA VULGARIS	Garden Yellow-Rocket	0	FAC	FAC	0	Forb	Biennial	Adventive
cxemor	Carex emoryi	Carex emoryi	Emory's Sedge	5	OBL	OBL	-2	Sedge	Perennial	Native
cxstri	Carex stricta	Carex stricta	Uptight Sedge	5	OBL	OBL	-2	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
elepal	Eleocharis palustris	Eleocharis erythropoda; Eleocharis palustris major; Eleocharis smallii; Eleocharis xyridiformis; Eleocharis macrostachya	Common Spike-Rush	1	OBL	OBL	-2	Sedge	Perennial	Native
equarv	Equisetum arvense	Equisetum arvense	Field Horsetail	0	FAC	FAC	0	Fern	Perennial	Native
equhye	Equisetum hyemale	Equisetum hyemale	Tall Scouring-Rush	1	FACW	FAC	-1	Fern	Perennial	Native
impcap	Impatiens capensis	Impatiens capensis	Spotted Touch-Me-Not	3	FACW	FACW	-1	Forb	Annual	Native
juntor	Juncus torreyi	Juncus torreyi	Torrey's Rush	2	FACW	FACW	-1	Forb	Perennial	Native
leeory	Leersia oryzoides	Leersia oryzoides	Rice Cut Grass	3	OBL	OBL	-2	Grass	Perennial	Native
lemmio	Lemna minor	Lemna minor	Common Duckweed	5	OBL	OBL	-2	Forb	Annual	Native
lontat	Lonicera tatarica	LONICERA TATARICA	Twinsisters	0	FACU	FACU	1	Shrub	Perennial	Adventive
lytsal	Lythrum salicaria	LYTHRUM SALICARIA	Purple Loosestrife	0	OBL	OBL	-2	Forb	Perennial	Adventive

polpen	Persicaria pensylvanica	Polygonum pensylvanicum	Pinkweed	0	FACW	FACW	-1	Forb	Annual	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
phyvir	Physostegia virginiana	Physostegia virginiana	Obedient-Plant	4	FACW	FACW	-1	Forb	Perennial	Native
popdel	Populus deltoides	Populus deltoides	Eastern Cottonwood	0	FAC	FAC	0	Tree	Perennial	Native
pruser	Prunus serotina	Prunus serotina	Black Cherry	0	FACU	FACU	1	Shrub	Perennial	Native
ratpin	Ratibida pinnata	Ratibida pinnata	Yellow Coneflower	4	UPL	UPL	2	Forb	Perennial	Native
rhacat	Rhamnus cathartica	RHAMNUS CATHARTICA	European Buckthorn	0	FAC	FAC	0	Shrub	Perennial	Adventive
rhuhir	Rhus hirta	Rhus typhina	Staghorn Sumac	1	UPL	UPL	2	Tree	Perennial	Native
rumcri	Rumex crispus	RUMEX CRISPUS	Curly Dock	0	FAC	FAC	0	Forb	Perennial	Adventive
salint	Salix interior	Salix interior	Sandbar Willow	2	FACW	FACW	-1	Shrub	Perennial	Native
salnig	Salix nigra	Salix nigra	Black Willow	5	OBL	OBL	-2	Tree	Perennial	Native
sciatv	Scirpus atrovirens	Scirpus atrovirens	Dark-Green Bulrush	4	OBL	OBL	-2	Sedge	Perennial	Native
sillac	Silphium laciniatum	Silphium laciniatum	Compass-Plant	5	UPL	UPL	2	Forb	Perennial	Native
silper	Silphium perfoliatum	Silphium perfoliatum	Cup-Plant	5	FACW	FACW	-1	Forb	Perennial	Native
silter	Silphium terebinthinaceum	Silphium terebinthinaceum	Prairie Dock	5	FAC	FAC	0	Forb	Perennial	Native
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
spaeur	Sparganium eurycarpum	Sparganium eurycarpum	Broad-Fruit Burr-Reed	5	OBL	OBL	-2	Forb	Perennial	Native
astsim	Symphyotrichum lanceolatum	Aster simplex	White Panicled American-Aster	3	FAC	FACW	0	Forb	Perennial	Native
symnov	Symphyotrichum novae-angliae	Aster novae-angliae	New England American-Aster	3	FACW	FACW	-1	Forb	Perennial	Native
taroff	Taraxacum officinale	TARAXACUM OFFICINALE	Common Dandelion	0	FACU	FACU	1	Forb	Perennial	Adventive
typang	Typha angustifolia	TYPHA ANGUSTIFOLIA	Narrow-Leaf Cat-Tail	0	OBL	OBL	-2	Forb	Perennial	Adventive
vibopu	Viburnum opulus var. opulus	VIBURNUM OPULUS	Highbush-Cranberry	0	FAC	FACW	0	Shrub	Perennial	Adventive
vitrip	Vitis riparia	Vitis riparia var. syrticola	River-Bank Grape	1	FACW	FAC	-1	Vine	Perennial	Native

Wetland Determination Data Forms – Updated June 11, 2019

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Lake Villa Apartments City/County: Lake Villa / Lake Sampling Date: 11-15-2018

Applicant/Owner: W-T Group State: IL Sampling Point: A

Investigator(s) K. McMahon & K. Smit Section, Township, Range: S28 T46N R10E

Landform (hillslope, terrace, etc.): Toe Slope / Ditch Local Relief (concave, convex, none): Concave

Slope (%): 0% Lat: 42.439411 Long: -88.062758 Datum: Wetland 1

Soil Map Unit Name: Zurich and Ozaukee silt loams, 4 to 6 percent slopes, eroded (840C2) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no explain in remarks)

Are vegetation ☐ Soil ☐ Hydrology ☐ significantly disturbed? Are normal circumstances present? Yes ☒ No ☐

Are vegetation ☐ Soil ☐ Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐ Hydric Soils Present ? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	**Is the Sampled Area Within a Wetland?**	**Yes ☒ No ☐**
Remarks:		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Rhamnus cathartica*	5	Y	FAC
2.			
3.			
4.			
5.			
	5	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Phalaris arundinacea*	80	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	80	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL,FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That are OBL,FACW, or FAC 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species:	x 1 =
FACW species:	x 2 =
FAC species:	x 3 =
FACU species:	x 4 =
UPL species:	x 5 =
Column Totals	(A)

Prevalence Index =B/A =

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation
☒ Dominance Test is >50%
☐ Prevalence Index is ≤ 3.0[1]
☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet)
Photograph 1

SOIL

Sampling Point A

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

Depth (Inches)	Matrix Color (Moist)	Matrix %	Redox Features Color (Moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	100					SiL	
4-10	10YR 3/1	85	10YR 4/1	10	D	M	SiCL	
			10YR 3/6	5	C	M		
10-24	10YR 5/2	60	10YR 6/6	25	C	M	C	
			10YR 4/1	10	D	M		
			10YR 6/1	5	D	M		

[1]Type: C = Concentration, D= Depletion, RM = Reduced Matrix, CS = Covered or Coated Sand Grains [2]Locaton: PL =Pore Lining, M = Matrix

Hydric Soil Indicators

- ☐ Histosol (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[3]

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron- Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.

Restrictive Layer (if observed)

Type: _____

Depth: _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (Minimum of one is required: check all that apply)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Water Stained Leaves (B9)
- ☐ Aquatic Fauna (B 3)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☒ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☒ No☐ Depth (inches) 6”

Water Table Present? Yes ☒ No☐ Depth (inches) surface

Saturation Present? (includes capillary fringe) Yes ☒ No☐ Depth (inches) surface

Wetland Hydrology Present? Yes☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Lake Villa Apartments City/County: Lake Villa / Lake Sampling Date: 11-15-2018

Applicant/Owner: W-T Group State: IL Sampling Point: B

Investigator(s) K. McMahon & K. Smit Section, Township, Range: S28 T46N R10E

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): Convex

Slope (%): 0.5% Lat: 42.439528 Long: -88.063203 Datum: Wetland 1- Upland

Soil Map Unit Name: Zurich and Ozaukee silt loams, 4 to 6 percent slopes, eroded (840C2) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no explain in remarks)

Are vegetation ☐ Soil ☐ Hydrology ☐ significantly disturbed? Are normal circumstances present? Yes ☒ No ☐

Are vegetation ☐ Soil ☐ Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ☐ No ☒	
Hydric Soils Present ?	Yes ☒ No ☐	**Is the Sampled Area Within a Wetland?** **Yes** ☐ **No** ☒
Wetland Hydrology Present?	Yes ☐ No ☒	

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Poa pratensis*	50	Y	FAC
2. *Festuca rubra*	50	Y	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL,FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That are OBL,FACW, or FAC 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species:	x 1 =
FACW species:	x 2 =
FAC species:	x 3 =
FACU species:	x 4 =
UPL species:	x 5 =
Column Totals	(A)

Prevalence Index =B/A =

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation
☐ Dominance Test is >50%
☐ Prevalence Index is ≤ 3.0[1]
☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☐ **No** ☒

Remarks: (Include photo numbers here or on a separate sheet)
Photograph 2

SOIL

Sampling Point B

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

Depth (Inches)	Matrix Color (Moist)	Matrix %	Redox Features Color (Moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR 3/1	80	10YR 5/3	10	C	M	SiCL	
			10YR 5/8	10	C	M		
18-24	10YR 4/3	96	10YR 3/1	2	N/A	M	C	
			10YR 5/2	2	D	M		

[1]Type: C = Concentration, D= Depletion, RM = Reduced Matrix, CS = Covered or Coated Sand Grains [2]Locaton: PL =Pore Lining, M = Matrix

Hydric Soil Indicators

- ☐ Histosol (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[3]

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron- Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.

Restrictive Layer (if observed)

Type: _____

Depth: _____

Hydric Soil Present? **Yes** ☒ **No** ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (Minimum of one is required: check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water Stained Leaves (B9)
- ☐ Aquatic Fauna (B 3)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No☒ Depth (inches) N/A

Water Table Present? Yes ☐ No☒ Depth (inches) N/A

Saturation Present? (includes capillary fringe) Yes ☐ No☒ Depth (inches) N/A

Wetland Hydrology Present? Yes☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Lake Villa Apartments City/County: Lake Villa / Lake Sampling Date: 11-15-2018

Applicant/Owner: W-T Group State: IL Sampling Point: C

Investigator(s) K. McMahon & K. Smit Section, Township, Range: S28 T46N R10E

Landform (hillslope, terrace, etc.): Emergent Wetland Terrace Local Relief (concave, convex, none): Concave

Slope (%): 0% Lat: 42.439480 Long: -88.065000 Datum: Wetland 1

Soil Map Unit Name: Zurich and Ozaukee silt loams, 4 to 6 percent slopes, eroded (840C2) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no explain in remarks)

Are vegetation ☐ Soil ☐ Hydrology ☐ significantly disturbed? Are normal circumstances present? Yes ☒ No ☐

Are vegetation ☐ Soil ☐ Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐
Hydric Soils Present ? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐

Is the Sampled Area Within a Wetland? **Yes ☒** **No ☐**

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	

Herb Stratum (Plot size: 5')			
1. *Typha angustifolia*	25	Y	OBL
2. *Phragmites australis*	5	N	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	30	=Total Cover	

Woody Vine Stratum (Plot size: 30')			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL,FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL,FACW, or FAC 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species:	x 1 =
FACW species:	x 2 =
FAC species:	x 3 =
FACU species:	x 4 =
UPL species:	x 5 =
Column Totals	(A)

Prevalence Index =B/A =

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation
☒ Dominance Test is >50%
☐ Prevalence Index is ≤ 3.0[1]
☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet)
Photograph 3

SOIL

Sampling Point C

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

Depth (Inches)	Matrix Color (Moist)	Matrix %	Redox Features Color (Moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR 2/1	100					SiL	
2-18	10YR 4/2	93	2.5Y 5/4	5	C	M	SiCL	
			10YR 2/1	2	N/A	M		
18-24	10YR 4/1	85	10GY 6/1	15	D	M	C	

[1]Type: C = Concentration, D= Depletion, RM = Reduced Matrix, CS = Covered or Coated Sand Grains [2]Locaton: PL =Pore Lining, M = Matrix

Hydric Soil Indicators

- ☐ Histosol (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[3]

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron- Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.

Restrictive Layer (if observed)

Type: _____

Depth: _____

Hydric Soil Present? Yes ☒ No ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (Minimum of one is required: check all that apply)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☒ Water Stained Leaves (B9)
- ☐ Aquatic Fauna (B 3)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☒ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☒ No☐ Depth (inches) 4”

Water Table Present? Yes ☒ No☐ Depth (inches) N/A

Saturation Present? (includes capillary fringe) Yes ☒ No☐ Depth (inches) N/A

Wetland Hydrology Present? Yes☒ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Lake Villa Apartments City/County: Lake Villa / Lake Sampling Date: 11-15-2018

Applicant/Owner: W-T Group State: IL Sampling Point: D

Investigator(s) K. McMahon & K. Smit Section, Township, Range: S28 T46N R10E

Landform (hillslope, terrace, etc.): Prairie Hillslope Local Relief (concave, convex, none): Concave

Slope (%): 0% Lat: 42.439493 Long: -88.064863 Datum: Wetland 1- Upland

Soil Map Unit Name: Zurich and Ozaukee silt loams, 4 to 6 percent slopes, eroded (840C2) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no explain in remarks)

Are vegetation ☐ Soil ☐ Hydrology ☐ significantly disturbed? Are normal circumstances present? Yes ☒ No ☐

Are vegetation ☐ Soil ☐ Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☐ No ☒ Hydric Soils Present ? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☐ No ☒	**Is the Sampled Area Within a Wetland?**	**Yes** ☐ **No** ☒
Remarks:		

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Sorghastrum nutans*	40	Y	FACU
2. *Andropogon gerardii*	20	Y	FAC
3. *Symphyotrichum novae-angliae*	2	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	62	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL,FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That are OBL,FACW, or FAC 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species:	x 1 =
FACW species:	x 2 =
FAC species:	x 3 =
FACU species:	x 4 =
UPL species:	x 5 =
Column Totals	(A)

Prevalence Index =B/A =

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation
☐ Dominance Test is >50%
☐ Prevalence Index is ≤ 3.0[1]
☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☐ **No** ☒

Remarks: (Include photo numbers here or on a separate sheet)
Photograph 4

SOIL

Sampling Point D

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

Depth (Inches)	Matrix Color (Moist)	Matrix %	Redox Features Color (Moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 4/2	100					SiCL	
6-18	10YR 5/2	60	10YR 5/4	25	C	M	C	
			2.5Y 6/1	15	D	M		

[1]Type: C = Concentration, D= Depletion, RM = Reduced Matrix, CS = Covered or Coated Sand Grains [2]Locaton: PL =Pore Lining, M = Matrix

Hydric Soil Indicators

- ☐ Histosol (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[3]

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron- Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.

Restrictive Layer (if observed)

Type: _____

Depth: _____

Hydric Soil Present? **Yes** ☒ **No** ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (Minimum of one is required: check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water Stained Leaves (B9)
- ☐ Aquatic Fauna (B 3)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No☒ Depth (inches) N/A

Water Table Present? Yes ☐ No☒ Depth (inches) N/A

Saturation Present? (includes capillary fringe) Yes ☐ No☒ Depth (inches) N/A

Wetland Hydrology Present? **Yes**☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Lake Villa Apartments City/County: Lake Villa / Lake Sampling Date: 11-15-2018

Applicant/Owner: W-T Group State: IL Sampling Point: E

Investigator(s) K. McMahon & K. Smit Section, Township, Range: S28 T46N R10E

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): Convex

Slope (%): 0.5% Lat: 42.439808 Long: -88.064462 Datum: Investigated Area 1

Soil Map Unit Name: Zurich and Ozaukee silt loams, 4 to 6 percent slopes, eroded (840C2) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no explain in remarks)

Are vegetation ☐ Soil ☐ Hydrology ☐ significantly disturbed? Are normal circumstances present? Yes ☒ No ☐

Are vegetation ☐ Soil ☐ Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐
Hydric Soils Present ? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☐ No ☒

Is the Sampled Area Within a Wetland? **Yes** ☐ **No** ☒

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	

Herb Stratum (Plot size: 5')			
1. *Phalaris arundinacea*	90	Y	FACW
2. *Cirsium arvense*	10	N	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100	=Total Cover	

Woody Vine Stratum (Plot size: 30')			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL,FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL,FACW, or FAC 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species:	x 1 =
FACW species:	x 2 =
FAC species:	x 3 =
FACU species:	x 4 =
UPL species:	x 5 =
Column Totals	(A)

Prevalence Index =B/A =

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation
☒ Dominance Test is >50%
☐ Prevalence Index is ≤ 3.0[1]
☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes ☒ **No** ☐

Remarks: (Include photo numbers here or on a separate sheet)
Photograph 19

SOIL

Sampling Point E

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

Depth (Inches)	Matrix Color (Moist)	Matrix %	Redox Features Color (Moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/1	100					SiCL	
4-8	10YR 4/1	85	10YR 5/2	10	D	M	SiCL	
			10YR 2/1	5	N/A	M		
8-18	10YR 2/1	63	10YR 5/2	35	D	M	C	
			10YR 6/4	2	C	M		
18-24	10YR 5/2	55	10YR 2/1	20	N/A	M	C	
			10YR 4/2	15	D	M		
			10YR 6/6	10	C	M		

[1]Type: C = Concentration, D= Depletion, RM = Reduced Matrix, CS = Covered or Coated Sand Grains [2]Locaton: PL =Pore Lining, M = Matrix

Hydric Soil Indicators

- ☐ Histosol (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[3]

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron- Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.

Restrictive Layer (if observed)

Type: _____

Depth: _____

Hydric Soil Present? **Yes** ☒ **No** ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (Minimum of one is required: check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water Stained Leaves (B9)
- ☐ Aquatic Fauna (B 3)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No☒ Depth (inches) N/A

Water Table Present? Yes ☐ No☒ Depth (inches) N/A

Saturation Present? (includes capillary fringe) Yes ☐ No☒ Depth (inches) N/A

Wetland Hydrology Present? Yes☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Lake Villa Apartments City/County: Lake Villa / Lake Sampling Date: 11-15-2018

Applicant/Owner: W-T Group State: IL Sampling Point: F

Investigator(s) K. McMahon & K. Smit Section, Township, Range: S28 T46N R10E

Landform (hillslope, terrace, etc.): Constructed, Grassy Drainage Swale Local Relief (concave, convex, none): Concave

Slope (%): 0.2% Lat: 42.439905 Long: -88.064751 Datum: Investigated Area 2

Soil Map Unit Name: Grays and Markham silt loams, 2 to 4 percent slopes (979B) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no explain in remarks)

Are vegetation ☒ Soil ☐ Hydrology ☐ significantly disturbed? Are normal circumstances present? Yes ☒ No ☐

Are vegetation ☐ Soil ☐ Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐
Hydric Soils Present ? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☐ No ☒

Is the Sampled Area Within a Wetland? **Yes** ☐ **No** ☒

Remarks: This area consists of mowed turf grass.

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
		= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
		=Total Cover	

Herb Stratum (Plot size: 5')			
1. *Poa pratensis*	100	Y	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	100	=Total Cover	

Woody Vine Stratum (Plot size: 30')			
1.			
2.			
		=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL,FACW, or FAC: 1 (A)
Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That are OBL,FACW, or FAC 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species:	x 1 =
FACW species:	x 2 =
FAC species:	x 3 =
FACU species:	x 4 =
UPL species:	x 5 =
Column Totals	(A)

Prevalence Index =B/A =

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation
☒ Dominance Test is >50%
☐ Prevalence Index is ≤ 3.0[1]
☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet)
Photograph 20

SOIL

Sampling Point F

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

Depth (Inches)	Matrix Color (Moist)	Matrix %	Redox Features Color (Moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-14	10YR 3/1	65	10YR 5/2	20	D	M	SiCL	
			10YR 5/4	10	C	M		
			10YR 5/8	5	C	M		
14-20	10YR 2/1	100					C	
20-24	10YR 5/1	98	10YR 5/6	2	C	M	C	

[1]Type: C = Concentration, D= Depletion, RM = Reduced Matrix, CS = Covered or Coated Sand Grains [2]Locaton: PL =Pore Lining, M = Matrix

Hydric Soil Indicators

- ☐ Histosol (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[3]

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron- Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.

Restrictive Layer (if observed)

Type: _____

Depth: _____

Hydric Soil Present? **Yes** ☒ **No** ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (Minimum of one is required: check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water Stained Leaves (B9)
- ☐ Aquatic Fauna (B 3)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☒ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No☒ Depth (inches) N/A

Water Table Present? Yes ☐ No☒ Depth (inches) N/A

Saturation Present? (includes capillary fringe) Yes ☐ No☒ Depth (inches) N/A

Wetland Hydrology Present? **Yes**☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Lake Villa Apartments City/County: Lake Villa / Lake Sampling Date: 05-15-2019

Applicant/Owner: W-T Group State: IL Sampling Point: G

Investigator(s) K. McMahon & K. Smit Section, Township, Range: S28 T46N R10E

Landform (hillslope, terrace, etc.): Micro-Depression Local Relief (concave, convex, none): Concave

Slope (%): 0% Lat: 42.439905 Long: -88.064751 Datum: Investigated Area 3

Soil Map Unit Name: Zurich and Ozaukee silt loams, 4 to 6 percent slopes, eroded (840C2) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no explain in remarks)

Are vegetation ☐ Soil ☐ Hydrology ☐ significantly disturbed? Are normal circumstances present? Yes ☒ No ☐

Are vegetation ☐ Soil ☐ Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐
Hydric Soils Present ? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☐ No ☒

Is the Sampled Area Within a Wetland? **Yes** ☐ **No** ☒

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0	=Total Cover	

Herb Stratum (Plot size: 5')			
1. *Phalaris arundinacea*	62	Y	FACW
2. *Poa pratensis*	20	Y	FAC
3. *Trifolium pratense*	10	N	FACU
4. *Taraxacum officinale*	5	N	FACU
5. *Daucus carota*	1	N	UPL
6. *Erigeron annuus*	1	N	FACU
7. *Barbarea vulgaris*	1	N	FAC
8.			
9.			
10.			
	100	=Total Cover	

Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	0	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL,FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That are OBL,FACW, or FAC 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species: _____	x 1 = _____
FACW species: _____	x 2 = _____
FAC species: _____	x 3 = _____
FACU species: _____	x 4 = _____
UPL species: _____	x 5 = _____
Column Totals _____	(A) _____

Prevalence Index =B/A = _____

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation
☒ Dominance Test is >50%
☐ Prevalence Index is ≤ 3.0[1]
☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet)
Photograph 23

SOIL

Sampling Point G

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

Depth (Inches)	Matrix Color (Moist)	Matrix %	Redox Features Color (Moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	100					SiCL	
4-16	10YR 3/1	85	10YR 4/2	10	D	M	SiCL	
			10YR 4/6	5	C	M		
16-24	10YR 5/2	55	10YR 5/4	35	C	M	C	
			10YR 2/1	5	N/A	M		
			10YR 5/8	5	C	M		

[1]Type: C = Concentration, D= Depletion, RM = Reduced Matrix, CS = Covered or Coated Sand Grains [2]Locaton: PL =Pore Lining, M = Matrix

Hydric Soil Indicators

- ☐ Histosol (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[3]

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron- Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.

Restrictive Layer (if observed)

Type: _____

Depth: _____

Hydric Soil Present? **Yes** ☒ **No** ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (Minimum of one is required: check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water Stained Leaves (B9)
- ☐ Aquatic Fauna (B 3)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No☒ Depth (inches) N/A

Water Table Present? Yes ☐ No☒ Depth (inches) N/A

Saturation Present? (includes capillary fringe) Yes ☐ No☒ Depth (inches) N/A

Wetland Hydrology Present? **Yes**☐ **No** ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Lake Villa Apartments City/County: Lake Villa / Lake Sampling Date: 05-15-2019

Applicant/Owner: W-T Group State: IL Sampling Point: H

Investigator(s) K. McMahon & K. Smit Section, Township, Range: S28 T46N R10E

Landform (hillslope, terrace, etc.): Hillslope Local Relief (concave, convex, none): Convex

Slope (%): 3% Lat: 42.439905 Long: -88.064751 Datum: Wetland 1- Upland

Soil Map Unit Name: Ozaukee silt loam, 6 to 12 percent slopes, eroded (530D2) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no explain in remarks)

Are vegetation ☐ Soil ☐ Hydrology ☐ significantly disturbed? Are normal circumstances present? Yes ☒ No ☐

Are vegetation ☐ Soil ☐ Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐
Hydric Soils Present ? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☐ No ☒

Is the Sampled Area Within a Wetland? **Yes** ☐ **No** ☒

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix interior*	80	Y	FACW
2.			
3.			
4.			
5.			
	80	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Poa pratensis*	20	Y	FAC
2. *Sonchus arvensis*	7	Y	FACU
3. *Silphium perfoliatum*	5	N	FACW
4. *Galium aparine*	3	N	FACU
5. *Equisetum arvense*	3	N	FAC
6. *Cirsium arvense*	2	N	FACU
7. *Daucus carota*	2	N	UPL
8. *Ratibida pinnata*	2	N	UPL
9. *Solidago altissima*	2	N	FACU
10. *Salix interior*	1	N	FACW
	47	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	0	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL,FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL,FACW, or FAC 66% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species:	x 1 =
FACW species:	x 2 =
FAC species:	x 3 =
FACU species:	x 4 =
UPL species:	x 5 =
Column Totals	(A)

Prevalence Index =B/A =

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation
☒ Dominance Test is >50%
☐ Prevalence Index is ≤ 3.0[1]
☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? **Yes** ☒ **No** ☐

Remarks: (Include photo numbers here or on a separate sheet)
Photograph 10

SOIL

Sampling Point H

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

Depth (Inches)	Matrix Color (Moist)	Matrix %	Redox Features Color (Moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10YR 3/1	90	10YR 4/4	10	C	M	SiCL	
10-22	10YR 2/1	65	10YR 4/6	30	C	M	C	
			10YR 7/1	5	D	M		

[1]Type: C = Concentration, D= Depletion, RM = Reduced Matrix, CS = Covered or Coated Sand Grains [2]Locaton: PL =Pore Lining, M = Matrix

Hydric Soil Indicators

- ☐ Histosol (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[3]

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron- Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.

Restrictive Layer (if observed)

Type: _____

Depth: _____

Hydric Soil Present? **Yes** ☒ **No** ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (Minimum of one is required: check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water Stained Leaves (B9)
- ☐ Aquatic Fauna (B 3)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☐ No☒ Depth (inches) N/A

Water Table Present? Yes ☐ No☒ Depth (inches) N/A

Saturation Present? (includes capillary fringe) Yes ☐ No☒ Depth (inches) N/A

Wetland Hydrology Present? Yes☐ No ☒

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Midwest Region

Project/Site: Lake Villa Apartments City/County: Lake Villa / Lake Sampling Date: 05-15-2019

Applicant/Owner: W-T Group State: IL Sampling Point: I

Investigator(s) K. McMahon & K. Smit Section, Township, Range: S28 T46N R10E

Landform (hillslope, terrace, etc.): Hillslope Seep Local Relief (concave, convex, none): Convex

Slope (%): 0.2% Lat: 42.439905 Long: -88.064751 Datum: Wetland 1

Soil Map Unit Name: Ozaukee silt loam, 6 to 12 percent slopes, eroded (530D2) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes ☒ No ☐ (If no explain in remarks)

Are vegetation ☐ Soil ☐ Hydrology ☐ significantly disturbed? Are normal circumstances present? Yes ☒ No ☐

Are vegetation ☐ Soil ☐ Hydrology ☐ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes ☒ No ☐
Hydric Soils Present ? Yes ☒ No ☐
Wetland Hydrology Present? Yes ☒ No ☐

Is the Sampled Area Within a Wetland? **Yes ☒** **No ☐**

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 15')			
1. *Salix interior*	20	Y	FACW
2.			
3.			
4.			
5.			
	20	=Total Cover	
Herb Stratum (Plot size: 5')			
1. *Phalaris arundinacea*	15	Y	FACW
2. *Impatiens capensis*	7	Y	FACW
3. *Lythrum salicaria*	5	N	OBL
4. *Equisetum arvense*	3	N	FAC
5.			
6.			
7.			
8.			
9.			
10.			
	30	=Total Cover	
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
	0	=Total Cover	

Dominance Test worksheet:

Number of Dominant Species That are OBL,FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That are OBL,FACW, or FAC 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species:	x 1 =
FACW species:	x 2 =
FAC species:	x 3 =
FACU species:	x 4 =
UPL species:	x 5 =
Column Totals	(A)

Prevalence Index =B/A =

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation
☒ Dominance Test is >50%
☐ Prevalence Index is ≤ 3.0[1]
☐ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
☐ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Hydrophytic Vegetation Present? Yes☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet)
Photograph 9

SOIL

Sampling Point ___I___

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

Depth (Inches)	Matrix Color (Moist)	Matrix %	Redox Features Color (Moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	**2.5Y 3/1**	**83**	**10GY 5/1**	**10**	**D**	**M**	**C**	
			10YR 6/6	**5**	**C**	**M**		
			10YR 8/1	**2**	**D**	**M**		

[1]Type: C = Concentration, D= Depletion, RM = Reduced Matrix, CS = Covered or Coated Sand Grains [2]Locaton: PL =Pore Lining, M = Matrix

Hydric Soil Indicators

- ☐ Histosol (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[3]

- ☐ Coast Prairie Redox (A16)
- ☐ Dark Surface (S7)
- ☐ Iron- Manganese Masses (F12)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3] Indicators of hydrophytic vegetation and wetland hydrology must be present unless disturbed or problematic.

Restrictive Layer (if observed)

Type: **Rock**

Depth: **12"**

Hydric Soil Present? **Yes** ☒ **No** ☐

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (Minimum of one is required: check all that apply)

- ☒ Surface Water (A1)
- ☒ High Water Table (A2)
- ☒ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☒ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Water Stained Leaves (B9)
- ☐ Aquatic Fauna (B 3)
- ☐ True Aquatic Plants (B14)
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres on Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Gauge or Well Data (D9)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Drainage Patterns (B10)
- ☐ Dry-Season Water Table (C2)
- ☒ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Stunted or Stressed Plants (D1)
- ☐ Geomorphic Position (D2)
- ☒ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ☒ No☐ Depth (inches) 2"

Water Table Present? Yes ☒ No☐ Depth (inches) N/A

Saturation Present? (includes capillary fringe) Yes ☒ No☐ Depth (inches) N/A

Wetland Hydrology Present? Yes☒ **No** ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Site Photographs – Updated June 11, 2019

PHOTOGRAPH 1	
DESCRIPTION: Lake Villa Apartments / W-T Group Wetland 1 Sample Point A (Off-Site) Facing South	
DATE PHOTO TAKEN: November 15, 2018	

PHOTOGRAPH 2	
DESCRIPTION: Lake Villa Apartments / W-T Group Wetland 1- Upland Sample Point B Facing South	
DATE PHOTO TAKEN: November 15, 2018	

PHOTOGRAPH 3	
DESCRIPTION: Lake Villa Apartments / W-T Group Wetland 1 Sample Point C Facing South	
DATE PHOTO TAKEN: November 15, 2018	

PHOTOGRAPH 4	
DESCRIPTION: Lake Villa Apartments / W-T Group Wetland 1- Upland Sample Point D Facing East	
DATE PHOTO TAKEN: November 15, 2018	

PHOTOGRAPH 5	
DESCRIPTION: Lake Villa Apartments / W-T Group Culvert connecting to Wetland 1 (west side of site) Facing Northeast	
DATE PHOTO TAKEN: November 15, 2018	

PHOTOGRAPH 6	
DESCRIPTION: Lake Villa Apartments / W-T Group Wetland 1 Overview Facing Southeast	
DATE PHOTO TAKEN: November 15, 2018	

PHOTOGRAPH 7	
DESCRIPTION: Lake Villa Apartments / W-T Group Wetland 1 Overview Facing Southwest	
DATE PHOTO TAKEN: May 15, 2019	

PHOTOGRAPH 8	
DESCRIPTION: Lake Villa Apartments / W-T Group Wetland 1 Overview (Off-Site) Facing East	
DATE PHOTO TAKEN: May 15, 2019	

PHOTOGRAPH 9	
DESCRIPTION: Lake Villa Apartments / W-T Group Wetland 1 Sample Point I (Off-Site) Facing South	
DATE PHOTO TAKEN: May 15, 2019	

PHOTOGRAPH 10	
DESCRIPTION: Lake Villa Apartments / W-T Group Wetland 1 – Upland Sample Point H (Off-Site) Facing North	
DATE PHOTO TAKEN: May 15, 2019	

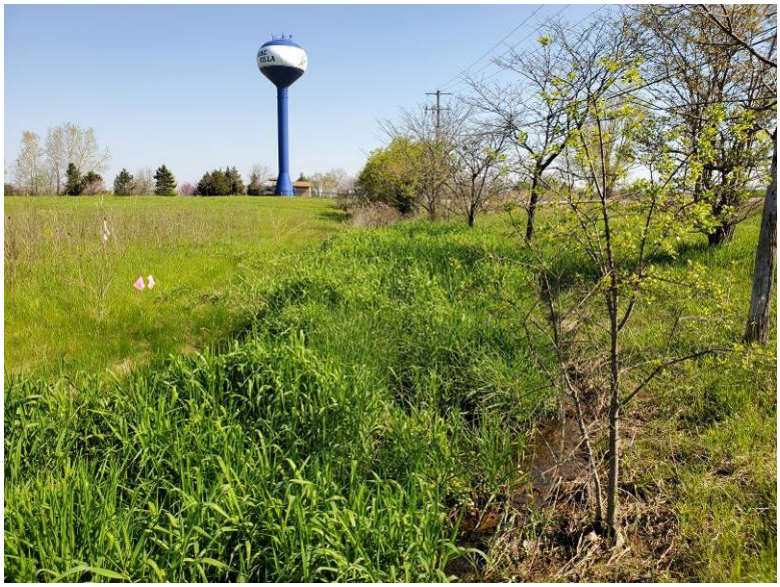
PHOTOGRAPH 11	
DESCRIPTION: Lake Villa Apartments / W-T Group Wetland 1 Overview (Off-Site) Facing South	
DATE PHOTO TAKEN: November 15, 2018	

PHOTOGRAPH 12	
DESCRIPTION: Lake Villa Apartments / W-T Group Wetland 1 Overview (Off-Site) Facing North	
DATE PHOTO TAKEN: May 15, 2019	

PHOTOGRAPH 13	
DESCRIPTION: Lake Villa Apartments / W-T Group Site Overview, Wetland 1 Upland-Prairie Buffer Facing Southwest	
DATE PHOTO TAKEN: November 15, 2018	

PHOTOGRAPH 14	
DESCRIPTION: Lake Villa Apartments / W-T Group Wetland 1 Overview (Off-Site) Facing East	
DATE PHOTO TAKEN: November 15, 2018	

PHOTOGRAPH 15	
DESCRIPTION: Lake Villa Apartments / W-T Group Wetland 1 Overview (Off-Site) Facing North	
DATE PHOTO TAKEN: November 15, 2018	

PHOTOGRAPH 16	
DESCRIPTION: Lake Villa Apartments / W-T Group Wetland 1 Overview (Off-Site) Facing North	
DATE PHOTO TAKEN: May 15, 2019	

PHOTOGRAPH 17	
DESCRIPTION: Lake Villa Apartments / W-T Group Culvert under N Deep Lake Road connecting to Wetland 1 (Off-Site) Facing East	
DATE PHOTO TAKEN: November 15, 2018	

PHOTOGRAPH 18	
DESCRIPTION: Lake Villa Apartments / W-T Group Wetland 1 Overview (Off-Site) Facing South	
DATE PHOTO TAKEN: May 15, 2019	

PHOTOGRAPH 19	
DESCRIPTION: Lake Villa Apartments / W-T Group Investigated Area 1, Sample Point E Facing West	
DATE PHOTO TAKEN: November 15, 2018	

PHOTOGRAPH 20	
DESCRIPTION: Lake Villa Apartments / W-T Group Investigated Area 2, Sample Point F Facing Southwest	
DATE PHOTO TAKEN: November 15, 2018	

PHOTOGRAPH 21	
DESCRIPTION: Lake Villa Apartments / W-T Group Investigated Area 2 Overview Facing Southwest	
DATE PHOTO TAKEN: November 15, 2018	

PHOTOGRAPH 22	
DESCRIPTION: Lake Villa Apartments / W-T Group Site Overview Facing Southwest	
DATE PHOTO TAKEN: May 15, 2019	

PHOTOGRAPH 23	
DESCRIPTION: Lake Villa Apartments / W-T Group Investigated Area 3 Sample Point G Facing South	
DATE PHOTO TAKEN: May 15, 2019	

PHOTOGRAPH 24	
DESCRIPTION: Lake Villa Apartments / W-T Group Site Overview, Northern Boundary Facing East	
DATE PHOTO TAKEN: November 15, 2018	

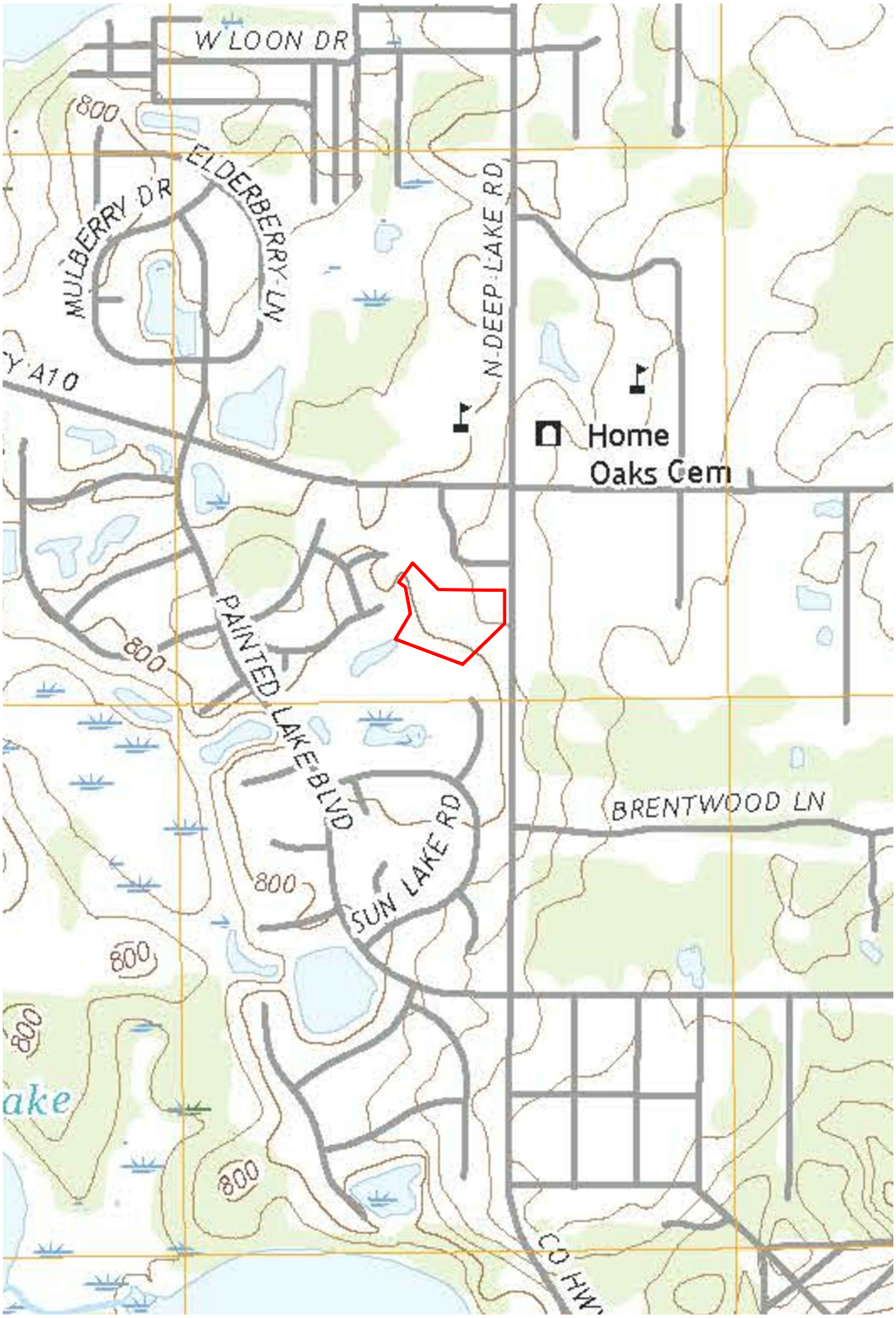
PHOTOGRAPH 25	
DESCRIPTION: Lake Villa Apartments / W-T Group Site Overview Facing Southeast	
DATE PHOTO TAKEN: November 15, 2018	

PHOTOGRAPH 26	
DESCRIPTION: Lake Villa Apartments / W-T Group Site Overview Facing South	
DATE PHOTO TAKEN: November 15, 2018	

PHOTOGRAPH 27	
DESCRIPTION: Lake Villa Apartments / W-T Group Site Overview Facing West	
DATE PHOTO TAKEN: November 15, 2018	

PHOTOGRAPH 28	
DESCRIPTION: Lake Villa Apartments / W-T Group Site Overview Facing South	
DATE PHOTO TAKEN: May 15, 2019	

Exhibits A – I
(Updated Aerial June 11, 2019)



ENCAP INCORPORATED

LEGEND:

Project Area

Location Map

Source: U.S. Geologic Survey
Section 28 T46N R10E
Latitude: 42.439706 Longitude: 88.063952

Lake Villa Apartments

Project Number: 18-1001B

W-T Group

0 1000 2000 4000

SCALE: 1"= 2000'

NORTH

Exhibit A

ENCAP INCORPORATED

LEGEND:

Project Area

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

National Wetlands Inventory

Source: U.S. Fish & Wildlife Service

0 100 200 400

SCALE: 1"=200'

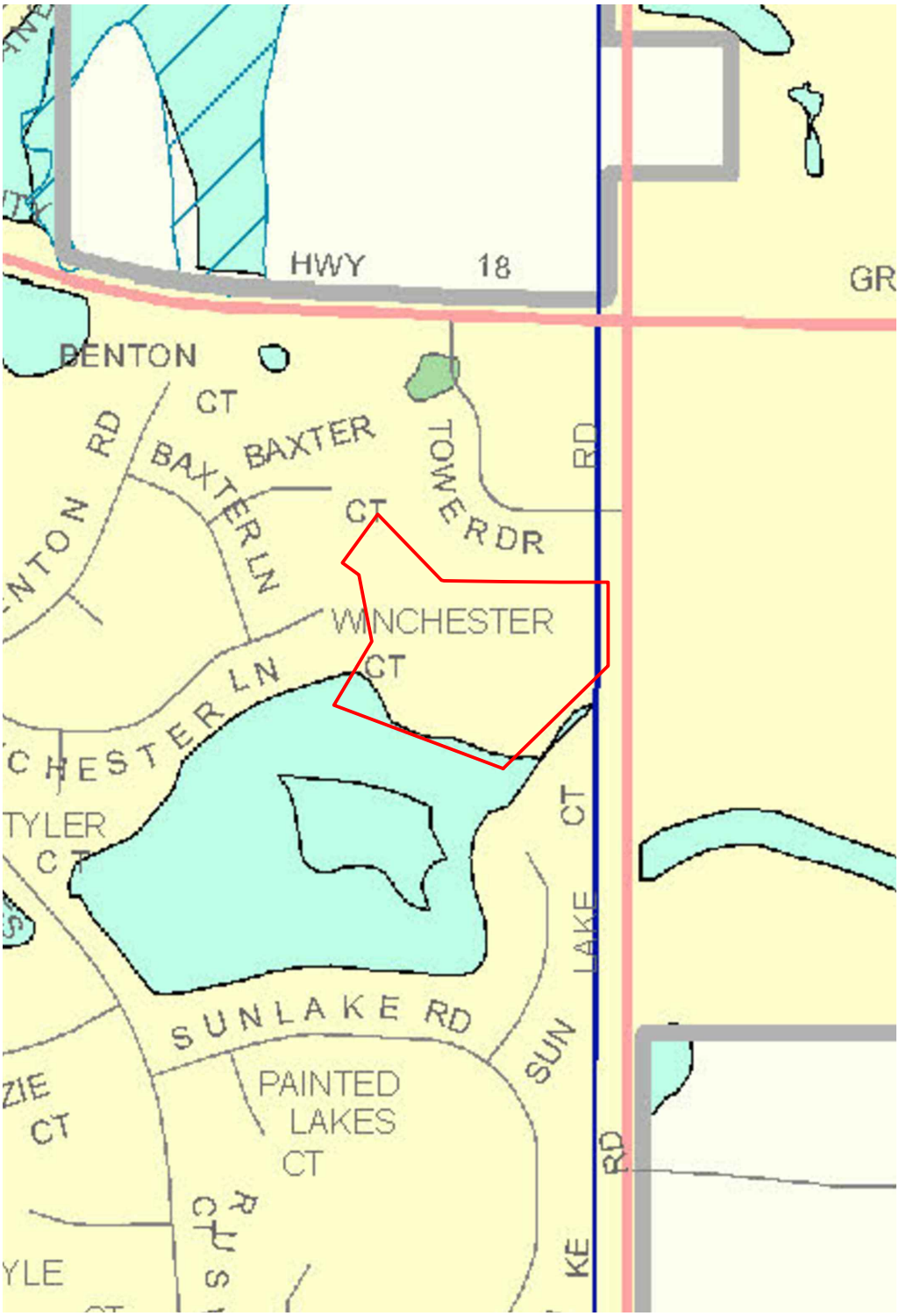
NORTH

Lake Villa Apartments

Project Number: 18-1001B

W-T Group

Exhibit B



ENCAP INCORPORATED

LEGEND:

Project Area

- WETLANDS - areas with a high potential for exhibiting hydric soil, hydrophytic vegetation and required hydrologic conditions.
- FARMED WETLANDS - agricultural cropped areas on hydric soil that have been cleared, partially drained or filled.
- POTENTIAL FARMED WETLANDS - areas with a high potential for exhibiting hydric soil, hydrophytic vegetation and required hydrologic conditions. Review of NRSC slides needed for confirmation.
- ARTIFICIAL WETLANDS - man-made wetlands on non-hydric soil.
- CONVERTED WETLANDS - areas that have been drained or filled and no longer exhibit Wetland or Farmed Wetland characteristics.
- NON-WETLANDS - upland areas within wetlands.
- ADID Wetlands
- Township Boundary
- Unincorporated Area
- Incorporated Area
- Major Water
- Hydrologic Unit Code (HUC-12)
- Major Road
- Road Centerline
- Rail Road

Lake County Advanced Identification of Aquatic Resources (ADID)

Sources: Lake County Agencies
USDA, USEPA, USFWS, USACE
Lake Villa Township

Lake Villa Apartments

Project Number: 18-1001B

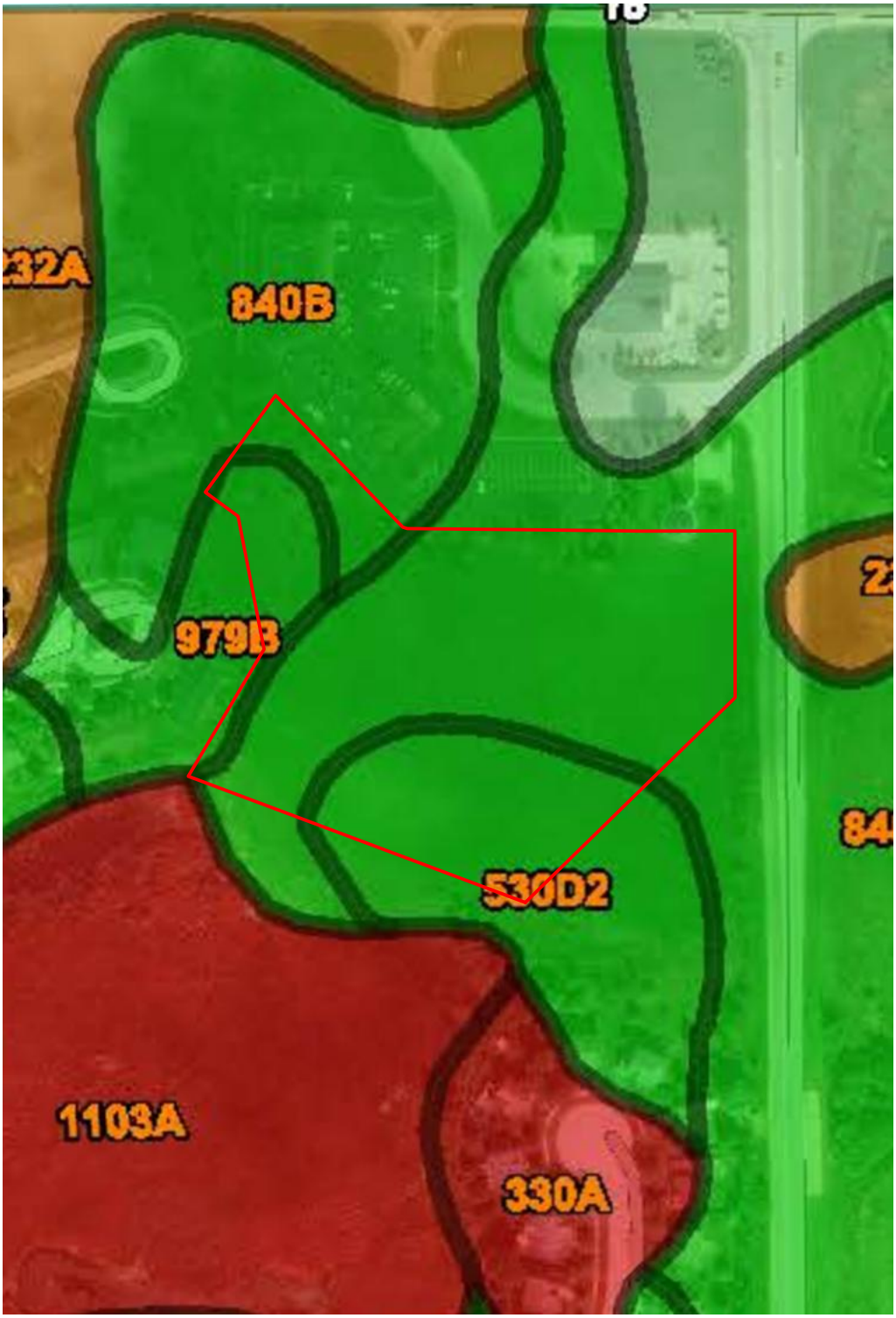
W-T Group

0 200 400 800

SCALE: 1"=400'

NORTH

Exhibit C



ENCAP INCORPORATED

LEGEND:

Project Area

- Hydric (100%)
- Hydric (66 to 99%)
- Hydric (33 to 65%)
- Hydric (1 to 32%)
- Not Hydric (0%)
- Not rated or not available

Soil Map

Source: U.S. Department of Agriculture
Natural Resources Conservation Service
Web Soil Survey 3.1

0 100 200 400
SCALE: 1"=200'

NORTH

Lake Villa Apartments

Project Number: 18-1001B

W-T Group

Exhibit D

ENCAP INCORPORATED

LEGEND:

Project Area

2018 USGS Topographic Map

Source: U.S. Geologic Survey
Antioch Quadrangle

0 200 400 800
SCALE: 1"=400'

NORTH

Lake Villa Apartments

Project Number: 18-1001B

W-T Group

Exhibit E

ENCAP INCORPORATED

LEGEND:

Project Area

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A	No Base Flood Elevations determined.
ZONE AE	Base Flood Elevations determined.
ZONE AH	Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO	Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR	Special Flood Hazard Areas formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99	Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V	Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE	Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X	Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X	Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D	Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

	1% Annual Chance Floodplain Boundary
	0.2% Annual Chance Floodplain Boundary
	Floodway boundary
	Zone D boundary
	CBRS and OPA boundary
	Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities.
513	Base Flood Elevation line and value; elevation in feet*
(EL 987)	Base Flood Elevation value where uniform within zone; elevation in feet*

*Referenced to the North American Vertical Datum of 1988

A — A	Cross section line
23 - - - 23	Transect line
	Culvert
	Bridge
45° 02' 08", 93° 02' 12"	Geographic coordinates referenced to the North American Datum of 1983 (NAD 83) Western Hemisphere
3100000 FT	5000-foot ticks: Wisconsin State Plane Central Zone (FIPS Zone 4802), Lambert Conformal Conic projection
4989000m N	1000-meter Universal Transverse Mercator grid values, zone 15
DX5510 ×	Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5	River Mile

Flood Insurance Rate Map

Source: Federal Emergency Management Agency (FEMA)
Panel Number: 0029K & 0035K
Effective Date: September 18, 2013

Lake Villa Apartments

Project Number: 18-1001B

W-T Group

0 200 400 800

SCALE: 1"=400'

NORTH

Exhibit F

ENCAP INCORPORATED

LEGEND:

Project Area

Area flooded

Boundary of 1965 flood

Boundary of 1960 flood

Boundary of 1938 flood

Drainage divide

River mile measured along stream channel

Inundated areas defined for different floods, upstream and downstream

Hydrologic Atlas

Source: U.S. Geologic Survey
Antioch Quadrangle

0 200 400 800

SCALE: 1"=400'

NORTH

Lake Villa Apartments

Project Number: 18-1001B

W-T Group

Exhibit G

ENCAP INCORPORATED

LEGEND:

Project Area

- Determined eligible for the NR
- Entered in the NR
- Part of a NR Historic District
- Part of a NR Historic District - contributing
- Part of a NR Historic District - non-contribu
- Undetermined
- High Probability Archeology

Historic Architectural Resources Geographic Information System

Source: Illinois State Historic Preservation Office

0 100 200 400

SCALE: 1"=200'

NORTH

Lake Villa Apartments

Project Number: 18-1001B

W-T Group

Exhibit H

ENCAP INCORPORATED

LEGEND:

Project Area	
Approximate On-site Wetland Boundary	
Approximate Off-site Wetland Boundary	
Sample Points	A-I
Culvert	

Aerial Photograph

Image Courtesy of Lake County GIS
2017

0 70 140 280
SCALE: 1"=140'

NORTH

Lake Villa Apartments

Project Number: 18-1001B

W-T Group

Exhibit I